

CARLO GAVAZZI
Automation Components



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A complete product range

ABOUT CARLO GAVAZZI

Carlo Gavazzi Automation is a multinational electronics group active in the design, manufacture and marketing of electronic equipment targeted at the global markets of industrial and building automation.

Our history is full of firsts and our products are installed in a huge number of applications all over the world. With more than 80 years of successful operation, our experience is unparalleled.

We have our headquarters in Europe and numerous offices around the world.

Our R&D competence centres and production sites are located in Denmark, Italy, Lithuania, Malta and the People's Republic of China.

We operate worldwide through 22 of our own sales companies and also selected representatives in more than 65 countries, from the United States in the West to the Pacific Rim in the East.

Our core competence in automation spans three product lines: Sensors, Switches and Controls.

Our wide array of products includes sensors, monitoring relays, timers, energy management systems, solid state relays, safety devices and fieldbus systems.

We focus our expertise on offering state-of-the-art product solutions in selected market segments.

Our customers include original equipment manufacturers of packaging machines, plastic-injection moulding machines, food and beverage production machines, conveying and materials handling equipment, door and entrance control systems, lifts and escalators, as well as heating, ventilation and air-conditioning devices.



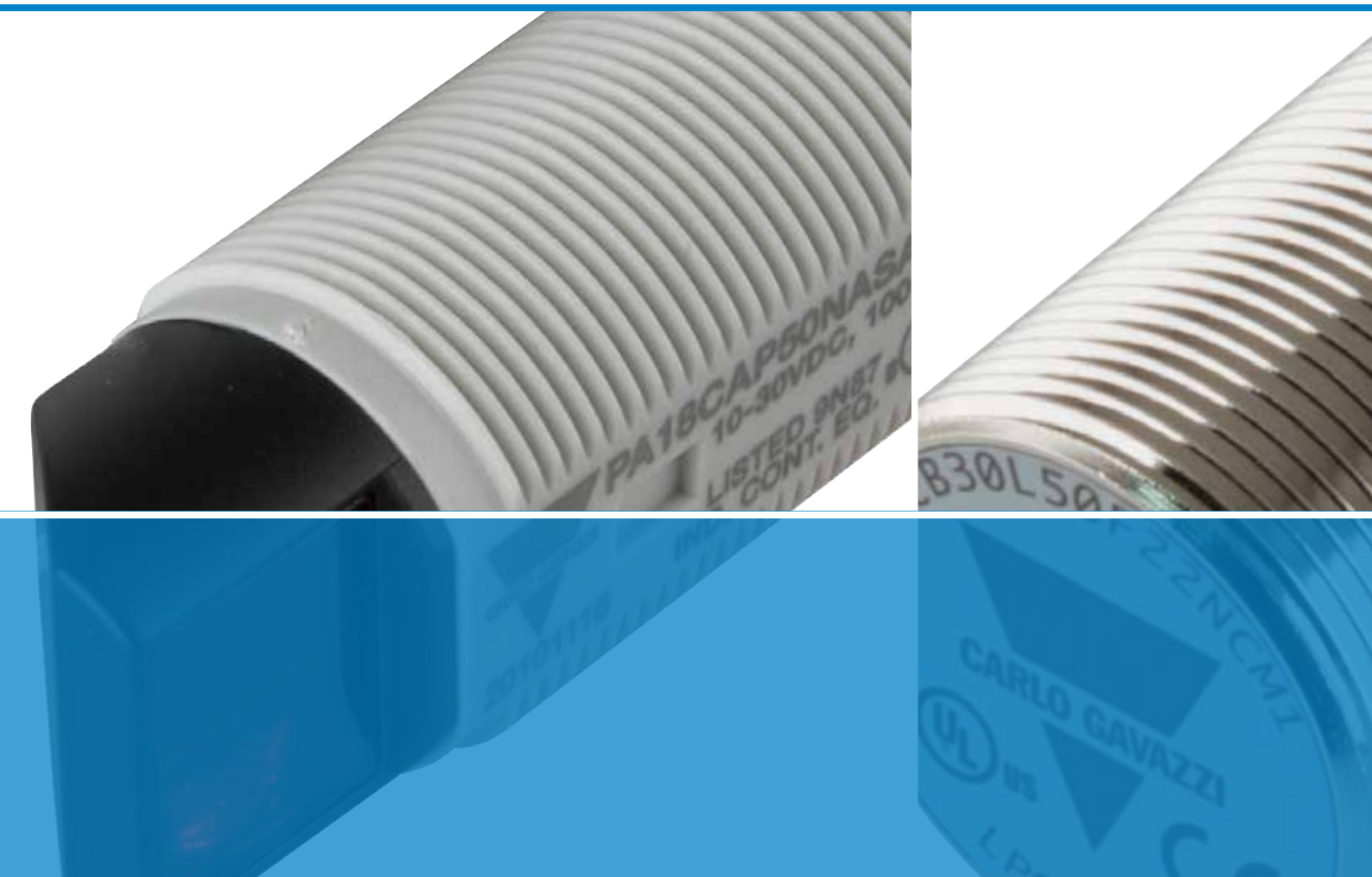
A guarantee of reliability

Carlo Gavazzi products earned the independent approval of the relevant bodies which govern our industry and the many markets we serve.

They are developed and manufactured in full compliance with the most important international standard regulations.

Carlo Gavazzi manufacturing facilities operates in line with the requirements of ISO9001:2008 Quality Management Systems and ISO14001:2008 Environmental Management System standard.



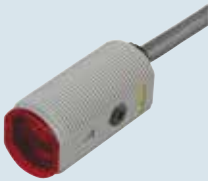


Sensors



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Photoelectric sensors

	M18, DC, axial type		M18, DC, radial type	
Types	PA18CA.	PA18CA.	PA18CR.	PA18CR.
Connections	2 m cable	M12 connector	2 m cable	M12 connector
				
Dimensions (mm)	M18 x 40	M18 x 44	M18 x 50	M18 x 54
Diffuse reflective				
Sensing distance (Sn)	50 - 1000 mm	50 - 1000 mm	50 - 800 mm	50 - 800 mm
NPN NO+NC	PA18CAD10NASA	PA18CAD10NAM1SA	PA18CRD08NASA	PA18CRD08NAM1SA
PNP NO+NC	PA18CAD10PASA	PA18CAD10PAM1SA	PA18CRD08PASA	PA18CRD08PAM1SA
Diffuse reflective WS				
Sensing distance (Sn)	0 - 400 mm	0 - 400 mm		
NPN NO+NC	PA18CAD04NAWS	PA18CAD04NAM1WS		
PNP NO+NC	PA18CAD04PAWS	PA18CAD04PAM1WS		
Retro reflective polarized				
Sensing distance (Sn)	5 - 500 cm	5 - 500 cm	5 - 400 cm	5 - 400 cm
NPN NO+NC	PA18CAP50NASA	PA18CAP50NAM1SA	PA18CRP40NASA	PA18CRP40NAM1SA
PNP NO+NC	PA18CAP50PASA	PA18CAP50PAM1SA	PA18CRP40PASA	PA18CRP40PAM1SA
Retro reflective				
Sensing distance (Sn)	5 - 650 cm	5 - 650 cm	5 - 500 cm	5 - 500 cm
NPN NO+NC	PA18CAR65NASA	PA18CAR65NAM1SA	PA18CRR50NASA	PA18CRR50NAM1SA
PNP NO+NC	PA18CAR65PASA	PA18CAR65PAM1SA	PA18CRR50PASA	PA18CRR50PAM1SA
Through-beam emitter (E)				
Sensing distance (Sn)	1 - 20 m	1 - 20 m	1 - 16 m	1 - 16 m
	PA18CAT20	PA18CAT20M1	PA18CRT16	PA18CRT16M1
Through-beam receiver (R)				
Sensing distance (Sn)	1 - 20 m	1 - 20 m	1 - 16 m	1 - 16 m
NPN NO+NC	PA18CAT20NASA	PA18CAT20NAM1SA	PA18CRT16NASA	PA18CRT16NAM1SA
PNP NO+NC	PA18CAT20PASA	PA18CAT20PAM1SA	PA18CRT16PASA	PA18CRT16PAM1SA
Background suppression (BGS)				
Sensing distance (Sn)	10 - 200 mm	10 - 200 mm		
NPN NO+NC	PA18CAB20NASA	PA18CAB20NAM1SA		
PNP NO+NC	PA18CAB20PASA	PA18CAB20PAM1SA		
Specifications				
Operating frequency	500 Hz	500 Hz	500 Hz	500 Hz
Rated operating voltage	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC
Voltage drop	≤ 2.0 VDC @ 100 mA	≤ 2.0 VDC @ 100 mA	≤ 2.0 VDC @ 100 mA	≤ 2.0 VDC @ 100 mA
Degree of protection	IP 67 + IP 69K	IP 67 + IP 69K	IP 67 + IP 69K	IP 67 + IP 69K
Protection Short-circuit (S)				
Reverse polarity (P)	SPT	SPT	SPT	SPT
Transients (T)				
Supply current	≤ 25 mA @ 24 VDC	≤ 25 mA @ 24 VDC	≤ 25 mA @ 24 VDC	≤ 25 mA @ 24 VDC
BGS, E + R	≤ 40 mA @ 24 VDC	≤ 40 mA @ 24 VDC	≤ 40 mA @ 24 VDC	≤ 40 mA @ 24 VDC
Housing material	ABS, PMMA, PBTB	ABS, PMMA, PBTB	ABS, PMMA, PBTB	ABS, PMMA, PBTB
Operating temperature	-25°C to +60°C	-25°C to +60°C	-25°C to +60°C	-25°C to +60°C
LED colour	Yellow, Green	Yellow, Green	Yellow, Green	Yellow, Green
Approvals/Marks	CE - cULus - ECOLAB	CE - cULus - ECOLAB	CE - cULus - ECOLAB	CE - cULus - ECOLAB

Photoelectric sensors

M18, DC, square type

Types	PH18.	PH18.	PH18.
Connections	2 m cable	M12 connector	Pigtail M12
			
Dimensions (mm)	15 x 21 (31.5) x 35	15 x 21 (31.5) x 35	15 x 21 (31.5) x 35
Diffuse reflective			
Sensing distance (Sn)	50 - 1000 mm	50 - 1000 mm	50 - 1000 mm
NPN NO+NC	PH18CND10NASA	PH18CND10NAM1SA	PH18CND10NAT1SA
PNP NC+NC	PH18CND10PASA	PH18CND10PAM1SA	PH18CND10PAT1SA
Retro reflective polarized			
Sensing distance (Sn)	5 - 500 cm	5 - 500 cm	5 - 500 cm
NPN NO+NC	PH18CNP50NASA	PH18CNP50NAM1SA	PH18CNP50NAT1SA
PNP NO+NC	PH18CNP50PASA	PH18CNP50PAM1SA	PH18CNP50PAT1SA
Retro reflective			
Sensing distance (Sn)	5 - 650 cm	5 - 650 cm	5 - 650 cm
NPN NO+NC	PH18CNR65NASA	PH18CNR65NAM1SA	PH18CNR65NAT1SA
PNP NO+NC	PH18CNR65PASA	PH18CNR65PAM1SA	PH18CNR65PAT1SA
Through-beam emitter (E)			
Sensing distance (Sn)	1 - 20 m	1 - 20 m	1 - 20 m
	PH18CNT20	PH18CNT20M1	PH18CNT20T1
Through-beam receiver (R)			
Sensing distance (Sn)	1 - 20 m	1 - 20 m	1 - 20 m
NPN NO+NC	PH18CNT20NASA	PH18CNT20NAM1SA	PH18CNT20NAT1SA
PNP NO+NC	PH18CNT20PASA	PH18CNT20PAM1SA	PH18CNT20PAT1SA
Background suppression (BGS)			
Sensing distance (Sn)	8 - 200 mm	8 - 200 mm	8 - 200 mm
NPN NO+NC	PH18CNB20NASA	PH18CNB20NAM1SA	PH18CNB20NAT1SA
PNP NO+NC	PH18CNB20PASA	PH18CNB20PAM1SA	PH18CNB20PAT1SA
Specifications			
Operating frequency	500 Hz	500 Hz	500 Hz
Rated operating voltage	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC
Voltage drop	≤ 2.0 VDC @ 100 mA	≤ 2.0 VDC @ 100 mA	≤ 2.0 VDC @ 100 mA
Degree of protection	IP 67 + IP 69K	IP 67 + IP 69K	IP 67 + IP 69K
Protection Short-circuit (S)			
Reverse polarity (P)	SPT	SPT	SPT
Transients (T)			
Supply current	≤ 25 mA @ 24 VDC	≤ 25 mA @ 24 VDC	≤ 25 mA @ 24 VDC
BGS, E + R	≤ 40 mA @ 24 VDC	≤ 40 mA @ 24 VDC	≤ 40 mA @ 24 VDC
Housing material	ABS, PMMA	ABS, PMMA	ABS, PMMA
Operating temperature	-25°C to +60°C	-25°C to +60°C	-25°C to +60°C
LED colour	Yellow, Green	Yellow, Green	Yellow, Green
Approvals/Marks	CE - cULus - ECOLAB	CE - cULus - ECOLAB	CE - cULus - ECOLAB

Photoelectric sensors

M18 metal, DC, integrated amplifier

Types	E.18..	E.18..-1
Connections	2 m cable	M12 connector
 		
Dimensions (mm)	M18 x 55	M18 x 67
Diffuse reflective		
Operating frequency	120 Hz	120 Hz
Sensing distance (Sn)	400 mm, adjustable	400 mm, adjustable
NPN NO+NC	EO1804NPAS	EO1804NPAS-1
PNP NC+NC	EO1804PPAS	EO1804PPAS-1
Retro reflective polarized		
Operating frequency	100 Hz	100 Hz
Sensing distance (Sn)	2 m, adjustable	2 m, adjustable
NPN NO+NC	EP1820NPAS	EP1820NPAS-1
PNP NO+NC	EP1820PPAS	EP1820PPAS-1
Retro reflective		
Operating frequency	120 Hz	120 Hz
Sensing distance (Sn)	3 m, adjustable	3 m, adjustable
NPN NO+NC	ER1830NPAS	ER1830NPAS-1
PNP NO+NC	ER1830PPAS	ER1830PPAS-1
Through-beam emitter		
Sensing distance (Sn)	20 m	20 m
	ET1820	ET1820-1
Through-beam receiver		
Operating frequency	170 Hz	170 Hz
Sensing distance (Sn)	20 m, adjustable	20 m, adjustable
NPN NO+NC	ET1820NPAS	ET1820NPAS-1
PNP NO+NC	ET1820PPAS	ET1820PPAS-1
Fiber optic		
Operating frequency	120 Hz	120 Hz
Sensing distance (Sn)	Fibre dependent	Fibre dependent
NPN NO+NC	EF1801NPAS	EF1801NPAS-1
PNP NO+NC	EF1801PPAS	EF1801PPAS-1
Specifications		
Rated operating voltage	10 - 40 VDC	10 - 40 VDC
Voltage drop	≤ 2.5 VDC	≤ 2.5 VDC
Degree of protection	IP 67	IP 67
Protection Short-circuit (S) Rev. polarity (P) Transients (T)	SPT	SPT
Load current	< 200 mA	< 200 mA
Housing material	Nickel-plated brass	Nickel-plated brass
Operating temperature	-20°C to +60°C	-20°C to +60°C
LED colour	Yellow	Yellow
Approvals/Marks	CE	CE

Photoelectric sensors

	M18 plastic, AC, integrated amplifier		M18 metal, AC, integrated amplifier	
Types	PA18CL	PA18CL.M6	PA18AL	PA18AL..M6
Connections	2 m cable	M12 connector	2 m cable	M12 connector
   				
Dimensions (mm)	M18 x 71.5	M18 x 83.5	M18 x 71.5	M18 x 83.5
Diffuse reflective				
Operating frequency	20 Hz	20 Hz	20 Hz	20 Hz
Sensing distance (Sn)	100 mm, fixed	100 mm, fixed		
Thyristor (SCR) NC	PA18CLD01TC	PA18CLD01TCM6		
Thyristor (SCR) NO	PA18CLD01TO	PA18CLD01TOM6		
Sensing distance (Sn)	200 mm, fixed	200 mm, fixed		
Thyristor (SCR) NC	PA18CLD02TC	PA18CLD02TCM6		
Thyristor (SCR) NO	PA18CLD02TO	PA18CLD02TOM6		
Sensing distance (Sn)	400 mm, fixed	400 mm, fixed		
Thyristor (SCR) NC	PA18CLD04TC	PA18CLD04TCM6		
Thyristor (SCR) NO	PA18CLD04TO	PA18CLD04TOM6		
Sensing distance (Sn)	400 mm, adjustable	400 mm, adjustable	400 mm, adjustable	400 mm, adjustable
Thyristor (SCR) NC	PA18CLD04TCSA	PA18CLD04TCM6SA	PA18ALD04TCSA	PA18ALD04TCM6SA
Thyristor (SCR) NO	PA18CLD04TOSA	PA18CLD04TOM6SA	PA18ALD04TOSA	PA18ALD04TOM6SA
Retro reflective polarized				
Operating frequency	25 Hz	25 Hz	25 Hz	25 Hz
Sensing distance (Sn)	2 m, fixed	2 m, fixed	2 m, adjustable	2 m, adjustable
Thyristor (SCR) NC	PA18CLP20TC	PA18CLP20TCM6	PA18ALP20TCSA	PA18ALP20TCM6SA
Thyristor (SCR) NO	PA18CLP20TO	PA18CLP20TOM6	PA18ALP20TOSA	PA18ALP20TOM6SA
Retro reflective				
Operating frequency	20 Hz	20 Hz	20 Hz	20 Hz
Sensing distance (Sn)	3 m, fixed	3 m, fixed	3 m, adjustable	3 m, adjustable
Thyristor (SCR) NC	PA18CLR30TC	PA18CLR30TCM6	PA18ALR30TCSA	PA18ALR30TCM6SA
Thyristor (SCR) NO	PA18CLR30TO	PA18CLR30TOM6	PA18ALR30TOSA	PA18ALR30TOM6SA
Specifications				
Rated operating voltage	20 - 250 VAC	20 - 250 VAC	20 - 250 VAC	20 - 250 VAC
Voltage drop	≤ 10 VAC	≤ 10 VAC	≤ 10 VAC	≤ 10 VAC
Off state current	≤ 5 mA AC	≤ 5 mA AC	≤ 5 mA AC	≤ 5 mA AC
Degree of protection	IP 67	IP 67	IP 67	IP 67
Protection Short-circuit (S)				
Reverse polarity (P)	PT	PT	PT	PT
Transients (T)				
Load current	< 500 mA	< 500 mA	< 500 mA	< 500 mA
Housing material	Polyester (PBTP)	Polyester (PBTP)	Nickel-plated brass	Nickel-plated brass
Operating temperature	-20°C to +60°C	-20°C to +60°C	-20°C to +60°C	-20°C to +60°C
LED colour	Yellow	Yellow	Yellow	Yellow
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA

Photoelectric sensors

Integrated amplifier

Types	PD30 Stainless Steel AISI 316L		PD30 ABS Housing Back Potentiometer	
Connections	2 m cable	M8 connector	2 m cable	M8 connector
				
Dimensions (mm)	11 x 31.5 x 21	11 x 31.5 x 21	10 x 30 x 20	10 x 30 x 20
Diffuse reflective				
Operating frequency / Sensing distance (Sn)	1000 Hz / 1 m	1000 Hz / 1m	1000 Hz / 1 m	1000 Hz / 1m
NPN NO+NC	PD30ETD10NASA	PD30ETD10NAM5SA	PD30CND10NASA	PD30CND10NAM5SA
PNP NO+NC	PD30ETD10PASA	PD30ETD10PAM5SA	PD30CND10PASA	PD30CND10PAM5SA
Diffuse reflective, extremely wide angle, infrared light				
Operating frequency / Sensing distance (Sn)	1000 Hz / 200 mm	1000 Hz / 200mm		
NPN NO+NC	PD30ETD02NAWE	PD30ETD02NAM5WE		
PNP NO+NC	PD30ETD02PAWE	PD30ETD02PAM5WE		
Diffuse reflective background suppression, red light				
Operating frequency / Sensing distance (Sn)	500 Hz / 200 mm	500 Hz / 200 mm	500 Hz / 200 mm	500 Hz / 200 mm
NPN NO+NC	PD30ETB20NASA	PD30ETB20NAM5SA	PD30CNB20NASA	PD30CNB20NAM5SA
PNP NO+NC	PD30ETB20PASA	PD30ETB20PAM5SA	PD30CNB20PASA	PD30CNB20PAM5SA
Diffuse reflective background suppression, infrared light				
Operating frequency / Sensing distance (Sn)	500 Hz / 200 mm	500 Hz / 200 mm	500 Hz / 200 mm	500 Hz / 200 mm
NPN NO+NC	PD30ETB20NAIS	PD30ETB20NAM5IS	PD30CNB20NAIS	PD30CNB20NAM5IS
PNP NO+NC	PD30ETB20PAIS	PD30ETB20PAM5IS	PD30CNB20PAIS	PD30CNB20PAM5IS
Retro-Reflective				
Operating frequency / Sensing distance (Sn)	1000 Hz / 6 m	1000 Hz / 6 m	1000 Hz / 6 m	1000 Hz / 6 m
NPN NO+NC	PD30ETR60NASA	PD30ETR60NAM5SA	PD30CNR60NASA	PD30CNR60NAM5SA
PNP NO+NC	PD30ETR60PASA	PD30ETR60PAM5SA	PD30CNR60PASA	PD30CNR60PAM5SA
Retro reflective polarized				
Operating frequency / Sensing distance (Sn)	1000 Hz / 6 m	1000 Hz / 6 m	1000 Hz / 6 m	1000 Hz / 6 m
NPN NO+NC	PD30ETP60NASA	PD30ETP60NAM5SA	PD30CNP60NASA	PD30CNP60NAM5SA
PNP NO+NC	PD30ETP60PASA	PD30ETP60PAM5SA	PD30CNP60PASA	PD30CNP60PAM5SA
Through-beam emitter				
Sensing distance (Sn)	15 m	15 m	15 m	15 m
	PD30ETT15	PD30ETT15M5	PD30CNT15	PD30CNT15M5
Through-beam receiver				
Operating frequency / Sensing distance (Sn)	500 Hz / 15 m	500 Hz / 15 m	500 Hz / 15 m	500 Hz / 15 m
NPN NO/NC	PD30ETT15NASA	PD30ETT15M5NASA	PD30CNT15NASA	PD30CNT15NAM5SA
PNP NO/NC	PD30ETT15PASA	PD30ETT15M5PASA	PD30CNT15PASA	PD30CNT15PAM5SA
Specifications				
Rated operating voltage	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC
Voltage drop	≤ 2.0 VDC@100 mA	≤ 2.0 VDC@100 mA	≤ 2.0 VDC@100 mA	≤ 2.0 VDC@100 mA
Degree of protection	IP 68, IP69K	IP 68, IP69K	IP 67	IP 67
Protection Short-circuit (S)				
Reverse polarity (P)	SPT	SPT	SPT	SPT
Transients (T)				
Load current	≤ 100 mA	≤ 100 mA	≤ 100 mA	≤ 100 mA
Housing material	Stainless Steel AISI 316L	Stainless Steel AISI 316L	ABS	ABS
Operating temperature	-40 (-25)°C to +60°C	-40 (-25)°C to +60°C	-25°C to +60°C	-25°C to +60°C
LED colour	Yellow + Green	Yellow + Green	Yellow + Green	Yellow + Green
Approvals/Marks UL508	CE - cULus - ECOLAB	CE - cULus - ECOLAB	CE - cULus	CE - cULus

Photoelectric sensors

Integrated amplifier			
Types	PD30 PointSpot Back Potentiometer		PD30 Top Potentiometer
Connections	2 m cable	M8 connector	2 m cable
			
Dimensions (mm)	10 x 30 x 20	10 x 30 x 20	10 x 30 x 20
Diffuse reflective			
Operating frequency / Sensing distance (Sn)			1000 Hz / 1m
NPN NO+NC			PD30CTD10NASA
PNP NO+NC			PD30CTD10PASA
Diffuse reflective, extremely wide angle, infrared light			
Operating frequency / Sensing distance (Sn)			1000 Hz / 200 mm
NPN NO+NC			PD30CTD02NAWE
PNP NO+NC			PD30CTD02PAWE
Diffuse reflective background suppression, red light			
Operating frequency / Sensing distance (Sn)	500 Hz / 250 mm	500 Hz / 250 mm	500 Hz / 200 mm
NPN NO+NC	PD30CNB25NAPS	PD30CNB25NAM5PS	PD30CTB20NASA
PNP NO+NC	PD30CNB25PAPS	PD30CNB25PAM5PS	PD30CTB20PASA
Diffuse reflective background suppression, infrared light			
Operating frequency / Sensing distance (Sn)			500 Hz / 200 mm
NPN NO+NC			PD30CTB20NAIS
PNP NO+NC			PD30CTB20PAIS
Retro reflective polarized			
Operating frequency / Sensing distance (Sn)	1000 Hz / 6 m	1000 Hz / 6 m	
NPN NO+NC	PD30CNP50NAPS	PD30CNP50NAM5PS	
PNP NO+NC	PD30CNP50PAPS	PD30CNP50PAM5PS	
Specifications			
Rated operating voltage	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC
Voltage drop	≤ 2.0 VDC@100 mA	≤ 2.0 VDC@100 mA	≤ 2.0 VDC@100 mA
Degree of protection	IP 67	IP 67	IP 67
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT
Load current	≤ 100 mA	≤ 100 mA	≤ 100 mA
Housing material	ABS	ABS	ABS
Operating temperature	-25°C to +60°C	-25°C to +60°C	-25°C to +60°C
LED colour	Yellow + Green	Yellow + Green	Yellow + Green
Approvals/Marks UL508	CE - cULus	CE - cULus	CE - cULus

Photoelectric sensors

Integrated amplifier

Types	PD30 - Advanced with teach-in			
Connections	2 m cable	M8 connector	2 m cable	M8 connector
				
Dimensions (mm)	10 x 30 x 20	10 x 30 x 20	10 x 30 x 20	10 x 30 x 20
Retro reflective		Retro reflective - transparent objects		
Operating frequency / Sensing distance (Sn)	1000 Hz / 6 m, Teach-in	1000 Hz / 6 m, Teach-in	1000 Hz / 2 m, Teach-in	1000 Hz / 2 m, Teach-in
Mute NPN NO/NC	PD30CNR06NPMU	PD30CNR06NPM5MU	PD30CNG02NPMU	PD30CNG02NPM5MU
Mute PNP NO/NC	PD30CNR06PPMU	PD30CNR06PPM5MU	PD30CNG02PPMU	PD30CNG02PPM5MU
Dust NPN NO/NC	PD30CNR06NPDU	PD30CNR06NPM5DU		
Dust PNP NO/NC	PD30CNR06PPDU	PD30CNR06PPM5DU		
Remote NPN NO/NC	PD30CNR06NPRT	PD30CNR06NPM5RT	PD30CNG02NPRT	PD30CNG02NPM5RT
Remote PNP NO/NC	PD30CNR06PPRT	PD30CNR06PPM5RT	PD30CNG02PPRT	PD30CNG02PPM5RT
Retro reflective polarized		Diffuse Reflective		
Operating frequency / Sensing distance (Sn)	1000 Hz / 6 m, Teach-in	1000 Hz / 6 m, Teach-in	1000 Hz / 1 m, Teach-in	1000 Hz / 1 m, Teach-in
Mute NPN NO/NC	PD30CNP06NPMU	PD30CNP06NPM5MU		
Mute PNP NO/NC	PD30CNP06PPMU	PD30CNP06PPM5MU		
Dust NPN NO/NC	PD30CNP06NPDU	PD30CNP06NPM5DU	PD30CND10NPDU	PD30CND10NPM5DU
Dust PNP NO/NC	PD30CNP06PPDU	PD30CNP06PPM5DU	PD30CND10PPDU	PD30CND10PPM5DU
Remote NPN NO/NC	PD30CNP06NPRT	PD30CNP06NPM5RT	PD30CND10NPRT	PD30CND10NPM5RT
Remote PNP NO/NC	PD30CNP06PPRT	PD30CNP06PPM5RT	PD30CND10PPRT	PD30CND10PPM5RT
Through-beam emitter				
Sensing distance (Sn)	15 m, Teach-in	15 m, Teach-in		
NPN	PD30CNT15NMU	PD30CNT15NM5MU		
PNP	PD30CNT15PMU	PD30CNT15PM5MU		
Through-beam receiver mute function				
Operating frequency / Sensing distance (Sn)	1000 Hz / 15 m, Teach-in	1000 Hz / 15 m, Teach-in	1000 Hz / 150 mm, Teach-in	1000 Hz / 150 mm, Teach-in
Remote NPN NO/NC	PD30CNT15NPRT	PD30CNT15NPM5RT	PD30CNB15NPRT	PD30CNB15NPM5RT
Remote PNP NO/NC	PD30CNT15PPRT	PD30CNT15PPM5RT	PD30CNB15PPRT	PD30CNB15PPM5RT
Dust NPN NO/NC	PD30CNT15NPDU	PD30CNT15NPM5DU		
Dust PNP NO/NC	PD30CNT15PPDU	PD30CNT15PPM5DU		
Specifications				
Rated operating voltage	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC
Voltage drop	≤ 2.4 VDC@100 mA	≤ 2.4 VDC@100 mA	≤ 2.4 VDC@100 mA	≤ 2.4 VDC@100 mA
Degree of protection	IP 67	IP 67	IP 67	IP 67
Protection Short-circuit (S)				
Reverse polarity (P)	SPT	SPT	SPT	SPT
Transients (T)				
Load current	≤ 100 mA	≤ 100 mA	≤ 100 mA	≤ 100 mA
Housing material	ABS	ABS	ABS	ABS
Operating temperature	-25°C to +55°C	-25°C to +55°C	-25°C to +55°C	-25°C to +55°C
LED colour	Yellow + Green	Yellow + Green	Yellow + Green	Yellow + Green
Approvals/Marks UL508	CE - cULus	CE - cULus	CE - cULus	CE - cULus

Photoelectric sensors

	Laser miniature, DC, integrated amplifier		Fiber optic sensor	Integrated amplifier colour sensors
Types	LD32	LD32	FA1	PD12CNC..BPT
Connections	2 m cable	M8 connector	2m cable	M12 connector
				
Dimensions (mm)	12 x 20 x 32	12 x 20 x 32	10 x 33 x 80	61 x 26 x 115
Diffuse reflective				
Operating frequency	4000 Hz	4000 Hz	200, 500, 1000, 5000 µS	500 Hz
Sensing distance (Sn)	150 mm, Teach-in	150 mm, Teach-in	Fiber dependent	2 to 60 mm (fiber depend.)
NPN NO+NC	LD32CND15NPT	LD32CND15NPM5T	FA1-N	
PNP NO+NC	LD32CND15PPT	LD32CND15PPM5T	FA1-P	
NPN/PNP NO+PC				PD12CNC01BPM1T 1 Output
NPN/PNP NO+PC				PD12CNC04BPM1T 4 Output
Diffuse reflective background suppression				
Operating frequency	4000 Hz	4000 Hz		
Sensing distance (Sn)	60 mm, Teach-in	60 mm, Teach-in		
NPN NO+NC	LD32CNB06NPT	LD32CNB06NPM5T		
PNP NO+NC	LD32CNB06PPT	LD32CNB06PPM5T		
Retro reflective polarized				
Operating frequency	4000 Hz	4000 Hz		
Sensing distance (Sn)	1 m, Teach-in	1 m, Teach-in		
NPN NO+NC	LD32CNP10NPT	LD32CNP10NPM5T		
PNP NO+NC	LD32CNP10PPT	LD32CNP10PPM5T		
Accessories: fibres				
Dist. 18 mm				FPDC 01 SCC 100
Dist. 40-60 mm				FPDC 02 SCC 100
Dist. 4-6 mm				FPDC 03 SCC 100
Dist. 2-6 mm				FPDC 04 SCC 100
Dist. 4 mm				FPDC 05 SCC 100
Specifications				
Rated operating voltage	10 - 30 VDC	10 - 30 VDC	12 to 24 VDC	24 VDC
Voltage drop	≤ 2.4 VDC	≤ 2.4 VDC	≤ 1.5 VDC	≤ 2.2 VDC
Degree of protection	IP 67	IP 67	IP 40	IP 65
Protection Short-circuit (S)				
Reverse polarity (P)	SPT	SPT	SPT	SPT
Transients (T)				
Load current	≤ 100 mA	≤ 100 mA	≤ 100 mA	< 100 mA
Housing material	ABS	ABS	ABS	Polycarbonate
Operating temperature	-25°C to +60°C	-25°C to +60°C	0°C to +60°C	0°C to +40°C
LED colour	Yellow + Green	Yellow + Green	Red + Green	Yellow + Green
Approvals/Marks	CE	CE	CE	CE - cUL
UL508			cULus (UL508)	
Light Source	Laser Class 2	Laser Class 2	Red LED 660 nm	
Plastic Fiber unit			FUR (reflective) & FUT (through beam) series. Please refer to FUR FUT specifications datasheets	

Photoelectric sensors

Through-beam, transistor output

Types	PB10..	PA12	PB18..	PE12..
Connections	5 m cable	M12 connector	5 m cable	5 m cable
				
Dimensions (mm)	Ø10	M12	Ø18	Ø12
Through-beam emitter				
Sensing distance (Sn)	20 m	20 m	15 m	15 m
Single channel	PB10CNT20	PA12BNT20	PB18CNT15	PE12CNT15
Channel 1	PB10C1T20	PA12B1T20		PE12C1T15
Channel 2	PB10C2T20	PA12B2T20		PE12C2T15
Channel 3	PB10C3T20	PA12B3T20		PE12C3T15
Through-beam receiver				
Operating frequency	100 Hz (for 3 ch 30 Hz)	100 Hz (for 3 ch 30 Hz)	100 Hz	100 Hz
Sensing distance (Sn)	25 m	25 m	15 m	15 m
NPN NO Single channel	PB10CNT20NO	PA12BNT20NO	PB18CNT15NO	PE12CNT15NO
NPN NC Single channel	PB10CNT20NC	PA12BNT20NC	PB18CNT15NC	PE12CNT15NC
PNP NO Single channel	PB10CNT20PO	PA12BNT20PO	PB18CNT15PO	PE12CNT15PO
PNP NC Single channel	PB10CNT20PC	PA12BNT20PC	PB18CNT15PC	PE12CNT15PC
NPN NO Channel 1	PB10C1T20NO	PA12B1T20NO		PE12C1T15NO
NPN NC Channel 1	PB10C1T20NC	PA12B1T20NC		PE12C1T15NC
PNP NO Channel 1	PB10C1T20PO	PA12B1T20PO		PE12C1T15PO
PNP NC Channel 1	PB10C1T20PC	PA12B1T20PC		PE12C1T15PC
NPN NO Channel 2	PB10C2T20NO	PA12B2T20NO		PE12C2T15NO
NPN NC Channel 2	PB10C2T20NC	PA12B2T20NC		PE12C2T15NC
PNP NO Channel 2	PB10C2T20PO	PA12B2T20PO		PE12C2T15PO
PNP NC Channel 2	PB10C2T20PC	PA12B2T20PC		PE12C2T15PC
NPN NO Channel 3	PB10C3T20NO	PA12B3T20NO		PE12C3T15NO
NPN NC Channel 3	PB10C3T20NC	PA12B3T20NC		PE12C3T15NC
PNP NO Channel 3	PB10C3T20PO	PA12B3T20PO		PE12C3T15PO
PNP NC Channel 3	PB10C3T20PC	PA12B3T20PC		PE12C3T15PC
Specifications				
Rated operating voltage	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC
Voltage drop	≤ 1.5 VDC	≤ 1.5 VDC	≤ 1.5 VDC	≤ 1.5 VDC
Degree of protection	IP 67	IP 67	IP 67	IP 67
Protection Short-circuit (S)				
Reverse polarity (P)	SPT	SPT	SPT	SPT
Transients (T)				
Load current	≤ 100 mA	≤ 100 mA	≤ 100 mA	≤ 100 mA
Housing material	PC	PC	PTE	PC
Operating temperature	-20°C to +50°C	-20°C to +50°C	-20°C to +50°C	-20°C to +50°C
LED colour	Green (E), Yellow (R)	Green (E), Yellow (R)		Green (E), Yellow (R)
Approvals/Marks	CE	CE	CE	CE
UL 508	cULus	UL - cUL	cULus	cULus
UL 325	cURus	UR - cURus	cURus	cURus

NB! For pig-tail connector versions add C2 after the part number

Photoelectric sensors

DC, integrated amplifier				
Types	PD70	PD112	PA.	PB.
Connections	2 m cable or connector		2 m cable or connector	
				
Dimensions (mm)	11.6 x 11.6 x 70	112 x 45 x 25	36 x 18 x 63	18 x 75 x 36
Diffuse reflective background suppression				
Operating frequency		Door mode 16.7 Hz Industri mode 250 Hz	1000 Hz	1000 Hz
Sensing distance (Sn)		2.5 m, adjustable	150 mm, adjustable	150 mm, adjustable
Cable		2 m	2 m	2 m
NPN/PNP, NO+NC		-	PA15INPA/PA15IPPA	PB15INPA/PB15IPPA
NPN+PNP, NO/NC		PD112CNB25BP	-	-
Connector		M12	M12	M12
NPN/PNP, NO+NC		-	PA15INPA-1/PA15IPPA-1	PB15INPA-1/PB15IPPA-1
NPN+PNP, NO/NC		PD112CNB25BPM1		
Retro reflective polarized				
Operating frequency			1000 Hz	1000 Hz
Sensing distance (Sn)			3 m, adjustable	3 m, adjustable
Cable			2 m	2 m
NPN/PNP, NO+NC			PA3PNPA/PA3PPPA	PB3PNPA/PB3PPPA
Connector			M12	M12
NPN/PNP, NO+NC			PA3PNPA-1/PA3PPPA-1	PB3PNPA-1/PB3PPPA-1
Through-beam				
Operating frequency	100 Hz			
Sensing distance (Sn)	12 m, adjustable			
Cable	2 m			
NPN NO (Receiver)	PD70CNT12NO			
NPN NC (Receiver)	PD70CNT12NC			
PNP NO (Receiver)	PD70CNT12PO			
PNP NC (Receiver)	PD70CNT12PC			
Mute High (Emitter)	PD70CNT12MH			
Mute Low (Emitter)	PD70CNT12ML			
Connector	M8			
NPN NO (Receiver)	PD70CNT12NOM5			
NPN NC (Receiver)	PD70CNT12NCM5			
PNP NO (Receiver)	PD70CNT12POM5			
PNP NC (Receiver)	PD70CNT12PCM5			
Mute High (Emitter)	PD70CNT12M5MH			
Mute Low (Emitter)	PD70CNT12M5ML			
Specifications				
Rated operating voltage	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC
Voltage drop	≤ 1.8 VDC	≤ 2.5 VDC	≤ 2.5 VDC	≤ 2.5 VDC
Degree of protection	IP 67	IP 67	IP 67	IP 67
Protection Short-circuit (S)				
Reverse polarity (P)	SPT	SPT	SPT	SPT
Transients (T)				
Load current	≤ 100 mA	< 200 mA	< 200 mA	< 200 mA
Housing material	PC Black	PC Black	Aluminium	Reinforced ABS
Operating temperature	-25°C to +55°C	-25°C to +55°C	-25°C to +60°C	-25°C to +60°C
LED colour	Yellow, Receiver output Green, Emitter power ON	Yellow, Output Green, Power ON	Yellow	Yellow
Approvals/Marks	CE - cURus	CE - cULus	CE	CE

Photoelectric sensors

Integrated amplifier

Types	PC50	PC50..M1	PC50
Connections	2 m cable	M12 connector	2 m cable
			
Dimensions (mm)	17 x 50 x 50	17 x 50 x 50	17 x 50 x 50
Diffuse reflective			
Operating frequency	500 Hz	500 Hz	20 Hz
Sensing distance (Sn)	1 m, adjustable	1 m, adjustable	
NPN/PNP NO+NC	PC50CND10BA	PC50CND10BAM1	
Sensing distance (Sn)	2 m, adjustable	2 m, adjustable	
NPN/PNP NO+NC	PC50CND20BA	PC50CND20BAM1	
Sensing distance (Sn)			1 m, adjustable
Relay SPDT Multivoltage			PC50CND10RP
Sensing distance (Sn)			2 m, adjustable
Relay SPDT Multivoltage			PC50CND20RP
Diffuse reflective background suppression			
Operating frequency	250 Hz	250 Hz	
Sensing distance (Sn)	500 mm, adjustable	500 mm, adjustable	
NPN/PNP NO+NC	PC50CNB50BA	PC50CNB50BAM1	
Retro reflective polarized			
Operating frequency	500 Hz	500 Hz	20 Hz
Sensing distance (Sn)	6 m, adjustable	6 m, adjustable	6 m, adjustable
NPN/PNP NO+NC	PC50CNP06BA	PC50CNP06BAM1	
Mute High	PC50CNP06BAMH	PC50CNP06BAM1MH	
Mute Low	PC50CNP06BAML	PC50CNP06BAM1ML	
Relay SPDT Multivoltage			PC50CNP06RP
Retro reflective			
Operating frequency	500 Hz	500 Hz	20 Hz
Sensing distance (Sn)	10 m, adjustable	10 m, adjustable	10 m, adjustable
NPN/PNP NO+NC	PC50CNR10BA	PC50CNR10BAM1	
Relay SPDT Multivoltage			PC50CNR10RP
Through-beam emitter			
Sensing distance (Sn)	20 m	20 m	20 m
	PC50CNT20B	PC50CNT20BM1	PC50CNT20R
Through-beam receiver			
Operating frequency	500 Hz	500 Hz	20 Hz
Sensing distance (Sn)	20 m, adjustable	20 m, adjustable	20 m, adjustable
NPN/PNP NO+NC	PC50CNT20BA	PC50CNT20BAM1	-
Relay SPDT Multivoltage			PC50CNT20RP
Specifications			
Rated operating voltage	10 - 30 VDC	10 - 30 VDC	12 - 240 VDC / 24 - 240 VAC
Voltage drop	≤ 2.5 VDC	≤ 2.5 VDC	Relay SPDT
Degree of protection	IP 67	IP 67	IP 67
Protection Short-circuit (S)			
Reverse polarity (P)	SPT	SPT	PT
Transients (T)			
Load current	≤ 200 mA	≤ 200 mA	≤ 3 mA
Housing material	Reinforced ABS/PC	Reinforced ABS/PC	Reinforced ABS/PC
Operating temperature	-20°C to +60°C	-20°C to +60°C	-20°C to +60°C
LED colour	Yellow + Green	Yellow + Green	Yellow + Green
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA

Photoelectric sensors

	Integrated amplifier		Fork sensor	
Types	PD60..	PD60..M5	PF80..	PF74..
Connections	2 m cable	M8 connector	M8 connector	5 m cable
   				
Dimensions (mm)	13 x 30 x 60	13 x 30 x 60	12 x 37.5 x 80	15 x 60 x 74
Transparent detection				
Operating frequency	1000 Hz	1000 Hz		
Sensing distance (Sn)	0.8 m, Teach-in	0.8 m, Teach-in		
NPN/PNP NO+NC	PD60CNG08BPT	PD60CNG08BPM5T		
Sensing distance (Sn)	1.4 m, Teach-in	1.4 m, Teach-in		
NPN/PNP NO+NC	PD60CNG14BPT	PD60CNG14BPM5T		
Contrast sensor				
Operating frequency	20 kHz	20 kHz		
Sensing distance (Sn)	18 mm (fibre depend.)	18 mm (fibre depend.)		
NPN/PNP NO+NC	PD60CNK18BPT	PD60CNK18BPM5T		
Fork sensor				
Operating frequency			10 kHz	≤ 1100 Hz
Sensing distance (Sn)			3 mm, slot width	30 mm, slot width
NPN/PNP NO+NC			PF80FNT03BPM5T	
PNP N.O., NPN N.C.				PF74CNT30BC
PNP N.C., NPN N.O.				PF74CNT30BO
General specifications				
Rated operating voltage	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC	19.2 - 28.8 VDC
Voltage drop	≤ 2.0 VDC	≤ 2.0 VDC	≤ 2.0 VDC @ 100 mA ≤ 1.0 VDC @ 10 mA	≤ 1.5 VDC @ 100 mA
Degree of protection	IP 65 (IP 67 CNG type)	IP 65 (IP 67 CNG type)	IP 65	IP 65
Protection Short-circuit (S)				
Reverse polarity (P)	SPT	SPT	ST	SPT
Transients (T)				
Load current	≤ 100 mA	≤ 100 mA	≤ 40 mA	≤ 30 mA
Housing material	PC	PC	Aluminium, black	PC, black
Operating temperature	0°C to +60°C	0°C to +60°C	-20°C to +60°C	-25°C to +60°C
LED colour	Red	Red	Yellow + Red	Yellow + Green
Approvals/Marks	CE - UL - cUL	CE - UL - cUL	CE	CE

Photoelectric sensors

Integrated amplifier relay output				Through-beam relay output
Types	PM..	PM..	PD86	PD98
Connections	Terminals single relay	Terminal block mute input	Terminal block mute input	Terminal block mute input
				
Dimensions (mm)	25 x 65 x 81	25 x 65 x 81	86 x 44 x 39	98 x 56 x 37
Diffuse reflective				
Oper. freq. / Sens. dist. (Sn)	20 Hz			
Sensing distance (Sn)	0.8 m, adjustable			
Relay SPDT Multivoltage	PMD8RG / RGT PMD8RI / RIT			
Retro reflective polarized				
Oper. freq. / Sens. dist. (Sn)	20 Hz / 12 m, fixed	20 Hz / 12 m, fixed	20 Hz / 12 m, fixed	
Relay SPDT Multivoltage	PMP12RG / PMP12RI		PD86CNP12QPMU	
Relay SPST (PC)	PMP12RGM / PMP12RIM		PD86HNP12QPMU-01C	
Relay SPST (ZAMAK)	PD86HNP12QPMU-01C			
Retro reflective				
Oper. freq. / Sens. dist. (Sn)	20 Hz / 10 m, fixed			
Relay SPDT Multivoltage	PMR10RG / RGT			
Relay SPST	PMR10RI / RIT			
Through-beam emitter				
Sensing distance (Sn)	20 m	20 m	30 m (15 m default)	
	PMT20G / PMT20I	PMT20GM / PMT20IM	PD98CNT30QMU*	
Through-beam receiver				
Oper. freq. / Sens. dist. (Sn)	20 Hz / 20 m, fixed	20 Hz / 20 m, fixed	25 Hz / 30 m (15 m default)	
Relay SPDT Multivoltage	PMT20RG / RGT PMT20RI / RIT			
Relay SPST				
General specifications				
Rated operating voltage	12 - 240 VDC / 24 - 240 VAC	24 VAC/DC ±20%	24 VAC/DC ±20%	12 V to 24 VAC/DC
Voltage drop	Relay SPDT	Relay SPST	Relay SPST	Relay DPDT
Degree of protection	IP 67	IP 67	IP 66	IP 54
Protection Short-circuit (S)				
Reverse polarity (P)	PT	PT	PT	PT
Transients (T)				
Load current	≤ 3 A	≤ 3 A	1 A (AC), 0.5 A (DC)	1 A (AC), 0.5 A (DC)
Housing material	PC/ABS	PC/ABS	PD86C... : PC + PMMA PD86H... : ZAMAK + PMMA	PC/ABS
Operating temperature	-25°C to +55°C	-25°C to +55°C	-25°C to +60°C	-25°C to +60°C
LED colour	Yellow	Yellow	Yellow + Green	Yellow (receiver)
Approvals/Marks	CE - UL - CSA	CE - UL325 - UL508	CE - UL325 - UL508	CE - UL325
Remarks	G = PG 13.5 Outlet I = ½"NPT Outlet T = Timer	G = PG 13.5 Outlet I = ½"NPT Outlet Mute input	Mute input	Mute input

* Item number set, emitter + receiver.

Photoelectric sensors

	Heavy duty infrared barrier	Through-beam relay output
Types	PD140	PD180
Connections	Terminal block	Terminal block
		
Dimensions (mm)	140 x 51 x 46	180 x 51 x 49
Through-beam range		
Indoor sensing distance (max)	60 m outdoor	15 / 30 m
General specifications		
Technology	Infrared	Infrared
Supply voltage Receiver or Emitter	12...24 VAC/VDC	12 + 24 VAC/DC
Battery Supply Emitter		2 x 3,6 VDC, 2100 mAh Lithium Batteries size AA
Consumption	155 mA to 24 VAC (Emitter and receiver)	35 mA DC (55 mA DC with low battery alarm)
Output	SPDT	2 x SPST
Contact rating	1 A /@ 30 VDC, 0.5 A @ 50 VAC (resistive load)	1 A @ 30 VDC (resistive load)
Approvals	CE - UL325 - UL508	CE - UL325
Conformity	EN 12445, EN 12453, EN12978, EN/ISO 13849-1 ESPE2, RoHS	EN 12445, EN12453, EN12978, RoHS
Test input	Emitter test input	Emitter test input
Environmental specifications		
Wavelength	850 nm	850 nm
Operating temperature	-20°C to +60°C	-25°C to +55°C
Degree of protection	IP 65	IP 55
Mechanical specifications		
LED transmitter	Power signal	None (energy saving)
LED receiver	Signal for alignment with transmitter	Power ON - Green LED Output - Yellow LED
Optical adjustment	Horizontal 200° Vertical ±15°	Horizontal 200° Vertical ±30°
Mounting	Wall mounted type	Wall mounted type
Material	Aluminium, PC	PC
Weight	460 g (set)	Emitter 270g Receiver 230g
Comments	ESPE Category 2, EN 61496-2 Accessory: Laser alignment tool	Emitter is supplied with 2 x 3.6 VDC 2100 mAh Lithium Batteries
Accessories	APD140-LA01 APD140-LA02 APD140-TC01	

Photoelectric sensors

	Sensors	Amplifier 1-channel	Amplifier 2-channel	Amplifier 3-channel	
Types	MPF..	MPF1..	MPF2..	MPF3..	
Connections	10 m cable	Terminals	Terminals	Terminals	
					
Dimensions (mm)	See sensor type	70 x 57 x 86	70 x 57 x 86	70 x 57 x 86	
Amplifier					
		1-Channel	2-Channel	3-Channel	
12-24 VAC/DC ±15% Low current		MPF1-912RSL	MPF2-912RSL	MPF3-912RSL	
12-24 VAC/DC ±15%		MPF1-912RS	MPF2-912RS	MPF3-912RS	
115 VAC ±15%		MPF1-115RS	MPF2-115RS	MPF3-115RS	
230 VAC ±15%		MPF1-230RS	MPF2-230RS	MPF3-230RS	
Through-beam emitter		Output and function selection			
Sensing distance (Sn)	15 m	No Dist Adjust		Dist Adjust	
Ø12 x 20	MPFT15-4 (C)	Normal Mute	Inverted Mute	Normal Mute	Inverted Mute
D11 x 24.5	MPFT15-D11-4				
D18 x 25	MPFT15-D18-4 (C)	RS	RSI	RSA	RSI
M14 x 23	MPFT15-M14-4 (C)	RSL	RSLI	RSLA	RSLI
Through-beam receiver					
Sensing distance (Sn)	15 m				
Ø12 x 20	MPFR-4 (C)				
D11 x 24.5	MPFR-D11-4				
D18 x 25	MPFR-D18-4 (C)				
M14 x 23	MPFR-M14-4 (C)				
General specifications					
Rated operating voltage	Powered by amplifier	See amplifier reference	See amplifier reference	See amplifier reference	
Output		1 x 2 SPST in series	2 x 2 SPST in series	3 x 2 SPST in series	
Low current resistive load		RS type: 2 A @ 240 VAC / 30 VDC	RS type: 2 A @ 240 VAC / 30 VDC	RS type: 2 A @ 240 VAC / 30 VDC	
		RSL type: 0.5 A @ 50 VAC / 30 VAC	RSL type: 0.5 A @ 50 VAC / 30 VAC	RSL type: 0.5 A @ 50 VAC / 30 VAC	
Operating frequency	Amplifier dependent	10 Hz	10 Hz	10 Hz	
Degree of protection	IP 67	IP 40	IP 40	IP 40	
Protection Short-circuit (S)					
Reverse polarity (P)	SPT	PT	PT	PT	
Transients (T)					
Housing material					
- Amplifier		PC	PC	PC	
- Sensor Ø12+D11+D18	PC + ABS				
- Sensor	PC + Stainless steel				
Operating temperature	-20°C to +60°C	-20°C to +60°C	-20°C to +60°C	-20°C to +60°C	
LED colour		Yellow	Yellow	Yellow	
Approvals/Marks	CE - UL325 - UL508	CE - UL325 - UL508	CE - UL325 - UL508	CE - UL325 - UL508	
Remarks	C = Pigtail connector version				
Optical angle (degrees)	±5				

Photoelectric sensors

Sensors for amplifiers

Types	MOF..	MOF.. ATEX	MNF..	MDF..
Connections	10 m cable	Terminals	Terminals	Terminals
				
Dimensions (mm)	Ø 10 x 42	Ø 10 x 42	Ø 20 x 80	Ø 13.5 x 55
Through-beam emitter				
Sensing distance (Sn)	20 m	20 m		
Max. ±2° optical angle	MOFT20 MOFT20-M12-2	MOFT20AX MOFT20-M12-2AX		
Sensing distance (Sn)	50 m			
Max. ±2° optical angle	MOFT50 MOFT50-M12-2			
Sensing distance (Sn)	20 m	20 m		
Max. ±5° optical angle	MOFT20-5 MOFT20-M12-5	MOFT20-5AX MOFT20-M12-5AX		
Sensing distance (Sn)	20 m	20 m	15 m	30 m
Max. ±8° optical angle	MOFT20-8 MOFT20-M12-8 MOFT20-M14-8	MOFT20-8AX MOFT20-M12-8AX MOFT20-M14-8AX	MNFT15	MDFT30
Through-beam receiver				
Operating frequency	Amplifier dependent	Amplifier dependent	Amplifier dependent	Amplifier dependent
Sensing distance (Sn)	See emitter	See emitter	See emitter	See emitter
Max. ±2° optical angle	MOFR MOFR-M12-2	MOFRAX MOFR-M12-2AX		
Max. ±5° optical angle	MOFR-5 MOFR-M12-5	MOFR-5AX MOFR-M12-5AX		
Max. ±8° optical angle	MOFR-8 MOFR-M12-8 MOFR-M14-8	MOFR-8AX MOFR-M12-8AX MOFR-M14-8AX	MNFR15	MDFR30
General specifications				
Rated operating voltage	Powered by Amplifier	Powered by Amplifier	Powered by Amplifier	Powered by Amplifier
Output	On Amplifier	On Amplifier	On Amplifier	On Amplifier
Operating frequency	See Amplifier type: S142.. - S143.. - PAM..	See Amplifier type: S142.. - S143.. - PAM..	See Amplifier type: S142.. - S143.. - PAM..	See Amplifier type: S142.. - S143.. - PAM..
Degree of protection	IP 66 - IP 67	IP 66 - IP 67	IP 67	IP 67
Protection Short-circuit (S)				
Reverse polarity (P)	SPT	SPT	SPT	SPT
Transients (T)				
Housing material sensor	Ø10: PC M14 + M14: PC + SS	Ø10: PC M14 + M14: PC + SS	PC M14 + M14: PC + SS	Acetal, glass reinforced
Operating temperature	-20°C to +60°C	-20°C to +60°C	-20°C to +60°C	-20°C to +60°C
LED colour	None	None	None	None
Approvals/Marks	CE	CE - ATEX	CE	CE

Photoelectric sensors

Types

Amplifiers for sensors

Connections

1 1-pole plug

1 1-pole plug

1 1-pole plug



Dimensions (mm)

35 x 80 x 81.5

35 x 80 x 81.5

35 x 80 x 81.5

Description

Standard amplifier with Sensor diagnostics and adjustable sensing distance

As S142A but with adjustable time delay

As S142A but with Master / Slave function for high neighbour immunity

References amplifier

1 x SPDT relay

S142ARNN924

S142BRNN924

1 x NPN Output

S142ARNN024

S142BRNN024

1 x NPN Alarm Output

S142ARNN115
S142ARNN230

S142BRNN115
S142BRNN230

1 x SPDT relay

S142ARNT924

S142BRNT924

1 x NPN Output or alarm

S142ARNT024

1 x Emitter mute input

S142ARNT115
S142ARNT230

S142BRNT115
S142BRNT230

1 x PNP Output

S142APPT924

S142BPPT924

1 x PNP Alarm Output

S142APPT115

S142BPPT115

1 x Emitter mute input

S142APPT230

S142BPPT230

1 x SPDT relay

S142CRXA924

A - Auto distance adjustment

S142CRXA115
S142CRXA230

M - Manual distance adjustment

S142CRXM924
S142CRXM115
S142CRXM230

General specifications

Rated operating voltage

924
115
230

24 VAC/DC
115 VAC
230 VAC

24 VAC/DC
115 VAC
230 VAC

24 VAC/DC
115 VAC
230 VAC

Relay load current
resistive load

10 A @ 250 VAC / 25 VDC SPD

10 A @ 250 VAC / 25 VDC SPD

10 A @ 250 VAC / 25 VDC SPD

Transistor Load current

100 mA 40 VDC

100 mA 40 VDC

Operation frequency

20 Hz

20 Hz, no timer

15 Hz @ 2 systems
4 Hz @ 6 systems

Degree of protection

IP 20

IP 20

IP 20

Protection Short-circuit (S)
Reverse polarity (P)
Transients (T)

SPT

SPT

S

Housing material

Noryl SE1, Light grey

Noryl SE1, Light grey

Noryl SE1, Light grey

Operating temperature

-20°C to +50°C

-20°C to +50°C

-20°C to +50°C

Approvals/Marks

CE - UL - CSA

CE - UL - CSA

CE - UL - CSA

Photoelectric sensors

Types	S1430 UAP..	S1430 RAL..	S1430 ROS..	PAM...
Connections	11-pole plug	11-pole plug	11-pole plug	Terminals
				
Dimensions (mm)	35 x 80 x 81.5	35 x 80 x 81.5	35 x 80 x 81.5	2, 3, 4, 5, 6 DIN housing
Description	3 input 3 transistors outputs	3 input 3 transistors outputs	3 input 3 double relay outputs	2-4-6-8 or 10 channel modular system
References amplifier				
12-30 VAC/DC $\pm 15\%$	S1430UAP912			
15-30 VAC/DC $\pm 10\%$		S1430RAL915	S1430ROS915	
No. of channels				2 channels
- NPN output, NO				PAM02AN3ANO/NC
- PNP output, NO				PAM02AN3APO/PC
No. of channels				4 channels
- NPN output, NO				PAM04AN3ANO/NC
- PNP output, NO				PAM04AN3APO/PC
No. of channels				6 channels
- NPN output, NO				PAM06AN3ANO/NC
- PNP output, NO				PAM06AN3APO/PC
References extension modules				
No. of channels				2 channels
- NPN output, NO				PAM02CN3ANO
- NPN output, NC				PAM02CN3ANC
- PNP output, NO				PAM02CN3APO
- PNP output, NC				PAM02CN3APC
No. of channels				4 channels
- NPN output, NO				PAM04CN3ANO
- NPN output, NC				PAM04CN3ANC
- PNP output, NO				PAM04CN3APO
- PNP output, NC				PAM04CN3APC
General specifications				
Rated operating voltage	See Amplifier type	See Amplifier type	See Amplifier type	18 - 33 VDC
Output	3 x Transistor NPN/PNP/NO/NC	3 x SPST	3 x SPST	One output per channel
Load current resistive load	100 mA, 40 VDC, NPN	1.5 A @ 100 VAC / 30 VDC	1.5 A @ 100 VAC / 30 VDC	20 mA, 33 VDC, NPN / PNP 8 A @ 250 VAC / 24 VDC SPDT resistive load
Operation frequency	16 Hz	12.5 Hz	12.5 Hz	30 Hz @ 6 channels
Degree of protection	IP 20	IP 20	IP 20	IP 20
Protection Short-circuit (S)				
Reverse polarity (P)	SPT	PT	PT	SPT
Transients (T)				
Housing material	Noryl SE1, Light grey	Noryl SE1, Light grey	Noryl SE1, Light grey	
Operating temperature	-20°C to +50°C	-20°C to +50°C	-20°C to +50°C	-20°C to +50°C
LED colour	Yellow + Green + Red	Yellow + Green + Red	Yellow + Green + Red	Yellow + Green + Red
Approvals/Marks	Multiplexed system	Multiplexed system	Multiplexed system	Multiplexed system, Test functions, bargraph, mute input etc.

Photoelectric sensors

Types **Wireless entrapment protection device for industrial doors ESPE**

Connections **Main controller** **Subcontroller** **PB 11**



Dimensions (mm) 35 x 35 x 125 26 x 242 x 45 Ø11 x 24.5

Description The Carlo Gavazzi main controller can control up to 4 subcontrollers This flexible Carlo Gavazzi subcontroller can handle 2 safety edges and 1 door-in-door limit switch

References

Main controller	WSM 2 B A 2 D24
Subcontroller	WSS 2 B A 2 BAT
Photoelectric sensor Emitter	PB 11 CNT 15 WE
Photoelectric sensor Receiver	PB 11 CNT 15 WR

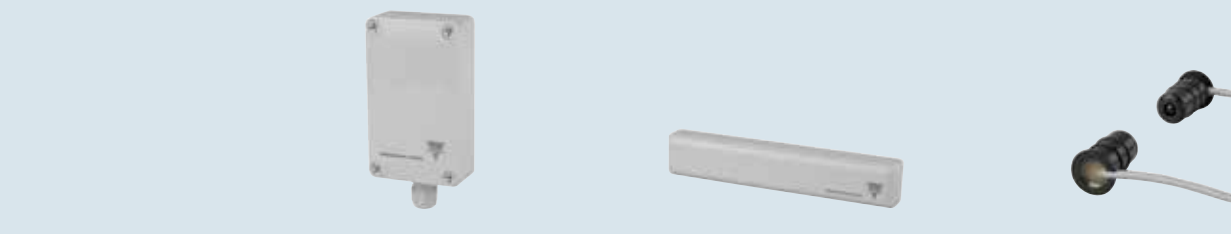
General specifications

Rated operating voltage	12 - 24 VAC/DC	1 - 4 Lithium 3.6 VDC size AA batteries	From sub controller
Supply current	< 50 mA		
Relay load current resistive load	1A / 30 VDC 0.5 A / 30 VAC		
Communication frequency	2.4 GHz Duplex	2.4 GHz Duplex	
Response time	120 mS	120 mS	
Number of channels	16	16	
Communication distance	10 m wireless	10 m wireless	
Sensing distance			15 m
Subcontroller up-time		10 - 80 sec	
Test input	On main module		
Degree of protection	IP 66	IP 66	IP 67
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	PT	P	
Housing material	ABS, Light grey	PC, Light grey	PA6 Glass reinforced
Operating temperature	-25°C to +55°C	-25°C to +55°C	-25°C to +55°C
LED colour	Green, Yellow, Red	Yellow	-
Approvals/Marks	CE - UL - FCC	CE - UL - FCC	CE - UL

Photoelectric sensors

Types Wireless entrapment protection device for industrial gates ESPE

Connections Main controller Subcontroller PB 11



Dimensions (mm) 35 x 35 x 125 26 x 242 x 45 Ø11 x 24.5

Description The Carlo Gavazzi main controller can control up to 6 subcontrollers This flexible Carlo Gavazzi subcontroller can handle one opening safety edge and one closing edge

References

Main controller (N.O. 8.2 kohm output)	WSM6GA00D24		
Main controller (N.C. output)	WSM6GACCD24		
Subcontroller		WSS2GA2BAT	
Photoelectric sensor Emitter			PB 11 CNT 15 WE
Photoelectric sensor Receiver			PB 11 CNT 15 WR

General specifications

Rated operating voltage	12 - 24 VAC/DC	1 - 4 Lithium 3.6 VDC size AA batteries	From sub controller
Supply current	< 50 mA		
Relay load current resistive load	1A / 30 VDC 0.5 A / 30 VAC		
Communication frequency	2.4 GHz Duplex	2.4 GHz Duplex	
Response time	From 15 to 100 ms	From 15 to 100 ms	
Number of channels	16	16	
Communication distance	15 m wireless	15 m wireless	
Sensing distance			2.5 m
Subcontroller up-time		15 – 105 s, fixed time or infinite	
Test input	On main module		
Degree of protection	IP 66	IP 66	IP 67
Protection Short-circuit (S)			
Reverse polarity (P)	PT	P	
Transients (T)			
Housing material	ABS, Light grey	PC, Light grey	PA6 Glass reinforced
Operating temperature	-25°C to +55°C	-25°C to +55°C	-25°C to +55°C
LED colour	Green, Yellow, Red	Yellow	-
Approvals/Marks	CE - UL - FCC - TÜV	CE - UL - FCC - TÜV	CE - UL

Photoelectric level sensors

Integrated amplifier

Types	VP0.E.	VP ATEX	VP E.M
Connections	2 m cable	2 m cable	2 m cable
			
Dimensions (mm)	3/8" x 74	3/8" x 74	3/8" x 74
Light type	Unmodulated	Unmodulated	Unmodulated
References optical level sensor			
Operating frequency	30 Hz	30 Hz	30 Hz
Sensing dist. (Sn), Hor.	± 5 mm, fixed	± 5 mm, fixed	± 5 mm, fixed
Sensing dist. (Sn), Ver.	± 2.5 mm, fixed	± 2.5 mm, fixed	± 2.5 mm, fixed
Housing material	Polysulphone	Polysulphone	Polysulphone
NPN NO	VP02E		VP02EM
NPN NC	VP01E		VP01EM
PNP NO	VP02EP	VP02EPAX	VP02EPM
PNP NC	VP01EP	VP01EPAX	VP01EPM
Housing material	Polyamide 12	Polyamide 12	Polyamide 12
NPN NO	VP04E		VP04EM
NPN NC	VP03E		VP03EM
PNP NO	VP04EP	VP04EPAX	VP04EPM
PNP NC	VP03EP	VP03EPAX	VP03EPM
Housing material	Polysulphone		
SCR NO	VP02-110TB		
SCR NC	VP01-110TB		
SCR NO	VP02-230TB		
SCR NC	VP01-230TB		
DC-types			
Rated operating voltage	10 - 40 VDC	10 - 40 VDC	10 - 40 VDC
Voltage drop	≤ 1.0 VDC	≤ 1.0 VDC	≤ 1.0 VDC
Off-state current	≤ 12 mA	≤ 12 mA	≤ 12 mA
Load current	< 200 mA	< 200 mA	< 200 mA
AC-types (SCR)			
Rated operating voltage	110 or 230 VAC	110 or 230 VAC	110 or 230 VAC
Voltage drop	≤ 9 VAC	≤ 9 VAC	≤ 9 VAC
Off-state current	≤ 7 mA	≤ 7 mA	≤ 7 mA
Load current	< 10 - 100 mA	< 10 - 100 mA	< 10 - 100 mA
General specifications			
Degree of protection	IP 67	IP 67	IP 67
Protection Short-circuit (S)			
Reverse polarity (P)	PT	PT	PT
Transients (T)			
Operating temperature	-20°C to +80°C	-20°C to +80°C	-20°C to +80°C
LED colour	Yellow	Yellow	Yellow
Pressure	10 bar @ +60°C	10 bar @ +60°C	10 bar @ +60°C
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA

Photoelectric level sensors

Integrated amplifier		
Types	VPA..../VPB....	VPA....-1/VPB....-1
Connections	2 m cable	M12 connector
 		
Dimensions (mm)	3/8" x 70.5	3/8" x 90.5
Light type	Modulated	Modulated
References optical level sensor		
Operating frequency	30 Hz	30 Hz
Sensing dist. (Sn), Hor.	± 5 mm, fixed	± 5 mm, fixed
Sensing dist. (Sn), Ver.	± 2.5 mm, fixed	± 2.5 mm, fixed
Housing material	Stainless steel/polysulphone	Stainless steel/polysulphone
NPN NO+NC	VPA1MNA	VPA1MNA-1
PNP NO+NC	VPA1MPA	VPA1MPA-1
Housing material	Stainless steel and glass	Stainless steel and glass
NPN NO+NC	VPA2MNA	VPA2MNA-1
PNP NO+NC	VPA2MPA	VPA2MPA-1
Housing material	Nickel-pl. brass/polysulphone	Nickel-pl. brass/polysulphone
NPN NO+NC	VPB1MNA	VPB1MNA-1
PNP NO+NC	VPB1MPA	VPB1MPA-1
Housing material	Nickel-plated brass and glass	Nickel-plated brass and glass
NPN NO+NC	VPB2MNA	VPB2MNA-1
PNP NO+NC	VPB2MPA	VPB2MPA-1
DC-types		
Rated operational voltage	10 - 40 VDC	10 - 40 VDC
Voltage drop	≤ 2.5 VDC	≤ 2.5 VDC
Off-state current	≤ 7 mA	≤ 7 mA
Load current	< 200 mA	< 200 mA
General specifications		
Degree of protection	IP 67	IP 67
Protection Short-circuit (S)		
Reverse polarity (P)	SPT	SPT
Transients (T)		
Operating temperature	-20°C to +80°C	-20°C to +80°C
LED colour	Yellow	No LED
Pressure	10 bar @ +60°C	10 bar @ +60°C
Approvals/Marks	CE - UL - CSA	CE - UL - CSA

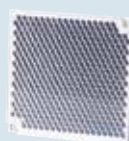
Motion and presence sensors

Combined motion and presence detectors for pedestrian doors

Types	GUARDIAN 1	GUARDIAN 2
Connections	Terminal block	Terminal block
		
Dimensions (mm)	210 x 77 x 58	210 x 77 x 58
Technology	Digital video camera technology 640 x 480	Digital video camera technology 640 x 480
Door types	Straight sliding doors	Curved and Straight sliding doors
Features	The Guardian sensor is a unique motion and presence detector that provides maximum safety and protection in pedestrian sliding door installations. Equipped with the latest digital video camera technology, Guardian watches over the entrance and exit area safeguarding people within, while at the same time controlling the doors. Guardian is able to ignore cross traffic, and it has a brilliant capability of self-adjusting to changes in the environment and weather conditions	
Input specifications		
Mounting height	180 cm to 300 cm	180 cm to 300 cm
Motion zone sensing area	Hight 180 cm = 246 x 204 cm Hight 220 cm = 300 x 249 cm Hight 300 cm = 410 x 340 cm	Hight 180 cm = 246 x 204 cm Hight 220 cm = 300 x 249 cm Hight 300 cm = 410 x 340 cm
Presence zone sensing area	Hight 180 cm = 42 cm x door width Hight 220 cm = 51 cm x door width Hight 300 cm = 70 cm x door width	Hight 180 cm = 42 cm x door width Hight 220 cm = 51 cm x door width Hight 300 cm = 70 cm x door width
Maximum door radius vs. Mounting height		Hight 180 cm = Radius 130 cm Hight 220 cm = Radius 170 cm Hight 300 cm = Radius 200 cm
Sensitivity	Adjusting in 7 steps	Adjusting in 7 steps
Presence time	7 step rotary switch: (10, 30 sec.) 1 min, 5 min (Not accordance to DIN18650)	7 step rotary switch: (10, 30 sec.) 1 min, 5 min (Not accordance to DIN18650)
Ambient Light	10 lux - 50.000 lux	10 lux - 50.000 lux
Output specifications		
Output function	Safety and Motion Zone: Relay - SPST Common relay data: 1 A DC 30 VDC 600.000 cycles @ 0.5 A, 50 VAC/30 VDC	Safety and Motion Zone: Relay - SPST Common relay data: 1 A DC 30 VDC 600.000 cycles @ 0.5 A, 50 VAC/30 VDC
General specifications		
Rated operating voltage	12 - 24 VAC	12 - 24 VAC
No load supply current	Max. 230 mA	Max. 230 mA
Test input. Active high	ON > 9 VAC/VDC OFF < 6 VAC/VDC	ON > 9 VAC/VDC OFF < 6 VAC/VDC
Test input. Active low	ON < 6 VAC/VDC OFF > 9 VAC/VDC	ON < 6 VAC/VDC OFF > 9 VAC/VDC
Type of ESPE	Type 2	Type 2
Degree of protection	IP 64	IP 64
TÜV	In acc. with machinery directive 2006/42/EC, annex I DIN 18650-1 § 5.7.4, edition 2005 (prEN16005), EN13241-1, EN 12978	In acc. with machinery directive 2006/42/EC, annex I DIN 18650-1 § 5.7.4, edition 2005 (prEN16005), EN13241-1, EN 12978
UL-approved	cURus: UL325, CSA-C22.2 No. 247	cURus: UL325, CSA-C22.2 No. 247
Marking	CE	CE
References		
Marking	GUARDIAN 1	GUARDIAN 2

Photoelectric sensors accessories

Reflectors, rectangular



Item Number	ER100	ER840	ER681	ER686
Dimensions (mm)	100 x 100 x 9.2	84.5 x 84.5 x 9	52 x 119 x 27	55.3 x 126 x 9
Mounting (screws not incl.)	2 x M3 screws	2 x M3.5 screws	4 x M4 screws	2 x M6 screws
Reduction factor	1.2	0.96	0.92	0.92

Reflectors, rectangular



Item Number	ER4060	ER5060	ER42182	ER5080
Dimensions (mm)	60 x 41 x 8	55.5 x 61 x 8	186 x 46.5 x 8	80 x 54 x 8
Mounting (screws not incl.)	2 x M3.5 screws	2 x M4 screws	2 x M6 screws	Adhesive
Reduction factor	0.81	0.80	0.65	0.60

Reflectors, rectangular



Item Number	ER483	ER8	ER665	ER530
Dimensions (mm)	32.5 x 65 x 8	82 x 37 x 5.5	18.5 x 120 x 65	19 x 72.5 x 8.4
Mounting (screws not incl.)	2 x M3.5 screws	Adhesive	2 x M4 screws	2 x M3.5 screws
Reduction factor	0.55	0.51	0.45	0.45

Reflectors, rectangular



Item Number	ER390	ER1	ER640	ER692
Dimensions (mm)	23.5 x 47.5 x 8	51 x 17.5 x 5	13 x 17 x 5	Ø 35 x 5.5
Mounting (screws not incl.)	2 x M3.5 screws	Adhesive	Adhesive	Adhesive
Reduction factor	1.39	0.20	0.16	0.53

Reflectors, cylindrical



Item Number	ER4	ER460	ER420	ER423
Dimensions (mm)	Ø 84 x 7.4	Ø 46 x 6.5	Ø 42 x 6.3	Ø 41.5 x 6
Mounting (screws not incl.)	1 x M4 screw	Adhesive	Adhesive	2 x M3 screws
Reduction factor	1	0.55	0.54	0.54

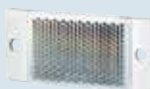
Photoelectric sensors accessories

Reflectors, cylindrical



Item Number	ER689
Dimensions (mm)	Ø 25 x 5.5
Mounting (screws not incl.)	Adhesive
Reduction factor	0.39

Micro cube reflectors for LD32



Item Number	EM 130-20
Dimensions (mm)	20 x 43
Mounting (screws not incl.)	2 x M3 screws
Reduction factor	1 (Micro Cube)

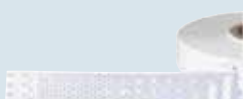


Item Number	EM 120-20
Dimensions (mm)	20 x 32
Mounting (screws not incl.)	2 x M3.5 screws
Reduction factor	1 (Micro Cube)



Item Number	EM 123-70
Dimensions (mm)	13.7 x 23
Mounting (screws not incl.)	2 x M2 screws
Reduction factor	1 (Micro Cube)

Reflectors, tape



Item Number	ERT25
Dimensions (mm)	25 mm x 45.7 m
Mounting (screws not incl.)	Adhesive
Reduction factor	0.23 (25 x 25 mm)



Item Number	EM 111-40
Dimensions (mm)	10.5 x 10.5
Mounting (screws not incl.)	Adhesive
Reduction factor	1 (Micro Cube)



Item Number	EM 121-41
Dimensions (mm)	Ø20
Mounting (screws not incl.)	Adhesive
Reduction factor	1 (Micro Cube)



Item Number	EM 110-40
Dimensions (mm)	Ø10
Mounting (screws not incl.)	Adhesive
Reduction factor	1 (Micro Cube)

Reflectors, tape



Item Number	ERT50
Dimensions (mm)/Used for	50 mm x 45.7 m
Mounting (screws not incl.)	Adhesive
Reduction factor/Description	0.34 (50 x 50 mm)



Item Number	AMPF-MB1
Dimensions (mm)/Used for	MPFT15-4 & MPFR-4
Mounting (screws not incl.)	Adhesive
Reduction factor/Description	Plastic mounting bracket for wall mounting



Item Number	AMPF-MB2
Dimensions (mm)/Used for	MPFT15-4 & MPFR-4
Mounting (screws not incl.)	Adhesive
Reduction factor/Description	Adaptor for fitting to an Ø18 mm rubber profile



Item Number	AMPF-MB3
Dimensions (mm)/Used for	MPFT15-4 & MPFR-4
Mounting (screws not incl.)	Adhesive
Reduction factor/Description	Metal mounting bracket for harsh environment

Accessories, photoelectric sensors



Item Number	APA18-AK
Used for	M18 photoelectrics
Description	Ø2, Ø4, and Ø8 mm aperture



Item Number	APA18-RAR
Used for	M18 photoelectrics
Description	90° mirror for angle detection



Item Number	610DC
Used for	S1430...
Description	Plug conversion



Item Number	APA3
Used for	PA.. sensors
Description	Mounting bracket in anodized aluminium

Accessories, photoelectric sensors



Item Number	MB-M01
Used for	MOE.. sensors
Description	Ball mounting bracket for flexible mounting



Item Number	MB18A
Used for	M18 sensors
Description	Mounting bracket in plast



Item Number	APA18-MB1
Used for	PA18 sensors
Description	Mounting bracket in plast

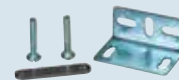


Item Number	APH18-MB1
Used for	PH18 sensors
Description	Mounting bracket in plast

Accessories, photoelectric sensors

Photoelectric sensors accessories

Brackets



Item Number	APA-2	APB-1	MB02	APD32-MB3
Used for	PA.. sensors	PB	PM	PD32 - LD32
Description	Mounting bracket in steel, black	Mounting bracket in steel, black	Long mounting bracket for wall mounting in steel, chromated	Mounting bracket in steel, chromated

Brackets



Item Number	APD30 MB1	APD30 MB2	ACP50-1
Used for	PD.. sensors	PD.. sensors	PC50.. sensors
Description	Mounting bracket in steel, chromated	Mounting bracket in steel, chromated	Mounting bracket in steel, chromated

Alignment tools



Item Number	APD140-LA01	APD140-LA02	APD140-TC01
Used for	PD140.. Heavy duty infrared barrier	PD140.. Heavy duty infrared barrier	PD140.. Heavy duty infrared barrier
Description	Laser alignment tool	Laser alignment tool without batteries (Battery: DL1/3N, CR1/3N 3V - Lithium)	Alignment test cable

Capacitive proximity sensors, TRIPLESIELD™

Types

M18-AC TRIPLESIELD™

Connections

2 m cable

M12 connector

Flush mountable



Dimensions (mm)

M18 x 71.5

M18 x 83.5

Thread (mm)

M18 x 1 x 46.5

M18 x 1 x 46.5

Operating frequency

10 Hz

10 Hz

Sensing distance (Sn)

3 - 8 mm (adjustable)

3 - 8 mm (adjustable)

References

Thyristor (SCR) NO

CA18CLF08TO

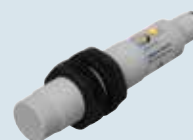
CA18CLF08TOM6

Thyristor (SCR) NC

CA18CLF08TC

CA18CLF08TCM6

Non-flush mountable



Dimensions (mm)

M18 x 79.5

M18 x 91.5

Thread (mm)

M18 x 1 x 46.5

M18 x 1 x 46.5

Operating frequency

10 Hz

10 Hz

Sensing distance (Sn)

3 - 12 mm (adjustable)

3 - 12 mm (adjustable)

References

Thyristor (SCR) NO

CA18CLN12TO

CA18CLN12TOM6

Thyristor (SCR) NC

CA18CLN12TC

CA18CLN12TCM6

Characteristics flush and non-flush mountable

Rated operating voltage

20 - 250 VAC

20 - 250 VAC

Voltage drop

≤ 10 VAC

≤ 10 VAC

Degree of protection

IP 67

IP 67

Protection Short-circuit (S)
Reverse polarity (P)
Transients (T)

T

T

Output current

< 500 mA

< 500 mA

Housing material

Thermoplastic polyester

Thermoplastic polyester

Operating temperature

-25°C to +80°C

-25°C to +80°C

LED colour

Yellow

Yellow

Approvals/Marks

CE - UL - CSA

CE - UL - CSA

Capacitive proximity sensors, 4th Generation TRIPLESIELD™

Types	M18-DC 4 th Generation TRIPLESIELD™ Flush mountable		M18-DC 4 th Generation TRIPLESIELD™ Non-flush mountable	
Connections	2 m cable	M12 connector	2 m cable	M12 connector
				
Dimensions (mm)	M18 x 70	M18 x 85	M18 x 70	M18 x 85
Thread (mm)	M18 x 1.0 x 55	M18 x 1.0 x 55	M18 x 1.0 x 55	M18 x 1.0 x 55
Operating frequency	50 Hz	50 Hz	50 Hz	50 Hz
Sensing distance (Sn)	2 - 10 mm (adjustable)	2 - 10 mm (adjustable)	3 - 15 mm (adjustable)	3 - 15 mm (adjustable)
References				
Standard				
NPN - NO and NC	CA18CAF08NA	CA18CAF08NAM1	CA18CAN12NA	CA18CAN12NAM1
PNP - NO and NC	CA18CAF08PA	CA18CAF08PAM1	CA18CAN12PA	CA18CAN12PAM1
Dust alarm				
PNP - NO	CA18CAF08PODU		CA18CAN12PODU	
PNP - NC	CA18CAF08PCDU		CA30CN25PCDU	
Temperature alarm				
PNP - NO	CA18CAF08POTA		CA18CAN12POTA	
PNP - NC	CA18CAF08PCTA		CA18CAN12PCTA	
Characteristics flush and non-flush mountable				
Rated operating voltage	10 - 40 VDC	10 - 40 VDC	10 - 40 VDC	10 - 40 VDC
Voltage drop	≤ 2.0 VDC	≤ 2.0 VDC	≤ 2.0 VDC	≤ 2.0 VDC
Degree of protection	IP 67, IP 68, IP 69K	IP 67, IP 68, IP 69K	IP 67, IP 68, IP 69K	IP 67, IP 68, IP 69K
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT
Output current	< 200 mA	< 200 mA	< 200 mA	< 200 mA
Housing material	PBT	PBT	PBT	PBT
Operating temperature	-30°C to +85°C	-30°C to +85°C	-30°C to +85°C	-30°C to +85°C
LED colour	Yellow and Green	Yellow and Green	Yellow and Green	Yellow and Green
Approvals/Marks	CE - cULus - ECOLAB	CE - cULus - ECOLAB	CE - cULus - ECOLAB	CE - cULus - ECOLAB

Capacitive proximity sensors, TRIPLESIELD™

Types

M30-DC TRIPLESIELD™

Connections

2 m cable

M12 connector

Flush mountable



Dimensions (mm)

M30 x 63.6

M30 x 63.6

Thread (mm)

M30 x 1.5 x 50

M30 x 1.5 x 50

Operating frequency

50 Hz

50 Hz

Sensing distance (Sn)

2 - 16 mm (adjustable)

2 - 16 mm (adjustable)

References

NPN - NO and NC

EC3016NPASL

EC3016NPASL-1

PNP - NO and NC

EC3016PPASL

EC3016PPASL-1

Non-flush mountable



Dimensions (mm)

M30 x 75.6

M30 x 75.6

Thread (mm)

M30 x 1.5 x 50

M30 x 1.5 x 50

Operating frequency

50 Hz

50 Hz

Sensing distance (Sn)

4 - 25 mm (adjustable)

4 - 25 mm (adjustable)

References

NPN - NO and NC

EC3025NPASL

EC3025NPASL-1

PNP - NO and NC

EC3025PPASL

EC3025PPASL-1

Characteristics flush and non-flush mountable

Rated operating voltage

10 - 40 VDC

10 - 40 VDC

Voltage drop

≤ 2.5 VDC

≤ 2.5 VDC

Degree of protection

IP 67

IP 67

Protection Short-circuit (S)
Reverse polarity (P)
Transients (T)

SPT

SPT

Output current

< 200 mA

< 200 mA

Housing material

Stainless steel

Stainless steel

Operating temperature

-25°C to +80°C

-25°C to +80°C

LED colour

Yellow

Yellow

Approvals/Marks

CE - UL - CSA

CE - UL - CSA

Capacitive proximity sensors, 4th Generation TRIPLESIELD™

M30-DC 4th Generation TRIPLESIELD™

Types	Flush mountable		Non-flush mountable	
Connections	2 m cable	M12 connector	2 m cable	M12 connector
				
Dimensions (mm)	M30 x 81	M30 x 74	M30 x 81	M30 x 74
Thread (mm)	M30 x 1.5 x 59.5	M30 x 1.5 x 59.5	M30 x 1.5 x 45.5	M30 x 1.5 x 45.5
Operating frequency	50 Hz	50 Hz	50 Hz	50 Hz
Sensing distance (Sn)	2 - 20 mm (adjustable)	2 - 20 mm (adjustable)	4 - 30 mm (adjustable)	4 - 30 mm (adjustable)
References				
Standard				
NPN - NO and NC	CA30CAF16NA	CA30CAF16NAM1	CA30CAN25NA	CA30CAN25NAM1
PNP - NO and NC	CA30CAF16PA	CA30CAF16PAM1	CA30CAN25PA	CA30CAN25PAM1
Dust alarm				
PNP - NO	CA30CAF16PODU		CA30CAN25PODU	
PNP - NC	CA30CAF16PCDU		CA30CAN25PCDU	
Temperature alarm				
PNP - NO	CA30CAF16POTA		CA30CAN25POTA	
PNP - NC	CA30CAF16PCTA		CA30CAN25PCTA	
Characteristics flush and non-flush mountable				
Rated operating voltage	10 - 40 VDC	10 - 40 VDC	10 - 40 VDC	10 - 40 VDC
Voltage drop	≤ 2.0 VDC	≤ 2.0 VDC	≤ 2.0 VDC	≤ 2.0 VDC
Degree of protection	IP 67, IP 68, IP 69K	IP 67, IP 68, IP 69K	IP 67, IP 68, IP 69K	IP 67, IP 68, IP 69K
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT
Output current	< 200 mA	< 200 mA	< 200 mA	< 200 mA
Housing material	PBT	PBT	PBT	PBT
Operating temperature	-30°C to +85°C	-30°C to +85°C	-30°C to +85°C	-30°C to +85°C
LED colour	Yellow and Green	Yellow and Green	Yellow and Green	Yellow and Green
Approvals/Marks	CE - cULus - ECOLAB	CE - cULus - ECOLAB	CE - cULus - ECOLAB	CE - cULus - ECOLAB

Capacitive proximity sensors, TRIPLESIELD™

Types

M30-AC TRIPLESIELD™

Connections **2 m cable** **M12 connector** **2 m cable** **M12 connector**

Flush mountable



Dimensions (mm)	M30 x 63.6	M30 x 63.6	M30 x 63.6	M30 x 63.6
Thread (mm)	M30 x 1.5 x 50	M30 x 1.5 x 50	M30 x 1.5 x 50	M30 x 1.5 x 50
Operating frequency	10 Hz	10 Hz	10 Hz	10 Hz
Sensing distance (Sn)	2 - 16 mm (adjustable)	2 - 16 mm (adjustable)	2 - 16 mm (adjustable)	2 - 16 mm (adjustable)

References

Thyristor (SCR) NO or NC	EC3016TBAPL	EC3016TBAPL-6	EC3016TBASL	EC3016TBASL-6
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Non-flush mountable



Dimensions (mm)	M30 x 75.6	M30 x 75.6	M30 x 75.6	M30 x 75.6
Thread (mm)	M30 x 1.5 x 50	M30 x 1.5 x 50	M30 x 1.5 x 50	M30 x 1.5 x 50
Operating frequency	10 Hz	10 Hz	10 Hz	10 Hz
Sensing distance (Sn)	4 - 25 mm (adjustable)	4 - 25 mm (adjustable)	4 - 25 mm (adjustable)	4 - 25 mm (adjustable)

References

Thyristor (SCR) NO or NC	EC3025TBAPL	EC3025TBAPL-6	EC3025TBASL	EC3025TBASL-6
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Characteristics flush and non-flush mountable

Rated operating voltage	20 - 250 VAC	20 - 250 VAC	20 - 250 VAC	20 - 250 VAC
Voltage drop	< 10 VAC	< 10 VAC	< 10 VAC	< 10 VAC
Degree of protection	IP 67	IP 67	IP 67	IP 67
Protection Short-circuit (S)				
Reverse polarity (P)	T	T	T	T
Transients (T)				
Output current	< 500 mA	< 500 mA	< 500 mA	< 500 mA
Housing material	Thermoplastic polyester	Thermoplastic polyester	Stainless steel	Stainless steel
Operating temperature	-25°C to +80°C	-25°C to +80°C	-25°C to +80°C	-25°C to +80°C
LED colour	Yellow	Yellow	Yellow	Yellow
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA

Capacitive proximity sensors, TRIPLESIELD™

Types	M12 teach-in TRIPLESIELD™		M18 teach-in TRIPLESIELD™	
Connections	2 m cable	M12 connector	2 m cable	M12 connector
Flush mountable				
	Dimensions (mm)	M12 x 82.4	M12 x 84.7	M18 x 89.55
	Thread (mm)	M12 x 1 x 50	M12 x 1 x 50	M18 x 1 x 50
	Operating frequency	15 Hz	15 Hz	15 Hz
	Sensing distance (Sn)	0.5 - 8 mm (Teach-in)	0.5 - 8 mm (Teach-in)	0.2 - 12 mm (Teach-in)
References				
NPN/PNP, NO/NC	CA12CLC08BP	CA12CLC08BPM1	CA18CLC12BP	CA18CLC12BPM1
Characteristics flush and non-flush mountable				
Rated operating voltage	10 - 40 VDC	10 - 40 VDC	10 - 40 VDC	10 - 40 VDC
Voltage drop	< 2.5 VDC	< 2.5 VDC	< 2.5 VDC	< 2.5 VDC
Degree of protection	IP 68	IP 68	IP 68	IP 68
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT
Output current	< 250 mA	< 250 mA	< 250 mA	< 250 mA
Housing material	Thermoplastic polyester	Thermoplastic polyester	Thermoplastic polyester	Thermoplastic polyester
Operating temperature	-25°C to +85°C	-25°C to +85°C	-25°C to +85°C	-25°C to +85°C
Special features	Teach-in, humidity compensation NPN/PNP auto detection, remote setup, alarm output. On request: dirt and moisture compensation	Teach-in, humidity compensation NPN/PNP auto detection, remote setup, alarm output. On request: dirt and moisture compensation	Teach-in, humidity compensation NPN/PNP auto detection, remote setup, alarm output. On request: dirt and moisture compensation	Teach-in, humidity compensation NPN/PNP auto detection, remote setup, alarm output. On request: dirt and moisture compensation
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA

Capacitive proximity sensors, TRIPLESIELD™

Types	M30 teach in TRIPLESIELD™		M30 AC/DC TRIPLESIELD™		
Connections	2 m cable	M12 connector	2 m cable	M12 connector	
Flush mountable					
					
	Dimensions (mm)	M30 x 99.2	M30 x 90.45	M30 x 63.6	M30 x 75.6
	Thread (mm)	M30 x 1.5 x 50	M30 x 1.5 x 50	M30 x 1.5 x 50	M30 x 1.5 x 50
	Operating frequency	15 Hz	15 Hz	10 Hz	10 Hz
Sensing distance (Sn)	0.5 - 30 mm (adjustable)	0.5 - 30 mm (adjustable)	2 - 16 mm (adjustable)	2 - 16 mm (adjustable)	
References					
NPN/PNP, NO/NC	CA30CLC30BP	CA30CLC30BPM1			
Power MOFSET			CA30CLF16CP	CA30CLF16CPM6	
Non-flush mountable					
					
	Dimensions (mm)		M30 x 71.6	M30 x 83.6	
	Thread (mm)		M30 x 1.5 x 50	M30 x 1.5 x 50	
	Operating frequency		10 Hz	10 Hz	
Sensing distance (Sn)			2 - 25 mm (adjustable)	2 - 25 mm (adjustable)	
References					
Power MOFSET			CA30CLN25CP	CA30CLN25CPM6	
Characteristics flush and non-flush mountable					
Rated operating voltage	10 - 40 VDC	10 - 40 VDC	20 - 250 VAC/DC	20 - 250 VAC/DC	
Voltage drop	< 2.5 VDC	< 2.5 VDC	< 5.5 VAC/DC	< 5.5 VAC/DC	
Degree of protection	IP 68	IP 68	IP 67	IP 67	
Protection Short-circuit (S)					
Reverse polarity (P)	SPT	SPT	PT	PT	
Transients (T)					
Output current	< 250 mA	< 250 mA	< 250 mA DC < 350 mA AC	< 250 mA DC < 350 mA AC	
Housing material	Thermoplastic polyester	Thermoplastic polyester	Thermoplastic polyester	Thermoplastic polyester	
Operating temperature	-20°C to +85°C	-20°C to +85°C	-25°C to +80°C	-25°C to +80°C	
LED colour	Yellow	Yellow	Yellow	Yellow	
Special features	Teach-in, humidity compensation NPN/PNP auto detection, remote setup, alarm output. On request: dirt and moisture compensation	Teach-in, humidity compensation NPN/PNP auto detection, remote setup, alarm output. On request: dirt and moisture compensation			
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA	

Capacitive proximity sensors, TRIPLESIELD™

Types	M18 TRIPLESIELD™, chemical resistant		
Connections	2 m cable	2 m cable	2 m cable
Flush mountable			
	Dimensions (mm)	M18 x 71.5	M18 x 71.5
	Thread (mm)	M18 x 1 x 46.5	M18 x 1 x 46.5
	Operating frequency	30 Hz	30 Hz
	Sensing distance (Sn)	3 - 8 mm (adjustable)	3 - 8 mm (adjustable)
References			
NPN-NO/NC	CA18HLF08NA	CA18GLF08NA	CA18FLF08NA
PNP-NO/NC	CA18HLF08PA	CA18GLF08PA	CA18FLF08PA
Non-flush mountable			
	Dimensions (mm)	M18 x 71.5	
	Thread (mm)	M18 x 1 x 46.5	
	Operating frequency	30 Hz	
	Sensing distance (Sn)	3 - 12 mm (adjustable)	
References			
NPN-NO/NC	CA18HLN12NA		
PNP-NO/NC	CA18HLN12PA		
Characteristics flush and non-flush mountable			
Rated operating voltage	10 - 40 VDC	10 - 40 VDC	10 - 40 VDC
Voltage drop	≤ 2.5 VDC	≤ 2.5 VDC	≤ 2.5 VDC
Degree of protection	IP 67	IP 67	IP 67
Protection Short-circuit (S)			
Reverse polarity (P)	SPT	SPT	SPT
Transients (T)			
Output current	< 200 mA	< 200 mA	< 200 mA
Housing material	Polypropylene	PVC	Teflon
Operating temperature	-25°C to +80°C	-25°C to +80°C	-25°C to +80°C
LED colour	Yellow	Yellow	Yellow
Approvals/Marks	CE	CE	CE

Capacitive proximity sensors, TRIPLESIELD™

Types	VC5510	VC5510 Time delay	CD50	
Connections	1.5 m cable	1.5 m cable	2 m cable	2 m cable
Flush mountable				
	Dimensions (mm)	55 x 35 x 15	55 x 35 x 15	50 x 30 x 7
	Operating frequency	> 15 Hz	> 0.1 Hz	10 Hz
	Sensing distance (Sn)	10 mm	10 mm	6 mm
References				
NPN - NO	VC5510NNOP	VC5510NNOPT	CD50CNF06NO	CD50CNF05NO
NPN - NC	VC5510NNCP	VC5510NNCPT		
PNP - NO	VC5510PNOP	VC5510PNOPT		
PNP - NC	VC5510PNCP	VC5510PNCPT		
Sensing distance (Sn)			7 mm	
PNP - NO			CD50CNF07PO	
NPN - NC			CD50CNF07NC	
Sensing distance (Sn)			10 mm	
PNP - NO			CD50CNF10PO	
NPN - NC			CD50CNF10NC	
Characteristics flush and non-flush mountable				
Rated operating voltage	5 - 30 VDC	5 - 30 VDC	10 - 30 VDC	5 VDC
Voltage drop	≤ 1.5 VDC	≤ 1.5 VDC	≤ 1.5 V	≤ 1.5 V
Degree of protection	IP65	IP 65	IP 67	IP 67
Output current	≤ 100 mA	≤ 100 mA	≤ 50 mA	≤ 50 mA
Housing material	PC/ABS	PC/ABS	Noryl, grey	Noryl, grey
Operating temperature	0°C to +50°C	0°C to +50°C	0°C to +60°C	0°C to +60°C
LED colour	Red	Red		
Approvals/Marks	CE - UL	CE - UL	CE	CE

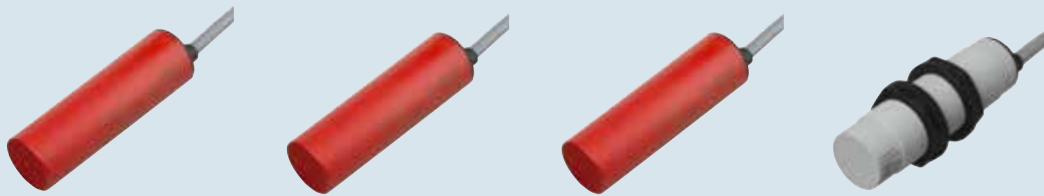
Capacitive proximity sensors, TRIPLESIELD™

Types	CD46 teach-in TRIPLESIELD™	EC 5525 TRIPLESIELD™	
Connections	2 m cable	2 m cable	M12 connector
Flush or non-Flush mountable			
Dimensions short body (mm)	46 x 28 x 5.5	55 x 35 x 15	55 x 35 x 15
Operating frequency	10 Hz	50 Hz	50 Hz
Sensing distance (Sn)	1.0 - 10 mm (Teach-in)	4 - 25 mm	4 - 25 mm
References			
NPN-NO/NC	CD46CNC10NP	EC5525NPAP	EC5525NPAP-1
PNP-NO/NC	CD46CNC10PP	EC5525PPAP	EC5525PPAP-1
Characteristics flush and non-flush mountable			
Rated operating voltage	10 - 30 VDC	10 - 40 VDC	10 - 40 VDC
Voltage drop	≤ 2.5 VDC	≤ 2.5 VDC	≤ 2.5 VDC
Degree of protection	IP 68	IP 67	IP 67
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT
Output current	≤ 200 mA	≤ 200 mA	≤ 200 mA
Housing material	PBT	Polycarbonate	Polycarbonate
Operating temperature	-25°C to +80°C	-25°C to +80°C	-25°C to +80°C
LED colour	Yellow, Green	Yellow	Yellow
Special features	Teach-in, remote setup, alarm output		
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA

Capacitive proximity sensors, TRIPLESIELD™

Types	M18 teach-in TRIPLESIELD™		M30 teach-in TRIPLESIELD™	
Connections	2 m cable	M12 connector	2 m cable	M12 connector
Flush or non-flush mountable				
				
Dimensions (mm)	M18 x 89.55	M18 x 89.2	M30 x 99.2	M30 x 99.45
Thread (mm)	M18 x 1 x 50	M18 x 1 x 50	M30 x 1.5 x 50	M30 x 1.5 x 50
Operating frequency	5 Hz	5 Hz	5 Hz	5 Hz
Sensing distance (Sn)	0.5 - 12 mm (Teach-in)	0.5 - 12 mm (Teach-in)	0.5 - 30 mm (Teach-in)	0.5 - 30 mm (Teach-in)
References				
NPN/PNP, NO/NC	CA18CLL12BP	CA18CLL12BPM1	CA30CLL30BP	CA30CLL30BPM1
Characteristics flush and non-flush mountable				
Rated operating voltage	10 - 40 VDC	10 - 40 VDC	10 - 40 VDC	10 - 40 VDC
Voltage drop	≤ 2.5 VDC	≤ 2.5 VDC	≤ 2.5 VDC	≤ 2.5 VDC
Degree of protection	IP 68	IP 68	IP 68	IP 68
Output current	≤ 250 mA	≤ 250 mA	≤ 250 mA	≤ 250 mA
Housing material	Thermoplastic polyester	Thermoplastic polyester	Thermoplastic polyester	Thermoplastic polyester
Operating temperature	-20°C to +85°C	-20°C to +85°C	-20°C to +85°C	-20°C to +85°C
Max. temperature on sensing face	120°C (248°F)	120°C (248°F)	120°C (248°F)	120°C (248°F)
LED colour	Yellow	Yellow	Yellow	Yellow
Special features	Single-step Teach-in, humidity compensation NPN/ PNP auto detection, remote setup, alarm output. On request: dirt and moisture compensation	Single-step Teach-in, humidity compensation NPN/ PNP auto detection, remote setup, alarm output. On request: dirt and moisture compensation	Single-step Teach-in, humidity compensation NPN/ PNP auto detection, remote setup, alarm output. On request: dirt and moisture compensation	Single-step Teach-in, humidity compensation NPN/ PNP auto detection, remote setup, alarm output. On request: dirt and moisture compensation
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA

Capacitive level sensors

Types	Capacitive level sensors for solid, fluid and granulated substances			
Connections	2 m cable	2 m cable	2 m cable	2 m cable
				
Dimensions (mm)	Ø32 x 101	Ø32 x 101	Ø32 x 101	M30 x 101
Thread	Smooth	Smooth	Smooth	M30 (with 2 nuts)
Operating frequency	1 Hz	1 Hz	1 Hz	1 Hz
Sensing distance (Sn)	4 - 12 mm (adjustable)	4 - 12 mm (adjustable)	4 - 12 mm (adjustable)	4 - 12 mm (adjustable)
References with ON delay				
Time delay	1 s - 10 m			1 s - 10 m
120 VAC	VC11RT12010M			
230 VAC	VC11RT23010M			
24 VAC/DC	VC11RT92410M			
24-230 VAC/DC	VC11RTM2410M			CA30CLN12MU10M
References with OFF delay				
Time delay	1 s - 10 m			1 s - 10 m
120 VAC	VC12RT12010M			
230 VAC	VC12RT23010M			
24 VAC/DC	VC12RT92410M			
24-230 VAC/DC	VC12RTM2410M			CA30CLN12MV10M
References without delay				
120 VAC	VC12RN120			
230 VAC	VC12RN230			
24 VAC/DC	VC12RN924			
24-230 VAC/DC	VC12RNM24			CA30CLN12MT
Specifications				
Consumption	≤ 1.5 W	≤ 1.5 W	≤ 1.5 W	≤ 2.5 W
Consumption M24 versions	≤ 2.5 W	≤ 2.5 W	≤ 2.5 W	
Hysteresis	1.5 mm at 7 mm sensing distance	1.5 mm at 7 mm sensing distance	1.5 mm at 7 mm sensing distance	3 - 20%
Output	Relay SPDT 2 A / 240 VAC	Relay SPDT 2 A / 240 VAC	Relay SPDT 2 A / 240 VAC	Relay SPDT 2 A / 240 VAC
Degree of protection	IP 67	IP 67	IP 67	IP 67
Housing material	Thermoplastic polyester	Thermoplastic polyester	Thermoplastic polyester	PBTP, grey
Operating temperature	-20°C to +70°C	-20°C to +70°C	-20°C to +70°C	-20°C to +70°C
LED colour	Red	Red	Red	Yellow
Approvals/Marks	CE UL508 NEMA	CE - CSA cULus (M24 versions)	CE cULus (M24 versions)	CE, CSA cULus 1, 2, 4, 4X, 5, 6, 6P, 12

Capacitive level sensors

Ø18 sensors for solid, fluid and granulated substances			Ø32 sensors
Types	2-wire, AC	3-wire, DC	2-wire, AC
Connections	2 m cable	2 m cable	2 m cable
			
Dimensions (mm)	Ø18 x 86	Ø18 x 86	Ø32 x 101
Thread	Smooth	Smooth	Smooth
Operating frequency	10 Hz	30 Hz	10 Hz
Sensing distance (Sn)	3 - 12 mm (adjustable)	3 - 12 mm (adjustable)	2 - 20 mm (adjustable)
References			
Thyristor (SCR) NO	CB18CLN12TOFT		
Thyristor (SCR) NO ATEX	CB18CLN12TOFTAX		
Thyristor (SCR) NC	CB18CLN12TCFT		
Thyristor (SCR) NC ATEX	CB18CLN12TCFTAX		
NPN - NO/NC	CB18CLN12NA		
NPN - NO/NC ATEX	CB18CLN12NAAX		
PNP - NO/NC	CB18CLN12PA		
PNP - NO/NC ATEX	CB18CLN12PAAX		
ON-delay	No		
Thyristor (SCR) NO	CB32CLN20TO		
Thyristor (SCR) NO ATEX	CB32CLN20TOAX		
Thyristor (SCR) NC	CB32CLN20TC		
Thyristor (SCR) NC ATEX	CB32CLN20TCAX		
ON-delay	Yes		
Thyristor (SCR) NO	CB32CLN20TOFT		
Thyristor (SCR) NO ATEX	CB32CLN20TOFTAX		
Thyristor (SCR) NC	CB32CLN20TCFT		
Thyristor (SCR) NC ATEX	CB32CLN20TCFTAX		
Specifications			
Rated operating voltage	20 - 250 VAC	10 - 40 VDC	20 - 250 VAC
Voltage drop	≤ 10 VAC	≤ 10 VAC	≤ 10 VAC
Time delay	30 s ON-delay		30 s ON-delay
Degree of protection	IP 67	IP 67	IP 67
Protection Short-circuit (S)			
Reverse polarity (P)	T	SPT	T
Transients (T)			
Output current	≤ 500 mA	≤ 200 mA	≤ 500 mA
Housing material	Thermoplastic polyester	Thermoplastic polyester	Thermoplastic polyester
Operating temperature	-25°C to +80°C	-25°C to +80°C	-20°C to +70°C
LED colour	Yellow	Yellow	Yellow
Approvals/Marks	CE - UL - CSA - ATEX	CE - UL - CSA - ATEX	CE - UL - CSA - ATEX

Capacitive level sensors

Types

Ø32 level sensors TRIPLESIELD™ - ATEX

Connections

With ON delay

With OFF delay

Without time delay



Dimensions (mm)	Ø32 x 101	Ø32 x 101	Ø32 x 101
Thread	Smooth	Smooth	Smooth
Operating frequency	5 Hz	5 Hz	5 Hz
Sensing distance (Sn)	4 - 20 mm (adjustable)	4 - 20 mm (adjustable)	4 - 20 mm (adjustable)

References

Cable length	2 m	2 m	2 m
120 VAC	CB32CLN20SUAX	CB32CLN20SVAX	CB32CLN20STAX
230 VAC	CB32CLN20RUAX	CB32CLN20RVAX	CB32CLN20RTAX
24 VAC/DC	CB32CLN20QUAX	CB32CLN20QVAX	CB32CLN20QTAX
Cable length	5 m	5 m	5 m
120 VAC	CB32CLN20SUAX5M	CB32CLN20SVAX5M	CB32CLN20STAX5M
230 VAC	CB32CLN20RUAX5M	CB32CLN20RVAX5M	CB32CLN20RTAX5M
24 VAC/DC	CB32CLN20QUAX5M	CB32CLN20QVAX5M	CB32CLN20QTAX5M
Cable length	10 m	10 m	10 m
120 VAC	CB32CLN20SUAX10M	CB32CLN20SVAX10M	CB32CLN20STAX10M
230 VAC	CB32CLN20RUAX10M	CB32CLN20RVAX10M	CB32CLN20RTAX10M
24 VAC/DC	CB32CLN20QUAX10M	CB32CLN20QVAX10M	CB32CLN20QTAX10M

Specifications

Consumption	< 1.5 W	< 1.5 W	< 1.5 W
Hysteresis	3 to 20% of sensing distance	3 to 20% of sensing distance	3 to 20% of sensing distance
Output	Relay SPDT, 2 A / 240 VAC	Relay SPDT, 2 A / 240 VAC	Relay SPDT, 2 A / 240 VAC
Time delay	1 s - 10 m	1 s - 10 m	
Degree of protection	IP 67	IP 67	IP 67
Housing material	PBT	PBT	PBT
Operating temperature	-20°C to +70°C	-20°C to +70°C	-20°C to +70°C
LED colour	Yellow	Yellow	Yellow
Approvals/Marks	CE - ATEX	CE - ATEX	CE - ATEX

Inductive proximity sensors, 3-wire, DC

Types	M12 Standard - Short body		M12 Standard - Long body	
Connections	2 m cable	M12 connector	2 m cable	M12 connector
Flush mountable				
Dimensions (mm)	M12 x 47	M12 x 50	M12 x 67	M12 x 70
Thread (mm)	M12 x 1 x 30	M12 x 1 x 30	M12 x 1 x 50	M12 x 1 x 50
Operating frequency	2 kHz	2 kHz	2 kHz	2 kHz
Sensing distance (Sn)	2 mm	2 mm	2 mm	2 mm
References				
NPN-NO	ICB12S30F02NO	ICB12S30F02NOM1	ICB12L50F02NO	ICB12L50F02NOM1
PNP-NO	ICB12S30F02PO	ICB12S30F02POM1	ICB12L50F02PO	ICB12L50F02POM1
NPN-NC	ICB12S30F02NC	ICB12S30F02NCM1	ICB12L50F02NC	ICB12L50F02NCM1
PNP-NC	ICB12S30F02PC	ICB12S30F02PCM1	ICB12L50F02PC	ICB12L50F02PCM1
Non-flush mountable				
Dimensions (mm)	M12 x 51	M12 x 54	M12 x 71	M12 x 74
Thread (mm)	M12 x 1 x 30	M12 x 1 x 30	M12 x 1 x 50	M12 x 1 x 50
Operating frequency	2 kHz	2 kHz	2 kHz	2 kHz
Sensing distance (Sn)	4 mm	4 mm	4 mm	4 mm
References				
NPN-NO	ICB12S30N04NO	ICB12S30N04NOM1	ICB12L50N04NO	ICB12L50N04NOM1
PNP-NO	ICB12S30N04PO	ICB12S30N04POM1	ICB12L50N04PO	ICB12L50N04POM1
NPN-NC	ICB12S30N04NC	ICB12S30N04NCM1	ICB12L50N04NC	ICB12L50N04NCM1
PNP-NC	ICB12S30N04PC	ICB12S30N04PCM1	ICB12L50N04PC	ICB12L50N04PCM1
Characteristics flush and non-flush mountable				
Rated operating voltage	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC
Voltage drop	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA
Degree of protection	IP 67	IP 67	IP 67	IP 67
Protection Short-circuit (S)	SPT	SPT	SPT	SPT
Reverse polarity (P)				
Transients (T)				
Output current	< 200 mA @ 50°C ≤ 150 mA @ 50-70°C	< 200 mA @ 50°C ≤ 150 mA @ 50-70°C	< 200 mA @ 50°C ≤ 150 mA @ 50-70°C	< 200 mA @ 50°C ≤ 150 mA @ 50-70°C
Housing material	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass
Operating temperature	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C
LED colour	Yellow	Yellow	Yellow	Yellow
Approvals/Marks	CE - UL - Cl. I Div. 2	CE - UL - Cl. I Div. 2	CE - UL - Cl. I Div. 2	CE - UL - Cl. I Div. 2

Inductive proximity sensors, 3-wire, DC, extended range

Types	M12 Extended - Extra-short body	M12 Extended - Short body		M12 Extended - Long body		
Connections	2 m cable	2 m cable	M12 connector	2 m cable	M12 connector	
Flush mountable						
	Dimensions (mm)	M12 x 25.4	M12 x 47	M12 x 50	M12 x 67	M12 x 70
	Thread (mm)	M12 x 1 x 23.4	M12 x 1 x 30	M12 x 1 x 30	M12 x 1 x 50	M12 x 1 x 50
	Operating frequency	2 kHz	2 kHz	2 kHz	2 kHz	2 kHz
	Sensing distance (Sn)	4 mm	4 mm	4 mm	4 mm	4 mm
References						
NPN-NO	ICB12S23F04NO	ICB12S30F04NO	ICB12S30F04NOM1	ICB12L50F04NO	ICB12L50F04NOM1	
PNP-NO	ICB12S23F04PO	ICB12S30F04PO	ICB12S30F04POM1	ICB12L50F04PO	ICB12L50F04POM1	
NPN-NC	ICB12S23F04NC	ICB12S30F04NC	ICB12S30F04NCM1	ICB12L50F04NC	ICB12L50F04NCM1	
PNP-NC	ICB12S23F04PC	ICB12S30F04PC	ICB12S30F04PCM1	ICB12L50F04PC	ICB12L50F04PCM1	
Non-flush mountable						
	Dimensions (mm)	M12 x 29.4	M12 x 51	M12 x 54	M12 x 71	M12 x 74
	Thread (mm)	M12 x 1 x 23.4	M12 x 1 x 30	M12 x 1 x 30	M12 x 1 x 50	M12 x 1 x 50
	Operating frequency	2 kHz	2 kHz	2 kHz	2 kHz	2 kHz
	Sensing distance (Sn)	8 mm	8 mm	8 mm	8 mm	8 mm
References						
NPN-NO	ICB12S23N08NO	ICB12S30N08NO	ICB12S30N08NOM1	ICB12L50N08NO	ICB12L50N08NOM1	
PNP-NO	ICB12S23N08PO	ICB12S30N08PO	ICB12S30N08POM1	ICB12L50N08PO	ICB12L50N08POM1	
NPN-NC	ICB12S23N08NC	ICB12S30N08NC	ICB12S30N08NCM1	ICB12L50N08NC	ICB12L50N08NCM1	
PNP-NC	ICB12S23N08PC	ICB12S30N08PC	ICB12S30N08PCM1	ICB12L50N08PC	ICB12L50N08PCM1	
Characteristics flush and non-flush mountable						
Rated operating voltage	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC	
Voltage drop	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	
Degree of protection	IP 67	IP 67	IP 67	IP 67	IP 67	
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT	SPT	
Output current	≤ 200 mA	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	
Housing material	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass	
Operating temperature	-25°C to +80°C	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C	
LED colour	Yellow	Yellow	Yellow	Yellow	Yellow	
Approvals/Marks	CE - UL - Cl. I Div. 2	CE - UL - Cl. I Div. 2	CE - UL - Cl. I Div. 2	CE - UL - Cl. I Div. 2	CE - UL - Cl. I Div. 2	

Inductive proximity sensors, 3-wire, DC, increased range

Types	M12 Increased - Short body		M12 Increased - Long body	
Connections	2 m cable	M12 connector	2 m cable	M12 connector
Quasi-flush mountable				
				
	Dimensions (mm)	M12 x 48	M12 x 51	M12 x 68
	Thread (mm)	M12 x 1 x 30	M12 x 1 x 30	M12 x 1 x 50
	Operating frequency	2 kHz	2 kHz	2 kHz
	Sensing distance (Sn)	6 mm	6 mm	6 mm
References				
NPN-NO	ICB12S30F06NO	ICB12S30F06NOM1	ICB12L50F06NO	ICB12L50F06NOM1
PNP-NO	ICB12S30F06PO	ICB12S30F06POM1	ICB12L50F06PO	ICB12L50F06POM1
NPN-NC	ICB12S30F06NC	ICB12S30F06NCM1	ICB12L50F06NC	ICB12L50F06NCM1
PNP-NC	ICB12S30F06PC	ICB12S30F06PCM1	ICB12L50F06PC	ICB12L50F06PCM1
Non-flush mountable				
				
	Dimensions (mm)	M12 x 51	M12 x 54	M12 x 71
	Thread (mm)	M12 x 1 x 30	M12 x 1 x 30	M12 x 1 x 50
	Operating frequency	2 kHz	2 kHz	2 kHz
	Sensing distance (Sn)	10 mm	10 mm	10 mm
References				
NPN-NO	ICB12S30N10NO	ICB12S30N10NOM1	ICB12L50N10NO	ICB12L50N10NOM1
PNP-NO	ICB12S30N10PO	ICB12S30N10POM1	ICB12L50N10PO	ICB12L50N10POM1
NPN-NC	ICB12S30N10NC	ICB12S30N10NCM1	ICB12L50N10NC	ICB12L50N10NCM1
PNP-NC	ICB12S30N10PC	ICB12S30N10PCM1	ICB12L50N10PC	ICB12L50N10PCM1
Characteristics quasi-flush and non-flush mountable				
Rated operating voltage	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC
Voltage drop	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA
Degree of protection	IP 67	IP 67	IP 67	IP 67
Protection Short-circuit (S)	SPT	SPT	SPT	SPT
Reverse polarity (P)				
Transients (T)				
Output current	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C
Housing material	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass
Operating temperature	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C
LED colour	Yellow	Yellow	Yellow	Yellow
Approvals/Marks	CE - UL - Cl. I Div. 2	CE - UL - Cl. I Div. 2	CE - UL - Cl. I Div. 2	CE - UL - Cl. I Div. 2

Inductive proximity sensors, 3-wire, DC

Types	M18 Standard - Short body		M18 Standard - Long body	
Connections	2 m cable	M12 connector	2 m cable	M12 connector
Flush mountable				
				
	Dimensions (mm)	M18 x 53	M18 x 54	M18 x 73
	Thread (mm)	M18 x 1 x 30	M18 x 1 x 30	M18 x 1 x 50
	Operating frequency	1.5 kHz	1.5 kHz	1.5 kHz
	Sensing distance (Sn)	5 mm	5 mm	5 mm
References				
NPN-NO	ICB18S30F05NO	ICB18S30F05NOM1	ICB18L50F05NO	ICB18L50F05NOM1
PNP-NO	ICB18S30F05PO	ICB18S30F05POM1	ICB18L50F05PO	ICB18L50F05POM1
NPN-NC	ICB18S30F05NC	ICB18S30F05NCM1	ICB18L50F05NC	ICB18L50F05NCM1
PNP-NC	ICB18S30F05PC	ICB18S30F05PCM1	ICB18L50F05PC	ICB18L50F05PCM1
Non-flush mountable				
				
	Dimensions (mm)	M18 x 63	M18 x 64	M18 x 83
	Thread (mm)	M18 x 1 x 30	M18 x 1 x 30	M18 x 1 x 50
	Operating frequency	1.5 kHz	1.5 kHz	1.5 kHz
	Sensing distance (Sn)	8 mm	8 mm	8 mm
References				
NPN-NO	ICB18S30N08NO	ICB18S30N08NOM1	ICB18L50N08NO	ICB18L50N08NOM1
PNP-NO	ICB18S30N08PO	ICB18S30N08POM1	ICB18L50N08PO	ICB18L50N08POM1
NPN-NC	ICB18S30N08NC	ICB18S30N08NCM1	ICB18L50N08NC	ICB18L50N08NCM1
PNP-NC	ICB18S30N08PC	ICB18S30N08PCM1	ICB18L50N08PC	ICB18L50N08PCM1
Characteristics flush and non-flush mountable				
Rated operating voltage	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC
Voltage drop	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA
Degree of protection	IP 67	IP 67	IP 67	IP 67
Protection Short-circuit (S)	SPT	SPT	SPT	SPT
Reverse polarity (P)	SPT	SPT	SPT	SPT
Transients (T)	SPT	SPT	SPT	SPT
Output current	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C
Housing material	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass
Operating temperature	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C
LED colour	Yellow	Yellow	Yellow	Yellow
Approvals/Marks	CE - UL - Cl. I Div. 2	CE - UL - Cl. I Div. 2	CE - UL - Cl. I Div. 2	CE - UL - Cl. I Div. 2

Inductive proximity sensors, 3-wire, DC, extended range

Types	M18 Extended - Short body		M18 Extended - Long body	
Connections	2 m cable	M12 connector	2 m cable	M12 connector
Flush mountable				
	Dimensions (mm)	M18 x 53	M18 x 54	M18 x 73
	Thread (mm)	M18 x 1 x 30	M18 x 1 x 30	M18 x 1 x 50
	Operating frequency	1.5 kHz	1.5 kHz	1.5 kHz
	Sensing distance (Sn)	8 mm	8 mm	8 mm
References				
NPN-NO	ICB18S30F08NO	ICB18S30F08NOM1	ICB18L50F08NO	ICB18L50F08NOM1
PNP-NO	ICB18S30F08PO	ICB18S30F08POM1	ICB18L50F08PO	ICB18L50F08POM1
NPN-NC	ICB18S30F08NC	ICB18S30F08NCM1	ICB18L50F08NC	ICB18L50F08NCM1
PNP-NC	ICB18S30F08PC	ICB18S30F08PCM1	ICB18L50F08PC	ICB18L50F08PCM1
Non-flush mountable				
	Dimensions (mm)	M18 x 63	M18 x 64	M18 x 83
	Thread (mm)	M18 x 1 x 30	M18 x 1 x 30	M18 x 1 x 50
	Operating frequency	1.5 kHz	1.5 kHz	1.5 kHz
	Sensing distance (Sn)	14 mm	14 mm	14 mm
References				
NPN-NO	ICB18S30N14NO	ICB18S30N14NOM1	ICB18L50N14NO	ICB18L50N14NOM1
PNP-NO	ICB18S30N14PO	ICB18S30N14POM1	ICB18L50N14PO	ICB18L50N14POM1
NPN-NC	ICB18S30N14NC	ICB18S30N14NCM1	ICB18L50N14NC	ICB18L50N14NCM1
PNP-NC	ICB18S30N14PC	ICB18S30N14PCM1	ICB18L50N14PC	ICB18L50N14PCM1
Characteristics flush and non-flush mountable				
Rated operating voltage	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC
Voltage drop	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA
Degree of protection	IP 67	IP 67	IP 67	IP 67
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT
Output current	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C
Housing material	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass
Operating temperature	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C
LED colour	Yellow	Yellow	Yellow	Yellow
Approvals/Marks	CE - UL - Cl. I Div. 2	CE - UL - Cl. I Div. 2	CE - UL - Cl. I Div. 2	CE - UL - Cl. I Div. 2

Inductive proximity sensors, 3-wire, DC, increased range

Types	M18 Increased - Short body		M18 Increased - Long body	
Connections	2 m cable	M12 connector	2 m cable	M12 connector
Quasi-flush mountable				
	Dimensions (mm)	M18 x 54	M18 x 55	M18 x 74
	Thread (mm)	M18 x 1 x 30	M18 x 1 x 30	M18 x 1 x 50
	Operating frequency	1.5 kHz	1.5 kHz	1.5 kHz
	Sensing distance (Sn)	12 mm	12 mm	12 mm
References				
NPN-NO	ICB18S30F12NO	ICB18S30F12NOM1	ICB18L50F12NO	ICB18L50F12NOM1
PNP-NO	ICB18S30F12PO	ICB18S30F12POM1	ICB18L50F12PO	ICB18L50F12POM1
NPN-NC	ICB18S30F12NC	ICB18S30F12NCM1	ICB18L50F12NC	ICB18L50F12NCM1
PNP-NC	ICB18S30F12PC	ICB18S30F12PCM1	ICB18L50F12PC	ICB18L50F12PCM1
Non-flush mountable				
	Dimensions (mm)	M18 x 63	M18 x 64	M18 x 83
	Thread (mm)	M18 x 1 x 30	M18 x 1 x 30	M18 x 1 x 50
	Operating frequency	1.5 kHz	1.5 kHz	1.5 kHz
	Sensing distance (Sn)	20 mm	20 mm	20 mm
References				
NPN-NO	ICB18S30N20NO	ICB18S30N20NOM1	ICB18L50N20NO	ICB18L50N20NOM1
PNP-NO	ICB18S30N20PO	ICB18S30N20POM1	ICB18L50N20PO	ICB18L50N20POM1
NPN-NC	ICB18S30N20NC	ICB18S30N20NCM1	ICB18L50N20NC	ICB18L50N20NCM1
PNP-NC	ICB18S30N20PC	ICB18S30N20PCM1	ICB18L50N20PC	ICB18L50N20PCM1
Characteristics quasi-flush and non-flush mountable				
Rated operating voltage	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC
Voltage drop	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA
Degree of protection	IP 67	IP 67	IP 67	IP 67
Protection Short-circuit (S)				
Reverse polarity (P)	SPT	SPT	SPT	SPT
Transients (T)				
Output current	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C
Housing material	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass
Operating temperature	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C
LED colour	Yellow	Yellow	Yellow	Yellow
Approvals/Marks	CE - UL - Cl. I Div. 2	CE - UL - Cl. I Div. 2	CE - UL - Cl. I Div. 2	CE - UL - Cl. I Div. 2

Inductive proximity sensors, 3-wire, DC

Types	M30 Standard - Short body		M30 Standard - Long body	
Connections	2 m cable	M12 connector	2 m cable	M12 connector
Flush mountable				
				
	Dimensions (mm)	M30 x 43.6	M30 x 55	M30 x 63.6
	Thread (mm)	M30 x 1.5 x 30	M30 x 1.5 x 30	M30 x 1.5 x 50
	Operating frequency	1 kHz	1 kHz	1 kHz
	Sensing distance (Sn)	10 mm	10 mm	10 mm
References				
NPN-NO	ICB30S30F10NO	ICB30S30F10NOM1	ICB30L50F10NO	ICB30L50F10NOM1
PNP-NO	ICB30S30F10PO	ICB30S30F10POM1	ICB30L50F10PO	ICB30L50F10POM1
NPN-NC	ICB30S30F10NC	ICB30S30F10NCM1	ICB30L50F10NC	ICB30L50F10NCM1
PNP-NC	ICB30S30F10PC	ICB30S30F10PCM1	ICB30L50F10PC	ICB30L50F10PCM1
Non-flush mountable				
				
	Dimensions (mm)	M30 x 55.6	M30 x 67	M30 x 75.6
	Thread (mm)	M30 x 1.5 x 30	M30 x 1.5 x 30	M30 x 1.5 x 50
	Operating frequency	1 kHz	1 kHz	1 kHz
	Sensing distance (Sn)	15 mm	15 mm	15 mm
References				
NPN-NO	ICB30S30N15NO	ICB30S30N15NOM1	ICB30L50N15NO	ICB30L50N15NOM1
PNP-NO	ICB30S30N15PO	ICB30S30N15POM1	ICB30L50N15PO	ICB30L50N15POM1
NPN-NC	ICB30S30N15NC	ICB30S30N15NCM1	ICB30L50N15NC	ICB30L50N15NCM1
PNP-NC	ICB30S30N15PC	ICB30S30N15PCM1	ICB30L50N15PC	ICB30L50N15PCM1
Characteristics flush and non-flush mountable				
Rated operating voltage	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC
Voltage drop	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA
Degree of protection	IP 67	IP 67	IP 67	IP 67
Protection Short-circuit (S)	SPT	SPT	SPT	SPT
Reverse polarity (P)				
Transients (T)				
Output current	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C
Housing material	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass
Operating temperature	-25°C to +70°C	-40°C to +70°C	-25°C to +70°C	-40°C to +70°C
LED colour	Yellow	Yellow	Yellow	Yellow
Approvals/Marks	CE - UL - Cl. I Div. 2	CE - UL - Cl. I Div. 2	CE - UL - Cl. I Div. 2	CE - UL - Cl. I Div. 2

Inductive proximity sensors, 3-wire, DC, extended range

Types	M30 Extended - Short body		M30 Extended - Long body	
Connections	2 m cable	M12 connector	2 m cable	M12 connector
Flush mountable				
	Dimensions (mm)	M30 x 43.6	M30 x 55	M30 x 63.6
	Thread (mm)	M30 x 1.5 x 30	M30 x 1.5 x 30	M30 x 1.5 x 50
	Operating frequency	1 kHz	1 kHz	1 kHz
	Sensing distance (Sn)	15 mm	15 mm	15 mm
References				
NPN-NO	ICB30S30F15NO	ICB30S30F15NOM1	ICB30L50F15NO	ICB30L50F15NOM1
PNP-NO	ICB30S30F15PO	ICB30S30F15POM1	ICB30L50F15PO	ICB30L50F15POM1
NPN-NC	ICB30S30F15NC	ICB30S30F15NCM1	ICB30L50F15NC	ICB30L50F15NCM1
PNP-NC	ICB30S30F15PC	ICB30S30F15PCM1	ICB30L50F15PC	ICB30L50F15PCM1
Non-flush mountable				
	Dimensions (mm)	M30 x 55.6	M30 x 67	M30 x 75.6
	Thread (mm)	M30 x 1.5 x 30	M30 x 1.5 x 30	M30 x 1.5 x 50
	Operating frequency	1 kHz	1 kHz	1 kHz
	Sensing distance (Sn)	22 mm	22 mm	22 mm
References				
NPN-NO	ICB30S30N22NO	ICB30S30N22NOM1	ICB30L50N22NO	ICB30L50N22NOM1
PNP-NO	ICB30S30N22PO	ICB30S30N22POM1	ICB30L50N22PO	ICB30L50N22POM1
NPN-NC	ICB30S30N22NC	ICB30S30N22NCM1	ICB30L50N22NC	ICB30L50N22NCM1
PNP-NC	ICB30S30N22PC	ICB30S30N22PCM1	ICB30L50N22PC	ICB30L50N22PCM1
Characteristics flush and non-flush mountable				
Rated operating voltage	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC
Voltage drop	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA
Degree of protection	IP 67	IP 67	IP 67	IP 67
Protection Short-circuit (S)				
Reverse polarity (P)	SPT	SPT	SPT	SPT
Transients (T)				
Output current	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C
Housing material	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass
Operating temperature	-25°C to +70°C	-40°C to +70°C	-25°C to +70°C	-40°C to +70°C
LED colour	Yellow	Yellow	Yellow	Yellow
Approvals/Marks	CE - UL - Cl. I Div. 2	CE - UL - Cl. I Div. 2	CE - UL - Cl. I Div. 2	CE - UL - Cl. I Div. 2

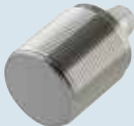
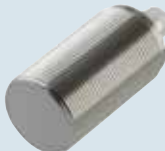
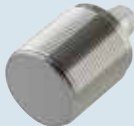
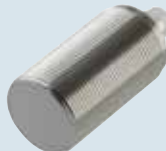
Inductive proximity sensors, 3-wire, DC, increased range

Types	M30 Increased - Short body		M30 Increased - Long body	
Connections	2 m cable	M12 connector	2 m cable	M12 connector
Quasi-flush mountable				
				
	Dimensions (mm)	M30 x 35	M30 x 60	M30 x 50
	Thread (mm)	M30 x 1.5 x 35	M30 x 1.5 x 35	M30 x 1.5 x 50
	Operating frequency	100 Hz	100 Hz	100 Hz
	Sensing distance (Sn)	22 mm	22 mm	22 mm
References				
NPN-NO	ICB30S35F22NO	ICB30S35F22NOM1	ICB30L50F22NO	ICB30L50F22NOM1
PNP-NO	ICB30S35F22PO	ICB30S35F22POM1	ICB30L50F22PO	ICB30L50F22POM1
NPN-NC	ICB30S35F22NC	ICB30S35F22NCM1	ICB30L50F22NC	ICB30L50F22NCM1
PNP-NC	ICB30S35F22PC	ICB30S35F22PCM1	ICB30L50F22PC	ICB30L50F22PCM1
Non-flush mountable				
				
	Dimensions (mm)	M30 x 47	M30 x 72	M30 x 62
	Thread (mm)	M30 x 1.5 x 35	M30 x 1.5 x 35	M30 x 1.5 x 50
	Operating frequency	100 Hz	100 Hz	100 Hz
	Sensing distance (Sn)	40 mm	40 mm	40 mm
References				
NPN-NO	ICB30S35N40NO	ICB30S35N40NOM1	ICB30L50N40NO	ICB30L50N40NOM1
PNP-NO	ICB30S35N40PO	ICB30S35N40POM1	ICB30L50N40PO	ICB30L50N40POM1
NPN-NC	ICB30S35N40NC	ICB30S35N40NCM1	ICB30L50N40NC	ICB30L50N40NCM1
PNP-NC	ICB30S35N40PC	ICB30S35N40PCM1	ICB30L50N40PC	ICB30L50N40PCM1
Characteristics quasi-flush and non-flush mountable				
Rated operating voltage	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC
Voltage drop	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA
Degree of protection	IP 67	IP 67	IP 67	IP 67
Protection Short-circuit (S)	SPT	SPT	SPT	SPT
Reverse polarity (P)				
Transients (T)				
Output current	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C
Housing material	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass
Operating temperature	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C
LED colour	Yellow	Yellow	Yellow	Yellow
Approvals/Marks	CE - UL - Cl. I Div. 2	CE - UL - Cl. I Div. 2	CE - UL - Cl. I Div. 2	CE - UL - Cl. I Div. 2

Inductive proximity sensors, 3-wire, DC, washdown IP69K

Types	M12 Standard - Long body	M12 Extended - Long body	M18 Standard - Long body	M18 Extended - Long body
Connections	M12 connector	M12 connector	M12 connector	M12 connector
Flush mountable				
	Dimensions (mm)	M12 x 64.8	M12 x 64.8	M18 x 63
	Thread (mm)	M12 x 1 x 38.7	M12 x 1 x 38.7	M12 x 1 x 35
	Operating frequency	2 kHz	2 kHz	1.5 kHz
	Sensing distance (Sn)	2 mm	4 mm	5 mm
References				
NPN-NO	ICS12LF02NOM1-FB	ICS12LF04NOM1-FB	ICS18LF05NOM1-FB	ICS18LF08NOM1-FB
PNP-NO	ICS12LF02POM1-FB	ICS12LF04POM1-FB	ICS18LF05POM1-FB	ICS18LF08POM1-FB
NPN-NC	ICS12LF02NCM1-FB	ICS12LF04NCM1-FB	ICS18LF05NCM1-FB	ICS18LF08NCM1-FB
PNP-NC	ICS12LF02PCM1-FB	ICS12LF04PCM1-FB	ICS18LF05PCM1-FB	ICS18LF08PCM1-FB
Non-flush mountable				
	Dimensions (mm)	M12 x 64.8	M12 x 64.8	M18 x 63
	Thread (mm)	M12 x 1 x 32.5	M12 x 1 x 32.5	M12 x 1 x 27
	Operating frequency	2 kHz	2 kHz	1.5 kHz
	Sensing distance (Sn)	4 mm	8 mm	12 mm
References				
NPN-NO	ICS12LN04NOM1-FB	ICS12LN08NOM1-FB	ICS18LN08NOM1-FB	ICS18LN12NOM1-FB
PNP-NO	ICS12LN04POM1-FB	ICS12LN08POM1-FB	ICS18LN08POM1-FB	ICS18LN12POM1-FB
NPN-NC	ICS12LN04NCM1-FB	ICS12LN08NCM1-FB	ICS18LN08NCM1-FB	ICS18LN12NCM1-FB
PNP-NC	ICS12LN04PCM1-FB	ICS12LN08PCM1-FB	ICS18LN08PCM1-FB	ICS18LN12PCM1-FB
Characteristics flush and non-flush mountable				
Rated operating voltage	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC
Voltage drop	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA
Degree of protection	IP 67, IP68, IP69K	IP 67, IP68, IP69K	IP 67, IP68, IP69K	IP 67, IP68, IP69K
Protection Short-circuit (S)	SPT	SPT	SPT	SPT
Reverse polarity (P)				
Transients (T)				
Output current	≤ 200 mA @ 50°C ≤ 150 mA @ 50-80°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-80°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-80°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-80°C
Housing material	Stainless steel (AISI 316L)	Stainless steel (AISI 316L)	Stainless steel (AISI 316L)	Stainless steel (AISI 316L)
Front cap material	PPS grey - FDA certified	PPS grey - FDA certified	PPS grey - FDA certified	PPS grey - FDA certified
Operating temperature	-40°C to +80°C	-40°C to +80°C	-40°C to +80°C	-40°C to +80°C
LED colour	Yellow	Yellow	Yellow	Yellow
Approvals/Marks	CE - UL - ECOLAB - Cl. I Div. 2	CE - UL - ECOLAB - Cl. I Div. 2	CE - UL - ECOLAB - Cl. I Div. 2	CE - UL - ECOLAB - Cl. I Div. 2

Inductive proximity sensors, 3-wire, DC, washdown IP69K

Types	M30 Standard		M30 Extended		
	Short body	Long body	Short body	Long body	
Connections	M12 connector	M12 connector	M12 connector	M12 connector	
Flush mountable					
	Dimensions (mm)	M30 x 47	M30 x 67.5	M30 x 47	M30 x 67.5
	Thread (mm)	M30 x 1.5 x 30	M30 x 1.5 x 50	M30 x 1.5 x 30	M30 x 1.5 x 50
	Operating frequency	1 kHz	1 kHz	1 kHz	1 kHz
	Sensing distance (Sn)	10 mm	10 mm	15 mm	15 mm
References					
NPN-NO	ICS30SF10NOM1-FB	ICS30LF10NOM1-FB	ICS30SF15NOM1-FB	ICS30LF15NOM1-FB	
PNP-NO	ICS30SF10POM1-FB	ICS30LF10POM1-FB	ICS30SF15POM1-FB	ICS30LF15POM1-FB	
NPN-NC	ICS30SF10NCM1-FB	ICS30LF10NCM1-FB	ICS30SF15NCM1-FB	ICS30LF15NCM1-FB	
PNP-NC	ICS30SF10PCM1-FB	ICS30LF10PCM1-FB	ICS30SF15PCM1-FB	ICS30LF15PCM1-FB	
Non-flush mountable					
	Dimensions (mm)	M30 x 59.5	M30 x 79.5	M30 x 59.5	M30 x 79.5
	Thread (mm)	M30 x 1.5 x 30	M30 x 1.5 x 50	M30 x 1.5 x 30	M30 x 1.5 x 50
	Operating frequency	1 kHz	1 kHz	1 kHz	1 kHz
	Sensing distance (Sn)	15 mm	15 mm	22 mm	22 mm
References					
NPN-NO	ICS30SN15NOM1-FB	ICS30LN15NOM1-FB	ICS30SN22NOM1-FB	ICS30LN22NOM1-FB	
PNP-NO	ICS30SN15POM1-FB	ICS30LN15POM1-FB	ICS30SN22POM1-FB	ICS30LN22POM1-FB	
NPN-NC	ICS30SN15NCM1-FB	ICS30LN15NCM1-FB	ICS30SN22NCM1-FB	ICS30LN22NCM1-FB	
PNP-NC	ICS30SN15PCM1-FB	ICS30LN15PCM1-FB	ICS30SN22PCM1-FB	ICS30LN22PCM1-FB	
Characteristics flush and non-flush mountable					
Rated operating voltage	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC	
Voltage drop	≤ 2 VDC @ 200 mA	≤ 2 VDC @ 200 mA	≤ 2 VDC @ 200 mA	≤ 2 VDC @ 200 mA	
Degree of protection	IP67, IP68, IP69K	IP67, IP68, IP69K	IP67, IP68, IP69K	IP67, IP68, IP69K	
Protection Short-circuit (S)	SPT	SPT	SPT	SPT	
Reverse polarity (P)	SPT	SPT	SPT	SPT	
Transients (T)	SPT	SPT	SPT	SPT	
Output current	≤ 200 mA @ 50°C ≤ 150 mA @ 50-80°C ≤ 100 mA @ 80-85°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-80°C ≤ 100 mA @ 80-85°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-80°C ≤ 100 mA @ 80-85°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-80°C ≤ 100 mA @ 80-85°C	
Housing material	Stainless steel (AISI 316L)	Stainless steel (AISI 316L)	Stainless steel (AISI 316L)	Stainless steel (AISI 316L)	
Front cap material	PPS grey - FDA certified	PPS grey - FDA certified	PPS grey - FDA certified	PPS grey - FDA certified	
Operating temperature	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C	
LED colour	Yellow	Yellow	Yellow	Yellow	
Approvals/Marks	CE - UL - ECOLAB - Cl. I Div. 2	CE - UL - ECOLAB - Cl. I Div. 2	CE - UL - ECOLAB - Cl. I Div. 2	CE - UL - ECOLAB - Cl. I Div. 2	

Inductive proximity sensors, 3-wire, DC

Types	M5 Standard - Short body		M8 Standard - Short body	
Connections	2 m cable	M8 connector	2 m cable	M8 connector
Flush mountable				
				
	Dimensions (mm)		M8 x 30	
	Thread (mm)		M8 x 1 x 30	
	Operating frequency		2 kHz	
Sensing distance (Sn)		1.5 mm		
References				
NPN-NO	IA05BSF10NOP	IA05BSF10NOM5P	IA08BSF15NO	IA08BSF15NOM5
PNP-NO	IA05BSF10POP	IA05BSF10POM5P	IA08BSF15PO	IA08BSF15POM5
NPN-NC	IA05BSF10NCP	IA05BSF10NCM5P	IA08BSF15NC	IA08BSF15NCM5
PNP-NC	IA05BSF10PCP	IA05BSF10PCM5P	IA08BSF15PC	IA08BSF15PCM5
Non-flush mountable				
				
	Dimensions (mm)		M8 x 30	
	Thread (mm)		M8 x 1 x 27	
	Operating frequency		2 kHz	
Sensing distance (Sn)		2.5 mm		
References				
NPN-NO			IA08BSN25NO	IA08BSN25NOM5
PNP-NO			IA08BSN25PO	IA08BSN25POM5
NPN-NC			IA08BSN25NC	IA08BSN25NCM5
PNP-NC			IA08BSN25PC	IA08BSN25PCM5
Characteristics flush and non-flush mountable				
Rated operating voltage	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC
Voltage drop	< 1.0 VDC (@ I _{max})	< 1.0 VDC (@ I _{max})	≤ 2.5 VDC (@ I _{max})	≤ 2.5 VDC (@ I _{max})
Degree of protection	IP 67	IP 67	IP 67	IP 67
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	SP	SP	SP	SP
Output current	≤ 200 mA	≤ 200 mA	≤ 200 mA @ 25°C	≤ 200 mA @ 25°C
Housing material	Stainless steel	Stainless steel	Stainless steel	Stainless steel
Operating temperature	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C
LED colour	Yellow	Yellow	Yellow	Yellow
Approvals/Marks	CE	CE	CE - UL - CSA	CE - UL - CSA

Inductive proximity sensors, 3-wire, DC

Types

M8 Standard - Long body

Connections

2 m cable

M8 connector

M12 connector

Flush mountable



Dimensions (mm)

M8 x 45

M8 x 60

M12 x 70

Thread (mm)

M8 x 1 x 45

M8 x 1 x 40

M8 x 1 x 43

Operating frequency

2 kHz

2 kHz

2 kHz

Sensing distance (Sn)

1.5 mm

1.5 mm

1.5 mm

References

NPN-NO

IA08BLF15NO

IA08BLF15NOM5

IA08BLF15NOM1

PNP-NO

IA08BLF15PO

IA08BLF15POM5

IA08BLF15POM1

NPN-NC

IA08BLF15NC

IA08BLF15NCM5

IA08BLF15NCM1

PNP-NC

IA08BLF15PC

IA08BLF15PCM5

IA08BLF15PCM1

Non-flush mountable



Dimensions (mm)

M8 x 45

M8 x 60

M12 x 70

Thread (mm)

M8 x 1 x 42

M8 x 1 x 37

M8 x 1 x 40

Operating frequency

2 kHz

2 kHz

2 kHz

Sensing distance (Sn)

2.5 mm

2.5 mm

2.5 mm

References

NPN-NO

IA08BLN25NO

IA08BLN25NOM5

IA08BLN25NOM1

PNP-NO

IA08BLN25PO

IA08BLN25POM5

IA08BLN25POM1

NPN-NC

IA08BLN25NC

IA08BLN25NCM5

IA08BLN25NCM1

PNP-NC

IA08BLN25PC

IA08BLN25PCM5

IA08BLN25PCM1

Characteristics flush and non-flush mountable

Rated operating voltage

10 - 30 VDC

10 - 30 VDC

10 - 30 VDC

Voltage drop

≤ 2.5 VDC (@ I_{max})

≤ 2.5 VDC (@ I_{max})

≤ 2.5 VDC (@ I_{max})

Degree of protection

IP 67

IP 67

IP 67

Protection Short-circuit (S)

S

S

S

Reverse polarity (P)

Transients (T)

Output current

< 200 mA @ 25°C

< 200 mA @ 25°C

< 200 mA @ 25°C

Housing material

Stainless steel

Stainless steel

Stainless steel

Operating temperature

-25°C to +70°C

-25°C to +70°C

-25°C to +70°C

LED colour

Yellow

Yellow

Yellow

Approvals/Marks

CE - UL - CSA

CE - UL - CSA

CE - UL - CSA

Inductive proximity sensors, 3-wire, DC, extended range

Types M8 Extended - Short body

Connections 2 m cable M8 connector

Flush mountable



Dimensions (mm)	M8 x 35	M8 x 50
Thread (mm)	M8 x 1 x 35	M8 x 1 x 30
Operating frequency	2 kHz	2 kHz
Sensing distance (Sn)	2 mm	2 mm

References

NPN-NO	IA08BSF20NO	IA08BSF20NOM5
PNP-NO	IA08BSF20PO	IA08BSF20POM5
NPN-NC	IA08BSF20NC	IA08BSF20NCM5
PNP-NC	IA08BSF20PC	IA08BSF20PCM5

Non-flush mountable



Dimensions (mm)	M8 x 35	M8 x 50
Thread (mm)	M8 x 1 x 32	M8 x 1 x 27
Operating frequency	1 kHz	1 kHz
Sensing distance (Sn)	4 mm	4 mm

References

NPN-NO	IA08BSN40NO	IA08BSN40NOM5
PNP-NO	IA08BSN40PO	IA08BSN40POM5
NPN-NC	IA08BSN40NC	IA08BSN40NCM5
PNP-NC	IA08BSN40PC	IA08BSN40PCM5

Characteristics flush and non-flush mountable

Rated operating voltage	10 - 30 VDC	10 - 30 VDC
Voltage drop	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA
Degree of protection	IP 67	IP 67
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT
Output current	< 200 mA @ 25°C	< 200 mA @ 25°C
Housing material	Stainless steel	Stainless steel
Operating temperature	-25°C to +70°C	-25°C to +70°C
LED colour	Yellow	Yellow
Approvals/Marks	CE - UL - CSA	CE - UL - CSA

Inductive proximity sensors, 4-wire, DC

Types	M12 Standard - Short body		M12 Standard - Long body	
Connections	2 m cable	M12 connector	2 m cable	M12 connector
Flush mountable				
	Dimensions (mm)	M12 x 47	M12 x 50	M12 x 67
	Thread (mm)	M12 x 1 x 30	M12 x 1 x 30	M12 x 1 x 50
	Operating frequency	2 kHz	2 kHz	2 kHz
	Sensing distance (Sn)	2 mm	2 mm	2 mm
References				
NPN-NO+NC	ICB12S30F02NA	ICB12S30F02NAM1	ICB12L50F02NA	ICB12L50F02NAM1
PNP-NO+NC	ICB12S30F02PA	ICB12S30F02PAM1	ICB12L50F02PA	ICB12L50F02PAM1
Non-flush mountable				
	Dimensions (mm)	M12 x 51	M12 x 54	M12 x 71
	Thread (mm)	M12 x 1 x 30	M12 x 1 x 30	M12 x 1 x 50
	Operating frequency	2 kHz	2 kHz	2 kHz
	Sensing distance (Sn)	4 mm	4 mm	4 mm
References				
NPN-NO+NC	ICB12S30N04NA	ICB12S30N04NAM1	ICB12L50N04NA	ICB12L50N04NAM1
PNP-NO+NC	ICB12S30N04PA	ICB12S30N04PAM1	ICB12L50N04PA	ICB12L50N04PAM1
Characteristics flush and non-flush mountable				
Rated operating voltage	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC
Voltage drop	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA
Degree of protection	IP 67	IP 67	IP 67	IP 67
Protection Short-circuit (S)				
Reverse polarity (P)	SPT	SPT	SPT	SPT
Transients (T)				
Output current	< 200 mA @ 50°C ≤ 150 mA @ 50-70°C	< 200 mA @ 50°C ≤ 150 mA @ 50-70°C	< 200 mA @ 50°C ≤ 150 mA @ 50-70°C	< 200 mA @ 50°C ≤ 150 mA @ 50-70°C
Housing material	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass
Operating temperature	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C
LED colour	Yellow	Yellow	Yellow	Yellow
Approvals/Marks	CE - UL	CE - UL	CE - UL	CE - UL

Inductive proximity sensors, 4-wire, DC, extended range

Types	M12 Extended - Short body		M12 Extended - Long body	
Connections	2 m cable	M12 connector	2 m cable	M12 connector
Flush mountable				
				
	Dimensions (mm)	M12 x 47	M12 x 50	M12 x 67
	Thread (mm)	M12 x 1 x 30	M12 x 1 x 30	M12 x 1 x 50
	Operating frequency	2 kHz	2 kHz	2 kHz
	Sensing distance (Sn)	4 mm	4 mm	4 mm
References				
NPN-NO+NC	ICB12S30F04NA	ICB12S30F04NAM1	ICB12L50F04NA	ICB12L50F04NAM1
PNP-NO+NC	ICB12S30F04PA	ICB12S30F04PAM1	ICB12L50F04PA	ICB12L50F04PAM1

Non-flush mountable				
				
	Dimensions (mm)	M12 x 51	M12 x 54	M12 x 71
	Thread (mm)	M12 x 1 x 30	M12 x 1 x 30	M12 x 1 x 50
	Operating frequency	2 kHz	2 kHz	2 kHz
	Sensing distance (Sn)	8 mm	8 mm	8 mm
References				
NPN-NO+NC	ICB12S30N08NA	ICB12S30N08NAM1	ICB12L50N08NA	ICB12L50N08NAM1
PNP-NO+NC	ICB12S30N08PA	ICB12S30N08PAM1	ICB12L50N08PA	ICB12L50N08PAM1

Characteristics flush and non-flush mountable

Rated operating voltage	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC
Voltage drop	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA
Degree of protection	IP 67	IP 67	IP 67	IP 67
Protection Short-circuit (S)	SPT	SPT	SPT	SPT
Reverse polarity (P)				
Transients (T)				
Output current	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C
Housing material	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass
Operating temperature	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C
LED colour	Yellow	Yellow	Yellow	Yellow
Approvals/Marks	CE - UL	CE - UL	CE - UL	CE - UL

Inductive proximity sensors, 4-wire, DC

Types	M18 Standard - Short body		M18 Standard - Long body	
Connections	2 m cable	M12 connector	2 m cable	M12 connector
Flush mountable				
	Dimensions (mm)	M18 x 53	M18 x 54	M18 x 73
	Thread (mm)	M18 x 1 x 30	M18 x 1 x 30	M18 x 1 x 50
	Operating frequency	1.5 kHz	1.5 kHz	1.5 kHz
	Sensing distance (Sn)	5 mm	5 mm	5 mm
References				
NPN-NO+NC	ICB18S30F05NA	ICB18S30F05NAM1	ICB18L50F05NA	ICB18L50F05NAM1
PNP-NO+NC	ICB18S30F05PA	ICB18S30F05PAM1	ICB18L50F05PA	ICB18L50F05PAM1
Non-flush mountable				
	Dimensions (mm)	M18 x 63	M18 x 64	M18 x 83
	Thread (mm)	M18 x 1 x 30	M18 x 1 x 30	M18 x 1 x 50
	Operating frequency	1.5 kHz	1.5 kHz	1.5 kHz
	Sensing distance (Sn)	8 mm	8 mm	8 mm
References				
NPN-NO+NC	ICB18S30N08NA	ICB18S30N08NAM1	ICB18L50N08NA	ICB18L50N08NAM1
PNP-NO+NC	ICB18S30N08PA	ICB18S30N08PAM1	ICB18L50N08PA	ICB18L50N08PAM1
Characteristics flush and non-flush mountable				
Rated operating voltage	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC
Voltage drop	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA
Degree of protection	IP 67	IP 67	IP 67	IP 67
Protection Short-circuit (S)				
Reverse polarity (P)	SPT	SPT	SPT	SPT
Transients (T)				
Output current	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C
Housing material	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass
Operating temperature	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C
LED colour	Yellow	Yellow	Yellow	Yellow
Approvals/Marks	CE - UL	CE - UL	CE - UL	CE - UL

Inductive proximity sensors, 4-wire, DC, extended range

Types	M18 Extended - Short body		M18 Extended - Long body	
Connections	2 m cable	M12 connector	2 m cable	M12 connector
Quasi-flush mountable				
	Dimensions (mm)	M18 x 53	M18 x 54	M18 x 73
	Thread (mm)	M18 x 1 x 30	M18 x 1 x 30	M18 x 1 x 50
	Operating frequency	1.5 kHz	1.5 kHz	1.5 kHz
	Sensing distance (Sn)	8 mm	8 mm	8 mm
References				
NPN-NO+NC	ICB18S30F08NA	ICB18S30F08NAM1	ICB18L50F08NA	ICB18L50F08NAM1
PNP-NO+NC	ICB18S30F08PA	ICB18S30F08PAM1	ICB18L50F08PA	ICB18L50F08PAM1
Non-flush mountable				
	Dimensions (mm)	M18 x 63	M18 x 64	M18 x 83
	Thread (mm)	M18 x 1 x 30	M18 x 1 x 30	M18 x 1 x 50
	Operating frequency	1.5 kHz	1.5 kHz	1.5 kHz
	Sensing distance (Sn)	14 mm	14 mm	14 mm
References				
NPN-NO+NC	ICB18S30N14NA	ICB18S30N14NAM1	ICB18L50N14NA	ICB18L50N14NAM1
PNP-NO+NC	ICB18S30N14PA	ICB18S30N14PAM1	ICB18L50N14PA	ICB18L50N14PAM1
Characteristics quasi-flush and non-flush mountable				
Rated operating voltage	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC
Voltage drop	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA
Degree of protection	IP 67	IP 67	IP 67	IP 67
Protection Short-circuit (S)				
Reverse polarity (P)	SPT	SPT	SPT	SPT
Transients (T)				
Output current	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C
Housing material	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass
Operating temperature	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C
LED colour	Yellow	Yellow	Yellow	Yellow
Approvals/Marks	CE - UL	CE - UL	CE - UL	CE - UL

Inductive proximity sensors, 4-wire, DC

Types	M30 Standard - Short body		M30 Standard - Long body	
Connections	2 m cable	M12 connector	2 m cable	M12 connector
Flush mountable				
	Dimensions (mm)	M30 x 43.6	M30 x 55	M30 x 63.6
	Thread (mm)	M30 x 1.5 x 30	M30 x 1.5 x 30	M30 x 1.5 x 50
	Operating frequency	1 kHz	1 kHz	1 kHz
	Sensing distance (Sn)	10 mm	10 mm	10 mm
References				
NPN-NO+NC	ICB30S30F10NA	ICB30S30F10NAM1	ICB30L50F10NA	ICB30L50F10NAM1
PNP-NO+NC	ICB30S30F10PA	ICB30S30F10PAM1	ICB30L50F10PA	ICB30L50F10PAM1
Non-flush mountable				
	Dimensions (mm)	M30 x 55.6	M30 x 67	M30 x 75.6
	Thread (mm)	M30 x 1.5 x 30	M30 x 1.5 x 30	M30 x 1.5 x 50
	Operating frequency	1 kHz	1 kHz	1 kHz
	Sensing distance (Sn)	15 mm	15 mm	15 mm
References				
NPN-NO+NC	ICB30S30N15NA	ICB30S30N15NAM1	ICB30L50N15NA	ICB30L50N15NAM1
PNP-NO+NC	ICB30S30N15PA	ICB30S30N15PAM1	ICB30L50N15PA	ICB30L50N15PAM1
Characteristics flush and non-flush mountable				
Rated operating voltage	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC
Voltage drop	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA
Degree of protection	IP 67	IP 67	IP 67	IP 67
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT
Output current	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C
Housing material	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass
Operating temperature	-25°C to +70°C	-40°C to +70°C	-25°C to +70°C	-40°C to +70°C
LED colour	Yellow	Yellow	Yellow	Yellow
Approvals/Marks	CE - UL	CE - UL	CE - UL	CE - UL

Inductive proximity sensors, 4-wire, DC, extended range

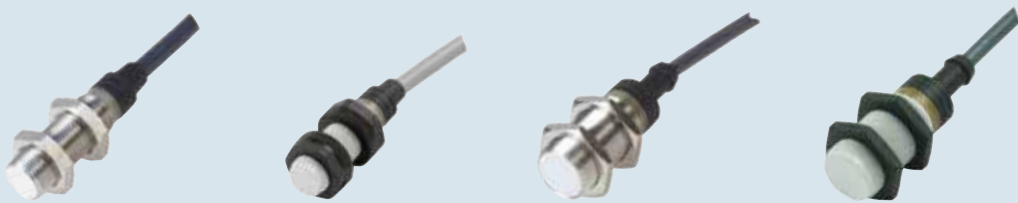
Types	M30 Extended - Short body		M30 Extended - Long body	
Connections	2 m cable	M12 connector	2 m cable	M12 connector
Flush mountable				
	Dimensions (mm)	M30 x 43.6	M30 x 55	M30 x 63.6
	Thread (mm)	M30 x 1.5 x 30	M30 x 1.5 x 30	M30 x 1.5 x 50
	Operating frequency	1 kHz	1 kHz	1 kHz
	Sensing distance (Sn)	15 mm	15 mm	15 mm
References				
NPN-NO+NC	ICB30S30F15NA	ICB30S30F15NAM1	ICB30L50F15NA	ICB30L50F15NAM1
PNP-NO+NC	ICB30S30F15PA	ICB30S30F15PAM1	ICB30L50F15PA	ICB30L50F15PAM1
Non-flush mountable				
	Dimensions (mm)	M30 x 55.6	M30 x 67	M30 x 75.6
	Thread (mm)	M30 x 1.5 x 30	M30 x 1.5 x 30	M30 x 1.5 x 50
	Operating frequency	1 kHz	1 kHz	1 kHz
	Sensing distance (Sn)	22 mm	22 mm	22 mm
References				
NPN-NO+NC	ICB30S30N22NA	ICB30S30N22NAM1	ICB30L50N22NA	ICB30L50N22NAM1
PNP-NO+NC	ICB30S30N22PA	ICB30S30N22PAM1	ICB30L50N22PA	ICB30L50N22PAM1
Characteristics flush and non-flush mountable				
Rated operating voltage	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC	10 - 36 VDC
Voltage drop	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA	≤ 2.5 VDC @ 200 mA
Degree of protection	IP 67	IP 67	IP 67	IP 67
Protection Short-circuit (S)	SPT	SPT	SPT	SPT
Reverse polarity (P)				
Transients (T)				
Output current	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C	≤ 200 mA @ 50°C ≤ 150 mA @ 50-70°C
Housing material	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass
Operating temperature	-25°C to +70°C	-40°C to +70°C	-25°C to +70°C	-40°C to +70°C
LED colour	Yellow	Yellow	Yellow	Yellow
Approvals/Marks	CE - UL	CE - UL	CE - UL	CE - UL

Inductive proximity sensors, high temperature

Types	M5	M8	M12	
Connections	2 m cable	2 m cable	2 m cable or M12 connector	
Flush or non-flush mountable				
Dimensions (mm)	M5 x 30	M8 x 45	M12 x 40	M12 x 40
Thread (mm)	M5 x 0.5 x 25	M8 x 1 x 40	M12 x 1 x 40	M12 x 1 x 34
Sensing distance (Sn)	0.8 mm	1 mm	2 mm	4 mm
Output	≤ 5 mA	≤ 5 mA	≤ 20 mA	≤ 20 mA
References				
NPN-NO Cable	IA05BSF08NOHT-K	IA08BSF10NOHT-K		
PNP-NO Cable	IA05BSF08POHT-K	IA08BSF10POHT-K	IA12ASF02POHT-K	IA12ASN04POHT-K
PNP-NO Plug			IA12ASF02POM1HT-K	IA12ASN04POM1HT-K
Specifications				
Rated operating voltage	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC
Degree of protection	IP 67	IP 67	IP 67	IP 67
Protection Short-circuit (S)				
Reverse polarity (P)	SP	SP	S	S
Transients (T)				
Housing material	Stainless steel	Stainless steel	Nickel-plated brass	Nickel-plated brass
Operating temperature	-25°C to +120°C	-25°C to +120°C	-40°C to +100°C	-40°C to +100°C
Approvals/Marks	CE	CE	CE	CE

Types	M18		M30	
Connections	2 m cable or M12 connector		2 m cable or M12 connector	
Flush or non-flush mountable				
Dimensions (mm)	M18 x 40	M18 x 40	M30 x 40	M30 x 40
Thread (mm)	M18 x 1 x 40	M18 x 1 x 32	M30 x 1.5 x 40	M30 x 1.5 x 28
Sensing distance (Sn)	5 mm	8 mm	10 mm	15 mm
Output	≤ 25 mA	≤ 25 mA	≤ 25 mA	≤ 25 mA
References				
PNP-NO Cable	IA18ASF05POHT-K	IA18ASN08POHT-K	IA30ASF10POHT-K	IA30ASN15POHT-K
PNP-NO Plug	IA18ASF05POM1HT-K	IA18ASN08POM1HT-K	IA30ASF10POM1HT-K	IA30ASN15POM1HT-K
Characteristics flush and non-flush mountable				
Rated operating voltage	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC
Degree of protection	IP 67	IP 67	IP 67	IP 67
Protection Short-circuit (S)				
Reverse polarity (P)	S	S	S	S
Transients (T)				
Housing material	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass
Operating temperature	-40°C to +100°C	-40°C to +100°C	-40°C to +100°C	-40°C to +100°C
Approvals/Marks	CE	CE	CE	CE

Inductive proximity sensors, NAMUR, DC

Types	M12		M18	
Housing	Steel	Plastic	Steel	Plastic
Flush mountable				
	Dimensions short body (mm)	Cable: M12 x 41 Plug (M12): M12 x 54.5	Cable: M12 x 41 Plug (M12): M12 x 54.5	Cable: M18 x 41.6 Plug (M12): M18 x 55
	Dimensions long body (mm)	Cable: M12 x 61 Plug (M12): M12 x 74.5	Cable: M12 x 61 Plug (M12): M12 x 74.5	Cable: M18 x 61.6 Plug (M12): M18 x 75
	Thread (mm)	Short: M12 x 1 x 30 Long: M12 x 1 x 50	Short: M12 x 1 x 30 Long: M12 x 1 x 50	Short: M18 x 1 x 30 Long: M18 x 1 x 50
	Operating frequency	1.4 kHz	1.4 kHz	500 Hz
	Sensing distance (Sn)	2 mm	2 mm	5 mm
References				
Short body cable	IA12ESF02UC	IA12CSF02UC	IA18ESF05UC	IA18CSF05UC
Long body cable	IA12ELF02UC	IA12CLF02UC	IA18ELF05UC	IA18CLF05UC
Short body plug	IA12ESF02UCM1	IA12CSF02UCM1	IA18ESF05UCM1	IA18CSF05UCM1
Long body plug	IA12ELF02UCM1	IA12CLF02UCM1	IA18ELF05UCM1	IA18CLF05UCM1
Non-flush mountable				
	Dimensions short body (mm)	Cable: M12 x 45 Plug (M12): M12 x 58.5	Cable: M12 x 45 Plug (M12): M12 x 58.5	Cable: M18 x 49.6 Plug (M12): M18 x 63
	Dimensions long body (mm)	Cable: M12 x 65 Plug (M12): M12 x 78.5	Cable: M12 x 65 Plug (M12): M12 x 78.5	Cable: M18 x 69.6 Plug (M12): M18 x 83
	Thread (mm)	Short: M12 x 1 x 30 Long: M12 x 1 x 50	Short: M12 x 1 x 30 Long: M12 x 1 x 50	Short: M18 x 1 x 30 Long: M18 x 1 x 50
	Operating frequency	1.2 kHz	1.2 kHz	200 Hz
	Sensing distance (Sn)	4 mm	4 mm	8 mm
References				
Short body cable	IA12ESN04UC	IA12CSN04UC	IA18ESN08UC	IA18CSN08UC
Long body cable	IA12ELN04UC	IA12CLN04UC	IA18ELN08UC	IA18CLN08UC
Short body plug	IA12ESN04UCM1	IA12CSN04UCM1	IA18ESN08UCM1	IA18CSN08UCM1
Long body plug	IA12ELN04UCM1	IA12CLN04UCM1	IA18ELN08UCM1	IA18CLN08UCM1
Characteristics flush and non-flush mountable				
Rated operating voltage	7 - 9 VDC	7 - 9 VDC	7 - 9 VDC	7 - 9 VDC
Degree of protection	IP 67	IP 67	IP 67	IP 67
Housing material	Stainless steel	Thermoplastic polyester	Stainless steel	Thermoplastic polyester
Operating temperature	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C
LED colour	Yellow	Yellow	Yellow	Yellow
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA

Inductive proximity sensors, NAMUR, DC

Types

M30

Housing

Steel

Plastic

Flush mountable



Dimensions short body (mm)	Cable: M30 x 43.6 Plug (M12): M30 x 55.5	Cable: M30 x 43.6 Plug (M12): M30 x 55.5
Dimensions long body (mm)	Cable: M30 x 63.6 Plug (M12): M30 x 75.5	Cable: M30 x 63.6 Plug (M12): M30 x 75.5
Thread (mm)	Short: M30 x 1.5 x 30 Long: M30 x 1.5 x 50	Short: M30 x 1.5 x 30 Long: M30 x 1.5 x 50
Operating frequency	300 Hz	300 Hz
Sensing distance (Sn)	10 mm	10 mm

References

Short body cable	IA30ESF10UC	IA30CSF10UC
Long body cable	IA30ELF10UC	IA30CLF10UC
Short body plug	IA30ESF10UCM1	IA30CSF10UCM1
Long body plug	IA30ELF10UCM1	IA30CLF10UCM1

Non-flush mountable



Dimensions short body (mm)	Cable: M30 x 55.6 Plug (M12): M30 x 67.5	Cable: M30 x 55.6 Plug (M12): M30 x 67.5
Dimensions long body (mm)	Cable: M30 x 75.6 Plug (M12): M30 x 87.5	Cable: M30 x 75.6 Plug (M12): M30 x 87.5
Thread (mm)	Short: M30 x 1.5 x 30 Long: M30 x 1.5 x 50	Short: M30 x 1.5 x 30 Long: M30 x 1.5 x 50
Operating frequency	100 Hz	100 Hz
Sensing distance (Sn)	15 mm	15 mm

References

Short body cable	IA30ESN15UC	IA30CSN15UC
Long body cable	IA30ELN15UC	IA30CLN15UC
Short body plug	IA30ESN15UCM1	IA30CSN15UCM1
Long body plug	IA30ELN15UCM1	IA30CLN15UCM1

Characteristics flush and non-flush mountable

Rated operating voltage	7 - 9 VDC	7 - 9 VDC
Degree of protection	IP 67	IP 67
Housing material	Stainless steel	Thermoplastic polyester
Operating temperature	-25°C to +70°C	-25°C to +70°C
LED colour	Yellow	Yellow
Approvals/Marks	CE - UL - CSA	CE - UL - CSA

Inductive proximity sensors, 2-wire, DC, extended range

Types	M8 Extended Short body	M12 Extended - Short body		
Connections	2 m cable	2 m cable	M12 connector	
Flush mountable				
	Dimensions (mm)	M8 x 30	M12 x 49	M12 x 63
	Thread (mm)	M8 x 1 x 30	M12 x 1 x 38	M12 x 1 x 38
	Operating frequency	2 kHz	1 kHz	1 kHz
	Sensing distance (Sn)	2 mm	4 mm	4 mm
References				
NO	IA08BSF02DO	IA12DSF04DO	IA12ASF04DOM1	
NC	IA08BSF02DC	IA12DSF04DC	IA12ASF04DCM1	
Non-flush mountable				
	Dimensions (mm)	M8 x 30	M12 x 53	M12 x 67
	Thread (mm)	M8 x 1 x 26	M12 x 1 x 38	M12 x 1 x 38
	Operating frequency	2 kHz	800 Hz	800 Hz
	Sensing distance (Sn)	4 mm	8 mm	8 mm
References				
NO	IA08BSN04DO	IA12DSN08DO	IA12ASN08DOM1	
NC	IA08BSN04DC	IA12DSN08DC	IA12ASN08DCM1	
Characteristics flush and non-flush mountable				
Rated operating voltage	10 - 30 VDC	10 - 40 VDC	10 - 40 VDC	
Voltage drop	≤ 8 VDC @ max. load	≤ 3 VDC @ max. load	≤ 3 VDC @ max. load	
Degree of protection	IP 67	IP 67	IP 67	
Protection Short-circuit (S)				
Reverse polarity (P)	SPT	SPT	SPT	
Transients (T)				
Output current	3 - 100 mA	5 - 100 mA	5 - 100 mA	
Housing material	Stainless steel	Nickel-plated brass	Nickel-plated brass	
Operating temperature	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C	
LED colour	Yellow	Yellow	Yellow	
Approvals/Marks	CE - CSA	CE - UL - CSA	CE - UL - CSA	

Inductive proximity sensors, 2-wire, DC, extended range

Types	M18 Extended - Short body		M30 Extended - Short body		
Connections	2 m cable	M12 connector	2 m cable	M12 connector	
Flush mountable					
	Dimensions (mm)	M18 x 42	M18 x 55	M30 x 44	M30 x 55
	Thread (mm)	M18 x 1 x 30	M18 x 1 x 30	M30 x 1.5 x 30	M30 x 1.5 x 30
	Operating frequency	500 Hz	500 Hz	400 Hz	400 Hz
	Sensing distance (Sn)	8 mm	8 mm	15 mm	15 mm
References					
NO	IA18DSF08DO	IA18ASF08DOM1	IA30DSF15DO	IA30ASF15DOM1	
NC	IA18DSF08DC	IA18ASF08DCM1	IA30DSF15DC	IA30ASF15DCM1	
Non-flush mountable					
	Dimensions (mm)	M18 x 50	M18 x 63	M30 x 56	M30 x 67
	Thread (mm)	M18 x 1 x 30	M18 x 1 x 30	M30 x 1.5 x 30	M30 x 1.5 x 30
	Operating frequency	400 Hz	400 Hz	200 Hz	200 Hz
	Sensing distance (Sn)	14 mm	14 mm	22 mm	22 mm
References					
NO	IA18DSN14DO	IA18ASN14DOM1	IA30DSN22DO	IA30ASN22DOM1	
NC	IA18DSN14DC	IA18ASN14DCM1	IA30DSN22DC	IA30ASN22DCM1	
Characteristics flush and non-flush mountable					
Rated operating voltage	10 - 40 VDC	10 - 40 VDC	10 - 40 VDC	10 - 40 VDC	
Voltage drop	≤ 3 VDC @ max. load	≤ 3 VDC @ max. load	≤ 3 VDC @ max. load	≤ 3 VDC @ max. load	
Degree of protection	IP 67	IP 67	IP 67	IP 67	
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT	
Output current	5 - 100 mA	5 - 100 mA	5 - 100 mA	5 - 100 mA	
Housing material	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass	
Operating temperature	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C	
LED colour	Yellow	Yellow	Yellow	Yellow	
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA	

Inductive proximity sensors, 2-wire, AC

Types	M12 Standard - Long body	
Connections	2 m cable	M12 connector
Flush mountable		
Dimensions (mm)	M12 x 66	M12 x 74.5
Thread (mm)	M12 x 1 x 50	M12 x 1 x 50
Operating frequency	25 Hz	25 Hz
Sensing distance (Sn)	2 mm	2 mm
References		
SCR-NO	EI1202TBOSL	EI1202TBOSL-6
SCR-NC	EI1202TBCSL	
Non-flush mountable		
Dimensions (mm)	M12 x 70	M12 x 78.5
Thread (mm)	M12 x 1 x 50	M12 x 1 x 50
Operating frequency	25 Hz	25 Hz
Sensing distance (Sn)	4 mm	4 mm
References		
SCR-NO	EI1204TBOSL	EI1204TBOSL-6
SCR-NC	EI1204TBCSL	
Characteristics flush and non-flush mountable		
Rated operating voltage	20 - 265 VAC	20 - 265 VAC
Voltage drop	≤ 8 VAC	≤ 8 VAC
Degree of protection	IP 67	IP 67
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	T	T
Output current	< 500 mA	< 500 mA
Housing material	Stainless steel	Stainless steel
Operating temperature	-25°C to +70°C	-25°C to +70°C
LED colour	Yellow	Yellow
Approvals/Marks	CE - UL - CSA	CE - UL - CSA

Inductive proximity sensors, 2-wire, AC

Types	M18 Standard - Short body		M18 Standard - Long body	
Connections	2 m cable	M12 connector	2 m cable	M12 connector
Flush mountable				
				
	Dimensions (mm)	M18 x 57	M18 x 55	M18 x 77
	Thread (mm)	M18 x 1 x 30	M18 x 1 x 30	M18 x 1 x 50
	Operating frequency	25 Hz	25 Hz	25 Hz
	Sensing distance (Sn)	5 mm	5 mm	5 mm
References				
SCR-NO	EI1805TBOSS	EI1805TBOSS-6	EI1805TBOSL	EI1805TBOSL-6
SCR-NC	EI1805TBCSS		EI1805TBCSL	
Non-flush mountable				
				
	Dimensions (mm)	M18 x 65	M18 x 63	M18 x 85
	Thread (mm)	M18 x 1 x 30	M18 x 1 x 30	M18 x 1 x 50
	Operating frequency	25 Hz	25 Hz	25 Hz
	Sensing distance (Sn)	8 mm	8 mm	8 mm
References				
SCR-NO	EI1808TBOSS	EI1808TBOSS-6	EI1808TBOSL	EI1808TBOSL-6
SCR-NC	EI1808TBCSS		EI1808TBCSL	EI1808TBCSL-6
Characteristics flush and non-flush mountable				
Rated operating voltage	20 - 265 VAC	20 - 265 VAC	20 - 265 VAC	20 - 265 VAC
Voltage drop	≤ 8 VAC	≤ 8 VAC	≤ 8 VAC	≤ 8 VAC
Degree of protection	IP 67	IP 67	IP 67	IP 67
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	T	T	T	T
Output current	< 500 mA	< 500 mA	< 500 mA	< 500 mA
Housing material	Stainless steel	Stainless steel	Stainless steel	Stainless steel
Operating temperature	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C
LED colour	Yellow	Yellow	Yellow	Yellow
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA

Inductive proximity sensors, 2-wire, AC

Types	M30 Standard - Short body		M30 Standard - Long body			
Connections	2 m cable	M12 connector	2 m cable	M12 connector		
Flush mountable						
						
	Dimensions (mm)		M30 x 59	M30 x 79	M30 x 75.5	
	Thread (mm)		M30 x 1.5 x 30	M30 x 1.5 x 50	M30 x 1.5 x 50	
	Operating frequency		25 Hz	25 Hz	25 Hz	
Sensing distance (Sn)		10 mm	10 mm	10 mm		
References						
SCR-NO	EI3010TBOSS		EI3010TBOSL	EI3010TBOSL-6		
SCR-NC	EI3010TBCSS		EI3010TBCSL			
Non-flush mountable						
						
	Dimensions (mm)		M30 x 87.5	M30 x 67.5	M30 x 91	M30 x 71
	Thread (mm)		M30 x 1.5 x 30	M30 x 1.5 x 30	M30 x 1.5 x 50	M30 x 1.5 x 50
	Operating frequency		25 Hz	25 Hz	25 Hz	25 Hz
Sensing distance (Sn)		15 mm	15 mm	15 mm	15 mm	
References						
SCR-NO	EI3015TBOSS	EI3015TBOSS-6	EI3015TBOSL	EI3015TBOSL-6		
SCR-NC	EI3015TBCSS		EI3015TBCSL			
Characteristics flush and non-flush mountable						
Rated operating voltage	20 - 265 VAC		20 - 265 VAC		20 - 265 VAC	
Voltage drop	≤ 8 VAC		≤ 8 VAC		≤ 8 VAC	
Degree of protection	IP 67		IP 67		IP 67	
Protection Short-circuit (S)	T		T		T	
Reverse polarity (P)	T		T		T	
Transients (T)	T		T		T	
Output current	< 500 mA		< 500 mA		< 500 mA	
Housing material	Stainless steel		Stainless steel		Stainless steel	
Operating temperature	-25°C to +70°C		-25°C to +70°C		-25°C to +70°C	
LED colour	Yellow		Yellow		Yellow	
Approvals/Marks	CE - UL - CSA		CE - UL - CSA		CE - UL - CSA	

Inductive proximity sensors, 2-wire, AC

Types	M18 Standard Short body	M18 Standard - Long body		M30 Standard Long body
Connections	2 m cable	2 m cable	M12 connector	2 m cable
Flush mountable				
	Dimensions (mm)	M18 x 57	M18 x 77	M30 x 79
	Thread (mm)	M18 x 1 x 30	M18 x 1 x 50	M30 x 1.5 x 50
	Operating frequency	25 Hz	25 Hz	25 Hz
	Sensing distance (Sn)	5 mm	5 mm	10 mm
References				
SCR-NO	EI1805TBOPS	EI1805TBOPL		EI3010TBOPL
Non-flush mountable				
	Dimensions (mm)	M18 x 85	M18 x 83	M30 x 91
	Thread (mm)	M18 x 1 x 50	M18 x 1 x 50	M30 x 1.5 x 50
	Operating frequency	25 Hz	25 Hz	25 Hz
	Sensing distance (Sn)	8 mm	8 mm	15 mm
References				
SCR-NO		EI1808TBOPL		EI3015TBOPL
SCR-NC		EI1808TBCPL	EI1808TBCPL-6	
Characteristics flush and non-flush mountable				
Rated operating voltage	20 - 265 VAC	20 - 265 VAC	20 - 265 VAC	20 - 265 VAC
Voltage drop	≤ 8 VAC	≤ 8 VAC	≤ 8 VAC	≤ 8 VAC
Degree of protection	IP 67	IP 67	IP 67	IP 67
Protection Short-circuit (S)				
Reverse polarity (P)	T	T	T	T
Transients (T)				
Output current	< 500 mA	< 500 mA	< 500 mA	< 500 mA
Housing material	Thermoplastic polyester	Thermoplastic polyester	Thermoplastic polyester	Thermoplastic polyester
Operating temperature	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C
LED colour	Yellow	Yellow	Yellow	Yellow
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA

Inductive proximity sensors, micro switch 2-wire DC

Types Micro switch

Connections 2 m cable



Dimensions body (mm) 30 x 19 x 15

Thread (mm) Ø 12 x 16

Sensing distance (Sn) 1 kHz

Output 4 mm

References

NO IG12FSF04DO

NC IG12FSF04DC

Specifications

Rated operating voltage 10 to 40 VDC

Voltage drop ≤ 3 VDC at max. load

Degree of protection IP67

Protection Short-circuit (S)
Reverse polarity (P)
Transients (T) SPT

Output current ≤ 5 - 100 mA

Housing material Anodized aluminium

Operating temperature -25°C to +70°C

Approvals/Marks CE

Inductive proximity sensors, switch, polyester housing

Types	Transistor NPN/PNP		Power MOSFET output AC/DC	
Connections	Terminals		Terminals	Terminals
Non-flush mountable				
	Dimensions (mm)		40 x 40 x 118	40 x 40 x 118
	Operating frequency		≤ 100 Hz	≤ 25 Hz AC; 40 Hz DC
	Sensing distance (Sn)		30 mm	30 mm
References				
NPN - NO / NC	IC40CNN30NAT1			
PNP - NO / NC	IC40CNN30PAT1			
AC / DC - NO			IC40CNN30COT1	
AC / DC - NC			IC40CNN30CCT1	
AC - NO / NC				IC40CNN30TAT1
Specifications				
Rated operating voltage	10 - 30 VDC		20 - 250 VAC/DC	20 - 250 VAC
Degree of protection	IP 67		IP 67	IP 67
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	SP		S	
Output current	≤ 200 mA		5 - 200 mA @ 25°C	5 - 200 mA @ 25°C
Housing material	Thermoplastic polyester		Thermoplastic polyester	Thermoplastic polyester
Operating temperature	-25°C to +70°C		-25°C to +70°C	-25°C to +70°C
LED colour	Red, green		Red, green	Red, green
Approvals/Marks	CE		CE	CE

Inductive proximity sensors, loop detector

Types	Single loop	Dual loop
Connections	Plug 11 pin circular	Plug 11 pin circular
 		
Dimensions HxWxD (mm)	80 x 35.5 x 63	80 x 35.5 x 63
Adjustment	Auto	Auto
Manual fine-tune	Yes	Yes
Loop inductance	15-1500 μ H	15-1500 μ H
Input	1 Loop	2 Loop
Output	1 x SPDT, 1 A / 250 VAC	2 x SPST, 1 A / 250 VAC
References		
24 VAC / DC	LDP1SA1BM24	LDP2TA2BM24
115 VAC	LDP1SA1B115	LDP2TA2B115
230 VAC	LDP1SA1B230	LDP2TA2B230
Specifications		
Operating temperature	-40°C to +70°C	-40°C to +70°C
Degree of protection	IP20	IP20
Mounting	11 pin circular plug	11 pin circular plug
Approvals/Marks	CE - UL	CE - UL

Ultrasonic sensors, 1 x digital output - Short body

Types	UA18CSD..TI	UA18CSD..M1TI	UA18ESD..TI	UA18ESD..M1TI
Connections	2 m cable	M12 connector	2 m cable	M12 connector
				
Dimensions (mm)	M18 x 53	M18 x 60	M18 x 53	M18 x 60
References				
Sensing distance (Sn)	40 - 300 mm	40 - 300 mm	40 - 300 mm	40 - 300 mm
Operating frequency	≤ 8 Hz	≤ 8 Hz	≤ 8 Hz	≤ 8 Hz
Blind zone	≤ 40 mm	≤ 40 mm	≤ 40 mm	≤ 40 mm
1 x NPN	UA18CSD03NPTI	UA18CSD03NPM1TI	UA18ESD03NPTI	UA18ESD03NPM1TI
1 x PNP	UA18CSD03PPTI	UA18CSD03PPM1TI	UA18ESD03PPTI	UA18ESD03PPM1TI
Sensing distance (Sn)	80 - 800 mm	80 - 800 mm	80 - 800 mm	80 - 800 mm
Operating frequency	≤ 5 Hz	≤ 5 Hz	≤ 5 Hz	≤ 5 Hz
Blind zone	≤ 80 mm	≤ 80 mm	≤ 80 mm	≤ 80 mm
1 x NPN	UA18CSD08NPTI	UA18CSD08NPM1TI	UA18ESD08NPTI	UA18ESD08NPM1TI
1 x PNP	UA18CSD08PPTI	UA18CSD08PPM1TI	UA18ESD08PPTI	UA18ESD08PPM1TI
Specifications				
Rated operating voltage	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC
Voltage drop	≤ 2.2 VDC	≤ 2.2 VDC	≤ 2.2 VDC	≤ 2.2 VDC
Degree of protection	IP 67	IP 67	IP 67	IP 67
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT
Load current	< 100 mA	< 100 mA	< 100 mA	< 100 mA
Housing material	PBT	PBT	Stainless steel AISI 316L	Stainless steel AISI 316L
Operating temperature	-20°C to +60°C	-20°C to +60°C	-20°C to +60°C	-20°C to +60°C
LED colour	Yellow (output), Green (Echo ON)	Yellow (output), Green (Echo ON)	Yellow (output), Green (Echo ON)	Yellow (output), Green (Echo ON)
Approvals/Marks	CE - cULus	CE - cULus	CE - cULus	CE - cULus

Ultrasonic sensors, analogue output - Short body

Types	UA18CSD..TI	UA18CSD..M1TI	UA18ESD..TI	UA18ESD..M1TI
Connections	2 m cable	M12 connector	2 m cable	M12 connector
				
Dimensions (mm)	M18 x 53	M18 x 60	M18 x 53	M18 x 60
References				
Sensing distance (Sn)	40 - 300 mm	40 - 300 mm	40 - 300 mm	40 - 300 mm
Response time	≤ 400 mS	≤ 400 mS	≤ 400 mS	≤ 400 mS
Blind zone	≤ 40 mm	≤ 40 mm	≤ 40 mm	≤ 40 mm
4-20 mA	UA18CSD03AGTI	UA18CSD03AGM1TI	UA18ESD03AGTI	UA18ESD03AGM1TI
0-10 V	UA18CSD03AKTI	UA18CSD03AKM1TI	UA18ESD03AKTI	UA18ESD03AKM1TI
Sensing distance (Sn)	80 - 800 mm	80 - 800 mm	80 - 800 mm	80 - 800 mm
Response time	≤ 400 mS	≤ 400 mS	≤ 400 mS	≤ 400 mS
Blind zone	≤ 80 mm	≤ 80 mm	≤ 80 mm	≤ 80 mm
4-20 mA	UA18CSD08AGTI	UA18CSD08AGM1TI	UA18ESD08AGTI	UA18ESD08AGM1TI
0-10 V	UA18CSD08AKTI	UA18CSD08AKM1TI	UA18ESD08AKTI	UA18ESD08AKM1TI
Specifications				
Rated operating voltage NG or PG NK or PK	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC
Degree of protection	IP 67	IP 67	IP 67	IP 67
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	Supply: PT Analogue output: P	Supply: PT Analogue output: P	Supply: PT Analogue output: P	Supply: PT Analogue output: P
Housing material	PBT	PBT	Stainless Steel AISI 316L	Stainless Steel AISI 316L
Operating temperature	-20°C to +60°C	-20°C to +60°C	-20°C to +60°C	-20°C to +60°C
LED colour	Yellow (output), Green (Echo ON)	Yellow (output), Green (Echo ON)	Yellow (output), Green (Echo ON)	Yellow (output), Green (Echo ON)
Approvals/Marks	CE - cULus	CE - cULus	CE - cULus	CE - cULus

Ultrasonic sensors, 2 x digital outputs

Types	UA18CAD..TI	UA18CAD..M1TI	UA30CAD35..TI	UA30CAD35..M1TI
Connections	2 m cable	M12 connector	2 m cable	M12 connector



Dimensions (mm)	M18 x 85	M18 x 85	M30 x 90	M30 x 90
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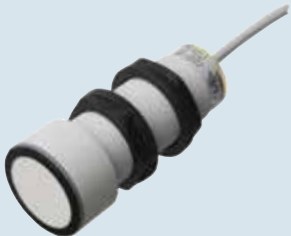
References

Sensing distance (Sn)	50 - 400 mm	50 - 400 mm	250 - 3500 mm	250 - 3500 mm
Operating frequency	≤ 10 Hz	≤ 10 Hz	≤ 2 Hz	≤ 2 Hz
Blind zone	≤ 50 mm	≤ 50 mm	≤ 250 mm	≤ 250 mm
2 x NPN	UA18CAD04NPTI	UA18CAD04NPM1TI	UA30CAD35NPTI	UA30CAD35NPM1TI
2 x PNP	UA18CAD04PPTI	UA18CAD04PPM1TI	UA30CAD35PPTI	UA30CAD35PPM1TI
Sensing distance (Sn)	100 - 900 mm	100 - 900 mm		
Operating frequency	≤ 4 Hz	≤ 4 Hz		
Blind zone	≤ 100 mm	≤ 100 mm		
2 x NPN	UA18CAD09NPTI	UA18CAD09NPM1TI		
2 x PNP	UA18CAD09PPTI	UA18CAD09PPM1TI		
Sensing distance (Sn)	200 - 2200 mm	200 - 2200 mm		
Operating frequency	≤ 1 Hz	≤ 1 Hz		
Blind zone	≤ 200 mm	≤ 200 mm		
2 x NPN	UA18CAD22NPTI	UA18CAD22NPM1TI		
2 x PNP		UA18CAD22PPM1TI		

Specifications

Rated operating voltage	15 - 30 VDC	15 - 30 VDC	12 - 30 VDC	12 - 30 VDC
Voltage drop	≤ 2.2 VDC	≤ 2.2 VDC	≤ 2.2 VDC	≤ 2.2 VDC
Degree of protection	IP 67	IP 67	IP 67	IP 67
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT
Load current	< 500 mA	< 500 mA	< 300 mA	< 300 mA
Load current - UL	< 100 mA	< 100 mA	< 100 mA	< 100 mA
Housing material	PBT	PBT	PBT	PBT
Operating temperature	-20°C to +60°C	-20°C to +60°C	-20°C to +70°C	-20°C to +70°C
LED colour	Yellow	Yellow	Yellow, green	Yellow, green
Approvals/Marks	CE - cULus	CE - cULus	CE - cULus	CE - cULus

Ultrasonic sensors, 2 x digital outputs

Types	UA30CAD60..TI	UA30CAD60..MITI
Connections	2 m cable	M12 connector
 		
Dimensions (mm)	M30 (Ø40) x 90	M30 (Ø40) x 90
References		
Sensing distance (Sn)	350 - 6000 mm	350 - 6000 mm
Operating frequency	≤ 1 Hz	≤ 1 Hz
Blind zone	≤ 350 mm	≤ 350 mm
2 x NPN	UA30CAD60NP1I	UA30CAD60NPM1TI
2 x PNP	UA30CAD60PP1I	UA30CAD60PPM1TI
Specifications		
Rated operating voltage	12 - 30 VDC	12 - 30 VDC
Voltage drop	≤ 2.2 VDC	≤ 2.2 VDC
Degree of protection	IP 67	IP 67
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT
Load current	< 300 mA	< 300 mA
Load current - UL	< 100 mA	< 100 mA
Housing material	PBT	PBT
Operating temperature	-20°C to +70°C	-20°C to +70°C
LED colour	Yellow, green	Yellow, green
Approvals/Marks	CE - cULus	CE - cULus

Ultrasonic sensors, 2 x digital outputs

Types	UA18EAD..TI	UA18EAD..M1TI	UA30EAD35..TI	UA30EAD35..M1TI
Connections	2 m cable	M12 connector	2 m cable	M12 connector
				
Dimensions (mm)	M18 x 85	M18 x 85	M30 x 90	M30 x 90
References				
Sensing distance (Sn)	50 - 400 mm	50 - 400 mm	350 - 3500 mm	350 - 3500 mm
Operating frequency	≤ 10 Hz	≤ 10 Hz	≤ 2 Hz	≤ 2 Hz
Blind zone	≤ 50 mm	≤ 50 mm	≤ 350 mm	≤ 350 mm
2 x NPN	UA18EAD04NPTI	UA18EAD04NPM1TI	UA30EAD35NPTI	UA30EAD35NPM1TI
2 x PNP	UA18EAD04PPTI	UA18EAD04PPM1TI	UA30EAD35PPTI	UA30EAD35PPM1TI
Sensing distance (Sn)	100 - 900 mm	100 - 900 mm		
Operating frequency	≤ 4 Hz	≤ 4 Hz		
Blind zone	≤ 100 mm	≤ 100 mm		
2 x NPN	UA18EAD09NPTI	UA18EAD09NPM1TI		
2 x PNP	UA18EAD09PPTI	UA18EAD09PPM1TI		
Sensing distance (Sn)	200 - 1500 mm	200 - 1500 mm		
Operating frequency	≤ 1 Hz	≤ 1 Hz		
Blind zone	≤ 200 mm	≤ 200 mm		
2 x NPN	UA18EAD15NPTI	UA18EAD15NPM1TI		
2 x PNP	UA18EAD15PPTI	UA18EAD15PPM1TI		
Specifications				
Rated operating voltage	15 - 30 VDC	15 - 30 VDC	12 - 30 VDC	12 - 30 VDC
Voltage drop	≤ 2.2 VDC	≤ 2.2 VDC	≤ 2.2 VDC	≤ 2.2 VDC
Degree of protection	IP 67	IP 67	IP 67	IP 67
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT	SPT	SPT
Load current	< 500 mA	< 500 mA	< 300 mA	< 300 mA
Load current - UL	< 100 mA	< 100 mA	< 100 mA	< 100 mA
Housing material	AISI 316L	AISI 316L	AISI 316L	AISI 316L
Operating temperature	-20°C to +60°C	-20°C to +60°C	-20°C to +70°C	-20°C to +70°C
LED colour	Yellow	Yellow	Yellow, green	Yellow, green
Approvals/Marks	CE - cULus	CE - cULus	CE - cULus	CE - cULus

Ultrasonic sensors, analogue and digital output

Types	UA18CAD..TI	UA18CAD..M1TI	UA30CAD35..TI	UA30CAD35..M1TI
Connections	2 m cable	M12 connector	2 m cable	M12 connector
				
Dimensions (mm)	M18 x 85	M18 x 85	M30 x 90	M30 x 90
References				
Sensing distance (Sn)	50 - 400 mm	50 - 400 mm	250 - 3500 mm	250 - 3500 mm
Operating frequency	≤ 10 Hz	≤ 10 Hz	≤ 2 Hz	≤ 2 Hz
Blind zone	≤ 50 mm	≤ 50 mm	≤ 250 mm	≤ 250 mm
NPN, 4-20 mA	UA18CAD04NGTI	UA18CAD04NGM1TI	UA30CAD35NGTI	UA30CAD35NGM1TI
PNP, 4-20 mA	UA18CAD04PGTI	UA18CAD04PGM1TI	UA30CAD35PGTI	UA30CAD35PGM1TI
NPN, 0-10 V	UA18CAD04NKTI	UA18CAD04NKM1TI	UA30CAD35NKTI	UA30CAD35NKM1TI
PNP, 0-10 V	UA18CAD04PKTI	UA18CAD04PKM1TI	UA30CAD35PKTI	UA30CAD35PKM1TI
Sensing distance (Sn)	100 - 900 mm	100 - 900 mm		
Operating frequency	≤ 4 Hz	≤ 4 Hz		
Blind zone	≤ 100 mm	≤ 100 mm		
NPN, 4-20 mA	UA18CAD09NGTI	UA18CAD09NGM1TI		
PNP, 4-20 mA	UA18CAD09PGTI	UA18CAD09PGM1TI		
NPN, 0-10 V	UA18CAD09NKTI	UA18CAD09NKM1TI		
PNP, 0-10 V	UA18CAD09PKTI	UA18CAD09PKM1TI		
Sensing distance (Sn)	200 - 2200 mm	200 - 2200 mm		
Operating frequency	≤ 1 Hz	≤ 1 Hz		
Blind zone	≤ 200 mm	≤ 200 mm		
NPN, 4-20 mA	UA18CAD22NGTI	UA18CAD22NGM1TI		
PNP, 4-20 mA	UA18CAD22PGTI	UA18CAD22PGM1TI		
NPN, 0-10 V	UA18CAD22NKTI	UA18CAD22NKM1TI		
PNP, 0-10 V	UA18CAD22PKTI	UA18CAD22PKM1TI		
Specifications				
Rated operating voltage				
NG or PG	15 - 30 VDC	15 - 30 VDC	12 - 30 VDC	12 - 30 VDC
NK or PK	15 - 30 VDC	15 - 30 VDC	15 - 30 VDC	15 - 30 VDC
Voltage drop	≤ 2.2 VDC	≤ 2.2 VDC	≤ 2.2 VDC	≤ 2.2 VDC
Degree of protection	IP 67	IP 67	IP 67	IP 67
Protection Short-circuit (S)	Digital output: SPT	Digital output: SPT	Digital output: SPT	Digital output: SPT
Reverse polarity (P)	Supply: PT	Supply: PT	Supply: PT	Supply: PT
Transients (T)	Analogue output: P	Analogue output: P	Analogue output: P	Analogue output: P
Load current	< 500 mA	< 500 mA	< 100 mA	< 100 mA
Load current - UL	< 100 mA	< 100 mA	< 100 mA	< 100 mA
Housing material	PBT	PBT	PBT	PBT
Operating temperature	-20°C to +60°C	-20°C to +60°C	-20°C to +70°C	-20°C to +70°C
LED colour	Yellow	Yellow	Yellow, green	Yellow, green
Approvals/Marks	CE - cULus	CE - cULus	CE - cULus	CE - cULus

Ultrasonic sensors, analogue and digital output

Types	UA30CAD60..TI	UA30CAD60..M1TI
Connections	2 m cable	M12 connector
		
Dimensions (mm)	M30 (Ø40) x 90	M30 (Ø40) x 90
References		
Sensing distance (Sn)	350 - 6000 mm	350 - 6000 mm
Operating frequency	≤ 1 Hz	≤ 1 Hz
Blind zone	≤ 350 mm	≤ 350 mm
NPN, 4-20 mA	UA30CAD60NGTI	UA30CAD60NGM1TI
PNP, 4-20 mA	UA30CAD60PGTI	UA30CAD60PGM1TI
NPN, 0-10 V	UA30CAD60NKTI	UA30CAD60NKM1TI
PNP, 0-10 V	UA30CAD60PKTI	UA30CAD60PKM1TI
Specifications		
Rated operating voltage NG or PG NK or PK	12 - 30 VDC 15 - 30 VDC	12 - 30 VDC 15 - 30 VDC
Voltage drop	≤ 2.2 VDC	≤ 2.2 VDC
Degree of protection	IP 67	IP 67
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	Digital output: SPT Supply: PT Analogue output: P	Digital output: SPT Supply: PT Analogue output: P
Load current	< 100 mA	< 100 mA
Load current - UL	< 100 mA	< 100 mA
Housing material	PBT	PBT
Operating temperature	-20°C to +70°C	-20°C to +70°C
LED colour	Yellow, green	Yellow, green
Approvals/Marks	CE - cULus	CE - cULus

Ultrasonic sensors, analogue and digital output

Types	UA18EAD..TI	UA18EAD..M1TI	UA30EAD35..TI	UA30EAD35..M1TI
Connections	2 m cable	M12 connector	2 m cable	M12 connector
				
Dimensions (mm)	M18 x 85	M18 x 85	M30 x 93	M30 x 100
References				
Sensing distance (Sn)	50 - 400 mm	50 - 400 mm	350 - 3500 mm	350 - 3500 mm
Operating frequency	≤ 10 Hz	≤ 10 Hz	≤ 2 Hz	≤ 2 Hz
Blind zone	≤ 50 mm	≤ 50 mm	≤ 350 mm	≤ 350 mm
NPN, 4-20 mA	UA18EAD04NGTI	UA18EAD04NGM1TI	UA30EAD35NGTI	UA30EAD35NGM1TI
PNP, 4-20 mA	UA18EAD04PGTI	UA18EAD04PGM1TI	UA30EAD35PGTI	UA30EAD35PGM1TI
NPN, 0-10 V	UA18EAD04NKTI	UA18EAD04NKM1TI	UA30EAD35NKTI	UA30EAD35NKM1TI
PNP, 0-10 V	UA18EAD04PKTI	UA18EAD04PKM1TI	UA30EAD35PKTI	UA30EAD35PKM1TI
Sensing distance (Sn)	100 - 900 mm	100 - 900 mm		
Operating frequency	≤ 4 Hz	≤ 4 Hz		
Blind zone	≤ 100 mm	≤ 100 mm		
NPN, 4-20 mA	UA18EAD09NGTI	UA18EAD09NGM1TI		
PNP, 4-20 mA	UA18EAD09PGTI	UA18EAD09PGM1TI		
NPN, 0-10 V	UA18EAD09NKTI	UA18EAD09NKM1TI		
PNP, 0-10 V	UA18EAD09PKTI	UA18EAD09PKM1TI		
Sensing distance (Sn)	200 - 1500 mm	200 - 1500 mm		
Operating frequency	≤ 1 Hz	≤ 1 Hz		
Blind zone	≤ 200 mm	≤ 200 mm		
NPN, 4-20 mA	UA18EAD15NGTI	UA18EAD15NGM1TI		
PNP, 4-20 mA	UA18EAD15PGTI	UA18EAD15PGM1TI		
NPN, 0-10 V	UA18EAD15NKTI	UA18EAD15NKM1TI		
PNP, 0-10 V	UA18EAD15PKTI	UA18EAD15PKM1TI		
Specifications				
Rated operating voltage				
NG or PG	15 - 30 VDC	15 - 30 VDC	12 - 30 VDC	12 - 30 VDC
NK or PK	15 - 30 VDC	15 - 30 VDC	15 - 30 VDC	15 - 30 VDC
Voltage drop	≤ 2.2 VDC	≤ 2.2 VDC	≤ 2.2 VDC	≤ 2.2 VDC
Degree of protection	IP 67	IP 67	IP 67	IP 67
Protection Short-circuit (S)	Digital output: SPT	Digital output: SPT	Digital output: SPT	Digital output: SPT
Reverse polarity (P)	Supply: PT	Supply: PT	Supply: PT	Supply: PT
Transients (T)	Analogue output: P	Analogue output: P	Analogue output: P	Analogue output: P
Load current	< 100 mA	< 100 mA	< 100 mA	< 100 mA
Load current - UL	< 100 mA	< 100 mA	< 100 mA	< 100 mA
Housing material	AISI 316L	AISI 316L	AISI 316L	AISI 316L
Operating temperature	-20°C to +60°C	-20°C to +60°C	-20°C to +70°C	-20°C to +70°C
LED colour	Yellow	Yellow	Yellow, green	Yellow, green
Approvals/Marks	CE - cULus	CE - cULus	CE - cULus	CE - cULus

Ultrasonic sensors, DC, analogue, remote teach

	Programmable RS232	Integrated amplifier
Types	UA30CLD..M7	UA12BLD..M1TR
Connections	M16 connector	M12 connector



Dimensions (mm)	M30 x 136	M12 x 79
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References diffuse reflective

Operating frequency	5 - 30 Hz Programmable	20 Hz
Sensing distance (Sn)	150 - 1500 mm adj.	25 - 200 mm adj.
0-10 VDC	UA30CLD15FKM7	
4-20 mA	UA30CLD15FGM7	
NPN-NO/NC		UA12BLD02NPM1TR
PNP-NO/NC		UA12BLD02PPM1TR
Sensing distance (Sn)	250 - 2000 mm adj.	
0-10 VDC	UA30CLD20FKM7	
4-20 mA	UA30CLD20FGM7	
Sensing distance (Sn)	350 - 3500 mm adj.	
0-10 VDC	UA30CLD35FKM7	
4-20 mA	UA30CLD35FGM7	

Specifications

Rated operating voltage	19 - 30 VDC	10 - 30 VDC
Voltage drop	≤ 2.5 VDC	≤ 4.5 V
Degree of protection	IP 67	IP 65
Protection Short-circuit (S) Reverse polarity (P) Transients (T)	SPT	SPT
Load current	< 100 mA Analogue see type	< 100 mA
Housing material	PBTB	Stainless Steel
Operating temperature	-15°C to +70°C	-20°C to +70°C
LED colour	Yellow + Green	
Remarks	Hold/sync. input RS232	
Approvals/Marks	CE - UL - cUL	CE

Adapters

Types	AUA - RT
Connections	M12 connector

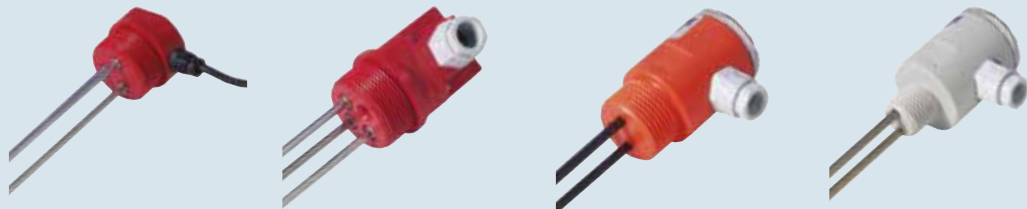


Dimensions (mm)	17 x 56
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Specifications

Programming adapter for remote teach sensors ending with "RT"

Conductive level sensors

Types	VN / VNI		VNY / VNYI		VPC		VPP	
Connections	Cable (PVC) 2 m		Screw connection		Screw connection		Screw connection	
								
Electrodes								
Number of electrodes	1, 2, 3 or 4		1, 2, 3 or 4		1, 2 or 3		1, 2 or 3	
Diameter/length (mm)	D5/1000		D5/1000		D4/500		D4/500	
Material	Stainless steel		Stainless steel		Stainless steel		Stainless steel	
Isolation of electrodes	Yes (VNI)		Yes (VNYI)		Yes		Yes	
Isolation	Polyethylene		Polyethylene		Polyethylene		PVDF	
Housing								
Pipe thread	1½"		1½"		½" (VPC x05) or 1" (VPC x10)		½" (VPC x05) or 1" (VPC x10)	
Material	Nylon 6		Nylon 6		PVC		Polypropylene	
References								
1 electrode	VN1	VNI1	VNY1	VNYI1	VPC105	VPC110	VPP105	VPP110
2 electrodes	VN2	VNI2	VNY2	VNYI2	VPC205	VPC210	VPP205	VPP210
3 electrodes	VN3	VNI3	VNY3	VNYI3		VPC310		VPP310
4 electrodes	VN4	VNI4	VNY4	VNYI4				
Specifications								
Degree of protection	IP 67		IP 67		IP 67		IP 67	
Operating temperature	0°C to +90°C		0°C to +90°C		0°C to +60°C		0°C to +100°C	
Approvals/Marks	CE		CE		CE		CE	

Conductive level sensors

Types	VT / VTI		CLH	VH1 / VH2	A 94-10
Connections	Cable (Silicone)		Screw connection	Cable (Neoprene)	Cable (PVC)
					
Electrodes					
Number of electrodes	1, 2, 3 or 4		2 or 4 + reference	1 (hanging)	2 (hanging)
Diameter/length (mm)	D5/1000		D4	D18/36.5 or D32/75.5	D22/75.0
Material	Stainless steel		Stainless steel	Stainless steel	Stainless steel
Isolation of electrodes	Yes (VTI)		Yes	No (VH1) - Yes (VH2)	No
Isolation	Teflon		Kynar, Polyolefine	Nylon 6	
Housing					
Pipe thread	1½"		1½"		
Material	Teflon		Polypropylene	Nylon 6	Polyester
References					
1 electrode	VT1	VTI1		VH1 or VH2	
2 electrodes	VT2	VTI2			A 94-10
3 electrodes	VT3	VTI3	CLH3*		
4 electrodes	VT4	VTI4			
5 electrodes			CLH5*		
Specifications					
Degree of protection	IP 67		IP 65	IP 67	IP 67
Operating temperature	0°C to +145°C		-20°C to +90°C	0°C to +90°C	0°C to +60°C
Approvals/Marks	CE		CE	CE	CE
Electrodes (Stainless steel ANSI316)					
No Insulation					
1 m			CLE1		
2 m			CLE2		
Extension 1 m			CLE1X		
Kynar (DVDP) Insulation					
1 m			CLE1K		
2 m			CLE2K		
Extension 1 m			CLE1KX		
Polyolefine Insulation					
1 m			CLE1P		
2 m			CLE2P		
Extension 1 m			CLE1PX		

* Electrodes shall be ordered separately

Conductive level sensors

Level controller

Types	CLD1	CLD2	CLP2 Basic	CLP2
Connections	DIN rail	DIN rail	Plug 11 pin circular	Plug 11 pin circular
				
Function	Filling or emptying. Selectable by rotary switches. Conductive liquids	Filling or emptying. Selectable by rotary switches. Conductive liquids	Filling or emptying. Selectable by rotary switches. Conductive liquids	Filling or emptying. Selectable by rotary switches. Conductive liquids
Adjustable	Yes, Potentiometer	Yes, Potentiometer	Yes, Potentiometer	Yes, Potentiometer
Sensitivity	5 K Ω to 150 K Ω	250 Ω to 500 K Ω	5 K Ω to 150 K Ω	250 Ω to 500 K Ω
Functions switch	- Timer 1 to 30 sec. delay on filling or/and emptying	- Filling / Emptying - 3-levels: Low, Standard and High	- Filling / Emptying	- Filling / Emptying - 3-levels: Low, Standard and High
Input	1 + reference	2 + reference	2 + reference	2 + reference
Output	8 A / 250 VAC SPST	8 A / 250 VAC SPDT	8 A / 250 VAC SPDT	8 A / 250 VAC DPDT
Power Supply	24 V AC/DC	24 - 240 VAC/DC	24 VDC, 24 VAC, 115 VAC or 230 VAC	24 VAC/DC, 115 VAC or 230 VAC
References				
24 240 VAC/DC		CLD2EB1BU24		
24 VDC			CLP2EB1B724	
24 VAC			CLP2EB1B024	
24 VAC/DC	CLD1EA1CM24			CLP2EA1CM24
115 VAC			CLP2EB1B115	CLP2EA1C115
230 VAC			CLP2EB1B230	CLP2EA1C230
Specifications				
Time delay	< 300 mS	< 2S	< 2S	< 300 mS
Housing material	ABS VO	PA66	NORYL PPO	NORYL PPO
Operating temperature	-20°C to +50°C	-20°C to +50°C	-20°C to +50°C	-20°C to +50°C
Output LED colour	Yellow	Yellow	Yellow	Yellow
Power LED colour	Green	Green	Green	Green
Approvals/Marks	CE - UL - CSA	CE - cULus	CE - UL - CSA	CE - UL - CSA

Conductive level sensors

Level controller				
Types	CLD2	CLP2 Master-Slave	CLD4	CLP4
Connections	DIN rail	Plug 11 pin circular	DIN rail	Plug 11 pin circular
				
Function	Filling or emptying. Selectable by rotary switches. Conductive liquids	Filling or emptying. Selectable by rotary switches. Conductive liquids Master - Slave system	Filling, emptying or combinations. Selectable by rotary switches. Conductive liquids	Filling, emptying or combinations. Selectable by rotary switches. Conductive liquids
Adjustable	Yes, Potentiometer	Yes, Potentiometer	Yes, Potentiometer	Yes, Potentiometer
Sensitivity	250 Ω to 500 K Ω	250 Ω to 500 K Ω	250 Ω to 500 K Ω	250 Ω to 500 K Ω
Functions switch	- Filling / Emptying - 3-levels: Low, Standard and High	- Filling / Emptying - 3-levels: Low, Standard and High	- Tank - well - Direct in to out 2 probe - Low and High alarm - 2 system in one, filling and/ or emptying - 3-levels: Low, Standard and High	- Tank - well - Direct in to out 2 probe - Low and High alarm - 2 system in one, filling and/ or emptying - 3-levels: Low, Standard and High
Input	2 + reference	2 + reference	2 to 4 + reference	2 to 4 + reference
Output	8 A / 250 VAC DPDT	8 A / 250 VAC SPDT	8 A / 250 VAC SPDT, SPST	8 A / 250 VAC 2 X SPST
Power Supply	24 VAC/DC, 115 VAC or 230 VAC	24 VAC/DC, 115 VAC or 230 VAC	24 VAC/DC, 115 VAC or 230 VAC	24 VAC/DC, 115 VAC or 230 VAC
References				
24 VAC/DC	CLD2EA1CM24	CLP2FA1BM24	CLD4MA2DM24	CLP4MA2AM24
115 VAC	CLD2EA1C115	CLP2FA1B115	CLD4MA2D115	CLP4MA2A115
230 VAC	CLD2EA1C230	CLP2FA1B230	CLD4MA2D230	CLP4MA2A230
Specifications				
Time delay	< 300 mS	< 300 mS	< 300 mS	< 300 mS
Housing material	ABS VO	NORYL PPO	ABS VO	NORYL PPO
Operating temperature	-20°C to +50°C	-20°C to +50°C	-20°C to +50°C	-20°C to +50°C
Output LED colour	Yellow	Yellow	Yellow	Yellow
Power LED colour	Green	Green	Green	Green
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA

Proximity magnetic sensors, rectangular

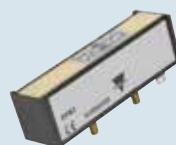
Rectangular

Types

S series

SPB2 series

SPA1 series



Dimensions (mm)

11.5 x 79 x 21.2

25.5 x 85 x 24

16 x 90 x 20

Electrical specifications

Max. switch. voltage contact	250 VAC [SA / SC 2, SB2 / -S5] 1500 VAC [SA / SC 8] 230 VAC [SS2, S.BS.2]	250 VAC	24 VDC [output 1 and 2]
Max. switch. current contact	1 A [SS2, S.BS.2] 3 A [SA2, SC2, SB2, SB2S5, SA8, SC8]	3 A	0.5 A [output 1] 4 A [output 2]
Max. switch. power contact	100 VA [SA / SC 2, SB2 / -S5] 120 VA [SA / SC 8] 60 VA [SS2, S.BS.2]	100 VA	5 VA [output 1] 100 VA [output 2]
Power supply			24 VDC

General specifications

Operating distance	5 - 32 mm	5 - 30 mm	12 mm
Output connection	PVC cable, 0.5 m (0.24 m Type S5)	Faston [SPB2] 2 m PVC Cable [SPB22MT]	PVC cable, 19 cm Pig-tail
Degree of protection	IP 67	IP 67 [SPB22MT] IP 65 [SPB2]	IP 67
Operating temperature	-25°C to +75°C	-25°C to +75°C	-25°C to +80°C
Housing material	Plastic	Plastic	ABS class V0

References

Normally open	SA2 SA8		
Normally closed	SC2 SC8		
Change - Over	SS2		
Bistable	SB2 SB2S5	SPB2 SPB22MT	
Bistable CO	S.BS.2		
Normally closed, 2 outputs			SPA1S2 SPA1S3

Proximity magnetic sensors, rectangular

Rectangular

Types

M and MS series

MM series



Dimensions (mm)

8.3 x 37 x 16

6.1 x 23.5 x 14 [A6]
7 x 27 x 11 [A3, S1]

Electrical specifications

Max. switch. voltage contact	100 VAC [MS1] 230 VAC [MSA1] 500 VAC [MA3, MC3]	100 VAC [S1, A6] 500 VAC [A3]
Max. switch. current contact	0.25 A [MS1] 0.5 A [MA3, MC3] 0.75 A [MSA1]	0.25 A [S1] 0.5 A [A3, A6]
Max. switch. power contact	5 VA [MS1] 10 VA [MSA1, MA3, MC3]	5 VA [S1] 10 VA [A3, A6]

General specifications

Operating distance	7 - 35 mm	10 - 40 mm
Output connection	PVC cable, 0.5 m (2 m, Type MSA1)	PVC cable [A3, S1] Twin lead cable [A6]
Degree of protection	IP 67	IP 67
Operating temperature	-25°C to +75°C	-25°C to +75°C
Housing material	Plastic	Plastic

References

Normally open	MSA1 MA3	MMA3 MMA6
Normally closed	MC3	
Change - Over	MS1	MMS1

Proximity magnetic sensors, cylindrical

Cylindrical

Types	FM... series	FMM... series	FMMP... series
			
Dimensions (mm)	Ø 9.3 [A3, C3, S1] M10 x 0.75 [A3S5, A6] M12 x 1 [C3S1, A9S1]	M8 x 1	Ø 6 x 25 [L25] Ø 6 x 33 [L33] Ø 6 x 38 [L38]
Electrical specifications			
Max. switch. voltage contact	100 VAC [S1, A6] 230 VAC [A9S1] 500 VAC [A3, C3, A3S5, C3S1]	100 VAC [A6, S1] 500 VAC [A3]	140 VAC
Max. switch. current contact	0.25 A [S1] 0.5 A [A3, C3, A6, A3S5, C3S1] 3 A [A9S1]	0.25 A [S1] 0.5 A [A3, A6]	1 A
Max. switch. power contact	5 VA [A3, C3, A3S5, C3S1] 60 VA [A9S1] 100 VA [S1, A6]	5 VA [S1] 10 VA [A3, A6]	10 VA
Max carry current			1.2 A
General specifications			
Operating distance	5 - 36 mm	8 - 27 mm	> 8 mm
Output connection	PVC cable 0.5 m for Ø 9.3 2 m for M10 and M12	PVC cable, 2 m	Twin lead cable, 0.5 m
Degree of protection	IP 67	IP 67	IP 67
Operating temperature	-25°C to +75°C	-25°C to +70°C	-20°C to +75°C
Housing material	Plastic [A3, C3, S1] Nickel plated brass [A6] Brass [A3S5, C3S1, A9S1]	Stainless steel [A3, S1] Nickel plated brass [A6]	Plastic
References			
Normally open	FMA3 FMA3S5 FMA6 FMA9S1	FMMA3 FMMA6	FMMPA7L25 FMMPA7L33 FMMPA7L38
Normally closed	FMC3 FMC3S1		
Change - Over	FMS1	FMMS1	

Proximity magnetic sensors, cylindrical

Cylindrical

Types	FMP... series	FS... series	FSLP... series	FSM... series
				

Dimensions (mm)	M12 x 1 x 100	Ø 13.5 [A2, A8, C2, C8, S2] M10 x 1.25 [A2S3, S2S1] M12 x 1 [A2S4, S2S4] M16 x 1.5 [B2]	Ø 16	M12 x 1 [A2, A7, S2] M16 x 1 [S2S2AT]
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Electrical specifications

Max. switch. voltage contact	120 VAC / DC [C7] 175 VDC, 120 VAC [S1] 200 VDC, 140 VAC [A7] 230 VAC / DC [A9, C9, A9S1] 250 VAC / DC [B2]	230 VAC [S2, S2S1, S2S4] 250 VAC [A2, B2, C2, A2S3, A2S4] 1500 VAC [A8, C8]	100 VAC [A7] 250 VAC [B2]	24 VDC [A7] 230 VAC [S2, S2S2AT] 250 VAC [A2]
Max. switch. current contact	0.25 A [S1] 0.5 A [C7] 1 A [A7] 3 A [B2, A9, C9, A9S1]	1 A [S2, S2S4, S2S1] 3 A [A2, B2, C2, A8, C8, A2S3, A2S4]	0.4 A [A7] 3 A [B2]	0.5 A [S2S2AT] 1 A [S2] 3 A [A2] 50 mA [A7]
Max. switch. power contact	5 VA [S1] 10 VA [A7, C7] 60 VA [A9, C9, A9S1] 120 VA [B2]	60 VA [S2S1, S2S4, S2] 100 VA [A2, B2, C2, A2S3, A2S4] 120 VA [A8, C8]	10 VA [A7] 120 VA [B2]	30 VA [S2S2AT] 60 VA [S2] 100 VA [A2] (A7 negligible)

General specifications

Operating distance	7 - 26 mm	3 - 32 mm	18 - 25 mm (front); >10 - >15 mm (side)	2 - 19 mm
Output connection	PVC cable, 2 m	PVC cable, 2 m 0.5 m for Ø 13.5	PVC cable, 2 m	Silicone cable, 2 m [A7] Silicone cable, 0.5 m [S2S2AT] PVC cable, 2 m [A2, S2]
Degree of protection	IP 67	IP 67	IP 67	IP 67
Operating temperature	-25°C to +75°C	-25°C to +75°C	-30°C to +80°C	-25°C to +75°C [A2, A7, S2] -20°C to +150°C [S2S2AT]
Housing material	Plastic	Plastic [A2, A8, C2, C8, S2, B2] Brass [A2S3 / S4, S2S1 / S4]	Plastic	Brass [S2S2, S2S2AT] Nickel plated brass [A2, A7, S2]

References

Normally open	FMPA7 [black] FMPA9 [black] FMPA9S1 [black]	FSA2 FSA8 FSA2S32MT FSA2S42MT	FSLPA7	FSMA2 FSMA7
Normally closed	FMPC7 [red] FMPC9 [red]	FSC2 FSC8		
Change - Over	FMPS1 [blue]	FSS2 FSS2S12MT FSS2S42MT		FSMS2 FSMS2S2AT
Bistable	FMPB2 [grey]	FSB22MT	FSLPB2	

Proximity magnetic sensors, slot

Slot

Types	ISY series	IM series
		
Dimensions (mm)	10 x 45 x 37	7 x 28 x 18.5
Electrical specifications		
Max. switch. voltage contact	100 VAC [S1] 500 VAC [C3]	100 VAC [S1] 500 VAC [C3]
Max. switch. current contact	0.25 A [S1] 0.5 A [C3]	0.25 A [S1] 0.5 A [C3]
Max. switch. power contact	5 VA [S1] 10 VA [C3]	5 VA [S1] 10 VA [C3]
General specifications		
Output connection	PVC cable, 0.5 m	PVC cable, 0.5 m
Degree of protection	IP 67	IP 67
Operating temperature	-25°C to +75°C	-25°C to +75°C
Housing materials	Plastic	Plastic
References		
Normally closed	ISYC3	IMC3
Change - Over	ISYS1	IMS1

Types	Magnetic units CL series		
Shapes	Rectangular	Trapezoidal	Cylindrical
			
General specifications			
Minimum separation:	Dimensions (mm)	References	
10	25 x 14 x 8	CL1	
20	44.5 x 12 x 9	CL2	
30	59 x 18 x 9	CL3	
50	76 x 25 x 18	CL4	
Not mandatory		Dimensions (mm)	References
		90 x 31 x 22.5	CL90
			Ø 9.3 x 32
			Ø 13.5 x 65
			Ø 18 x 6
			Ø 23 x 9
			Ø 31 x 10
			Ø 20 x 10
			Ø 22.1 x 11.3
			CL10
			CL11
			CL18
			CL23
			CL31
			CL20S1
			CL20S3

Level magnetic sensors

Cylindrical

Types	ILM series	ILMM series	ILMP series
			
Float Diameter (mm)	Ø 53	Ø 28	Ø 25
Output functions			
	Normally open, Normally closed [2, 8] Change-over [S2]	Normally open and normally closed [5, 590, 5ATS1] Normally open [5S1] Normally closed [5S2, 5S2AT]	Normally open, normally closed
Electrical specifications			
Max. switch. voltage contact	230 VAC [S2] - 250 VAC [2] 1500 VAC [8]	240 VAC, 220 VDC	240 VAC, 200 VDC
Max. switch. current contact	1 A [S2] 3 A [2, 8]	0.5 A	0.5 A
Max. switch. power contact	60 VA [S2] - 100 VA [2] 120 VA [8]	50 VA	50 VA
General specifications			
Output connection	Silicone cable, 0.5 m	XLPE cable, 0.3 m 1,1 m [ATS1]	PVC cable, 0.3 m
Min. liquid specific gravity	0.75 kg / dm ³	0.75 kg / dm ³	
Max. pressure	20 kg / cm ²	10 kg / cm ²	2 kg / cm ²
Degree of protection	IP 67	IP 67	IP 67
Operating temperature	-25°C to +120°C [2, 8, S2]	-10°C to +120°C [5, 590] -10°C to +200°C [5ATS1, 5S2AT] -20°C to +120°C [5S1, 5S2]	-20°C to +80°C
Housing materials	AISI 316 Stainless steel	AISI 304 stainless steel [5, 590 5ATS1] AISI316 stainless steel [5S2AT, 5S1, 5S2]	Plastic
References			
Normally open / Normally closed	ILM.2 ILM8	ILMM5 ILMM590 ILMM5ATS1	ILMP5 ILMP5P
Change - Over	ILMS2		
Normally closed		ILMM5S2AT ILMM5S2	
Normally open		ILMM5S1	

Level magnetic sensors

Cylindrical			
Types	ILMPU - ILU - ILMU series	ILSP series	FLM series - Flux Sensors
			
Float Diameter (mm)	Ø 17.5 [ILMPU] Ø 31 [ILMU] Ø 45 [ILU]	Ø 44	Ø 20
Electrical specifications			
Max. switch. voltage contact	240 VAC, 200 VDC [ILMPU5, ILMU5] 250 VAC [ILU2] 1000 VAC [ILU8]	230 VAC [S2] 250 VAC [2] 1500 VAC [8]	100 VAC
Max. switch. current contact	0.5 A [ILMP, ILM] 1 A [ILUS2] 3 A [ILU2, ILU8]	1 A [S2] 3 A [2, 8]	0.4 A
Max. switch. power contact	50 VA [ILMP, ILM] 60 VA [ILUS2] 100 VA [ILU2] 120 VA [ILU8]	60 VA [S2] 100 VA [2] 120 VA [8]	10 VA
General specifications			
Output connection	XLPE cable, 0.3 m [ILMPU5] PVC cable, 0.3 m [ILMU5] Silicone cable, 0.5 m [ILU2, ILU8, ILUS2]	Silicone cable, 0.5 m	HT105 PVC cable ended with 6.35 mm female faston
Operating distance D_{on}			+5 mm
Release distance D_{off}			$D_{on} - 2$ mm
Min. liquid specific gravity	0.70 kg / dm ³ [ILMPU, ILMU] 0.75 kg / dm ³ [ILU]	0.75 kg / dm ³	
Max. pressure	2 kg / cm ² [ILMPU, ILMU] 100 kg / cm ² [ILU]	0.6 kg / cm ²	
Degree of protection	IP 68	IP 67	IP 67
Operating temperature	-20°C to +80°C [ILMPU, ILMU] -25°C to +100°C [ILU]	-25°C to +100 °C	-30°C to +105°C
Housing materials	Non toxic polypropylene or plastic	Plastic	Stainless steel
References			
Normally open / Normally closed	ILMPU5 ILMU5	ILSP2 ILSP8	
Normally open	ILU2 ILU8		FLMA1S1
Change - Over	ILUS2	ILSPS2	

Configurable safety modules

Types

CERTUS Master module

CMM



Dimensions HxWxD (mm)

108 x 22.5 x 114.5

Safety level

Safety Integrity Level SIL 3, according to IEC 61508
Safety Integrity Level SIL CL 3, according to IEC 62061
Performance Level PL e and Cat. 4, according to ISO/EN 13489-1

Function

Can stand-alone managing and monitoring different safety sensors and commands at the same time. Manages up to 14 expansion units leaving out C2 R/C4 R modules

Safety inputs and outputs specifications

CMM as a stand alone unit

- 8 digital inputs, PNP active high according to EN 61131-2
- 2 pairs of solid state programmable safety outputs (OSSD), PNP active high 400 mA at 24 VDC max

Max. digital inputs with expansion modules

128

Max. digital outputs with expansion modules

16 pairs (OSSD)

Max. n° of expansion modules

14, leaving out C2 R/C4 R modules

Non-Safety inputs and outputs specifications

Test outputs

4

Programmable digital signal outputs

2

Input for Start/Restart interlock and EDM

2

General specifications

Rated voltage

24 VDC $\pm 20\%$ / supply from Class II

Digital inputs

PNP active high, according to EN 61131-2

OSSD

PNP active high - 400 mA @ 24 VDC (every OSSD)

Enclosure protection class

IP 20

Terminal blocks protection class

IP 2x

Types

I/O Expansion modules

C 8I 2O



C 8I / C 16I



C 12I 8TO



Dimensions HxWxD (mm)

108 x 22.5 x 114.5

108 x 22.5 x 114.5

108 x 22.5 x 114.5

Safety category

Category 4

Category 4

Category 4

Performance level

PL e

PL e

PL e

Function

expansion modules

expansion modules

expansion modules

General specifications

PFHd (IEC 61508:1998)

5.72E-9

5.75E-9 [C 8I]
7.09E-9 [C 16I]

3.24E-9

Rated voltage

24 VDC $\pm 20\%$

24 VDC $\pm 20\%$

24 VDC $\pm 20\%$

Dissipated power

3 W max

3 W max

3 W max

Digital inputs

8 / PNP active high according to EN 61131-2
[C 8I 2O]

PNP active high according to EN 61131-2
8 [C 8I] / 16 [C 16I]

12 / PNP active high according to EN 61131-2
[C 12I 8TO]

Digital output

2 OSSD pairs with 400mA output current

4 for sensor monitoring and checking
short-circuits and overloads

8 for sensor monitoring and checking
short-circuits and overloads

Test output

4 for sensor monitoring and checking
short-circuits and overloads

4 for sensor monitoring and checking
short-circuits and overloads

8 for sensor monitoring and checking
short-circuits and overloads

Configurable safety modules

	OSSD	Standard relay expansion modules
Types	C 2OSSD / C 4OSSD	C 2R / C 4R
		
Dimensions HxWxD (mm)	108 x 22.5 x 114.5	108 x 22.5 x 114.5
Safety category	Category 4	Category 4
Performance level	PL e	PL e
Rated voltage	24 VDC ±20%	24 VDC ±20%
Function	Expansion modules	Expansion modules
General specifications		
PHFd (IEC 61508:1998)	3.16E-9 [C 2OSSD] / 3.44E-9 [C 4OSSD]	
Dissipated power	3 W max	3 W max
Digital output	PNP active high 2 [C 2OSSD]; PNP active high 4 [C 4OSSD]	
Switching voltage		240 VAC
Switching current		6 A max
Contacts		2 NO + 1 NC [C 2R] connectable to 1 OSSD pair 4 NO + 2 NC [C 4R] connectable to 2 OSSD pairs
Feedback contacts		1 NC [C 2R] / 2 NC [C 4R]
Speed monitoring modules		
	C PSS	C ES1 / C ES2
		
Dimensions HxWxD (mm)	108 x 22.5 x 114.5	108 x 22.5 x 114.5
Safety category	Category 4	Category 4
Performance level	PL e	PL e
Rated voltage	24 VDC ±20%	24 VDC ±20%
Function	Can be used to control the following: • Zero speed, Max. speed, Speed range; • Direction of movement, rotation/translation; Up to 4 speed thresholds can be set for each logic output (axis). Each unit incorporates two logic outputs that can be configured using the software and is thus capable of controlling up to two independent axes	Can be used to control the following: • Zero speed, Max. speed, Speed range; • Direction of movement, rotation/translation; Up to 4 speed thresholds can be set for each logic output (axis). Each unit incorporates two logic outputs that can be configured using the software and is thus capable of controlling up to two independent axes
General specifications		
Dissipated power	3 W max	3 W max
Max number of axis	2	2
2 proximity inputs	1 encoder Sin/Cos + 1 or 2 proximity [C PSS]	
1 encoder e 2 proximity inputs		1 encoder TTL 5V + 1 or 2 proximity [C ES1T] 1 encoder HTL + 1 or 2 proximity [C ES1H]
2 encoder e 2 proximity inputs		2 encoder TTL + 1 or 2 proximity [C ES2T] 2 encoder HTL + 1 or 2 proximity [C ES2H] 2 encoder Sin/Cos + 1 or 2 proximity [C ES2S]

Configurable safety modules

	Data and diagnostics communication modules	Bus transfer expansion modules
Types	C DDC	C BT
		
Dimensions HxWxD (mm)	108 x 22.5 x 114.5	108 x 22.5 x 114.5
Safety category	Category 4	Category 4
Performance level	PL e	PL e
Rated voltage	24 VDC $\pm 20\%$	24 VDC $\pm 20\%$
Function	Communication with most common industrial fieldbus system	Interface expansion module allowing the connection of remote expansions. Ideal solution for the interconnection of the safety functions of several machines in a production line
General specifications		
Connection		Shielded cable compatible with RS485
Max connection distance		50 m
Max number of CBT modules per system		6
References	Profibus [C PFBUS] DeviceNET [C DNET] CANopen [C CAN] Ethernet IP [C EIP] EtherCAT [C ECAT] PROFINET [C PFNET] Universal Serial Bus [C OMMS]	1 connection (1 input or 1 output) [C BT1] 2 connections (1 input and 1 output) [C BT2] The C BT1 is placed at the beginning or at the end of the network connected with a single cable, whilst the C BT2 goes in the middle.

Safety modules

Emergency stop and safety gates				Two hand device
Types	NES02D	NES13D	NA13D	ND12D
   				
Dimensions HxWxD (mm)	99 x 22.5 x 114	99 x 22.5 x 114	99 x 22.5 x 114	99 x 22.5 x 114
Safety category	Category 4 (EN ISO 13849-1:2008)	Category 4 (EN ISO 13849-1:2008)	Category 4 (EN 13849-1)	Category 4 (EN ISO 13849-1:2008)
Performance level	PL _e (EN ISO 13849-1:2008)	PL _e (EN ISO 13849-1:2008)	PL _e (EN 13849-1)	PL _e (EN ISO 13849-1:2008)
Function	Category 0 emergency stop module safety gates (mech. switches)	Category 0 emergency stop module safety gates (mech. switches)	Category 0 emergency stop module safety gates (mech. switches)	Two hand device
Output specifications				
	2 x NO safety relay	3 x NO safety relay + 1 NC relay	3 x NO safety relay + 1 NC relay	2 x NO safety relay + 1 NC relay, 1 NO PNP
Max. load AC1	6 A @ 230 VAC	6 A @ 230 VAC	6 A @ 230 VAC	6 A @ 230 VAC
Max. load DC12	6 A @ 24 VDC	6 A @ 24 VDC	6 A @ 24 VDC	6 A @ 24 VDC
Electrical life	> 10 ⁵ operations	> 10 ⁵ operations	> 10 ⁵ operations	> 10 ⁵ operations
Input specifications				
Type	2 x NO, voltage free	2 x NO, voltage free	2 x NO, voltage free	2 x NO, 2 x NC, voltage free
General specifications				
Power supply	24 VAC / DC -15% +10%	24 VAC / DC -15% +10%	24 VAC/DC -15% +10% 110 VAC -15% +10% [110CG] 230 VAC -15% +10% [230CG]	24 VAC/DC -15% +10% 110 VAC -15% +10% [110CG] 230 VAC -15% +10% [230CG]
Screw terminals	Fixed [SA, SC] Detachable [DA, DC]	Fixed [SA, SC] Detachable [DA, DC]	Fixed	Fixed
Start	Automatic / Manual [SA, DA] Monitored manual [SC, DC]	Automatic / Manual [SA, DA] Monitored manual [SC, DC]	Automatic / Manual	Automatic
Approvals/Marks	CE - UL - TÜV	CE - UL - TÜV	CE	CE - UL - TÜV
References				
	NES02DB24SA	NES13DB24SA	NA13D	ND12D
	NES02DB24SC	NES13DB24SC	NA13D110CG	ND12D110CG
	NES02DB24DA	NES13DB24DA	NA13D230CG	ND12D230CG
	NES02DB24DC	NES13DB24DC		

Safety modules

	Safety mat & edge		Safety light curtains
Types	NSE02C	NST02C	NLG02D / NLG13D
			
Dimensions HxWxD (mm)	84 x 22.5 x 100	84 x 22.5 x 100	99 x 22.5 x 114
Safety category	Category 3 (EN ISO 13849-1: 2008)	Category 3 (EN ISO 13849-1: 2008)	Category 4 (EN ISO 13849-1:2008)
Performance level	PLd (EN ISO 13849-1:2008)	PLd (EN ISO 13849-1:2008)	PLe (EN ISO 13849-1:2008)
Function	Safety mat & edge module	Safety mat module	Light curtains safety modules
Output specifications			
	2 x NO safety relay	2 x NO safety relay	2 x NO safety relay [NLG02] 3 x NO safety relay + 1 NC relay [NLG13]
Max. load AC1	5 A @ 230 VAC	5 A @ 230 VAC	6 A @ 230 VAC
Max. load DC12	5 A @ 24 VDC	5 A @ 24 VDC	6 A @ 24 VDC
Electrical life	> 10 ⁵ operations	> 10 ⁵ operations	> 10 ⁵ operations
Input specifications			
Type	2-wire mats or safety edges	4-wire mats (SM...)	2 x NO min 10 mA / 17 V max 60 mA / 38 V [NLG02] max 30 mA / 38 V
General specifications			
Power supply	24 VAC/DC ±15%	24 VAC/DC ±15%	24 VDC - 15% +10%
Screw terminals	Fixed	Fixed	Fixed [SA, SC] Detachable [DA, DC]
Start	Automatic / Manual [SA] Monitored manual [SC]	Automatic / Manual [SA] Monitored manual [SC]	Automatic / Manual [SA, DA] Monitored manual [SC, DC]
Approvals/Marks	CE - TÜV	CE - TÜV	CE - UL - TÜV
References			
	NSE02CB24SA	NST02CB24SA	NLG02D724SA
	NSE02CB24SC	NST02CB24SC	NLG02D724SC
			NLG02D724DA
			NLG02D724DC
			NLG13D724SA
			NLG13D724SC
			NLG13D724DA
			NLG13D724DC

Safety modules

Safety gates (magnetic sensors)

Types	NSO02	NSO13	NSC02	NSC13
				
Dimensions HxWxD (mm)	99 x 22.5 x 114	99 x 22.5 x 114	99 x 22.5 x 114	99 x 22.5 x 114
Safety category	Category 4 (EN ISO 13849-1:2008)	Category 4 (EN ISO 13849-1:2008)	Category 4 (EN ISO 13849-1:2008)	Category 4 (EN ISO 13849-1:2008)
Performance level	PL _e (EN ISO 13849-1:2008)	PL _e (EN ISO 13849-1:2008)	PL _e (EN ISO 13849-1:2008)	PL _e (EN ISO 13849-1:2008)
Function	Safety gates module	Safety gates module	Safety gates module	Safety gates module
Output specifications				
	2 x NO safety relay	3 x NO safety relay + 1 NC relay	2 x NO safety relay	3 x NO safety relay + 1 NC relay
Max. load AC1	6 A @ 230 VAC	6 A @ 230 VAC	6 A @ 230 VAC	6 A @ 230 VAC
Max. load DC12	6 A @ 24 VDC	6 A @ 24 VDC	6 A @ 24 VDC	6 A @ 24 VDC
Electrical life	> 10 ⁵ operations	> 10 ⁵ operations	> 10 ⁵ operations	> 10 ⁵ operations
Input specifications				
Type	2 x NO, SMS or mechanical	2 x NO, SMS or mechanical	1 x NO, 1 x NC, SMS or mechanical	1 x NO, 1 x NC, SMS or mechanical
General specifications				
Power supply	24 VAC/DC -15% +10%	24 VAC/DC -15% +10%	24 VAC/DC -15% +10%	24 VAC/DC -15% +10%
Screw terminals	Fixed [SA, SC] Detachable [DA, DC]	Fixed [SA, SC] Detachable [DA, DC]	Fixed [SA, SC] Detachable [DA, DC]	Fixed [SA, SC] Detachable [DA, DC]
Start	Automatic / Manual [SA, DA] Monitored manual [SC, DC]	Automatic / Manual [SA, DA] Monitored manual [SC, DC]	Automatic / Manual [SA, DA] Monitored manual [SC, DC]	Automatic / Manual [SA, DA] Monitored manual [SC, DC]
Approvals/Marks	CE - UL - TÜV	CE - UL - TÜV	CE - UL - TÜV	CE - UL - TÜV
References				
	NSO02DB24SA	NSO13DB24SA	NSC02DB24SA	NSC13DB24SA
	NSO02DB24SC	NSO13DB24SC	NSC02DB24SC	NSC13DB24SC
	NSO02DB24DA	NSO13DB24DA	NSC02DB24DA	NSC13DB24DA
	NSO02DB24DC	NSO13DB24DC	NSC02DB24DC	NSC13DB24DC

Safety modules

	Lift levelling		Extension
Types	NA12DLIFT	NXL12DG	NE14D
			
Dimensions HxWxD (mm)	99 x 22.5 x 114	99 x 22.5 x 114	99 x 22.5 x 114
Safety category			Category 4 (EN ISO 13849-1:2008)
Performance level			PL _e (EN ISO 13849-1:2008)
Function	Lift levelling module (EN 81-20, 81-50, EN 12015, EN 12016)	Lift levelling module (EN 81-20, 81-50, EN 12015, EN 12016)	Extension safety module
Output specifications			
	2 x NO safety relay	[NXL12DG002] 2 x NO safety relay [NXL12DG020] 2 x NO safety relay + 1 x NC auxiliary output	4 x NO safety relay + 1NC (feedback)
Max. load AC1	6 A @ 230 VAC	6 A @ 230 VAC	6 A @ 230 VAC
Max. load DC12			6 A @ 24 VDC
Electrical life	> 10 ⁵ operations	> 10 ⁵ operations	> 10 ⁵ operations
Input specifications			
Type	4-wire 2 NO Channel with short-circuit detection	[NXL12DG002] 3-wire, 2 NO 1 common terminal [NXL12DG020] 4-wire, 2 NO channel with short-circuit detection	2 x NO, voltage free
General specifications			
Power supply	[NA12D12LIFT] 12 VAC/DC -15% +10% [NA12DLIFT] 24 VAC/DC -15% +10%	24 VAC/DC -15% +10%	24 VAC/DC -15% +10% 110 VAC -15% +10% [110CG] 230 VAC -15% +10% [230CG]
Screw terminals	Fixed	Fixed	Fixed
Start			
Approvals/Marks	CE - TÜV	CE - TÜV	CE
References			
	NA12D12LIFT	NXL12DG002	NE14DCG
	NA12DLIFT	NXL12DG020	NE14D110CG
			NE14D230CG

Safety light curtains

Safety light curtains, safety category 2
hand resolution

Safety light curtains, safety category 2
presence resolution

Types

SC2...

SC2...



General specifications

Power supply	24 VDC $\pm 20\%$	24 VDC $\pm 20\%$
OSSD outputs	2 PNP	2 PNP
Output connections	M12 4-pole connector for TX M12 5-pole connector for RX	M12 4-pole connector for TX M12 5-pole connector for RX
Safety category	Category 2	Category 2
Auxiliary functions	Reset / Test; Automatic Restart	Reset / Test; Automatic Restart
Housing material	Painted aluminium (yellow RAL 1003)	Painted aluminium (yellow RAL 1003)
Ambient light rejection	IEC 61496-2	IEC 61496-2
Degree of protection	IP 65 (EN 60529)	IP 65 (EN 60529)
Operating temperature	-10°C to +55°C	-10°C to +55°C
Approvals/Marks	CE - TÜV - cULus listed	CE - TÜV - cULus listed

References

Resolution	Range	Protected height (mm)	No. of beams	Response time (ms)	REFERENCES	Protected height (mm)	No. of beams	Response time (ms)	REFERENCES
Hand 30 mm	0.2-19 m	150	8	8	SC2AR30150D19				
		300	16	9	SC2AR30300D19				
		450	24	11	SC2AR30450D19				
		600	32	12	SC2AR30600D19				
		750	40	14	SC2AR30750D19				
		900	48	15	SC2AR30900D19				
		1050	56	17	SC2AR301050D19				
		1200	64	18	SC2AR301200D19				
		1350	72	20	SC2AR301350D19				
		1500	80	21	SC2AR301500D19				
Presence 90 mm	0.2-19 m					300	5	9	SC2AR90300D19
						450	7	10	SC2AR90450D19
						600	9	11	SC2AR90600D19
						750	11	12	SC2AR90750D19
						900	13	13	SC2AR90900D19
						1050	15	14	SC2AR901050D19
						1200	17	15	SC2AR901200D19
						1350	19	16	SC2AR901350D19
						1500	21	17	SC2AR901500D19

Safety light curtains

**Safety light curtains, safety category 4
finger resolution**

**Safety light curtains, safety category 4
hand resolution**

Types

SC4...

SC4...



General specifications

Power supply	24 VDC $\pm 20\%$	24 VDC $\pm 20\%$
OSSD outputs	2 PNP	2 PNP
Output connections	M12 4-pole connector for TX M12 8-pole connector for RX	M12 4-pole connector for TX M12 8-pole connector for RX
Safety category	Category 4	Category 4
Auxiliary functions	Reset / Test; Selectable Manual/Auto. Restart; Selectable EDM	Reset / Test; Selectable Manual/Auto. Restart; Selectable EDM
Housing material	Painted aluminium (yellow RAL 1003)	Painted aluminium (yellow RAL 1003)
Ambient light rejection	IEC 61496-2	IEC 61496-2
Degree of protection	IP 65 (EN 60529)	IP 65 (EN 60529)
Operating temperature	0°C to +55°C	0°C to +55°C
Approvals/Marks	CE - TÜV - cULus listed	CE - TÜV - cULus listed

References

Resolution	Range	Protected height (mm)	No. of beams	Response time (ms)	REFERENCES	Protected height (mm)	No. of beams	Response time (ms)	REFERENCES
Finger 14 mm	0.2 - 6 m	150	16	11	SC4ED14150D6				
		300	32	15	SC4ED14300D6				
		450	48	18	SC4ED14450D6				
		600	64	22	SC4ED14600D6				
		750	80	25	SC4ED14750D6				
		900	96	29	SC4ED14900D6				
		1050	112	33	SC4ED141050D6				
		1200	128	36	SC4ED141200D6				
Hand 30 mm	0.2 - 19 m					150	8	9	SC4ED30150D19
						300	16	11	SC4ED30300D19
						450	24	13	SC4ED30450D19
						600	32	14	SC4ED30600D19
						750	40	16	SC4ED30750D19
						900	48	18	SC4ED30900D19
						1050	56	19	SC4ED301050D19
						1200	64	21	SC4ED301200D19
						1350	72	23	SC4ED301350D19
						1500	80	25	SC4ED301500D19
						1650	88	26	SC4ED301650D19

Safety magnetic sensors

Safety magnetic sensors

Types

SMS...

CLS...



Electrical specifications

Max. switch. voltage	100 VAC
Max. switch. power	5 VA
Max. switch. current	0.25 A

General specifications

External dimensions (mm)	88 x 25 x 13; M18x1 SMSA2; M30x1.5 SMSA3P	
Suitable magnetic unit	CLS; CLSA2 (SMSA2P); CLSA2M (SMSA2M); CLSA3 (SMSA3P)	
Output connection	Cable (PVC, AWG 22 to 26, L=2 m.); pig tail with M12 connector, L=0.3 m	
Degree of protection	IP 67	IP 67
Operating temperature	-25°C to +70°C	-25°C to +70°C
Housing material	Plastic; PBT + 30 % glass (SMSA2P and SMSA3P); Stainless steel (SMSA2M)	Plastic (CLS, CLSA2, CLS3); Stainless steel (CLSA2M)
Approvals/Marks	CE - (UL version is available for some items with different codification)	CE - (UL version is available for some items with different codification)

References

	Safety Aux. Outputs	Aux. Outputs	REFERENCES	Dimensions	REFERENCES
Housing type: Rectangular Material: Plastic	1NO		SMS10	88 x 25 x 13	CLS
	1NO	1NC	SMS10NC		
	1NO	1NC	SMS10NCCM1 0.3 m cable with M12 conn.		
	1NO+1NC		SMS01		
	1NO+1NC		SMS02		
	1NO+1NC		SMS02LD LED on NC contact		
	1NO+1NC		SMS02S1 Resistor on NO contact		
	2NO		SMS03		
	2NO		SMS03+ CM1A4/03MT 0.3 m cable with M12 conn.		
	2NO	1NC	SMS03NC		
Housing type: Cylindrical Material: Plastic	1NO+1NC		SMSA2P02	Ø25.1 x 9.3	CLSA2
	1NO+1NC		SMSA2P02LD LED on NC contact		
	2NO		SMSA2P03		
	1NO		SMSA2P10		
	2NO		SMSA2P30	Ø30 x 16	CLSA3
	1NO+1NC		SMSA3P02		
	2NO		SMSA3P03		
	2NO		SMSA3P30		
Housing type: Cylindrical Material: Stainless steel	1NO+1NC		SMSA2M02	Ø25.1 x 9.3	CLSA2M
	1NO		SMSA2M10		

Safety switches - Electromagnetic safety interlock

Interlock types

Electrical

Mechanical



Family: ESI

ESI Electrical Interlock

ESI Mechanical Interlock

Material body

Polimeric

Polimeric

Dimensions WxHxD (mm)

40 x 190 x 42

40 x 190 x 42

References contact block

1 NO + 2 NC (Coil) + 1 NC (Actuator)

ESI31xE024

ESI31xM024

1 NO + 2 NC (Coil) + 1 NO (Actuator)

ESI22xE024

ESI22xM024

2 NC (Coil) + 1 NO + 1 NC (Actuator)

ESI13xE024

ESI13xM024

1 NO + 2 NC (Coil) + 1 NC (Actuator)

ESI31xE120

ESI31xM120

1 NO + 2 NC (Coil) + 1 NO (Actuator)

ESI22xE120

ESI22xM120

2 NC (Coil) + 1 NO + 1 NC (Actuator)

ESI13xE120

ESI13xM120

1 NO + 2 NC (Coil) + 1 NC (Actuator)

ESI31xE230

ESI31xM230

1 NO + 2 NC (Coil) + 1 NO (Actuator)

ESI22xE230

ESI22xM230

2 NC (Coil) + 1 NO + 1 NC (Actuator)

ESI13xE230

ESI13xM230

General specifications (for all types)

Conformance	Low Voltage Directive 2014/35/EU in accordance with EN/IEC 60947-5-1	Low Voltage Directive 2014/35/EU in accordance with EN/IEC 60947-5-1
	Machinery Directive 2006/42/CE in accordance with EN ISO 14119	Machinery Directive 2006/42/CE in accordance with EN ISO 14119
	SIL 3 in accordance with EN 62061	SIL 3 in accordance with EN 62061
	PL e in accordance with EN ISO 13849-1	PL e in accordance with EN ISO 13849-1
	Interlock type 2 in accordance with EN ISO 14119	Interlock type 2 in accordance with EN ISO 14119
Max actuating speed	20 m/min	20 m/min
Switching frequency	600 cycles/h	600 cycles/h
Load factor	0.5	0.5
Retention force at locked actuator	1200N	1200N
Mechanical durability	1,000,000 operations	1,000,000 operations
B10d	4,000,000 operations	4,000,000 operations
Rated operating current AC-15	24V - 10A	24V - 10A
Rated operating current AC-15	230V - 4A	230V - 4A
Rated operating current DC-13	24V - 4A	24V - 4A

X must be replaced depending on the head orientation:
1: 0° 2: 90° 3: 180° 4: 270°

Limit switches - Safety type

Head types

Key Actuator 90° adj. head (key must be ordered separately)



Family: S

	PS21	PS42	PS31	PS43
	Thermoplastic*	Thermoplastic*	Thermoplastic*	Metal
Dimensions WxHxD (mm)	30.3 x 90 x 30	57 x 83 x 33	41.3 x 109.5 x 41	43 x 104.5 x 66
References contact block				
Snap 1NO+1NC	PS21S-PS1105-T00	PS42S-PS1105-T00	PS31S-PS1105-T00	PS43S-PS1105-Y00
Snap 2NC	PS21S-PS0205-T00	PS42S-PS0205-T00	PS31S-PS0205-T00	PS43S-PS0205-Y00
Slow 1NO+1NC	PS21S-PT1105-T00	PS42S-PT1105-T00	PS31S-PT1105-T00	PS43S-PT1105-Y00
Slow Ov.**1NO+1NC	PS21S-PO1105-T00	PS42S-PO1105-T00	PS31S-PO1105-T00	PS43S-PO1105-Y00
Slow 2NC	PS21S-PT0205-T00	PS42S-PT0205-T00	PS31S-PT0205-T00	PS43S-PT0205-Y00
Slow 2NO+1NC			PS31S-PT2105-T00	PS43S-PT2105-Y00
Slow 1NO+2NC			PS31S-PT1205-T00	PS43S-PT1205-Y00
Slow 3NC			PS31S-PT0305-T00	PS43S-PT0305-Y00

Head types

Key actuator fully turnable head (key must be ordered separately)

Hinge Switch Operated lever*



Family: S / H

	PS21	PS42	PS21	PS42
	Thermoplastic*	Thermoplastic*	Thermoplastic*	Thermoplastic*
Dimensions WxHxD (mm)	30.3 x 98.6 x 30	57 x 91.5 x 33	30.3 x 157 x 42	57 x 150 x 42
References contact block				
Snap 1NO+1NC	PS21S-PS1109-T00	PS42S-PS1109-T00	PS21H-PS11HC-T00	PS42H-PS11HC-T00
Snap 2NC	PS21S-PS0209-T00	PS42S-PS0209-T00	PS21H-PS02HC-T00	PS42H-PS02HC-T00
Slow 1NO+1NC	PS21S-PT1109-T00	PS42S-PT1109-T00	PS21H-PT11HC-T00	PS42H-PT11HC-T00
Slow Ov.**1NO+1NC	PS21S-PO1109-T00	PS42S-PO1109-T00	PS21H-PO11HC-T00	PS42H-PO11HC-T00
Slow 2NC	PS21S-PT0209-T00	PS42S-PT0209-T00	PS21H-PT02HC-T00	PS42H-PT02HC-T00

Head types

Hinge shaft Zinc plated steel

Hinge Shaft Stainless steel



Family: H

	PS21	PS42	PS21	PS42
	Thermoplastic*	Thermoplastic*	Thermoplastic*	Thermoplastic*
Dimensions WxHxD (mm)	30.3 x 79.5 x 51.2	57 x 72.5 x 52.5	30.3 x 79.5 x 51.2	30.3 x 72.5 x 52.5
References Contact Block				
Snap 1NO+1NC	PS21H-PS11HZ-T00	PS42H-PS11HZ-T00	PS21H-PS11HS-T00	PS42H-PS11HS-T00
Snap 2NC	PS21H-PS02HZ-T00	PS42H-PS02HZ-T00	PS21H-PS02HS-T00	PS42H-PS02HS-T00
Slow 1NO+1NC	PS21H-PT11HZ-T00	PS42H-PT11HZ-T00	PS21H-PT11HS-T00	PS42H-PT11HS-T00
Slow Ov.**1NO+1NC	PS21H-PO11HZ-T00	PS42H-PO11HZ-T00	PS21H-PO11HS-T00	PS42H-PO11HS-T00
Slow 2NC	PS21H-PT02HZ-T00	PS42H-PT02HZ-T00	PS21H-PT02HS-T00	PS42H-PT02HS-T00

General specifications (for all types)

Degree of protection	IP 65 (plastic body) IP 66 (metal body)	Rated operational current	
Rated insulation voltage plastic body	(Ui)		
according to IEC 60947-1 and EN 60947-1	500 V	Ie/AC-15 230 VAC	3.1 A
according to UL 508, CSA C22-2 n°14	A 600, Q 600	Ie/DC-13 24 VDC	2.8 A
Rated insulation voltage metal body	(Ui)	Electrical durability (according to IEC 60947-5-1 annex C)	
according to IEC 60947-1 and EN 60947-1	400 V (PS21, PS42)	max. switching frequency Cycles/h	3600
	500 V (PS31, PS43)	load factor	0.5
according to UL 508, CSA C22-2 n°14	A 300, Q 300 (PS21, PS42)	Air temperature near the device	
	A 600, Q 600 (PS31, PS43)	during operation	-25 to +70°C
Rated impulse withstand voltage Uimp	6 kV	for storage	-30 to +80°C
		Approvals	CE - UL - CSA

* also available in metal (M type) ** Ov.: overlapping travel paths

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Limit switches - Safety type

Head types

Pull wire activated head - 16 m cable max



Family: R

	PS31 Metal	PS43 Metal
Dimensions WxHxD (mm)	40 x 162.75 x 43	63 x 158.25 x 43.3
References contact block		
Snap 1NO+1NC	PS31R-PS11N7-Y00	PS43R-PS11N7-Y00
Snap 2NC	PS31R-PS02N7-Y00	PS43R-PS02N7-Y00
Slow 1NO+1NC	PS31R-PT11N7-Y00	PS43R-PT11N7-Y00
Slow Ov.**1NO+1NC	PS31R-PO11N7-Y00	PS43R-PO11N7-Y00
Slow 2NC	PS31R-PT02N7-Y00	PS43R-PT02N7-Y00
Slow 2NO+1NC	PS31R-PT21N7-Y00	PS43R-PT21N7-Y00
Slow 1NO+2NC	PS31R-PT12N7-Y00	PS43R-PT12N7-Y00
Slow 3NC	PS31R-PT03N7-Y00	PS43R-PT03N7-Y00

Head types

Pull wire activated head with pull button reset - 16 m cable max



Family: H

	PS31 Metal	PS43 Metal
Dimensions WxHxD (mm)	40 x 162.75 x 43	63 x 158.25 x 44
References contact block		
Snap 1NO+1NC	PS31R-PS11N7-YK0	PS43R-PS11N7-YK0
Snap 2NC	PS31R-PS02N7-YK0	PS43R-PS02N7-YK0
Slow 1NO+1NC	PS31R-PT11N7-YK0	PS43R-PT11N7-YK0
Slow Ov.**1NO+1NC	PS31R-PO11N7-YK0	PS43R-PO11N7-YK0
Slow 2NC	PS31R-PT02N7-YK0	PS43R-PT02N7-YK0
Slow 2NO+1NC	PS31R-PT21N7-YK0	PS43R-PT21N7-YK0
Slow 1NO+2NC	PS31R-PT12N7-YK0	PS43R-PT12N7-YK0
Slow 3NC	PS31R-PT03N7-YK0	PS43R-PT03N7-YK0

General specifications (for all types)

Degree of protection	IP 65 (plastic body) IP 66 (metal body)	Rated operational current	
Rated insulation voltage plastic body	(U _i)	I _e /AC-15 230 VAC	3.1 A
according to IEC 60947-1 and EN 60947-1	500 V	I _e /DC-13-24VDC	2.8 A
according to UL 508, CSA C22-2 n°14	A 600, Q 600	Electrical durability (according to IEC 60947-5-1 annex C)	
Rated insulation voltage metal body	(U _i)	max. switching frequency Cycles/h	3600
according to IEC 60947-1 and EN 60947-1	400 V (PS21, PS42)	load factor	0.5
	500 V (PS31, PS43)	Air temperature near the device	
according to UL 508, CSA C22-2 n°14	A 300, Q 300 (PS21, PS42)	during operation	-25 to +70°C
	A 600, Q 600 (PS31, PS43)	for storage	-30 to +80°C
Rated impulse withstand voltage U _{imp}	6 kV	Approvals	CE - UL - CSA

* also available in metal (Y type) ** Ov.: overlapping travel paths

Limit switches - Safety type with pull button reset

Head Types	PO Steel plunger	PR Steel plunger with nylon roller	R3 Plastic roller lever on metal plunger	RT Lever with nylon roller
				

Family: K

	PS21 Thermoplastic*	PS21 Thermoplastic*	PS21 Thermoplastic*	PS21 Thermoplastic*
Dimensions WxHxD (mm)	30.3 x 88 x 36.5	30.3 x 99 x 36.5	30.3 x 107 x 36.5	39 x 106 x 45

References contact block

Snap 1NO+1NC	⊕	PS21K-PS11P0-T00	PS21K-PS11PR-T00	PS21K-PS11R3-T00	PS21K-PS1105-T00
Snap 2NC	⊕	PS21K-PS02P0-T00	PS21K-PS02PR-T00	PS21K-PS02R3-T00	PS21K-PS0205-T00
Slow 1NO+1NC	⊕	PS21K-PT11P0-T00	PS21K-PT11PR-T00	PS21K-PT11R3-T00	PS21K-PT1105-T00
Slow 2NC	⊕	PS21K-PT02P0-T00	PS21K-PT02PR-T00	PS21K-PT02R3-T00	PS21K-PT02RT-T00

				
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Family: K

	PS42 Thermoplastic*	PS42 Thermoplastic*	PS42 Thermoplastic*	PS42 Thermoplastic*
Dimensions WxHxD (mm)	57 x 81 x 36.5	57 x 92 x 36.5	57 x 100 x 36.5	57 x 99 x 45

References contact block

Snap 1NO+1NC	⊕	PS42K-PS11P0-T00	PS42K-PS11PR-T00	PS42K-PS11R3-T00	PS42K-PS11RT-T00
Snap 2NC	⊕	PS42K-PS02P0-T00	PS42K-PS02PR-T00	PS42K-PS02R3-T00	PS42K-PS02RT-T00
Slow 1NO+1NC	⊕	PS42K-PT11P0-T00	PS42K-PT11PR-T00	PS42K-PT11R3-T00	PS42K-PT11RT-T00
Slow 2NC	⊕	PS42K-PT02P0-T00	PS42K-PT02PR-T00	PS42K-PT02R3-T00	PS42K-PT02RT-T00

Head Types	R4 Roller Lever, external side actuation	LR Roller Lever Ø22, side actuation
		

Family: K

	PS21 Thermoplastic*	PS42 Thermoplastic*
Dimensions WxHxD (mm)	44 x 107 x 36.5	57 x 112 x 36.5

References contact block

Snap 1NO+1NC	⊕	PS21K-PS11R4-T00	PS42K-PS11LR-T00
Snap 2NC	⊕	PS21K-PS02R4-T00	PS42K-PS02LR-T00
Slow 1NO+1NC	⊕	PS21K-PT11R4-T00	PS42K-PT11LR-T00
Slow 2NC	⊕	PS21K-PT02R4-T00	PS42K-PT02LR-T00

General specifications (for all types)

Degree of protection	IP 65	Rated operational current	
Rated insulation voltage plastic body	(U _i)	I _e /AC-15 230 VAC	3.1 A
according to IEC 60947-1 and EN 60947-1	500 V	I _e /DC-13-24VDC	2.8 A
according to UL 508, CSA C22-2 n°14	A 600, Q 600	Electrical durability (according to IEC 60947-5-1 annex C)	
Rated insulation voltage metal body	(U _i)	max. switching frequency Cycles/h	3600
according to IEC 60947-1 and EN 60947-1	400 V	load factor	0.5
	500 V	Air temperature near the device	
according to UL 508, CSA C22-2 n°14	A 300, Q 300 (PS21, PS42)	during operation	-25 to +70°C
	A 600, Q 600 (PS31, PS43)	for storage	-30 to +80°C
Rated impulse withstand voltage U _{imp}	6 kV	Approvals	CE - UL - CSA

* Also available in metal (Y type) other types available

Limit switches - Safety hinge

Head types

Safety hinge

Safety hinge

Safety hinge



Family: PS38H

	PS38H M12 connector	PS38H 2 m cable	PS38H 2 m cable back output
Material body	Thermoplastic	Thermoplastic	Thermoplastic
Dimensions WxHxD (mm)	60 x 110 x 15	60 x 110 x 15	60 x 110 x 15

References contact block

Slow action T22: 2NO + 2NC	PS38H-IT2205-T01	PS38H-CT2205-T01	PS38H-CT2205-T02
Slow action T13: 1NO + 3NC	PS38H-IT1305-T01	PS38H-CT1305-T01	PS38H-CT1305-T02

General specifications (for all types)

Conformance	IEC 947-5-1 and European EN 60947-5-1 standards. Safety system of machinery up to SIL 3 or PLe according to EN ISO 13849-1	IEC 947-5-1 and European EN 60947-5-1 standards. Safety system of machinery up to SIL 3 or PLe according to EN ISO 13849-1	IEC 947-5-1 and European EN 60947-5-1 standards. Safety system of machinery up to SIL 3 or PLe according to EN ISO 13849-1
Air temperature near the device	Operation - 20°C to + 80°C Storage - 20°C to + 80°C	Operation - 20°C to + 80°C Storage - 20°C to + 80°C	Operation - 20°C to + 80°C Storage - 20°C to + 80°C
Degree of protection	IP 67	IP 67	IP 67
Mechanical durability	1,000,000 operations	1,000,000 operations	1,000,000 operations
Operation frequency	1,200 cycles/h	1,200 cycles/h	1,200 cycles/h
B10d	2,000,000 cycles	2,000,000 cycles	2,000,000 cycles
Positive opening operation (according to IEC 947-5-1)	All NC contacts are positive opening operation (min. actuating torque 0.5 Nm)	All NC contacts are positive opening operation (min. actuating torque 0.5 Nm)	All NC contacts are positive opening operation (min. actuating torque 0.5 Nm)
Rated insulation voltage Ui	30 V	400 V	400 V
Protection against electrical shocks (according to IEC 536)	Class II	Class II	Class II
Thermal current Ith	2 A	4 A	4 A
Rated operational current	24 VDC - 2 A	24 - 120 - 250 - 400 VCA 4 A 24 VDC 2 A / 125 VDC 0.4 A / 250 VDC 0.3 A	24 - 120 - 250 - 400 VAC 4 A 24 VDC 2 A / 125 VDC 0.4 A / 250 VDC 0.3 A
Approvals	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA

Limit switches - Miniature type

Head Types	PO Plain plunger	PY Nylon roller plunger	P8 Cross nylon roller plunger	RT Ø14 Nylon roller lever
				
Dimensions WxHxD (mm)	35 x 60 x 16 1 m PVC cable	35 x 70 x 16 1 m PVC cable	35 x 70 x 16 1 m PVC cable	35 x 92 x 29.5 1 m PVC cable
PS31M (metal*) References contact block				
Snap 1NO+1NC	PS31M-CS11P0-M00	PS31M-CS11PY-M00	PS31M-CS11P8-M00	PS31M-CS11RT-M00
Slow 1NO+1NC	PS31M-CT11P0-M00	PS31M-CT11PY-M00	PS31M-CT11P8-M00	PS31M-CT11RT-M00
				
Dimensions WxHxD (mm)	31.5 x 60 x 16 1 m PVC cable	31.5 x 70 x 16 1 m PVC cable	31.5 x 70 x 16 1 m PVC cable	31.5 x 92 x 29.5 1 m PVC cable
PS21M (metal*) References contact block				
Snap 1NO+1NC	PS21M-CS11P0-M00	PS21M-CS11PY-M00	PS21M-CS11P8-M00	PS21M-CS11RT-M00
Slow 1NO+1NC	PS21M-CT11P0-M00	PS21M-CT11PY-M00	PS21M-CT11P8-M00	PS21M-CT11RT-M00
Head Types	Plain plunger with fixing nuts	Roller plunger with fixing nuts	Cross roller plunger with fixing nuts	R1 Adjustable lever with Ø18 nylon roller
				
Dimensions (mm) WxHxD	35 x 74 x 16 1 m PVC cable	35 x 84.8 x 16 1 m PVC cable	35 x 84.8 x 16 1 m PVC cable	35 x 86...158 x 38.9 1 m PVC cable
PS31M (metal*) References contact block				
Snap 1NO+1NC	PS31M-CS11P0-M0L	PS31M-CS11PY-M0L	PS31M-CS11P8-M0L	PS31M-CS11RT-M0L
Slow 1NO+1NC	PS31M-CT11P0-M0L	PS31M-CT11PY-M0L	PS31M-CT11P8-M0L	PS31M-CT11RT-M0L
				
Dimensions WxHxD (mm)	31.5 x 74 x 16 1 m PVC cable	31.5 x 84.8 x 16 1 m PVC cable	31.5 x 84.8 x 16 1 m PVC cable	31.5 x 86...158 x 38.9 1 m PVC cable
PS21M (metal*) References contact block				
Snap 1NO+1NC	PS21M-CS11P0-M0L	PS21M-CS11PY-M0L	PS21M-CS11P8-M0L	PS21M-CS11RT-M0L
Slow 1NO+1NC	PS21M-CT11P0-M0L	PS21M-CT11PY-M0L	PS21M-CT11P8-M0L	PS21M-CT11RT-M0L
General specifications (for all types)				
Mechanical life	>10 000 000 cycles		Rated thermal current (I _{th})	10 A (IEC947-5-1)
Operating frequency	3600 cycles/h		Rated insulation voltage (U _i)	400 VAC (IEC947-5-1)
Rated operating current (I _e)	1.5 A/230 V (Cat. AC15)		Degree of protection	IP 67
	1.1 A/24 V (Cat. DC13)		Approvals	CE - UL (upon request)

* Also available in thermoplastic (T type)

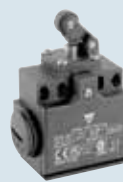
Limit switches - Limit type

Head Types	PO Plain plunger	PR Roller plunger	RH Plastic roller plunger	RT Nylon roller lever
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Family: L

	PS21	PS21	PS21	PS21
	Thermoplastic*	Thermoplastic*	Thermoplastic*	Thermoplastic*
Dimensions WxHxD (mm)	30.3 x 73 x 30	30.3 x 84 x 30	30.3 x 92 x 30	30.3 x 106 x 45
References contact block				
Snap 1NO+1NC	PS21L-PS11PO-T00	PS21L-PS11PR-T00	PS21L-PS11RH-T00	PS21L-PS11RT-T00
Slow 1NO+1NC	PS21L-PT11PO-T00	PS21L-PT11PR-T00	PS21L-PT11RH-T00	PS21L-PT11RT-T00
Slow Ov.**1NO+1NC	PS21L-PO11PO-T00	PS21L-PO11PR-T00	PS21L-PO11RH-T00	PS21L-PO11RT-T00
Slow 2NO	PS21L-PT20PO-T00	PS21L-PT20PR-T00	PS21L-PT20RH-T00	PS21L-PT20RT-T00
Slow 2NC	PS21L-PT02PO-T00	PS21L-PT02PR-T00	PS21L-PT02RH-T00	PS21L-PT02RT-T00
Snap 2NC	PS21L-PS02PO-T00	PS21L-PS02PR-T00	PS21L-PS02RH-T00	PS21L-PS02RT-T00



Family: L

	PS42	PS42	PS42	PS42
	Thermoplastic*	Thermoplastic*	Thermoplastic*	Thermoplastic*
Dimensions WxHxD (mm)	57 x 66 x 33	57 x 77 x 33	57 x 85 x 33	57 x 99 x 45
References contact block				
Snap 1NO+1NC	PS42L-PS11PO-T00	PS42L-PS11PR-T00	PS42L-PS11RH-T00	PS42L-PS11RT-T00
Slow 1NO+1NC	PS42L-PT11PO-T00	PS42L-PT11PR-T00	PS42L-PT11RH-T00	PS42L-PT11RT-T00
Slow Ov.**1NO+1NC	PS42L-PO11PO-T00	PS42L-PO11PR-T00	PS42L-PO11RH-T00	PS42L-PO11RT-T00
Slow 2NO	PS42L-PT20PO-T00	PS42L-PT20PR-T00	PS42L-PT20RH-T00	PS42L-PT20RT-T00
Slow 2NC	PS42L-PT02PO-T00	PS42L-PT02PR-T00	PS42L-PT02RH-T00	PS42L-PT02RT-T00
Snap 2NC	PS42L-PS02PO-T00	PS42L-PS02PR-T00	PS42L-PS02RH-T00	PS42L-PS02RT-T00

General specifications (for all types)

Degree of protection	IP 65 (plastic body) IP 66 (metal body)	Rated operational current	
Rated insulation voltage plastic body	(U _i)	I _e /AC-15 230 VAC	3.1 A
according to IEC 60947-1 and EN 60947-1	500 V	I _e /DC-13-24VDC	2.8 A
according to UL 508, CSA C22-2 n°14	A 600, Q 600	Electrical durability (according to IEC 60947-5-1 annex C)	
Rated insulation voltage metal body	(U _i)	max. switching frequency Cycles/h	3600
according to IEC 60947-1 and EN 60947-1	400 V (PS21, PS42)	load factor	0.5
	500 V (PS31, PS43)	Air temperature near the device	
according to UL 508, CSA C22-2 n°14	A 300, Q 300 (PS21, PS42)	during operation	-25 to +70°C
	A 600, Q 600 (PS31, PS43)	for storage	-30 to +80°C
Rated impulse withstand voltage U _{imp}	6 kV	Approvals	CE - UL - CSA

* also available in metal (Y type) ** Ov.: overlapping travel paths

Limit switches - Limit type

Head types

W1 Adjustable lever with Ø50 rubber roller

R1 Adjustable lever with Ø18 nylon roller

BE Ø18 nylon roller lever

LW Stainless steel spring cat whisker



Family: L

		PS21	PS21	PS21	PS21
		Thermoplastic*	Thermoplastic*	Thermoplastic*	Thermoplastic*
Dimensions WxHxD (mm)		30.3 x (126.5-186.5) x 52	30.3 x (98.5-170.5) x 45.5	30.3 x 114 x 33	30.3 x 188 x 30
References contact block					
Snap 1NO+1NC	⊕	PS21L-PS11W1-T00	PS21L-PS11R1-T00	PS21L-PS11BE-T00	PS21L-PS11LW-T00
Slow 1NO+1NC	⊕	PS21L-PT11W1-T00	PS21L-PT11R1-T00	PS21L-PT11BE-T00	PS21L-PT11LW-T00
Slow Ov.**1NO+1NC	⊕	PS21L-PO11W1-T00	PS21L-PO11R1-T00	PS21L-PO11BE-T00	PS21L-PO11LW-T00
Slow 2NO		PS21L-PT20W1-T00	PS21L-PT20R1-T00	PS21L-PT20BE-T00	PS21L-PT20LW-T00
Slow 2NC	⊕	PS21L-PT02W1-T00	PS21L-PT02R1-T00	PS21L-PT02BE-T00	PS21L-PT02LW-T00
Snap 2NC	⊕	PS21L-PS02W1-T00	PS21L-PS02R1-T00	PS21L-PS02BE-T00	PS21L-PS02LW-T00



Family: L

		PS42	PS42	PS42	PS42
		Thermoplastic*	Thermoplastic*	Thermoplastic*	Thermoplastic*
Dimensions WxHxD (mm)		57 x (118.5-177) x 33	57 x (91.5-163.5) x 33	57 x 107 x 33	57 x 181 x 45
References contact block					
Snap 1NO+1NC	⊕	PS42L-PS11W1-T00	PS42L-PS11R1-T00	PS42L-PS11BE-T00	PS42L-PS11LW-T00
Slow 1NO+1NC	⊕	PS42L-PT11W1-T00	PS42L-PT11R1-T00	PS42L-PT11BE-T00	PS42L-PT11LW-T00
Slow Ov.**1NO+1NC	⊕	PS42L-PO11W1-T00	PS42L-PO11R1-T00	PS42L-PO11BE-T00	PS42L-PO11LW-T00
Slow 2NO		PS42L-PT20W1-T00	PS42L-PT20R1-T00	PS42L-PT20BE-T00	PS42L-PT20LW-T00
Slow 2NC	⊕	PS42L-PT02W1-T00	PS42L-PT02R1-T00	PS42L-PT02BE-T00	PS42L-PT02LW-T00
Snap 2NC	⊕	PS42L-PS02W1-T00	PS42L-PS02R1-T00	PS42L-PS02BE-T00	PS42L-PS02LW-T00

General specifications (for all types)

Degree of protection	IP 65 (plastic body) IP 66 (metal body)	Rated operational current	
Rated insulation voltage plastic body	(Ui)	Ie/AC-15 230 VAC	3.1 A
according to IEC 60947-1 and EN 60947-1	500 V	Ie/AC-13 24 VDC	2.8 A
according to UL 508, CSA C22-2 n°14	A 600, Q 600	Electrical durability (according to IEC 60947-5-1 annex C)	
Rated insulation voltage metal body	(Ui)	max. switching frequency Cycles/h	3600
according to IEC 60947-1 and EN 60947-1	400 V (plastic body)	load factor	0.5
	500 V (PS31, PS43)	Air temperature near the device	
according to UL 508, CSA C22-2 n°14	A 300, Q 300 (PS21, PS42)	during operation	-25 to +70°C
	A 600, Q 600 (PS31, PS43)	for storage	-30 to +80°C
Rated impulse withstand voltage Uimp	6 kV	Approvals	CE - UL - CSA

* also available in metal (M type) ** Ov.: overlapping travel paths

Limit switches - Limit type

Head types

PO
Plain plunger

PR
Roller plunger

RH
Plastic roller lever

RT
Nylon roller lever



Family: L

	PS43	PS43	PS43	PS43
	Metal	Metal	Metal	Metal
Dimensions WxHxD (mm)	66 x 102.5 x 43	66 x 115.5 x 43	67 x 129.5 x 43	66 x 128.5 x 61.5

References contact block

Snap 1NO+1NC	⊕	PS43L-PS11PO-M00	PS43L-PS11PR-M00	PS43L-PS11RH-M00	PS43L-PS11RT-M00
Slow 1NO+1NC	⊕	PS43L-PT11PO-M00	PS43L-PT11PR-M00	PS43L-PT11RH-M00	PS43L-PT11RT-M00
Slow Ov.**1NO+1NC	⊕	PS43L-PO11PO-M00	PS43L-PO11PR-M00	PS43L-PO11RH-M00	PS43L-PO11RT-M00
Slow 2NO		PS43L-PT20PO-M00	PS43L-PT20PR-M00	PS43L-PT20RH-M00	PS43L-PT20RT-M00
Slow 2NC	⊕	PS43L-PT02PO-M00	PS43L-PT02PR-M00	PS43L-PT02RH-M00	PS43L-PT02RT-M00
Snap 2NC	⊕	PS43L-PS02PO-M00	PS43L-PS02PR-M00	PS43L-PS02RH-M00	PS43L-PS02RT-M00
Slow 1NO+2NC	⊕	PS43L-PT12PO-M00	PS43L-PT12PR-M00	PS43L-PT12RH-M00	PS43L-PT12RT-M00
Slow 2NO+1NC	⊕	PS43L-PT21PO-M00	PS43L-PT21PR-M00	PS43L-PT21RH-M00	PS43L-PT21RT-M00
Slow 3NC	⊕	PS43L-PT03PO-M00	PS43L-PT03PR-M00	PS43L-PT03RH-M00	PS43L-PT03RT-M00
Slow 3NO		PS43L-PT30PO-M00	PS43L-PT30PR-M00	PS43L-PT30RH-M00	PS43L-PT30RT-M00



Family: L

	PS31	PS31	PS31	PS31
	Thermoplastic*	Thermoplastic*	Thermoplastic*	Thermoplastic*
Dimensions WxHxD (mm)	41 x 104 x 40.5	41 x 117 x 40.5	41 x 121 x 40.5	41 x 130 x 59

References contact block

Snap 1NO+1NC	⊕	PS31L-PS11PO-T00	PS31L-PS11PR-T00	PS31L-PS11RH-T00	PS31L-PS11RT-T00
Slow 1NO+1NC	⊕	PS31L-PT11PO-T00	PS31L-PT11PR-T00	PS31L-PT11RH-T00	PS31L-PT11RT-T00
Slow Ov.**1NO+1NC	⊕	PS31L-PO11PO-T00	PS31L-PO11PR-T00	PS31L-PO11RH-T00	PS31L-PO11RT-T00
Slow 2NO		PS31L-PT20PO-T00	PS31L-PT20PR-T00	PS31L-PT20RH-T00	PS31L-PT20RT-T00
Slow 2NC	⊕	PS31L-PT02PO-T00	PS31L-PT02PR-T00	PS31L-PT02RH-T00	PS31L-PT02RT-T00
Snap 2NC	⊕	PS31L-PS02PO-T00	PS31L-PS02PR-T00	PS31L-PS02RH-T00	PS31L-PS02RT-T00
Slow 1NO+2NC	⊕	PS31L-PT12PO-T00	PS31L-PT12PR-T00	PS31L-PT12RH-T00	PS31L-PT12RT-T00
Slow 2NO+1NC	⊕	PS31L-PT21PO-T00	PS31L-PT21PR-T00	PS31L-PT21RH-T00	PS31L-PT21RT-T00
Slow 3NC	⊕	PS31L-PT03PO-T00	PS31L-PT03PR-T00	PS31L-PT03RH-T00	PS31L-PT03RT-T00
Slow 3NO	⊕	PS31L-PT30PO-T00	PS31L-PT30PR-T00	PS31L-PT30RH-T00	PS31L-PT30RT-T00

General specifications (for all types)

Degree of protection	IP 65 (plastic body) IP 66 (metal body)	Rated operational current	
Rated insulation voltage plastic body	(U _i)	I _e /AC-15 230 VAC	3.1 A
according to IEC 60947-1 and EN 60947-1	500 V	I _e /DC-13-24VDC	2.8 A
according to UL 508, CSA C22-2 n°14	A 600, Q 600	Electrical durability (according to IEC 60947-5-1 annex C)	
Rated insulation voltage metal body	(U _i)	max. switching frequency Cycles/h	3600
according to IEC 60947-1 and EN 60947-1	400 V (PS21, PS42) 500 V (PS31, PS43)	load factor	0.5
according to UL 508, CSA C22-2 n°14	A 300, Q 300 (PS21, PS42) A 600, Q 600 (PS31, PS43)	Air temperature near the device	
		during operation	-25 to +70°C
		for storage	-30 to +80°C
Rated impulse withstand voltage U _{imp}	6 kV	Approvals	CE - UL - CSA

* also available in metal (M type) ** Ov.: overlapping travel paths

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

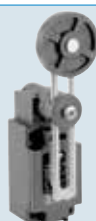
Limit switches - Limit type

Head types	W1 Adjustable lever with Ø50 rubber roller	R1 Adjustable lever with Ø18 nylon roller	BE Ø50 nylon roller lever	LW Stainless steel spring cat whisker
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Family: L

	PS43 Metal	PS43 Metal	PS43 Metal	PS43 Metal
Dimensions WxHxD (mm)	62 x (147.5-203.5) x 62.5	62 x (133.5-189.5) x 60	62 x 142.5 x 66	62 x 195,5 x 43
References contact block				
Snap 1NO+1NC	PS43L-PS11W1-M00	PS43L-PS11R1-M00	PS43L-PS11W0-M00	PS43L-PS11LW-M00
Slow 1NO+1NC	PS43L-PT11W1-M00	PS43L-PT11R1-M00	PS43L-PT11W0-M00	PS43L-PT11LW-M00
Slow Ov.**1NO+1NC	PS43L-PO11W1-M00	PS43L-PO11R1-M00	PS43L-PO11W0-M00	PS43L-PO11LW-M00
Slow 2NO	PS43L-PT20W1-M00	PS43L-PT20R1-M00	PS43L-PT20W0-M00	PS43L-PT20LW-M00
Slow 2NC	PS43L-PT02W1-M00	PS43L-PT02R1-M00	PS43L-PT02W0-M00	PS43L-PT02LW-M00
Snap 2NC	PS43L-PS02W1-M00	PS43L-PS02R1-M00	PS43L-PS02W0-M00	PS43L-PS02LW-M00
Slow 1NO+2NC	PS43L-PT12W1-M00	PS43L-PT12R1-M00	PS43L-PT12W0-M00	PS43L-PT12LW-M00
Slow 2NO+1NC	PS43L-PT21W1-M00	PS43L-PT21R1-M00	PS43L-PT21W0-M00	PS43L-PT21LW-M00
Slow 3NC	PS43L-PT03W1-M00	PS43L-PT03R1-M00	PS43L-PT03W0-M00	PS43L-PT03LW-M00
Slow 3NO	PS43L-PT30W1-M00	PS43L-PT30R1-M00	PS43L-PT30W0-M00	PS43L-PT30LW-M00



Family: L

	PS31 Thermoplastic*	PS31 Thermoplastic*	PS31 Thermoplastic*	PS31 Thermoplastic*
Dimensions WxHxD (mm)	50 x (149-205) x 65	41 x (135-191) x 60	50 x 144 x 64.5	41 x 195 x 40.5
References contact block				
Snap 1NO+1NC	PS31L-PS11W1-T00	PS31L-PS11R1-T00	PS31L-PS11W0-T00	PS31L-PS11LW-T00
Slow 1NO+1NC	PS31L-PT11W1-T00	PS31L-PT11R1-T00	PS31L-PT11W0-T00	PS31L-PT11LW-T00
Slow Ov.**1NO+1NC	PS31L-PO11W1-T00	PS31L-PO11R1-T00	PS31L-PO11W0-T00	PS31L-PO11LW-T00
Slow 2NO	PS31L-PT20W1-T00	PS31L-PT20R1-T00	PS31L-PT20W0-T00	PS31L-PT20LW-T00
Slow 2NC	PS31L-PT02W1-T00	PS31L-PT02R1-T00	PS31L-PT02W0-T00	PS31L-PT02LW-T00
Snap 2NC	PS31L-PS02W1-T00	PS31L-PS02R1-T00	PS31L-PS02W0-T00	PS31L-PS02LW-T00
Slow 1NO+2NC	PS31L-PT12W1-T00	PS31L-PT12R1-T00	PS31L-PT12W0-T00	PS31L-PT12LW-T00
Slow 2NO+1NC	PS31L-PT21W1-T00	PS31L-PT21R1-T00	PS31L-PT21W0-T00	PS31L-PT21LW-T00
Slow 3NC	PS31L-PT03W1-T00	PS31L-PT03R1-T00	PS31L-PT03W0-T00	PS31L-PT03LW-T00
Slow 3NO	PS31L-PT30W1-T00	PS31L-PT30R1-T00	PS31L-PT30W0-T00	PS31L-PT30LW-T00

General specifications (for all types)

Degree of protection	IP 65 (plastic body) IP 66 (metal body)	Rated operational current	
Rated insulation voltage plastic body	(Ui)	Ie/AC-15 230 VAC	3.1 A
according to IEC 60947-1 and EN 60947-1	500 V	Ie/DC-13-24VDC	2.8 A
according to UL 508, CSA C22-2 n°14	A 600, Q 600	Electrical durability (according to IEC 60947-5-1 annex C)	
Rated insulation voltage metal body	(Ui)	max. switching frequency Cycles/h	3600
according to IEC 60947-1 and EN 60947-1	400 V (PS21, PS42)	load factor	0.5
	500 V (PS31, PS43)	Air temperature near the device	
according to UL 508, CSA C22-2 n°14	A 300, Q 300 (PS21, PS42)	during operation	-25 to +70°C
	A 600, Q 600 (PS31, PS43)	for storage	-30 to +80°C
Rated impulse withstand voltage Uimp	6 kV	Approvals	CE - UL - CSA

* also available in metal (M type) ** Ov.: overlapping travel paths

Intrinsic safety

Explosion proof sensors

Types	Cylindrical series FSQ	Rectangular series MQ	Level series ILM
			
Exter. Dimensions (mm) Float Dimensions (mm)	Ø16 x 110	37 x 16 x 8.3	Spherical Ø 53 [S], Cylindrical Ø 45x55 [C]
Category	2G, 2D	2G, 2D [MQx1EX] 1G, 1D [MQA0EX]	2G, 2D [ILMx2] 1G, 1D [ILMx0]
EX Identification	 II2GExmbIICT5Gb  II2DExmbIICT100°CDbIP67	 II2GExmbIICT5Gb [MQx1EX]  II2DExmbIICT100°CDbIP67 [MQx1EX]  II1GExialIICT6Ga [MQA0EX]  II1DExialIICT100°CdIP67 [MQA0EX]	 II2GExmbIICT5Gb [ILMx2]  II2DExmbIICT100°CDbIP67 [ILMx2]  II1GExialIICT6Ga [ILMx0]  II1DExialIICT100°CdIP67 [ILMx0]

General specifications

Max. switch. voltage contact	250 VAC	230 VAC/DC [MQA1EX, MQC1EX] 30 VAC/DC [MQA0EX] 150 VAC/DC [MQS1EX]	250 VAC/DC [ILMA2] 230 VAC/DC [ILMS2] 30 VAC/DC [ILMx0]
Max. switch. current contact	3 A	0.25 to 0.75 A [MQx1EX] 120 mA [MQA0EX]	3 A [ILMA2]; 1A [ILMS2] 120 mA [ILMx0]
Max. switch. power contact	100 VA	5 to 10 VA [MQx1EX] - [MQA0EX]	100 VA [ILMA2] 60 VA [ILMS2]
Operating distance	8 - 30 mm	10 - 35 mm	-
Degree of protection	IP 67 IP66 (FSQA2HFEX)	IP 67	IP 67
Temperature Class	T5	T5 [MQx1EX] T6 [MQA0EX]	T5 [ILMx2] T6 [ILMx0]
Body material	Stainless steel AISI 303	Self-exting. PP + 30% glass fiber	Stainless steel AISI 316
Approvals/Mark	CE - TÜV Sud	CE - TÜV Sud	CE - TÜV Sud

References

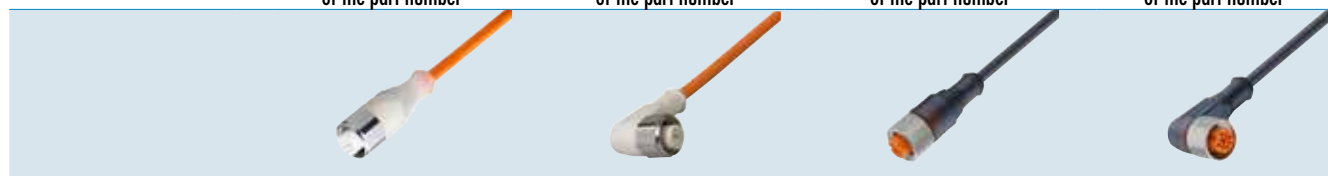
Normally open	FSQA2B01SLEX FSQA2HFEX	MQA1EX MQA0EX	ILMA2SSLEX ILMA2CSLEX ILMA0SSLEX ILMA0CSLEX
Normally closed		MQC1EX	
Change - Over		MQS1EX	ILMS2SEX ILMS2CEX ILMS0SEX ILMS0CEX

Connectors and brackets

General Accessories, sensors



Dimensions (mm)	Straight M8 connector PVC cable	Angled M8 connector PVC cable	Straight M8 connector PVC cable	Angled M8 connector PVC cable
Used for	3-wire DC Sensors	3-wire DC Sensors	4-wire DC Sensors	4-wire DC Sensors
2 m cable	CONB53NF-S2	CONB53NF-A2	CONB54NF-S2	CONB54NF-A2
5 m cable	CONB53NF-S5	CONB53NF-A5	CONB54NF-S5	CONB54NF-A5
10 m cable	CONB53NF-S10	CONB53NF-A10	CONB54NF-S10	CONB54NF-A10
15 m cable	CONB53NF-S15	CONB53NF-A15	CONB54NF-S15	CONB54NF-A15
Degree of protection	IP 67	IP 67	IP 67	IP 67
PUR version	Add "P" at the end of the part number	Add "P" at the end of the part number	Add "P" at the end of the part number	Add "P" at the end of the part number



Dimensions (mm)	Straight M12 connector TPE cable	Angled M12 connector TPE cable	Straight M12 connector PVC cable	Angled M12 connector PVC cable
Used for	4-wire DC	4-wire DC	3-, 4- or 5-wire DC	3-, 4- or 5-wire DC
2 m cable, 3-pin			CONB13NF-S2	CONB13NF-A2
5 m cable, 3-pin			CONB13NF-S5	CONB13NF-A5
10 m cable, 3-pin			CONB13NF-S10	CONB13NF-A10
15 m cable, 3-pin			CONB13NF-S15	CONB13NF-A15
2 m cable, 4-pin	CONB14NF-S2W	CONB14NF-A2W	CONB14NF-S2	CONB14NF-A2
5 m cable, 4-pin	CONB14NF-S5W	CONB14NF-A5W	CONB14NF-S5	CONB14NF-A5
10 m cable, 4-pin			CONB14NF-S10	CONB14NF-A10
15 m cable, 4-pin			CONB14NF-S15	CONB14NF-A15
2 m cable, 5-pin			CONB15NF-S2	CONB15NF-A2
5 m cable, 5-pin			CONB15NF-S5	CONB15NF-A5
10 m cable, 5-pin			CONB15NF-S10	CONB15NF-A10
15 m cable, 5-pin			CONB15NF-S15	CONB15NF-A15
Degree of protection	IP69K	IP69K	IP 67	IP 67
PUR version			Add "P" at the end of the part number	Add "P" at the end of the part number



Dimensions (mm)	-	65 x 27 x 130	Straight M12 connector	Angled M12 connector
Used for	Cylindrical 4-30 mm sensor	Testing sensor	4-wire DC	4-wire DC
Item number	AMB4-30	ST-03	CONB14NF-S	CONB14NF-A
No cable 4-pin				
Description	Universal sensor mounting bracket	Sensor tester for: NAMUR and 2-, 3- or 4-wire DC NPN/PNP and NO/NC with LED and Buzzer	Terminal connection	Terminal connection
Degree of protection			IP 67	IP 67

Connectors and brackets

Brackets angled



Steel, galvanized	AMB8-A	AMB12-A	AMB18-A	AMB30-A
Stainless steel AISI316L	-	AMB12-A316L	AMB18-A316L	-
Used for	M8 sensors	M12 sensors	M18 sensors	M30 sensors
Description	Mounting bracket	Mounting bracketd	Mounting bracket	Mounting bracket

Brackets straight



Steel, galvanized	AMB8-S	AMB12-S	AMB18-S	AMB30-S
Stainless steel AISI316L		AMB12-S316L	AMB18-S316L	-
Used for	M8 sensors	M12 sensors	M18 sensors	M30 sensors
Description	Mounting bracket	Mounting bracket	Mounting bracket	Mounting bracket

Environmental sensors

Environmental sensors - ES series

Types	ESCO2THWxxDM	ESTHD50X ESTHW50X	ESAV
			
Dimensions (mm)	85 x 85 x 30.2	85 x 85 x 30.2	80 x 80 x 38 (cable length 2 m - remote type)
Function	CO ₂ , Humidity and Temperature	Humidity and Temperature	Air Velocity and Temperature
Mounting	Wall mounting	Wall or Duct mounting	Remote or Duct mounting
Input specifications			
Relative humidity			
Working range	0 to 100%	0 to 95%	
Accuracy @ 23°C	±3% RH	Wall: ±5%; Duct: ±3%	
Temperature			
Sensor	Pt1000, 0...50°C (32...122°F)	Pt100; 0...50°C (32 -122°F)	PT1000, 0...50°C (32...122°F)
Accuracy @ 23°C	±0.5°C	±0.3°C+0.002°C x t actual	±0.3%°C
Air Velocity			
Working range	0-5000 ppm		0.2...20 m/s
Accuracy @ 23°C	±40 ppm +3%		±3% of F.S.
Electrical specifications			
Output	0-10 V and 4-20 mA	0-10 V or 4-20 mA	0-10 V or 4-20 mA
Supply Voltage	24 VAC ±10% / 12-36 VDC	19-29 VAC / 15-35 VDC	8...35 VDC / 12...30 VAC
Consumption @ 24V			
DC supply	150 mA	Wall: 15 mA / Duct: 56 mA	100 mA
AC supply	120 mA	Wall: 40 mA / Duct: 150 mA	180 mA
General specifications			
Electrical connections	Screw terminals	Screw terminals	Screw terminals
Working temperature range	0°C...50°C (+32°F...+122°F)	0°C...+50°C (+32°F...+122°F)	0°C...+50°C (+32°F...+122°F)
Storage temperature range	-20°C... +60°C (+32°F...+140°F)	-25°C...+60°C (-13°F...+140°F)	-20°C...+60°C (-4°C...+140°F)
Degree of protection	IP20	Wall: IP20; Duct: IP 54	IP 54
Display	Standard; LCD double line character Up array CO ₂ / down array temp. and humidity interchange	No	Optional; LCD Module with green back light. Double line character (up: velocity, down: temp.)
Modbus Communication	Standard	No	Optional
Approvals/Marks	CE - RoHS	CE - RoHS	CE - RoHS
References			
For ordering key details, please refer to www.productselection.net			

Environmental sensors

Environmental sensors - ES series

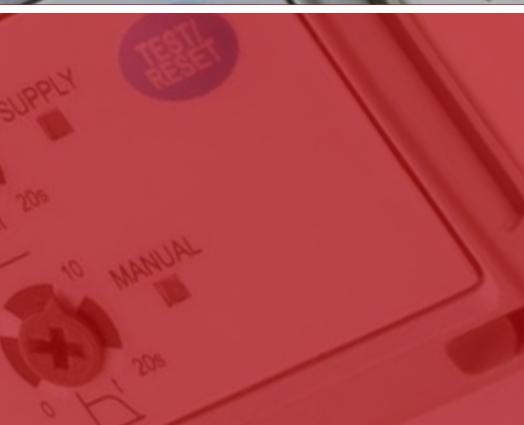
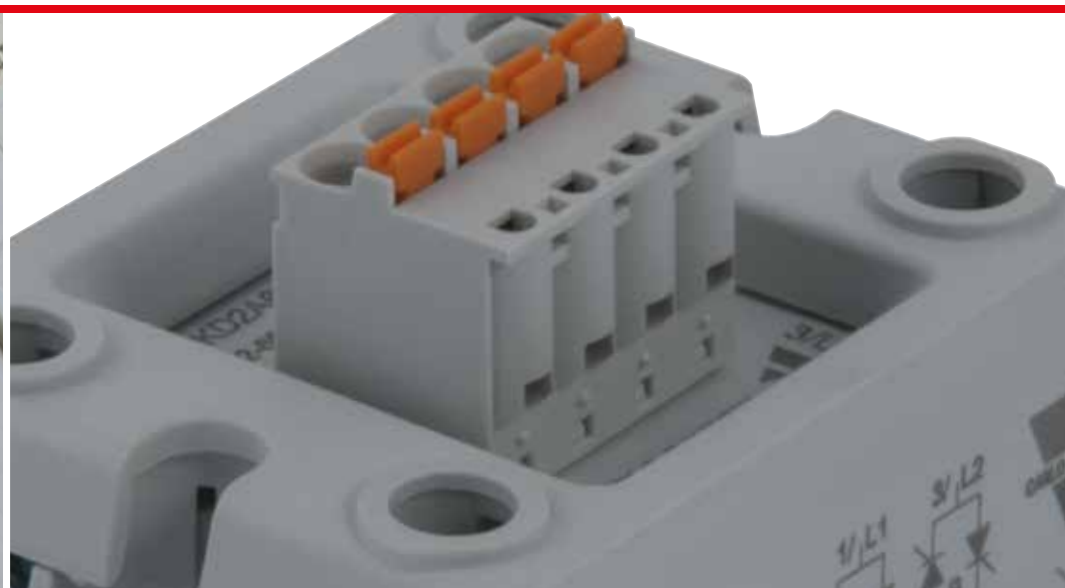
Types	ESCO	ESCO2	ESTxW50xxM ESTxD50xxM
			
Dimensions (mm)	80 x 80 x 38	80 x 80 x 38	80 x 80 x 38
Function	CO	CO ₂	Humidity, Temperature and Dew Point
Mounting	Wall or Duct mounting	Wall or Duct mounting	Wall or Duct mounting
Input specifications			
Relative humidity Working range Accuracy @ 20°C			0...100% RH ±2% RH
Temperature Sensor Accuracy @ 20°C			Wall: 0°C...50°C (32°F...122°F); Duct: -40°C...100°C (-40°F...212°F) ±0.15°C+0.002°C x t actual
CO ₂ Working range Accuracy @ 25°C ±2°C, 40 ±10% RH	0 to 300 ppm / 0 to 500 ppm ±3% of F.S	0 to 2000 ppm / 0 to 5000 ppm < ± 40 ppm	
Electrical specifications			
Output	0-10 V or 4-20 mA or switching	0-10 V or 4-20 mA	0-10 V or 4-20 mA
Supply Voltage	12-30 VAC / 8-35 VDC	24 VAC / 12-36 VDC	12-30 VAC / 8-35 VDC
Consumption @ 24V DC supply AC supply	60 mA 140 mA	37 mA 70 mA	60 mA 140 mA
General specifications			
Electrical connections	M12 x 1 connector	M12 x 1 connector	Screw terminals
Working temperature range	0°C...+50°C (32°F...+122°F)	0°C...+50°C (32°F...+122°F)	0°C...+50°C (32°F...+122°F)
Storage temperature range	-10°C...+60°C (14°F...+140°F)	-20°C...+60°C (-4°F...+158°F)	-25°C...+60°C (-4°F...+158°F)
Degree of protection	IP 65	IP 64 (duct) IP54 (wall)	IP 65
Display	No	No	Wall: Optional; Duct: No
Modbus	Optional	Optional	Standard
Approvals/Marks	CE - RoHS	CE - RoHS	CE - RoHS
References			
For ordering key details, please refer to www.productselection.net			

Environmental sensors

	Wind vane	Cup anemometer
Types	DWS-D-D...	DWS-V-D...
Connections	2 m cable	2 m cable
		
Dimensions (mm)	207 x 174	183 x 145
Function	Wind direction	Wind speed
References wind vane		
Wind indication	0° and 90° intervals	
	DWS-D-DAC13	
Wind indication	±7° and left/right	
	DWS-D-DDC13	
References cup anemometer		
Operating temperature		-20°C to 60°C
Heating		Yes
Air Velocity		from 1.5 m/s to 30 m/s
		DWS-V-DAC13
Operating temperature		0°C to 60°C
Heating		No
Air Velocity		from 1.5 m/s to 30 m/s
		DWS-V-DBC05
General specifications		
Rated operating voltage	12 - 24 VDC	12 - 24 VDC
Voltage drop	Typ. 4.9 VDC	Typ. 4.9 VDC
Degree of protection	IP 54	IP 54
Output frequency		10 Hz pr. m/s
Signal	NPN/PNP square wave 12.5 mA ± 2 mA	
Housing material	Body: Black PVC Rotor: Stainless steel	Body: Black PVC Rotor: Stainless steel
Approvals/Marks	CE	CE



Switches



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Solid state relays PCB type, 1-phase

	AC output switching		DC output switching
Types	RP1A - RP1B 3/5/5.5 AAC	RP.10 10 AAC	RP1D 1/4/8 ADC
PCB mounting SSRs, AC and DC operating. Rated isolation voltage ≥ 4000 Vrms			
Dimensions H x W x D (mm)	25.4 x 43 x 10.5	37 x 43 x 22	25.4 x 43 x 10.5
Features	Standard AC switching SSR	With integral heatsink	DC switching SSR
Input specifications			
Control input range	3-32 VDC [RP1A23..] 3-32 VDC [RP1A40..] 4-32 VDC [RP1A48..] 15-32 VAC [RP1A23A6]	3-32 VDC [RP1A23..] 4-32 VDC [RP1A40..] 4-32 VDC [RP1A48..]	4.5 - 32 VDC
Max. input current	10 mA	10 mA	15 mA
Output specifications			
Rated operational current			DC1: 1/4/8 ADC
AC 51 @ Ta=25°C	3 A [RP1...3] 5 A [RP1...5] 5.5 A [RP1...6]	10 A	
AC 53a @ Ta=25°C	2 A [RP1...3] 3 A [RP1...5] 5 A [RP1...6]	7 A	
Min. operational current	20 mA	10 mA	1 mADC
Non rep. surge current (t=20 ms)	65 A _p [RP1...3] 80 A _p [RP1...5] 250 A _p [RP1...6]	250 A _p	
Off-state leakage current	≤ 1 mA	≤ 3 mA	0.01 mADC
I ² t for fusing (t=10 ms)	20 A ² s [RP1...3] 50 A ² s [RP1...5] 340 A ² s [RP1...6]	340 A ² s	
Critical dV/dt off-state	250 V/ μ s [RP1...3] 500 V/ μ s [RP1...5] 500 V/ μ s [RP1...6]	1000 V/ μ s	
General specifications			
Operational voltage range	12-265 Vrms [RP1A23..] 20-440 Vrms [RP1A40..] 20-530 Vrms [RP1A48..]	12-265 Vrms [RP1A23..] 20-440 Vrms [RP1A40..] 20-530 Vrms [RP1A48..]	1-60 VDC [RP1D060...] 1-350 VDC [RP1D350...]
Blocking voltage	650 V _p [RP1A23..] 850 V _p [RP1A40..] 1000 V _p [RP1A48..]	650 V _p [RP1A23..] 850 V _p [RP1A40..] 1000 V _p [RP1A48..]	
Power factor	0.5	0.5	0.5
Operating temperature	-20°C to +70°C	-30°C to +80°C	-20°C to +80°C
Terminals	4 pins x $\varnothing$ 0.1 mm	4 pins x $\varnothing$ 0.1 mm	4 pins x $\varnothing$ 0.1 mm
Approvals/Marks	CE - UR - cUR - VDE	CE - UR - cUR	CE - UR - cUR
References			
	3 A	10 A	1 A
	RP1A23D3	RP1A23D10	RP1D350D1
	RP1A40D3	RP1A40D10	
	RP1A48D3	RP1A48D10	4 A
	5 A		RP1D060D4
	RP1A23D5		
	RP1A40D5		8 A
	RP1A48D5		RP1D060D8
	5.5 A		
	RP1A23D6		
	RP1A23A6		
	RP1A40D6		
	RP1A48D6		

* Other options available on request: Instant-on switching (RP1B..), see Accessories for DIN-rail adaptor.

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Solid state relays, 1-phase

Slimline - AC output switching

Types	RGS1A..KKE 25/50/75/90 AAC	RGS1A..KGE 50/90 AAC	RGS1A..MKE 25/50/90 AAC
Single phase, chassis mounting with LED for control status indication, IP20 protection, 45-65 Hz operating frequency, ≥ 4000 VACrms isolation voltage, 100 kArms short circuit current rating, certified motor ratings			
Dimensions (mm)	90 x 17.8 x 50.6	90 x 17.8 x 50.6	90 x 17.8 x 63.6
Features	17.8 mm wide solid state relay with integrated varistor on output, AC or DC control range, screw terminals with captivated clamp for power and control connections, E-type layout	17.8 mm wide solid state relay with integrated varistor on output, AC or DC control range, box clamp for power connections (up to 25 mm ² /AWG3), screw for control connections, E-type layout	17.8 mm wide solid state relay with integrated varistor on output, AC or DC control range, screw terminals with captivated clamp for power connections and pluggable spring for control, E-type layout
Input specifications			
Control input range	3-32 VDC [RG.23D.] / 4-32 VDC [RG.60D.] 20-275 VAC, 24-190 VDC [RG..A.]	4-32 VDC [RG..D..] 20-275 VAC, 24-190 VDC [RG..A.]	3-32 VDC [RG..23D..], 4-32 VDC [RG..60D..] 20-275 VAC, 24-190 VDC [RG..A.]
Max. input current	11 mADC [RG..D.] 30 mAAC [RG..A.]	11 mADC [RG..D..] 30 mAAC [RG..A.]	11 mADC [RG..D..] 30 mAAC [RG..A.]
Output specifications			
Rated operational current AC-51 @ Ta=40°C	25 AAC [RG..25] / 50 AAC [RG..50/51] 75 AAC [RG..75] / 90 AAC [RG..90/91/92]	50 AAC [RG..50] 90 AAC [RG..92]	25 AAC [RG..25] / 50 AAC [RG..50] 90 AAC [RG..90/92]
AC-53a @ Ta=40°C	5 AAC [RG..25] / 10 AAC [RG..50/51] 14.8 AAC [RG..75] / 18 AAC [RG..90/91/92]	10 AAC [RG..50] 18 AAC [RG..92]	5 AAC [RG..25] / 10 AAC [RG..50] 18 AAC [RG..90/92]
Min. operational current	150 mAAC [RG..25] / 250 mAAC [RG..50/51] 400 mAAC [RG..75] / 500 mAAC [RG..90/91/92]	250 mAAC [RG..50] 500 mAAC [RG..92]	150 mAAC [RG..25] / 250 mAAC [RG..50] 500 mAAC [RG..90/92]
Non rep. surge current (t=10 ms)	325 Ap [RG..25] / 600 Ap [RG..50/51] 800 Ap [RG..75] / 1150 Ap [RG..90/91] 1900 Ap [RG..92]	600 Ap [RG..50] 1900 Ap [RG..92]	325 Ap [RG..25] / 600 Ap [RG..50] 1150 Ap [RG..90] / 1900 Ap [RG..92]
Max. Off-state leak current	3 mAAC	3 mAAC	3 mAAC
I ² t for fusing (t=10 ms)	525 A ² s [RG..25] / 1800 A ² s [RG..50/51] 3200 A ² s [RG..75] / 6600 A ² s [RG..90/91] 18000 A ² s [RG..92]	1800 A ² s [RG..50] 18000 A ² s [RG..92]	525 A ² s [RG..25] / 1800 A ² s [RG..50] 6600 A ² s [RG..90] / 18000 A ² s [RG..92]
Critical dV/dt (@ Tj init = 40°C)	1000 V/μs	1000 V/μs	1000 V/μs
General specifications			
Operational voltage range	24-240 VAC +10% [RG.23..] 42-600 VAC +10% [RG.60...] 42-690 VAC + 10% [RG..69..]*	42-600 VAC +10%	24-240 VAC +10% [RG..23..] 42-600 VAC +10% [RG..60..]
Blocking voltage	800 Vp [RG..23..] 1200 Vp [RG..60..] 1600 Vp [RG..60..51/91]	1200 Vp	800 Vp [RG..23..] 1200 Vp [RG..60..]
Power factor	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage
Operating temperature	-40°C to 80°C	-40°C to +80°C	-40°C to +80°C
Approvals/Marks	CE - cURus - CSA - VDE	CE - cURus - CSA - VDE	CE - cURus - CSA - VDE
References			
230 VAC, 800 Vp	25 AAC: RGS1A23X25KKE		25 AAC: RGS1A23X25MKE
	50 AAC: RGS1A23X50KKE		50 AAC: RGS1A23X50MKE
	75 AAC: RGS1A23X75KKE		
600 VAC, 1200 Vp	25 AAC: RGS1A60X25KKE		25 AAC: RGS1A60X25MKE
	50 AAC: RGS1A60X50KKE	50 AAC: RGS1A60X50KGE	50 AAC: RGS1A60X50MKE
	75 AAC: RGS1A60X75KKE		
	90 AAC: RGS1A60X90KKE		90 AAC: RGS1A60X90MKE
	90 AAC: RGS1A60X92KKE	90 AAC: RGS1A60X92KGE	90 AAC: RGS1A60X92MKE
	50 AAC: RGS1A60X51KKE		
600 VAC, 1600 Vp	90 AAC: RGS1A60X91KKE		
690 VAC, 1600 Vp	90 AAC: RGS1A69X91KKE*		

X must be replaced with D for DC control 3-32 VDC, 4-32 VDC (for 600 VAC versions)

X must be replaced with A for AC control 20-275 VAC, 24-190 VDC

RGS1B.. models for Instant On (Random) switching are available on request

*690VAC variants are CE marked only and do not include a varistor across the output

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Solid state relays, 1-phase

Slimline - AC output switching

Types	RGS1A..MGE 50/90 AAC	RGS1A..KGU 20/30 AAC	RGS1A..DIN 10/12 AAC
Single phase, chassis mounting with LED for control status indication, IP20 protection, 45-65 Hz operating frequency, ≥ 4000 VACrms isolation voltage, 100 kArms short circuit current rating, certified motor ratings			

Dimensions (mm)	90 x 17.8 x 63.6	90 x 17.8 x 50.6	106 x 17.8 x 65
Features	17.8 mm wide solid state relay with integrated varistor on output, AC or DC control range, box clamps for power connections (25 mm ² / AWG3) and pluggable spring for control, E-type layout	17.8 mm wide solid state relay with integrated varistor on output, AC or DC control range, box clamps for power and control connections, U-type layout	17.8 mm wide solid state relay mounted on DIN mountable module

Input specifications

Control input range	4-32 VDC [RG..D..] 20-275 VAC, 24-190 VDC [RG..A..]	3-32 VDC [RG..23D..] 4-32 VDC [RG..60D..] 20-275 VAC, 24-190 VDC [RG..A..]	3-32 VDC [RG..23D..] 4-32 VDC [RG..60D..] 20-275 VAC, 24-190 VDC [RG..A..]
Max. input current	11 mADC [RG..D..] 30 mAAC [RG..A..]	11 mADC [RG..D..] 30 mAAC [RG..A..]	11 mADC [RG..D..] 30 mAAC [RG..A..]

Output specifications

Rated operational current AC-51 @ Ta=40°C	50 AAC [RG..50] 90 AAC [RG..92]	20 AAC [RG..20] 30 AAC [RG..30]	10 AAC [RG..20/25..DIN] 12 AAC [RG..50/90..DIN]
AC-53a @ Ta=40°C	10 AAC [RG..50] 18 AAC [RG..92]	5 AAC [RG..20] 8 AAC [RG..30]	5 AAC [RG..20/25..DIN] 5 AAC [RG..50/90..DIN]
Min. operational current	250 mAAC [RG..50] 500 mAAC [RG..92]	150 mAAC [RG..20] 250 mAAC [RG..30]	150 mAAC [RG..20/25..DIN] 250 mAAC [RG..50..DIN] 400 mAAC [RG..90..DIN]
Non rep. surge current (t=10 ms)	600 Ap [RG..50] 1900 Ap [RG..92]	325 Ap [RG..20] 600 Ap [RG..30]	325 Ap [RG..20/25..DIN] 600 Ap [RG..50..DIN] 1150 Ap [RG..90..DIN]
Max. Off-state leak current	3 mAAC	3 mAAC	3 mAAC
I ² t for fusing (t=10 ms)	1800 A ² s [RG..50] 18000 A ² s [RG..92]	525 A ² s [RG..20] 1800 A ² s [RG..30]	525 A ² s [RG..20/25..DIN] 1800 A ² s [RG..50..DIN] 6600 A ² s [RG..90..DIN]
Critical dV/dt (@ Tj init=40°C)	1000 V/μs	1000 V/μs	1000 V/μs

General specifications

Operational voltage range	42-600 VAC +10%	24-240 VAC +10% [RG..23..] 42-600 VAC +10% [RG..60..]	24-240 VAC +10% [RG..23..] 42-600 VAC +10% [RG..60..]
Blocking voltage	1200 Vp	800 Vp [RGS..23..] 1200 Vp [RGS..60..]	800 Vp [RG..23..] 1200 Vp [RG..60..]
Power factor	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage
Operating temperature	-40°C to +80°C	-40°C to +80°C	-40°C to +80°C
Approvals/Marks	CE - cURus - CSA - VDE	CE - cURus - CSA - VDE	CE - cURus - CSA - VDE

References

230 VAC, 800 Vp, E-type	10 AAC: RGS1A23X25KKEDIN 12 AAC: RGS1A23X50KKEDIN
50 AAC: RGS1A60X50MGE	10 AAC: RGS1A60X25KKEDIN
600 VAC, 1200 Vp, E-type	12 AAC: RGS1A60X50KKEDIN 12 AAC: RGS1A60D90KKEDIN
230 VAC, 800 Vp, U-type	20 AAC: RGS1A23X20KGU 30 AAC: RGS1A23X30KGU
600 VAC, 1200 Vp, U-type	20 AAC: RGS1A60X20KGU 30 AAC: RGS1A60X30KGU

X must be replaced with D for DC control 3-32 VDC, 4-32 VDC (for 600 VAC versions)
X must be replaced with A for AC control 20-275 VAC, 24-190 VDC
RGS1B.. models for Instant On (Random) switching are available on request

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Solid state relays, 1-phase

	Slimline - DC output switching	Slimline - AC output switching Integrated current measurement	
Types	RGS1D..KKE 15/25 ADC	RGS1S..EP 20/30/90 AAC	RGS1S..UP 65 AAC
Single phase, chassis mounting industrial relays with LED for control status indication and IP20 protection, Rated isolation voltage ≥ 4000 Vrms, 100 kArms short circuit current rating for AC switching versions			
Dimensions HxWxD (mm)	90 x 17.8 x 50.6	90 x 22.5 x 78	90 x 35.6 x 78
Features	17.8 mm wide solid state relay with IGBT output, integrated free wheeling diode, DC control voltage, screw terminals with captivated clamp, E-type layout	22.5 mm wide solid-state relay with thyristor output, integrated varistor, DC control, local or remote TEACH, detection of partial load failure (1/6), SSR and load malfunction, SSR overheat protection.	35 mm wide solid-state relay with thyristor output, integrated varistor, DC control, local or remote TEACH, detection of partial load failure (1/6), SSR and load malfunction, SSR overheat protection.
Input specifications			
Control input range	4.5-32 VDC	4-32 VDC	4-32 VDC
Max. input current	13.7 mADC	10 mADC at 24 VDC	10 mADC at 24 VDC
Supply voltage		24 VDC -15%, +20%	24 VDC -15%, +20%
Max. supply current		50 mADC	50 mADC
Alarm specifications			
Output type		NC PNP open collector max. 35 VDC / 50 mA	NC PNP open collector max. 35 VDC / 50 mA
Alarm Indication		Red LED (flash rate)	Red LED (flash rate)
Output specifications			
Rated operational current AC-51 @ Ta=40°C		20 AAC [RGS1S..20] 30 AAC [RGS1S..30 / 31] 90 AAC [RGS1S..92]	65 AAC
DC Rated operational current	15 ADC [RGS1D..15.] 25 ADC [RGS1D..25.]		
Minimum TEACH / operational current	20 mA	1.2 AAC [RGS1S..20/30/31] 5 AAC [RGS1S..92]	5 AAC
Minimum partial load current		0.2 AAC [RGS1S..20/30/31] 0.83 AAC [RGS1S..92]	0.83 AAC
Detectable partial load failure		>16.67% from current setpoint	>16.67% from current setpoint
Non rep. surge current (I _{tsm}) (t=10 ms)	200 ADC [10µs]	325 A _p [RGS1S..20] - 600 A _p [RGS1S..30] 1150 A _p [RGS1S..31] - 1900 A _p [RGS1S..92]	1900 A _p
Max. Off-state leak current	1.5 mADC	3 mAAC	3 mAAC
I ² t for fusing (t=10 ms)		525 A ² s [RGS1S..20] - 1800 A ² s [RGS1S..30] 6600 A ² s [RGS1S..31] - 18000 A ² s [RGS1S..92]	18000 A ² s
Critical dV/dt (@ T _j init = 40°C)		1000 V/µs	1000 V/µs
General specifications			
Operational voltage range	24-1000 VDC [CE] 24-600 VDC [UL508]	42-600 VAC +10%	42-600 VAC +10%
Blocking voltage	1200 VDC	1200 V _p	1200 V _p
Power factor		≥ 0.9 at rated voltage	≥ 0.9 at rated voltage
Operating temperature	-40°C to +80°C	-25°C to +70°C	-25°C to +70°C
Approvals/Marks	CE - cURus - CSA	CE - cURus - CSA	CE - cURus - CSA
References			
1000 VDC	15 ADC: RGS1D1000D15KKE 25 ADC: RGS1D1000D25KKE		
600 VAC, 525 A ² s, E-type		20 AAC: RGS1S60D20GKEP	
600 VAC, 1800 A ² s, E-type		30 AAC: RGS1S60D30GKEP	
600 VAC, 6600 A ² s, E-type		30 AAC: RGS1S60D31GKEP	
600 VAC, 18000 A ² s, E-type		90 AAC: RGS1S60D92GGEF	
600 VAC, 18000 A ² s, U-type			65 AAC: RGS1S60D61GGUP

KK = screws for control terminals, screws for power terminals
GK = box clamps for control terminals, screws for power terminals
GG = box clamps for control terminals, box clamps for power terminals

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Solid state relays, 1-phase

Types	Slimline - Soft start switching		Slimline - Proportional switching controllers	
	RGS1P..K.. 50 AAC	RGS1P..K.. 90 AAC	RGS1P..AA.. / V.. 50 AAC	RGS1P..AA.. / V.. 90 AAC
Single phase, chassis mounting industrial relays with integrated overvoltage protection, LED for control and load status indication, IP20 protection, rated isolation voltage ≥ 4000 Vrms, 100 kArms short circuit current rating				
Dimensions HxWxD (mm)	90 x 35.8 x 51	90 x 35.8 x 51	90 x 35.8 x 51	90 x 35.8 x 51
Features	DC control input solid state relay with soft starting feature for short wave infrared heaters.	DC control input solid state relay with soft starting feature for short wave infrared heaters.	Analog input (current or voltage), selectable modes for output switching - phase angle, full cycle distributed firing, advanced full cycle and soft starting	Analog input (current or voltage), selectable modes for output switching - phase angle, full cycle distributed firing, advanced full cycle and soft starting
Supply specifications				
Supply voltage	24 VDC -15%, +20% 24 VAC -15%, +15%	24 VDC -15%, +20% 24 VAC -15%, +15%	24 VDC -15%, +20% (RG..V.ED) 24 VAC -15%, +15% (RG..V.ED) 90-250 VAC (RG..V.EA)	24 VDC -15%, +20% (RG..V.ED) 24 VAC -15%, +15% (RG..V.ED) 90-250 VAC (RG..V.EA)
Max. supply current	30 mA	30 mA	30 mA (RG..V.ED) 14 mA (RG..V.EA)	30 mA (RG..V.ED) 14 mA (RG..V.EA)
Control specifications				
Control input range	19.2 - 28.8 VDC	19.2 - 28.8 VDC	4-20 mA (RG..AA..) 0-10V, 0-5V, 1-5V, POT (RG..V..)	4-20 mA (RG..AA..) 0-10V, 0-5V, 1-5V, POT (RG..V..)
Input impedance	100 k Ω	100 k Ω	500 Ω (RG..AA..) 100 k Ω (RG..V..)	500 Ω (RG..AA..) 100 k Ω (RG..V..)
Output specifications				
Rated operational current AC-51 @ 40°C	50 AAC	90 AAC	50 AAC	90 AAC
Minimum operational current	250 mAAC	500 mAAC	250 mAAC	500 mAAC
Non rep. surge current (I _{tsm}) (t=10 ms)	600 Ap	1900 Ap	600 Ap	1900 Ap
I ² t for fusing (t=10 ms)	1800 A ² s	18000 A ² s	1800 A ² s	18000 A ² s
Max. Off-state leakage current	5 mAAC	5 mAAC	5 mAAC	5 mAAC
Critical dV/dt (@ T _j init = 40°C)	1000 V/ μ s	1000 V/ μ s	1000 V/ μ s	1000 V/ μ s
General specifications				
Operational voltage range	85 - 265 VAC (RGS1P23..) 190 - 550 VAC (RGS1P48..) 410 - 660 VAC (RGS1P60..)	85 - 265 VAC (RGS1P23..) 190 - 550 VAC (RGS1P48..) 410 - 660 VAC (RGS1P60..)	85 - 265 VAC (RGS1P23..) 190 - 550 VAC (RGS1P48..) 410 - 660 VAC (RGS1P60..)	85 - 265 VAC (RGS1P23..) 190 - 550 VAC (RGS1P48..) 410 - 660 VAC (RGS1P60..)
Blocking voltage	800 V _P (RGS1P23..) 1200 V _P (RGS1P48..) 1200 V _P (RGS1P60..)	800 V _P (RGS1P23..) 1200 V _P (RGS1P48..) 1200 V _P (RGS1P60..)	800 V _P (RGS1P23..) 1200 V _P (RGS1P48..) 1200 V _P (RGS1P60..)	800 V _P (RGS1P23..) 1200 V _P (RGS1P48..) 1200 V _P (RGS1P60..)
Power factor	> 0.7	> 0.7	> 0.7	> 0.7
Terminals	Screw with captive clamp	Box clamp	Screw with captive clamp	Box clamp
Operating temperature	-40°C to +70°C	-40°C to +70°C	-40°C to +70°C	-40°C to +70°C
Approvals/Marks	CE - cURus - CSA	CE - cURus - CSA	CE - cURus - CSA	CE - cURus - CSA
References				
External supply 24 VDC/AC				
Operational output 85 - 265 VAC	RGS1P23K50ED	RGS1P23K92ED		
Operational output 190 - 550 VAC	RGS1P48K50ED	RGS1P48K92ED		
Operational output 410 - 660 VAC	RGS1P60K50ED	RGS1P60K92ED		
Control input				
4-20 mA			RGS1PxxAA50E	RGS1PxxAA92E
0-10 VDC, 0-5 VDC, 1-5 VDC, POT				
External supply 24 VDC/AC			RGS1PxxV50ED	RGS1PxxV92ED
External supply 90-250 VAC			RGS1PxxV50EA	RGS1PxxV92EA

xx = 23 for operational voltage range 85 - 265 VAC
xx = 48 for operational voltage range 190 - 550 VAC
xx = 60 for operational voltage range 410 - 660 VAC

Solid state relays, 1-phase

Industrial housing - AC output switching

Types	RF1A 25 AAC	RS1A 10/25/40 AAC	RAM1A 25/50/75/100/125 AAC	RAM1A..G 25/50/100/125 AAC
Single phase, chassis mounting, industrial relays with LED status indication and IP 20 protection. AC operating frequency range 45-65 Hz. Rated isolation voltage ≥ 4000 Vrms				
Dimensions HxWxD (mm)	36 x 21 x 24	58.2 x 44.8 x 28.8	58.2 x 44.8 x 28.8	58.2 x 44.8 x 28.8
Features	Zero Cross or Instant ON, Built-in transit, VDE, Glow wire acc. to IEC/EN 60335-1	Zero Cross, Ideal for Ohmic loads	Zero Cross or Instant ON, Built-in snubber, VDE	Zero Cross, Built-in varistor, VDE, Glow wire acc. to IEC/EN 60335-1
Input specifications				
Control input range	4.25 - 9 VDC [RF1A..L] 9 - 18 VDC [RF1A..M] 18 - 28.8 VDC [RF1A..D]	3-32 VDC [RS1A23D] 4-32 VDC [RS1A....D] 18-36 VAC/DC [RS1A...LA] 80-130 VAC [RS1A..A1-] 200-260 VAC [RS1A..A2-] 360-440 VAC [RS1A..A4-]	3-32 VDC [RAM1A23D...] 4-32 VDC [RAM1A60D...] 20-280 VAC / 22-48 VDC [RAM1A..A.]	3-32 VDC [RAM1A23D...] 4-32 VDC [RAM1A60D...] 20-280 VAC / 22-48 VDC [RAM1A..A.]
Max. input current	15 mA [RF1A..L] 12 mA [RF1A..M] 12.5 mA [RF1A..D]	12 mA [RS1A..D] 15 mA [RS1A..LA] 13 mA [RS1A...A1- / A2- / A4-]	12 mA [RAM1A..D.] 20 mA [RAM1A..A.]	12 mA [RAM1A..D.] 20 mA [RAM1A..A.]
Output specifications				
		RS1A..10 / 25 / 40	RAM1A..25 / 50 / 75 / 100 / 125	RAM1A..25/50/51/100/125
Rated operational current				
AC 51 @ Ta=25°C	25 AAC	10 / 25 / 40 AAC	25 / 50 / 75 / 100 / 125 AAC	25 / 50 / 50 / 100 / 125 AAC
AC 53a @ Ta=25°C			5 / 15 / 17 / 20 / 30 AAC	5 / 15 / 15 / 20 / 30 AAC
Min. operational current	150 mAAC	150 / 150 / 250 mAAC	150 / 250 / 400 / 400 / 500 mAAC	150 / 250 / 400 / 400 / 500 mAAC
Non rep. surge current (t=10 ms)	325 Ap	100 / 325 / 600 Ap	325 / 600 / 800 / 1150 / 1900 Ap	325 / 600 / 800 / 1150 / 1900 Ap
Off-state leakage current	< 3 mA	< 3 mA	< 3 mA	< 3 mA
I ² t for fusing (t=10 ms)	525 A ² s	50 / 525 / 1800 A ² s	525 / 1800 / 3200 / 6600 / 18000 A ² s	525 / 1800 / 3200 / 6600 / 18000 A ² s
Critical dV/dt	1000 V/μs	500 V/μs	1000 V/μs	1000 V/μs
General specifications				
Operational voltage range	24 - 280 VAC	42-265 VAC [RS1A23...] 42-440 VAC [RS1A40...] 42-530 VAC [RS1A48...]	24-265 VAC [RAM1A23...] 42-660 VAC [RAM1A60...] 42-760 VAC [RAM1A69...]	24-265 VAC [RAM1A23...] 42-660 VAC [RAM1A60...]
Blocking voltage	600Vp	650 Vp [RS1A23...] 850 Vp [RS1A40...] 1200 Vp [RS1A48...]	650 Vp [RAM1A23...] 1200 Vp [RAM1A60...] 1600 Vp [RAM1A69...]	650 Vp [RAM1A23...] 1200 Vp [RAM1A60...]
Power factor	≥ 0.9	≥ 0.95	≥ 0.5	≥ 0.5
Operating temperature	-30°C to +80°C	-20°C to +70°C	-40°C to +80°C	-40°C to +80°C
Terminals	FASTONS	Screw type with clamp	Screw type with clamp	Screw type with clamp
Approvals/Marks	CE - UR - CSA - VDE	CE - UR - CSA	CE - UR - CSA - CCC - VDE*	CE - UR - CSA - CCC - VDE
References				
	25 AAC	10 / 25 / 40 AAC	25 / 50 / 75 / 100 / 125 AAC	25 / 50 / 100 / 125 AAC
230 VAC	RF1A23L25	RS1A23X10 (X = D, LA only)	RAM1A23DY	RAM1A23DYYG
	RF1A23M25	RS1A23X25	RAM1A23AY	RAM1A23AYYG
	RF1A23D25	RS1A23X40		
400 VAC		RS1A40X10 (X = D, LA only)		
		RS1A40X25		
		RS1A40X40		
480 VAC		RS1A48X10 (X = D, LA only)		
		RS1A48X25 (X = D, LA only)		
		RS1A48X40 (X = D, LA only)		
600 VAC			RAM1A60DY	RAM1A60DYYG
			RAM1A60AY	RAM1A60AYYG
			RAM1A69DY	
690 VAC			RAM1A69AY	

RF1B..., RAM1B... Instant On switching versions available on request.
* 690 VAC CE marked only.

X = D for DC control = 3-32VDC (RS1A23...), 4-32VDC (RS1A40..., RS1A48...)
X = LA for AC control = 18-36VAC/DC
X = A1- for AC control = 80-130VAC (not available for RS1A40...)

X = A2- for AC control = 200-260VAC
X = A4- for AC control = 360-440VAC
YY = 25 for 25AAC
YY = 50 for 50AAC

YY = 51 for 50AAC high I²t (RAM1A60..G only)
YY = 75 for 75AAC
YY = 100 for 100AAC (not available for RAM1A23..G)
YY = 125 for 125AAC (not available for RAM1A23..G)

Solid state relays, 1-phase

	Industrial housing zero/instant ON switching	Industrial housing peak switching	Industrial housing phase angle switching
Types	RM1A 25/50/75/100 AAC	RM1C 25/50/75/100 AAC	RM1E 25/50/100 AAC
Single phase, chassis mounting, industrial relays with LED status indication and IP20 protection AC operating frequency range 45-65 Hz. Rated isolation voltage ≥ 4000 Vrms			
Dimensions HxWxD (mm)	58.2 x 44.8 x 28.8	58.2 x 44.8 x 28.8	58.2 x 44.8 x 28.8
Features	Zero Cross or Instant ON, Built-in varistor	Ideal for transformers	Analogue phase-angle control
Input specifications			
Control input range	3-32 VDC [RM1A23D.] 4-32 VDC [RM1A60D.] 20-280 VAC/22-48 VDC [RM1A..A.] 4.25-36 VDC/4.25-27 VAC [RM1A..M.]	4.25-32 VDC	4-20 mA [RM1E..AA.] 0-10 VDC [RM1E..V.]
Max. input current	12 mA [RM1A..D.] 20 mA [RM1A..A.] 18 mA [RM1A..M.]	18 mA	0.15 mA [RM1E..V.]
Supply voltage range			24 VDC [RM1E..V.]
Max. supply input current			20 mA [RM1E..V.]
Output specifications			
	RM1A..25 / 50 / 75 / 100	RM1C..25 / 50 / 75 / 100	RM1E..25 / 50 / 100
Rated operational current			
AC 51 @ Ta=25°C	25 / 50 / 75 / 100 AAC	25 / 50 / 75 / 100 AAC	25 / 50 / 100 AAC
AC 53a @ Ta=25°C	5 / 15 / 20 / 30 AAC		5 / 15 / 20 AAC
AC 56a @ Ta=25°C		10 / 20 / 25 / 30 AAC	
Min. operational current	150 / 250 / 400 / 500 mAAC	150 / 250 / 400 / 500 mAAC	150 / 250 / 400 mAAC
Non rep. surge current (t=10 ms)	325 / 600 / 1150 / 1900 A _p	325 / 600 / 1150 / 1900 A _p	325 / 600 / 1150 A _p
Off-state leakage current	< 3 mA	< 3 mA	< 3 mA
I ² t for fusing (t=10 ms)	525 / 1800 / 6600 / 18000 A ² s	525 / 1800 / 6600 / 18000 A ² s	525 / 1800 / 6600 A ² s
General specifications			
Operational voltage range	24-265 VAC [RM1A23..] 42-440 VAC [RM1A40..] 42-530 VAC [RM1A48..] 42-660 VAC [RM1A60..]	100-440 VAC [RM1C40D.] 340-660 VAC [RM1C60D.]	90-280 VAC [RM1E23AA..] 340-460 VAC [RM1E40AA..] 200-550 VAC [RM1E48AA..] 410-660 VAC [RM1E60AA..] 90-265 VAC [RM1E23V..] 200-550 VAC [RM1E48V..] 410-660 VAC [RM1E60V..]
Blocking voltage	650 V _p [RM1A23..] 850 V _p [RM1A40..] 1200 V _p [RM1A48..] 1400 V _p [RM1A60..]	850 V _p [RM1C40D..] 1400 V _p [RM1C60D..]	650 V _p [RM1E23..] 850 V _p [RM1E40..] 1200 V _p [RM1E48..] 1400 V _p [RM1E60..]
Power factor	≥ 0.5	≥ 0.5	≥ 0.75
Operating temperature	-20°C to +70°C	-30°C to +80°C	-20°C to +70°C
Terminals	Screw type with clamp	Screw type with clamp	Screw type with clamp
Approvals/Marks	CE - UR - CSA - CCC	CE - UR - CSA	CE - UR - CSA
References 1-phase:			
	25 / 50 / 75 / 100 AAC	25 / 50 / 75 / 100 AAC	25 / 50 / 100 AAC
230 Vrms	RM1A23XYY		RM1E23X25 (X = AA or V) RM1E23X50 (X = AA or V) RM1E23X100 (X = AA or V)
400 Vrms	RM1A40XYY	RM1C40D25 RM1C40D50 RM1C40D75	RM1E40AA25 RM1E40AA50 RM1E40AA100
480 Vrms	RM1A48XYY		RM1E48X25 (X = AA or V) RM1E48X50 (X = AA or V) RM1E48X100 (X = AA or V)
600 Vrms	RM1A60XYY	RM1C60D25 RM1C60D50 RM1C60D100	RM1E60X25 (X = AA or V) RM1E60X50 (X = AA or V) RM1E60X100 (X = AA or V)

RM1B.. Instant On switching versions available on request

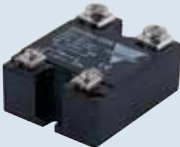
X = D for DC control = 3-32VDC (RM1A23..), 4-32VDC (RM1A40.., RM1A48.., RM1A60..)
X = A for AC control = 20-280VAC / 22-48VDC

X = M for low AC control = 4.25-36VDC / 4.25-27VAC
YY = 25 for 25 AAC
YY = 50 for 50 AAC

YY = 75 for 75 AAC
YY = 100 for 100 AAC

Solid state relays, 1-phase

Industrial housing AC output switching

Types	RA 25/50/90/110 AAC	RA Sense 25/50/90/110 AAC	RA Low Noise 10/25 AAC
Single phase relays, chassis mounting, variants with special functions 2 Phase industrial relays			
Dimensions HxWxD (mm)	58.2 x 44.8 x 28.8	58.2 x 44.8 x 28.8	58.2 x 44.8 x 28.8
Features	General purpose	Detects supply and load failure	Complies with EN55022

Input Specifications

Control input range	3-32 VDC [RA..D..] 10-90 VAC / DC [RA..LA..] 90-280 VAC / DC [RA..HA..]	7-32 VDC	3-32 VDC
Max. input current	22 mA [RA..D..] 17 mA [RA..LA..] 6.5 mA [RA..HA..]	4 mA	32 mA
Control supply		20-32 VDC (40 mA)	
Alarm output	PNP NPN	VCC - 2 VDC (100 mA) 2 VDC (100 mA)	

Output specifications

Rated operational current			
AC 51 @ Ta=25°C	25 / 50 / 90 / 110 AAC	25 / 50 / 90 / 110 AAC	10 / 25 AAC
AC 53a @ Ta=25°C	5/15/ 20/30 AAC		
Min. operational current	20 mA	200 mArms	2 Arms
Non rep. surge current (t=10 ms)	325 Ap [RA..25.] 600 Ap [RA..50.] 1150 Ap [RA..90.] 1900 Ap [RA..110.]	325 Ap [RA..25..S] 600 Ap [RA..50..S] 1150 Ap [RA..90..S] 1900 Ap [RA..110..S]	90 Ap, t=20 ms [RA..10..L] 200 Ap, t=20 ms [RA..25..L]
Off-state leakage current	< 3 mA	< 6 mArms	< 1 mArms
I ² t for fusing (t=10 ms)	<525 A ² s [RA..25.] <1800 A ² s [RA..50.] <6600 A ² s [RA..90.] <18000 A ² s [RA..110.]	525 A ² s [RA..25..S] 1800 A ² s [RA..50..S] 6600 A ² s [RA..90..S] 18000 A ² s [RA..110..S]	120 A ² s [RA..10..L] 200 A ² s [RA..25..L]

General specifications

Operational voltage range	24-280 Vrms [RA24.06..] 42-480 Vrms [RA44.08..] 42-530 Vrms [RA48.12..] 24-690 Vrms [RA60.16..]	60-140 Vrms [RA12..S] 170-250 Vrms [RA23..S] 150-440 Vrms [RA40..S] 180-530 Vrms [RA48..S]	180-265 Vrms [RA24..L] 340-530 Vrms [RA40..L]
Blocking voltage	<650 Vp [RA24.06..] <850 Vp [RA44.08..] <1200 Vp [RA48.12..] <1600 Vp [RA60.16..]	650 Vp [RA12..S] 650 Vp [RA23..S] 1000 Vp [RA40..S] 1200 Vp [RA48..S]	650 Vp [RA24..L] 850 Vp [RA40..L]
Power factor	≥ 0.5	≥ 0.5	1
Operating temperature	-20°C to +70°C	-20°C to +70°C	-20°C to +70°C
Terminals	Screw type with clamp	Screw / 5 way plug	Screw type with clamp
Approvals/Marks	CE - UR - CSA	CE - UR - CSA	CE - UR - CSA - VDE

References

	25 / 50 / 90 / 110 AAC	25 / 50 / 90 / 110 AAC	10 / 25 AAC
120 Vrms		RA12..06..S	
230 Vrms	RA24..-D.. RA24..LA.. RA24..HA.. RA44..-D.. RA44..LA.. RA44..HA.. RA48..-D.. RA48..LA.. RA48..HA.. RA60..-D..	RA23..06..S	RA2410-D06L RA2425-D06L RA4010-D08L RA4025-D08L RA48..12..S
400 Vrms			
480 Vrms			
600 Vrms			

Solid state relays, 2-poles

Industrial housing AC output switching

Types	RA2A 25/40 AAC	RA2A..C 25/40 AAC
2-pole industrial solid state relays		
Dimensions HxWxD (mm)	57.8 x 44.5 x 31.7	57.8 x 44.5 x 34.8
Features	Two independent poles, RA2A..M for inductive loads	Two independent poles with integrated varistor on output
Input specifications		
Control input range	4.5-32 VDC	4.5-32 VDC
Max. input current	2 x 10 mA	2x 10 mA
Output specifications		
Rated operational current		
AC 51 @ Ta=25°C	25 / 40 AAC per pole	25 / 40 AAC per pole
AC 53a @ Ta=25°C	5 / 15 AAC per pole [RA2A..M]	
Min. operational current	150 mArms [RA2A...25] 250 mArms [RA2A...40]	150 mArms [RA2A...25C] 250 mArms [RA2A...40C]
Non rep. surge current (t=10 ms)	325 Ap [RA2A...25] 600 Ap [RA2A...40]	325 Ap [RA2A...25C] 600 Ap [RA2A...40C]
Off-state leakage current	< 3 mArms	<3 mArms
I ² t for fusing (t=10 ms)	525 A ² s [RA2A...25] 1800 A ² s [RA2A...40]	525 A ² s [RA2A...25C] 1800 A ² s [RA2A...40C]
General specifications		
Operational voltage range	24-265 Vrms [RA2A23..] / 42-440 Vrms [RA2A40..] 42-530 Vrms [RA2A48..] / 42-660 Vrms [RA2A60..]	24-265 Vrms [RA2A23..] 42-660 Vrms [RA2A60..]
Blocking voltage	650 Vp [RA2A23..] / 850 Vp [RA2A40..] 1200 Vp [RA2A48..] / 1200 Vp [RA2A60..]	650 Vp [RA2A23..] 1200 Vp [RA2A60..]
Power factor	≥0.95 [RA2A...] / ≥0.50 [RA2A...M]	≥ 0.95
Operating temperature	-20°C to +70°C	-20°C to +70°C
Terminals	FASTONS 6.35 mm	FASTONS 6.35 mm / 4 way plug
Approvals/Marks	CE - UR - CSA	CE - cURus
References		
	25 / 40 AAC per pole	25 / 40 AAC per pole
230 Vrms	25 AAC: RA2A23D25	25 AAC: RA2A23D25C
	RA2A23D25M	
	40 AAC: RA2A23D40	40 AAC: RA2A23D40C
	RA2A23D40M	
400 Vrms	25 AAC: RA2A40D25	
	RA2A40D25M	
	40 AAC: RA2A40D40	
	RA2A40D40M	
480 Vrms	25 AAC: RA2A48D25	
	RA2A48D25M	
	40 AAC: RA2A48D40	
	RA2A48D40M	
600 Vrms	25 AAC: RA2A60D25	25 AAC: RA2A60D25C
	RA2A60D25M	
	40 AAC: RA2A60D40	40 AAC: RA2A60D40C
	RA2A60D40M	

Solid state relays, 2-poles

Industrial housing AC output switching

Types	RKD2..C / RK2..C 50 / 75 AAC	RKD2..P / RK2..P 50 / 75 AAC
2-pole industrial solid state relays		
Dimensions HxWxD (mm)	45 x 53 x 33	45 x 58 x 33 (w/o plug) 45 x 58 x 44 (incl. plug)
Features	Two poles with independent control (RKD2) or common control (RK2), control connection via connector pins	Two poles with independent control (RKD2) or common control (RK2), control connection via provided spring plug
Input specifications		
Control input range	4 - 32 VDC	4 - 32 VDC
Max. input current	2 x 12 mA (RKD2..) 1 x 24 mA (RK2..)	2 x 12 mA (RKD2..) 1 x 24 mA (RK2..)
Output specifications		
Rated operational current		
AC 51 @ Ta=25°C	50 AAC per pole [RK..50/51] 75 AAC per pole [RK..75]	50 AAC per pole [RK..50/51] 75 AAC per pole [RK..75]
AC 53a @ Ta=25°C	12 AAC	12 AAC
Min. operational current	250 mArms [RK..50] 400 mArms [RK..51/75]	250 mArms [RK..50] 400 mArms [RK..51/75]
Non rep. surge current (t=10 ms)	500 Ap [RK..50] 775 Ap [RK..51] 1400 Ap [RK..75]	500 Ap [RK..50] 775 Ap [RK..51] 1400 Ap [RK..75]
Off-state leakage current	≤ 3 mArms	≤ 3 mArms
I ² t for fusing (t=10 ms)	1500 A ² s [RK..50] 3000 A ² s [RK..51] 9800 A ² s [RK..75]	1500 A ² s [RK..50] 3000 A ² s [RK..51] 9800 A ² s [RK..75]
General specifications		
Operational voltage range	24 - 265 Vrms [RK..23..] 42 - 660 Vrms [RK..60]	24 - 265 Vrms [RK..23] 42 - 660 Vrms [RK..60]
Blocking voltage	600 Vp [RK..23..] 1200 Vp [RK..60..]	600 Vp [RK..23..] 1200 Vp [RK..60..]
Power factor	≥ 0.5	≥ 0.5
Operating temperature	-40°C to +80°C	-40°C to +80°C
Terminals	M4 screw / Control pins	M4 screw / Plug terminal
Approvals/Marks	CE - UR - CSA - VDE	CE - UR - CSA - VDE
References		
	50 / 75 AAC per pole	50 / 75 AAC per pole
230 Vrms	50 AAC: RKD2A23D50C	50 AAC: RKD2A23D50P
	50 AAC: RKD2A23D51C	50 AAC: RKD2A23D51P
	75 AAC: RKD2A23D75C	75 AAC: RKD2A23D75P
600 Vrms	50 AAC: RKX2Y60D50C	50 AAC: RKX2Y60D50P
	50 AAC: RKX2A60D51C	50 AAC: RKX2A60D51P
	75 AAC: RKX2Y60D75C	75 AAC: RKX2Y60D75P

X = must be replaced with 'D' for dual control, blank for common control

Y = must be replaced with 'A' for zero cross switching, 'B' for instant on switching

Solid state relays, 1 / 3-phase

	Industrial housing DC switching	Industrial housing 3-phase switching
Types	RD 1/5 ADC	RZ3A 25/55/75 AAC
Single phase and 3-phase industrial relays		
Dimensions HxWxD (mm)	58.2 x 44.8 x 28.8	74 x 103 x 41
Features	Ideal for DC valve coils	3-phase switching
Input Specifications		
Control input range	3-32 VDC	4-32 VDC [RZ3A..D.] 24-275 Vrms [RZ3A..A.]
Max. input current	32 mA	23 / 15 mA
Output specifications		
Rated operational current		
AC 51 @ Ta=25°C	DC1: 1 A / 5 A	25 / 55 / 75 AAC
AC 53a @ Ta=25°C		5 / 15 / 20 AAC
Min. operational current	1 mA	150 mArms [RZ3..25] 250 mArms [RZ3..55] 400 mArms [RZ3..75]
Non rep. surge current (t=10 ms)		325 Ap [RZ3A..25..] 600 Ap [RZ3A..55..] 1150 Ap [RZ3A..75..]
Off-state leakage current	< 1 mA	< 3 mA
I²t for fusing (t=10 ms)		525 A²s [RZ3A..25..] 1800 A²s [RZ3A..55..] 6600 A²s [RZ3A..75..]
General specifications		
Operational voltage range	3-60 VDC [RD0605..D] 3-200 VDC [RD2001..D] 3-350 VDC [RD3501..D]	24-440 Vrms [RZ3A40..] 42-530 Vrms [RZ3A48..] 42-660 Vrms [RZ3A60..]
Blocking voltage		<850 Vp [RZ3A40..] <1200 Vp [RZ3A48..] <1600 Vp [RZ3A60..]
Operating temperature	-20°C to +70°C	-30°C to +80°C
Terminals	Screw type with clamp	Screw type with clamp
Approvals/Marks	CE - CSA	CE - UR - CSA
References		
	1 / 5 ADC	25 / 55 / 75 AAC per pole
230 Vrms	200 VDC: RD2001-D 350 VDC: RD3501-D	
400 Vrms	60 VDC: RD0605-D	RZ3A40D..* RZ3A40A..*
480 Vrms		RZ3A48D..* RZ3A48A..*
600 Vrms		RZ3A60D..* RZ3A60A..*

* Add suffix 'P' for additional integrated Over Temperature Protection

Solid state relays, 1 / 3-phase

AC output switching - Hybrid relays for DIN rail mounting

Types	RMD1H 20 AAC	RMD2H 30/40 AAC	RMD3H 30/40 AAC
Hybrid relays. AC operating frequency range 45-65 Hz.			
Dimensions HxWxD (mm)	81 x 17.5 x 67.2	97 x 140.7 x 50.7	97 x 140.7 x 50.7
Features	Hybrid relay	2 pole switching hybrid relay	3 pole switching hybrid relay
Input specifications			
Control input range	4-32 VDC [RMD....D20] 24-275 VAC [RMD....A20]	24 VAC/DC +10/-15% [RMD2..LA..] 120 VAC/DC +10/-15% [RMD2..MA..] 240 VAC/DC +10/-15% [RMD2..HA..]	24 VAC/DC +10/-15% [RMD3..LA..] 120 VAC/DC +10/-15% [RMD3..MA..] 240 VAC/DC +10/-15% [RMD3..HA..]
Max. input current	5 mA [RMD..D20] 3 mA [RMD..A20]	400 mA	400 mA
Output specifications			
Rated operational current			
AC 51 @ Ta=25°C	20 AAC	30 AAC [RMD2..30] 40 AAC [RMD2..40]	30 AAC [RMD3..30] 40 AAC [RMD3..40]
Min. operational current	100 mA	150 mA	150 mA
General specifications			
Operational voltage range	195-253 Vrms	240 VAC -15% /+10% [RMD..24..] 277 VAC -15% /+10% [RMD..48..]	240 VAC -15% /+10% [RMD..24..] 277 VAC -15% /+10% [RMD..48..] 480 VAC + N [RMD..48..]
Power factor	≥ 0.9	≥ 0.9 at rated voltage	≥ 0.9 at rated voltage
Operating temperature	-5°C to +55°C	0°C to 70°C	0°C to 70°C
Terminals	Box clamp	Input 6.35 mm FASTON, Output screw	Input 6.35 mm FASTON, Output screw
Approvals/Marks	CE - cURus	CE - cURus	CE - cURus
References			
	20 AAC	30 AAC	30 AAC
	RMD1H23D20	RMD2H24LA30	RMD3H24LA30
	RMD1H23A20	RMD2H24MA30	RMD3H24MA30
		RMD2H24HA30	RMD3H24HA30
		40 AAC	RMD3H48LA30
		RMD2H24LA40	RMD3H48MA30
		RMD2H24MA40	RMD3H48HA30
		RMD2H24HA40	40 AAC
			RMD3H24LA40
			RMD3H24MA40
			RMD3H24HA40
			RMD3H48LA40
			RMD3H48MA40
			RMD3H48HA40

Solid state contactors, 1-phase

Ready for use design - DIN rail mounting, AC output switching

Types	RGC/RGH1A..15KKE 20 AAC	RGC1A..25KKE 25 AAC	RGC/RGH1A..30KKE 30 AAC
Single phase, semiconductor contactors with integrated heatsink, LED indication and IP20 protection, AC operating frequency 45-65 Hz, rated isolation voltage ≥ 4000 Vrms, 100 kArms short circuit current rating, motor ratings according to UL508			
Dimensions HxWxD (mm)	110 x 17.8 x 103.5	110 x 17.8 x 103.5	110 x 22.5 x 141
Features	17.8 mm wide solid state contactor, integrated output varistor, DC or AC control voltage, screw terminals for power and control, E-type layout	17.8 mm wide solid state contactor, integrated output varistor, DC or AC control voltage, screw terminals for power and control, E-type layout	22.5 mm wide solid state contactor, integrated output varistor, DC or AC control voltage, screw terminals for power and control, E-type layout
Input specifications			
Control input range	3-32 VDC [RG.23D.] 4-32 VDC [RG.60D.] 20-275 VAC, 24-190 VDC [RG..A.]	3-32 VDC [RG.23D.] 4-32 VDC [RG.60D.] 20-275 VAC, 24-190 VDC [RG..A.]	3-32 VDC [RG.23D.] 4-32 VDC [RG.60D.] 20-275 VAC, 24-190 VDC [RG..A.]
Max. input current	11 mADC [RG..D.] 30 mAAC [RG..A.]	11 mADC [RG..D.] 30 mAAC [RG..A.]	11 mADC [RG..D.] 30 mAAC [RG..A.]
Output specifications			
Rated operational current AC 51 @ Ta=40°C	20 AAC	25 AAC	30 AAC
AC 53a @ Ta=40°C	5 AAC	5 AAC	8 AAC [RGC..30.] 10 AAC [RGH..31.]
Min. operational current	150 mA [RGC..15.] 400 mA [RGH..15.]	250 mA	250 mA [RGC..30.] 400 mA [RGH..31.]
Non rep. surge current (t=10 ms)	325 Ap [RGC..15.] 1150 Ap [RGH..15.]	600 Ap	600 Ap [RGC..30.] 1150 Ap [RGH..31.]
Off-state leakage current	3 mAAC	3 mAAC	3 mAAC
I ² t for fusing (t=10 ms)	525 A ² s [RGC..15.] 6600 A ² s [RGH..15.]	1800 A ² s	1800 A ² s [RGC..30.] 6600 A ² s [RGH..31.]
Critical dV/dt (@ Tj init=40°C)	1000 V/μs	1000 V/μs	1000 V/μs
General specifications			
Operational voltage range	24-240 VAC +10% [RG.23..] 42-600 VAC +10% [RG.60..]	24-240 VAC +10% [RG.23..] 42-600 VAC +10% [RG.60..]	24-240 VAC +10% [RG.23..] 42-600 VAC +10% [RG.60..]
Blocking voltage	800 Vp [RGC.23.] 1200 Vp [RGC.60.] 1600 Vp [RGH.60.]	800 Vp [RGC.23.] 1200 Vp [RGC.60.]	800 Vp [RGC.23.] 1200 Vp [RGC.60.] 1600 Vp [RGH.60.]
Power factor	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage
Operating temperature	-40°C to +80°C	-40°C to +80°C	-40°C to +80°C
Approvals/Marks	CE - cULus - VDE - GL [RGC..15.]	CE - cULus - VDE - GL	CE - cULus - VDE - GL [RGC..30.]
References			
DC control voltage			
230 VAC, 800 Vp	RGC1A23D15KKE	RGC1A23D25KKE	RGC1A23D30KKE
600 VAC, 1200 Vp	RGC1A60D15KKE	RGC1A60D25KKE	RGC1A60D30KKE
600 VAC, 1600 Vp, 6600 A ² s	RGH1A60D15KKE		RGH1A60D31KKE
AC/DC control voltage			
230 VAC, 800 Vp	RGC1A23A15KKE	RGC1A23A25KKE	RGC1A23A30KKE
600 VAC, 1200 Vp	RGC1A60A15KKE	RGC1A60A25KKE	RGC1A60A30KKE
600 VAC, 1600 Vp, 6600 A ² s	RGH1A60A15KKE		RGH1A60A31KKE

Instant On (Random) Switching available on request (RGC1860D...)

Solid state contactors, 1-phase

Ready for use design - DIN rail mounting, AC output switching

Types	RGC/RGH1A..15MKE 20 AAC	RGC1A..25MKE 25 AAC	RGC/RGH1A..30MKE 30 AAC
Single phase, semiconductor contactors with integrated heatsink, LED indication and IP20 protection, AC operating frequency 45-65 Hz, rated isolation voltage ≥ 4000 Vrms, 100 kArms short circuit current rating, motor ratings according to UL508			
Dimensions HxWxD (mm)	110 x 17.8 x 114.5	110 x 17.8 x 114.5	110 x 22.5 x 152
Features	17.8 mm wide solid state contactor, integrated varistor for overvoltage protection, DC or AC control voltage range, screw terminals with captivated clamp for power terminals and spring plug for control, E-type layout	17.8 mm wide solid state contactor, integrated varistor for overvoltage protection, DC or AC control voltage range, screw terminals with captivated clamp for power terminals and spring plug for control, E-type layout	22.5 mm wide solid state contactor, integrated varistor for overvoltage protection, DC or AC control voltage range, screw terminals with captivated clamp for power terminals and spring plug for control, E-type layout

Input specifications

Control input range	3-32 VDC [RG.23D.] / 4-32 VDC [RG.60D.] 20-275 VAC, 24-190 VDC [RG..A.]	3-32 VDC [RG.23D.] / 4-32 VDC [RG.60D.] 20-275 VAC, 24-190 VDC [RG..A.]	3-32 VDC [RG.23D.] / 4-32 VDC [RG.60D.] 20-275 VAC, 24-190 VDC [RG..A.]
Max. input current	11 mADC [RG..D.] 30 mAAC [RG..A.]	11 mADC [RG..D.] 30 mAAC [RG..A.]	11 mADC [RG..D.] 30 mAAC [RG..A.]

Output specifications

Rated operational current			
AC 51 @ Ta=40°C	20 AAC	25 AAC	30 AAC
AC 53a @ Ta=40°C	5 AAC	5 AAC	8 AAC [RGC..30.] 10 AAC [RGH..31.]
Min. operational current	150 mA [RGC..15.] 400 mA [RGH..15.]	250 mA	250 mA [RGC..30.] 400 mA [RGH..31.]
Non rep. surge current (t=10 ms)	325 Ap [RGC...15.] 1150 Ap [RGH...15..]	600 Ap	600 Ap [RGC..30.] 1150 Ap [RGH..31.]
Off-state leakage current	3 mAAC	3 mAAC	3 mAAC
I ² t for fusing (t=10 ms)	525 A ² s [RGC..15.] 6600 A ² s [RGH..15.]	1800 A ² s	1800 A ² s [RGC..30.] 6600 A ² s [RGH..31.]
Critical dV/dt (@Tj init=40°C)	1000 V/μs	1000 V/μs	1000 V/μs

General specifications

Operational voltage range	24-240 VAC +10% [RG.23..] 42-600 VAC +10% [RG.60..]	24-240 VAC +10% [RG.23..] 42-600 VAC +10% [RG.60..]	24-240 VAC +10% [RG.23..] 42-600 VAC +10% [RG.60..]
Blocking voltage	800 Vp [RGC.23.] 1200 Vp [RGC.60.] 1600 Vp [RGH.60.]	800 Vp [RGC.23.] 1200 Vp [RGC.60.]	800 Vp [RGC.23.] 1200 Vp [RGC.60.] 1600 Vp [RGH.60.]
Power factor	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage
Operating temperature	-40°C to +80°C	-40°C to +80°C	-40°C to +80°C
Approvals/Marks	CE - cULus - VDE - GL [RGC..15.]	CE - cULus - VDE - GL	CE - cULus - VDE - GL [RGC..30.]

References

DC control voltage			
230 VAC, 800 Vp	RGC1A23D15MKE	RGC1A23D25MKE	RGC1A23D30MKE
600 VAC, 1200 Vp	RGC1A60D15MKE	RGC1A60D25MKE	RGC1A60D30MKE
600 VAC, 1600 Vp, 6600 A ² s	RGH1A60D15MKE		RGH1A60D31MKE
AC/DC control voltage			
230 VAC, 800 Vp	RGC1A23A15MKE	RGC1A23A25MKE	RGC1A23A30MKE
600 VAC, 1200 Vp	RGC1A60A15MKE	RGC1A60A25MKE	RGC1A60A30MKE
600 VAC, 1600 Vp, 6600 A ² s	RGH1A60A15MKE		RGH1A60A31MKE

Instant On (Random) Switching available on request (RGC1B60D...)

Solid state contactors, 1-phase

Ready for use design - DIN rail mounting, AC output switching

Types	RGC1A..15KGU 20 AAC	RGC1A..25KGU 25 AAC	RGC1A..30KGU 30 AAC
Single phase, semiconductor contactors with integrated heatsink, LED indication and IP20 protection, AC operating frequency 45-65 Hz, rated isolation voltage ≥ 4000 Vrms, 100 kArms short circuit current rating, motor ratings according to UL508			
Dimensions HxWxD (mm)	110 x 17.8 x 103.5	110 x 17.8 x 103.5	110 x 22.5 x 141
Features	17.8 mm wide solid state contactor, integrated varistor for overvoltage protection, DC or AC control voltage range, screw terminals with captivated clamp for connection of control terminals and box clamps for power terminals, U-type layout	17.8 mm wide solid state contactor, integrated varistor for overvoltage protection, DC or AC control voltage range, screw terminals with captivated clamp for connection of control terminals and box clamps for power terminals, U-type layout	22.5 mm wide solid state contactor, integrated varistor for overvoltage protection, DC or AC control voltage range, screw terminals with captivated clamp for connection of control terminals and box clamps for power terminals, U-type layout

Input specifications

Control input range	3-32 VDC [RG.23D.] 4-32 VDC [RG.60D.] 20-275 VAC, 24-190 VDC [RG..A.]	3-32 VDC [RG.23D.] 4-32 VDC [RG.60D.] 20-275 VAC, 24-190 VDC [RG..A.]	3-32 VDC [RG.23D.] 4-32 VDC [RG.60D.] 20-275 VAC, 24-190 VDC [RG..A.]
Max. input current	11 mADC [RG..D.] 30 mAAC [RG..A.]	11 mADC [RG..D.] 30 mAAC [RG..A.]	11 mADC [RG..D.] 30 mAAC [RG..A.]

Output specifications

Rated operational current			
AC 51 @ Ta=40°C	20 AAC	25 AAC	30 AAC
AC 53a @ Ta=40°C	5 AAC	5 AAC	8 AAC
Min. operational current	150 mA	250 mA	250 mA
Non rep. surge current (t=10 ms)	325 Ap	600 Ap	600 Ap
Off-state leakage current	3 mAAC	3 mAAC	3 mAAC
I²t for fusing (t=10 ms)	525 A²s	1800 A²s	1800 A²s
Critical dV/dt (@ Tj init = 40°C)	1000 V/µs	1000 V/µs	1000 V/µs

General specifications

Operational voltage range	24-240 VAC +10% [RG.23..] 42-600 VAC +10% [RG.60..]	24-240 VAC +10% [RG.23..] 42-600 VAC +10% [RG.60..]	24-240 VAC +10% [RG.23..] 42-600 VAC +10% [RG.60..]
Blocking voltage	800 Vp [RGC.23.] 1200 Vp [RGC.60.]	800 Vp [RGC.23.] 1200 Vp [RGC.60.]	800 Vp [RGC.23.] 1200 Vp [RGC.60.]
Power factor	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage
Operating temperature	-40°C to +80°C	-40°C to +80°C	-40°C to +80°C
Approvals/Marks	CE - cULus - VDE - GL	CE - cULus - VDE - GL	CE - cULus - VDE - GL

References

DC control voltage			
230 VAC, 800 Vp	RGC1A23D15KGU	RGC1A23D25KGU	RGC1A23D30KGU
600 VAC, 1200 Vp	RGC1A60D15KGU	RGC1A60D25KGU	RGC1A60D30KGU
AC/DC control voltage			
230 VAC, 800 Vp	RGC1A23A15KGU	RGC1A23A25KGU	RGC1A23A30KGU
600 VAC, 1200 Vp	RGC1A60A15KGU	RGC1A60A20KGU	RGC1A60A30KGU

Instant On (Random) Switching available on request (RGC1B60D...)

Solid state contactors, 1-phase

Ready for use design - DIN rail mounting, AC output switching

Types	RG..40/41/42KGE 40/43 AAC	RG..40/41/42MGE 40/43 AAC	RG..60/62KGE 60/65 AAC	RGC1A..62MGE 65 AAC
Single phase, semiconductor contactors with integrated heatsink, LED indication and IP20 protection, AC operating frequency 45-65 Hz, rated isolation voltage ≥ 4000 Vrms, 100 kArms short circuit current rating, motor ratings according to UL508				
Dimensions HxWxD (mm)	110 x 35.6 x 141	110 x 35.6 x 152	110 x 69.1 x 141	110 x 69.1 x 152
Features	35 mm wide solid state contactor, integrated varistor, DC or AC control voltage, screw terminals for control, box clamp for power terminals, E-type layout	35 mm wide solid state contactor, integrated varistor, DC or AC control voltage, spring plug for control, box clamp for power terminals, E-type layout	70 mm wide solid state contactor, integrated varistor, DC or AC control voltage, screw terminals for control, box clamp for power terminals, E-type layout	70 mm wide solid state contactor, integrated varistor, DC or AC control voltage, spring plug for control, box clamp for power terminals, E-type layout
Input specifications				
Control input range	3-32 VDC [RG..23D..] 4-32 VDC [RG..60D..] 20-275 VAC, 24-190 VDC [RG..A..]	3-32 VDC [RG..23D..] 4-32 VDC [RG..60D..] 20-275 VAC, 24-190 VDC [RG..A..]	60 / 65 AAC [RGC..60/62], 60 AAC [RGH..60]	3-32 VDC [RG..23D..] 4-32 VDC [RG..60D..] 20-275 VAC, 24-190 VDC [RG..A..]
Max. input current	11 mADC [RG..D..] 30 mAAC [RG..A..]	11 mADC [RG..D..] 30 mAAC [RG..A..]	11 mADC [RG..D..] 30 mAAC [RG..A..]	11 mADC [RG..D..] 30 mAAC [RG..A..]
Output specifications				
Rated operational current AC 51 @ Ta=40°C	40 / 43 AAC [RGC..40/42], 40 AAC [RGH..40/41]	40 / 43 AAC [RGC..40/42], 40 AAC [RGH..41]	60 / 65 AAC [RGC..60/62], 60 AAC [RGH..60]	65 AAC [RGC..62]
AC 53a @ Ta=40°C	13 / 16 AAC [RGC..40/42], 10 / 13 AAC [RGH..40/41]	13 / 16 AAC [RGC..40/42], 13 AAC [RGH..41]	14.8 / 20 AAC [RGC..60/62], 18 AAC [RGH..60]	20 AAC [RGC..62]
Min. operational current	400 / 500 mAAC [RGC..40/42], 250 / 400 mAAC [RGH..40/41]	400 / 500 mAAC [RGC..40/42], 400 mAAC [RGH..41]	400 / 500 mAAC [RGC..60/62], 400 mAAC [RGH..60]	500 mAAC [RGC..62]
Non rep. surge current (t=10 ms)	800 / 1900 Ap [RGC..40/42], 600 / 1150 Ap [RGH..40/41]	800 / 1900 Ap [RGC..40/42], 1150 Ap [RGH..41]	800 / 1900 Ap [RGC..60/62], 1150 Ap [RGH..60]	1900 Ap [RGC..62]
Off-state leakage current	3 mAAC	3 mAAC	3 mAAC	3 mAAC
I ² t for fusing (t=10 ms)	3200 / 18000 A ² s [RGC..40/42], 1800 / 6600 A ² s [RGH..40/41]	3200 / 18000 A ² s [RGC..40/42], 6600 A ² s [RGH..41]	3200 / 18000 A ² s [RGC..60/62], 6600 A ² s [RGH..60]	18000 A ² s [RGC..62]
Critical dV/dt (@Tj init=40°C)	1000 V/μs	1000 V/μs	1000 V/μs	1000 V/μs
General specifications				
Operational voltage range	24-240 VAC +10% [RG..23..] 42-600 VAC +10% [RG..60..] 42-690 VAC +10% [RG..69..]*	24-240 VAC +10% [RG..23..] 42-600 VAC +10% [RG..60..]	24-240 VAC +10% [RG..23..] 42-600 VAC +10% [RG..60..] 42-690 VAC +10% [RG..69..]*	24-240 VAC +10% [RG..23..] 42-600 VAC +10% [RG..60..]
Blocking voltage	800 Vp [RGC..23..] 1200 Vp [RGC..60..] 1600 Vp [RGH..60/69..]	800 Vp [RGC..23..] 1200 Vp [RGC..60..] 1600 Vp [RGH..60..]	800 Vp [RGC..23..] 1200 Vp [RGC..60..] 1600 Vp [RGH..60/69..]	800 Vp [RGC..23..] 1200 Vp [RGC..60..]
Power factor	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage
Operating temperature	-40°C to +80°C	-40°C to +80°C	-40°C to +80°C	-40°C to +80°C
Approvals/Marks	CE - cULus - VDE	CE - cULus - VDE	CE - cULus - VDE	CE - cULus - VDE
References				
230 VAC, 800 Vp, 3200 A's	40 AAC: RGC1A23X40KGE	40 AAC: RGC1A23X40MGE	60 AAC: RGC1A23X60KGE	
230 VAC, 800 Vp, 18000 A's	43 AAC: RGC1A23X42KGE	43 AAC: RGC1A23X42MGE	65 AAC: RGC1A23X62KGE	65 AAC: RGC1A23X62MGE
600 VAC, 1200 Vp, 3200 A's	40 AAC: RGC1A60X40KGE	40 AAC: RGC1A60X40MGE	60 AAC: RGC1A60X60KGE	
600 VAC, 1200 Vp, 18000 A's	43 AAC: RGC1A60X42KGE	43 AAC: RGC1A60X42MGE	65 AAC: RGC1A60X62KGE	65 AAC: RGC1A60X62MGE
600 VAC, 1600 Vp, 1800 A's	40 AAC: RGH1A60X40KGE			
600 VAC, 1600 Vp, 6600 A's	40 AAC: RGH1A60X41KGE	40 AAC: RGH1A60X41MGE	60 AAC: RGH1A60X60KGE	
690 VAC, 1600 Vp, 6600 A's	40 AAC: RGH1A69X41KGE*		60 AAC: RGH1A69X60KGE*	

X must be replaced with D for DC control 3-32 VDC, 4-32 VDC (for 600 VAC versions)

X must be replaced with A for AC control 20-275 VAC, 24-190 VDC

RGC1B.. models for Instant On (Random) switching are available on request

*690VAC variants are CE marked only and do not include a varistor across the output

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Switches

Solid state contactors, 1-phase

Ready for use design - DIN rail mounting

	AC output switching		DC output switching
Types	RG..40/42KGU 40/43 AAC	RG..60/62KGU 60/65 AAC	RGC1D1000D15KKE 15 ADC
Single phase, semiconductor contactors with integrated heatsink, LED indication and IP20 protection, rated isolation voltage ≥ 4000 Vrms, 100 kArms short circuit current rating and motor ratings according to UL508 for AC output switching			
Dimensions HxWxD (mm)	110 x 35.6 x 141	110 x 69.1 x 141	110 x 17.8 x 141
Features	35 mm wide solid state contactor, integrated varistor, DC or AC control voltage, screw terminals for control, box clamp for power terminals, U-type layout	70 mm wide solid state contactor, integrated varistor, DC or AC control voltage, screw terminals for control, box clamp for power terminals, U-type layout	17.8 mm wide solid state contactor for DC switching with integrated free wheeling diode, DC control, screw terminals for power and control, E-type layout

Input specifications

Control input range	3-32 VDC [RG..23D..] 4-32 VDC [RG..60D..] 20-275 VAC, 24-190 VDC [RG..A..]	3-32 VDC [RG..23D..] 4-32 VDC [RG..60D..] 20-275 VAC, 24-190 VDC [RG..A..]	4.5-32 VDC
Max. input current	11 mA DC [RG..D..] 30 mA AC [RG..A..]	11 mA DC [RG..D..] 30 mA AC [RG..A..]	13.7 mA DC

Output specifications

Rated operational current			
AC-51 @ Ta = 40°C	40/43 AAC [RGC..40/42] 40 AAC [RGH..41]	60 / 65 AAC [RGC..60/62], 60 AAC [RGH..60]	
AC-53a @ Ta = 40°C	13/16 AAC [RGC..40/42] 13 AAC [RGH..41]	14.8 / 20 AAC [RGC..60/62], 18 AAC [RGH..60]	
DC 1 @ 60°C			8 ADC
Min. operational current	400 / 500 mA AC [RGC..40/42], 400 mA AC [RGH..41]	400 / 500 mA AC [RGC..60/62], 400 mA AC [RGH..60]	20 mA DC
Non rep. surge current (t=10 ms)	800 / 1900 A _p [RGC..40/42], 1150 A _p [RGH..41]	800 / 1900 A _p [RGC..60/62], 1150 A _p [RGH..60]	200 ADC (10 μ s)
Off-state leakage current	3 mA AC	3 mA AC	3 mA AC
I ² t for fusing (t=10 ms)	3200 / 18000 A ² s [RGC..40/42], 6600 A ² s [RGH..41]	3200 / 18000 A ² s [RGC..60/62], 6600 A ² s [RGH..60]	1.5 mA DC
Critical dV/dt (@ T _j init= 40°C)	1000 V/ μ s	1000 V/ μ s	1000 V/ μ s

General specifications

Operational voltage range	24-240 VAC +10% [RG..23..] 42-600 VAC +10% [RG..60..] 42-690 VAC +10% [RG..69..]*	24-240 VAC +10% [RG..23..] 42-600 VAC +10% [RG..60..] 42-690 VAC +10% [RG..69..]*	24-1000 VDC [CE] 24-600 VDC [UL508]
Blocking voltage	800 V _p [RGC..23..] 1200 V _p [RGC..60..] 1600 V _p [RGH..60/69..]	800 V _p [RGC..23..] 1200 V _p [RGC..60..] 1600 V _p [RGH..60/69..]	1200 V _p
Power factor	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage	
Operating temperature	-40°C to +80°C	-40°C to +80°C	-40°C to +80°C
Approvals/Marks	CE - cULus - VDE	CE - cULus - VDE	CE - cULus

References

230 VAC, 800 V _p , 3200 A ² s	40 AAC: RGC1A23X40KGU	60 AAC: RGC1A23X60KGU	
230 VAC, 800 V _p , 18000 A ² s	43 AAC: RGC1A23X42KGU	65 AAC: RGC1A23X62KGU	
600 VAC, 1200 V _p , 3200 A ² s	40 AAC: RGC1A60X40KGU	60 AAC: RGC1A60X60KGU	
600 VAC, 1200 V _p , 18000 A ² s	43 AAC: RGC1A60X42KGU	65 AAC: RGC1A60X62KGU	
600 VAC, 1600 V _p , 6600 A ² s	40 AAC: RGH1A60X41KGU	60 AAC: RGH1A60X60KGU	
690 VAC, 1600 V _p , 6600 A ² s	40 AAC: RGH1A69X41KGU*	60 AAC: RGH1A69X60KGU*	
1000 VDC			15 ADC: RGC1D1000D15KKE

X must be replaced with D for DC control 3-32 VDC, 4-32 VDC (for 600 VAC versions). X must be replaced with A for AC control 20-275 VAC, 24-190 VDC
RGC1B.. models for Instant On (Random) switching are available on request
*690 VAC variants are CE marked only and do not include a varistor across the output

Solid state contactors, 1-phase

Ready for use design - DIN rail mounting
AC output switching with integrated over temperature protection

Types	RGC1A..25GKEP 25 AAC	RGC1A..30GKEP 30 AAC	RGC1A..40/42GG.P 40/43 AAC
Single phase, semiconductor contactors with integrated heatsink, LED indication and IP 20 protection, AC operating frequency 45-65 Hz, rated isolation voltage ≥ 4000 Vrms, 100 kArms short circuit current rating, motor ratings according to UL508			
Dimensions HxWxD (mm)	110 x 22.5 x 130	110 x 22.5 x 168	110x 35.6 x 168
Features	22.5 mm wide solid state contactor, integrated varistor for overvoltage protection and integrated over temperature for protection against over heating, screw terminals with captivated clamp for connection of power terminals and box clamps for control terminals	22.5 mm wide solid state contactor, integrated varistor for overvoltage protection and integrated over temperature for protection against over heating, screw terminals with captivated clamp for connection of power terminals and box clamps for control terminals	35 mm wide solid state contactor, integrated varistor for overvoltage protection and integrated over temperature for protection against over heating, box clamps for connection of power and control terminals

Input specifications

Control input range	5-32 VDC [RG.D.] 20-275 VAC, 24-190 VDC [RG..A.]	5-32 VDC [RG.D.] 20-275 VAC, 24-190 VDC [RG..A.]	5-32 VDC [RG.D.] 20-275 VAC, 24-190 VDC [RG..A.]
Max. input current	24 mADC [RG..D.] 35 mAAC [RG..A.]	24 mADC [RG..D.] 35 mAAC [RG..A.]	24 mADC [RG..D.] 35 mAAC [RG..A.]

Supply voltage

Rated supply voltage	24 VDC -15%, +20%	24 VDC -15%, +20%	24 VDC -15%, +20%
Max. current rating	50 mADC	50 mADC	50 mADC

Over temperature alarm

Alarm output	PNP open collector normally closed, max. 24 VDC / 50 mA [RG.C.D.P] Potential free normally closed, max. 24 VDC / 50 mA [RG.C.A.P]	PNP open collector normally closed, max. 24 VDC / 50 mA [RG.C.D.P] Potential free normally closed, max. 24 VDC / 50 mA [RG.C.A.P]	PNP open collector normally closed, max. 24 VDC / 50 mA [RG.C.D.P] Potential free normally closed, max. 24 VDC / 50 mA [RG.C.A.P]
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Output specifications

Rated operational current			
AC 51 @ Ta=40°C	25 AAC	30 AAC	40 AAC [RGC..40], 43 AAC [RGC..42]
AC 53a @ Ta=40°C	5 AAC	8 AAC	13 AAC [RGC..40], 16 AAC [RGC..42]
Min. operational current	250 mA	250 mA	400 mAAC [RGC..40], 500 mAAC [RGC..42]
Non rep. surge current (t=10 ms)	600 Ap	600 Ap	800 Ap [RGC..40] 1900 Ap [RGC..42]
Off-state leakage current	3 mAAC	3 mAAC	3 mAAC
I ² t for fusing (t=10 ms)	1800 A ² s	1800 A ² s	3200 A ² s [RGC..40], 18000 A ² s [RGC..42]
Critical dV/dt off-state (@ Tj init = 40°C)	1000 V/μs	1000 V/μs	1000 V/μs

General specifications

Operational voltage range	24-240 VAC +10% [RG.23..] 42-600 VAC +10% [RG.60..]	24-240 VAC +10% [RG.23..] 42-600 VAC +10% [RG.60..]	24-240 VAC +10% [RG.23..] 42-600 VAC +10% [RG.60..]
Blocking voltage	800 Vp [RGC.23.] 1200 Vp [RGC.60.]	800 Vp [RGC.23.] 1200 Vp [RGC.60.]	1200 Vp
Power factor	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage
Operating temperature	-40°C to +70°C	-40°C to +70°C	-40°C to +70°C
Approvals/Marks	CE - cULus - VDE	CE - cULus - VDE	CE - cULus - VDE

References

DC control voltage			
230 VAC, 800 Vp		30 AAC: RGC1A23D30GKEP	
600 VAC, 1200 Vp	25 AAC: RGC1A60D25GKEP	30 AAC: RGC1A60D30GKEP	40 AAC: RGC1A60D40GGXP
600 VAC, 1200 Vp, high I ² t			43 AAC: RGC1A60D42GGXP
AC/DC control voltage			
600 VAC, 1200 Vp	25 AAC: RGC1A60A25GKEP	30 AAC: RGC1A60A30GKEP	40 AAC: RGC1A60A40GGXP
600 VAC, 1200 Vp, high I ² t			43 AAC: RGC1A60A42GGXP

X must be replaced with the following depending on the connection configuration required
Configuration X: E = E-type U = U-type

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Solid state contactors, 1-phase

Ready for use design - DIN rail mounting, AC output switching

Integrated over temperature protection

Integrated fuse

Types

RGC1A..60/62GG.P
60/65 AAC

RGC1A..90/92GG.P
85 AAC

RGC1F
20/30/40 AAC

Single phase, semiconductor contactors with integrated heatsink, LED indication and IP20 protection, AC operating frequency 45-65 Hz, rated isolation voltage ≥ 4000 Vrms, 100 kArms short circuit current rating, motor ratings according to UL508



Dimensions HxWxD (mm)

110 x 69.1 x 168

126 x 69.1 x 168 (with fan)

110 x 35.6 x 168

Features

70 mm wide solid state contactor, integrated varistor for overvoltage protection and integrated over temperature for protection against over heating, box clamps for connection of power & control terminals

70 mm wide solid state contactor with attached fan, integrated varistor for overvoltage protection and integrated over temperature for protection against over heating, box clamps for connection of power & control terminals

35 mm wide solid state contactor with integrated fuse, additional monitoring features available with RGC1FS.. for SSR, load & fuse failure detection, integrated varistor for overvoltage protection, DC control voltage range, box clamps for connection of power & control terminals

Input specifications

Control input range	5-32 VDC [RG.D.] 20-275 VAC, 24-190 VDC [RG..A.]	5-32 VDC [RG.D.] 20-275 VAC, 24-190 VDC [RG..A.]	3-32 VDC [RGC1F..23.] 4.5-32 VDC [RGC1F..60.]
Max. input current	23 mADC [RG..D.] / 35 mAAC [RG..A.]	23 mADC [RG..D.] / 35 mAAC [RG..A.]	12 mAC

Supply voltage

Rated supply voltage	24 VDC -15%, +20%	24 VDC -15%, +20%	24 VDC -15%, +20%
Max. current rating	50 mADC	50 mADC (fan rating 24 VDC / 50 mA)	80 mADC

Over temperature alarm

Alarm output	PNP open collector normally closed, max. 24 VDC / 50 mA [RGC.D.P] Potential free normally closed, max. 24 VDC / 50 mA [RGC.A.P]	PNP open collector normally closed, max. 24 VDC / 50 mA [RGC.D.P] Potential free normally closed, max. 24 VDC / 50 mA [RGC.A.P]	PNP open collector normally closed, max. 24 VDC / 50 mA [RGC1FS..]
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Output specifications

Rated operational current			
AC 51 @ Ta=40°C	60 AAC [RGC..60] 65 AAC [RGC..62]	85 AAC	20 AAC [RGC1F..20.] / 30 AAC [RGC1F..30.] / 40 AAC [RGC1F..40.]
AC 53a @ Ta=40°C	14.8 AAC [RGC..60] 20 AAC [RGC..62]	18 AAC [RGC..90] 20 AAC [RGC..92]	4.7 AAC [RGC1F..20.] / 6 AAC [RGC1F..30.] / 8 AAC [RGC1F..40.]
Min. operational current	400 mA [RGC..60] 500 mA [RGC..62]	400 mA [RGC..90] 500 mA [RGC..92]	200 mA
Non rep. surge current (Itsm) (t=10 ms)	800 Ap [RGC..60] 1900 Ap [RGC..62]	1150 Ap [RGC..90] 1900 Ap [RGC..92]	Integrated fuse
Off-state leakage current	3 mAAC	3 mAAC	
I ² t for fusing (t=10 ms)	3200 A ² s [RGC..60] 18000 A ² s [RGC..62]	6600 A ² s [RGC..90] 18000 A ² s [RGC..92]	Fuse - 740A ² s [RGC1F..20.] Fuse - 1400A ² s [RGC1F..30.] Fuse - 3100A ² s [RGC1F..40.]
Critical dV/dt off-state (@ Tj init = 40°C)	1000 V/μs	1000 V/μs	1000 V/μs

General specifications

Operational voltage range	42-600 VAC +10% [RG.60...]	24-240 VAC +10% [RG.23..] 42-600 VAC +10% [RG.60..]	24-240 VAC +10% [RG.23..] 42-600 VAC +10% [RG.60..]
Blocking voltage	1200 Vp	800 Vp [RGC.23.] / 1200 Vp [RGC.60.]	1200 Vp
Power factor	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage
Operating temperature	-40°C to +70°C	-40°C to +70°C	-40°C to +70°C
Approvals/Marks	CE - cULus - VDE	CE - cULus - VDE	CE - cULus (up to 30 AAC)

References

DC control voltage		85 AAC: RGC1A23D90GGXP	20 AAC: RGC1FY23D20GGE 30 AAC: RGC1FY23D30GGE 40 AAC: RGC1FY23D40GGE
230 VAC, 800 Vp			
	60 AAC: RGC1A60D60GGXP 65 AAC: RGC1A60D62GGXP	85 AAC: RGC1A60D90GGXP 85 AAC: RGC1A60D92GGXP	20 AAC: RGC1FY60D20GGE 30 AAC: RGC1FY60D30GGE 40 AAC: RGC1FY60D40GGE
600 VAC, 1200 Vp			
AC/DC control voltage			
600 VAC, 1200 Vp	60 AAC: RGC1A60A60GGXP 65 AAC: RGC1A60A62GGXP	85 AAC: RGC1A60A90GGXP 85 AAC: RGC1A60A92GGXP	

X and Y must be replaced with the following depending on the version required
Configuration X: E = E-type U = U-type
Version Y: A = fuse only S = fuse + monitoring

Solid state contactors, 1-phase

Ready for use design - AC output switching,
Integrated current measurement

Types	RGC1S..20/30/31GKEP 23/30 AAC	RGC1S..25GKEP 25 AAC	RGC1S..26GGEP 25 AAC
Single phase, semiconductor contactors with integrated current measurement, E-type configuration, LED indication and IP20 protection, AC operating frequency 45-65 Hz, rated isolation voltage ≥ 4000 Vrms, 100 kArms short circuit current rating			
Dimensions HxWxD (mm)	110 x 22.5 x 163	110 x 22.5 x 126	110 x 22.5 x 126
Features	22.5 mm wide solid state contactor, integrated varistor, DC control, local or remote TEACH, detection of partial load failure (1/6), SSR and load malfunction, SSR overheat protection	22.5 mm wide solid state contactor, integrated varistor, DC control, local or remote TEACH, detection of partial load failure (1/6), SSR and load malfunction, SSR overheat protection	22.5 mm wide solid state contactor, integrated varistor, DC control, local or remote TEACH, detection of partial load failure (1/6), SSR and load malfunction, SSR overheat protection
Input specifications			
Control input range	4-32 VDC	4-32 VDC	4-32 VDC
Max. input current	10 mA DC at 24 VDC	10 mA DC at 24 VDC	10 mA DC at 24 VDC
Supply voltage			
Rated supply voltage	24 VDC -15%, +20%	24 VDC -15%, +20%	24 VDC -15%, +20%
Max. current rating	50 mA DC	50 mA DC	50 mA DC
Alarm specifications			
Output type	NC PNP open collector max. 35 VDC/50 mA	NC PNP open collector max. 35 VDC/50 mA	NC PNP open collector max. 35 VDC/50 mA
Alarm Indication	Red LED (flash rate)	Red LED (flash rate)	Red LED (flash rate)
Output specifications			
Rated operational current			
AC 51 @ $T_a=40^\circ\text{C}$	23 AAC [RGC1S..20] 30 AAC [RGC1S..30] 30 AAC [RGC1S..31]	25 AAC	25 AAC
Minimum TEACH / operational current	1.2 AAC	1.2 AAC	1.2 AAC
Minimum partial load current	0.2 AAC	0.2 AAC	0.2 AAC
Detectable partial load failure	>16.67% from current setpoint	>16.67% from current setpoint	>16.67% from current setpoint
Non. rep. surge current I_{tsm} (t=10ms)	325 A _p [RGC1S..20] 600 A _p [RGC1S..30] 1150 A _p [RGC1S..31]	600 A _p	1900 A _p
Max. off state leakage current	3 mA AC	3 mA AC	3 mA AC
I^2t for fusing (t=10ms)	525 A ² s [RGC1S..20] 1800 A ² s [RGC1S..30] 6600 A ² s [RGC1S..31]	1800 A ² s	18000 A ² s
Critical dV/dt (@ T_j init = 40°C)	1000 V/ μ s	1000 V/ μ s	1000 V/ μ s
General specifications			
Operational voltage range	42-600 VAC +10%	42-600 VAC +10%	42-600 VAC +10%
Blocking voltage	1200 V _p	1200 V _p	1200 V _p
Power factor	≥ 0.9 at rated voltage	≥ 0.9 at rated voltage	≥ 0.9 at rated voltage
Operating temperature	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C
Approvals/Marks	CE - cULus	CE - cULus	CE - cULus
References			
600 VAC, 1200 V _p , 525A ² s	23 AAC: RGC1S60D20GKEP		
600 VAC, 1200 V _p , 1800A ² s	30 AAC: RGC1S60D30GKEP	25 AAC: RGC1S60D25GKEP	
600 VAC, 1200 V _p , 6600A ² s	30 AAC: RGC1S60D31GKEP		
600 VAC, 1200 V _p , 18000A ² s			25 AAC: RGC1S60D26GGEP

GK = screws for control terminals, box clamps for power terminals
GG = box clamps for control terminals, box clamps for power terminals

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

Solid state contactors, 1-phase

Ready for use design - AC output switching,
Integrated current measurement

Types	RGC1S..41GG.P 43 AAC	RGC1S..61GG.P 65 AAC	RGC1S..90GGEP 85 AAC
Single phase, semiconductor contactors with integrated heatsink, LED indication and IP20 protection, AC operating frequency 45-65 Hz, Rated isolation voltage ≥ 4000 Vrms, 100 kArms short circuit current rating, motor ratings according to UL508			
Dimensions HxWxD (mm)	110 x 35.6 x 163	110 x 69.1 x 163	126 x 69.1 x 163 (with fan)
Features	35 mm wide solid-state contactor, integrated varistor, DC control, local or remote TEACH, detection of partial load failure (1/6), SSR and load malfunction, SSR overheat protection	70 mm wide solid-state contactor, integrated varistor, DC control, local or remote TEACH, detection of partial load failure (1/6), SSR and load malfunction, SSR overheat protection	70 mm wide solid-state contactor with, integrated varistor, DC control, local or remote TEACH, detection of partial load failure (1/6), SSR and load malfunction, SSR overheat protection
Input specifications			
Control input range	4-32 VDC	4-32 VDC	4-32 VDC
Max. input current	10 mADC at 24 VDC	10 mADC at 24 VDC	10 mADC at 24 VDC
Supply voltage			
Supply Voltage	24 VDC -15%, +20%	24 VDC -15%, +20%	24 VDC -15%, +20%
Max. current rating	50 mADC	50 mADC	50 mADC (fan rating 24 VDC / 50 mA)
Alarm specifications			
Output type	NC PNP open collector max. 35 VDC / 50 mA	NC PNP open collector max. 35 VDC / 50 mA	NC PNP open collector max. 35 VDC / 50 mA
Alarm Indication	Red LED (flash rate)	Red LED (flash rate)	Red LED (flash rate)
Output specifications			
Rated operational current			
AC 51 @ Ta=40°C	43 AAC	65 AAC	85 AAC
Minimum TEACH / operational current	1.2 AAC	5 AAC	5 AAC
Minimum partial load current	0.2 AAC	0.83 AAC	0.83 AAC
Detectable partial load failure	>16.67% from current setpoint	>16.67% from current setpoint	>16.67% from current setpoint
Non. rep. surge current I _{tsm} (t=10ms)	1900 A _p	1900 A _p	1900 A _p
Max. off state leakage current	3 mAAC	3 mAAC	3 mAAC
I ² t for fusing (t=10 ms)	18000 A ² s	18000 A ² s	18000 A ² s
Critical dV/dt (@ T _j init = 40°C)	1000 V/μs	1000 V/μs	1000 V/μs
General specifications			
Operational voltage range	42-600 VAC +10%	42-600 VAC +10%	42-600 VAC +10%
Blocking voltage	1200 V _p	1200 V _p	1200 V _p
Power factor	≥ 0.9 at rated voltage	≥ 0.9 at rated voltage	≥ 0.9 at rated voltage
Operating temperature	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C
Approvals/Marks	CE - cULus	CE - cULus	CE - cULus
References			
600 VAC, 1200 V _p , E-type	43 AAC: RGC1S60D41GGEP	65 AAC: RGC1S60D61GGEP	85 AAC: RGC1S60D90GGEP
600 VAC, 1200 V _p , U-type	43 AAC: RGC1S60D41GGUP	65 AAC: RGC1S60D61GGUP	

GG = box clamps for control terminals, box clamps for power terminals

Solid state contactors, 1-phase

Ready for use design - DIN rail mounting
Soft start switching

Types	RGC1P..K.. 30 AAC	RGC1P..K.. 43 AAC	RGC1P..K.. 63 AAC
Single phase, solid state relay with integrated heatsink, with integrated overvoltage protection, LED for control and load status indication, IP20 protection, Rated isolation voltage ≥ 4000 Vrms, 100 kArms short circuit current rating			
Dimensions HxWxD (mm)	110 x 35.8 x 104	110 x 35.8 x 104	110 x 72 x 126
Features	DC control input solid state contactor with soft starting feature for short wave infrared heaters	DC control input solid state contactor with soft starting feature for short wave infrared heaters	DC control input solid state contactor with soft starting feature for short wave infrared heaters
Supply specifications			
Supply voltage	24 VDC -15%, +20% 24 VAC -15%, +15%	24 VDC -15%, +20% 24 VAC -15%, +15%	24 VDC -15%, +20% 24 VAC -15%, +15%
Max. supply current	30 mA	30 mA	30 mA
Control specifications			
Control input	19.2 - 28.8 VDC	19.2 - 28.8 VDC	19.2 - 28.8 VDC
Input impedance	100 k Ω	100 k Ω	100 k Ω
Output specifications			
Rated operational current AC-51 @ 40°C	30 AAC	43 AAC	63 AAC
Minimum operational current	250 mAAC	500 mAAC	500 mAAC
Non rep. surge current (Itsm) (t=10 ms)	600 Ap	1900 Ap	1900 Ap
I ² t for fusing (t=10 ms)	1800 A ² s	18000 A ² s	18000 A ² s
Max. Off-state leakage current	5 mAAC	5 mAAC	5 mAAC
Critical dV/dt (@ Tj init = 40°C)	1000 V/ μ s	1000 V/ μ s	1000 V/ μ s
General specifications			
Operational voltage range	85 - 265 VAC (RGC1P23..) 190 - 550 VAC (RGC1P48..) 410 - 660 VAC (RGC1P60..)	85 - 265 VAC (RGC1P23..) 190 - 550 VAC (RGC1P48..) 410 - 660 VAC (RGC1P60..)	85 - 265 VAC (RGC1P23..) 190 - 550 VAC (RGC1P48..) 410 - 660 VAC (RGC1P60..)
Blocking voltage	800 V _P (RGC1P23..) 1200 V _P (RGC1P48..) 1200 V _P (RGC1P60..)	800 V _P (RGC1P23..) 1200 V _P (RGC1P48..) 1200 V _P (RGC1P60..)	800 V _P (RGC1P23..) 1200 V _P (RGC1P48..) 1200 V _P (RGC1P60..)
Power factor	> 0.7	> 0.7	> 0.7
Terminals	Screw with captive clamp	Box clamp	Box clamp
Operating temperature	-40°C to +70°C	-40°C to +70°C	-40°C to +70°C
Approvals/Marks	CE - UL - cUL	CE - UL - cUL	CE - UL - cUL
References			
External supply 24 VDC/AC			
Operational output 85 - 265 VAC	RGC1P23K30ED	RGC1P23K42ED	RGC1P23K62ED
Operational output 190 - 550 VAC	RGC1P48K30ED	RGC1P48K42ED	RGC1P48K62ED
Operational output 410 - 660 VAC	RGC1P60K30ED	RGC1P60K42ED	RGC1P60K62ED

Solid state contactors, 1-phase

Ready for use design - DIN rail mounting
Proportional switching controllers

Types	RGC1P..AA.. / V.. 12 AAC	RGC1P..AA.. / V.. 30 AAC	RGC1P..AA.. / V.. 43 AAC	RGC1P..AA.. / V.. 50 / 63 AAC
Single phase, solid state relay with integrated heatsink, with integrated overvoltage protection, LED for control and load status indication, IP20 protection, rated isolation voltage ≥ 4000 Vrms, 100 kArms short circuit current rating				
Dimensions HxWxD (mm)	106 x 35.8 x 65	110 x 35.8 x 104	110 x 35.8 x 104	110 x 72 x 126
Features	Analog input (current or voltage), selectable modes for output switching - phase angle, full cycle distributed firing, advanced full cycle and soft starting	Analog input (current or voltage), selectable modes for output switching - phase angle, full cycle distributed firing, advanced full cycle and soft starting	Analog input (current or voltage), selectable modes for output switching - phase angle, full cycle distributed firing, advanced full cycle and soft starting	Analog input (current or voltage), selectable modes for output switching - phase angle, full cycle distributed firing, advanced full cycle and soft starting
Supply specifications				
Supply voltage	24 VDC -15%, +20% (RG..V..ED) 24 VAC -15%, +15% (RG..V..ED) 90-250 VAC (RG..V..EA)	24 VDC -15%, +20% (RG..V..ED) 24 VAC -15%, +15% (RG..V..ED) 90-250 VAC (RG..V..EA)	24 VDC -15%, +20% (RG..V..ED) 24 VAC -15%, +15% (RG..V..ED) 90-250 VAC (RG..V..EA)	24 VDC -15%, +20% (RG..V..ED) 24 VAC -15%, +15% (RG..V..ED) 90-250 VAC (RG..V..EA)
Max. supply current	30 mA (RG..V..ED) 14 mA (RG..V..EA)	30 mA (RG..V..ED) 14 mA (RG..V..EA)	30 mA (RG..V..ED) 14 mA (RG..V..EA)	30 mA (RG..V..ED) 14 mA (RG..V..EA)
Control specifications				
Control input range	4-20 mA (RG..AA..) 0-10 V, 0-5 V, 1-5 V, POT (RG..V..)	4-20 mA (RG..AA..) 0-10 V, 0-5 V, 1-5 V, POT (RG..V..)	4-20 mA (RG..AA..) 0-10 V, 0-5 V, 1-5 V, POT (RG..V..)	4-20 mA (RG..AA..) 0-10 V, 0-5 V, 1-5 V, POT (RG..V..)
Input impedance	500 Ω (RG..AA..) 100 k Ω (RG..V..)	500 Ω (RG..AA..) 100 k Ω (RG..V..)	500 Ω (RG..AA..) 100 k Ω (RG..V..)	500 Ω (RG..AA..) 100 k Ω (RG..V..)
Output specifications				
Rated operational current AC-51 @ 40°C	15 AAC	30 AAC	43 AAC	50 AAC (RG..50) 63 AAC (RG..62)
Minimum operational current	250 mAAC	250 mAAC	500 mAAC	500 mAAC
Non rep. surge current (I _{tsm}) (t=10 ms)	600 Ap	600 Ap	1900 Ap	800 Ap (RG..50) 1900 Ap (RG..62)
I ² t for fusing (t=10 ms)	1800 A ² s	1800 A ² s	18000 A ² s	3200 A ² s (RG..50) 18000 A ² s (RG..62)
Max. Off-state leakage current	5 mAAC	5 mAAC	5 mAAC	5 mAAC
Critical dV/dt (@ T _j init = 40°C)	1000 V/ μ s	1000 V/ μ s	1000 V/ μ s	1000 V/ μ s
General specifications				
Operational voltage range	85 - 265 VAC (RGC1P23..) 190 - 550 VAC (RGC1P48..)	85 - 265 VAC (RGC1P23..) 190 - 550 VAC (RGC1P48..) 410 - 660 VAC (RGC1P60..)	85 - 265 VAC (RGC1P23..) 190 - 550 VAC (RGC1P48..) 410 - 660 VAC (RGC1P60..)	85 - 265 VAC (RGC1P23..) 190 - 550 VAC (RGC1P48..) 410 - 660 VAC (RGC1P60..)
Blocking voltage	800 V _P (RGC1P23..) 1200 V _P (RGC1P48..)	800 V _P (RGC1P23..) 1200 V _P (RGC1P48..) 1200 V _P (RGC1P60..)	800 V _P (RGC1P23..) 1200 V _P (RGC1P48..) 1200 V _P (RGC1P60..)	800 V _P (RGC1P23..) 1200 V _P (RGC1P48..) 1200 V _P (RGC1P60..)
Power factor	> 0.7	> 0.7	> 0.7	> 0.7
Terminals	Screw with captive clamp	Screw with captive clamp	Box clamp	Box clamp
Operating temperature	-40°C to +70°C	-40°C to +70°C	-40°C to +70°C	-40°C to +70°C
Approvals/Marks	CE - UL - cUL	CE - UL - cUL	CE - UL - cUL	CE - UL - cUL
References				
Control input				
4-20 mA	RGC1PyyAA12E	RGC1PxxAA30E	RGC1PxxAA42E	50 AAC: RGC1PyyAA50E 63 AAC: RGC1PxxAA62E
0-10 VDC, 0-5 VDC, 1-5 VDC, POT				
External supply 24 VDC/AC	RGC1PyyV12ED	RGC1PxxV30ED	RGC1PxxV42ED	50 AAC: RGC1PyyV50ED 63 AAC: RGC1PxxV62ED
External supply 90-250 VAC	RGC1PyyV12EA	RGC1PxxV30EA	RGC1PxxV42EA	63 AAC: RGC1PxxV62EA

xx = 23 for operational voltage range 85 - 265 VAC
48 for operational voltage range 190 - 550 VAC
60 for operational voltage range 410 - 660 VAC
yy = 23 for operational voltage range 85 - 265 VAC
48 for operational voltage range 190 - 550 VAC

Solid state contactors, 1-phase

AC output switching - MODBUS RTU

AC output switching - System monitoring

Types

RJ1P MB
50 AAC

RN1S Sense
30/50 AAC

Semiconductor contactors with integrated heatsink.
AC operating frequency range 45-65 Hz.
Rated isolation voltage ≥ 4000 Vrms



Dimensions HxWxD (mm)

103 x 45 x 122

120 x 45 x 110 (30 A)
120 x 90 x 110 (50 A)

Features

SSR with fieldbus communication interface

High precision economy switching

Control specifications

Control input range 2-wire Modbus RTU

7-32 VDC

Max. input current

4 mA

Control supply

20-32 VDC (≤ 40 mA)

Alarm output

PNP : VCC - 2 VDC (≤ 100 mA) / NPN: 2 VDC @ (≤ 100 mA)

Output specifications

Rated operational current

AC 51 @ $T_a=25^\circ\text{C}$

50 AACrms

30 Arms [RN1S...30..]
50 Arms [RN1S...50..]AC 51 @ $T_a=40^\circ\text{C}$

40 AACrms

30 Arms [RN1S...30..]
50 Arms [RN1S...50..]AC 53a @ $T_a=25^\circ\text{C}$ 6 Arms [RN1S...30..]
12 Arms [RN1S...50..]

Min. operational current

500 mAACrms

200 mArms

Non-repet. surge current
($t=10$ ms)1900 A_p325 A_p [RN1S...30..]
600 A_p [RN1S...50..]

Off-state leakage current

 < 3 mArms < 6 mAAC I^2t for fusing ($t=10$ ms)18000 A²s525 A²s [RN1S...30..]
1800 A²s [RN1S...50..]

On state voltage drop

1.6 Vrms

Critical dV/dt off-state

1000 V/ μ s500 V/ μ s

General specifications

Operational voltage range

90-265 VAC [RJ1P23..]
200-500 VAC [RJ1P48..]
410-660 VAC [RJ1P60..]120-265 VAC [RN1S23..]
150-440 VAC [RN1S40..]
180-530 VAC [RN1S48..]

Blocking voltage

650 V_p [RJ1P23..]
1200 V_p [RJ1P48..]
1200 V_p [RJ1P60..]800 V_p [RN1S23..]
1000 V_p [RN1S40..]
1200 V_p [RN1S48..]

Power factor

 ≥ 0.9 ≥ 0.5

Operating temperature

 $-30^\circ\text{C} - +70^\circ\text{C}$ $-20^\circ\text{C} - +70^\circ\text{C}$

Terminals

Box clamp

Box clamp

Approvals/Marks

CE - UR - cUR

CE - UR - CSA

References

230 VAC	RJ1P23MBT50EBC	30 AAC: RN1S23H30NO
	RJ1P23MBT50ECS	30 AAC: RN1S23H30PO
	RJ1P23MBT50ECV	50 AAC: RN1S23H50NO
400 VAC		50 AAC: RN1S23H50PO
		30 AAC: RN1S40H30NO
		30 AAC: RN1S40H30PO
480 VAC		50 AAC: RN1S40H50NO
		50 AAC: RN1S40H50PO
		30 AAC: RN1S48H30NO
480 VAC	RJ1P48MBT50EBC	30 AAC: RN1S48H30NO
	RJ1P48MBT50ECS	30 AAC: RN1S48H30PO
	RJ1P48MBT50ECV	50 AAC: RN1S48H50NO
600 VAC		50 AAC: RN1S48H50PO
	RJ1P60MBT50EBC	
	RJ1P60MBT50ECS	
	RJ1P60MBT50ECV	

Solid state contactors, 45mm, 3-phase

	DIN rail mounting - AC output switching, 2 + 1 poles	DIN rail mounting - AC output switching, 3 poles
Types	RGCM2A..20.. 20 AAC	RGCM3A..15.. 15 AAC
Semiconductor contactors with integrated heatsink. AC operating frequency range 45-65 Hz. Rated isolation voltage ≥ 4000 Vrms		
Dimensions HxWxD (mm)	105 x 45 x 105	105 x 45 x 105
Features	45 mm solid state contactor, enclosed heatsink, integrated varistors for over-voltage protection, 5 kArms SCCR, screw with clamp for power connection	45 mm solid state contactor, enclosed heatsink, integrated varistors for over-voltage protection, 5 kArms SCCR, screw with clamp for power connection
Control specifications		
Control input range	5-32 VDC [RG..D.] 20-275 VAC, 24-190 VDC [RG..A.]	5-32 VDC [RG..D.] 20-275 VAC, 24-190 VDC [RG..A.]
Input current @ max. control voltage	31.5 mADC [RG..D.] 19 mAAC [RG..A.]	31.5 mADC [RG..D.] 19 mAAC [RG..A.]
Output specifications		
Rated operational current AC-51 @ Ta = 40°C	20 AAC	15.5 AAC
AC-53a @ Ta = 40°C	7.6 AAC	5.8 AAC
Motor rating	3 kW @ 400 VAC 5 HP @ 600 VAC	2.2 kW @ 400 VAC 3 HP @ 600 VAC
Minimum operational current	250 mAAC	250 mAAC
Non. rep. surge current I _{tsm} (t=10ms)	600 Ap	600 Ap
I ² t for fusing (t=10ms)	1800 A ² s	1800 A ² s
Off-state leakage current	3 mAAC	3 mAAC
Critical dV/dt (@ Tj init=40°C)	1000 V/μs	1000 V/μs
General specifications		
Operational voltage range	42-600 VAC +10%	42-220 VAC + 10% [RG..22.] 42-600 VAC +10% [RG..60.]
Blocking voltage	1200 Vp	800 Vp [RG..22.] 1200 Vp [RG..60.]
Power factor	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage
Operating temperature	-40°C to +70°C	-40°C to +70°C
Approvals/Marks	CE - cULus	CE - cULus
References		
DC control voltage 220 VAC, 800 Vp		RGCM3A22D15GKE
600 VAC, 1200 Vp	RGCM2A60D20GKE	RGCM3A60D15GKE
AC control voltage 220 VAC, 800 Vp		RGCM3A22A15GKE
600 VAC, 1200 Vp	RGCM2A60A20GKE	RGCM3A60A15GKE

Solid state contactors, 3-phase

DIN rail mounting - AC output switching, 2 + 1 poles

Types	RGC2A..10.. 10 AAC	RGC2A..25.. 27 AAC	RGC2A..40.. 40 AAC	RGC2A..75..F 75 AAC
Semiconductor contactors with integrated heatsink, AC operating frequency range 45-65 Hz. Rated isolation voltage 4000 Vrms				
Dimensions HxWxD (mm)	106 x 54 x 65	110 x 54 x 103	110 x 72 x 126	141 x 72 x 141 (with fan)
Features	54 mm solid state contactor, integrated varistors for over-voltage protection, 100 kArms SCCR, screw with clamp for power connection	54 mm solid state contactor, integrated varistors for over-voltage protection, 100 kArms SCCR, screw with clamp for power connection	72 mm solid state contactor, integrated varistors for over-voltage protection, 100 kArms SCCR, box clamp for power connection	72 mm solid state contactor, integrated overheat protection with EMR alarm output, 100 kArms SCCR, box clamp for power connection
Input specifications				
Control input range	5-32 VDC [RGC..D.] 20-275 VAC, 24-190 VDC [RGC..A.]	5-32 VDC [RGC..D.] 20-275 VAC, 24-190 VDC [RGC..A.]	5-32 VDC [RGC..D.] 20-275 VAC, 24-190 VDC [RGC..A.]	5-32 VDC [RG..D..DF] 5-32 VDC [RG..D..AF] 20-275 VAC [RG..A..AF]
Input current @ max. control voltage	31.5 mADC [RG..D.] 19 mAAC [RG..A.]	31.5 mADC [RG..D.] 19 mAAC [RG..A.]	31.5 mADC [RG..D.] 19 mAAC [RG..A.]	12.5 mADC [RG..D..DF] 5.5 mADC [RG..D..AF] 4.3 mAAC [RG..A..AF]
External supply voltage				24 VDC [RG..D..DF] 90-250 VAC [RG..D..AF] 90-250 VAC [RG..A..AF]
Max. supply current				150 mADC [RG..D..DF] 80 mADC [RG..D..AF] 80 mAAC [RG..A..AF]
Alarm specifications				
Alarm output				EMR: 2 A 230 VAC / 30 VDC
Alarm condition				Over Temperature
Output specifications				
Rated operational current AC-51 @ Ta = 40°C	10 AAC	27 AAC	40 AAC	75 AAC
AC-53a @ Ta = 40°C	5 AAC	11.5 AAC	16.5 AAC	28 AAC
Motor rating	1.5 kW @ 400 VAC 3 HP @ 600 VAC	5.5 kW @ 400 VAC 10 HP @ 600 VAC	7.5 kW @ 400 VAC 15 HP @ 600 VAC	11 kW @ 400 VAC 25 HP @ 600 VAC
Minimum operational current	250 mAAC	250 mAAC	400 mAAC	500 mAAC
Non. rep. surge current I _{tsm} (t=10ms)	600 A _p	600 A _p	1150 A _p	1750 A _p
I ² t for fusing (t=10ms)	1800 A ² s	1800 A ² s	6600 A ² s	15000 A ² s
General specifications				
Operational voltage range	42-600 VAC +10%	42-220 VAC +10% [RG..22.] 42-600 VAC +10% [RG..60.]	42-600 VAC +10%	42-600 VAC +10%
Blocking voltage	1200 V _p	800 V _p [RG..22.] 1200 V _p [RG..60.]	1200 V _p	1200 V _p
Power factor	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage
Operating temperature	-40°C to +80°C	-40°C to +80°C	-40°C to +80°C	-40°C to +70°C [RG...DF] -40°C to +60°C [RG...AF]
Approvals/Marks	CE - cULus - VDE	CE - cULus	CE - cULus	CE - cULus
References				
DC control voltage				
220 VAC, 800 V _p		RGC2A22D25KKE		
600 VAC, 1200 V _p	RGC2A60D10KKE	RGC2A60D25KKE	RGC2A60D40KGE	
AC/DC control voltage				
220 VAC, 800 V _p		RGC2A22A25KKE		
600 VAC, 1200 V _p	RGC2A60A10KKE	RGC2A60A25KKE	RGC2A60A40KGE	
DC control voltage, DC external supply				RGC2A60D75GGEDF
DC control voltage, AC external supply				RGC2A60D75GGAEAF
AC control voltage, AC external supply				RGC2A60A75GGAEAF

Solid state contactors, 3-phase

DIN rail mounting - AC output switching with monitoring, 2 + 1 poles

Types	RGC2A..25..M 27 AAC	RGC2A..40..M 40 AAC	RGC2A..75..FM 75 AAC
Semiconductor contactors with integrated heatsink, AC operating frequency 45-65 Hz. Rated isolation voltage output to heatsink of 4000 Vrms, 100 kArms Short Circuit Current Rating			
Dimensions HxWxD (mm)	110 x 54 x 118	110 x 72 x 141	141 x 72 x 141 (with fan)
Features	54 mm solid state contactor, EMR alarm output and electronic auxiliary output, screw with clamp for power connection	72 mm solid state contactor, EMR alarm output and electronic auxiliary output, box clamp for power connection	72 mm solid state contactor, EMR alarm output and electronic auxiliary output, box clamp for power connection
Input specifications			
Control input range	5-32 VDC [RG..D..DM] 5-32 VDC [RG..D..AM] 20-275 VAC [RG..A..AM]	5-32 VDC [RG..D..DM] 5-32 VDC [RG..D..AM] 20-275 VAC [RG..A..AM]	5-32 VDC [RG..D..DFM] 5-32 VDC [RG..D..AFM] 20-275 VAC [RG..A..AFM]
Control current @ max. control voltage	12.5 mADC [RG..D..DM] 5.5 mADC [RG..D..AM] 4.3 mAAC [RG..A..AM]	12.5 mADC [RG..D..DM] 5.5 mADC [RG..D..AM] 4.3 mAAC [RG..A..AM]	12.5 mADC [RG..D..DFM] 5.5 mADC [RG..D..AFM] 4.3 mAAC [RG..A..AFM]
External supply voltage	24 VDC [RG..D..DM] 90-250 VAC [RG..D..AM] 90-250 VAC [RG..A..AM]	24 VDC [RG..D..DM] 90-250 VAC [RG..D..AM] 90-250 VAC [RG..A..AM]	24 VDC [RG..D..DFM] 90-250 VAC [RG..D..AFM] 90-250 VAC [RG..A..AFM]
Max. supply current	60 mADC [RG..D..DM] 60 mAAC [RG..D..AM] 60 mAAC [RG..A..AM]	60 mADC [RG..D..DM] 60 mAAC [RG..D..AM] 60 mAAC [RG..A..AM]	150 mADC [RG..D..DFM] 80 mAAC [RG..D..AFM] 80 mAAC [RG..A..AFM]
Alarm specifications			
Alarm output	EMR; 2 A 250 VAC / 30 VDC	EMR; 2 A 250 VAC / 30 VDC	EMR; 2 A 250 VAC / 30 VDC
Alarm condition	Mains loss, Load loss, SSR open cct., SSR short cct., SSR over temperature	Mains loss, Load loss, SSR open cct., SSR short cct., SSR over temperature	Mains loss, Load loss, SSR open cct., SSR short cct., SSR over temperature
Output specifications			
Rated operational current AC-51 @ Ta = 40°C	27 AAC	40 AAC	75 AAC
Minimum operational current	250 mAAC	400 mAAC	500 mAAC
Non. rep. surge current I _{tsm} (t=10ms)	600 A _p	1150 A _p	1750 A _p
I ² t for fusing (t=10ms)	1800 A ² s	6600 A ² s	15000 A ² s
Off-state leakage current	3 mAAC	3 mAAC	3 mAAC
General specifications			
Operational voltage range	90-600 VAC +10%	90-600 VAC +10%	90-600 VAC +10%
Blocking voltage	1200 V _p	1200 V _p	1200 V _p
Operating temperature	-40°C to +80°C [RG...DM] -40°C to +60°C [RG...AM]	-40°C to +80°C [RG...DM] -40°C to +60°C [RG...AM]	-40°C to +70°C [RG...DFM] -40°C to +60°C [RG...AFM]
Approvals/Marks	CE - cULus	CE - cULus	CE - cULus
References			
600 VAC, 1200 V _p			
DC control voltage, DC external supply	RGC2A60D25GKEDM	RGC2A60D40GGEDM	RGC2A60D75GGEDFM
DC control voltage, AC external supply	RGC2A60D25GKEAM	RGC2A60D40GGEAM	RGC2A60D75GGEAFM
AC control voltage, AC external supply	RGC2A60A25GKEAM	RGC2A60A40GGEAM	RGC2A60A75GGEAFM

Solid state contactors, 3-phase

DIN rail mounting - AC output switching, 3 poles

Types	RGC3A..10.. 10 AAC	RGC3A..20.. 20 AAC	RGC3A..25.. / 30.. 28/30 AAC
Semiconductor contactors with integrated heatsink, AC operating frequency 45-65 Hz. Rated isolation voltage output to heatsink of 4000 Vrms			
Dimensions HxWxD (mm)	110 x 54 x 63.5	110 x 54 x 103	110 x 72 x 126
Features	54 mm solid state contactor, integrated varistors for over-voltage protection, 100 kArms SCCR, screw with clamp for power connection	54 mm solid state contactor, integrated varistors for over-voltage protection, 100 kArms SCCR, screw with clamp for power connection	72 mm solid state contactor, integrated varistors for over-voltage protection, 100 kArms SCCR, screw with clamp or box clamp for power connection
Input specifications			
Control input range	5-32 VDC [RGC..D.] 20-275 VAC, 24-190 VDC [RGC..A.]	5-32 VDC [RGC..D.] 20-275 VAC, 24-190 VDC [RGC..A.]	5-32 VDC [RGC..D.] 20-275 VAC, 24-190 VDC [RGC..A.]
Input current @ max. control voltage	31.5 mADC [RG..D.] 19 mAAC [RG..A.]	31.5 mADC [RG..D.] 19 mAAC [RG..A.]	31.5 mADC [RG..D.] 19 mAAC [RG..A.]
Output specifications			
Rated operational current AC-51 @ Ta = 40°C	10 AAC	20 AAC	28 AAC [RGC3..25] 30 AAC [RGC3..30]
AC-53a @ Ta = 40°C	5 AAC	10 AAC	11 AAC [RGC3..25] 14 AAC [RGC3..30]
Motor rating	1.5 kW @ 400 VAC 3 HP @ 600 VAC	4 kW @ 400 VAC 10 HP @ 600 VAC	4 kW @ 400 VAC [RGC3..25] 5.5 kW @ 400 VAC [RGC3..30] 10 HP @ 600 VAC [RGC3..25] 15 HP @ 600 VAC [RGC3..30]
Minimum operational current	250 mAAC	250 mAAC	250 mAAC [RGC3..25] 400 mAAC [RGC3..30]
Non. rep. surge current I _{tsm} (t=10ms)	600 Ap	600 Ap	600 Ap [RGC3..25] 1150 Ap [RGC3..30]
I ² t for fusing (t=10ms)	1800 A ² s	1800 A ² s	1800 A ² s [RGC3..25] 6600 A ² s [RGC3..30]
Off-state leakage current	3 mAAC	3 mAAC	3 mAAC
Critical dV/dt (@ T _j init=40°C)	1000 V/μs	1000 V/μs	1000 V/μs
General specifications			
Operational voltage range	42-220 VAC + 10% [RG..22.] 42-600 VAC +10% [RG..60.]	42-220 VAC + 10% [RG..22.] 42-600 VAC +10% [RG..60.]	42-600 VAC +10%
Blocking voltage	800 V _P [RG..22.] 1200 V _P [RG..60.]	800 V _P [RG..22.] 1200 V _P [RG..60.]	1200 V _P
Power factor	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage
Operating temperature	-40°C to +80°C	-40°C to +80°C	-40°C to +80°C
Approvals/Marks	CE - cULus - VDE	CE - cULus	CE - cULus
References			
DC control voltage			
220 VAC, 800 V _P	RGC3A22D10KKE	RGC3A22D20KKE	
600 VAC, 1200 V _P	RGC3A60D10KKE	RGC3A60D20KKE	28 AAC: RGC3A60D25KKE 30 AAC: RGC3A60D30KGE
AC/DC control voltage			
220 VAC, 800 V _P	RGC3A22A10KKE	RGC3A22A20KKE	
600 VAC, 1200 V _P	RGC3A60A10KKE	RGC3A60A20KKE	28 AAC: RGC3A60A25KKE 30 AAC: RGC3A60A30KGE

Solid state contactors, 3-phase

DIN rail mounting - AC output switching, 3 poles

Types

RGC3A..40..F
42 AAC

RGC3A..65..F
66 AAC

Semiconductor contactors with integrated heatsink, AC operating frequency 45-65 Hz. Rated isolation voltage output to heatsink of 4000 Vrms, 100 kArms short circuit current rating



Dimensions HxWxD (mm)

135 x 54 x 118 (with fan)

141 x 72 x 141 (with fan)

Features

54 mm solid state contactor + fan, integrated overheat protection with EMR alarm output, box clamp for power connection

72 mm solid state contactor + fan, integrated overheat protection with EMR alarm output, box clamp for power connection

Input specifications

Control input range	5-32 VDC [RG..D..DF] 20-275 VAC [RG..A..AF]	5-32 VDC [RG..D..DF] 5-32 VDC [RG..D..AF] 20-275 VAC [RG..A..AF]
Input current @ max. control voltage	12.5 mADC [RG..D..DF] 4.3 mAAC [RG..A..AF]	12.5 mADC [RG..D..DF] 5.5 mADC [RG..D..AF] 4.3 mAAC [RG..A..AF]
External supply voltage	24 VDC [RG..D..DF] 90-250 VAC [RG..A..AF]	24 VDC [RG..D..DF] 90-250 VAC [RG..D..AF] 90-250 VAC [RG..A..AF]
Max. supply current	150 mADC [RG..D..DF] 80 mAAC [RG..A..AF]	150 mADC [RG..D..DF] 80 mAAC [RG..D..AF] 80 mAAC [RG..A..AF]

Alarm specifications

Alarm output	EMR; 2 A 250 VAC / 30 VDC	EMR; 2 A 250 VAC / 30 VDC
Alarm condition	Over temperature	Over temperature

Output specifications

Rated operational current AC-51 @ Ta = 40°C	42 AAC	66 AAC
AC-53a @ Ta = 40°C	17 AAC	25 AAC
Motor rating	7.5 kW @ 400 VAC 15 HP @ 600 VAC	11 kW @ 400 VAC 25 HP @ 600 VAC
Minimum operational current	400 mAAC	500 mAAC
Non. rep. surge current I _{tsm} (t=10ms)	1150 A _p	1750 A _p
I ² t for fusing (t=10ms)	6600 A ² s	15000 A ² s
Off-state leakage current	3 mAAC	3 mAAC
Critical dV/dt (@ T _j init=40°C)	1000 V/μs	1000 V/μs

General specifications

Operational voltage range	42-600 VAC +10%	42-600 VAC +10%
Blocking voltage	1200 V _p	1200 V _p
Power factor	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage
Operating temperature	-40°C to +70°C [RG..D..DF] -40°C to +60°C [RG..A..AF]	-40°C to +70°C [RG..D..DF] -40°C to +60°C [RG..A..AF]
Approvals/Marks	CE - cULus	CE - cULus

References

600 VAC, 1200 V _p		
DC control voltage, DC external supply	RGC3A60D40GGEDF	RGC3A60D65GGEDF
DC control voltage, AC external supply	RGC3A60D65GGEAF	
AC control voltage, AC external supply	RGC3A60A40GGEAF	RGC3A60A65GGEAF

Solid state contactors, 3-phase

DIN rail mounting - AC output switching with monitoring, 3 poles

Types	RGC3A..20..M 20 AAC	RGC3A..25/30..M 28/30 AAC	RGC3A..65..FM 66 AAC
Semiconductor contactors with integrated heatsink, AC operating frequency 45-65 Hz. Rated isolation voltage output to heatsink of 4000 Vrms, 100 kArms SCCR			
Dimensions HxWxD (mm)	110 x 54 x 118	110 x 72 x 141	141 x 72 x 141 (with fan)
Features	54 mm solid state contactor, EMR alarm output and electronic auxiliary output, screw with clamp for power connection	72 mm solid state contactor, EMR alarm output and electronic auxiliary output, screw with clamp or box clamp for power connection	72 mm solid state contactor + fan, EMR alarm output and electronic auxiliary output, box clamp for power connection
Input specifications			
Control input range	5-32 VDC [RG..D..DM] 5-32 VDC [RG..D..AM] 20-275 VAC [RG..A..AM]	5-32 VDC [RG..D..DM] 5-32 VDC [RG..D..AM] 20-275 VAC [RG..A..AM]	5-32 VDC [RG..D..DFM] 5-32 VDC [RG..D..AFM] 20-275 VAC [RG..A..AFM]
Control current @ max. control voltage	12.5 mADC [RG..D..DM] 5.5 mADC [RG..D..AM] 4.3 mAAC [RG..A..AM]	12.5 mADC [RG..D..DM] 5.5 mADC [RG..D..AM] 4.3 mAAC [RG..A..AM]	12.5 mADC [RG..D..DFM] 5.5 mADC [RG..D..AFM] 4.3 mAAC [RG..A..AFM]
External supply voltage	24 VDC [RG..D..DM] 90-250 VAC [RG..D..AM] 90-250 VAC [RG..A..AM]	24 VDC [RG..D..DM] 90-250 VAC [RG..D..AM] 90-250 VAC [RG..A..AM]	24 VDC [RG..D..DFM] 90-250 VAC [RG..D..AFM] 90-250 VAC [RG..A..AFM]
Max. supply current	60 mADC [RG..D..DM] 60 mAAC [RG..D..AM] 60 mAAC [RG..A..AM]	60 mADC [RG..D..DM] 60 mAAC [RG..D..AM] 60 mAAC [RG..A..AM]	150 mADC [RG..D..DFM] 80 mAAC [RG..D..AFM] 80 mAAC [RG..A..AFM]
Alarm specifications			
Alarm output	EMR; 2 A 250 VAC / 30 VDC	EMR; 2 A 250 VAC / 30 VDC	EMR; 2 A 250 VAC / 30 VDC
Alarm condition	Mains loss, Load loss, SSR open cct., SSR short cct., SSR over temperature	Mains loss, Load loss, SSR open cct., SSR short cct., SSR over temperature	Mains loss, Load loss, SSR open cct., SSR short cct., SSR over temperature
Output specifications			
Rated operational current AC-51 @ Ta = 40°C	20 AAC	28 AAC [RGC3..25] 30 AAC [RGC3..30]	66 AAC
Minimum operational current	250 mAAC	250 mAAC [RGC3..25] 400 mAAC [RGC3..30]	500 mAAC
Non. rep. surge current I _{tsm} (t=10ms)	600 Ap	600 Ap [RGC3..25] 1150 Ap [RGC3..30]	1750 Ap
Off-state leakage current	3 mAAC	3 mAAC	3 mAAC
I ² t for fusing (t=10ms)	1800 A ² s	1800 A ² s [RGC3..25] 6600 A ² s [RGC3..30]	15000 A ² s
Critical dV/dt (@ T _j init=40°C)	1000 V/μs	1000 V/μs	1000 V/μs
General specifications			
Operational voltage range	90-600 VAC +10%	90-600 VAC +10%	90-600 VAC +10%
Blocking voltage	1200 V _p	1200 V _p	1200 V _p
Operating temperature	-40°C to +80°C [RG...DM] -40°C to +60°C [RG...AM]	-40°C to +80°C [RG...DM] -40°C to +60°C [RG...AM]	-40°C to +70°C [RG...DFM] -40°C to +60°C [RG...AFM]
Approvals/Marks	CE - cULus	CE - cULus	CE - cULus
References			
DC control voltage, DC external supply	RGC3A60D20GKEDM	28AAC: RGC3A60D25GKEDM 30AAC: RGC3A60D30GGEDM	RGC3A60D65GGEDFM
DC control voltage, AC external supply	RGC3A60D20GKEAM	28AAC: RGC3A60D25GKEAM 30AAC: RGC3A60D30GGEAM	RGC3A60D65GGAEAFM
AC control voltage, AC external supply	RGC3A60A20GKEAM	28AAC: RGC3A60A25GKEAM 30AAC: RGC3A60A30GGEAM	RGC3A60A65GGAEAFM

Solid state contactors, 3-phase

4-20 mA Proportional controllers, 2 + 1 poles

Types	RGC2P60AA15C1 15 AAC	RGC2P60AA25C1 27 AAC	RGC2P60AA40C1 40 AAC
3-phase semiconductor proportional controllers with integrated heatsink, AC operating frequency range 45-65 Hz. Rated isolation voltage 4000 Vrms, 100 kArms short circuit current rating			
Dimensions HxWxD (mm)	110 x 54 x 103	110 x 54 x 103	110 x 72 x 126
Features	54 mm solid state contactor with integrated varistors for over-voltage protection, screw with clamp for power connection	54 mm solid state contactor with integrated varistors for over-voltage protection, screw with clamp for power connection	72 mm solid state contactor, integrated varistors for over-voltage protection, box clamp for power connection
Input specifications			
Control input	4-20 mADC	4-20 mADC	4-20 mADC
Voltage drop	<10 VDC @ 20 mADC	<10 VDC @ 20 mADC	<10 VDC @ 20 mADC
Types			
Switching mode	1 Full Cycle [RGC...C1..]	1 Full Cycle [RGC...C1..]	1 Full Cycle [RGC...C1..]
Output specifications			
Rated operational current AC-51 @ Ta = 40°C	15 AAC	27 AAC	40 AAC
Minimum operational current	500 mAAC	500 mAAC	500 mAAC
Non. rep. surge current I _{tsm} (t=10ms)	600 A _p	600 A _p	1150 A _p
I ² t for fusing (t=10ms)	1800 A ² s	1800 A ² s	6600 A ² s
Off-state leakage current	5 mAAC	5 mAAC	5 mAAC
Critical dV/dt (@ T _j init=40°C)	1000 V/μs	1000 V/μs	1000 V/μs
General specifications			
Operational voltage range	180-600 VAC +10%	180-600 VAC +10%	180-600 VAC +10%
Blocking voltage	1200 V _p	1200 V _p	1200 V _p
Power factor	≥ 0.7 at rated voltage	≥ 0.7 at rated voltage	≥ 0.7 at rated voltage
Operating temperature	-40°C to +70°C	-40°C to +70°C	-40°C to +70°C
Approvals/Marks	CE - cULus	CE - cULus	CE - cULus
References			
Control Input:	4-20 mADC	4-20 mADC	4-20 mADC
1 Full Cycle	RGC2P60AA15C1	RGC2P60AA25C1	RGC2P60AA40C1

Solid state contactors, 3-phase

Proportional controllers with monitoring, 2 + 1 poles

Types	RGC2P..25..M 27 AAC	RGC2P..40..M 40 AAC	RGC2P..75..FM 75 AAC
Semiconductor contactors with integrated heatsink, AC operating frequency 45-65 Hz. Rated isolation voltage output to heatsink of 4000 Vrms, 100 kArms short circuit current rating			
Dimensions HxWxD (mm)	110 x 54 x 118	110 x 72 x 141	141 x 72 x 141 (with fan)
Features	54 mm solid state contactor with integrated varistors for over-voltage protection, system monitoring, screw with clamp for power connection	72 mm solid state contactor with integrated varistors for over-voltage protection, system monitoring, box clamp for power connection	72 mm solid state contactor with fan and system monitoring, integrated varistors for over-voltage protection, box clamp for power connection
Input specifications			
Control input	0-20, 4-20, 12-20 mADC [RGC..I..] 0-10, 0-5, 1-5 VDC [RGC..V..] External potentiometer [RGC..V..]	0-20, 4-20, 12-20 mADC [RGC..I..] 0-10, 0-5, 1-5 VDC [RGC..V..] External potentiometer [RGC..V..]	0-20, 4-20, 12-20 mADC [RGC..I..] 0-10, 0-5, 1-5 VDC [RGC..V..] External potentiometer [RGC..V..]
Input impedance	<250 ohms [RGC..I..] 100k ohms [RGC..V..]	<250 ohms [RGC..I..] 100k ohms [RGC..V..]	<250 ohms [RGC..I..] 100k ohms [RGC..V..]
External supply voltage	24 VDC/AC	24 VDC/AC	24 VDC/AC [RGC..DFM] 90-250 VAC [RGC..AFM]
Max. supply current	90 mADC/AC	90 mADC/AC	175 mADC/AC [RGC..DFM] 60 mAAC [RGC..AFM]
Alarm specifications			
Alarm output	EMR; 2 A 250 VAC / 30 VDC	EMR; 2 A 250 VAC / 30 VDC	EMR; 2 A 250 VAC / 30 VDC
Alarm condition	Mains loss, Load loss, SSR open cct., SSR short cct., SSR over temperature	Mains loss, Load loss, SSR open cct., SSR short cct., SSR over temperature	Mains loss, Load loss, SSR open cct., SSR short cct., SSR over temperature
Types			
Switching mode	1 Full Cycle [RGC..C1..] 4 Full Cycles [RGC..C4..]	1 Full Cycle [RGC..C1..] 4 Full Cycles [RGC..C4..]	1 Full Cycle [RGC..C1..] 4 Full Cycles [RGC..C4..]
Output specifications			
Rated operational current AC-51 @ Ta = 40°C	27 AAC	40 AAC	75 AAC
Minimum operational current	500 mAAC	500 mAAC	500 mAAC
Non. rep. surge current I _{tsm} (t=10ms)	600 Ap	1150 Ap	1750 Ap
I ² t for fusing (t=10ms)	1800 A²s	6600 A²s	15000 A²s
Off-state leakage current	5 mAAC	5 mAAC	5 mAAC
Critical dV/dt (@ Tj init=40°C)	1000 V/μs	1000 V/μs	1000 V/μs
General specifications			
Operational voltage range	180-600 VAC +10%	180-600 VAC +10%	180-600 VAC +10%
Blocking voltage	1200 Vp	1200 Vp	1200 Vp
Power factor	≥ 0.7 at rated voltage	≥ 0.7 at rated voltage	≥ 0.7 at rated voltage
Operating temperature	-40°C to +70°C max. +60°C for 24 VAC supply	-40°C to +70°C max. +60°C for 24 VAC supply	-40°C to +70°C max. +60°C for 24 VAC supply
Approvals/Marks	CE - cULus	CE - cULus	CE - cULus
References			
Control Input:	0-20, 4-20, 12-20 mADC	0-20, 4-20, 12-20 mADC	0-20, 4-20, 12-20 mADC
1 Full Cycle, DC external supply	RGC2P60I25C1DM	RGC2P60I40C1DM	RGC2P60I75C1DFM
1 Full Cycle, AC external supply			RGC2P60I75C1AFM
4 Full Cycles, DC external supply	RGC2P60I25C4DM	RGC2P60I40C4DM	RGC2P60I75C4DFM
4 Full Cycles, AC external supply			RGC2P60I75C4AFM
Control Input:	0-10, 0-5, 1-5 VDC, Pot	0-10, 0-5, 1-5 VDC, Pot	0-10, 0-5, 1-5 VDC, Pot
1 Full Cycle, DC external supply	RGC2P60V25C1DM	RGC2P60V40C1DM	RGC2P60V75C1DFM
1 Full Cycle, AC external supply			RGC2P60V75C1AFM

Solid state contactors, 3-phase

4-20 mA Proportional controllers, 3 poles

Types

RGC3P60AA20..
20 AAC

RGC3P60AA30..
30 AAC

3-phase semiconductor proportional controllers with integrated heatsink, AC operating frequency range 45-65 Hz. Rated isolation voltage 4000 Vrms, 100 kArms short circuit current rating



Dimensions HxWxD (mm)

110 x 54 x 103

110 x 72 x 126

Features

54 mm solid state contactor with integrated varistors for over-voltage protection, screw with clamp for power connection

72 mm solid state contactor, integrated varistors for over-voltage protection, box clamp for power connection

Input specifications

Control input

4-20 mADC

4-20 mADC

Voltage drop

<10 VDC @ 20 mADC

<10 VDC @ 20 mADC

Types

Switching mode

Phase Angle [RGC..E]
1 Full Cycle [RGC..C1]

Phase Angle [RGC..E]
1 Full Cycle [RGC..C1]

Output specifications

Rated operational current
AC-51 @ Ta = 40°C

20 AAC

30 AAC

Minimum operational
current

500 mAAC

500 mAAC

Non. rep. surge current I_tsm
(t=10ms)

600 A_p

1150 A_p

I²t for fusing (t=10ms)

1800 A²s

6600 A²s

Off-state leakage current

5 mAAC

5 mAAC

Critical dV/dt
(@ T_j init=40°C)

1000 V/μs

1000 V/μs

General specifications

Operational voltage range

180-600 VAC +10%

180-600 VAC +10%

Blocking voltage

1200 V_p

1200 V_p

Power factor

≥ 0.7 at rated voltage

≥ 0.7 at rated voltage

Operating temperature

-40°C to +70°C

-40°C to +70°C

Approvals/Marks

CE - cULus

CE - cULus

References

Control Input:

4-20 mADC

4-20 mADC

Phase Angle

RGC3P60AA20E

RGC3P60AA30E

1 Full Cycle

RGC3P60AA20C1

RGC3P60AA30C1

Solid state contactors, 3-phase

Proportional controllers with monitoring, 3 poles

Types	RGC3P..20..EP RGC3P..20..M 20 AAC	RGC3P..30..EP RGC3P..30..M 30 AAC	RGC3P..65..EPF RGC3P..65..FM 66 AAC
Semiconductor contactors with integrated heatsink, AC operating frequency 45-65 Hz. Rated isolation voltage output to heatsink of 4000 Vrms, 100 kArms short circuit current rating			
Dimensions HxWxD (mm)	110 x 54 x 118	110 x 72 x 141	141 x 72 x 141 (with fan)
Features	54 mm solid state contactor with integrated varistors for over-voltage protection, system monitoring, screw with clamp for power connection	72 mm solid state contactor with integrated varistors for over-voltage protection, system monitoring, box clamp for power connection	72 mm solid state contactor with fan and system monitoring, integrated varistors for over-voltage protection, box clamp for power connection
Input specifications			
Control input	0-20, 4-20, 12-20 mADC [RGC..I..] 0-10, 0-5, 1-5 VDC [RGC..V..] External potentiometer [RGC..V..]	0-20, 4-20, 12-20 mADC [RGC..I..] 0-10, 0-5, 1-5 VDC [RGC..V..] External potentiometer [RGC..V..]	0-20, 4-20, 12-20 mADC [RGC..I..] 0-10, 0-5, 1-5 VDC [RGC..V..] External potentiometer [RGC..V..]
Input impedance	<250 ohms [RGC..I..] 100k ohms [RGC..V..]	<250 ohms [RGC..I..] 100k ohms [RGC..V..]	<250 ohms [RGC..I..] 100k ohms [RGC..V..]
External supply voltage	24 VDC/AC [RGC..DM] 90-250 VAC [RGC..AM]	24 VDC/AC [RGC..DM] 90-250 VAC [RGC..AM]	24 VDC/AC [RGC..DFM] 90-250 VAC [RGC..AFM]
Max. supply current	90 mADC/AC [RGC..DM] 30 mAAC [RGC..AM]	90 mADC/AC [RGC..DM] 30 mAAC [RGC..AM]	175 mADC/AC [RGC..DFM] 60 mAAC [RGC..AFM]
Alarm specifications			
Alarm output	EMR; 2 A 250 VAC / 30 VDC	EMR; 2 A 250 VAC / 30 VDC	EMR; 2 A 250 VAC / 30 VDC
Alarm condition	Mains loss, Load loss, SSR open cct., SSR short cct., SSR over temperature	Mains loss, Load loss, SSR open cct., SSR short cct., SSR over temperature	Mains loss, Load loss, SSR open cct., SSR short cct., SSR over temperature
Types			
Switching mode	Phase Angle [RGC..E..] 1 Full Cycle [RGC..C1..] 4 Full Cycles [RGC..C4..] 16 Full Cycles [RGC..C16..] Softstart [RGC..S..]	Phase Angle [RGC..E..] 1 Full Cycle [RGC..C1..] 4 Full Cycles [RGC..C4..] 16 Full Cycles [RGC..C16..] Softstart [RGC..S..]	Phase Angle [RGC..E..] 1 Full Cycle [RGC..C1..] 4 Full Cycles [RGC..C4..] 16 Full Cycles [RGC..C16..] Softstart [RGC..S..]
Output specifications			
Rated operational current AC-51 @ Ta = 40°C	20 AAC	30 AAC	66 AAC
Minimum operational current	500 mAAC	500 mAAC	500 mAAC
Non. rep. surge current Itsm (t=10ms)	600 Ap	1150 Ap	1750 Ap
I²t for fusing (t=10ms)	1800 A²s	6600 A²s	15000 A²s
Off-state leakage current	5 mAAC	5 mAAC	5 mAAC
Critical dV/dt (@ Tj init = 40°C)	1000 V/µs	1000 V/µs	1000 V/µs
General specifications			
Operational voltage range	180-600 VAC +10%	180-600 VAC +10%	180-600 VAC +10%
Blocking voltage	1200 Vp	1200 Vp	1200 Vp
Power factor	≥ 0.7 at rated voltage	≥ 0.7 at rated voltage	≥ 0.7 at rated voltage
Operating temperature	-40°C to +70°C max. +60°C for 24 VAC supply	-40°C to +70°C max. +60°C for 24 VAC supply	-40°C to +70°C max. +60°C for 24 VAC supply
Approvals/Marks	CE - cULus	CE - cULus	CE - cULus
References			
Phase Angle, DC external supply	RGC3P60Y20EDP	RGC3P60Y30EDP	RGC3P60Y65EDFP
Phase Angle, AC external supply	RGC3P60Y30EAP	RGC3P60Y65EAFP	
X Full Cycle, DC external supply	RGC3P60Y20CXDM (X = 1/4/16)	RGC3P60Y30CXDM (X = 1/4/16)	RGC3P60Y65CXDFM (X = 1/4/16)
X Full Cycle, AC external supply	RGC3P60Y30CXAM (X = 1/4/16)	RGC3P60Y65CXAFM (X = 1/4/16)	
Softstart + 16 Full Cycles, DC external supply	RGC3P60V20S16DM	RGC3P60V30S16DM	RGC3P60V65S16DFM
Digital Control Input (5-10VDC):	5-10VDC	5-10VDC	5-10VDC
Softstart + ON/OFF, DC external supply	RGC3P60V20SDM	RGC3P60V30SDM	RGC3P60V65SDFM

Y = 'I' for 0-20 mA, 4-20 mA or 12-20 mA or 'V' for 0-10 V, 0-5 V, 1-5 V or pot

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

45 mm Solid state contactors for motor switching, 3-phase

Ready for use design - DIN rail mounting

Types	REC2B 4 kW	REC3B 3 kW	REC2R 3 kW
Semiconductor contactors with integrated heatsink. AC operating frequency range 45-65 Hz. Rated isolation voltage ≥ 4000 Vrms			
Dimensions HxWxD (mm)	105 x 45 x 99.4	105 x 45 x 99.4	105 x 45 x 99.4
Features	2-phase switching electronic motor contactor	3-phase switching electronic motor contactor	2-phase switching electronic motor contactor for reversing
Control specifications			
Control input range	15-32 VDC [REC..D] 90-253 VAC [REC..A]	15-32 VDC [REC..D] 90-253 VAC [REC..A]	15-32 VDC [REC..D] 90-253 VAC [REC..A]
Max. input current	10 mADC [REC..D] 15 mAAC [REC..A]	10 mADC [REC..D] 15 mAAC [REC..A]	10 mADC [REC..D] 15 mAAC [REC..A]
Output specifications			
Rated operational current ACS3a @ Ta= 40°C, 400 VAC	6.2 AAC [REC2B..20] 7.6 AAC [REC2B..30] 9.2 AAC [REC2B..40]	5.8 AAC [REC3B..20] 5.8 AAC [REC3B..21] 7.6 AAC [REC3B..30]	6.2 AAC [REC2R..20] 7.6 AAC [REC2R..30]
Motor Rating @ 400 VAC UL508/IEC60947-4-2 @40°C	3 HP / 2.2 kW [REC2B..20] 3 HP / 3.0 kW [REC2B..30] 3 HP / 4.0 kW [REC2B..40]	2 HP / 2.2 kW [REC3B..20] 2 HP / 2.2 kW [REC3B..21] 3 HP / 3.0 kW [REC3B..30]	3 HP / 2.2 kW [REC2R..20] 3 HP / 3.0 kW [REC2R..30]
Min. operational current	150 mA [REC2B..20]	150 mA [REC3B..20]	150 mA [REC2R..20]
Non repet. surge current (I _{tsm}) (t=10 ms)	325 A _p [REC2B..20] 600 A _p [REC2B..30] 800 A _p [REC2B..40]	325 A _p [REC3B48..20] 600 A _p [REC3B60..20] 600 A _p [REC3..21] 800 A _p [REC3..30]	600 A _p
Max. Off-state leak current	< 3 mAAC	< 3 mAAC	< 3 mAAC
I ² t for fusing (t=10 ms)	525 A ² s [REC2..20] 525 A ² s [REC2..48..30] 1800 A ² s [REC2..60..30] 3200 A ² s [REC2..40]	525 A ² s [REC3B48..20] 1800 A ² s [REC3B60..20] 1800 A ² s [REC3..21] 3200 A ² s [REC3..40]	1800 A ² s
Critical dV/dt (@ T _j init=40°C)	1000 V/μs	1000 V/μs	1000 V/μs
General specifications			
Operational voltage range	48 - 530 VAC [REC..48..] 48 - 600 VAC [REC..60..]	48 - 530 VAC [REC..48..] 48 - 600 VAC [REC..60..]	48 - 530 VAC [REC..48..] 48 - 600 VAC [REC..60..]
Blocking voltage	1200 V _p [REC..48..] 1600 V _p [REC..60..]	1200 V _p [REC..48..] 1600 V _p [REC..60..]	1200 V _p [REC..48..] 1600 V _p [REC..60..]
Power factor	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage	≥ 0.5 at rated voltage
Operating temperature	-25°C to +60°C	-25°C to +60°C	-25°C to +60°C
Terminals	input screw/spring, output screw	input screw/spring, output screw	input screw/spring, output screw
Approvals/Marks	CE - cULus	CE - cULus	CE - cULus
References			
	2.2 kW	2.2 kW	2.2 kW
	REC2B48D20GKE	REC3B48D20GKE	REC2R48D20GKE
	REC2B48A20GKE	REC3B48A20GKE	REC2R48A20GKE
	3.0 kW	REC3B60D20GKE	3.0 kW
	REC2B48D30GKE	REC3B60A20GKE	REC2R48D30GKE
	REC2B48A30GKE	2.2 kW (high I _{tsm})	REC2R48A30GKE
	REC2B60D30GKE	REC3B48D21GKE	REC2R60D30GKE
	REC2B60A30GKE	3.0 kW	REC2R60A30GKE
	4.0 kW	REC3B48D30GKE	
	REC2B48D40GKE	REC3B48A30GKE	
	REC2B48A40GKE		

Solid state relays accessories

General accessories

Types	RPM1	RPM1P	RPM1V	RPM2
				
Dimensions HxWxD (mm)	84 x 12.5 x 42	84 x 12.5 x 42	84 x 12.5 x 42	82 x 25 x 39
Description	Din-rail adaptor for PCB relays. (Relay excluded)	Din-rail adaptor with sockets for plug-in PCB relays. (Relay excluded)	DIN-rail adaptor for PCB relays with LED and varistor across output terminals. (Relay excluded)	Din-rail adaptor for PCB relays with an operational voltage ≥ 230 V. (Relay excluded)
Pack quantity	1	1	1	2
References				
	RPM1	RPM1P (no LED) RPM1PD (with LED)	RPM1V	RPM2

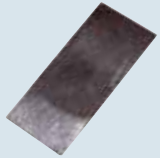
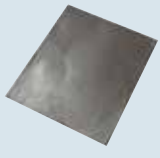
Selection guide for SSR assemblies*

RP...M1	RP...M1P (no LED) RP...M1PD (with LED)	RP...M1V	RP...M2
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Types	DIN Adaptor	DIN Adaptor RG	Protection cover RM/RA/RK	Tamper proof cover RGS1P, RGC1P
				
Dimensions HxWxD (mm)	81 x 44 x 13.5	106 x 17.8 x 14	58 x 45 x 9 / 26	59 x 45 x 25.5
Description	DIN-rail adaptor for 1-phase SSR & heatsink assemblies. Integrated in heatsink kits.	DIN-rail adaptor for RGS relays.	Clip-on IP20 protection Cover	Tamper proof protection cover for RGS1P, RGC1P
Pack quantity	1	1	10 (RK)/20 (RMIP20)/25 (BBR..)	5
References				
	RHS00	RGS1DIN	RMIP20 (for RM, RS, RAM series) RKIP20 (for RK series) BBR (for RA, RD series) BBR-S (for RA...S series)	RGTMP

Selection guide for SSR assemblies*

R...H8	RGS...DIN
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Types	Thermal paste	Thermal pad Slim SSRs	Thermal Pad RM, RA	Thermal pad RZ3
				
Dimensions HxWxD (mm)		34.6 x 14 x 0.13 (RG) 21 x 19 x 0.13 (RF) 23.8 x 11.2 x 0.20 (RK)	42 x 35 x 0.25	70 x 77 x 0.25
Description	2 ml syringe silicon based thermal compound	Thermal pad for RG, RF and RK series	Graphite thermal pad for RA, RD, RM, RAM, RS series	Graphite thermal pad for RZ3 series
Pack quantity	1	10	50	10
References				
	HTS02S	RGHT (for RG series) RFHT (for RF series) RKHT (for RK series)	KK071CUT	RZHT

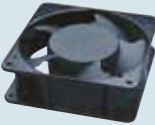
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Solid state relays accessories

Terminal Adaptors				
Types	RM fork terminal	RM FASTON terminals	RM spacers	Overload Relay Adaptor
				
Dimensions HxWxD (mm)	35 x 16.5 x 25 / 29	4.8 / 6.3	M3 x 12	
Description	RM, RS, RK and RAM terminal adaptor for 16 mm ² and 35 mm ² cable	Screw FASTON terminals, flat or 45° angled for output (6.3 mm) and input (4.8 mm) RM, RS, RAM terminals	Standoff spacer for RM, RS, RAM series M3 control terminals	Overload Relay Adaptor for REC and RGCM3 series
Pack quantity	10	20	20	5
References				
	RM625FK (16 mm ²)	RM48F0 (4.8 mm, flat)	RMSP03	REC3ADAPTOR
	RM635FK (35 mm ²)	RM48F4 (4.8 mm, 45°)		
	RM635FKP (35 mm ²)	RM63F0 (6.3 mm, flat)		
		RM63F4 (6.3 mm, 45°)		

Types	RG plug terminals	RGCM plug terminals	RK plug terminals	Varistors
				
Description	2 pole spring loaded plug terminal, 2.5 mm ² for RG series	3 way, 2 pole box clamp plug terminal, 2.5 mm ² for RGCM3 series	4 way, 4 pole / 2 pole spring loaded plug terminal, 5.08 mm for RK series	Surge / transient voltage protection for SSRs
Pack quantity	10	10	10	10
References				
	RGM25	RG3G25	RK4MT (4 way, 4-pole)	275 V: RV02 420 V: RV04
			RK2MT (4 way, 2-pole)	510 V: RV05 625 V: RV06
				680 V: RV07

Types	Cables	Fans	Screw Kits	Temperature limit switches
				
Dimensions HxWxD (mm)		40 x 40 x 20 (RHSF40) 60 x 60 x 20 (RHSF60) 120 x 120 x 38 (RHS301F)		6.5 x 5.5 x 3
Description	Cable for RM1E...V, RA2A...C, RK...C and RA...S models with one-end terminated with a female plug for mounting on the SSR	RHSF40-24 to be mounted with RHS45C, RHS45B, RHS540, RHS542 RHSF60-24/240 to be mounted with RHS90A, RHS112A, RHS703 RHS301F115/230 to be mounted with RHS301 incl. bracket	Screw kits for assembling SSRs to heatsinks. M5 x 10 mm to be used with RA, RD, RM, RAM, RS, RK and RZ3 series. M4 x 15 mm used for RHS38AD heatsink. M5 x 23 / 30 mm to be used with RG series.	Temperature limit switches that may be fitted in the RZ3 housing between SSR and heatsink
	1	1	20	1
References				
	RCS3-100-1 [RM1E...V]	RHSF40-24 (24 VDC)	SRWKITM5X10MM	UP62-70
	RCS4-100-1 [RA2A...C]	RHSF60-24 (24 VDC)	SRWKITM4X15MM	UP62-80
	RCS4-400-1 [RA2A...C]	RHSF60-230 (240 VAC)	SRWKITM5X23MM	UP62-90
	RCS5-200-1 [RA...S]	RHS301F115 (115 VAC)	SRWKITM5X30MM	
	RCK4-100-1 [RKD2...C]	RHS301F230 (230 VAC)		
	RCK2-100-1 [RK2...C]			

Solid state relays accessories

DIN mount heatsinks for solid state relays

Types	RHS300	RHS37A	RHS10015
			
Dimensions HxWxD (mm) (SSR not included)	105 x 82 x 20	18 x 110 x 52	100 x 82 x 29
Description	Heatsink for 1x 3-phase RZ3 series	Heatsink for 1x 1-phase RG series	Heatsink for max. 2x 1-phase RA, RD, RM, RAM, RS and RK series
Thermal resistance**			
Without fan	5.40°C/W (>30 W)	4.00°C/W (>20 W)	4.00°C/W (>30 W)
With fan	Not available	Not available	Not available
Selection guide for heatsink assemblies*			
Without fan	R...H1	R...H51	R...H47
With fan	Not available	Not available	Not available

Types	RHS100	RHS45C	RHS52A
			
Dimensions HxWxD (mm) (SSR not included)	44 x 82 x 48	45 x 103 x 55	22.5 x 110 x 90
Description	Heatsink for 1x 1-phase RA, RD, RM, RAM, RS and RK series	Heatsink for 1x 1-phase RA, RD, RM, RAM, RS and RK series	Heatsink for 1x 1-phase RG series
Thermal resistance**			
Without fan	3.10°C/W (>25 W)	2.20°C/W (>45 W)	2.00°C/W (>45 W)
With fan	Not available	Not available	Not available
Selection guide for heatsink assemblies*			
Without fan	R...H0	R...H15	R...H61
With fan	Not available	Not available	Not available

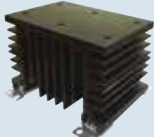
Types	RHS45B	RHS54..	RHS703..
			
Dimensions HxWxD (mm) (SSR not included)	45 x 103 x 80	54 x 110 x 51 54 x 135 x 51 (with fan)	72 x 110 x 75 72 x 141 x 75 (with fan)
Description	Heatsink for 1x 1-phase RA, RD, RM, RAM, RS and RK series	Heatsink for max. 3x 1-phase RG series, 1x 1-phase RA, RD, RM, RAM, RS and RK series: RHS540 (no fan) RHS540F40-24 (24 VDC fan) Heatsink for max. 2x 1-phase RG series: RHS542 (no fan) RHS542F40-24 (24 VDC fan)	Heatsink for max. 3x 1-phase RG series, 1x 1-phase RA, RD, RM, RAM, RS and RK series: RHS703 (no fan) RHS703F60-24 (24 VDC fan) RHS703F60-230 (240 VAC fan)
Thermal resistance**			
Without fan	1.85°C/W (>50 W)	1.85°C/W (>60 W)	1.10°C/W (>60 W)
With fan	Not available	0.65°C/W	0.37°C/W
Selection guide for heatsink assemblies*			
Without fan	R...H5	R...H65 [RHS540] R...H66 [RHS542]	R...H75 [RHS703]
With fan	Not available	R...H67 [RHS540F40-24] R...H68 [RHS542F40-24]	R...H76 [RHS703F60-24] R...H77 [RHS703F60-230]

* Conditions may apply. Please ask your Sales representative for further details.

** Refer to specific heatsink datasheet for further details on heatsink characteristics and assemblies.

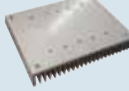
Solid state relays accessories

DIN mount heatsinks for solid state relays

Types	RHS90A	RHS301..	RHS112A..
			
Dimensions HxWxD (mm) (SSR not included)	90 x 103 x 80	119 x 82 x 94 124 x 146 x 122 (with fan)	112 x 103 x 80 112 x 120 x 80 (with fan)
Description	Heatsink for 1x 1-phase RA, RD, RM, RAM, RS and RK series	Heatsink for 1x 3-phase RZ3, 2x 1-phase RA, RD, RM, RAM, RS and RK series: RHS301 [no fan] RHS301F115C [115 VAC fan] RHS301F230C [230 VAC fan]	Heatsink for 1x 3-phase RZ3, 2x 1-phase RA, RD, RM, RAM, RS and RK series: RHS112A [no fan] RHS112AF60-24 [24 VDC fan] RHS112AF60-230 [230 VAC fan]
Thermal resistance**			
Without fan	0.97°C/W (>60 W)	0.82°C/W (> 80W)	0.76°C/W (>100 W)
With fan	Not available	0.28°C/W	0.35°C/W
Selection guide for heatsink assemblies*			
Without fan	R...H16	R...H2 [RHS301]	R...H17
With fan	Not available	R...H10 [RHS301F115C] R...H12 [RHS301F230C]	R...H18 [RHS112AF60-24] R...H52 [RHS112AF60-230]

Types	RHS11267DIND	RHS28009F80-24P	RHS28011F80-24P
			
Dimensions HxWxD (mm) (SSR not included)	119 x 125 x 94	280 x 87 x 122	280 x 87 x 122
Description	Heatsink for 1x 3-phase RZ3 series, max 3x 1-phase RG series, 2x 1-phase RA, RD, RM, RAM, RS and RK series	Heatsink for max. 9x 1-phase RG series or 4x 1-phase RA, RD, RM, RAM, RS and RK series with integrated fan and overtemperature protection	Heatsink for max. 11x 1-phase RG series or 3x 1-phase RA, RD, RM, RAM, RS and RK series with integrated fan and overtemperature protection
Thermal resistance**			
Without fan	0.54°C/W (>150 W)	Not available	Not available
With fan	Not available	0.12°C/W (24 VDC)	0.12°C/W (24 VDC)
Selection guide for heatsink assemblies*			
Without fan	R...H78D	Not available	Not available
With fan	Not available	R...H41	R...H44

Thru wall mount heatsinks for solid state relays

Types	RHS38ARFD	RHS10025D	RHS16225D
			
Dimensions HxWxD (mm) (SSR not included)	46 x 76 x 33	100 x 100 x 25	162 x 100 x 25
Description	Heatsink for 1x 1-phase RF series	Heatsink for max. 3x 1-phase RG series, 1x 1-phase RA, RD, RM, RAM, RS and RK series	Heatsink for 1x 3-phase RZ3 series, max. 3x 1-phase RA, RD, RM, RAM, RS, RK and RG series
Thermal resistance**			
Without fan	2.85°C/W (>40 W)	1.85°C/W (>60 W)	1.30°C/W (>90 W)
With fan	Not available	Not available	Not available
Selection guide for heatsink assemblies*			
Without fan	R...H53	R...H49	R...H55
With fan	Not available	Not available	Not available

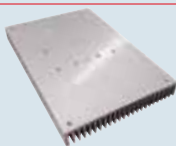
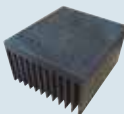
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** Refer to specific heatsink datasheet for further details on heatsink characteristics and assemblies.

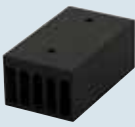
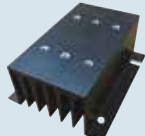
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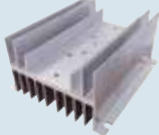
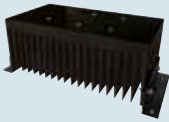
Solid state relays accessories

Thru wall mount heatsinks for solid state relays

Types	RHS16225LD	RHS11267D	RHS30040D
			
Dimensions HxWxD (mm) (SSR not included)	162 x 250 x 25	112 x 125 x 67	300 x 200 x 40
Description	Heatsink for 1x 3-phase RZ3 series, max. 3x 1-phase RA, RD, RM, RS, RK and RG series	Heatsink for max. 3x 1-phase RG series or 1x 1-phase RA, RD, RM, RAM, RS and RK series	Heatsink for max. 12x 1-phase RG series or 8x 1-phase RA, RD, RM, RAM, RS and RK series
Thermal resistance**			
Without fan	0.84°C/W (>120 W)	0.54°C/W (>150 W)	0.40°C/W (>180 W)
With fan	Not available	Not available	Not available
Selection guide for heatsink assemblies*			
Without fan	R...H55L	R...H78	R...H57
With fan	Not available	Not available	Not available

Panel mount heatsinks for solid state relays

Types	RHS5050..	RHS38A..	RHS5840D
			
Dimensions HxWxD (mm) (SSR not included)	80 x 50 x 51	46 x 76 x 33	81 x 100 x 40
Description	RHS5050D: Heatsink for 1x 1-phase RA, RD, RM, RAM, RS and RK series RHS5050RFD: Heatsink for 1x 1-phase RF series	RHS38AD: Heatsink for 1x 1-phase RA, RD, RM, RAM, RS and RK series RHS38ARFD: Heatsink for 1x 1-phase RF series	Heatsink for max. 3x 1-phase RG series, 1x 1-phase RA, RD, RM, RAM, RS and RK series
Thermal resistance**			
Without fan	3.50°C/W (>25 W)	2.85°C/W (>40 W)	1.80°C/W (>60 W)
With fan	Not available	Not available	Not available
Selection guide for heatsink assemblies*			
Without fan	R...H60	R...H53	R...H48
With fan	Not available	Not available	Not available

Types	RHS10067D	RHS10067LD	RHS320
			
Dimensions HxWxD (mm) (SSR not included)	121 x 76 x 67	121 x 140 x 67	240 x 100 x 93
Description	Heatsink for 1x 1-phase RA, RD, RM, RAM, RS and RK series	Heatsink for 2x 1-phase RA, RD, RM, RAM, RS, RK and RG series	Heatsink for 1x 3-phase RZ3 series, max. 3x 1-phase RA, RD, RM, RAM, RS, RK and RG series
Thermal resistance**			
Without fan	1.70°C/W (>20 W)	0.88°C/W (>80 W)	0.40°C/W (>120 W)
With fan	Not available	Not available	Not available
Selection guide for heatsink assemblies*			
Without fan	R...H58	R...H58L	R...H13
With fan	Not available	Not available	Not available

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** Refer to specific heatsink datasheet for further details on heatsink characteristics and assemblies.

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Soft starters

Scroll compressor soft starters

Types	RSBS	RSBD 45 & 75 mm	RSBT 45 & 120 mm
Soft starting of 1-Phase (RSBS) and 3-phase (RSBD, RSBT) scroll compressors			
Dimensions (mm)	60.4* x 137 x 81.4	12 A to 45 A: 106 x 45 x 125 55 A to 95 A: 150 x 75 x 170	16 A to 32 A (no relay output): 81 x 45 x 125 16 A to 32 A (with relay output): 97.5 x 45 x 125 55A to 95A: 150 x 120 x 170
Features	Internally bypassed, current limit start optional auxiliary relay output (Option V22), HP algorithm for high pressure starts	Compact 2- (RSBD) controlled soft starter for scroll compressors. Patented auto-adapt function for reduction of inrush current and for current balancing. No user settings required with HP algorithm optimised for multi-compressor systems	3-phase (RSBT) Controlled solution with internal bypass. Patented self-learning algorithm for optimal current reduction. Compliant to Class B (residential limits) for EMC emissions (16 A to 32 A). Optional serial communication for energy variables, alarms, start/stop.

Control specifications

Control input range	230 VAC	Option E: 110 - 400 VAC Option F: 24 VAC / DC	Option E: 110 - 400VAC [RSBT 45 mm] Option C: 24 VAC/DC & 110-400 VAC [RSBT 120 mm]
Controlled phases	1	2	3

Output specifications

Rated operational current (Ie)	RSBS2325...: 25 A RSBS2332...: 32 A	RSBD 45 mm: 12/16/25/32/37/45A RSBD 75 mm: 55/70/95 A	RSBT 45 mm: 16/25/32A RSBT 120 mm: 55/70/95A
Operational voltage	230 VAC (-15%, +10%)	RSBD 45 mm: 220 - 400 VAC (-15%, +10%) RSBD 75 mm: 220 - 600 VAC (-15%, +10%)	RSBT 45 mm: 220/400 VAC (-15%, +10%) RSBT 120 mm: 220 - 480 VAC (-15%, +10%)
Number of starts per hour	12 (evenly distributed)	12 (evenly distributed)	12 (evenly distributed)
Assigned compressor rating @400 V	RSBS2325... / RSBS2332...**** 3.7 kW (5 HP) / 4 kW (5 HP)	RSBD 45 mm: 5.5 kW (5 HP) to 22 kW (25 HP) RSBD 75 mm: 30 kW (30 HP) to 55 kW (50 HP)	RSBT 45 mm: 7.5 kW (7.5 HP) to 15 kW (15 HP) RSBT 120 mm: 22 kW (30 HP) to 45 kW (50 HP)

General specifications

Internally bypassed	Yes	Yes	Yes
Operational frequency	50/60 Hz ±10%	50/60 Hz +/- 10 Hz	50/60 Hz +/- 10 Hz
Ramp up/Ramp down	< 600ms/0s	<1s/0s	<1s/0s
Default Current limit	RSBS2325...V2...: 40 Arms RSBS2332...V2...: 45 Arms	3.5xIe	RSBT 45 mm RSBT..16: 40 A, RSBT..25: 90 A, RSBT..32: 110 A RSBT 120 mm: 3.5xIe
Operating temperature	-20°C to +65°C (-4°F to +149°F)	-20°C to +60°C (-4°F to +140°F)	RSBT..16: -20°C to 60°C (-4°F to +140°F) RSBT..25: -20°C to 55°C (-4°F to +131°F) RSBT..32: -20°C to 50°C (-4°F to +122°F)
Storage temperature	-30°C to +70°C (-22°F to +158°F)	-40°C to +80°C (-40°F to +176°F)	-40°C to +85°C (-40°F to +185°F)
Wrong phase sequence indication	N/A	Yes	Yes
Degree of protection	IP 20	RSBD 45 mm: IP20 RSBD 75 mm: IP 20 (Housing) / IP 10 (Terminals)	RSBT 45 mm: IP20 RSBT 120 mm: IP 20 (Housing) / IP 10 (Terminals)
Approvals	CE - UL - cUL	RSBD 45 mm: CE - cULus - CCC RSBD 75 mm: CE - cULus - CCC	RSBT 45 mm: CE - cULus** - VDE*** - CCC RSBT 120 mm: CE - cULus - CCC

* For RSBS23...V22..., auxiliary terminal is 10.5 mm protruding

** For options V50/ V51/ V61

*** Up to 15 AAC (Up to 32 AAC for RSBT..HPV models only)

**** Assigned compressor rating @ 230 V

Soft starters

Centrifugal pump and ventilators soft starters

Types	RSWT 45 mm	RSWT 75 & 120 mm
Soft-starters with dedicated, self-learning algorithm for centrifugal pumps.		
Dimensions (mm)	RSWT4012/RSWT4016: 130 x 45 x 125 RSWT4025: 157 x 45 x 125	RSWT 75 mm: 177 x 75 x 206 RSWT 120 mm: 177 x 120 x 206
Features	3-phase controlled, internally bypassed. Self-learning algorithm dedicated to centrifugal pumps and ventilators. RSWT..V10 version - Integrated overload protection (Class 10). RSWT40 versions - internally supplied.	3-phase controlled and internally bypassed. RSWT..V01. versions with PTC input protection. RSWT...V11.versions with integrated overload protection, PTC i/p, remote alarm reset. RSWT40 versions - internally supplied. 3 output relays for alarm, top of ramp and run indication.
Control specifications		
Control input range	Option E: 110 - 400 VAC Option F: 24 VAC/DC Option G: 100 - 240 VAC [RSWT60..]	Option E: 110 - 400 VAC [RSWT40..] Option F: 24 VAC/DC [RSWT40....] Option G: 100 - 240 VAC [RSWT60..]
Controlled phases	3	3
Output specifications		
Rated operational current AC 53b	12/16/25 A	32/37/45/55/70/90 A
Operational voltage	RSWT40: 220 - 400 VAC (-15%, +10%) RSWT60: 220 - 600 VAC (-15%, +10%)	RSWT40: 220 - 400 VAC (-15%, +10%) RSWT60: 220 - 600 VAC (-15%, +10%)
Number of starts per hour @40°C	20	20
Assigned motor rating @ 400 V	RSWTxx12: 5.5 kW (5 HP) RSWTxx16: 7.5 kW (7.5 HP) RSWTxx25: 11 kW (10 HP)	RSWTxx32: 15 kW (20 HP) RSWTxx37: 18.5 kW (25 HP) RSWTxx45: 22 kW (30 HP) RSWTxx55: 25 kW (35 HP) RSWTxx70: 37 kW (40 HP) RSWTxx90: 45 kW (50 HP)
General specifications		
Internally bypassed	Yes	Yes
Operational frequency	50/60 Hz +/- 10%	50/60 Hz +/- 10%
Ramp up/Ramp down	1-20s/0-20s	1-20s/0-20s
Initial torque	Self-adjusted by RSWT	Self-adjusted by RSWT
Operating temperature	-20°C to 60°C (-4°F to +140°F)	-20°C to 60°C (-4°F to +140°F)
Storage temperature	-40°C to +80°C (-40°F to +176°F)	-40°C to +80°C (-40°F to +176°F)
Integrated overload protection	Yes	Yes
Degree of protection	IP 20	IP 20 (control circuit) IP 10 (power terminals)
Approvals	CE - cULus - CCC - EAC	CE - cULus - CCC - EAC

xx = 40 or 60

Soft starters

General purpose soft starters

Types	RSHR 3-Phase	RSGD 45mm	RSGD 75mm
Soft starting and stopping of 3-phase motors. Self-learning algorithms on RSGD series for better ease of use.			
Dimensions (mm)	158.5 x 90 x 90	106 x 45 x 125 [RSGD..VD2.0] 137 x 45 x 137 [RSGD..VX2.0]	177 x 75 x 206 [RSGD..55.. - RSGD..85..] 177 x 75 x 221 [RSGD..100..]
Features	3-phase controlled. In Line or In Delta (6-wire) connection. Wrong Phase sequence detection. Motor PTC protection. Phase Loss Detection	Self-learning 2-phase controlled general purpose soft starter. Improved current reduction capability. 2-relay outputs for top of ramp and alarm indication. Optional motor overload protection (Class 10). QR code for quicker troubleshooting	Self-learning 2-phase controlled general purpose soft starter. Integrated motor overload protection (Class 10) and serial communication (Modbus RS485)

Control specifications

Control input range	24-550 VAC/DC (Option "C") 24-600 VAC/DC (Option "D")	Option E0: 110 - 400 VAC [RSGD40..] Option F0: 24 VAC/DC [RSGD40..] Option GG: 100 - 240 VAC [RSGD60..]	Option E0: 110 - 400 VAC [RSGD40..] Option F0: 24 VAC/DC [RSGD40..] Option FF: 24VAC/DC [RSGD60..] Option GG: 100 - 240 VAC [RSGD60..]
Controlled phases	3	2	2

Output specifications

Rated operational current AC 53b	25 A [RSHR..25...] 32 A [RSHR..32...]	12/16/25/32/45 A	55/70/85/100 A
Operational voltage	127/220 VAC [RSHR22..] 230/400 VAC [RSHR40..] 277/480 VAC [RSHR48..] 346/600 VAC [RSHR60..] 220-480 VAC [RSHRM] 400-480 VAC [RSHRM]	RSGD40: 220 - 400 VAC (-15%, +10%) RSGD60: 220 - 600 VAC (-15%, +10%)	RSGD40: 220 - 400 VAC (-15%, +10%) RSGD60: 220 - 600 VAC (-15%, +10%)
Number of starts per hour @40°C	7 [RSHR2225.../RSHR4025...] 3 [RSHR4825.../RSHR6025.../RSHRM] 50 [RSHR..32...]	20 [RSGD..12, RSGD..16, RSGD..25..VX210, RSGD..32] 10 [RSGD..25..VD200, RSGD..45]	10
Assigned motor rating @ 400 V	In Line Connection/In Delta Connection RSHR4025CV. 11 kW [10 HP] / 20 kW [20 HP] RSHR4032CV. 15 kW [20 HP] / 22kW [30 HP]	RSGD..12: 5.5kW/5HP RSGD..16: 7.5kW/7.5HP RSGD..25: 11kW/10HP RSGD..32: 15kW/15HP RSGD..45: 22kW/25HP	RSGD..55: 30kW/30HP RSGD..70: 37kW/40HP RSGD..85: 45kW/50HP RSGD..100:55kW/50HP

General specifications

Internally bypassed	No	Yes	Yes
Operational frequency	50/60 Hz ±10%	50/60 Hz ± 10%	50/60 Hz ± 10%
Ramp up/Ramp down	1-10s / 0-30s; 0-1s / 0-1s [RSHR...V38]	1 - 20s/0 - 20s	1 - 30s/0 - 30s
Initial torque	0-70%	Not required	Not required
Operating temperature	-20°C to +60°C (-4°F to +140°F)	-20°C to 60°C (-4°F to +140°F)	-20°C to 60°C (-4°F to +140°F)
Storage temperature	-50°C to +85°C (-58°F to +185°F)	-40°C to +80°C (-40°F to +176°F)	-40°C to +80°C (-40°F to +176°F)
Wrong phase sequence indication	Yes	Yes	Yes
Motor overload protection	No	V.200: No V.210: Yes (Class 10)	Yes (Class 10)
PTC input	Yes	No	Yes
Degree of protection	IP 20	IP 20	IP 20 (control circuit) IP 10 (power terminals)
Approvals	CE - UL - cUL	CE - cULus - CCC - EAC	CE - cULus - CCC - EAC

Soft starters

	Proportional controller	Motor reversing
Types	RSC..AA...+RSO...	RR2A
Phase angle control of 3-phase motors (AC53a) and heaters (AC51a). Reversing motor relay (RR..)		
Dimensions (mm)	65 x 103 x 74	41 x 103 x 74
Features	Proportional output for motor/heater control according to user controlled analogue input	Reversing with interlock, optoisolation 2-pole change-over, built-in transient overvoltage protection, interlocking reversing, LED status indication
Control specifications		
Control input range	0-20 mA (A-input) 4-20 mA (B-input)	10-40 VDC
Max. input current	20 mA	20 mA
Control supply	10 - 32 VDC	-
Max. supply current	180 mA	-
Output specifications		
Rated operational current		
AC 51a	16 Arms [RSO..10] 25 Arms [RSO..25] 50 Arms [RSO..50] 90 Arms [RSO..90] 110 Arms [RSO..110]	-
AC 53a	5 Arms [RSO..25] 15 Arms [RSO..50] 30 Arms [RSO..90] 40 Arms [RSO..110]	5 Arms [RR2A40D150/RR2A48D220] 11 Arms [RR2A40D400/RR2A48D550]
Operational voltage	150-250 Vrms [RSO22..] 220-420 Vrms [RSO40..] 400-510 Vrms [RSO48..] 400-625 Vrms [RSO60..]	400 Vrms [RR2A40D...] 480 Vrms [RR2A48D...]
General specifications		
Connections	Screw type with clamp	Screw type with clamp
Operating temperature	-20°C to +70°C	-20°C to +80°C
Storage temperature	-40°C to +100°C	-40°C to +100°C
Approvals/Marks	CE - UL - CSA	CE - UL - cUL
Reference		
	Control module	5 A
	RSC-AAM60	RR2A40D150 (1.5 kW)
	Output module: 400 VAC	RR2A40D400 (4.0 kW)
	25 A: RSO4025 (4 kW*)	11 A
	50 A: RSO4050 (11 kW*)	RR2A48D220 (2.2 kW)
	90 A: RSO4090 (15 kW*)	RR2A48D550 (5.5 kW)
	110 A: RSO40110 (22 kW*)	

* Output module can be 200, 400, 480, 600 VAC

* Correct heatsink assembly required. For further details please consult datasheet.

** Applicable when device is mounted to heatsink type RHS301

Variable frequency drives

VariFlex³ variable frequency drives - RVLF series

Types	Size A	Size B	Size C	Size D
Drives, Inverters				

Dimensions HxWxD (mm)	141 x 72 x 139	144 x 118 x 147	197 x 129 x 148	273 x 187 x 190
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Features	V/F and Sensorless vector control algorithm. Conform to EMC standard EN 61800-3. In-built PTC and PID functions. In-built RJ45 for Modbus and BACnet communication. Additional communication protocol via add-on modules.			
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Technical specifications

AC Supply Voltage	1-ph: 100 - 120 VAC 1-ph: 200 - 240 VAC 3-ph: 200 - 240 VAC	1-ph: 200 - 240 VAC 3-ph: 200 - 240 VAC 3-ph: 380 - 480 VAC	3-ph: 380 - 480 VAC	3-ph: 380 - 480 VAC
AC Supply frequency	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz
Output Voltage	3-ph: 0 - 240 VAC [RVLFA1../RVLFA320...] 3-ph: 0 - 480 VAC [RVLFA340...]	3-ph: 0 - 240 VAC [RVLFB1../RVLFB320...] 3-ph: 0 - 480 VAC [RVLFB340...]	3-ph: 0 - 480 VAC [RVLFC340...]	3-ph: 0 - 480 VAC [RVLFD340...]
Output Frequency	0.01 - 599 Hz	0.01 - 599 Hz	0.01 - 599 Hz	0.01 - 599 Hz
Rated output Current	2.6 A [RVLFA..040...] 4.3 A [RVLFA..075...] 7.5 A [RVLFA..150...]	7.5 A [RVLFB..150...] 10.5 A [RVLFB..220...] 2.3 A [RVLFB34..075...] 3.8 A [RVLFB34..150...] 5.2 A [RVLFB34..220...]	9.2 A [RVLFB34..370...] 13.0 A [RVLFB34..550...]	17.5 A [RVLFB34..750...] 24.0 A [RVLFB34..1100...]
Allowable momentary power loss	1.0 s	2.0 s	2.0 s	2.0 s

General specifications

Operating temperature	-10°C to +50°C	-10°C to +50°C	-10°C to +50°C	-10°C to +50°C
Storage temperature	-20°C to +60°C	-20°C to +60°C	-20°C to +60°C	-20°C to +60°C
Ingress Protection	IP20	IP20	IP20	IP20
Power Connections	Screw terminals	Screw terminals	Screw terminals	Screw terminals
Control Connections	Screw terminals	Screw terminals	Screw terminals	Screw terminals
Mounting	Panel mount Din rail (with accessory)	Panel mount Din rail (with accessory)	Panel mount	Panel mount
Integrated cooling fan	No	No	Yes	Yes
Switching Frequency	1 to 16 kHz	1 to 16 kHz	1 to 16 kHz	1 to 16 kHz
Approvals	CE - cULus	CE - cULus	CE - cULus	CE - cULus

References

100 - 120 VAC, 1-Phase	RVLFA110040A [0.4kW] RVLFA110075A [0.75kW]			
200 - 240 VAC, 1-phase	RVLFA120040FA [0.4kW] RVLFA120075FA [0.75kW]	RVLFB120150FA [1.5kW] RVLFB120220FA [2.2kW]		
200 - 240 VAC, 3-phase	RVLFA320040A [0.4kW] RVLFA320075A [0.75kW]	RVLFB320150A [1.5kW] RVLFB320220A [2.2kW]		
380 - 480 VAC, 3-phase		RVLFB340075FA [0.75kW] RVLFB340150FA [1.5kW] RVLFB340220FA [2.2kW]	RVLFC340370FA [3.7kW] RVLFC340550FA [5.5kW]	RVLFC340750FA [7.5kW] RVLFC3401100FA [11kW]

Variable frequency drives

VariFlex³ variable frequency drives - RVFF series

Types	Size A	Size B	Size C
Drives, Inverters			
Dimensions HxWxD (mm)	385 x 140 x 177	416 x 210 x 215	500 x 265 x 225
Features	V/F control, SLV, PM SLV with PWM mode, 32bit processor, overload 120% for 60sec, built-in filter (up to 55kw), simple PLC capability, 2 sets of PID functions, multi-pumps control, 6 multi-functions DI, 3 multi-functions D O, 2 Analogue inputs and 2 Analogue outputs, built-in RS485 modbus communication.		
Technical specifications			
AC supply voltage	3-ph: 380-480 VAC	3-ph: 380-480 VAC	3-ph: 380-480 VAC
AC supply frequency	50/60 Hz	50/60 Hz	50/60 Hz
Output voltage	3-ph: 380-480 VAC	3-ph: 380-480 VAC	3-ph: 380-480 VAC
Output frequency	0.1 ~ 400.0 Hz	0.1 ~ 400.0 Hz	0.1 ~ 400.0 Hz
100% RMS output current	9.2 A [RVFFA3400400F] 12.1 A [RVFFA3400550F] 17.5 A [RVFFA3400750F]	23 A [RVFFB3401100F] 31 A [RVFFB3401500F]	38 A [RVFFC3401850F] 44 A [RVFFC3402200F] 54 A [RVFFC3403000F]
General specifications			
Operating temperature	-10°C to +50°C	-10°C to +50°C	-10°C to +50°C
Storage temperature	-20°C to +70°C	-20°C to +70°C	-20°C to +70°C
Degree of protection	IP 20	IP 20	IP 20
Power connections	Screw terminals	Screw terminals	Screw terminals
Control connections	Screw terminals	Screw terminals	Screw terminals
Drive connections	Screw terminals	Screw terminals	Screw terminals
Mounting	Panel mounting	Panel mounting	Panel mounting
Integrated cooling fan	Yes	Yes	Yes
Switching frequency	2 to 16 kHz	2 to 16 kHz	2 to 16 kHz
Approvals	CE - cULus	CE - cULus	CE - cULus
References			
380 - 480 VAC, 3-phase	RVFFA3400400F [4 kW - 5 HP] RVFFA3400400F [5.5 kW - 7.5 HP] RVFFA3400750F [7.5 kW - 10 HP]	RVFFB3401100F [11 kW - 15 HP] RVFFB3401500F [15 kW - 20 HP]	RVFFC3401850F [18.5 kW - 25 HP] RVFFC3402200F [22 kW - 30 HP] RVFFC3403000F [30 kW - 40 HP]

Variable frequency drives

VariFlex ³ variable frequency drives - RVFF series				Accessories
Types	Size D	Size E	Size F	Braking unit
Drives, Inverters				
Dimensions HxWxD (mm)	679 x 284 x 252	740 x 349 x 300	1105 x 463 x 325	132 x 77 x 130.5
Features	V/F control, SLV, PM SLV with PWM mode, 32bit processor, overload 120% for 60sec, built-in filter (up to 55kw), simple PLC capability, 2 sets of PID functions, multi-pumps control, 6 multi-functions DI, 3 multi-functions D O, 2 Analogue inputs and 2 Analogue outputs, built-in RS485 modbus communication.			External braking unit for RVEF frequency drives, with 240 VAC and 480 VAC inverter voltage. Applicable motor rated capacity up to 2.2 kW
Technical specifications				
AC supply voltage	3-ph: 380-480 VAC;	3-ph: 380-480 VAC;	3-ph: 380-480 VAC;	
AC supply frequency	50/60 Hz	50/60 Hz	50/60 Hz	
Output voltage	3-ph: 380-480 VAC	3-ph: 380-480 VAC	3-ph: 380-480 VAC	
Output frequency	0.1 ~ 400.0 Hz	0.1 ~ 400.0 Hz	0.1 ~ 400.0 Hz	
100% RMS output current	73 A [RVFFD3403700F] 88 A [RVFFD3404500F] 103 A [RVFFD3405500F]	145 A [RVFFE3407500] 168 A [RVFFE3409000]	208 A [RVFFF34011000] 250 A [RVFFF34013200] 296 A [RVFFF34016000]	
General specifications				
Operating temperature	-10°C to +50°C	-10°C to +50°C	-10°C to +50°C	-10°C to +50°C
Storage temperature	-20°C to +70°C	-20°C to +70°C	-20°C to +70°C	-20°C to +70°C
Degree of protection	IP 20	IP 20	IP 20	IP 20
Power connections	Screw terminals	Screw terminals	Screw terminals	
Control connections	Screw terminals	Screw terminals	Screw terminals	
Drive connections	Screw terminals	Screw terminals	Screw terminals	Screw terminals
Mounting	Panel mounting	Panel mounting	Panel mounting	DIN-rail or panel mounting
Integrated cooling fan	Yes	Yes	Yes	
Switching frequency	2 to 16 kHz	2 to 16 kHz	2 to 16 kHz	
Approvals	CE - cULus	CE - cULus	CE - cULus	CE - cULus
Braking unit				
Rate discharge current				240 V: 7.5 A 480 V: 3 A
Max. discharge current				240 V: 15 A 480 V: 7.5 A
References				
200 - 240 VAC, 1-phase				RVFTBU230
380 - 480 VAC, 3-phase	RVFFD3403700F [37 kW - 50 HP] RVFFD3404500F [45 kW - 60 HP] RVFFD3405500F [55 kW - 75 HP]	RVFFE3407500 [75 kW - 100 HP] RVFFE3409000 [90 kW - 125 HP]	RVFFF34011000 [110 kW - 150 HP] RVFFF34013200 [132 kW - 175 HP] RVFFF34016000 [160 kW - 215 HP]	RVFTBU480

Industrial and Midi industrial relays

Industrial relays		Midi industrial relays		
Types	RCP 8 (2 Poles)	RCP 11 (3 Poles)	RMI 2-10 (2 Poles)	RMI 4-5 (4 Poles)
				
Dimensions HxWxD (mm)	56 x 35.5 x 35.5	56 x 35.5 x 35.5	36 x 21.5 x 28	36 x 21.5 x 28
No. of Contacts	2 Change-over (octal)	3 Change-over (undecal)	2 Change-over	4 Change-over
Contact rating	10 A	10 A	10 A	5 A
Features	Test button / Flag / LED	Test button / Flag / LED	Test button / Flag / LED	Test button / Flag / LED
Output specifications				
Max. load AC1	12 A / 250 VAC	12 A / 250 VAC	12 A / 250 VAC	6 A / 250 VAC
Min. load	100 mA / 12 VDC	100 mA / 125 VDC	100 mA / 5 VDC	100 mA / 5 VDC
Electrical life	> 100.000 cycles	> 100.000 cycles	> 100.000 cycles	> 100.000 cycles
Switching power	2500 VA (resistive)	2500 VA (resistive)	2500 VA (resistive)	1250 VA (resistive)
General specifications				
Voltage ranges VDC	6 - 12 - 24 - 48 - 60 - 100 - 110	6 - 12 - 24 - 48 - 60 - 100 - 110	5 - 6 - 12 - 24 - 48 - 60 - 110	5 - 6 - 12 - 24 - 48 - 60 - 110
Voltage ranges VAC	6 - 12 - 24 - 48 - 115/120 - 230	6 - 12 - 24 - 48 - 115/120 - 230	6 - 12 - 24 - 48 - 115/120 - 230	6 - 12 - 24 - 48 - 115/120 - 230
Insulation according to	EN 61810-5	EN 61810-5	EN 61810-5	EN 61810-5
Consumption	1.5 W DC-2.5 VA AC	1.5 W DC-2.5 VA AC	1 W DC-1.5 VA AC	1 W DC-1.5 VA AC
Approvals / Conformity	cURus - CSA - IMQ - RINA	cURus - CSA - IMQ - RINA	cURus - CSA - TÜV - CQC	cURus - CSA - TÜV - CQC
References				
5 VDC			RMIA/B2-105 VDC	RMIA/B4-55 VDC
6 VAC	RCP80026 VDC	RCP110036 VDC	RMIA/B2-106 VAC	RMIA/B4-56 VAC
6 VDC	RCP80026 VAC	RCP110036 VAC	RMIA/B2-106 VDC	RMIA/B4-56 VDC
12 VAC	RCP800212 VAC	RCP1100312 VAC	RMIA/B2-1012 VAC	RMIA/B4-512 VAC
12 VDC	RCP800212 VDC	RCP1100312 VDC	RMIA/B2-1012 VDC	RMIA/B4-512 VDC
24 VAC	RCP800224 VAC	RCP1100324 VAC	RMIA/B2-1024 VAC	RMIA/B4-524 VAC
24 VDC	RCP800224 VDC	RCP1100324 VDC	RMIA/B2-1024 VDC	RMIA/B4-524 VDC
48 VAC	RCP800248 VAC	RCP1100348 VAC	RMIA/B2-1048 VAC	RMIA/B4-548 VAC
48 VDC	RCP800248 VDC	RCP1100348 VDC	RMIA/B2-1048 VDC	RMIA/B4-548 VDC
60 VDC	RCP800260 VDC	RCP1100360 VDC	RMIA/B2-1060 VDC	RMIA/B4-560 VDC
100 VDC	RCP8002100 VDC	RCP11003100 VDC	RMIA/B2-10100 VDC	RMIA/B4-5100 VDC
110 VDC	RCP8002110 VDC	RCP11003110 VDC	RMIA/B2-10110 VDC	RMIA/B4-5110 VDC
115/120 VAC	RCP8002115/120 VAC	RCP11003115/120 VAC	RMIA/B2-10115 VAC	RMIA/B4-5115 VAC
230 VAC	RCP8002230 VDC	RCP11003230 VDC	RMIA/B2-10230 VAC	RMIA/B4-5230 VAC
Industrial relays sockets		Midi industrial relays sockets		
Types	ZPD 8XA ZPD 11XA	ZPD 8A ZPD 11A	ZMI 2NA ZMI 4NA	ZMI 2 / 3 / 4SA
				
General specifications				
Dimensions HxWxD (mm)	65 X 27 X 38	65 X 27 X 38	42.5 x 75 x 27	42.5 x 75 x 27
Rated volt. / Rated curr.	10 A @ 400 VAC	10 A @ 400 VAC	10 A @ 300 VAC	10/12 A @ 300 VAC
Insulation voltage	> 3 kV	> 3 kV	> 4 kV	> 4 kV
Socket material	Self-ext. PA6 + GF (V1)	Self-ext. PA6 + GF (V1)	Self-ext. PA6 + GF (V2)	Self-ext. PA6 + GF (V2)
Mounting	DIN-rail	DIN-rail	DIN-rail	DIN-rail
Degree of protection	IP 20	IP 20	IP 20	IP 20
Approvals	CE - cURus - CSA (10 A 300 VAC)	CE - cURus - CSA - IMQ	CE - cURus - CSA	CE - cURus - CSA
References				
For RCP 8 / RCP 11	ZPD 8XA / ZPD 11XA	ZPD 8A / ZPD 11A		
For RMI2-10 / RMI4-5			ZMI 2NA / ZMI 4NA	ZMI 2 / 3 / 4SA

Midi industrial relays

Midi industrial relays

Types	RPY 1	RPY 2	RPY 3	RPY 4
   				
Dimensions HxWxD (mm)	36 x 21.5 x 28	36 x 21.5 x 28	36 x 31.5 x 28	36 x 41.5 x 28
No. of Contacts	1 Change-over	2 Change-over	3 Change-over	4 Change-over
Contact rating	16 A	10 A	10 A	10 A
Terminal types	Faston or PCB	Faston or PCB	Faston or PCB	Faston or PCB
Output specifications				
Max. load AC1	16 A	10 A	10 A	10 A
Electrical life	1 x 10 ⁵	1 x 10 ⁵	1 x 10 ⁵	1 x 10 ⁵
Switching power	1 HP at 240 VAC 1/2 HP at 120 VAC	3/4 HP at 240 VAC 1/3 HP at 120 VAC	3/4 HP at 240 VAC 1/3 HP at 120 VAC	3/4 HP at 240 VAC 1/3 HP at 120 VAC
General specifications				
Voltage ranges VDC	6 - 12 - 24 - 36 - 48 - 110	6 - 12 - 24 - 36 - 48 - 110	6 - 12 - 24 - 36 - 48 - 110	6 - 12 - 24 - 36 - 48 - 110 - 220
Voltage ranges VAC	6 - 12 - 24 - 120 - 230	6 - 12 - 24 - 120 - 230	6 - 12 - 24 - 120 - 230	6 - 12 - 24 - 120 - 230
Insulation Coil / Contact	2000/1200 VAC	2000/1200 VAC	2000/1200 VAC	2000/1200 VAC
Consumption	DC=0.9 W - AC=1.2 VA	DC=0.9 W - AC=1.2 VA	DC=1.4 W - AC=2 VA	DC=1.5 W - AC=2.5 VA
Approvals / Conformity	cURus - CSA - TÜV	cURus - CSA - TÜV	cURus - CSA - TÜV	cURus - CSA - TÜV
References				
Consult your Carlo Gavazzi Partner or Distributor	Several options available: Led, diode, etc...	Several options available: Led, diode, etc...	Several options available: Led, diode, etc...	Several options available: Led, diode, etc...

Midi industrial relays sockets

Types	ZPY08A	ZPY11A	ZPY14A
  			
General specifications			
Dimensions HxWxD (mm)	27.8 x 30 x 69.8	27.8 x 40 x 69.8	27.8 x 50.5 x 69.8
Rated volt. / Rated curr.	10 A @ 300 VAC	10 A @ 300 VAC	10 A @ 300 VAC
Insulation voltage	> 4 kV	> 4 kV	> 4 kV
Socket material	PA6 - V2	PA6 - V2	PA6 - V2
Mounting	DIN Rail	DIN Rail	DIN Rail
Degree of protection	IP 00	IP 00	IP 00
Approvals	cURus - CSA	cURus - CSA	cURus - CSA
References			
Consult your Carlo Gavazzi Partner or Distributor	For Relays: RPYA 001 and RPYA 002	For Relays: RPYA 003	For Relays: RPYA 004

Slim industrial relays

Slim industrial relays

Types

RSLM100
RSLM001


Dimensions HxWxD (mm)

15 x 28 x 5

15 x 28 x 5

No. of Contacts

1 Normally open

1 Change-over

Contact rating

6 A

6 A

Output specifications

Max. load AC1

6 A / 250 VAC

6 A / 250 VAC

Min. load

170 mW / 24 VDC
210 mW / 48~60 VDC

170 mW / 24 VDC
210 mW / 48~60 VDC

Mechanical endurance

> 100,000 cycles

> 100,000 cycles

Switching power

1500 VA

1500 VA

General specifications

Voltage ranges VDC

12 - 24 - 48 - 60

12 - 24 - 48 - 60

Consumption

170 mW ~ 210 mW

170 mW ~ 210 mW

Approvals / Conformity

cURus - CSA - VDE - CQC

cURus - CSA - VDE - CQC

References

12 VDC

RSLM100012
RSLM001012

24 VDC

RSLM100024
RSLM001024

48 VDC

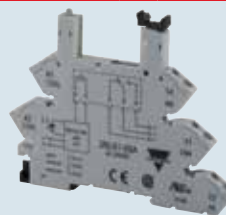
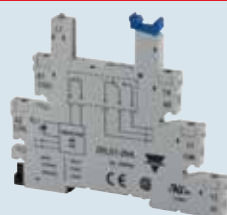
RSLM100048
RSLM001048

60 VDC

RSLM100060
RSLM001060

Slim relay sockets

Types

ZRLS1.NA
ZRLS1.GA
ZRLP


General specifications

Dimensions HxWxD (mm)

88 x 55 x 6

101 x 80 x 6

33 x 30 x 6

Rated volt. / Rated curr.

6 A @ 300 VAC

6 A @ 300 VAC

6 A @ 300 VAC

Insulation voltage

> 3 kV

> 3 kV

> 3 kV

Socket material

PA66 + GF (V0)

PA66 + GF (V0)

PA66 + GF (V0)

Mounting

DIN-rail

DIN-rail

PCB

Terminal Type

Screw cage

Spring loaded

Approvals

CE - cURus - CSA

CE - cURus - CSA

CSA - cURus

References

Input Voltage 6~24 VAC/VDC

ZRLS12NA
ZRLS12GA

Input Voltage 48~60 VAC/VDC

ZRLS13NA
ZRLS13GA

Input Voltage 110~125 VAC/VDC

ZRLS14NA
ZRLS14GA

Input Voltage 220~240 VAC/VDC

ZRLS15NA
ZRLS15GA
ZRLP

Power relays

Power relays

Types	NB (1/2 Poles)	NF (1/2 Poles)	NP (1/2 Poles)
			
Dimensions HxWxD (mm)	55 x 50.5 54.5	36 x 50.5 x 54.5	36 x 50.5 x 33.5
No. of Contacts	1 Normally open 2 Normally open	1 Normally open 2 Normally open	1 Normally open 2 Normally open
Contact rating	30 A	30 A	30 A
Terminal types	Bolt	Faston	PCB
Output specifications			
Max. load AC1	30 A (1NO) - 25 A (2NO)	30 A (1NO) - 25 A (2NO)	30 A (1NO) - 25 A (2NO)
Electrical life	1 x 10 ⁵	1 x 10 ⁵	1 x 10 ⁵
Switching power	7500 VA / 840 W	7500 VA / 840 W	7500 VA / 840 W
General specifications			
Voltage ranges VDC	6 - 12 - 24 - 48 - 100 - 110	6 - 12 - 24 - 48 - 100 - 110	6 - 12 - 24 - 48 - 100 - 110
Voltage ranges VAC	12 - 24 - 48 - 115 - 230	12 - 24 - 48 - 115 - 230	12 - 24 - 48 - 115 - 230
Insulation according to	4000 VAC	4000 VAC	4000 VAC
Consumption	DC=1.9 W - AC=2.7 VA	DC=1.9 W - AC=2.7 VA	DC=1.9 W - AC=2.7 VA
Approvals / Conformity	cURus	cURus	cURus

Power relays

Power relays

CF (2 Poles)

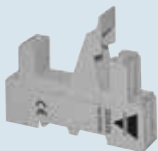
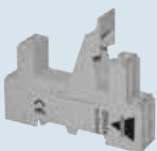


CS (2 Poles)

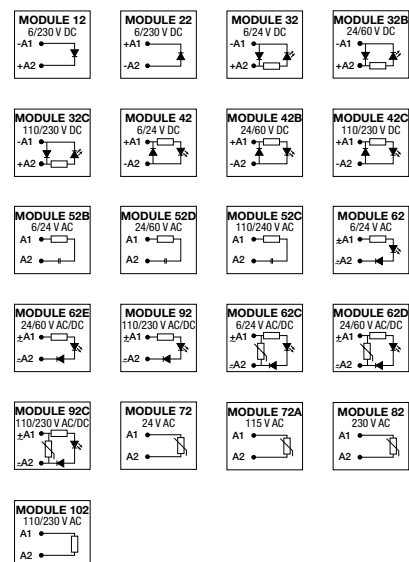


Dimensions (mm) WxHxD	26.42 x 68.58 x 34.54	26.42 x 52.32 x 34.54
No. of Contacts	2 Normally open 2 Change-over	2 Normally open 2 Change-over
Contact rating	30 A	30 A
Terminal types	Faston	PCB
Output specifications		
Max. load AC1	30 A (2NO) - 30 A (2CO)	30 A (2NO) - 30 A (2CO)
Electrical life	1 x 10 ⁵	1 x 10 ⁵
Switching power	8310 VA / 840 W	8310 VA / 840 W
General specifications		
Voltage ranges VDC	5 - 6 - 12 - 24 - 48 - 110	5 - 6 - 12 - 24 - 48 - 110
Voltage ranges VAC	24 - 120 - 208 - 240 - 277	24 - 120 - 208 - 240 - 277
Insulation according to	4000 VAC	4000 VAC
Consumption	DC=1.7 W - AC=4 VA	DC=1.7 W - AC=4 VA
Approvals / Conformity	URus	

Sockets for electromechanical relays

Types	ZD 35/2A	ZD 50/2A	ZD 35/3A	ZD 50/3A
   				
General specifications				
Rated volt. / Rated curr.	12 A @ 300 VAC	12 A @ 300 VAC	12 A @ 300 VAC	12 A @ 300 VAC
Insulation voltage	> 5 kV	> 5 kV	> 5 kV	> 5 kV
Socket material	Self-ext. PA6 + GF (V1)	Self-ext. PA6 + GF (V1)	Self-ext. PA6 + GF (V1)	Self-ext. PA6 + GF (V1)
Mounting	DIN-rail	DIN-rail	DIN-rail	DIN-rail
Degree of protection	IP 20	IP 20	IP 20	IP 20
Approvals	CE - cURus - CSA (12 A, 300 VAC)	CE - cURus - CSA (12 A, 300 VAC)	CE - cURus - CSA (12 A, 300 VAC)	CE - cURus - CSA (12 A, 300 VAC)
References				
For relay:	MZ 1P 5/10 A	MZ B 1P 5/10 A	MZ 1P 5/10 A	MZ B 1P 5/10 A
	M15 M 8 A	MZ 2P 5/10 A	M15 M 8 A	MZ 2P 5/10 A
	M25 1P 12 A	MZ 1P 16 A	M25 1P 12 A	MZ 1P 16 A
	LC 10 A	M15 M 8 A	LC 10 A	M15 M 8 A
		M25 1P 16 A		M25 1P 16 A
		M25 2P 8 A		M25 2P 8 A
		LC 5/16 A		LC 5/16 A
For detailed informations consult your Carlo Gavazzi Partner or Distributor	Hold down spring to be ordered separately: • SZD15 for M15/M25 relays • SZD20 for LC relays • SZD25 for MZ relays	Hold down spring to be ordered separately: • SZD15 for M15/M25 relays • SZD20 for LC relays • SZD25 for MZ relays	Hold down spring to be ordered separately: • SZD15 for M15/M25 relays • SZD20 for LC relays • SZD25 for MZ relays	Hold down spring to be ordered separately: • SZD15 for M15/M25 relays • SZD20 for LC relays • SZD25 for MZ relays

Types	Additional modules for ZMI and ZD sockets			
				
General specifications				
Dimensions (mm) WxHxD	23 x 12.5 x 8.5			
Terminal material	CuSn			
Degree of protection	IP 40			
Operating temperature	-40°C to + 70°C			
Ambient humidity	85RH non condensing			
Approvals / Conformity	No approvals			
References				
Consult your Carlo Gavazzi Partner or Distributor				



Switching power supplies

Single phase switching power supplies

Types	SPD 5 / 10 / 18 W				SPD 30 / 60 W			SPD 90 / 100 W		
										
Dimensions HxWxD (mm)	90 x 22.5 x 114				90 x 40.5 x 114			90 x 54 x 114		
Output specifications										
Voltage	5 VDC	12 VDC	15 VDC	24 VDC	12 VDC	24 VDC	48 VDC	12 VDC	24 VDC	48 VDC
Current SPD 5 W	1 A	420 mA	340 mA	210 mA						
Current SPD 10 W	2 A	840 mA	670 mA	420 mA						
Current SPD 18 W	3 A	1.5 A	1.2 A	750 mA						
Current SPD 30 W					2.5 A	1.25 A	625 mA			
Current SPD 60 W					5 A	2.5 A	1.25 A			
Current SPD 90 W									3.8 A	
Current SPD 100 W								8.4 A	4.2 A	2.1 A
Line regulation		±1%				±0.5%			±1%	
Load regulation		±2%				±0.5%			±1%	
Efficiency	75%	77%	77%	77%	86%	89%	89%		85%	
Input specifications										
Voltage range	Multi voltage: 90 to 265 VAC or 120 to 370 VDC				Multi voltage: 85 to 264 VAC or 90 to 375 VDC			Multi voltage: 90 to 264 VAC or 120 to 375 VDC		
Frequency range	47 to 63 Hz				47 to 63 Hz			47 to 63 Hz		
General specifications										
Ambient temperature	-40°C to +71°C				-40°C to +71°C			-35°C to +71°C		
Storage	-40°C to +85°C				-40°C to +85°C			-40°C to +85°C		
Derating (>60°C)	3 % / °C				2.5 % / °C			2.5 % / °C		
Approvals/Marks	cULus - TÜV - CE - UL Class 2 - Class I DIV2				cULus - TÜV - CE - UL Class 2 - Class I DIV2			cULus - TÜV - CE - UL Class 2 (90W) - Class I DIV2		
Installation	DIN Rail				DIN Rail			DIN Rail		
Connection	Screw terminals / Spring terminals (B)				Screw terminals / Spring terminals (B)			Screw terminals / Spring terminals (B)		
Main features										
	Adjustable output voltage. Internal noise filter. Short circuit protection. Overload protection (110-135%).				Adjustable output voltage. Internal noise filter. Short circuit protection. Overload protection (110-135%). Output "Power ready" signal VDC (only model 24 VDC).			Adjustable output voltage. Internal noise filter. Short circuit protection. Overload protection (102-108%), PFC. Overvoltage protection (102-106%). Output "Power ready" signal VDC.		
LED indicator for "power on"	Yes				Yes			Yes		
LED indicator for DC "too low"	Yes				No - SPD24 with transistor output			Yes with relay output		
References										
5 VDC										
Screw terminals	SPD05051 / SPD05101 SPD05181									
Spring terminals	SPD05051B / SPD05101B SPD05181B									
12 VDC										
Screw terminals	SPD12051 / SPD12101 SPD12181				SPD12301 / SPD12601			SPD121001		
Spring terminals	SPD12051B / SPD12101B SPD12181B				SPD12301B / SPD12601B					
24 VDC										
Screw terminals	SPD24051 / SPD24101 SPD24181				SPD24301 / SPD24601			SPD24901L / SPD241001		
Spring terminals	SPD24051B / SPD24101B SPD24181B				SPD24301B / SPD24601B					
48 VDC										
Screw terminals					SPD48301 / SPD48601			SPD481001		
Spring terminals					SPD48301B / SPD48601B					

Switching power supplies

Single phase switching power supplies

Types	SPD 120 W / 120 W(N)			SPD 240 W		SPD 300 W		SPD 480 W	
									
Dimensions HxWxD (mm)	124.5 x 64 x 123.6			124.5 x 83.5 x 123.6		124.5 x 83.5 x 123.6		124.5 x 175.5 x 123.6	
Output specifications									
Voltage	12 VDC	24 VDC	48 VDC	24 VDC	48 VDC	24 VDC	48 VDC	24 VDC	48 VDC
Current	10 A	5 A	2.5 A	10 A	5 A	12.5 A	6.25 A	20 A	10 A
Line regulation		±0.5%	±0.5%		±0.5%		±0.5%		±0.5%
Load regulation		±1%	±1%		±1%		±1%		±1%
Efficiency	84%	86%	86%	89%	90%	89%	90%	89%	90%
Input specifications									
Voltage range	Autoselect: 90 to 132 VAC, 180 to 264 VAC, 120 to 375 VDC			Autoselect: 90 to 132 VAC, 180 to 264 VAC, 120 to 375 VDC		Autoselect: 90 to 132 VAC, 180 to 264 VAC, 120 to 375 VDC		Autoselect: 90 to 132 VAC, 186 to 264 VAC, 120 to 370 VDC	
Frequency range	47 to 63 Hz			47 to 63 Hz		47 to 63 Hz		47 to 63 Hz	
PFC	0.7			0.75		0.75		0.99	
General specifications									
Ambient temperature	-35°C to +71°C			-40°C to +71°C		-30°C to +71°C		-40°C to +71°C	
Storage	-40°C to +85°C			-40°C to +85°C		-40°C to +85°C		-40°C to +85°C	
Derating (>60°C)	2.5 % / °C			2.5 % / °C		2.5 % / °C		2.5 % / °C > 56°C	
Approvals/Marks	cULus - TÜV - CE - Class I DIV2			cULus - TÜV - CE - Class I DIV2		cULus - TÜV - CE - Class I DIV2		cULus - TÜV - CE - Class I DIV2	
Installation	DIN Rail			DIN Rail		DIN Rail		DIN Rail	
Connection	Screw terminals / Spring terminals (B)			Screw terminals / Spring terminals (B)		Screw terminals / Spring terminals (B)		Screw terminals / Spring terminals (B)	
Main features									
	Adjustable output voltage. Internal noise filter. Short circuit protection. Overload protection (110-145%). Parallel connection up to 3 supplies and PFC function on (N) model only			Adjustable output voltage. Internal noise filter. Short circuit protection. Overload protection (110-145%). Parallel connection up to 3 supplies standard. PFC function integrated		Parallel function, PFC and Output ready		Adjustable output voltage. Internal noise filter. Short circuit protection. Overload protection (120-140%). Parallel connection up to 3 supplies standard. PFC function integrated	
LED indicator for “power on”	Yes			Yes		Yes, 24 V with output ready		Yes	
LED indicator for DC “too low”	Yes - with relay output (SPD24 only)			Yes - with relay output (SPD24 only)		Yes		Yes - with relay output (SPD24 only)	
References									
12 VDC									
Screw terminals	SPD121201 SPD121201N								
Detach. screw terminals	SPD121201B SPD121201BN								
24 VDC									
Screw terminals	SPD241201 SPD241201N			SPD242401		SPD243001		SPD244801	
Detach. screw terminals	SPD241201B SPD241201BN			SPD242401B		SPD243001B		SPD244801B	
48 VDC									
Screw terminals	SPD481201 SPD481201N			SPD482401		SPD483001		SPD484801	
Detach. screw terminals	SPD481201B SPD481201BN			SPD482401B		SPD483001B		SPD484801B	

Switching power supplies

Three phase switching power supplies

Types	SPD 120 W 3-ph		SPD 240 W 3-ph		SPD 480 W 3-ph		SPD 960 W 3-ph	
								
Dimensions HxWxD (mm)	124 x 74.3 x 118.8		124 x 89.0 x 118.8		124 x 150 x 118.8		126.2 x 275.8 x 118.8	
Output specifications								
Voltage	12 VDC	24 VDC	24 VDC	48 VDC	24 VDC	48 VDC	24 VDC	48 VDC
Current	10 A	5 A	10 A	5 A	20 A	10 A	40 A	20 A
Line regulation	±1%		±1%		±1%		±1%	
Load regulation	±1%		±1%		±1%		±1%	
Efficiency	87%	89%	90%	91%	90%	91%	92%	93%
Input specifications								
Voltage range	340 to 575 VAC 480 to 820 VDC		340 to 575 VAC 480 to 820 VDC		340 to 575 VAC 480 to 820 VDC		340 to 575 VAC 480 to 820 VDC	
Frequency range	47 to 63 Hz		47 to 63 Hz		47 to 63 Hz		47 to 63 Hz	
PFC	0.55		0.55		0.65		0.80	
General specifications								
Ambient temperature	-40°C to +71°C		-25°C to +71°C		-30°C to +71°C		-40°C to +71°C	
Storage	-40°C to +85°C		-25°C to +85°C		-40°C to +85°C		-40°C to +85°C	
Derating	2.5 % / °C > 61°C		2.5 % / °C > 61°C		2.5 % / °C > 61°C		3.5 % / °C > 61°C	
Approvals/Marks	cULus - TÜV - CE - Class I Div 2		cULus - TÜV - CE - Class I Div 2		cULus - TÜV - CE - Class I Div 2		cULus - TÜV - CE - Class I Div 2	
Installation	DIN Rail		DIN Rail		DIN Rail		DIN Rail	
Connection	Screw terminals		Screw terminals		Screw terminals / Detach conn.		Screw terminals	
Main features								
	Can be used as Bi or Three phase, Parallel function and PFC		Can be used as Bi or Three phase, Parallel function and PFC		Can be used as Bi or Three phase, Parallel function and PFC		Can be used as Bi or Three phase. Active parallel function and PFC	
LED indicator for “power on”	Yes, 24 V with output ready		Yes, 24 V with output ready		Yes, 24 V with output ready		Yes, 24 V with output ready	
LED indicator for DC “too low”	Yes		Yes		Yes		Yes	
References								
12 VDC								
Screw terminals	SPD121203							
24 VDC								
Screw terminals	SPD241203		SPD242403		SPD244803		SPD249603 SPD249603L (without parallel function and output ready)	
48 VDC								
Screw terminals			SPD482403		SPD484803		SPD489603	

Switching power supplies

Low profile DIN rail mounting

Types	SPM 1 7.5 W to 10 W	SPM 3 15 W to 30 W	SPM 4 35 W to 60 W	SPM 5 60 W to 100 W
				
Dimensions HxWxD (mm)	91 x 18 x 55.5	91 x 52 x 55.5	91 x 71 x 55.5	91 x 90 x 55.5
Output specifications				
Voltage	5 VDC, 12 VDC, 15 VDC, 24 VDC	5 VDC, 12 VDC, 15 VDC, 24 VDC	5 VDC, 12 VDC, 15 VDC, 24 VDC	5 VDC, 12 VDC, 15 VDC, 24 VDC, 24 VDC (S ver.)
Current	1.5 A - 0.83 A 0.67 A - 0.42 A	3.0 A - 2.1 A 2.0 A - 1.3 A	7.0 A - 4.5 A 4.0 A - 2.5 A	12 A - 6 A - 5 A 4.2 A - 3.8 A
Output Power	5 V - 7.5 W 12 V, 15 V, 24 V - 10 W	5 V - 15 W 12 V - 25 W 15 V, 24 V - 30 W	5 V - 35 W 12 V - 54 W 15 V, 24 V - 60 W	5 V - 60 W 12 V - 72 W 15 V - 75 W 24 V - 100 W or 24 V - 91 W (for class 2 compliance)
Line regulation	±1%	±1%	±1%	±1%
Load regulation	±1%	±1%	±1%	±1%
Input specifications				
Voltage range	90 to 264 VAC, 120 to 370 VDC	90 to 264 VAC, 120 to 370 VDC	90 to 264 VAC, 120 to 370 VDC	90 to 264 VAC, 120 to 370 VDC
Frequency range	47 to 63 Hz	47 to 63 Hz	47 to 63 Hz	47 to 63 Hz
General specifications				
Ambient temperature	-25°C to +71°C	-25°C to +71°C	-25°C to +71°C	-25°C to +71°C
Storage	-25°C to +85°C	-25°C to +85°C	-25°C to +85°C	-25°C to +85°C
Derating (>60°C)	2.5 % / °C	2.5 % / °C	2.5 % / °C	2.5 % / °C
Approvals/Marks	cULus - TÜV - CE - UL Class 2 - Class I DIV2	cULus - TÜV - CE - UL Class 2 - Class I DIV2	cULus - TÜV - CE - UL Class 2 - Class I DIV2	cULus - TÜV - CE - UL Class 2 (up to 91 W) - Class I DIV2
Installation	DIN Rail	DIN Rail	DIN Rail	DIN Rail
Connection	Screw terminals	Screw terminals	Screw terminals	Screw terminals
Main features				
		Adjustable output voltage	Adjustable output voltage	Adjustable output voltage
LED indicator for "power on"	Yes	Yes	Yes	Yes
LED indicator for DC "too low"	Yes	Yes	Yes	Yes
References				
5 VDC	SPM1-051	SPM3-051	SPM4-051	SPM5-051
12 VDC	SPM1-121	SPM3-121	SPM4-121	SPM5-121
15 VDC	SPM1-151	SPM3-151	SPM4-151	SPM5-151
24 VDC	SPM1-241	SPM3-241	SPM4-241	SPM5-241
24 VDC (Class 2 UL)				SPM5-241S

Switching power supplies

Enclosed switching power supplies

Types	SPPC 25 W	SPPC 35 W	SPPC 50 W	SPPC 75 W
				
Dimensions HxWxD (mm)	79 x 51 x 28.8	101.6 x 63.5 x 33	99 x 82 x 35	129 x 98 x 38
Output specifications				
Voltage	5 V, 12 V, 24 V	5 V, 12 V, 24 V	5 V, 12 V, 15 V, 24 V, 48 V	5 V, 12 V, 24 V, 48 V
Current	5 A, 2.1 A, 1.1 A	6 A, 3 A, 1.5 A	8 A, 4.2 A, 3.4 A, 2.2 A, 1.12 A	12 A, 6 A, 3.2 A, 1.62 A
Line regulation	±0.5%	±0.5%	±0.5%	±0.5%
Load regulation	±2.0%, ±1.0%, ±1.0%	±1.0%	±1.0%	±2.0%
Efficiency (typ)	115 VAC 230 VAC	76%, 80%, 84% 78%, 82%, 85%	79%, 83%, 86% 80%, 84%, 87%	79%, 84%, 87%, 88% 80%, 85%, 88%, 89%
Input specifications				
Voltage range	90 to 264 VAC 127 to 370 VDC	90 to 264 VAC 127 to 370 VDC	90 to 264 VAC 27 to 370 VDC	90 to 264 VAC 127 to 370 VDC
Frequency range	47 to 63 Hz	47 to 63 Hz	47 to 63 Hz	47 to 63 Hz
General specifications				
Ambient temperature	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C
Storage	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C;
Derating (>50°C)	2% / °C	2% / °C	1.5% / °C	1.5% / °C
Cooling	Free air convection	Free air convection	Free air convection	Free air convection
Approvals/Marks	CE - cURus	CE - cURus	CE - cURus	CE - cURus
Installation	Screw terminal	Screw terminal	Screw terminal	Screw terminal
Main features				
Mounting	Horizontal and Vertical (DIN rail mounting accessories available)	Horizontal and Vertical (DIN rail mounting accessories available)	Horizontal and Vertical (DIN rail mounting accessories available)	Horizontal and Vertical (DIN rail mounting accessories available)
References				
5 VDC	SPPC 525 1	SPPC 535 1	SPPC 550 1	SPPC 575 1
12 VDC	SPPC 1225 1	SPPC 1235 1	SPPC 1250 1	SPPC 1275 1
15 VDC			SPPC 1550 1	
24 VDC	SPPC 2425 1	SPPC 2435 1	SPPC 2450 1	SPPC 2475 1
48 VDC			SPPC 4850 1	SPPC 4875 1

Switching power supplies

Compact enclosed switching power supplies

Types	SPPC 100 W	SPPC 150 W	SPPC 150 W (PFC) Power Factor Correction	SPPC 150 W PFC Compact
				
Dimensions HxWxD (mm)	129 x 98 x 38	199 x 98 x 38	194 x 99 x 50	160 x 98 x 38
Output specifications				
Voltage	5 V, 12 V, 24 V, 48 V	5 VDC, 12 VDC, 15 VDC, 24 VDC, 48 VDC	5 VDC, 12 VDC, 15 VDC, 24 VDC, 48 VDC	5 VDC, 12 VDC, 15 VDC, 24 VDC, 48 VDC
Current	20 A, 8.5 A, 4.2 A, 2.2 A	26 A, 12.5 A, 10 A, 6.5 A, 3.3 A	30 A, 12.5 A, 10 A, 6.3 A, 3.2 A	12.5 A, 10 A, 6.3 A, 3.2 A
Line regulation	±0.5%	±0.5%	±0.5%	±0.5%
Load regulation	±2% (5, 12 V) ±1% (24, 48 V)	±1%	±1%	±2%, ±2%, ±1%, ±1%
Efficiency (typ)	84%, 87%, 88%, 88%	up to 85%	up to 87%	86%, 87%, 87%, 88%
Built-in active PFC			PFC > 0.98 @ 115 VAC; PFC > 0.95 @ 230 VAC	Active PFC, PF > 0.95
Input specifications				
Voltage range	90 to 264 VAC 127 to 370 VDC	88 to 132 VAC 176 to 264 VAC 124 to 186 VDC 248 to 370 VDC	88 to 264 VAC 124 to 370 VDC	90 to 264 VAC 120 to 370 VDC
Frequency range	47 to 63 Hz	47 to 63 Hz	47 to 63 Hz	47 - 63 VAC
General specifications				
Ambient temperature	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C	-20°C to +70°C
Storage	-40°C to +85°C	-40°C to +85°C	-30°C to +85°C	-30°C to +85°C
Output short circuit		Long-term, Auto recovery	Long-term, Auto recovery	Long-term, Auto recovery
Derating (>50°C)	See derating curve	2.5% / °C	2.5% / °C	Refer to derating diagram
Cooling	Free air convection	Free air convection	Free air convection	Free air convection
Approvals/Marks	CE - cURus	CE - cURus	CE - cURus	CE - cURus
Installation	Screw terminal	Screw terminal	Screw terminal	Screw terminal
Main features				
Mounting	Horizontal and Vertical (DIN rail mounting accessories available)	Horizontal and Vertical (DIN rail mounting accessories available)	Horizontal and Vertical (DIN rail mounting accessories available)	Horizontal and Vertical (DIN rail mounting accessories available)
References				
5 VDC	SPPC51001	SPPC-5150 1	SPPC-5150 1F	
12 VDC	SPPC121001	SPPC-12150 1	SPPC-12150 1F	SPPC-12150 1FC
15 VDC		SPPC-15150 1	SPPC-15150 1F	SPPC-15150 1FC
24 VDC	SPPC241001	SPPC-24150 1	SPPC-24150 1F	SPPC-24150 1FC
48 VDC	SPPC481001	SPPC-48150 1	SPPC-48150 1F	SPPC-48150 1FC

Switching power supplies

Compact enclosed switching power supplies

Types	SPPC 200 W	SPPC 240 W	SPPC 320 W	SPPC 480 W
				
Dimensions HxWxD (mm)	199 x 99 x 50	199 x 99 x 50	199 x 99 x 50	218 x 116.5 x 41
Output specifications				
Voltage	5 V, 12 V, 24 V, 48 V	12 V, 24 V	5 V, 12 V, 24 V, 48 V	12 V, 24 V, 36 V, 48 V
Current	40 A, 16.7 A, 8.4 A, 4.2 A	20 A, 10 A	55 A, 25 A, 13 A, 6.7 A	34 A, 22 A, 14 A, 11 A
Line regulation	±0.5%	±0.5%	±0.5%	±0.5%, ±0.5%, ±0.5%, ±0.2%
Load regulation	±1.0%	±1.0%	±1.0%	±1.0%
Efficiency (typ)	79%, 84%, 86%, 87.5%	84%, 86%	79%, 84.5%, 87%, 87.5%	88%, 89%, 90%, 90%
Built-in active PFC	(115 VAC): PF>0.98 (230 VAC): PF>0.96	(115 VAC): PF>0.98 (230 VAC): PF>0.96	(115 VAC): PF>0.98 (230 VAC): PF>0.96	(115 VAC): PF>0.98 (230 VAC): PF>0.96
Input specifications				
Voltage range	85 to 264 VAC 120 to 370 VDC	85 to 264 VAC 120 to 370 VDC	85 to 264 VAC 120 to 370 VDC	90 to 264 VAC 127 to 370 VAC
Frequency range	47 to 63 Hz	47 to 63 Hz	47 to 63 Hz	47 to 63 Hz
General specifications				
Ambient temperature	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C	-30°C to +70°C
Storage	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C
Output short circuit	Long-term, Auto recovery	Long-term, Auto recovery		
Derating (>50°C)	2% / °C	2% / °C	2% / °C	2% / °C
Cooling	Forced air (built-in DC fan controlled by load and internal temperature)	Forced air (built-in DC fan controlled by load and internal temperature)	Forced air (built-in DC fan controlled by load and internal temperature)	Forced air (built-in DC fan controlled by load and internal temperature)
Approvals/Marks	CE - cURus	CE - cURus	CE - cURus	CE - cURus
Installation	Screw terminal	Screw terminal	Screw terminal	Screw terminal
Main features				
Mounting	Horizontal and Vertical (DIN rail mounting accessories available)	Horizontal and Vertical (DIN rail mounting accessories available)	Horizontal and Vertical (DIN rail mounting accessories available)	Horizontal and Vertical (DIN rail mounting accessories available)
References				
5 VDC	SPPC 5200 1FC		SPPC 5320 1FC	
12 VDC	SPPC 12200 1FC	SPPC 12240 1FC	SPPC 12320 1FC	SPPC 12480 1FC
15 VDC				SPPC 24480 1FC
24 VDC	SPPC 24200 1FC	SPPC 24240 1FC	SPPC 24320 1FC	SPPC 36480 1FC
48 VDC	SPPC 48200 1FC		SPPC 48320 1FC	SPPC 48480 1FC

Switching power supplies

Compact enclosed switching power supplies			Bi-phase switching power supplies		
Types	SPPC 600 W	SPPC 800 W	SPD 100 W		
					
Dimensions HxWxD (mm)	218 x 116.5 x 41	226 x 116.5 x 41	90 x 54 x 114		
Output specifications					
Voltage	12 V, 24 V, 36 V, 48 V	24 V, 48 V	12 VCC	24 VCC	48 VCC
Current	(100 to 127 VAC): 34 A, 22 A, 14 A, 11 A (128 to 264 VAC): 42 A, 26.5 A, 17.5 A, 13.6 A	(100 to 127 VAC): 27 A, 14 A (128 to 264 VAC): 33 A, 16.5 A	8.4 A	4.2 A	2.1 A
Line regulation	±0.5%	±0.5%	±1.0%		
Load regulation	±1.0%	±1.0%	±1.0%		
Efficiency (typ)	88%, 89%, 90%, 90%	88%, 89%	86%	87%	89%
Built-in active PFC	(115 VAC VAC): PF>0.98 (230 VCA): PF>0.96	(115 VAC): PF>0.98 (230 VAC): PF>0.96			
Input specifications					
Voltage range	90 to 264 VAC 127 to 370 VAC	90 to 264 VAC 127 to 370 VAC	340 to 575 VAC, 480 to 820 VAC		
Frequency range	47 to 63 Hz	47 to 63 Hz	47 to 63 Hz 0.55		
General specifications					
Ambient temperature	-30°C to +70°C	-30°C to +70°C	-40°C to +71°C		
Storage	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C		
Output short circuit	Yes	Yes			
Derating (>50°C)	2% / °C	2% / °C			
Derating (>60°C)			2.5% / °C		
Cooling	Forced air (built-in DC fan controlled by load and internal temperature)	Forced air (built-in DC fan controlled by load and internal temperature)			
Approvals/Marks	CE - cURus	CE - cURus	cULus - TÜV - CE - Class I DIV2		
Installation	Screw terminal	Screw terminal	Screw terminal		
Main features					
Mounting	Horizontal and Vertical (DIN rail mounting accessories available)	Horizontal and Vertical (DIN rail mounting accessories available)	DIN Rail		
LED indicator for “power on”			Yes - with relay output (SPD24 only)		
LED indicator for DC “too low”			Yes		
Features			Parallel function, PFC and Output ready		
References					
12 VDC	SPPC 12600 1FC		SPD 121002		
15 VDC	SPPC 24600 1FC	SPPC 24800 1FC			
24 VDC	SPPC 36600 1FC		SPD 241002		
48 VDC	SPPC 48600 1FC	SPPC 48800 1FC	SPD 481002		

Switching power supplies

Compact DIN Rail power supplies

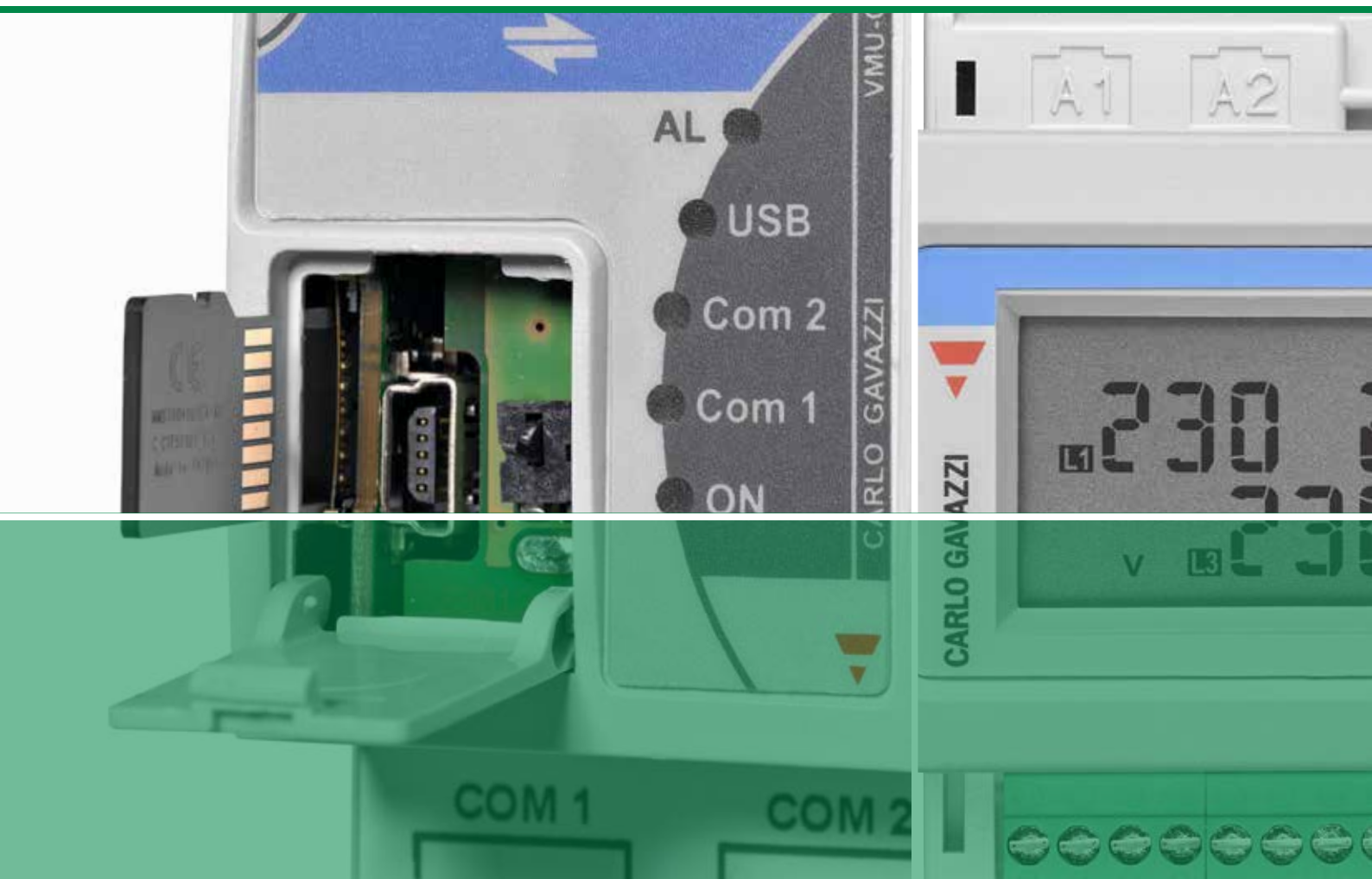
Types	SPDM 30W	SPDM 50W	SPDM 75W	SPDM 120W
				
Dimensions HxWxD (mm)	90 x 22.4 x 100	90 x 30 x 100	90 x 40.5 x 100	124 x 45 x 119
Output specifications				
Voltage	12 V, 24 V	12 V, 24 V	12 V, 24 V	24 V
Current	2 A (12 V) 1.25 A (24 V)	4 A (12 V) 2.1 A (24 V)	5.5 A (12 V) 3 A (24 V)	5 A
Line regulation	±1.0%	±1.0%	±1.0%	±0.5%
Load regulation	±1.0%	±1.0%	±1.0%	±1.0%
Efficiency (typ)	85% to 89%	85% to 89%	85% to 89%	88%
Input specifications				
Voltage range	85 to 264 VAC 120 to 375 VDC	85 to 264 VAC 120 to 375 VDC	85 to 264 VAC 120 to 375 VDC	90 to 264 VAC 127 to 375 VDC
Frequency range	47 to 63 Hz	47 to 63 Hz	47 to 63 Hz	47 to 63 Hz
General specifications				
Ambient temperature	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C
Storage	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C
Output short circuit	Yes	Yes	Yes	Yes
Derating (>50°C)	Refer to datasheet	Refer to datasheet	Refer to datasheet	Refer to datasheet
Cooling	Natural air convection	Natural air convection	Natural air convection	Natural air convection
Approvals/Marks	CE - cURus - UL Class 2	CE - cURus - UL Class 2	CE - cURus - UL Class 2	CE - UR
Installation	DIN Rail	DIN Rail	DIN Rail	DIN Rail
Connection	Screw or Spring terminals	Screw or Spring terminals	Screw or Spring terminals	Screw terminals
Main features				
LED indicator for "DC OK"	Yes	Yes	Yes	Yes
References				
12 VDC	SPDM12301	SPDM12601	SPDM12751	
24 VDC	SPDM24301	SPDM24601	SPDM24751	SPDM241201

Switching power supplies, redundancy modules

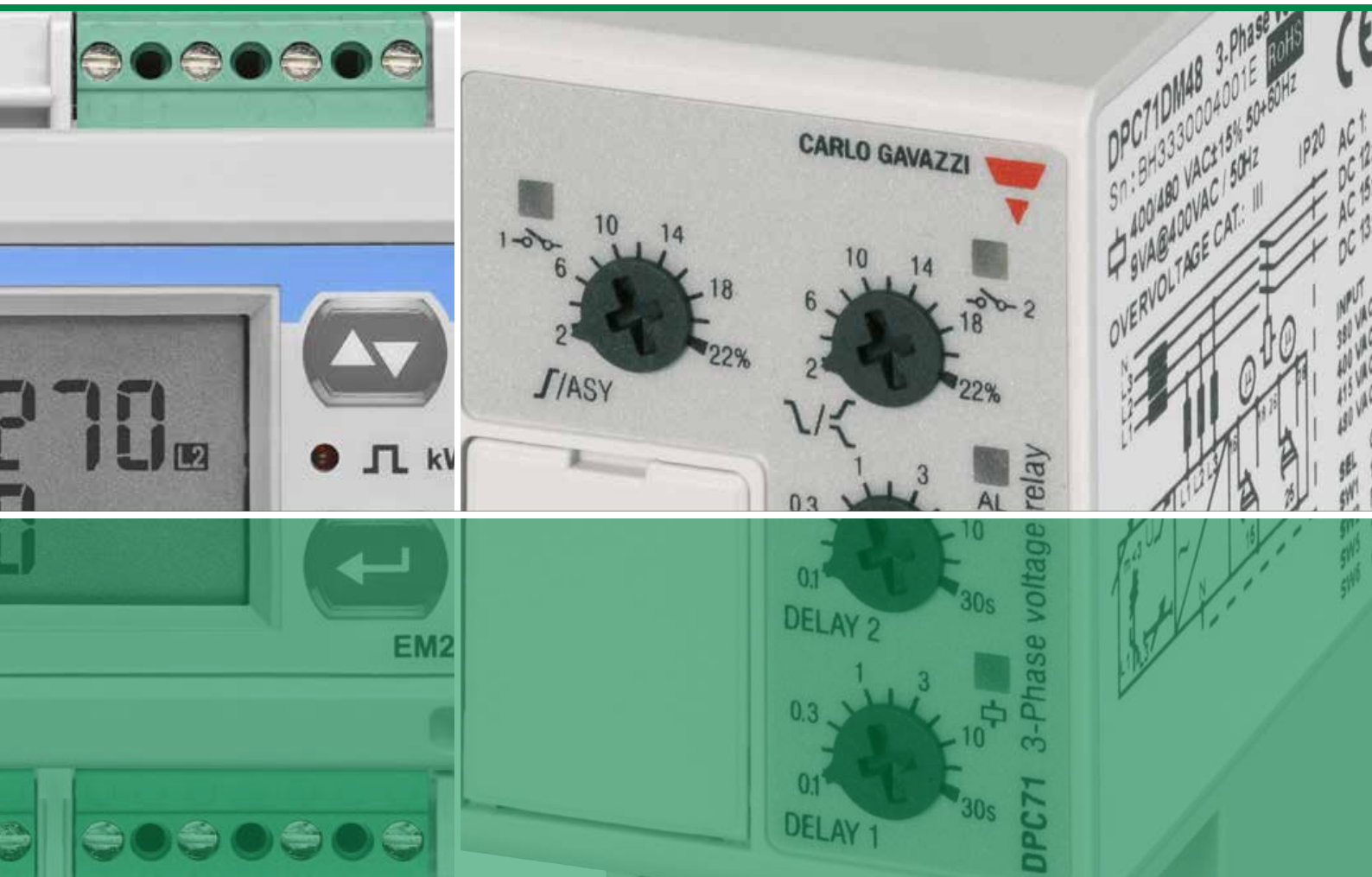
High Compactness DIN Rail power supplies		Redundancy modules		
Types	SPDC 120 W	SPDC 240 W	SPD Redundancy Module	SPM Redundancy Module
				
Dimensions HxWxD (mm)	124 x 32 x 119	124 x 45 x 119	90 x 54 x 114	91 x 35 x 56
Output specifications				
Voltage	12 V, 24 V	24 V	24 VDC	24 VDC
Current	10 A, 5 A	10 A	20 A	10 A
Line regulation	±0.5%	±0.5%		
Load regulation	±1.0%	±1.0%		
Efficiency (typ)	from 89.5% to 91%	88%		
Built-in active PFC	>0.95	>0.95		
Input specifications				
Rated input voltage	110 VAC - 240 VAC	110 VAC - 240 VAC		
Voltage range	90 to 264 VAC 127 to 370 VDC	90 to 264 VAC 127 to 370 VDC	21 to 28 VDC	21 to 48 VDC
Frequency range	47 to 63 Hz	47 to 63 Hz		
General specifications				
Ambient temperature	-25°C to 70°C	-25°C to 70°C	-40°C to +71°C	
Storage	-40°C to 85°C	-40°C to 85°C	-40°C to +85°C	
Output short circuit	Yes	Yes		
Derating (>50°C)	Refer to datasheet diagram	Refer to datasheet diagram		
Cooling	Free air convection	Free air convection		
Approvals/Marks	CE - cULus	CE - cULus	cULus - TÜV - CE	CE
Installation	DIN Rail	DIN Rail	DIN Rail	DIN Rail
Connection	Screw terminals	Screw terminal	Screw terminals	Screw terminals
Main features				
DC OK Out	SPST relay	SPST relay		
LED indicator for "power on"			Yes - with relay output (SPD24 only)	
Features			2 Relay outputs for remote monitoring	
References				
12 VDC	SPDC121201			
24 VDC	SPDC241201	SPDC242401	SPD24RM20	SPM2RM2410

Switching power supplies, backup systems

	UPS controller	Switching power supply and UPS	Low profile DIN battery charger	Battery Racks for UPS and chargers
Types	SPUC	SPUBC	SPM5BC	SPUBAT 24V
				
Dimensions HxWxD (mm)	90 x 54 x 114	115 x 65 x 135	91 x 90 x 57	175 x 62 x 120 200 x 82 x 160 210 x 145 x 130 210 x 210 x 210
Output specifications				
Voltage	12 / 24 VDC	24 VDC	12 V / 24 V	24 VDC
Charging voltage	12 V Model: Min. 9.1 VDC ~ 13.75 VDC Max. 24 V Model: Min. 18.7 VDC ~ 28 VDC Max.	27.5 VDC (Std.), 28.8 VDC (Boost)	13.6 VDC / 27.2 VDC	
Power supply Current	30 A	5 A + 5 A with battery charged + 5 A for 4 s	30 W / 60 W	
Charging current max	2.5 A	5 A	1.25 A - 2.5 A 30 W / 2.5 A - 5 A 60 W	120 mA, 320 mA, 720 mA, 1.2 A
Battery Capacity				1.2 / 3.2 / 7.2 / 12 Ah
Battery Type				AGM VRLA
Input specifications				
Rated Voltage input	12 / 24 VDC	115 VAC, 230 VAC, 277 VAC	110 VAC / 240 VAC	24 V
Voltage range	12 V Model: 11 VDC to 14 VDC 24 V Model: 22.5 VDC to 28 VDC	90 to 305 VAC	90 to 264 VAC 120 to 375 VDC	27.5 @ 20°C 26.8 @ 30°C 26.1 @ 40°C VDC End of charge voltage (trickle)
Frequency range		47 to 63 Hz	47 to 63 Hz	
Max Charging Current				0.36 / 0.9 / 2.16 A
General specifications				
Ambient temperature	-40°C to +71°C	-25°C to +70°C	-40°C to +51°C	0°C to +40°C
Storage	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C	0°C to +40°C
Derating (+51°C to +70°C)	2.5% / °C	Refer to datasheet diagram	Refer to datasheet diagram	
Cooling	Free air convection	Free air convection	Free air convection	Free air convection
Approvals/Marks	CE - cURus - TÜV	CE - cURus	CE - TÜV	CE
Installation	Screw terminal	Screw terminal	Screw terminal	Screw terminal
Main features				
Mounting	DIN rail mounting	DIN rail mounting	Horizontal and Vertical (DIN rail mounting accessories available)	Wall / DIN rail mounting
Battery diagnosys	No	Yes	No	
DC OK Out	Yes	Yes	No	
Battery OK Out	Yes	Yes	No	
Mains / Backup Out	Yes	Yes	Yes	
References				
12 V 30 A max	SPUC12360			
24 V 30 A max	SPUC24720			
PS + UPS 24V 120W		SPUBC24120		
12V 30W			SPM5BC 1230	
24V 30W			SPM5BC 2430	
12V 60W			SPM5BC 1260	
24V 60W			SPM5BC 2460	
24 V 1.2 Ah Battery				SPUBAT241A2
24 V 3.2 Ah Battery				SPUBAT243A2
24 V 7.2 Ah Battery				SPUBAT247A2
24 V 12 Ah Battery				SPUBAT2412A



Controls



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Digital panel meters

Ammeters, voltmeters and frequency meters

Types	DI3 DIN	DI3 72	LDI 3
			
Dimensions HxWxD (mm)	89 x 52.5 x 58.5	72 x 72 x 75.5	48 x 96 x 83
Function	3-digit meter. 1-phase AC, DC. Voltmeter, ammeter frequency meter.	Microprocessor based indicator. AC / DC Ammeter, Voltmeter. Freq. meter 3-digit display red LED. Height: 14.2 mm.	Microprocessor based indicator. AC / DC Ammeter, Voltmeter. Freq. meter 3-digit display.
Input specifications			
Range code	1 A / 100 VAC [AV1] 5 A / 500 VAC [AV5] 1 A / 60 mV / 100 V / 500 VDC [AV6] 1 Hz to 1000 Hz [F1K]	[AV1]: 1 AAC / 100 VAC [AV5]: 5 AAC / 500 VAC [AV6]: 1 ADC / 60 mV / 100 V / 500 VDC	[AV1]: 1 AAC / 100 VAC [AV5]: 5 AAC / 500 VAC [AV6]: 1 ADC / 60 mV / 100 V / 500 VDC [F1K]: 1 to 1000 Hz
Accuracy	0.5% FS (0.1% FS frequency meter)	±0.5% FS	±0.5% FS (±0.3% FS frequency meter)
Indication	Max. 999 [AV1 / AV5]	999 [AV1 / AV5], 000 [AV1 / AV5]"	999
	Min. 000 [AV1 / AV5] -99 [AV6]	000 [AV1 / AV5] -99 [AV6]	000 [AV1 / AV5] -99 [AV6]
Range selection / decimal point pos.	Selectable by DIP-switch	Selectable by DIP-switch	Selectable by DIP-switch
Display refresh time	1 time/s	1 time/s	1 time/s
General specifications			
Power supply	24 VAC [A] 48 VAC [B] 115 VAC [C] 230 VAC [D]	24 VAC [A], 48 VAC [B], 115 VAC [C], 230 VAC [D]	24 VAC [A], 48 VAC [B], 115 VAC [C], 230 VAC [D]
Option		IP65[EX]	IP65[IX], tropicalization [XT]
Safety Standards	EN 61010-1, IEC 61010-1, VDE0411	EN 61010-1, IEC 61010-1, VDE0411	EN 61010-1, IEC 61010-1, VDE0411
Approvals/Marks	CE - CSA	CE - CSA	CE - c CSA us
References			
For ordering key details, please refer to www.productselection.net			

Digital panel meters

Ammeters and voltmeters			Thermometer and ohmmeter
Types	LDI 35 AV0	LDI 35 AV2	LDI 35 CF
			
Dimensions HxWxD (mm)	48 x 96 x 83	48 x 96 x 83	48 x 96 x 83
Function	Microprocessor based indicator/controller, AC / DC ammeter, voltmeter, 3½-digit or 3-digit + dummy zero display	Microprocessor based indicator/controller, AC / DC ammeter, voltmeter, 3½-digit or 3-digit + dummy zero display	Microprocessor based indicator/controller, Temperature resistance Measur. in °C or °F, 3½-digit or 3-digit + dummy zero display
Input specifications			
Range code	Current: 2 mA DC, 20 mA DC Voltage: 200 mV DC, 20 VDC, 200 VDC [AV0]	Current: 2 AAC/DC, 5 AAC/DC Voltage: 200 VAC/DC, 500 VAC/DC [AV2]	Pt100, Ni100 [CFX]; Pt1000 [CFP]; TC-J-LK-S-T [CFX/CFP]; 200.0Ω [CFX]; 2000Ω [CFP]
Accuracy	±0.3% FS	DC: ±0.3% FS, AC: ±0.5% FS	TC, PT100/1000, resistance ±0.3% FS Ni 100 ±0.5% FS
Indication	Max. 3½-dgt: 1999, 3+0-dgt: 9990	3½-dgt: 1999, 3+0-dgt: 9990	Depending on range and type of the temperature probe
	Min. 3½-dgt: -1999, 3+0-dgt: -1990	3½-dgt: -1999 (DC), 0 (AC), 3+0-dgt: -1990 (DC), 0 (AC)	
Resistance			0 to 200 Ω (2000 Ω)
Range election / decimal point pos.	Programmable	Programmable	Programmable
Display refresh time	4 times/s	4 times/s	4 times/s
Functions			
	Password protection. Scaling factor. Diagnostics. Digital filter programm. Max. data hold.	Password protection. Scaling factor. Diagnostics. Digital filter programm. Max. data hold.	Password protection. Scaling factor. Diagnostics. Digital filter programm. Max. data hold.
Output specifications			
Setpoints	1 optional alarm [1] 5 A / 250 VAC / DC Excit. output 40 mA / 15 VDC [AX]	1 optional alarm [1] 5 A / 250 VAC / DC Excit. output 40 mA / 15 VDC [AX]	1 optional alarm [1] 5 A / 250 VAC / DC Excit. output 40 mA / 15 VDC [AX]
General specifications			
Power supply	120 [E], 230 [D], 240 [F], 24 [A], 48 [B], 115 [C] VAC, 9 - 32 [3] VDC, 40 - 150 [6] VDC	120 [E], 230 [D], 240 [F], 24 [A], 48 [B], 115 [C] VAC, 9 - 32 [3] VDC, 40-150 [6] VDC	120 [E], 230 [D], 240 [F], 24 [A], 48 [B], 115 [C] VAC, 9 - 32 [3] VDC, 40-150 [6] VDC
Option	IP65[IX], excit. out [AX], tropicalization [XT]	IP65[IX], excit. out [AX], tropicalization [XT]	IP65[IX], excit. out [AX], tropicalization [XT]
Safety Standards	EN 61010-1, IEC 61010-1, VDE0411	EN 61010-1, IEC 61010-1, VDE0411	EN 61010-1, IEC 61010-1, VDE0411
Approvals/Marks	CE - c CSA us	CE - c CSA us	CE - c CSA us
References			
For ordering key details, please refer to www.productselection.net			

Digital panel meters

Ammeters and voltmeters

Types	LDM 30	LDM 35 H	LDM 40
			
Dimensions HxWxD (mm)	48 x 96 x 83	48 x 96 x 83	48 x 96 x 83
Function	3-digit + dummy 0 μ P-based indicator, red LED display	3 1/2-digit μ P-based indicator and controller, 3 1/2-DGT or 3-DGT + dummy 0 red LED display	4-digit μ P-based indicator and controller
Input specifications			
Range code	1A / 100 VAC [AV1]; 5A / 500 VAC [AV5]	(0.2-2-20 mA, 0.2-2-20 V) [LSE]; (0.2- 2-5 A, 20-200-500 V) [HSX]; DC and AC TRMS	(0.2-2-20 mA, 0.2-2-20 V) [LSE]; (0.2- 2-5 A, 20-200-500 V) [HSX]; DC and AC TRMS
Accuracy	$\pm 0.5\%FS$, $\pm 1DGT$	DC: $\pm(0.3\%RDG + 3DGT)$ AC: $\pm(0.5\%RDG + 3DGT)$	DC: $\pm(0.1\%RDG + 2DGT)$ AC: $\pm(0.3\%RDG + 2DGT)$
Indication	Max.	9990	9999
	Min.	000	0 (AC) -9999 (DC) 4-digit LED red
Range selection / decimal point pos.	Selectable by dipswitch	Programmable	Programmable
Display refresh time	2 times/s	5 times/s	5 times/s
Functions			
		Signal / display scaling. Digital filter. Peak and valley.	Signal / display scaling. Digital filter. Peak and valley.
Output specifications			
		Up to 2 Alarm relay, [1-2]	Up to 2 Alarm relay, [1-2], Analogue 0 to 20 mA, 0 to 10 V [AV], RS485
General specifications			
Power supply	24 / 48 VAC [B], 115 / 230 VAC [D]	90 to 260 VAC / DC [H], 18 to 60 VAC / DC [L]	90 to 260 VAC / DC [H], 18 to 60 VAC / DC [L]
Option	Tropicalization [XT], IP 65 [IX]	Tropicalization [TX]	Tropicalization [T]
Safety Standards	EN61010-1 IEC61010-1	EN61010-1 IEC61010-1	EN61010-1 IEC61010-1
Approvals/Marks	CE - c UR us - c CSA us	CE - c UR us - c CSA us	CE - c UR us - c CSA us
References			
For ordering key details, please refer to www.productselection.net			

Digital panel meters

Modular meter and conditioner

Types	UDM 35	UDM40/USC	UDM 60
			
Dimensions HxWxD (mm)	48 x 96 x 105	44 x 113 x 107 (USC) 48 x 96 x 105 (UDM40)	48 x 96 x 105
Function	MODULAR Microprocessor-based indicator / controller AC/DC Ammeter / Voltmeter / resistance / temperature measurement	MODULAR Microprocessor-based indicator / controller AC/DC Ammeter / Voltmeter / resistance / temperature measurement	MODULAR 6-DGT μ P-based controller
Input specifications			
Range code	0.2-2-20 mA DC/AC 0.2-2-20 VDC/AC [LSX] + AUX 13 VDC [LSE] or 25 VDC [LSF]; 0.2-2-5 A DC/AC; 20-200-500 V DC/AC [HSX]; TC: J-K-S-T-E, Pt100-250-500- 1000 [TRX]; 0.02-0.2-2-20 k Ω [TRX] 0.001 Hz to 50 Hz for DC signal [TF1] 0.001 Hz to 50 Hz for AC signal [TF2]	0.2-2-20 mA DC/AC 0.2-2-20 VDC/AC [LSX] + AUX 13 VDC [LSE] or 25 VDC [LSF]; 0.2-2-5 A DC/AC; 20-200-500 VDC/AC [HSX]; TC: J-K-S-T-E, Pt100-250-500- 1000 [TRX]; 0.02-0.2-2-20 k Ω [TRX] 0.001 Hz to 50 Hz for DC signal [TF1] 0.001 Hz to 50 Hz for AC signal [TF2]	Speed, frequency, rate, period, totalizer 0.001 Hz to 50 Hz for DC signal [TF1] 0.001 Hz to 50 Hz for AC signal [TF2]
Accuracy	0.1% RDG	0.1% RDG	$\pm(0.001\%RDG + 3DGT)$
Indication	Max. 1999 Min. 0 (AC) -1999 (DC), 3 1/2-DGT LED red	9999 0 (AC) -9999 (DC), 4-DGT LED. Colours: red, green, orange	9 999 999 0 6-DGT, LCD backlighted display
Range election / decimal	Programmable	Programmable	Programmable
Display refresh time	5 times/s	5 times/s	
Functions			
	Password protection. Scaling factor. Min Max data storage. Programmable digital filter Analog signal re-transmission Range selection. Programmable via PC.	Password protection. Scaling factor. Min Max data storage. 16 linearization points. Programmable digital filter. Analog signal re-transmission Range selection. Programmable via PC.	Signal/display scaling. Analogue output scaling. Digital filter. Peak and valley. Linearization. Combination of the inputs according to predefined functions. Pulse metering and totalizing.
Output specifications			
Setpoints	Analogue 0 to 20 mA, 0 to 10 V [AV] Serial RS485 [SX], Serial RS232 [SY], Single relay output [R1], Dual relay output [R2], Dual relay + dual open coll. output [R4], Four relay output [R5]	Analogue 0 to 20 mA, 0 to 10 V [AV] Serial RS485 [SX], Serial RS232 [SY], Single relay output [R1], Dual relay output [R2], Dual relay + dual open coll. output [R4], Four relay output [R5]	Analogue 0 to 20 mA, 0 to 10 V [AV] Serial RS485 [SX], Serial RS232 [SY], Single relay output [R1], Dual relay output [R2], Dual relay + dual open coll. output [R4], Four relay output [R5]
General specifications			
Power supply	90 to 260 AC/DC [H], 18 to 60 VAC/DC [L] 10 to 28 VDC [3]	90 to 260 AC/DC [H], 18 to 60 VAC/DC [L] 10 to 28 VDC [3]	90 to 260 AC/DC [H], 18 to 60 VAC/DC [L] 10 to 28 VDC [3]
Option	Tropicalization [TX]	Tropicalization [TX]	Tropicalization [TX]
Safety Standards	EN 61010-1, IEC 61010-1	EN 61010-1, IEC 61010-1	EN 61010-1, IEC 61010-1
Approvals/Marks	CE - c UR us - c CSA us	CE - c UR us - c CSA us	CE - c UR us - c CSA us
References			

For ordering key details, please refer to www.productselection.net

Energy analyzers

	Energy meters/ analyzers	Energy meters	Energy analyzers	
Types	EM10 DIN/ EM11 DIN	EM110	EM111	EM112
				
Dimensions HxWxD (mm)	90 x 18 x 67	90 x 18 x 63	90 x 18 x 63	90 x 36 x 63
Description	1-phase energy meter analyzer 1-DIN module	1-phase kWh meter 1-DIN module	1-phase energy analyzer with Touch Tech technology 1-DIN module	1-phase energy analyzer with Touch Tech technology 2-DIN modules
Function	kWh TRMS method [EM10] V, A, Hz, W, W _{dmd} , var, PF, kWh, kvarh TRMS method [EM11]	kWh	VLN, A, Hz, $\pm W$, W _{dmd} , W _{dmd} max, $\pm var$, PF, $\pm kWh$, $\pm kvarh$, kWh+ by tariff (2) TRMS method	VLN, A, Hz, $\pm W$, W _{dmd} , W _{dmd} max, $\pm var$, PF, $\pm kWh$, $\pm kvarh$, kWh+ by tariff (2) TRMS method
Input specifications				
Range code	120 VAC [AV7] 230 VAC [AV8] Ib: 5 A, I _{max} : 32 AAC	120 VAC [AV7] 230 VAC [AV8] Ib: 5 A, I _{max} : 45 AAC; 1-phase	120 VAC [AV7] 230 VAC [AV8] Ib: 5 A, I _{max} : 45 AAC; 1-phase	120 VAC [AV1] 230 VAC [AV0] Ib: 5 A, I _{max} : 100 AAC; 1-phase
Accuracy	$\pm 0.5\%$ RDG (V, A) [EM11]	n.a.	$\pm 0.5\%$ RDG (V, A)	$\pm 0.5\%$ RDG (V, A)
Active energy	Class 1 (EN62053-21) Class B (EN50470-3)	Class 1 (EN62053-21) Class B (EN50470-3)	Class 1 (EN62053-21) Class B (EN50470-3)	Class 1 (EN62053-21) Class B (EN50470-3)
Reactive energy	Class 2 (EN62053-23) [EM11]	n.a.	Class 2 (EN62053-23)	Class 2 (EN62053-23)
Display	LCD 4 DGT (inst. variables) 4+2, 5+1, 6 DGT (energies)	Electromechanical 6+1 DGT (energy)	Backlit LCD with touch keypad 4 DGT (inst. variables) 5+2, 6+1, 7 DGT (energies)	Backlit LCD with touch keypad and supercapacitor backup (up to 48h) up to 2 x 4 DGT (inst. variables) 6+2, 7+1, 8 DGT (energies)
Output specifications				
Pulse output	1-open collector	1-open collector [O1]	1-open collector [O1]	1-open collector [O1]
Alarm output	1-relay [EM11]			
Communication			Modbus RTU [S1] M-bus [M1]	Modbus RTU [S1] M-bus [M1]
Inputs			1 (dual tariff management)	1 (dual tariff management)
General specifications				
Power supply	Self power supply [X]	Self power supply [X]	Self power supply [X]	Self power supply [X]
Approvals/Marks	CE - cULus - MID [AV8]	CE - MID - cULus [AV7 only]	CE - MID - cULus [AV7 only]	CE - MID - cULus [AV1 only]
References				
For ordering key details, please refer to www.productselection.net				

Energy analyzers

Energy analyzers

Types	EM330	EM340	EM24 DIN	EM26 96
				
Dimensions HxWxD (mm)	90 x 54 x 63	90 x 54 x 63	90 x 72 x 67	96 x 96 x 61
Description	3-phase energy analyzer with Touch Tech technology and wrong connection detection 3-DIN modules	3-phase energy analyzer with Touch Tech technology and wrong connection detection 3-DIN modules	3-phase energy analyzer 4 DIN modules	3-phase power analyzer 96 x 96 panel mounting
Function	System: $\pm kWh$, $\pm kvarh$, kWh by tariff (2), V_{LN} , V_{LL} , PF, Hz, $\pm W$, W_{dmd} , $W_{dmd\ max}$, $\pm var$, VA, h Single-phase: kWh , V_{LN} , V_{LL} , A, PF, W, var, VA TRMS method	System: $\pm kWh$, $\pm kvarh$, kWh by tariff (2), V_{LN} , V_{LL} , PF, Hz, $\pm W$, W_{dmd} , $W_{dmd\ max}$, $\pm var$, VA Single-phase: kWh , V_{LN} , V_{LL} , A, PF, W, var, VA TRMS method	System: $\pm kWh$, $\pm kvarh$, V_{LN} , var, VA, W_{dmd} , W, VA_{dmd} , Hz, hour counter, gas and water Max: $Admd$, W_{dmd} , VA_{dmd} Single-phase: V_{LL} , V_{LN} , A, W, var, VA, PF, kWh , $kvarh$ TRMS method	System: $\pm kWh$, $\pm kvarh$, V_{LN} , var, VA, W, W_{dmd} , VA_{dmd} , VA, PF, Hz, THD, hour counter, gas and water Max: $Admd$, W_{dmd} , VA_{dmd} Single phase: V_{LL} , V_{LN} , A, W, var, VA, PF, $Admd$, kWh , $kvarh$ TRMS method
Input specifications				
Range code	3-phase 400-480 V_{LL} AC [AV5] 3-phase 208-240 V_{LL} AC [AV6] Ib: 5 A, I _{max} : 6 AAC; 3-phase	3-phase 208-400 V_{LL} ac [AV2] Ib: 5 A, I _{max} : 65 AAC; 3-phase	120 / 208 V_{LL} [AV6]; 400 V_{LL} [AV5] In: 1 / 5 A, I _{max} : 10 AAC [AV5 and AV6]; 208/400 V_{LL} [AV2] Ib: 10A, I _{max} : 65AAC [AV2]	120 / 208 V_{LL} AC [AV6], 400 / 660 V_{LL} AC [AV5], In: 1 / 5A, I _{max} : 10 Aca
Accuracy	$\pm 0.5\%$ RDG (V, A)	$\pm 0.5\%$ RDG (V, A)	$\pm 0.5\%$ RDG (V, A)	$\pm 0.5\%$ RDG (V, A)
Active energy	Class 1 (EN62053-21) Class B (EN50470-3)	Class 1 (EN62053-21) Class B (EN50470-3)	Class 1 (EN62053-21) Class B (EN50470-3)	Class 1 (EN62053-21) Class B (EN50470-3)
Reactive energy	Class 2 (EN62053-23)	Class 2 (EN62053-23)	Class 2 (EN62053-23)	Classe 2 (EN62053-23)
Display	Backlit LCD with touch keypad 3x 4 DGT (inst. variables) 3x 6+2, 7+1, 8 DGT (energies)	Backlit LCD with touch keypad 3x 4 DGT (inst. variables) 3x 6+2, 7+1, 8 DGT (energies)	LCD 3x 4 DGT (inst. variables) 6+2, 7+1, 8 DGT (energies)	LCD backlight 3x 4 DGT (inst. variables) 6+2, 7+1, 8 DGT (energies)
Output specifications				
Pulse output	1-open collector [O1]	1-open collector [O1]	2-open collector [O2]; Relay [R2]	3-open collector [O3]; Relay [R2]
Alarm output			2-open collector [O2]; Relay [R2]	2-relay [R2]; Open collector [O3]
Communication	Modbus RTU [S1] M-bus [M1]	Modbus RTU [S1] M-bus [M1]	Modbus RTU [IS] M-BUS [Mx] Dupline [DP]	RS485 (2-wire) [S1] M-BUS by means of VMU-B
Inputs	1 (dual tariff management)	1 (dual tariff management)	3 digital input [IS]	3 digital inputs [I3]
General specifications				
Power supply	90 to 260 VAC/DC [H]	Self power supply [X]	Self power supply [X] [AV2]. Auxiliary power supply: 18 to 60 VAC/DC [L], 115 / 230 VAC [D], according to the model [AV5, AV6]	90 to 260 VAC/DC [H]
Approvals/Marks	CE	CE - MID	CE - cULus [AV5 and AV6] - MID	CE - cULus - MID
References				
For ordering key details, please refer to www.productselection.net				

Energy analyzers

Energy transducers			Compact transducers	
Types	ET112	ET340	CPT DIN	CPT DIN Advanced
				
Dimensions HxWxD (mm)	90 x 36 x 63	90 x 54 x 63	83.5 x 45 x 98.5	83.5 x 45 x 98.5
Description	1-phase energy transducer 2-DIN modules	3-phase energy transducer with wrong connection detection 3-DIN modules	3-phase compact power transducer	3-phase compact power transducer
Function	V _{LN} , A, Hz, ±W, W _{dmd} , W _{dmd} max, ±var, PF, ± kWh, ±kvarh, kWh+ by tariff (2) TRMS method	System: ±kWh, ±kvarh, kWh+ by tariff (2), V _{LN} , V _{LL} , PF, Hz, ±W, W _{dmd} , W _{dmd} max, ±var, VA Single-phase: kWh, V _{LN} , V _{LL} , A, PF, W, var, VA, THD TRMS method	4-digit data format instantaneous variable, 8+1-digit format energy variables, 5+2-digit data format hours TRMS method System: kWh, kvarh, V _{LL} , A _n , PF, W, var, VA, W _{dmd} , VA _{dmd} , Hz, hour meter Max: W _{dmd} Single-phase: V _{LL} , V _{LN} , A, A _{dmd} , PF, W, var, VA	4-digit data format instantaneous variable, 8+1-digit format energies, 5+2-digit format hours TRMS method System: kWh, kvarh, V _{LL} , V _{LN} , A _n , PF, W, var, VA, W _{dmd} , VA _{dmd} , Hz, hour meter Max: W _{dmd} , VA _{dmd} Single-phase: V _{LL} , V _{LN} , A, A _{dmd} , PF, W, var, VA, THD, (A, V) Max: V _{LN} , A, A _{dmd} , W Min: V _{LN} , A, PF
Input specifications				
Range code	120 VAC [AV1] 230 VAC [AV0] Ib: 5 A, I _{max} : 100 AAC; 1-phase	3-phase 208-400 V _{LL} AC [AV2] Ib: 5 A, I _{max} : 65 AAC; 3-phase	120 / 208 VAC [AV6], 400 / 690 VAC [AV5], 1 AAC and 5 AAC	120 / 208 VAC [AV6], 400 / 690 VAC [AV5], 1 AAC and 5 AAC
Accuracy	±0.5% RDG (V, A)	±0.5% RDG (V, A)	±0.5% RDG (A,V)	±0.5% RDG (A,V)
Active energy	Class 1 (EN62053-21)	Class 1 (EN62053-21)	kWh: Class 1 (EN62053-21)	kWh: Class 1 (EN62053-21)
Reactive energy	Class 2 (EN62053-23)	Class 2 (EN62053-23)	kvarh: Class 2 (EN62053-23)	kvarh: Class 2 (EN62053-23)
Output specifications				
Pulse output				2 (open collector) [O2]
Alarm output				2 (relays) with PLC-type control function on 16 variables (AND / OR) [R2]
Analogue output				Up to 3: 20 mA [A1-3], 10 VDC [V1-3]
Communication	Modbus RTU [S1]	Modbus RTU [S1]	RS422/485 [S1], RS232 [S2]	RS422/485 [S1], RS232 [S2]
Inputs	1 (dual tariff management)	1 (dual tariff management)		
General specifications				
Power supply	Self power supply [X]	Self power supply [X]	18 to 60 VAC/DC [L], 90 to 260 VAC/DC [H]	18 to 60 VAC/DC [L], 90 to 260 VAC/DC [H]
Approvals/Marks	CE	CE	CE - cURus - CSA	CE - cURus - CSA
References				
For ordering key details, please refer to www.productselection.net				

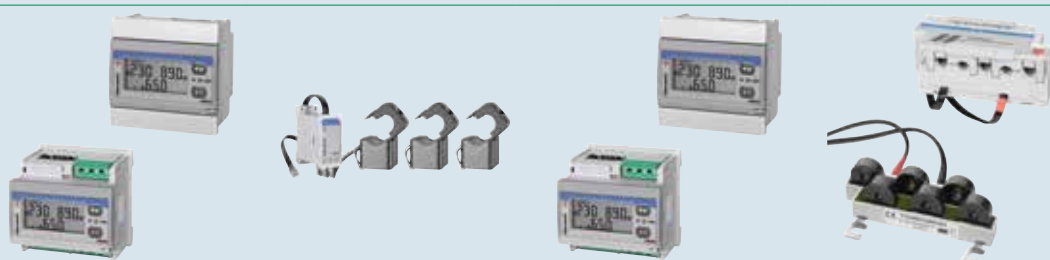
Energy analyzers

	Energy meters	Energy analyzers	
Types	EM21 72R	EM210 AV	EM210 MV
			
Dimensions HxWxD (mm)	72 x 72 x 65	72 x 72 x 65	72 x 72 x 65
Description	3-phase energy meter 4-DIN modules and 72 x 72 panel mounting	3-phase energy analyzer 4-DIN modules and 72 x 72 panel mounting	3-phase energy analyzer 4-DIN modules and 72 x 72 panel mounting
Function	System: kWh, kvarh, W, var, PF, Hz, Phase sequence Single-phase: V _{LN} , V _{LL} , A, PF, TRMS method	System: ±kWh, kvarh, W, var, PF, An and h-meter (only [X]), Phase-sequence Single-phase: V _{LN} , V _{LL} , A, PF, THD (V, A, up to 15th H. THD only [X]), TRMS method	System: ±kWh, kvarh, W, var, PF, An, h-meter, Phase-sequence Single-phase: V _{LN} , V _{LL} , A, PF, THD (V, A, up to 15th H.) TRMS method
Input specifications			
Range code	120 / 230 VAC, 400 VAC 3-phase current input by included current sensors (three ranges available: 90 A - 150 A - 250 A)	120 / 230 VAC, 400 VAC In: 5 A; I _{max} : 6 A (current connection by CT)	120 / 230 VAC, 400 VAC By 333 mV CT [CTV] or by Rogowski sensors [ROG4K]
Accuracy	±0.5% RDG (V) ±1% RDG (A)	±0.5% RDG (V, A)	±0.5% RDG (V, A)
Active energy	Class 2 (EN62053-21)	Class 1 (EN62053-21) Class B (EN50470-3)	Class 1 (EN62053-21)
Reactive energy		Class 2 (EN62053-23)	Class 2 (EN62053-23)
Display	LCD 3 DGT (inst. variables) 6+1, 7 DGT (energies)	LCD 3 DGT (inst. variables) 5+2, 6+1, 7 DGT (energies)	LCD 3 DGT (inst. variables) 5+2, 6+1, 7 DGT (energies)
Output specifications			
Pulse output	1 static opto-mosfet	1 static opto-mosfet	1 static opto-mosfet
Communication	RS485 (2-wire, Modbus) M-BUS by means of VMU-B	RS485 (2-wire, Modbus)	RS485 (2-wire, Modbus)
General specifications			
Power supply	Self power supply	Self power supply [X] Universal power supply 90-260 VAC/DC [H] (MID version)	Self power supply
Approvals/Marks	CE - cULus	CE - cULus - MID [PF]	CE - cULus
References			
For ordering key details, please refer to www.productselection.net			

Quick-fit energy meters

	Quick-fit dual energy meters	3-phase current transformers	Panel adapter for energy meters
Types	EM270	TCD X	EM200-96 Adapter
			
Dimensions HxWxD (mm)	72 x 72 x 65	TCD1X: 72 x 75 x 66.8 TCD2X: 72 x 105 x 50 TCD3X: 78 x 135 x 50	96 x 96 x 41.4
Description	3-phase energy meter 4-DIN modules and 72 x 72 panel mounting	3-phase current transformers for EM270 quick fit meter. Connection to the meter by means of RJ11 connector (included).	Adapter frame from 72 x 72 mm to 96 x 96 mm panel mounting. Installation by fixing brackets included in the meter.
Function	System: kWh, kvarh, kW, kvar Single-phase: kWh, W, W _{dmd} , W _{dmd max} , A, V _{LL} , V _{LN} Virtual sum of the two 3-phase or six 1-phase loads TRMS method	Suitable to be installed downstream the circuit breakers (same width). Automatic setting of the CT ratio in the meter	Suitable for EM210, EM270, EM271, EM280, EM21-72D, EM21-72R, EM21-72V
Input specifications			
Range	120 / 230 VAC, 400 VAC In: from 160 to 630 A by TCD X	TCD1X: 160 A TCD2X: 250 A TCD3X: 630 A	
Accuracy	±0.5% RDG (V, A)	Equivalent to Class 0.5 (IEC61869-2)	
Active energy	Equivalent to Class 1 (EN62053-21)		
Reactive energy	Equivalent to Class 2 (EN62053-23)		
Display	LCD 3 DGT (inst. variables) 6+1, 7 DGT (energies)		
Output specifications			
Pulse output	2 static opto-mosfet		
Communication	RS485 (2-wire, Modbus) M-BUS by means of VMU-BM2...B		
General specifications			
Power supply	Self power supply	n.a.	
Approvals/Marks	CE - cULus	CE - cULus (with EM 270)	CE
References			
For ordering key details, please refer to www.productselection.net			

Quick-fit energy meters

	Quick fit dual energy meters	3-phase current transformers	Quick fit 6-channel energy meters	6-channel current transformer blocks
Types	EM271	TCD M	EM280	TCD06B
				
Dimensions HxWxD (mm)	72 x 72 x 65	TCD0M: 3 by 26 x 40 x 26, hole 9.6 TCD1M: 3 by 31 x 46 x 31, hole 15.7 TCD2M: 3 by 41 x 66 x 38, hole 15.5 TCD3M: 3 by 50 x 78 x 39, hole 20.5	72 x 72 x 65	TCD06BX (solid core): 118 x 53 x 34, hole 7.0, hole centre distance 17.5 TCD06BS (split core): 118 x 45 x 59, hole 8.5, hole centre distance 17.5
Description	Quick fit energy meter with daisy chaining of voltage and serial connections and fast RJ connection of TCD M 3-phase split-core current sensors, for retrofit applications. Managing of two 3-phase or six 1-phase loads. 4-DIN modules and 72 x 72 panel mounting	3-phase split core current sensors for EM271 quick fit meter. Connection to the meter by means of RJ11 connector (included)	Quick fit energy meter with daisy chaining of voltage and serial connections and fast RJ connection of TCD06B 6-channel current transformer block. Managing of two 3-phase or six 1-phase loads. 4-DIN modules and 72 x 72 panel mounting	6-channel current transformer blocks with hole centre distance 17.5 mm (same of miniature circuit breakers) for EM280 quick fit meter. Connection to the meter by means of RJ11 connector (included)
Function	System: kWh, kvarh, kW, kvar Single-phase: kWh, W, W _{dmd} , W _{dmd max} , A, V _{LL} , V _{LN} Virtual sum of the two 3-phase or six 1-phase loads TRMS method	Suitable to be installed in any existing installation. Automatic setting of the CT ratio in the meter	System: kWh, kvarh, kW, kvar Single-phase: kWh, W, W _{dmd} , W _{dmd max} , A, V _{LL} , V _{LN} Virtual sum of the two 3-phase or six 1-phase loads TRMS method	Suitable to be installed in any new and existing installation. Automatic setting of the CT ratio in the meter
Input specifications				
Range	120 / 230 VAC, 400 VAC In: from 60 to 400 A by TCD M	TCD0M: 60 A TCD1M: 100 A TCD2M: 200 A TCD3M: 400 A	120 / 230 VAC, 400 VAC In: 32 A by TCD06BX and TCD06BS	TCD06B: 32 A
Accuracy	±0.5% RDG (V, A)	Equivalent to Class 1 (IEC61869-2)	±0.5% RDG (V, A)	Equivalent to Class 0.5 (IEC61869-2)
Active energy	Equivalent to Class 1 (EN62053-21)		Equivalent to Class 1 (EN62053-21)	
Reactive energy	Equivalent to Class 2 (EN62053-23)		Equivalent to Class 2 (EN62053-23)	
Display	LCD 3 DGT (inst. variables) 6+1, 7 DGT (energies)		LCD 3 DGT (inst. variables) 6+1, 7 DGT (energies)	
Output specifications				
Pulse output	2 static opto-mosfet		2 static opto-mosfet	
Communication	RS485 (2-wire, Modbus)		RS485 (2-wire, Modbus)	
General specifications				
Power supply	Self power supply		Self power supply	
Approvals/Marks	CE - cULus	CE - cULus (with EM271)	CE - cULus	CE - cULus (with EM280)
References				
For ordering key details, please refer to www.productselection.net				

Power analyzers

Multifunction meters		Power analyzers	
Types	WM10 DIN	WM12	WM14 Basic/Profibus/Advanced
			
Dimensions HxWxD (mm)	90 x 72 x 67	96 x 96 x 46 [96] or 90 x 108 x 64.5 [DIN]	96 x 96 x 46 [96] or 90 x 108 x 64.5 [DIN]
Description	3-phase multifunction meter 4 DIN modules	3-phase multifunction meter 96 x 96 panel mounting [96] or 6-DIN modules [DIN]	3-phase power analyzer 96 x 96 panel mounting [96] or 6-DIN modules [DIN]
Function	System: V_{LN} , V_{LL} , W, var, PF, Hz, phase sequence Single-phase: V_{LN} , V_{LL} , A, W, var TRMS method	System: V_{LL} , V_{LN} , A, An, VA, V_{Admd} , W, W_{dmd} , var, PF, Hz Max: A, W_{dmd} Single phase: V_{LL} , V_{LN} , A, VA, W, var, PF	System: kWh, kvarh, V_{LL} , V_{LN} , An, PF, W, var, VA, W_{dmd} , V_{Admd} , Hz, hour meter Max: A, A_{dmd} , W_{dmd} Single phase: V_{LL} , V_{LN} , A, A_{dmd} , PF, W, var, VA, THD (AX) Max: V_{LN} , A, A_{dmd} , W (AX) Min: V_{LN} , A, PF (AX)
Input specifications			
Range code	400 V_{LL} AC Ib: 10 A; I _{max} 65 AAC 3-phase	400 / 660 V_{LL} AC 5(6) AAC [AV5], 100 / 208 V_{LL} AC 5(6) AAC [AV6] (current connection by CT)	400 / 660 V_{LL} AC 5(6) AAC [AV5], 100 / 208 V_{LL} AC 5(6) AAC [AV6] (current connection by CT)
Accuracy	±0.5% RDG (V, A)		
Active energy			Class 1
Reactive energy			Class 2
Display	LCD 3 x 3 DGT (inst. variables)	LED 3x 3 DGT	LED 3x 3-DGT 8+1 DGT (energies)
Output specifications			
Pulse output			2 open collector [02AX]
Alarm output			2 relays with PLC-type control function on 16 variables (AND / OR) [R2AX]
Communication		RS485 port [S]	RS485 port [S] Profibus DP port [DG], only on [96] model
General specifications			
Power supply	Self power supply	24 VAC [A] 48 VAC [B] 115 VAC [C] 230 VAC [D] 18 to 60 VDC [3]	24 VAC [A] 48 VAC [B] 115 VAC [C] 230 VAC [D] 18 to 60 VDC [3] 90 to 260 AC/DC [H DG] 18 to 60 VAC/DC [L AX] 90 to 260 VAC/DC [H AX]
Approvals/Marks	CE	CE - cULus	CE - cULus Advanced version [AX]
References			
For ordering key details, please refer to www.productselection.net			

Power analyzers

	Modular power quality analyzers		Modular power quality transducers
Types	WM3 96	WM5 96	PQT H
			
Dimensions HxWxD (mm)	96 x 96 x 124	96 x 96 x 124	90 x 90 x 140
Description	3-phase modular power quality analyzer 96 x 96 panel mounting	3-phase modular smart power quality analyzer 96 x 96 panel mounting	3-phase modular smart power quality transducer 96 x 96 DIN rail mounting
Function	System: total/partial $\pm$ kWh, $\pm$ kvarh (4 tariff), V_{LN} , V_{LL} , An, VA, V_{Admd} , W, W_{dmd} , var, PF, Hz, THD Single phase: V_{LN} , V_{LL} , A, W, var, PF, THD	System: kWh, kvarh, V_{LN} , V_{LL} , An, W, var, VA, PF, Hz Single-phase: V_{LN} , V_{LL} , A, W, var, VA, PF, THD THD and single H up to the 63rd H (V, A)	System: kWh, kvarh, V_{LN} , V_{LL} , An, W, var, VA, PF, Hz Single-phase: V_{LN} , V_{LL} , A, W, var, VA, PF, THD THD and single H up to the 63rd H (V, A)
Input specifications			
Range code	400 VAC-1/5 AAC [AV5] 690 VAC-1/5 AAC [AV7] In: 1/5A, I _{max} : 6 AAC	120/208 V_{LL} [AV6], 400/690 V_{LL} [AV5] In: 1/5A, I _{max} : 10 AAC	120/208 V_{LL} [AV6], 400/690 V_{LL} [AV5] In: 1/5A, I _{max} : 10 AAC
Accuracy	$\pm 0.5\%$ RDG (V, A)	$\pm 0.2\%$ RDG (V, A)	$\pm 0.2\%$ RDG (V, A)
Active energy	Class 1 (EN62053-21)	Class 0.5S (EN62053-22)	Class 0.5S (EN62053-22)
Reactive energy	Class 2 (EN62053-23)	Class 2 (EN62053-23)	Class 2 (EN62053-23)
	Matrix LCD backlight 4x 4 DGT (instantaneous variables) 4x 7+2, 8+1, 9 DGT (energies)	Matrix LCD backlight 4x 4 DGT (instantaneous variables) 4x 7+2, 8+1, 9 DGT (energies)	
Output specifications			
Pulse output	Up to 2 single / dual open collector or relay modules	Up to 16, by: single / dual or quadruple open collector or relay modules	Up to 16, by: single / dual or quadruple open collector or relay modules
Alarm output	Up to 2 single / dual open collector or relay modules	Up to 16, by: single / dual or quadruple open collector or relay modules	Up to 16, by: single / dual or quadruple open collector or relay modules
Communication	RS422 / 485 port RS232 port + RTC	RS422 / 485, RS232+RTC modules. Optical port (ANSI C12.18/Modbus) Internet / Ethernet comm. [E2]	RS422 / 485, RS232+RTC modules. Optical port (ANSI C12.18/Modbus) Internet / Ethernet comm. [E2]
Analogue output	Up to 2 single / dual analog output modules	Up to 8, by single / dual (mA/V) output modules	Up to 8, by single / dual (mA/V) output modules
Inputs	Up to 3 digital inputs	Up to 12 (W_{dmd} , V_{Admd} sync.; tariff, contact status reading)	Up to 12 (W_{dmd} , V_{Admd} sync.; tariff, contact status reading)
General specifications			
Power supply	18 to 60 VAC/DC [L] 90 to 260 VAC/DC [H]	18 to 60 VAC/DC [L] 90 to 260 VAC/DC [H]	18 to 60 VAC/DC [L] 90 to 260 VAC/DC [H]
Approvals/Marks	CE - cURus - CSA	CE - cURus - CSA	CE - cURus - CSA
References			
For ordering key details, please refer to www.productselection.net			

Power analyzers

	Modular power analyzers	Modular power quality analyzers	
Types	WM20 96	WM30 96	WM40 96
			
Dimensions HxWxD (mm)	96 x 96 x 50	96 x 96 x 50	96 x 96 x 50
Description	3-phase modular power quality analyzer 96 x 96 panel mounting	3-phase modular power quality analyzer 96 x 96 panel mounting	3-phase modular power quality analyzer 96 x 96 panel mounting
Function	System: total/partial $\pm$ kWh and $\pm$ kvarh, V_{LN} , V_{LL} , VA, W, var, PF, Hz, THD (V,A) Single phase: V_{LN} , V_{LL} , VA, A, An, W, var, PF, THD Phase-sequence-asymmetry loss	System: total/partial $\pm$ kWh and $\pm$ kvarh, V_{LN} , V_{LL} , VA, W, var, PF, Hz, THD (V,A) Single phase: V_{LN} , V_{LL} , VA, A, An, W, var, PF, THD Phase-sequence-asymmetry loss	System: Total/partial $\pm$ kWh and $\pm$ kvarh (multi-tariff), V_{LN} , V_{LL} , VA, W, var, PF, Hz, THD, K-factor Single phase: V_{LN} , V_{LL} , VA, A, An (calculated or measured), W, var, PF, THD, TDD; Phase sequence-asymmetry-loss Load profile, event stamping, data logger, utility and hour counters
Input specifications			
Range code	400 / 690 V _{LL} AC 1(2) AAC [AV4] 400 / 690 V _{LL} AC 5(6) AAC [AV5] 100 / 208 V _{LL} AC 5(6) AAC [AV6] 100 / 208 V _{LL} AC 1(2) AAC [AV7]	400 / 690 V _{LL} AC 1(2) AAC [AV4] 400 / 690 V _{LL} AC 5(6) AAC [AV5] 100 / 208 V _{LL} AC 5(6) AAC [AV6] 100 / 208 V _{LL} AC 1(2) AAC [AV7]	400 / 690 V _{LL} AC 1(2) AAC [AV4] 400 / 690 V _{LL} AC 5(6) AAC [AV5] 100 / 208 V _{LL} AC 5(6) AAC [AV6] 100 / 208 V _{LL} AC 1(2) AAC [AV7]
Accuracy	$\pm 0.2\%$ RDG (V, A)	$\pm 0.2\%$ RDG (V, A)	$\pm 0.2\%$ RDG (V, A)
Active energy	Class 0.5S according to EN62053-22	Class 0.5S according to EN62053-22	Class 0.5S according to EN62053-22
Reactive energy	Class 2 according to EN62053-23	Class 2 according to EN62053-23	Class 2 according to EN62053-23
Display	LCD backlight 3x 4 DGT (inst. variables) 8+2, 9+1, 10 DGT (energies)	LCD backlight 4x 4 DGT (inst. variables) 8+2, 9+1, 10 DGT (energies)	LCD backlight 4x 4 DGT (inst. variables) 8+2, 9+1, 10 DGT (energies)
Output specifications			
Pulse output	Up to 2 digital outputs	Up to 2 digital outputs	Up to 8 digital outputs
Alarm output	Up to 4 freely configuration virtual alarms	Up to 4 freely configuration virtual alarms	Up to 16 freely configuration virtual alarms
Communication	Optical port Modbus RS485/232 port, BACnet SMTP [B3], Modbus TCP Ethernet port [E2], BACnet-IP [B1], Profibus [P1]	Optical port Modbus RS485/232 port, BACnet SMTP [B3], Modbus TCP Ethernet port [E2], BACnet-IP [B1], Ethernet/IP [E6], Profibus [P1]	Optical port Modbus RS485/232 port, BACnet SMTP [B3], Modbus TCP Ethernet port [E2], BACnet-IP [B1], Ethernet/IP [E6], Profibus [P1]
Analogue output		up to 2	up to 4
Inputs			up to 6 digital inputs
General specifications			
Power supply	18 to 60 VAC/DC [L] 90 to 260 VAC/DC [H]	18 to 60 VAC/DC [L] 90 to 260 VAC/DC [H]	18 to 60 VAC/DC [L] 90 to 260 VAC/DC [H]
Approvals/Marks	CE - cULus	CE - cULus	CE - cULus
References			
For ordering key details, please refer to www.productselection.net			

Power analyzers			
	Modular branch circuit analyzers	12-channel current transformer blocks	Wiring system for WM50
Types	WM50 96	TCD12 BS	TCD12 WS
			
Dimensions HxWxD (mm)	96 x 96 x 50	221 x 58 x 49,50	
Description	96-channel branch circuit analyzer 96 x 96 panel mounting	Split-core CT block for WM50: hole 8.5, hole centre distance 17.5	Wires system for WM50 branch circuit monitoring system
Function	Mains power analysis and single branch circuit measurement Mains, system: Total/partial $\pm$ kWh and $\pm$ kvarh (multi-tariff), V_{LN} , V_{LL} , VA, W, var, PF, Hz, THD, K-factor Mains, single phase: V_{LN} , V_L , VA, A_L , A_n (calculated or measured), W, var, PF, THD, TDD; Phase sequence-asymmetry-loss, event stamping, utility and hour counters Single branch channels: A, W, var, VA, PF, kWh, THD (A), daily min and max for 1 of the above variables	12-channel current transformer blocks with hole centre distance 17.5 mm (same of miniature circuit breakers) for WM50 branch circuit analyzer. Connection to the meter by means of dedicated cable [TCD12WS]	Set of cables to connect WM50 with TCD12BS and 2 consecutive TCD12BS ¹)
Input specifications			
Range code	208..480 V _{LL} AC 5(6) AAC [AV5]	32 AAC	[030]: 30 cm length cable [050]: 50 cm length cable [100]: 100 cm length cable [200]: 200 cm length cable [500]: 500 cm length cable
Accuracy	$\pm$ 0.2% RDG (V, A), mains	$\pm$ 0.5% RDG (A), branch channels	
Active energy	Mains: Class 0.5S according to EN62053-22 Branch channels: Class 2 according to EN62053-21		
Reactive energy	Class 2 according to EN62053-23		
Display	LCD backlight 4x 4 DGT (inst. variables) 8+2, 9+1, 10 DGT (energies), only mains		
Output specifications			
Pulse output	Up to 6 digital outputs		
Alarm output	Up to 16 freely configuration virtual alarms		
Communication	Optical port Modbus RS485/232 port [S1], Modbus TCP Ethernet port [E2],	High speed communication to WM50	
Inputs	up to 6 digital inputs		
General specifications			
Power supply	100 to 277 VAC/DC	Power supply from WM50	
Approvals/Marks	CE - cULus	CE - cULus (with WM50)	CE - cULus (with WM50)
References			
For ordering key details, please refer to www.productselection.net			

DC Energy meters

Contactless power analyzers			Energy analyzers	
Types	CPA050/CPA300	CPA300-V	VMU-E	VMU-X
				
Dimensions HxWxD (mm)	CPA050 63x46x25 (without connectors) CPA0300 99x89x30 (without connectors)	99x89x30 (without connectors)	1-DIN module	1-DIN module
Description	Contactless power analyzers	Contactless current transducer for PV installations up to 1500 VDC	DC energy analyzer: V, A, W, kWh	Power supply module for VMU-E unit
Function	CPA monitors electrical variables (V, A, W, var, VA, kWh, PF, HZ, THD) in 1-phase AC (from 1 to 400 Hz) or DC systems	CPA monitors electrical variables (A,Ah) in 1-phase AC (from 1 to 400 Hz) or DC systems		
Input specifications				
Range code	One current input (Hall effect): 50 AAC/50 ADC [CPA300] 300 AAC/400 ADC One voltage input: 800 VAC/1000 VDC	One current input (Hall effect): 300 AAC/400 ADC	400 VDC 20 ADC [AV00] (up 1000 ADC by external shunt 120 mV) 400 VDC 1000 ADC [AV10] (by 10 VDC current sensor)	
Accuracy	±0.5%F.S. (V, A, W)	±0.5%F.S. (A)	±0.5% RDG (V, A)	
Active energy			Class 1	
Display	Front LED to show the Power-ON status of the device	Front LED to show the Power-ON status of the device	LCD 6 DGT	
Output specifications				
Pulse output				1 opto-mosfet
Alarm output	Virtual alarm detection of voltage over-range and current over-range	Virtual alarm detection of current over-range		1 opto-mosfet
Communication	RS485 Modbus RTU	RS485 Modbus RTU		RS485 Modbus RTU
Analogue output		Programmable scale 0-10 Vdc		
General specifications				
Power supply	9 to 30 VDC power supply	9 to 30 VDC power supply	Self power supply through VMU-X unit [X]	38 to 265 VAC/DC [U]
Approvals/Marks	CE	CE	CE	CE
References				
For ordering key details, please refer to www.productselection.net				

Current transformers

Current transformers

Types	CTD 1Z	CTD 2Z	CTD 3Z
			

Dimensions HxWxD (mm)	76 x 44 x 31	86 x 56 x 42	99 x 75 x 45
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Input specifications

	Current transformer 1-phase AC	Current transformer 1-phase AC	Current transformer 1-phase AC
Operating frequency	48 to 62 Hz	48 to 62 Hz	48 to 62 Hz
Max. system voltage	0.72 kV	0.72 kV	0.72 kV
Rated insulation level	3 kV / 1 min @ 50 Hz	3 kV / 1 min @ 50 Hz	3 kV / 1 min @ 50 Hz
Security factor	≤ 5	≤ 5	≤ 5

Output specifications

Secondary current	5 A	5 A	5 A
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General specifications

Class	1 / 3	0.5 / 1 / 3	0.5 / 1 / 3
Bus-bar size (mm) [diameter]	[22]	30 x 10 / 25 x 20 [28]	40 x 10 / 30 x 20 / 25 x 25 [33]
Standards	EN 61869-2	EN 61869-2	EN 61869-2

Primary current

	Burden (VA)				Burden (VA)				Burden (VA)			
	Class	0.5	1	3	Class	0.5	1	3	Class	0.5	1	3
	50 A			1.5	40 A			2.5	100 A	1.5		
Accuracy class depending on the burden of the secondary circuit	60 A		1.5		50 A			2.5	150 A	1.5		
	75 A		1.5		100 A	2.5			200 A	1.5		
	80 A		1.5		150 A	2.5			250 A	2.5		
	100 A		2.5		200 A	3.75			300 A	2.5		
	125 A		2.5		250 A	5			400 A	5		
	150 A		2.5		300 A	5			500 A	5		
	200 A		3.75		400 A	5			600 A	5		
	250 A		3.75		500 A	5						
	300 A		3.75		600 A	5						

References

For ordering key details, please refer to www.productselection.net

Current transformers

Current transformers

Types

TADK



TADK2



CTD 1X



CTD 2X



Dimensions HxWxD (mm)

115.5 x 75 x 44

115.5 x 75 x 44

66 x 46 x 30

86 x 56 x 42

Input specifications

	Current transformer 1-phase AC	Current transformer 1-phase AC	Current transformer 1-phase AC	Current transformer 1-phase AC
Operating frequency	48 to 62 Hz	48 to 62 Hz	48 to 62 Hz	48 to 62 Hz
Max. system voltage	0.72 kV	0.72 kV	0.72 kV	0.72 kV
Rated insulation level	3 kV/1 min @ 50 Hz	3 kV/1 min @ 50 Hz	3 kV/1 min @ 50 Hz	3 kV/1 min @ 50 Hz
Security factor	≤ 5	≤ 5	≤ 5	≤ 5

Output specifications

Secondary current	5 A standard (1 A on request)	5 A standard (1 A on request)	5 A 1 A	5 A 1 A
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General specifications

Class	0.5	0.5	0.5 / 1 / 3	0.5 / 1 / 3
Bus-bar size (mm) [diameter]	no (wounded primary)	25 x 5 (fixed bar)	20 x 5 [23]	32 x 5 / 30 x 10 / 25 x 20 / 25 x 12 [24]
Standards	IEC 60185	IEC 60185	EN 60044-1, cURus (*)	EN 60044-1, cURus (*)

Primary current

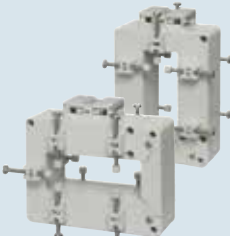
	Burden (VA)					Burden (VA)					Burden (VA)					Burden (VA)			
	Class	0.5	1	3		Class	0.5	1	3		Class	0.5	1	3		Class	0.5	1	3
Accuracy class depending on the burden of the secondary circuit	1 A	10			1 A	10				50 A			1	1.25	40 A				1.25
	5 A	10			5 A	10				60 A			1	1.25	50 A				1.5
	10 A	10			10 A	10				70 A			1.5	1.75	60 A				2
	15 A	10			15 A	10				75 A	1	1.25	1.75		70 A				2.5
	25 A	10			25 A	10				80 A	1.25	1.5	2		75 A		1.75	2.5	
	40 A	10			40 A	10				100 A	1.5	1.75	2.25		80 A		2	2.75	
					50 A	10				120 A	1.75	2	2.5		100 A		2.5	3	
					60 A	10				125 A	2	2.25	2.75		120 A		2.75	3.75	
					80 A	10				150 A	2.25	2.5	3		125 A	2	2.75	3.75	
					100 A	10				160 A	2.5	2.75	3.25		150 A	3	4	5	
					150 A	10				200 A	3	3.25	3.75		160 A	3	4	5	
					200 A	10				250 A	4.5	4.75	5.25		200 A	4	5	6.5	
					250 A	10				300 A	5	5.5	6		250 A	5.5	7	8	
															300 A	7	8.5	9.5	
															400 A	12	13.5	14.5	
															500 A	14	15.5	16.5	
															600 A	17.5	19	20	

References

For ordering key details, please refer to www.productselection.net
 (*) The list of the cURus approved current transformers is available on the datasheets on www.productselection.net

Current transformers

Current transformers

Types	CTD 3X	CTD 4X	CTD 8V CTD 8H	CTD 8Q
				

Dimensions HxWxD (mm)	109 x 77 x 42	113 x 90 x 42	133 x 87 x 40 104 x 117 x 40	144 x 129 x 40
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Input specifications

	Current transformer 1-phase AC	Current transformer 1-phase AC	Current transformer 1-phase AC	Current transformer 1-phase AC
Operating frequency	48 to 62 Hz	48 to 62 Hz	48 to 62 Hz	48 to 62 Hz
Max. system voltage	0.72 kV	0.72 kV	0.72 kV	0.72 kV
Rated insulation level	3 kV/1 min @ 50 Hz	3 kV/1 min @ 50 Hz	3 kV/1 min @ 50 Hz	3 kV _{RMS} , 50 Hz, 1 min
Security factor	≤ 5	≤ 5	≤ 5	≤ 5

Output specifications

Secondary current	5 A 1 A	5 A 1 A	5 A 1 A	5 A 1 A
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General specifications

Class	0.5 / 1 / 3	0.5 / 1 / 3 / 5P5	0.5 / 1 / 3	0.5
Bus-bar size (mm) [diameter]	51 x 15 / 40 x 20 / 32 x 32 / 40 x 20 [41]	64 x 20 / 51 x 43 / [51]	80 X 30	55 x 100
Standards	EN 60044-1, cURus (*)	EN 60044-1, cURus (*)	EN 60044-1, cURus (*)	EN 60044-1

Primary current

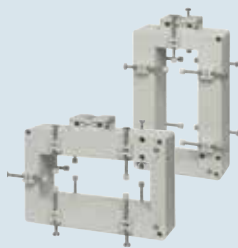
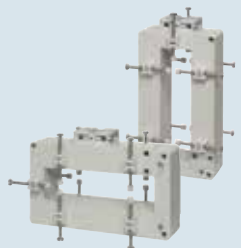
	Burden (VA)			Burden (VA)			Burden (VA)			Burden (VA)		
	Class	0.5	1	3	Class	0.50	1	3	Class	0.5	1	3
	Class	0.5	1	3	Class	0.50	1	3	Class	0.5	1	3
Accuracy class depending on the burden of the secondary circuit	50 A			1.75	150 A		2.5	5	150 A			2
	60 A			2	200 A		3.25	6	200 A			4
	70 A			2.25	250 A	2.5	4.5		250 A			5
	75 A			3	300 A	3	4		300 A		2	6
	80 A			3	400 A	6	9		400 A	3	5	8
	100 A		2	3.5	500 A	10	12.5		500 A	5	7	10
	120 A		2.25	4	600 A	11	13.5		600 A	6	10	12
	125 A		2.5	4.5	700 A	12.5	15		700 A	6	10	12
	150 A	2.25	3	6	750 A	13	15.5		750 A	8	12	15
	160 A	2.5	3.5	6.5	800 A	14	16.5		800 A	8	12	15
	200 A	3	4.5	8.5	1000 A	17.5	20		1000 A	10	15	20
	250 A	3.5	6.5	10.5	1200 A	20	22.5		1200 A	12	15	20
	300 A	7	10	13	1250 A	20	22.5		1250 A	12	15	20
	400 A	9	14	17	1500 A	27.5	30		1500 A	15	20	25
	500 A	14	18	21	1600 A	27.5	30		1600 A	15	20	25
	600 A	17	21	24					2000 A	20	25	30
	700 A	22	26	29					2500 A	25	30	40
	750 A	24	28	31								
	800 A	25	29	32								

References

For ordering key details, please refer to www.productselection.net
 (*) The list of the cURus approved current transformers is available on the datasheets on www.productselection.net

Current transformers

Current transformers

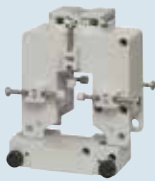
Types	CTD 9V CTD 9H	CTD 10V CTD 10H	CTD 11V CTD 11H	CTD 12V CTD 12H								
												
Dimensions HxWxD (mm)	178 x 92 x 40 109 x 162 x 40	178 x 107 x 40 124 x 162 x 40	178 x 98 x 40 115 x 160 x 40	178 x 125 x 40 140 x 157 x 40								
Input specifications												
	Current transformer 1-phase AC	Current transformer 1-phase AC	Current transformer 1-phase AC	Current transformer 1-phase AC								
Operating frequency	48 to 62 Hz	48 to 62 Hz	48 to 62 Hz	48 to 62 Hz								
Max. system voltage	0.72 kV	0.72 kV	0.72 kV	0.72 kV								
Rated insulation level	3 kV / 1 min @ 50 Hz	3 kV / 1 min @ 50 Hz	3 kVRMS, 50 Hz	3 kVRMS, 50 Hz								
Security factor	≤ 5	≤ 5	≤ 5	≤ 5								
Output specifications												
Secondary current	5 A 1 A	5 A 1 A	5 A 1 A	5 A 1 A								
General specifications												
Class	0.5 / 1 / 3	0.5 / 1 / 3	0.5	0.5								
Bus-bar size (mm)	125 x 35	125 x 50	125 x 37	125 x 53								
Standards	EN 60044-1, cURus (*)	EN 60044-1, cURus (*)	EN 60044-1	EN 60044-1								
Primary current												
Accuracy class depending on the burden of the secondary circuit	Burden (VA)				Burden (VA)				Burden (VA)		Burden (VA)	
	Class	0.5	1	3	Class	0.50	1	3	Class	0.5	Class	0.5
	400 A		3	6	400 A	1	7	10	1000 A	15	1000 A	15
	500 A	2	4	8	500 A	3	10	14	1500 A	15	1500 A	15
	600 A	4	6	10	600 A	5	12	17	2000 A	15	2000 A	15
	700 A	4	8	10	700 A	8	15	20	2500 A	15	2500 A	15
	750 A	4	8	10	750 A	10	15	20	3000 A	15	3000 A	15
	800 A	4	8	10	800 A	10	15	20	4000 A	15	4000 A	15
	1000 A	6	10	13	1000 A	12	20	25				
	1200 A	8	12	15	1200 A	15	25	30				
	1250 A	8	12	15	1250 A	15	25	30				
	1500 A	10	15	18	1500 A	20	30	40				
	1600 A	10	15	18	1600 A	20	30	40				
	2000 A	15	20	24	2000 A	25	40	50				
	2500 A	20	25	30	2500 A	30	50	60				
	3000 A	25	30	35	3000 A	30	50	60				
	3200 A	25	30	35	3200 A	30	50	60				
References												

For ordering key details, please refer to www.productselection.net

(*) The list of the cURus approved current transformers is available on the datasheets on www.productselection.net

Current transformers

Split core current transformers

Types	CTD 5S	CTD 6S	CTD 8S
			

Dimensions HxWxD (mm)	94 x 83 x 40	114 x 107 x 40	133 x 87 x 40
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Input specifications

	Split core current transformer 1-phase AC	Split core current transformer 1-phase AC	Split core current transformer 1-phase AC
Operating frequency	48 to 62 Hz	48 to 62 Hz	48 to 62 Hz
Max. system voltage	0.72 kV	0.72 kV	0.72 kV
Rated insulation level	3 kV _{RMS} , 50 Hz, 1 min	3 kV _{RMS} , 50 Hz, 1 min	3 kV _{RMS} , 50 Hz, 1 min
Security factor	≤ 5	≤ 5	≤ 5

Output specifications

Secondary current	5 A 1 A	5 A 1 A	5 A 1 A
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General specifications

Class	1	1	1
Bus-bar size (mm)	27 x 32	52 x 51	81 x 31
Standards	EN 60044-1, cURus (*)	EN 60044-1, cURus (*)	EN 60044-1, cURus (*)

Primary current

	Burden (VA)			Burden (VA)			Burden (VA)		
	Class	1	3	Class	1	3	Class	1	3
	100 A		1.5	150 A		1.5	150 A		1.5
	125 A	1.5	1.5	200 A	1.5	2	200 A		1.5
	150 A	1.5	2.5	250 A	1.5	3.75	250 A		2
	200 A	1.5	5	300 A	1.5	5	300 A		2
	250 A	1.5	5	400 A	2.5	5	400 A	3	5
	300 A	2.5	7.5	500 A	5	10	500 A	5	7
	400 A	5	10	600 A	7.5	15	600 A	6	10
				700 A	7.5	15	700 A	6	10
				750 A	7.5	15	750 A	8	12
				800 A	10	15	800 A	8	12
				1000 A	10	15	1000 A	10	15
							1200 A	12	15
							1250 A	12	15
							1500 A	15	20
							1600 A	15	20
							2000 A	20	25
							2500 A	25	30

Accuracy class
depending on the
burden of the
secondary circuit

References

For ordering key details, please refer to www.productselection.net
 (*) The list of the cURus approved current transformers is available on the datasheets on www.productselection.net

Current transformers

	Split core current transformers		Active current sensor
Types	CTD 9S	CTD 10S	ROG 400
			
Dimensions HxWxD (mm)	178 x 92 x 40	178 x 107 x 40	54 x 29 x 17
Input specifications			
	Split core current transformer 1-phase AC	Split core current transformer 1-phase AC	Split core AC current sensor 1-phase AC
Operating frequency	48 to 62 Hz	48 to 62 Hz	45 to 65 Hz
Max. system voltage	0.72 kV	0.72 kV	
Rated insulation level	3 kV _{RMS} , 50 Hz, 1 min	3 kV _{RMS} , 50 Hz, 1 min	3 kV _{RMS} , 50 Hz
Security factor	≤ 5	≤ 5	
Output specifications			
Secondary current	5 A 1 A	5 A 1 A	4 to 20 mA DC
General specifications			
Class	1	1	
Bus-bar size (mm) [diameter]	125 x 35	125 x 50	[40]
Standards	EN 60044-1, cURus (*)	EN 60044-1, cURus (*)	
Primary current			
Accuracy class depending on the burden of the secondary circuit	Burden (VA)		
	Class	1	3
	400 A		3
	500 A	2	4
	600 A	4	6
	700 A	4	8
	750 A	4	8
	800 A	4	8
	1000 A	6	10
	1200 A	8	12
	1250 A	8	12
	1500 A	10	15
	1600 A	10	15
	2000 A	15	20
	2500 A	20	25
	3000 A	25	30
	3200 A	25	30
	Burden (VA)		
	Class	1	3
	400 A	1	7
	500 A	3	10
	600 A	5	12
	700 A	8	15
	750 A	10	15
	800 A	10	15
	1000 A	12	20
	1200 A	15	25
	1250 A	15	25
	1500 A	20	30
	1600 A	20	30
	2000 A	25	40
	2500 A	30	50
	3000 A	30	50
	3200 A	30	50
400 AAC			
References			
For ordering key details, please refer to www.productselection.net			
(*) The list of the cURus approved current transformers is available on the datasheets on www.productselection.net			

Current transformers

Split core and Rogowski current sensors for EM210_MV

Types	CTV-1X	CTV-2X	CTV-3X
			

Input / output specifications

Primary current 50/60 Hz	60 A (1-70 A)	100 A (1-120 A)	200 A
Secondary output	333 mV	333 mV	333 mV

General specifications

Accuracy	1%	1%	1%
Linearity	0.5%	0.5%	0.5%
Phase error at nominal current	$\leq 4^\circ$	$\leq 2^\circ$	$\leq 2^\circ$
Max. system voltage	660 V	660 V	660 V
Opening angle	180°	180°	180°
Certifications	CE - cURus	CE - cURus	CE - cURus

References

CTV1X60A333MV

CTV2x100A333MV

CTV3X200A333MX

Types	CTV-4X	CTV-8X	ROG4K
			

Input / output specifications

Primary current 50/60 Hz	400 A (20-480 A max)	800 A (1-1000 A max)	4000 A
Secondary output	333 mV	333 mV	

General specifications

Accuracy	1%	1%	1%
Linearity	0.5%		
Phase error at nominal current	$\leq 2^\circ$	$\leq 2^\circ$	
Max. system voltage	660 V	660 V	600V (cat III)
Opening angle	180°		
Coil length			400, 600 or 900 [XXX]
Certifications	CE - cURus	CE - cURus	CE - cURus

References

CTV4X400A333MV

CTV8X800A333MV

ROG4K1002M [XXX] 3X

Current transformers

Current transformers for monitoring relays

Types	MI	MP	A 82	E 83
				
Dimensions HxWxD (mm)	45 x 52 x 16 [5 / 20] 67.5 x 95 x 20 [100 / 500]	45 x 120 x 16 [5 / 20] 114 x 150 x 23 [100 / 500]	67.5 x 95 x 20	56 x 22.5 x 49
Function	1-phase AC. Output voltage. Cable hole.	3-phase AC. Output voltage. Cable hole.	1-phase AC. Output 0 / 4-20 mA DC, 0-10 VDC (A82-30). Cable hole. Led indication.	1-phase AC. Output 4-20 mA DC. Cable hole. DIN-rail mounting.
Input specifications				
Input current	0.5 - 5 AAC [5] 2 - 20 AAC [20] 10 - 100 AAC [100] 50 - 500 AAC [500]	0.5 - 5 AAC [5] 2 - 20 AAC [20] 10 - 100 AAC [100] 50 - 500 AAC [500]	0 - 25 AAC [25] 0 - 50 AAC [50] 0 - 100 AAC [100] 0 - 250 AAC [250] 0 - 500 AAC [500]	0 - 5 AAC 0 - 10 AAC 0 - 15 AAC 0 - 20 AAC 0 - 25 AAC 0 - 30 AAC 0 - 50 AAC
Max. current continuously	20 AAC [5] 50 AAC [20] 250 AAC [100] 750 AAC [500]	20 AAC [5] 50 AAC [20] 250 AAC [100] 750 AAC [500]	600 AAC	100 AAC
Dielectric voltage	6 kV ACrms	6 kV ACrms	6 kV ACrms	
Output specifications				
Output value	0.4 - 4 Vp The output voltage is proportional to the input current	0.4 - 4 Vp The output voltage is proportional to the highest current value in the 3 conductors which are drawn through the holes of the current metering transformer	A82 - 10: 0-20 mA DC A82 - 20: 4-20 mA DC A82 - 30: 0-10 VDC The output current (A82-10, A82-20) and voltage (A82-30) are proportional to the input current	4 - 20 mA DC The output current is proportional to the input current
Output tolerance	± 5% @ In	± 5% @ In	± 2% @ 50 Hz	± 2% @ 50 Hz
Rated insulation voltage (cable)	250 VACrms	250 VACrms	250 VACrms	
General specifications				
Cable hole diameter	10.5 mm [5 / 20] 27 mm [100 / 500]	3 x 12 mm [5 / 20] 3 x 27 mm [100 / 500]	27 mm	12 mm
Connection cable	2 m PVC 2 x 0.5 mm ²	2 m PVC 2 x 0.5 mm ²	A82-10, A82-30: 2 m, 3x0.25 mm ² A82-20: 2 m, 2x0.25 mm ²	Screw terminal 2 x 1.5 mm ²
Operating temperature	-20°C to +60°C	-20°C to +60°C	-20°C to +50°C	-20°C to +50°C
References				
	MI 5	MP 3005	A 82-XX 25	E 83-20 50
	MI 20	MP 3020	A 82-XX 50	
	MI 100	MP 3100	A 82-XX 100	
	MI 500	MP 3500	A 82-XX 250	
			A 82-XX 500	
			XX = 10: 0-20 mA DC = 20: 4-20 mA DC = 30: 0-10 VDC	

Data aggregation solutions

	Web-server	USB dongle connection module
Types	VMU-C EM	VMU-D
		
Dimensions HxWxD (mm)	2-DIN module	2-DIN module
Description	Web-server which controls and supervises any electrical installation acquiring information from energy meters, power analyzers and VMU I/O modules. It provides information via Internet, so data are available anywhere	Accessory module for connecting third party USB dongle modems (3G or 4G) approved by Carlo Gavazzi to VMU-C systems
Type	Micro PC	USB dongle connection module
Storage memory	4 GB	
Back-up memory	Micro-SD / Micro-SDHC / USB	
Mobile communication specifications		
SIM card		Depending on the modem unit
Compatibility		Compatible with USB modems (3G or 4G) approved by Carlo Gavazzi
Supported services		Internet communication; SMS
LED		
Status and colour	One LED with different colours for internal BUS communication, communication ports, alarms and power supply	Single colour green for power supply status
Communication port and Output specifications		
RS485	1 port for VMU I/O modules, 1 port for power analyzers, energy meters and Modbus devices	
Ethernet	1 port for Internet / LAN connection and Modbus/TCP devices	
USB	1 USB "A" (for USB stick) and 1 USB "mini-A" (service port)	1 USB "A" (for USB dongle modem connection)
Antenna		
Connector		Depending on the modem unit
Type		Depending on the modem unit
Connections		
RS485	3 screw terminals per port	
Ethernet	RJ-45 connector (10 / 100 Base-T)	
USB	High Speed USB 2.0	
General specifications		
Voltage supply	From 12 to 28 VDC	From 12 to 28 VDC
Power consumption	≤ 5 W	IN/OUT connection to supply also the VMU-C / VMU-Y unit; consumption depending on the connected optional modules (range: from 8.6 W to 18.6 W)
Approvals/Marks	CE - cULus listed	CE - cULus listed
References		
For ordering key details, please refer to www.productselection.net		

Data aggregation solutions

VMU I/O optional modules

Types	VMU-M EM	VMU-P EM	VMU-O EM
			
Dimensions	1-DIN module	1-DIN module	1-DIN module
Description	Master unit 6-DGT readout	Environment variable measurement unit	Inputs / outputs unit
Function	VMU-M performs the local bus management of VMU-P both measuring units and VMU-O I/O unit	2 temperatures, 1 analogue and 1 pulse rate output	VMU-O allows to add, for every single unit, available in the local bus two digital inputs and two relay outputs
Input specifications			
Range code	2 Pt100 or Pt1000, 3-wires (-50.0 to +200.0°C) or one digital input and one pulse input, for local management	2 Pt100 or Pt1000, 3-wires 1 analogue input (20 mA or 120 mV). 1 pulse rate input (0 to 1000 Hz max.) [2TIW]	2 digital inputs for Protection trip detection or others"
Accuracy	±(0.5%RDG + 5DGT)	±(0.2%RDG + 1DGT)	
Output specifications			
Alarm	Real and virtual alarm management of all variables coming from VMU-M and VMU-P with local event logging		2 digital outputs for alarm notification of local alarms or as a digital input status changing. SPST relay type
Serial communication	Local bus: up to 1 VMU-P and 3 VMU-O units RS485 communication port (Modbus)	Local bus: one VMU-P unit per bus	Local bus: up to 3 VMU-O units
Others		Front multicolour LED to show the status of the unit	Front multicolour LED to show the status of the unit
General specifications			
Power supply	12 to 28 VDC power supply	Self-power supply from VMU-M unit	Self-power supply from VMU-M unit
Approvals/Marks	cULus approved	cULus approved	cULus approved
References			
For ordering key details, please refer to www.productselection.net			

Data aggregation solutions

Aggregation server

Types

Em²-Server



Description

Em²-Server is a cloud solution capable of aggregating information from up to 100 installations powered by VMU-C EM units. Data from the plants are transmitted through Internet, stored inside the embedded database and presented by the integrated web interface. Em²-Server + VMU-C EM is a solid, reliable and plug'n play architecture aimed at managing multiple sites projects

Type

Virtual Machine Software

Compatibility

Host Operating System

Operating system compatible with VMWARE 64 bit technology

Virtual Machine Compatibility

VMWARE 64 bit

Hardware compatibility

64 bit architecture compatible with VMWARE 64 bit

Cloud compatibility

Hosting providers compatible with VMWARE technology

Software/Firmware specification

Data acquisition

By means of Carlo Gavazzi's DP (Data push) protocol

Integrated operating system

64 bit Linux

Integrated Data Base

Industrial class SQL relational database

User Interface

Integrated multi-user, multilingual web interface

General specifications

Managed VMU-C PV units

From 20 to 100

Software installation

By DVD or USB stick containing the Em²-Server Virtual machine

Licensing

Perpetual license based on connected VMU-C EM units

References

For ordering key details, please refer to www.productselection.net

Data aggregation solutions

	Serial converter	Ethernet gateway	M-bus converter
Types	SIU-PC3	SIU-TCP	VMU-B
			
Dimensions HxWxD (mm)	Front: 60 x 37.5	Front: 78 x 65	Front: 90 x 17.5
Function	RS422 / RS485 to USB converter	[SIU TCP2] RS232 / 485 to Ethernet Gateway [SIU TCP3] RS232 / 485 to Ethernet Modbus Gateway	Modbus to M-bus converter
Port 1			
Port connections	USB type A	Ethernet, 10 / 100 Mbps RJ45	RS485
Baud rate	Max 961.6 kBaud	Max 230400 Baud	
Port 2			
Port connections	RS232, RS485 2-wire communication	[SIU TCP2] RS232, RS485 2-wire and 4-wire communication [SIU TCP3] RS232, RS485 2-wire communication	M-bus
General specifications			
Power supply	Self supplied by USB port	9 to 30 VDC AD5V1A: AC / DC power supply adapter (on request)	18 to 260 VAC/DC
Approvals/Marks	CE - FCC	CE	CE
References			
	SIU PC3	SIU TCP2	VMUBM2US1B1A (for EM210, EM26)
		SIU TCP3	VMUBM2US1B1B (for EM27x, EM280)

PV monitoring solutions

	Web-server	USB dongle connection module
Types	VMU-C PV	VMU-D
		
Dimensions HxWxD (mm)	2-DIN module	2-DIN module
Description	VMU-C is a Web-server which controls and supervises a photovoltaic installation acquiring information from Eos-Array groups, inverters and energy meters. The VMU-C provides information via Internet so data are available wherever you are. VMU-C is also capable of M2M communication by scheduling FTP uploads or by interacting with its HTTP API.	Accessory module for connecting third party USB dongle modems (3G or 4G) approved by Carlo Gavazzi to VMU-C systems
Type	Micro PC	USB dongle connection module
Storage memory	4 GB	
Back-up memory	Micro-SD / Micro-SDHC / USB	
Mobile communication specifications		
SIM card		Depending on the modem unit
Compatibility		Compatible with USB modems (3G or 4G) approved by Carlo Gavazzi
Supported services		Internet communication; SMS
LED		
Status and colour	One led with different colors for internal BUS communication, communication ports, alarms and power supply	Single colour green for Power supply status
Communication port and Output specifications		
RS485	1 port for Eos-Arrays, 1 port for inverters and energy meters	
Ethernet	1 port for Internet / LAN connection	
USB	1 USB "A" (for USB stick) and 1 USB "mini-A" (service port)	1 USB "A" (for USB dongle modem connection)
Antenna		
Connector		Depending on the modem unit
Type		Depending on the modem unit
Connections		
RS485	3 screw terminals per port	
Ethernet	RJ-45 connector (10 / 100 Base-T)	
USB	High Speed USB 2.0	
General specifications		
Voltage supply	From 12 to 28 VDC	From 12 to 28 VDC
Power consumption	≤ 5 W	IN/OUT connection to supply also the VMU-C unit; consumption depending on the connected optional modules (range: from 8.6W to 18.6W)
Approvals/Marks	CE - cULus listed	CE - cULus listed
References		
For ordering key details, please refer to www.productselection.net		

PV monitoring solutions

EOS-Array solar control solution

Types	VMU-M	VMU-S	VMU-P	VMU-O
				
Dimensions HxWxD (mm)	1-DIN module	1-DIN module	1-DIN module	1-DIN module
Description	Master unit 6-DGT readout	String unit, with built-in protection fuseholder	Environment variable measurement unit	Inputs/outputs unit
Function	VMU-M performs the local bus management of VMU-S, VMU-P both measuring units and VMU-O I/O unit	Variables measuring unit, DC current, voltage, power and energy metering. String control and efficiency mesurement	PV module temperature, air temperature, sun irradiance and wind speed metering	VMU-O allows to add, for every single unit, available in the local bus two digital inputs and two relay outputs.
Input specifications				
Range code	2 Pt100 or Pt1000, 3-wire (-50.0°C to +200.0°C) or one digital input and one pulse input. [T2]	Direct connections 16 A / 1000 VDC [AV10]. Measurements: V, A, W, Wh	2 Pt100 or Pt1000, 3-wire (PV and air temperature). 1 irradiance input (up to 120 mV [2TIW] or 4-20 mA [2TCW]). 1 wind speed input (0 to 1000 Hz max.)	2 digital inputs for "Protection trip detection or others" [I2]
Accuracy	±(0.5% RDG + 5DGT)	±(0.5% RDG + 2DGT)	±(0.2% RDG + 1DGT)	
Output specifications				
Alarm	Real and virtual alarm management of all variables coming from VMU-M, VMU-S, and VMU-P with event logging			2 digital outputs for alarm notification as string alarm or as a digital input status changing. SPST relay type. [R2]
Serial communication	Local bus: up to 15 mixed VMU-S, VMU-P and VMU-O units RS485 communication port (Modbus) [S1]	Local bus: up to 15 VMU-S units in the same bus [S]	Local bus: one VMU-P unit per bus [S]	Local bus: up to 7 VMU-O units
Others	Data logger (V, A, W, PV cell and air temperature, irradiation, wind speed) DC/AC efficiency	Diagnostics functions: anti theft control, fuse blow detection, wrong PV panel connection. Front multicolour LED to show the status of the unit	Front multicolour LED to show the status of the unit	Front multicolour LED to show the status of the unit
General specifications				
Power supply	12 to 28 VDC power supply [A]	Self-power supply from VMU-M unit [X]	Self-power supply from VMU-M unit [X]	Self-power supply from VMU-M unit [X]
Approvals/Marks	CE - cULus Listed	CE - cULus Listed	CE - cULus Listed	CE - cULus Listed
References				
For ordering key details, please refer to www.productselection.net				

PV monitoring solutions

EOS-Array Lite solar control solution

Types	VMU-ML	VMU-S0	VMU-P
			
Dimensions HxWxD (mm)	1-DIN module	1-DIN module	1-DIN module
Description	Master unit 6-DGT readout	String unit, with built-in protection fuseholder	Environment variable measurement unit
Function	VMU-ML performs the local bus management of VMU-S0, VMU-P both measuring units and VMU-O output unit	Variables measuring unit, DC current and voltage	PV module temperature, air temperature, sun irradiance
Input specifications			
Range code		Direct connections 16 A / 1000 VDC [AV10]. Measurements: V, A	1 Pt100 or Pt1000, 3-wire (PV and air temperature). 1 irradiation input (up to 120 mV [1TI] or 4 - 20 mA [2TCW])
Accuracy		$\pm(0.5\%RDG + 2DGT)$	$\pm(0.2\%RDG + 1DGT)$
Output specifications			
Alarm	Single real or virtual alarm management of all variables coming from VMU-ML, VMU-S0, and VMU-P		
Serial communication	Local bus: up to 15 mixed VMU-S0, VMU-P and VMU-O units RS485 communication port (Modbus) [S1]	Local bus: up to 15 VMU-S0 units in the same bus [S]	Local bus: one VMU-P unit per bus [S]
Others	Front dual colour LED to show the status of the unit	Diagnostics functions: wrong PV panel connection	Front multicolor LED to show the status of the unit
General specifications			
Power supply	12 to 28 VDC power supply [A]	Self-power supply from VMU-ML unit [X]	Self-power supply from VMU-ML unit [X]
Approvals/Marks	CE - cULus Listed	CE - cULus Listed	CE - cULus Listed
References			
For ordering key details, please refer to www.productselection.net			

PV monitoring solutions

	Solar irradiance sensor		Pyranometer
Types	PVS-1V	PVS-1A	PVS-2A
Connections			
			
Dimensions (mm)	57 x 48 x 15 (not including clamp)	62 x 48 x 15 (not including clamp)	162 x 215 x 40
Description	Solar irradiance sensor based on photovoltaic technology built with a solid aluminium case and anti-UV encapsulating resin	Solar irradiance sensor based on photovoltaic technology built with a solid aluminium case and anti-UV encapsulating resin	Global solar radiation sensor based on a thermopile transducer compliant with WMO (World Meteorological Organization) standards for environmental monitoring, provided with worldwide valid calibration certificate
Environmental specification			
Operating temperature	-10°C to 80°C	-10°C to 80°C	-40°C to 80°C
Degree of protection	IP 67	IP 67	IP 67
General specification			
Technology	Crystalline calibrated cell	Crystalline calibrated cell	2nd Class Thermopile Pyranometer according to ISO9060
Output	80 mV @ 1000 W/m ² STC	4-20 mA	4-20 mA
Calibration	According to IEC 60904-2 and 60904-4 (calibration certificate as option)	According to IEC 60904-2 and 60904-4 (calibration certificate as option)	According to ISO9847 (calibration certificate included)
Solar irradiance range	0-1250 W/m ²	0-1250 W/m ²	0-2000 W/m ²
Connector	3 PIN Phoenix M8 IP67 connector (male and female included)	3 PIN Phoenix M8 IP67 connector (male and female included)	7 pin IP68 connector (male, female and 10 meters cable included)
Housing material	Aluminium	Aluminium	Aluminium
Power Supply	Self-powered	Powered by VMU-P module through the 4-20 mA current loop	10-28 VDC, power consumption < 0.1 W
Approvals/Marks	CE	CE	CE
References			
For ordering key details, please refer to www.productselection.net			

Building automation

Controller			
Function	Home	Building	Hotel
			
Dimensions (mm)	2-DIN module	2-DIN module	2-DIN module
Functions	Controller with home/building automation functions and energy data logging configurable by software	BACnet controller, BTL certified, converting Dupline® and Energy Meter data points to BACnet/IP objects	Room controller for hotel application. Programmable light functions to control DALI lamps
Electrical specifications			
Power supply	24 VDC $\pm$ 20%	24 VDC $\pm$ 20%	24 VDC $\pm$ 20%
General specifications			
LEDs	Green, yellow, blue, red	Green, yellow, blue, red	Green, yellow, blue, red
Mounting	DIN-rail (2 modules)	DIN-rail (2 modules)	DIN-rail (2 modules)
Degree of protection	Front: IP 40 Screw terminal: IP 20	Front: IP 40, Screw terminal: IP 20	Front: IP 40, Screw terminal: IP 20
Pollution degree	2 (IEC 60664-1, par. 4.6.2)		2 (IEC 60664-1, par. 4.6.2)
Operating temperature	-20°C to +50°C	-20°C to +50°C	-20°C to +50°C
Storage temperature	-30°C to +70°C	-30°C to +70°C	-30°C to +70°C
Humidity (non condensing)	90% @ 40°C	90% @ 40°C	90% @ 40°C
Main features	Home automation master unit with datalogging capability. Linux based PC with 2 USB ports, ethernet port, 2 RS485 ports, local bus	Automatically creates BACnet/IP objects for all Dupline and energy meter data points. Ethernet port for BACnet/IP communication	Programmable room controller for hotels/homes. Linux based PC with 2 USB ports, ethernet port, local bus
References			
	SH2WEB24	SB2WEB24	SA2WEB24

Building automation

Bus generators

Function	Wired	Wired	Wireless	DALI Master
				
Dimensions (mm)	2-DIN module	2-DIN module	2-DIN module	2-DIN module
Functions	Smart Dupline® generator	Dupline® generator	Wireless base unit for generating wireless network	DALI Master and DALI Power supply
Electrical specifications				
Power supply	24 VDC ± 20%	24 VDC ± 20%	24 VDC, 115-240 VAC	230 VAC
General specifications				
LEDs	Green, yellow	Green, yellow	Green, yellow, blue	Green, yellow, yellow
Mounting	DIN-rail (2 modules)	DIN-rail (2 modules)	DIN-rail (2 modules)	DIN-rail (2 modules)
Degree of protection	Front: IP 40, Screw terminal: IP 20	Front: IP 40, Screw terminal: IP 20	Front: IP 40, Screw terminal: IP 20	Front: IP 40, Screw terminal: IP 20
Pollution degree	2 (IEC 60664-1, par. 4.6.2)	2 (IEC 60664-1, par. 4.6.2)	2 (IEC 60664-1, par. 4.6.2)	2 (IEC 60664-1, par. 4.6.2)
Operating temperature	-20°C to +50°C	-20°C to +50°C	-20°C to +50°C	-20°C to +50°C
Storage temperature	-50°C to +85°C	-50°C to +85°C	-50°C to +85°C	-40°C to +70°C
Humidity (non condensing)	20 to 80 %	20 to 80 %	20 to 80 %	20 to 80 %
Main features	Smart Dupline® bus generator. Connection of up to 250 slave modules	Dupline® bus generator	Wireless bus generator. Connection of up to 250 slave modules. Based on IEEE 802.15.4, @ 2.4 GHz. Range up to 700 m	Acts as a gateway between Smart Dupline® and DALI. Enables the use of DALI lighting actuators in the system
References				
	SH2MCG24	SH2DUG24	SH2WBU230N	SB2DALI230

Building automation

	Network module	USB dongle connection module	Relay modules	
Function	Repeater		SPST relay	Bistable relay
				
Dimensions (mm)	2-DIN module	2-DIN module	2-DIN module	2-DIN module
Functions	Repeater and isolator	Remote access by Internet when a wired connection is not available Plug'n'play configuration SMS alerting SMS commands Email alertin	Four-relay output module	Four-relay output module
Electrical specifications				
Outputs			4	4
Power supply	230 VAC	12 to 28 VDC	24 VDC	Bus
General specifications				
LEDs	Green, yellow, yellow	Green	Green, yellow, red	Green, yellow, red
Mounting	DIN-rail (2 modules)	DIN-rail (2 modules)	DIN-rail (2 modules)	DIN-rail (2 modules)
Degree of protection	Front: IP 40, Screw terminal: IP 20	Front: IP 40, Screw terminal: IP 20	Front: IP 40, Screw terminal: IP 20	Front: IP 40, Screw terminal: IP 20
Pollution degree	2 (IEC 60664-1, par. 4.6.2)		2 (IEC 60664-1, par. 4.6.2)	2 (IEC 60664-1, par. 4.6.2)
Operating temperature	0°C to +50°C	-25°C to +65°C	-20°C to +50°C	-20°C to +50°C
Storage temperature	-50°C to +85°C	-30°C to +70°C	-50°C to +85°C	-50°C to +85°C
Humidity (non condensing)	20 to 90 %		20 to 80 %	20 to 80 %
Main features	Extends the transmission distance by regenerating the carrier signal and providing 300 mA bus output. Acts as an isolator between primary and secondary Dupline®	Compatible with Sx2WEB system Mobile Internet connection Compatible with USB dongle modems. Watchdog features to prevent common mobile network hassles	Load: 5 A, voltage free x 4 Local bus	Load: 16 A, 230 VAC x 4 Local bus
References				
	SB2REP230	SH2DSP24	SH2RE1A424	SH2RE16A4

Building automation

Relay modules			
Output type	Bistable relay	Bistable relay	Wireless relay
			
Dimensions (mm)	2-DIN module	26 x 39 x 17	40 x 45 x 31
Functions	Two-relay output module with energy measurement	Small sized remote relay output	Wireless relay output module with energy measurement
Electrical specifications			
Outputs	2	1	1
Power supply	230 VAC	Bus	230/110 VAC
General specifications			
LEDs	Green, yellow, red		Green, blue
Mounting	DIN-rail (2 modules)	Decentralized	
Degree of protection	Front: IP 40, Screw terminal: IP 20		
Pollution degree	2 (IEC 60664-1, par. 4.6.2)	3 (IEC 60664)	2 (IEC 60664-1, par. 4.6.2)
Operating temperature	-20°C to +50°C	-20°C to +50°C	-20°C to +50°C
Storage temperature	-50°C to +85°C	-50°C to +85°C	-50°C to +85°C
Humidity (non condensing)	20 to 80 %	20 to 80 %	20 to 80 %
Main features	Load: 16 A, 230 VAC x 2 Energy reading, Local bus	Load: 13 A, 250 VAC	Load: 10 A, 250 VAC Energy reading, Wireless
References			
	SH2RE16A2E230	BDA-RE13A-U	
230 VAC			SHJWRE10AE230
115 VAC			SHJWRE10AE115
Capacitive push buttons			SHJWRE10AExLS230

Building automation

Roller blind modules

Output type	SPST relay	SPST relay	SPST relay
			
Dimensions (mm)	50 x 50 x 30	2-DIN module	2-DIN module
Functions	Decentralized module for up/down control of one rollerblind motor	Relay output module for up/down control of two AC rollerblind motors	Relay output module for up/down control of two DC rollerblind motors
Electrical specifications			
Outputs	1 SPST relay & 1 SPDT relay	2 SPST + 2 SPDT relay	2 SPST + 2 SPDT relay
Inputs	AC	AC	DC
Power supply	230 VAC ± 15%	24 VDC ± 20%	24 VDC ± 20%
General specifications			
LEDs		Green, yellow, red	Green, yellow, red
Mounting	Eurobox	DIN-rail (2 modules)	DIN-rail (2 modules)
Degree of protection		Front: IP 40, Screw terminal: IP 20	Front: IP 40, Screw terminal: IP 20
Pollution degree	3 (IEC 60664)	2 (IEC 60664-1, par. 4.6.2)	2 (IEC 60664-1, par. 4.6.2)
Operating temperature	-20°C to +50°C	-20°C to +50°C	-20°C to +50°C
Storage temperature	-50°C to +85°C	-50°C to +85°C	-50°C to +85°C
Humidity (non condensing)	20 to 80 %	20 to 80 %	20 to 80 %
Main features	Up/down control, tilting, local bus	Up/down control, tilting, local bus	Up/down control, tilting, local bus
References			
	SHDRODC230	SH2ROAC224	SH2RODC224

Building automation

Output type	Dimmer modules		Output modules	
	Power mosfet	Wireless dimmer	1 to 10 V output	Solid state relay
				
Dimensions (mm)	2-DIN module	40 x 45 x 31	2-DIN module	2-DIN module
Functions	Power dimmer up to 500 W for R, L, C load and LED lamps	Power dimmer up to 200 W for R, L, C load and LED lamps	Analogue output dimmer for adjustable ballast with 1 to 10 V input	Four-solid-state relay output module
Electrical specifications				
Outputs	1	1	4	4
Power supply	230 VAC	230/110 VAC	24 VDC $\pm$ 20%	24 VDC $\pm$ 20%
General specifications				
LEDs	Green, yellow, red	Green, blue	Green, yellow, red	Green, yellow, red
Mounting	DIN-rail (2 modules)		DIN-rail (2 modules)	DIN-rail (2 modules)
Degree of protection	Front: IP 40, Screw terminal: IP 20		Front: IP 40, Screw terminal: IP 20	Front: IP 40, Screw terminal: IP 20
Pollution degree	2 (IEC 60664-1, par. 4.6.2)	2 (IEC 60664-1, par. 4.6.2)	2 (IEC 60664-1, par. 4.6.2)	2 (IEC 60664-1, par. 4.6.2)
Operating temperature	-20°C to +50°C	-20°C to +50°C	-20°C to +50°C	-20°C to +50°C
Storage temperature	-50°C to +85°C	-50°C to +85°C	-50°C to +85°C	-50°C to +85°C
Humidity (non condensing)	20 to 80 %	20 to 80 %	20 to 80 %	20 to 80 %
Main features	Local bus / Energy reading	Wireless universal dimmer with energy reading		Load: 10 W x 4 Local bus
References				
With energy reading	SH2D500WE230			
Without energy reading	SH2D500W1230			
230 VAC	SHJWD200WE230			
115 VAC	SHJWD200WE115			
Capacitive push buttons	SHJWD200WE_{LS}230			
			SH2D10V424	SH2SSTRI424

Building automation

	Energy meter modules		Digital input module	Fire damper
Function	Dupline® connection	Wireless	4 inputs	I/O module
				
Dimensions (mm)	2-DIN module	40 x 45 x 31	2-DIN module	150x110x70
Functions	Energy meter with direct connection up to 16 A	Energy meter with direct connection up to 16 A	Input module, configurable as contact or pulse counter	I/O-module for control of two fire dampers
Electrical specifications				
Inputs			4	4
Outputs				2
Power supply	115...240 VAC	115...240 VAC	24 VDC ± 20%	24...230 VAC
General specifications				
LEDs	Green, yellow, red	Green, blue	Green, yellow, red	Green, yellow (3)
Mounting	DIN-rail (2 modules)		DIN-rail (2 modules)	Box ready for wall mounting
Degree of protection	Front: IP 40, Screw terminal: IP 20		Front: IP 40, Screw terminal: IP 20	IP50
Pollution degree	2 (IEC 60664-1, par. 4.6.2)	2 (IEC 60664-1, par. 4.6.2)	2 (IEC 60664-1, par. 4.6.2)	2 (IEC 60664-1, par. 4.6.2)
Operating temperature	-20°C to +50°C	-20°C to +50°C	-20°C to +50°C	0°C to +50°C
Storage temperature	-50°C to +85°C	-50°C to +85°C	-50°C to +85°C	-50°C to +85°C
Humidity (non condensing)	20 to 80 %	20 to 80 %	20 to 80 %	20 to 90 %
Main features	Values readout: A, V, W, Wdmd, VA, var, PF, kWh	Values readout: A, V, W, Wdmd, VA, var, PF, kWh	Voltage free, NPN, PNP, counter	Box ready for decentral mounting near dampers
References				
			SH2INDI424	
115...230 VAC	SH2EM16A230			
230 VAC		SHJWEM16A230		SBB4I20230
115 VAC		SHJWEM16A115		
24 VAC				SBB4I2024

Building automation

	Transparent module	Analogue output modules	Analogue input modules	
Function		0 to 10 V output	Input module	Pulse counter
				
Dimensions (mm)	8.5 x 90 x 67	50 x 30 x 18	50 x 30 x 18	28 x 14 x 10
Functions	Transparent module for simplifying the wiring of the smart-house installation	Output module with 2 analogue outputs	Input module with 2 analogue inputs	Decentral 4 input pulse counter module
Electrical specifications				
Inputs			2 x 0-20 / 4-20 mA inputs	
Outputs		2 x 0-10 VDC		
Power supply	No power supply needed	24 VDC	24 VDC	Powered by bus
General specifications				
Mounting	DIN-rail	Inside wall box or environmental sensor housings	Inside wall box or environmental sensor housings	small sized plug-in
Degree of protection	Front: IP 40 Screw terminal: IP 20	IP 20	IP 20	IP 20
Pollution degree	2 (IEC 60664-1, par. 4.6.2)	2 (IEC 60664-1, par. 4.6.2)	2 (IEC 60664-1, par. 4.6.2)	
Operating temperature	-20°C to +50°C	0°C to +50°C	0°C to +50°C	0°C to +50°C
Storage temperature	-30°C to +70°C	-50°C to +85°C	-50°C to +85°C	-50°C to +70°C
Humidity (non condensing)	20 to 80 %	20 to 90 %	20 to 90 %	20 to 90%
References				
	SH1DUPFT	SHPOUTV224	SHPINA224	
50 inputs				SHPINCNTS04
Contact inputs				SHPINCNT4

Building automation

Analogue input modules

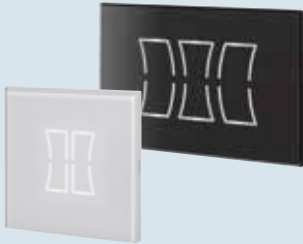
Function	Input module	Input module	Input module	Input module
				
Dimensions (mm)	50 x 30 x 18	50 x 30 x 18	50 x 30 x 18	50 x 30 x 18
Functions	Input module with 3 analogue inputs	Input module with 4 analogue inputs	Input module with 2 analogue inputs	Input module with 2 analogue inputs
Electrical specifications				
Inputs	3 x 0-10 VDC	2 x 0-10 VDC, 1 x thermistor 10K3 input 1 x variable resistor 1-11 KΩ	1 x thermistor 10K3 1 x variable resistor 1-11 KΩ	2* Ni1000/Pt1000 inputs
Power supply	24 VDC	24 VDC	Bus	Bus
General specifications				
Mounting	Inside wall box or environmental sensor housings	Inside wall box or environmental sensor housings	Inside wall box or environmental sensor housings	Inside wall box or environmental sensor housings
Degree of protection	IP 20	IP 20	IP 20	IP 20
Pollution degree	2 (IEC 60664-1, par. 4.6.2)	2 (IEC 60664-1, par. 4.6.2)	2 (IEC 60664-1, par. 4.6.2)	2 (IEC 60664-1, par. 4.6.2)
Operating temperature	0°C to +50°C	0°C to +50°C	0°C to +50°C	0°C to +50°C
Storage temperature	-50°C to +85°C	-50°C to +85°C	-50°C to +85°C	-50°C to +85°C
Humidity (non condensing)	20 to 90 %	20 to 90 %	20 to 90 %	20 to 90 %
References				
	SHPINV324	SHPINV2T1P124	SHPINT1P1	SHPINNI2

Building automation

Light Switch interfaces		Input modules		
Function	Input module	Input/output	Digital	Voltage
				
Dimensions (mm)	28 x 28 x 10	28 x 28 x 10	89 x 66 x 29	28 x 28 x 10
Functions	Input module for voltage free outputs	Input / output module for voltage free outputs and PNP transistor inputs	Input module for voltage free outputs or NPN transistor outputs.	Opto-isolated input voltage module, 90-265 VAC
Electrical specifications				
Inputs	4/8	4	4-contact or NPN transistor inputs	90 - 265 VAC
Outputs		4 PNP		
Power supply	Powered by bus	Powered by bus	Powered by bus	Powered by bus
General specifications				
LEDs			Green, yellow, red	
Mounting	In a junction box or behind a switch/pushbutton input	In a junction box or behind a switch/pushbutton input		
Degree of protection	IP 20	IP 20	IP 20	IP 20
Pollution degree				3 (IEC 60664)
Operating temperature	0°C to +50°C	0°C to +50°C	-20°C to +50°C	-20°C to +50°
Storage temperature	-20°C to +70°C	-20°C to +70°C	-50°C to +85°C	-50° to +70°C
Humidity (non condensing)	20 to 80%	20 to 80 %	20 to 80%	20 to 80%
References				
			BDD-INCON4-U	BDA-INVOL-U
4 contacts	BDB-INCON4-U			
8 contacts	BDB-INCON8-U			
Output voltage 3.3 V		BDB-IOCP8-U		
Output voltage 8 V		BDB-IOCP8A-U		

Building automation

Glass Switches

Function	Switch	Dimming	Temperature
			
Dimensions (mm)	120 x 80 x 27.2, 80 x 80 x 27.9	120 x 80 x 27.2, 80 x 80 x 27.9	120 x 80 x 27.2, 80 x 80 x 27.9
Functions	Programmable glass touch switch	Programmable glass touch switch for dimming control	Programmable glass touch switch for temperature control
Electrical specifications			
Number of switches	4/6	4	4
Power supply	24 VDC	24 VDC	24 VDC
General specifications			
Colour	Black/white	Black/white	Black/white
LEDs	Blue/white	Blue/white	Blue/white
Mounting	Ø60 box, 503 box	Ø60 box, 503 box	Ø60 box, 503 box
Degree of protection	IP 20	IP 20	IP 20
Pollution degree	3 (IEC 60664)	3 (IEC 60664)	3 (IEC 60664)
Operating temperature	-10°C to +50°C	-10°C to +50°C	-10°C to +50°C
Storage temperature	-20°C to +70°C	-20°C to +70°C	-20°C to +70°C
Humidity (non condensing)	20 to 80%	20 to 80%	20 to 80%
Remarks	Approved according to UL60950, integrated temperature probe	Approved according to UL60950	Approved according to UL60950, integrated temperature probe
References			
4 push buttons, Ø60 box	SHG060WLS4, SHG060BLS4		
6 push buttons, 503 box	SHG503WLS6, SHG503BLS6		
Display for dimming, Ø60 box	SHG060WSLD, SHG060BSLD		
Display for dimming, 503 box	SHG503WSLD, SHG503SLD		
Temperature display, Ø60 box	SHG060WSLT, SHG060BSLT		
Temperature display, 503 box	SHG503WSLT, SHG503BSLT		

Building automation

Light Switches

Function	4 pushbutton	4 pushbutton	4 pushbutton + PIR + Luxmeter
			
Dimensions (mm)	44 x 44 / 55 x 55	44 x 44 / 55 x 55	44 x 44 / 55 x 55
Functions	Light switch for building automation applications	Wireless light switch for building automation applications	Light switch and PIR sensor for detecting presence and/or movement in indoor installations

Electrical specifications

Number of switches	4	4	4
Power supply	Powered by bus	Supplied by battery, type Lithium button 2450 3V	Powered by bus

General specifications

Colour	Black/white	Black/white	Black/white
LEDs	White/blue	Red/blue	White/blue
Mounting	Compatible with many types of wall boxes see datasheet	Compatible with many types of wall boxes see datasheet	Compatible with many types of wall boxes see datasheet
Degree of protection	IP 20	IP 20	IP 20
Pollution degree	3 (IEC 60664)	3 (IEC 60664)	3 (IEC 60664)
Operating temperature	-20°C to +50°C	-20°C to +50°C	0°C to +50°C
Storage temperature	-30°C to +60°C	-30°C to +60°C	-20°C to +70°C
Humidity (non condensing)	20 to 80%	20 to 80%	20 to 80%
Other functions	Humidity and temperature sensor (...TH)	55x55: Flat design, mountable on any surface, embedded temperature sensor	Operating distance: 8 m Angle: 90°
Remarks	Approved according to UL60950	Approved according to UL60950	Approved according to UL60950

References

44 x 44 Wallbox Btino, Niko, Fuga	B4X-LS4-U	SHA4XWLS4	SHA4XLS4P90L
55 x 55 Compatible with many types of wall boxes - see datasheet	B5X-LS4-U	SHE5XWLS4WF SHE5XWLS4BF	SHE5XLS4P90L
55 x 55 Compatible with many types of wall boxes - see datasheet Temperature		SHE5XWLS4WFT SHE5XWLS4BFT	
44 x 44 Wallbox Btino, Niko, Fuga Temperature and humidity	SHA4XLS4TH		
55 x 55 Compatible with many types of wall boxes - see datasheet Temperature and humidity	SHE5XLS4TH		

Building automation

	Temperature display	Movement / Presence sensors	
Function		150° PIR /Luxmeter	90° PIR/Luxmeter
			
Dimensions (mm)	44 x 44 / 55 x 55	44 x 44 / 55 x 55	44 x 44 / 55 x 55
Functions	Temperature controller with display	PIR sensor for detecting presence and/or movement in indoor installations	PIR sensor for detecting presence and/or movement in indoor installations
Electrical specifications			
Number of switches	4		
Power supply	Powered by bus	Powered by bus	Powered by bus
General specifications			
Colour	White/black	White/black	White/black
LEDs	White/blue	White/blue	White/blue
Mounting	Wallbox Btcino, Niko, Fuga / Elko, Gira, Jung	Wallbox Btcino, Niko, Fuga / Elko, Gira, Jung	Wallbox Btcino, Niko, Fuga / Elko, Gira, Jung
Degree of protection	IP 20	IP 20	IP 20
Pollution degree	3 (IEC 60664)	3 (IEC 60664)	3 (IEC 60664)
Operating temperature	-10°C to +50°C	-20°C to +50°C	0°C to +50°C
Storage temperature	-20°C to +70°C	-30°C to +70°C	-20°C to +70°C
Humidity (non condensing)	20 to 80%	20 to 80%	20 to 80%
Remarks	Approved according to UL60950	Operating distance: 8 m angle: 150°	Operating distance: 8 m Angle: 90°
References			
44 x 44 Wallbox Btcino, Niko, Fuga	SHA4XTEMDIS SHA4XLS2TEMDIS	SHA4XP150/SHA4XP150L	B4X-PIR90-U
55 x 55 Compatible with many types of wall boxes - see datasheet	SHE5XTEMDIS SHE5XLS2TEMDIS	SHE5XP150/SHE5XP150L	B5X-PIR90-U
44 x 44 Wallbox Btcino, Niko, Fuga + luxmeter			SHA4XP90L
55 x 55 Compatible with many types of wall boxes - see datasheet + luxmeter			SHE5XP90L

Building automation

Movement / Presence sensors

Function	90° PIR/ Luxmeter	90° PIR/ Luxmeter	90° PIR/ Luxmeter	360° PIR/ Luxmeter
				
Dimensions (mm)	104 x 55 x 57	Ø 76 x 25	67 x 52 x 34	Ø 90 x 40
Functions	PIR sensor for detecting presence and/or movement in indoor installations	PIR sensor for detecting presence and/or movement in indoor installations	PIR sensor for detecting presence and/or movement in indoor /outdoor installations	PIR sensor for detecting presence and/or movement in indoor installations with a built-in luxmeter
Electrical specifications				
Power supply	Powered by bus	Powered by bus	Powered by bus	Powered by bus
General specifications				
Colour	White	White	White	White
LEDs	Red	Blue	Red	Blue
Mounting	Wall mounting	LK ceilingbox PL52 or PL55	Wall mounting	Ceiling mounting
Degree of protection	IP 40	IP 20	IP 64 / IP 20	IP 20
Pollution degree	3 (IEC 60664)	3 (IEC 60664)	3 (IEC 60664)	3 (IEC 60664)
Operating temperature	0°C to +50°C	0°C to +50°C	-20°C to +50°C	0°C to +50°C
Storage temperature	-20°C to +70°C	-20°C to +70°C	-30°C to +70°C	-20°C to +70°C
Humidity (non condensing)	20 to 80%	20 to 80%	20 to 80%	20 to 80%
Main features	Operating distance: 12 m Angle: 90°	Operating distance: ≤ 8 m Angle: 90°	Operating distance: 0.5 - 15 m Angle: 90°	Operating distance: ≤ 7.5 m Angle: 360° Lens: dual detecting zones
References				
	BSD-PIR90-U	BSB-PIR90-U		SHSQP360L
Luxmeter	SHSDP90L	SHSBP90L		
Outdoor			BSP-PIR90-U	
Indoor			BSP-PIR90A-U	
Outdoor + luxmeter			SHSPP90L	
Indoor + luxmeter			SHSPP90LA	

Building automation

Touch displays

Environmental sensors

Function	Graphical display	Display	RGB LED	Blind
				
Dimensions (mm)	187 x 147 / 147 x 107	80 x 90 x 26	80 x 90 x 26	80 x 90 x 26
Functions	High definition 7" and 4.3" colour touchscreens, BACnet, Modbus and KNX gateway	Room sensors for CO ₂ , temperature and %RH measurement - with display	Room sensors for CO ₂ , temperature and %RH measurement - with LED indication	Room sensors for CO ₂ , temperature and %RH measurement
Electrical specifications				
Power supply	24 VDC ± 20%	Bus	Bus	Bus
General specifications				
Mounting	Wall mounting	Wall mounting	Wall mounting	Wall mounting
Indication	Display	Display	Red, green, blue	None
Degree of protection	Front: IP66 Rear: IP20	IP 20	IP 20	IP 20
Pollution degree		2 (IEC 60664-1, par. 4.6.2)	2 (IEC 60664-1, par. 4.6.2)	2 (IEC 60664-1, par. 4.6.2)
Operating temperature	0°C to +50°C	-20°C to +50°C	-20°C to +50°C	-20°C to +50°C
Storage temperature	-20°C to +70°C	-40°C to +70°C	-40°C to +70°C	-40°C to +70°C
Humidity (non condensing)	5 to 85% RH	0 to 90 %	0 to 90 %	0 to 90 %
Main features	Windows CE, 7", 800 x 480 pixel / 4.3", 480 x 272 pixel, Ethernet port, BACnet, Modbus, KNX, data logging, configurable graphical display and alarms management	CO ₂ measuring range: 0 to 2000 ppm CO ₂ measurement: Dual source infrared NDIR technology Temperature measuring range: -20°C to +50°C (-4 to 122°F) Humidity measuring range: 0 to 100 %RH	CO ₂ measuring range: 0 to 2000 ppm CO ₂ measurement: Dual source infrared NDIR technology Temperature measuring range: -20°C to +50°C (-4 to 122°F) Humidity measuring range: 0 to 100 %RH	CO ₂ measuring range: 0 to 2000 ppm CO ₂ measurement: Dual source infrared NDIR technology Temperature measuring range: -20°C to +50°C (-4 to 122°F) Humidity measuring range: 0 to 100 %RH
References				
7", 800 x 480 pixel	BTM-T7-24			
4.3", 480 x 272 pixel	BTM-T4-24			
Display, CO ₂ + temperature	SHSUCOTD			
Display, CO ₂ + temperature + humidity	SHSUCOTH			
Display, temperature + humidity	SHSUTH			
Display, temperature	SHSUTD			
RGB Led, CO ₂ + temperature	SHSUCOTL			
RGB Led, temperature + humidity	SHSUCOHL			
CO ₂ + temperature	SHSUCOT			
CO ₂ + temperature + humidity	SHSUCOTH			
Temperature + humidity	SHSUTH			
Temperature	SHSUT			

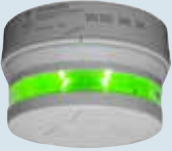
Building automation

	Smoke	Water	Window	Alarm
Function	Smoke detector	Water sensor	Wireless sensor	Keypad
				
Dimensions (mm)	Ø 100 x 54	70 x 39 x 15.5	sensor: 60 x 30 x 15.5, magnet: 32 x 10.2 x 11.5	130 x 50 x 8
Functions	Smoke detector for home/ building applications	Water detection sensor for home/building applications	Wireless, battery powered reed sensor with additional input	Programmable keypad for building access control and alarm control in indoor and outdoor applications
Electrical specifications				
Inputs			Reed, voltage free	12 pushbuttons
Power supply	Powered by bus / 9 VDC battery	Powered by bus	Battery	9-17 VDC
General specifications				
Colour	White	White	White	Black / white
LEDs	Red		Red/blue	Yellow, red, green, programmable
Mounting	Ceiling mounting	Wall mounting	Wall mounting, screw and double side tape	Wall box mounting
Degree of protection	IP 43	IP 67	IP20	IP 67
Pollution degree			2 (IEC 60664-1, par. 4.6.2)	
Operating temperature	0°C to +50°C	-20°C to +50°C	-20°C to +50°C	-15°C to +60°C
Storage temperature	-5°C to +85°C	-50°C to +85°C	-30°C to +85°C	-30° to 80°C
Humidity (non condensing)	20 to 80%	20 to 80 %	20 to 80 %	100%
Main features	Detection area: 60 m ²	Input for Felson probe		28 user-programmable codes, Buzzer output
References				
		BSF-WAT-U		BACC-KEYPAD-DC-U
Battery backup	BSG-SMOA-U			
No battery backup	BSG-SMO-U			
Reed contact			SHDWWISEN	
Reed contact + voltage free			SHDWWISENIN1	

Building automation

	Enviromental sensor		Light	Temperature
Function	Weather station	Anemometer	Luxmeter	Outdoor
				
Dimensions (mm)	96 x 77 x 118	183 x 137 x 145	55 x 53 x 36	67 x 35 x 15
Functions	Weather station for measurement of temperature, wind speed, brightness and precipitation	Anemometer for building automation applications	Luxmeter for indoor / outdoor installations	Temperature sensor for indoor and outdoor applications
Electrical specifications				
Power supply	12 to 40 VDC / 12 to 28 VAC	Powered by bus	Powered by bus	Powered by bus
General specifications				
Colour	White		White	Light grey
Mounting	Wall mounting	Wall mounting	Wall mounting	Direct wall mounting
Connection				Cable / plug
Degree of protection	IP 44	IP 54	IP 44	IP 67
Pollution degree		2 (IEC 60664-1, par. 4.6.2)		
Operating temperature	-30°C to +50°	-20°C to +60°C	-30°C to +60°C	-40°C to +60°C
Storage temperature	-30°C to +70°C	-20°C to +60°C		-55°C to +85°C
Humidity (non condensing)	5 to 95%	20 to 80%		20 to 80%
Main features	GPS receiver	Measuring range: 2 to 25 m/s Heating system	Measuring range: 0 to 20 kLux	
Remarks				Approved according to UL60950
References				
	SHOWEAGPS	BSN-ANE-U	BSH-LUX-U	
Cable, 2 m				BSI-TEMANAB-U
Plug, M12				BSI-TEMANA-U

Parking guidance system

	Sensor	Led indicator	Baseholder
Types	SBPSUSLxx	SBPILED	SBPBASEx
			
Dimensions (mm)	Ø116 x 78	Ø116 x 50	Ø116 x 26 / Ø116 x 44
Functions	Ultrasonic sensors for detection of cars and with RGB LED indication	LED indicator with RGB LED indication	Baseholder for Carpark sensors and LED indicator
Housing type	Direct mounting on base holder to rail, ceiling or conduit/pipe	Direct mounting on base holder to rail, ceiling or conduit/pipe	Direct mounting of base holder on rail, ceiling or conduit/pipe
Electrical specifications			
Features/Signal types	3-wire sensor with built-in RGB LEDs. Programmable from the SBP2WEB configuration software. Can detect available or occupied spaces or be used in count systems	3-wire LED indicator with built-in RGB LEDs. Programmable from the SBP2WEB24 configuration software. To be mounted outside the parking space	Baseholder for sensors and LED indicators. No programming. Only wire connected
Power supply	3-wire system with Dupline [®] and sensor supply	3-wire system with Dupline [®] and sensor supply	
General specifications			
Degree of protection	IP 34	IP 34	IP 34
Operating temperature	-40°C to +70°C	-40°C to +70°C	-40°C to +70°C
Storage temperature	-40°C to +85°C	-50°C to +85°C	-50°C to +85°C
References			
45 degree sensor	SBPSUSL45		
Vertical sensor	SBPSUSL		
Counting sensor	SBPSUSCNT		
LED indicator		SBPILED	
Baseholder for cable tray / conduit			SBPBASEA
Baseholder for ceiling			SBPBASEB

Parking guidance system

	Carpark Master generator	Carpark Controller	Carpark Server	Carpark Display interface
Types	SBP2MCG324	SBP2WEB24	SBP2CPY24	SBP2DI48524
				
Dimensions	2-DIN module	2-DIN module	2-DIN module	2-DIN module
Functions	The Carpark Master Generator provide 28 VDC power and bus on a 3-wire connection with up to 90 sensors	Programmable controller with functions for parking guidance, booking, energy saving. One controller can manage up to 7 Dupline® networks (630 spaces).	Carpark server to link together up to 10 carpark controllers SBP2WEB24 in a TCP/IP network to manage large networks (up to 6300 spaces).	Module which interface between Dupline and Modbus RTU for Carpark displays
Housing type	Mounting on DIN rail	Mounting on DIN rail	Mounting on DIN rail	Mounting on DIN-rail
Electrical specifications				
Features/Signal types	3-wire master generator for carpark sensors and LED indicators. Other smartbuilding components such as PIR, CO sensors and HVAC modules can be connected to the same bus	Various I/O's and function parameters are available as BACnet/IP objects through the Ethernet port, thereby allowing seamless integration with any building management system, thereby allowing energy saving functions for lighting and ventilation	The webserver aggregates data from multiple carpark controllers in a single centralized database, allowing the user to access them as a graphical user interface through a PC with a standard Web-browser	Interface module between Dupline® and Modbus RTU. RS485 to display. Up to 300 m.
Power supply	28 VDC	24 VDC	24 VDC	24 VDC
General specifications				
Degree of protection	IP 20	IP 20	IP 20	IP20
Pollution degree	-20°C to +50°C	-25°C to +50°C	-25°C to +50°C	-20°C to +50°C
Operating temperature	-50°C to +85°C	-30°C to +70°C	-30°C to +70°C	-50°C to +85°C
References				
Carpark master generator	SBP2MCG324			
Carpark controller		SBP2WEB24		
Carpark server			SBP2CPY24	
Display interface				SBP2DI48524

Parking guidance system

Displays			
Types	SBPDISxxxxT	SBPDISxT	SBPDIS9x
			
Dimensions (mm)	215 x 215 x 45 215 x 535 x 45 215 x 358 x 45 215 x 428 x 45 215 x 464 x 45	215 x 253 x 45 215 x 360 x 45 215 x 467 x 45	215 x 950 x 45
Functions	Displays with: green arrow or red cross, disabled sign and up to 3 clear white digits. Programmable from Carpark software	Displays with: 2 - 4 clear white digits. Programmable from Carpark software	9 character matrix display with clear white LED. Can combine text and digits. Programmable from Carpark software
Housing type	Black aluminium box with acrylic glass front	Black aluminium box with acrylic glass front	Black aluminium box with acrylic glass front
Electrical specifications			
Power supply	24 VDC / 5-25 W (40- 60 W heated version)	24 VDC / 14-30 W (50-65 W heated version)	24 VDC / 62 W (120 W heated version)
Features			
	Guides the driver by showing moving green arrow or red cross as well as number of free spaces for a lane or area in the carpark. Blue sign for disabled can be added. RS485 communication	Guides the driver by showing number of free spaces for a lane or area in the carpark by the use of clear white digits. RS485 communication	Show a text or a combination with up to 4 digits on max. 9 character. The text is of costumers own choice. RS485 communication
General specifications			
Degree of protection	IP 54	IP 54	IP 54
Pollution degree	3 (IEC 60664)	3 (IEC 60664)	3 (IEC 60664)
Operating temperature	-20°C to +50°C -40°C to + 50°C (heated version)	-20°C to +50°C -40°C to + 50°C (heated version)	-20°C to +50°C -40°C to + 50°C (heated version)
Humidity	5 to 90% non condensing	5 to 90% non condensing	5 to 90% non condensing
References			
Arrow	SBPDISA (T)		
Arrow / disabled	SBPDISARH (T) / SBPDISALH (T)		
Arrow / disabled / 1 digit	SBPDIS1ARH (T) / SBPDIS1ALH (T)		
Arrow / 2 digit	SBPDIS2AR (T) / SBPDIS2AL (T)		
Arrow / 3 digit	SBPDIS3AR (T) / SBPDIS3AL (T)		
2 digit	SBPDIS2 (T)		
3 digit	SBPDIS3 (T)		
4 digit	SBPDIS4 (T)		
9 digit	SBPDIS9 (T)		

DuplineSafe

	Input module	Output module	Gateway / interface	
Types	GS7510 2101	GS3830 0143	GS3891 0125	GSTI 50
				
Dimensions (mm)	57.5 x 36.0 x 16.4	144 x 77 x 70	144 x 77 x 70	55 x 70 x 15
Functions	Bus-powered safety input module	DuplineSafe relay output module. Monitors up to 63 DuplineSafe inputs	Profibus-DP Gateway passive with Safety mapping	Dupline® Modbus interface module with Safety mapping
Housing type		DIN-rail mounting H8	DIN-rail mounting H8	Compact plastic housing
Electrical specifications				
Number of channels	2	2		
Features/Signal types	1 x NC contact	2 x NO Relays Force Guided contact	Reads/controls up to 128 inputs/outputs through Profibus-DP, Communication speed up to 12 MBaud	
Power supply	Powered through the Dupline® network	230 VAC ± 15%	115 = 115 VAC 230 = 230 VAC	Powered by the RS485 com port
General specifications				
Degree of protection	IP 67	IP 20	IP 20	IP 20
Pollution degree	3 (IEC 60664)	3 (IEC 60664)		
Operating temperature	-40°C to +50°C	-25°C to +50°C	0°C to +50°C	-20°C to +60°C
Storage temperature	-40°C to +70°C	-30°C to +70°C	-20°C to +85°C	-30°C to +85°C
Humidity (non condensing)	20 to 80%	20 to 80%	20 to 80%	
Remarks	Approved according to IEC/EN 61508, EN 62061 and ISO/EN 13849-1 PL e	Approved according to IEC/EN 61508, EN 62061 and ISO/EN 13849-1 PL e	Certified by PNO	Supports Modbus RTU function code 3 and code 16
References				
Cable connection	GS7510 2101			
Cable connection cULus approved	GS7510 2192			
Plug connector	GS7510 2101-1			
Plug connector cULus approved	GS7510 2192-1			
Output relay		GS3830 0143		
Gateway / interface			GS3891 0125	GSTI 50

DuplineSafe

	Optical fibre converter	Repeater	Configuration tool	
Types	GS3492/GS3493	GS3892 0000	GS7380 0080	GS7380 0081
				
Dimensions (mm)	77 x 72 x 70	77 x 144 x 70	28 x 90 x 145	25 x 50 x 100
Functions	Optical repeater for converting DuplineSafe from electrical to optical transmission media	DuplineSafe signal repeater for extension of transmission distance	Configuration and test unit for DuplineSafe	USB Configuration unit for DuplineSafe
Housing type	DIN-Rail, H4	DIN-Rail H8	Handheld	Handheld
Electrical specifications				
Number of channels	Adjusts automatically	Adjusts automatically		
Features/Signal types	All Dupline® signal types	Regenerates the Dupline® signal carrier through channel generator output		Windows based programming tool for safety output relay module and safety input modules
Power supply	230 = 115/230 VAC	024 = 024 VAC 115 = 115 VAC 230 = 230 VAC	9 V battery 6LR61	Supplied by the USB port
General specifications				
Degree of protection	IP 20	IP 40	IP 40	IP 40
Pollution degree				3 (IEC 60664)
Operating temperature	0°C to +50°C	0°C to +50°C	0°C to +50°C	0°C to +50°C
Storage temperature	-20°C to +85°C	-50°C to +85°C	-20°C to +70°C	-20°C to +60°C
Humidity (non condensing)				
Remarks	Operates pair-wise. Runs on 50/125, 62.5/125 or 100/140 micro m with STN connectors		Adapt 7380 is included	
References				
		GS3892 0000	GS7380 0080	GS7380 0081
Optical/electrical converter	GS3492 0000			
Electrical/optical converter	GS3493 0000			

Fieldbuses - Industrial

Channel generators/interfaces

Types	G3490	G3496	G3800
			
Dimensions (mm)	77 x 72 x 70	77 x 72 x 70	77 x 144 x 70
Functions	Standard channel generator	Plug & Play RS232/RS485 Interface with built-in protocols for specific PLC brands and Modbus	Controller and Modbus Interface with built-in GSM Modem (option) or external Radio Modem Logger (option)
Housing type	DIN-Rail, H4	DIN-Rail, H4	DIN-Rail, H8
Electrical specifications			
Number of channels	Selectable	Selectable	Selectable
Features/Signal types		Possibility for 3-wire operation with DC-power on the 3 rd wire	4 x Contact/PNP input +4 x PNP 10-30 VDC output 2 x RS232+1 x RS485. Possibility for alarms, monitoring and control via SMS messages
Power supply	024 = 24 VAC 115 = 115 VAC 230 = 230 VAC 824 = 15-30 VDC	700 = 20-30 VDC	800 = 10-30 VDC 230 = 115-230 VAC
General specifications			
Degree of protection	IP 20	IP 20	IP 20
Operating temperature	-20°C to +50°C	0°C to +50°C	0°C to +50°C
Storage temperature	-50°C to +85°C	-50°C to +85°C	-20°C to +85°C
Remarks		Built-in protocol for specific PLC brands for easy interfacing	Up to 32 controllers can be networked together via RS485 or Ethernet via converter module
References			
Channel Generator	G3490 0000		
Mitsubishi		G3496 0003	
Omron		G3496 0004	
Modbus		G3496 0005	
Allen-Bradley		G3496 0006	
Schneider		G3496 0007	
Matsushita		G3496 0009	
-GSM Modem, -RS485			G3800 0015
+GSM Modem, -RS485			G3800 1015
-GSM Modem, +RS485			G3800 0016
+GSM Modem, +RS485			G3800 1016

Fieldbuses - Industrial

Channel generators/interfaces		Digital input modules		
Types	G3891	GTI50	G3410 5501	G3420
				
Dimensions (mm)	77 x 144 x 70	55 x 70 x 15 mm	77 x 72 x 70	77 x 72 x 70
Functions	Gateways to Fieldbus systems (Profibus-DP, DeviceNet etc.)	Dupline® Modbus RTU Interface module for Text Displays and Touch screens	Dupline® powered transmitter with 8 monostable volt-free contacts	Input module for external supply with optoisolated inputs
Housing type	DIN-Rail, H8	Closed plastic housing with 25p male sub-D	DIN-Rail, H4	DIN-Rail, H4
Electrical specifications				
Number of channels	Selectable		8	8
Features/Signal types		Supports Modbus RTU function code 3 and code 16	Volt-free input contacts	Contact/NPN Voltage (6-265 VAC/DC)
Power supply	230 = 115/230 VAC	Powered by RS485 port	Powered by Dupline®	024 = 24 VAC 115 = 115 VAC 230 = 230 VAC 800 = 10-30 VDC
General specifications				
Degree of protection	IP 20	IP 20	IP 20	IP 20
Operating temperature	0°C to +50°C	-20°C to +60°C	-20°C to +50°C	-20°C to +50°C
Storage temperature	-20°C to +85°C	-50°C to +85°C	-50°C to +85°C	-50°C to +85°C
Remarks			Low power consumption	
References				
	GTI50			
Profibus-DP with C. G.	G3891 0020			
Profibus-DP analogue output multiplex	G3891 0021			
DeviceNet	G3891 0050			
Lonworks	G3891 0051			
Modbus / TCP	G3891 0052			
Profibus-DP passive	G3891 0120			
8 channel	G3410 5501			
Contact/NPN	G3420 5501			
Voltage	G3420 5502			

Fieldbuses - Industrial

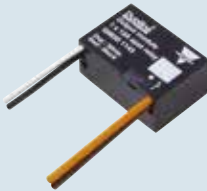
Digital input modules

Types	G4420 7401	G5010	G8810 2201
			
Dimensions (mm)	36 x 85 x 58	49 x 22.5 x 56	28 x 14 x 10
Functions	Input module for counting of pulses from energy meters, item detectors etc	Dupline® powered single input Module	Small-sized 2-channel monostable transmitter
Housing type	DIN-Rail, H2	DIN-Rail, Mini-E	Plug-in
Electrical specifications			
Number of channels	4	1	2
Features/Signal types	Contact input (DIN 43 864). Max. count frequency: 14 Hz	Contact input	2 contact inputs for push buttons cULus approved
Power supply	230 = 230 VAC 724 = 15-30 VDC	Powered through the Dupline® network	Supplied by Dupline®
General specifications			
Degree of protection	IP 40	IP 20	IP 65
Operating temperature	-20°C to +60°C	-20°C to +50°C	-40°C to +70°C
Storage temperature	-20°C to +85°C	-50°C to +85°C	-40°C to +70°C
Remarks	Decentral counting. Counter values stored in non-volatile memory		Address coding by GAP 1605
References			
4 channel Counter	G4420 7401		
1 channel		G5010 1106	
2 channels		G5010 2206	G8810 2201

Fieldbuses - Industrial

	Digital I/O modules		Digital output modules	
Types	G3440 4443	G3440 5543	G3430 / G3830	G34305545
				
Dimensions (mm)	77 x 72 x 70	77 x 72 x 70	77 x 72 x 70 77 x 144 x 70 (H8)	77 x 72 x 70
Functions	Combined I/O module for external supply with optoisolated inputs and relay outputs	I/O module for digital signals	Output modules for external supply with isolated outputs	Central relay module with 8 x SPST relays for resistive loads
Housing type	DIN-Rail, H4	DIN-Rail, H4	DIN-Rail, H4 DIN-Rail, H8 (G3830 5543)	DIN-Rail, H4
Electrical specifications				
Number of channels	4	6	1, 2, 4, 8	8
Features/Signal types	2 x 6-265 VAC/DC inputs + 2 x SPST relay outputs	4 opto isolated inputs and 2 SPST relay outputs	10 A SPDT relay 10 A SPST relay 0.7 A NPN transistor 0.7 A PNP transistor	8 x 16 A/250 VAC relays Inrush current: <130 A
Power supply	024 = 24 VAC 115 = 115 VAC 230 = 230 VAC 824 = 15-30 VDC	230 = 230 VAC	024 = 24 VAC 115 = 115 VAC 230 = 230 VAC 800 = 10-30 VDC 824 = 15-30 VDC	024 = 24 VAC 115 = 115 VAC 230 = 230 VAC
General specifications				
Degree of protection	IP 20	IP 20	IP 20	IP 20
Operating temperature	-20°C to +50°C	-20°C to +50°C	-20°C to +50°C	-5°C to +50°C
Storage temperature	-50°C to +85°C	-50°C to +85°C	-50°C to +85°C	-50°C to +85°C
Remarks	Total module load max. 32 A			
References				
2 input + 2 output SPST	G3440 4443			
4 input + 2 output SPST		G3440 5543		
1 x 10 A SPDT			G3430 1149	
2 x 10 A SPDT			G3430 2249	
4 x 5 A SPST			G3430 4443	
4 x 16 A SPST			G3430 4445	
8 x 5 A SPST			G3830 5543	
8 x 0.7 A NPN			G3430 5511	
8 x 0.7 A PNP			G3430 5521	
8 x 16 A SPST (Max. 32 A)				G3430 5545

Fieldbuses - Industrial

	Digital output modules	Analogue input modules		
Types	G8830 1143	G3429 6470	G3210 1161	G3210 1111
				
Dimensions (mm)	26 x 39 x 17	77 x 72 x 70	77 x 36 x 70	77 x 36 x 70
Functions	Decentral relay module with 1 x SPST relay for control of lights	Universal analogue input module for external supply	Analogue input module powered from Dupline® and input signal	Dupline®- powered Analogue input module for Pt100 temperature sensor
Housing type	Compact regular, with solid cables. For decentral installation	DIN-Rail, H4	DIN-Rail, H2	DIN-Rail, H2
Electrical specifications				
Number of channels	1	Selectable	1	1
Features/Signal types	1 x 13 A/250 VAC relay Inrush current: <130 A	4 x isolated analogue input. Input type individually configurable (0-20 mA, 4-20 mA, 0-10 VDC)	1 x 4-20 mA input	1 x Pt100 3-wire input Ranges: (-50°C to +40°C) (+30°C to +120°C) (-10°C to +100°C)
Power supply	Powered through the Dupline® network	024 = 24 VAC 115 = 115 VAC 230 = 230 VAC 800 = 10-30 VDC	Powered through the Dupline® network and 4-20 mA input signal	Powered through the Dupline® network
General specifications				
Degree of protection	IP 20	IP 20	IP 20	IP 20
Operating temperature	0°C to +50°C	0°C to +50°C	0°C to +50°C	0°C to +50°C
Storage temperature	-50°C to +85°C	-20°C to +85°C	-50°C to +85°C	-50°C to +85°C
Remarks	Recommended minimum load 100 mA / 12 V	Protocol freely selectable (Analink, Multiplexed BCD or 8-bit)	Uses Analink 8-bit protocol	Uses Analink 8-bit protocol. Built-in cable compensation
References				
Universal analogue output	G3429 6470			
Dupline® powered analogue input	G3210 1161			
-50°C to +40°C	G3210 1111			
+30°C to +120°C	G3210 1112			
-10°C to +100°C	G3210 1113			
1 x 13 A SPST	G8830 1143			

Fieldbuses - Industrial

	Analogue output modules	Decentral analogue input modules		
Types	G3439 6470	G8810 6265	G8810 6311	G8810 6312
				
Dimensions (mm)	77 x 72 x 70	50 X 30 X 18	50 X 30 X 18	50 X 30 X 18
Functions	Universal analogue output module for external supply	Decentral analogue module with 3 x 0-10 VDC inputs designed for HVAC systems	Decentral analogue module with 2 x 0-10 VDC, 1 x thermistor and 1 x variable resistor inputs designed for HVAC systems	Decentral analogue module with 1 x thermistor and 1 x variable resistor inputs designed for HVAC systems
Housing type	DIN-Rail, H4	Compact housing for decentral installation	Compact housing for decentral installation	Compact housing for decentral installation
Electrical specifications				
Number of channels	Selectable	3	4	2
Features/Signal types	4 x analogue outputs. Output type configurable for 0-20 mA, 4-20 mA or 0-10 VDC	3 x 0-10 VDC input	2 x 0-10 VDC input 1 x thermistor 10k3 input 1 x variable resistor 1 - 11 KΩ input	1 x thermistor 10k3 input 1 x variable resistor 1 - 11 KΩ input
Power supply	024 = 24 VAC 115 = 115 VAC 230 = 230 VAC 800 = 10-30 VDC	Powered from external 15 - 30 VDC	Powered from external 15 - 30 VDC	Dupline® powered
General specifications				
Degree of protection	IP 20	IP 20	IP 20	IP 20
Operating temperature	0°C to +50°C	0°C to +50°C	0°C to +50°C	0°C to +50°C
Storage temperature	-20°C to +85°C	-20°C to +85°C	-20°C to +85°C	-20°C to +85°C
Remarks	Protocol freely selectable (Analink, Multiplexed BCD or 8-bit)	Analink protocol 8 bit resolution	Analink protocol 8 bit resolution	Analink protocol 8 bit resolution
References				
Universal analogue output	G3439 6470			
Decentral 3 x input		G8810 6265		
Decentral 4 x input			G8810 6311	
Decentral 2 x input Bus powered				G8810 6312

Fieldbuses - Industrial

	Digital sensors		Temperature sensor
Types	G6110 1145	G8910 1101	G8911 1010
			
Dimensions (mm)	M18 x 55	Ø11 x 68	67 x 35 x 15
Functions	Dupline® powered inductive proximity switch	Dupline® powered magnet proximity switch	Temperature sensor for outdoor use. With built-in PT1000 transducer
Housing type	M18	Cylindrical	Flat pack sensor housing
Electrical specifications			
Number of channels	1	1	1
Features/Signal types	Detects proximity of metal objects	Detects proximity of magnet	1 x Analink Range: -30°C to +60°C
Power supply	Powered through the Dupline® network	Powered through the Dupline® network	Powered through the Dupline® network
General specifications			
Degree of protection	IP 67	IP 67	IP 67
Operating temperature	-25°C to +70°C	-20°C to +50°C	-25°C to +70°C
Storage temperature	-30°C to +80°C	-20°C to +70°C	-55°C to +85°C
Remarks	Available with cable or M12 connector. Flush mounting	Available in Ø 11 plastic housing or with M14 metal thread	8-bit resolution
References			
Cable	G6110 1145		
M12 plug	G6110 1145-1		G8911 1010
Ø11		G8910 1101	
M14		G8910 1101-G	

Fieldbuses - Industrial

Types	Repeater	Converters	
Housing	D3892 0000	G3491 0040	G3492 / G3493
  			
Dimensions (mm)	77 x 144 x 70	77 x 72 x 70	77 x 72 x 70
Functions	Dupline® signal Repeater for extension of transmission distance	Private line Modem for long distance transmission of Dupline® signals	Optical repeater for converting Dupline® from electrical to optical transmission media
Housing type	DIN-Rail, H8	DIN-Rail, H4	DIN-Rail, H4
Electrical specifications			
Number of channels	Adjusts automatically	Adjusts automatically	Adjusts automatically
Features/Signal types	All Dupline® signal types. Regenerates the Dupline® signal carrier through channel-generator output	Digital, 8-bit analogue, non-multiplexed 3 1/2 digit BCD analogue	All Dupline® signal types
Power supply	024 = 24 VAC 115 = 115 VAC 230 = 230 VAC	024 = 24 VAC 115 = 115 VAC 230 = 230 VAC	230 = 115/230 VAC
General specifications			
Degree of protection	IP 20	IP 20	IP 20
Operating temperature	0°C to +50°C	0°C to +50°C	0°C to +50°C
Storage temperature	-50°C to +85°C	-20°C to +85°C	-20°C to +85°C
Remarks		Operates pair-wise	Operates pair-wise. Runs on 0/125, 62.5/125 or 100/140 micro m with STN connectors
References			
Repeater (Booster)	D3892 0000		
Long distance modem		G3491 0040	
Optical/electrical converter			G3492 0000
Electrical/optical converter			G3493 0000

Fieldbuses - Industrial

	Display modules	Power supply
Types	G5460 6606	G3485 0000
		
Dimensions (mm)	96 x 96 x 78	77 x 72 x 70
Functions	LED status indicator for 16 Dupline® channels	3-wire power supply, used when multiple Dupline® modules are supplied through a DC-bus
Housing type	Panel mounting	DIN-Rail, H4
Electrical specifications		
Number of channels	16	Selectable
Features/Signal types	Each of the 16 LED's indicates the status of the digital channels assigned to it	Supply current ≤ 4 A (up to 25°C) or ≥ 3 A (up to 50°C)
Power supply	115 = 115 VAC 230 = 230 VAC	15-30 VDC
General specifications		
Degree of protection	IP 40	IP 20
Operating temperature	0°C to +50°C	0°C to +50°C
Storage temperature	-20°C to +60°C	-20°C to +85°C
Remarks		Multiple units can be connected in parallel to increase length and size of a Dupline® system
References		
LED indicator for Dupline®	G5460 6606	
3-wire power supply		G3485 0000 700

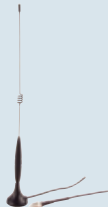
Fieldbuses - Industrial

Accessories

Types	GAP1605	GTU8	G3282 2002 230
			
Dimensions (mm)	120 x 65 x 22	145 x 90 x 28	77 x 36 x 70
Functions	Dupline® coding device for assigning addresses to Dupline® I/O modules and sensors	Dupline® test unit for monitoring and control of Dupline® channels	Dupline® bus separator
Housing type	Handheld	Handheld	H2 Housing
Electrical specifications			
Number of channels	NA	Adjusts automatically	2
Features/Signal types		Digital, multiplexed BCD, 8-bit analogue signals and split I/O. Also prepared to calibrate sensors in Carpark system	Disconnect the secondary side of the Dupline® bus when a short-circuit is detected
Power supply	9 V battery	Powered through the Dupline® network	230 V
General specifications			
Degree of protection	IP 40	IP 40	IP 20
Operating temperature	0°C to +50°C	0°C to +50°C	0°C to +50°C
Storage temperature	-20°C to +60°C	-20°C to +85°C	-20°C to +85°C
Remarks		Options for latching digital signals and for reading multiplexed BCD values	
References			
Programmer	GAP1605		
Monitoring and control unit		GTU8	
Bus separator			G3282 2002 230

Fieldbuses - Industrial

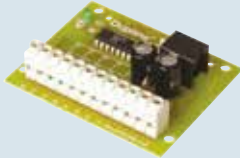
Accessories

Types	ADAPT 1605	ANT1	ANT2	DT01/DT02
				
Dimensions (mm)	25 x 50 x 100		15 x 35 x 120	17.5 x 70 x 77
Functions	Codings adaptor between GAP1605 and Dupline® modules without standard connection plug	GSM antenna 900 MHz	Active antenna used for radio controlled clock	Cable termination unit
Housing type	Handheld box		Glued plastic casing	H1 housing
Electrical specifications				
Features/Signal types	4 clip-on terminals for Dupline® modules. Includes a M12 plug for modules like G8911 1010		Input signal is 77.5 kHz	Removes distortion caused by reflection
Power supply		Powered by G3800 XXXX	Powered by G3800 XXXX	No power needed
General specifications				
Degree of protection	IP 20	IP 67	IP 40	IP 20
Operating temperature	0°C to +50°C	-25°C to +60°C	0°C to +50°C	-20°C to +50°C
Storage temperature	-20°C to +60°C	-20°C to +60°C	-20°C to +60°C	-50°C to +85°C
References				
Adaptor	ADAPT 1605			
Antenna		ANT1	ANT2	
Standard Dupline®				DT01
Hi-line Dupline®				DT02

Fieldbuses - Irrigation

	Digital I/O modules		Converter	Tools
Types	GH3440 4412	GH6440 4412	GH3485 0000	GHTU8
				
Dimensions (mm)	77 x 72 x 70	80 x 77 x 50	77 x 72 x 70	145 x 90 x 28
Functions	I/O module for irrigation valve control	I/O module for irrigation valve control	Dupline® to Hi-Line converter	Dupline® test unit for monitoring and control of Dupline® channels. Used for Hi-line modules
Housing type	DIN-Rail, H4	Fully molded housing for under ground installation	DIN-Rail, H4	Handheld
Electrical specifications				
Number of channels	4	4	Adjusts automatically	Adjusts automatically
Features/Signal types	2 outputs for control of 3-wire 12 VDC latching valve, and 2 contact inputs	2 outputs for control of 3-wire 12 VDC latching valve, and 2 contact inputs	Converts the Dupline® signal to Hi-Line 28 VDC level for control of irrigation valves (see GH3440 4412 and GH6440 4412)	Digital, multiplexed BCD and 8-bit analogue signals
Power supply	Powered through Hi-Line signal (see GH34850000)	Powered through Hi-Line signal (see GH34850000)	724 = 20-30 VDC	Powered through the Dupline® network
General specifications				
Degree of protection	IP 20	IP 67	IP 20	IP 40
Operating temperature	0°C to +50°C	0°C to +50°C	0°C to +50°C	0°C to +50°C
Storage temperature	-50°C to +85°C	-50°C to +85°C	-50°C to +85°C	-20°C to +85°C
Remarks				Options for latching digital signals and for reading multiplexed BCD values
References				
2 outputs and 2 inputs	GH3440 4412	GH6440 4412		
Converter			GH3485 0000	
Monitoring and control unit				GHTU8

Fieldbuses - Elevator

	Input module	Output module	Input/output module
Types	G2120	G2130	G2140 4421
			
Dimensions (mm)	Open PCB 72.3 x 59	Open PCB 74 x 59	Open PCB 54 x 40
Functions	8 contact inputs for push buttons or transistors. LED indications for supply and carrier	8 outputs for control of floor indicators and lamps. LED indications for supply and carrier	2 push button inputs. 2 PNP-transistor outputs. LED indications for supply and carrier
Housing type	Snap locks or DIN-rail (vertical or horizontal)	Snap locks or DIN-rail (vertical or horizontal)	Snap locks or DIN-rail (vertical or horizontal)
Electrical specifications			
Number of channels	8	8	4
Features/Signal types	3-wire operation with DC-power on wire 3	3-wire operation with DC-power on wire 3	3-wire operation with DC-power on wire 3
Power supply	700 = 10 - 30 VDC	700 = 10 - 30 VDC	700 = 10 - 30 VDC
General specifications			
Operating temperature	-20°C to +50°C	-20°C to +50°C	-20°C to +50°C
References			
NPN	G2120 5501 700	G2130 5511 700	
PNP	G2120 5502 700	G2130 5521 700	G2140 4421 700

Fieldbuses - Elevator

Input/output module		Master modules	
Types	G2140 55.0	G2196	G3496
			
Dimensions (mm)	Open PCB 74 x 59	Open PCB 86 x 54	77 x 72 x 70
Functions	4 push-button inputs 4 transistor outputs LED indications for supply and carrier	128 signals RS 485/RS 232 interface to control system LED indications for supply, carrier and RS485Tx	Plug & Play RS232/RS485 Interface with built-in protocols for specific PLC brands and Modbus
Housing type	Snap locks or DIN-rail (vertical or horizontal)	Snap locks or DIN-rail (vertical or horizontal)	DIN-Rail, H4
Electrical specifications			
Number of channels	8	128 inputs and 128 outputs	Selectable
Features/Signal types	3-wire operation with DC-power on 3 wires	3-wire operation with DC-power on 3 wires	Possibility for 3-wire operation with DC-power on 3 wires
Power supply	700 = 10 - 30 VDC	700 = 20 - 30 VDC	700 = 20 - 30 VDC
General specifications			
Degree of protection			IP 20
Operating temperature	-20°C to +50°C	-20°C to +60°C	0°C to +50°C
Storage temperature			-50°C to +85°C
Remarks			Built-in protocol for specific PLC brands for easy interfacing
References			
NPN	G2140 5510 700		
PNP	G2140 5520 700		
Mitsubishi FX & A-series		G2196 0003 700	G3496 0003 700
Omron		G2196 0004 700	G3496 0004 700
Modbus RTU Slave		G2196 0005 700	G3496 0005 700
Allen-Bradley			G3496 0006 700
Matsushita			G3496 0009 700

Monitoring relays

Current relays

Types	DIA 01 PIA 01	DIA 53	DIB 01 PIB 01
			
Dimensions HxWxD (mm)	80 x 22.5 x 99.5 [D]	81 x 17.5 x 67.2 [Mini-D]	80 x 22.5 x 99.5 [D]
DIN RAIL housing	80 x 36 x 94 [P]		80 x 36 x 94 [P]
Plug-in housing			
Function	Over current monitoring relay. 1-phase AC / DC. Direct input or on CT 5A. Setpoint adjustable. Hysteresis adjustable.	Over current monitoring relay. 1-phase AC. Setpoint adjustable. 2-wire connection. Reaction time < 50 ms for F versions. 12 mm hole for insulated current carrying wire.	Over or under current monitoring relay. 1-phase AC / DC TRMS. Direct input or on CT 10A. Setpoint adjustable. Hysteresis adjustable. Delay time adjustable. 12 mm hole for insulated current carrying wire [100 A].
Input specifications			
Measuring range	0.5 - 5 AAC/DC	2 - 20 AAC [20A] 5 - 50 AAC [50A] 10 - 100 AAC [100A]	0.1 - 5 mAAC/DC [5 MA] 1 - 50 mAAC/DC [50 MA] 10-500 mAAC/DC [500 MA] 0.1-5 AAC/DC [5 A] 1-10 AAC/DC [10 A] 2-100 AAC [100 A]
Output specifications			
	1 x SPDT relay	Static output	1 x SPDT relay
Max. load AC1	8 A / 250 VAC		8 A / 250 VAC
Max. load DC12	5 A / 24 VDC	100 mA	5 A / 24 VDC
Electrical life	>1 x 10 ⁵ operations		>1 x 10 ⁵ operations
General specifications			
Power supply	24-48 VAC/DC [D48] 115 / 230 VAC [B23]	40 VDC max. Powered by the measured current	24-48 VAC/DC [D48] 115 / 230 VAC [B23] 24 VDC / 24-240 VAC [M24]
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA
References			
	DIA01C D48 5A	DIA53S 724 20A	DIB01C ... 5MA
	PIA01C D48 5A	DIA53S 724 50A	DIB01C ... 50MA
	DIA01C B23 5A	DIA53S 724 100A	DIB01C ... 500MA
	PIA01C B23 5A	DIA53S 724 20A F	DIB01C ... 5A
		DIA53S 724 50A F	DIB01C ... 10A
		DIA53S 724 100A F	DIB01C M24 100A
			PIB01C ... 5MA
			PIB01C ... 50MA
			PIB01C ... 500MA
			PIB01C ... 5A
			PIB01C ... 10A
			... = insert code for Power Supply

Monitoring relays

Current relays

Types	DIB 71	DIB 02 PIB 02	DIC 01 PIC 01
			
Dimensions HxWxD (mm)	81 x 35.5 x 67.2 [Mini-D]	80 x 22.5 x 99.5 [D] 80 x 36 x 94 [P]	80 x 45 x 99.5 [D] 80 x 36 x 94 [P]
DIN RAIL housing			
Plug-in housing			
Function	Over or under current monitoring relay. 1-phase AC/DC TRMS. Direct input or on CT 5 A. Setpoint adjustable. Hysteresis adjustable. Delay time adjustable.	Over or under current monitoring relay. 1-phase AC/DC TRMS. Input on shunt or CT MI / MP. Setpoint adjustable. Hysteresis adjustable. Delay time adjustable.	Process signal monitoring relay. 1-phase AC/DC TRMS. Direct input, CT A82 or CT MI / MP. 2 setpoints separately adjustable. Hysteresis adjustable. 2 delay functions separately adjustable.
Input specifications			
Measuring range	0.1 - 5 mAAC/DC [5MA] 1 - 50 mAAC/DC [50MA] 10 - 500 mAAC/DC [500 MA] 0.1 - 5 AAC/DC [5A]	6 - 150 mVAC/DC 0.4 - 4 V _P	0.5 - 20 mAAC/DC 0.1 - 10 VAC/DC 0.4 - 4 V _P
Output specifications			
	1 x SPDT relay	1 x SPDT relay	1 x SPDT relay [P] 2 x SPDT relays [D]
Max. load AC1	5 A / 250 VAC	8 A / 250 VAC	5 A / 250 VAC
Max. load DC12	5 A / 24 VDC	5 A / 24 VDC	5 A / 24 VDC
Electrical life	>1 x 10 ⁵ operations	>1 x 10 ⁵ operations	>1 x 10 ⁵ operations
General specifications			
Power supply	24 / 48 VAC [B48] 115 / 230 VAC [B23]	24 - 48 VAC/DC [D48] 115 / 230 VAC [B23]	24 - 48 VAC/DC [D48] 115 / 230 VAC [B23]
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA
References			
	DIB71C B48 5MA	DIB02C D48 150MV	DIC01D D48 AV0
	DIB71C B48 50MA	PIB02C D48 150MV	PIC01C D48 AV0
	DIB71C B48 500MA	DIB02C B23 150MV	DIC01D B23 AV0
	DIB71C B48 5A	PIB02C B23 150MV	PIC01C B23 AV0
	DIB71C B23 5MA		
	DIB71C B23 50MA		
	DIB71C B23 500MA		
	DIB71C B23 5A		

Monitoring relays

Voltage relays

Types	DUA 01 PUA 01	DUA 52	DUA 55	DUB 01 PUB 01
				
Dimensions HxWxD (mm)	80 x 22.5 x 99.5 [D] 80 x 36 x 94 [P]	81 x 17.5 x 67.2 [Mini-D]	81 x 17.5 x 67.2 [Mini-D]	80 x 22.5 x 99.5 [D] 80 x 36 x 94 [P]
Function	Over current and voltage monitoring relay. 1-phase AC/DC. Setpoint adjustable. Hysteresis adjustable.	Under voltage monitoring relay for DC battery. Setpoint adjustable. Hysteresis adjustable. Measures its own power supply.	Over and under voltage monitoring relay. 1-phase (measures its own power supply) AC TRMS.	Over or under voltage monitoring relay. 1-phase AC/DC TRMS. Setpoint adjustable. Hysteresis adjustable. Delay time adjustable.
Input specifications				
Measuring range	2 - 500 VAC/DC 0.4 - 4 V _P	8 - 28 VDC [724] 38 - 58 VDC [748]	208 / 220 / 230 / 240 VAC	0.1 - 10 VAC/DC [10 V] 2-500 VAC/DC [500 V]
Output specifications				
	1 x SPDT relay	1 x SPDT relay	1 x SPDT relay	1 x SPDT relay
Max. load AC1	8 A / 250 VAC	5 A / 250 VAC	5 A / 250 VAC	8 A / 250 VAC
Max. load DC12	5 A / 24 VDC	5 A / 24 VDC	5 A / 24 VDC	5 A / 24 VDC
Electrical life	>1 x 10 ⁵ operations	>1 x 10 ⁵ operations	>1 x 10 ⁵ operations	>1 x 10 ⁵ operations
General specifications				
Power supply	24 - 48 VAC/DC [D48] 115 / 230 VAC [B23]	8 - 28 VDC [724] 38 - 58 VDC [748]	208 - 480 VAC	24-48 VAC/DC [D48] 115 / 230 VAC [B23]
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA
References				
	DUA01C D48 500V	DUA52 C724	DUA55 CM44	DUB01C D48 10V
	PUA01C D48 500V	DUA52 C748		DUB01C D48 500V
	DUA01C B23 500V			PUB01C D48 10V
	PUA01C B23 500V			PUB01C D48 500V
				DUB01C B23 10V
				DUB01C B23 500V
				PUB01C B23 10V
				PUB01C B23 500V

Monitoring relays

Voltage relays

Types	DUB 71	DUB 02 PUB 02	DUB 03 PUB 03	DUC 01 PUC 01
				
Dimensions HxWxD (mm)				
DIN RAIL housing	81 x 35.5 x 67.2 [Mini-D]	80 x 22.5 x 99.5 [D] 80 x 36 x 94 [P]	80 x 22.5 x 99.5 [D] 80 x 36 x 94 [P]	80 x 45 x 99.5 [D] 80 x 36 x 94 [P]
Plug-in housing				
Function	Over or under voltage monitoring relay. 1-phase AC/DC TRMS. Setpoint adjustable. Hysteresis adjustable. Delay time adjustable.	Over and under voltage monitoring relay. 1-phase (measures its own power supply) AC TRMS. Over and under voltage setpoints separately adjustable. Hysteresis adjustable. Delay time adjustable (ON/OFF).	Over or under voltage monitoring relay. 1-phase (measures its own power supply) AC/DC TRMS. Setpoint adjustable. Hysteresis adjustable. Delay time adjustable.	Over and under voltage monitoring relay. 1-phase AC/DC TRMS. 2 setpoints separately adjustable. Hysteresis adjustable. 2 delay functions separately adjustable.
Input specifications				
Measuring range	0.1 - 10 VAC/DC [10 V] 2-500 VAC/DC [500 V]	24/115/230 VAC	24/48/115/240 VAC/DC	2 - 500 VAC/DC [500 V]
Output specifications				
	1 x SPDT relay	1 x SPDT relay	1 x SPDT relay [P]	1 x SPDT relay [C] 2 x DPDT relay [D]
Max. load AC1	5 A / 250 VAC	8 A / 250 VAC	8 A / 250 VAC	8 A / 250 VAC
Max. load DC12	5 A / 24 VDC	5 A / 24 VDC	5 A / 24 VDC	5 A / 24 VDC
Electrical life	>1 x 10 ⁵ operations	>1 x 10 ⁵ operations	>1 x 10 ⁵ operations	>1 x 10 ⁵ operations
General specifications				
Power supply	24/48 VAC [B48] 115 / 230 VAC [B23]	24/115/230 VAC	12 - 240 VAC/DC	24 - 48 VAC/DC [D48] 115 / 230 VAC [B23]
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA
References				
	DUB71C B48 10V	DUB02C T23	DUB03C W24	DUC01D D48 500V
	DUB71C B48 500V	PUB02C T23	PUB03C W24	PUC01C D48 500V
	DUB71C B23 10V			DUC01D B23 500V
	DUB71C B23 500V			PUC01C B23 500V

Monitoring relays

3-phase voltage relays

Types	DPA 01 PPA 01	DPA 51 DPA 71	DPA 03 PPA 03	DPA 53
				
Dimensions HxWxD (mm)				
DIN RAIL housing	80 x 22.5 x 99.5 [D]	81 x 17.5 x 67.2 [Mini-D] 81 x 35.5 x 67.2 [Mini-D]	80 x 22.5 x 99.5 [D]	81 x 17.5 x 67.2 [Mini-D]
Plug-in housing	80 x 36 x 94 [P]		80 x 36 x 94 [P]	
Function	Phase sequence, total and partial phase loss monitoring relay. 3-phase AC (measures its own power supply). Regenerated voltage detection.	Phase sequence, total and partial phase loss monitoring relay. 3-phase AC (measures its own power supply). Regenerated voltage detection.	Under voltage, phase sequence, total and partial phase loss monitoring relay. 3-phase AC TRMS (measures its own power supply). Regenerated voltage detection.	Under voltage, phase sequence, total and partial phase loss monitoring relay. 3-phase AC TRMS (measures its own power supply). Regenerated voltage detection.
Input specifications				
Measuring range	208 - 240 VAC [M23] 208 - 415 VAC [P] [M44] 208 - 480 VAC [D] [M44] 380 - 415 VAC [P] [M48] 380 - 480 VAC [D] [M48] 380 - 600 VAC [M60] 380 - 690 VAC [M69]	208 - 240 VAC [M23] 208 - 480 VAC [M44] 380 - 480 VAC [M48]	208 - 240 VAC [M23] 380 - 415 VAC [P] [M48] 380 - 480 VAC [D] [M48] 600 - 690 VAC [M69]	208 - 240 VAC [M23] 380 - 480 VAC [M48]
Output specifications				
	1 x SPDT relay [C] 1 x DPDT relay [D]	1 x SPDT relay [C] 1 x DPDT relay [D]	1 x SPDT relay	1 x SPDT relay
Max. load AC1	8 A / 250 VAC	5 A / 250 VAC	8 A / 250 VAC	5 A / 250 VAC
Max. load DC12	5 A / 24 VDC	5 A / 24 VDC	5 A / 24 VDC	5 A / 24 VDC
Electrical life	>1 x 10 ⁵ operations	>1 x 10 ⁵ operations	>1 x 10 ⁵ operations	>1 x 10 ⁵ operations
General specifications				
Power supply	208 - 240 VAC [M23] 208 - 415 VAC [P] [M44] 208 - 480 VAC [D] [M44] 380 - 415 VAC [P] [M48] 380 - 480 VAC [D] [M48] 380 - 600 VAC [M60] 380 - 690 VAC [M69]	208 - 240 VAC [M23] 208 - 480 VAC [M44] 380 - 480 VAC [M48]	208 - 240 VAC [M23] 380 - 415 VAC [P] [M48] 380 - 480 VAC [D] [M48] 600 - 690 VAC [M69]	208 - 240 VAC [M23] 380 - 480 VAC [M48]
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA
References				
	DPA01D M23	DPA51C M44	DPA03C M23	DPA53C M23
	PPA01D M23	DPA71D M23	PPA03C M23	DPA53C M48
	DPA01C M44	DPA71D M48	DPA03C M48	
	PPA01C M44		PPA03C M48	
	DPA01D M48		DPA03C M69	
	PPA01D M48			
	DPA01C M60			
	DPA01C M69			

Monitoring relays

3-phase voltage relays

Types	DPA 55	DPB 01 PPB 01	DPB 51
			

Dimensions HxWxD (mm)
DIN RAIL housing
Plug-in housing

81 x 17.5 x 67.2 [Mini-D]

80 x 22.5 x 99.5 [D]
80 x 36 x 94 [P]

90 x 17.5 x 67.2 [Mini-D]

Function	Over and under voltage, phase sequence, total and partial phase loss monitoring relay. 3-phase (measures its own power supply) AC TRMS. Two tolerance voltage windows. Regenerated voltage detection.	Over and under voltage, phase sequence, total and partial phase loss. 3-phase+N AC TRMS (measures its own power supply). N versions without phase sequence detection. W4 versions supplied between L and N. Regenerated voltage detection 2 setpoints separately adjustable. Delay time adjustable.	Over and under voltage monitoring phase sequence, total and partial phase loss, neutral loss monitoring relay. 3-phase+N AC TRMS (measures its own power supply). Regenerated voltage detection 2 setpoints separately adjustable. Delay time adjustable.
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Input specifications

Measuring range	208 - 480 VAC	208 - 240 VAC [M23] 380 - 415 VAC [P] [M48] 380 - 480 VAC [D] [M48]	208 - 480 VAC
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Output specifications

	1 x SPDT relay	1 x SPDT relay	1 x SPDT relay
Max. load AC1	5 A / 250 VAC	8 A / 250 VAC	5 A / 250 VAC
Max. load DC12	5 A / 24 VDC	5 A / 24 VDC	5 A / 24 VDC
Electrical life	>1 x 10 ⁵ operations	>1 x 10 ⁵ operations	>1 x 10 ⁵ operations

General specifications

Power supply	208 - 480 VAC	208 - 240 VAC [M23] 380 - 415 VAC [P] [M48] 380 - 480 VAC [D] [M48] [W]	208 - 480 VAC
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA

References

DPA55C M44	DPB01C M23	DPB51C M44
	PPB01C M23	DPB51C M44T
	DPB01C M23 N	DPB51C M44B006
	PPB01C M23 N	DPB51C M44B006T
	DPB01C M48	
	PPB01C M48	
	DPB01C M48 W4	
	PPB01C M48 W4	
	DPB01C M48 N	
	PPB01C M48 N	
	DPB01C M48 N W4	
	PPB01C M48 N W4	

Monitoring relays

3-phase voltage relays

Types	DPA52	DPB52	DPB 02 PPB 02	DPC 01 PPC 01
				
Dimensions HxWxD (mm)	81 x 17.5 x 67.2 [Mini-D]	81 x 17.5 x 67.2 [Mini-D]	80 x 22.5 x 99.5 [D] 80 x 36 x 94 [P]	80 x 45 x 99.5 [D] 80 x 36 x 94 [P]
DIN RAIL housing				
Plug-in housing				
Function	Phase sequence, total and partial phase loss monitoring relay. 3-phase AC TRMS (measures its own power supply), switching power supply. Regenerated voltage detection	Over and under voltage, phase sequence, total and partial phase loss monitoring 3-phase (measures its own power supply), switching power supply. Regenerated voltage detection. 2 setpoints separately adjustable. Delay time adjustable.	Asymmetry monitoring relay, phase sequence, total and partial phase loss monitoring relay. 3-phase +N AC TRMS (measures its own power supply). Adjustable asymmetry. Delay time adjustable.	Over and under voltage, asymmetry and tolerance, phase sequence, total and partial phase loss monitoring relay. 3-phase+N AC TRMS (measures its own power supply). Setpoint separately adjustable by function.

Input specifications

Measuring range	208 - 480 VAC	208 - 480 VAC	208 - 240 VAC [M23] 380 - 415 VAC [P] [M48] 380 - 480 VAC [D] [M48]	208 - 240 VAC [M23] 380 - 415 VAC [P] [M48] 380 - 480 VAC [D] [M48] 600 - 690 VAC [M69] Frequency 50 - 60 Hz 100 - 115 VAC [M11 400Hz] 208 - 240 VAC [M23 400Hz] 380 - 415 VAC [M48 400Hz] 440 - 480 VAC [M49 400Hz] 600 - 690 VAC [M69 400Hz] Frequency 50 - 400 Hz
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Output specifications

	1 x SPDT relay	1 x SPDT relay	1 x SPDT relay	2 x SPDT relay
Max. load AC1	5 A / 250 VAC	5 A / 250 VAC	8 A / 250 VAC	8 A / 250 VAC
Max. load DC12	5 A / 24 VDC	5 A / 24 VDC	5 A / 24 VDC	5 A / 24 VDC
Electrical life	>1 x 10 ⁵ operations	>1 x 10 ⁵ operations	>1 x 10 ⁵ operations	>1 x 10 ⁵ operations

General specifications

Power supply	208 - 480 VAC	208 - 480 VAC	208 - 240 VAC [M23] 380 - 415 VAC [P] [M48] 380 - 480 VAC [D] [M48]	100 - 115 VAC [M11] 208 - 240 VAC [M23] 380 - 415 VAC [P] [M48] 380 - 480 VAC [D] [M48] 440 - 480 VAC [M49] 600 - 690 VAC [M69]
Approvals/Marks	CE - UL - CCC	CE - UL - CCC	CE - UL - CSA	CE - UL - CSA

References

	DPA52CM44	DPB52CM44	DPB02C M23	DPC01D M23
			PPB02C M23	PPC01D M23
			DPB02C M48	DPC01D M48
			PPB02C M48	PPC01D M48
				DPC01D M69
				DPC01D M11 400HZ
				DPC01D M23 400HZ
				DPC01D M48 400HZ
				DPC01D M49 400HZ
				DPC01D M69 400HZ

Monitoring relays

3-phase multifunction voltage relays

Types	DPC 71 PPC 71	DPC 02	DPD
			
Dimensions (mm) HxWxD	81 x 35.5 x 67.2 [D]	80 x 45 x 99.5 [D]	80 x 45 x 99.5 [D]
DIN RAIL housing	81.2 x 35.5 x 75 [P]		
Plug-in housing			
Function	Over and under voltage, asymmetry and tolerance, phase sequence, total and partial phase loss monitoring relay. 3-phase+N AC TRMS (measures its own power supply). Setpoints separately adjustable by function.	Over and under voltage, over and under frequency, phase sequence, total and partial phase loss monitoring relay. 3-phase+N AC TRMS (measures its own power supply). Regenerated voltage detection. Setpoints separately adjustable. Separately adjustable delay times. Adjustable frequency range.	Over and under voltage, over and under frequency, asymmetry detection, total and partial phase loss and phase sequence monitoring relay. NFC Communication 3-phase / 3-phase+N AC TRMS (measures its own power supply), switching power supply. Digital settings, Setpoints separately adjustable. Separately adjustable delay times. Adjustable frequency range.
Input specifications			
Measuring range	208 - 240 VAC [M23] 380 - 415 VAC [P] [M48] 380 - 480 VAC [D] [M48]	Voltage: 208 - 240 VAC [M23] 380 - 415 VAC [M48] 440 - 480 VAC [M49] 600 - 690 VAC [M69] Frequency: 50 / 60 Hz	Voltage: 102 V _{LN} to 318 V _{LN} 176 V _{LL} to 552 V _{LL} Frequency: 45 Hz to 440 Hz
Output specifications			
	2 x SPDT relays	2 x SPDT relays	2 x SPDT relays
Max. load AC1	5 A / 250 VAC	8 A / 250 VAC	8 A / 250 VAC
Max. load DC12	5 A / 24 VDC	5 A / 24 VDC	5 A / 24 VDC
Electrical life	>1 x 10 ⁵ operations	>1 x 10 ⁵ operations	>1 x 10 ⁵ operations
General specifications			
Power supply	208 - 240 VAC [M23] 380 - 415 VAC [P] [M48] 380 - 480 VAC [D] [M48]	208 - 240 VAC [M23] 380 - 415 VAC [M48] 440 - 480 VAC [M49] 600 - 690 VAC [M69]	120 V _{LN} to 277 V _{LN} 208 V _{LL} to 480 V _{LL} Frequency: 50 Hz to 400 Hz
Approvals/Marks	CE - UL - CSA	CE - UL - CSA ENEL DK 5950 [B003]	CE - cULus - CCC
References			
	DPC71D M23	DPC02D M23	DPD02D M44
	PPC71D M23	DPC02D M48	DPD02D M44B
	DPC71D M48	DPC02D M49	
	PPC71D M48	DPC02D M69	
		DPC02D M23 B003	
		DPC02D M48 B003	

Monitoring relays

Interface protection relays

Types

DPC 72

PI-DIN



Dimensions HxWxD (mm)

90 x 71.6 x 66.3 [D]

90 x 71.6 x 66.3

Description

Digital interface protection relay with over and under voltage, over and under frequency, phase sequence, total or partial phase loss. Frequency derivative monitoring [B001, B003], voltage quality [B002], RS485 port, event counter, datatimestamping and auto-test function. 3-phase (measures its own power supply) AC TRMS. Setpoints separately adjustable. Separately adjustable delay times. Programmable via PC (DpcSoft free configuration software).

1- or 3-phase systems monitoring relay interface protection.

Measuring input

Voltage range

380-415 VAC [M48]

230 V_{LN}, 400 V_{LL}

Frequency range

45-65 Hz

47.5 to 51.5 Hz

Display

LCD, 2 lines 4 DGT, 1 line 8 DGT

LCD, 2 lines 4 DGT, 1 line 8 DGT

Input specifications

VDE-AR-N-4105

2 digitals

CEI 0-21

4 digitals

Output specifications

Type

1 x DPDT relays

2 x SPDT relays

Max. load AC1

8 A / 250 VAC

8 A @ 250 VAC

Max. load DC12

5 A / 24 VDC

5 A / 24 VDC

Electrical life

>1 x 10⁵ operations

>1 x 10⁵ operations

Serial communication protocol

RS485

RS485

Protocol

Modbus RTU

Modbus RTU

General specifications

Power supply

308 - 415 VAC [M48]

115..230 VCA -20% +15%
(48..62 Hz)
Option 24 VDC -20% +10%

Approvals/Marks

CE - VDE 0126-1-1 [B002]

CE - VDE V 0126-1-1:2013 - VDE AR N 4105 - CEI 0 - 21

References

DPC72D M48 B001

DPC72D M48 B002

CEI 0-21 (AC aux power)

PIDIN0021HI4R2S1XX

CEI 0-21 (DC aux power)

PIDIN0021LI4R2S1XX

VDE V 0126-1-1:2013 (AC aux power)

PIDIN0126HI2R2S1XX

VDE AR N 4105 (AC aux power)

VDE V 0126-1-1:2013 (DC aux power)

PIDIN0126LI2R2S1XX

VDE AR N 4105 (DC aux power)

Monitoring relays

Frequency relays		Cosφ relays	
Types	DFB 01 PFB 01	DFC 01	DWA 01 PWA 01
			
Dimensions HxWxD (mm)	80 x 22.5 x 99.5 [D]	80 x 45 x 99.5 [D]	80 x 22.5 x 99.5 [D]
DIN RAIL housing	80 x 36 x 94 [P]		80 x 36 x 94 [P]
Plug-in housing			
Function	Frequency monitoring relay. 1-phase AC (measures its own power supply). 2 setpoints separately adjustable. Delay time adjustable.	Frequency monitoring relay. 1-phase AC (measures its own power supply). 2 setpoints separately adjustable. 2 separately adjustable delay times. 2 separate relay outputs.	Cosφ monitoring relay. 1- or 3-phase AC (measures its own power supply). Direct input or through external CT. Power ON delay adjustable.
Input specifications			
Measuring range	50 / 60 Hz	50 / 60 Hz	cosφ : 0.1-0.99
Output specifications			
	1 x SPDT relay	2 x SPDT relay	1 x SPDT relay
Max. load AC1	8 A / 250 VAC	8 A / 250 VAC	8 A / 250 VAC
Max. load DC12	5 A / 24 VDC	5 A / 24 VDC	5 A / 24 VDC
Electrical life	>1 x 10 ⁵ operations	>1 x 10 ⁵ operations	>1 x 10 ⁵ operations
General specifications			
Power supply	24 - 240 VAC	24 - 48 VAC [B48] 115 - 230 VAC [B23]	208 - 240 VAC [M23] 380 - 415 VAC [P] [M48] 380 - 480 VAC [D] [M48]
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA
References			
	DFB01C M24	DFC01D B48	DWA01C M23 5A
	PFB01C M24	DFC01D B23	PWA01C M23 5A
			DWA01C M48 5A
			PWA01C M48 5A

Monitoring relays

Power and power factor relays

Types	DWB 01 PWB 01	DWB 02 PWB 02	DWB 03 PWB 03
			
Dimensions HxWxD (mm)	80 x 45 x 99.5 [D] 80 x 36 x 94 [P]	80 x 45 x 99.5 [D] 80 x 36 x 94 [P]	80 x 45 x 99.5 [D] 80 x 36 x 94 [P]
DIN RAIL housing			
Plug-in housing			
Function	Power factor monitoring relay. 1- or 3-phase (measures its own power supply) AC TRMS. Direct input or through external CT. 2 separately adjustable setpoints. Delay time adjustable. Power ON delay adjustable.	Active power monitoring relay. 1- or 3-phase (measures its own power supply) AC TRMS. Direct input or through external CT. 2 separately adjustable setpoints. Delay time adjustable. Power ON delay adjustable.	Active power monitoring relay. 1- or 3-phase AC TRMS power direction (measures its own power supply). Direct input or through external CT. 2 separately adjustable setpoints. Delay time adjustable. Power ON delay adjustable.
Input specifications			
Measuring range	$\cos\varphi$: 0.1 - 0.99	208 - 690 VAC 0.5 - 5 AAC 1 - 10 AAC 0.4 - 4 V _P	208 - 690 VAC 0.5 - 5 AAC 1 - 10 AAC 0.4 - 4 V _P
Output specifications			
	1 x SPDT relays	1 x SPDT relays	1 x SPDT relays
Max. load AC1	8 A / 250 VAC	8 A / 250 VAC	8 A / 250 VAC
Max. load DC12	5 A / 24 VDC	5 A / 24 VDC	5 A / 24 VDC
Electrical life	>1 x 10 ⁵ operations	>1 x 10 ⁵ operations	>1 x 10 ⁵ operations
General specifications			
Power supply	208 - 240 VAC [M23] 380 - 415 VAC [P] [M48] 380 - 480 VAC [D] [M48] 600 - 690 VAC [M69]	208 - 240 VAC [M23] 380 - 415 VAC [P] [M48] 380 - 480 VAC [D] [M48] 600 - 690 VAC [M69]	208 - 240 VAC [M23] 380 - 415 VAC [P] [M48] 380 - 480 VAC [D] [M48] 600 - 690 VAC [M69]
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA
References			
	DWB01C M23 10A	DWB02C M23 10A	DWB03C M23 10A
	PWB01C M23 10A	PWB02C M23 10A	PWB03C M23 10A
	DWB01C M48 10A	DWB02C M48 10A	DWB03C M48 10A
	PWB01C M48 10A	PWB02C M48 10A	PWB03C M48 10A
	DWB01C M69 10A	DWB02C M69 10A	DWB03C M69 10A

Monitoring relays

Motor thermistor relays				Pump alternating relays
Types	DTA 01 PTA 01 DTA 02 PTA 02	DTA 71 DTA 72	DTA 04	DLA 71 DLA 73
				
Dimensions HxWxD (mm) DIN RAIL housing Plug-in housing	80 x 22.5 x 99.5 [D] 80 x 36 x 94 [P]	81 x 35.5 x 67.2 [Mini-D]	80 x 22.5 x 99.5 [D]	81 x 35.5 x 67.2 [Mini-D]
Function	Motor temperature monitoring relays. PTC insulated input. Automatic set-point. Short circuit detection. Latch, test and reset function (DTA02, PTA02).	Motor Thermistor relays. PTC insulated input. Automatic set-point. Short circuit and Open Circuit detection. Automatic Reset (DTA71) Latch, test, reset, ready for reset functions. (DTA02).	Motor Thermistor relays. PTC insulated input. Automatic set-point. Short circuit and Open Circuit detection. Automatic or manual Reset, test, ready for reset functions.	Pump alternating relay. For 2 or 3 pumps. Differential or sequential mode. Automatic rotation of the pumps. Output relay managed by one independent input contact (DLA73).
Output specifications				
	1 x SPDT relay 1 x SPST relay [DTA01]	1 x SPDT relay [DTA01] 2 x SPDT relay [DTA01]	2 x SPST relays	2 x SPST relay [DLA71] [2P] 3 x SPST relay [DLA71] [3P] 3 x SPST relay [DLA73]
Max. load AC1	8 A / 250 VAC	8 A / 250 VAC	8 A / 250 VAC	5 A / 250 VAC
Max. load DC12	5 A / 24 VDC	5 A / 24 VDC	5 A / 24 VDC	5 A / 24 VDC
Electrical life	>1 x 10 ⁵ operations	>1 x 10 ⁵ operations	>1 x 10 ⁵ operations	>1 x 10 ⁵ operations
General specifications				
Power supply	24 - 48 VAC/DC [D48] 115 VAC [115] 230 VAC [230]	24 - 240 VAC/DC	24 - 240 VAC/DC	24 / 48 VAC [B48] 115 / 230 VAC [B23]
Approvals/Marks	CE - UL - CSA	CE - UL	CE - UL	CE - UL - CSA
References				
	DTA01C D48	DTA71CM24	DTA04CM24	DLA71D B48 2P
	PTA01C D48	DTA72DM24		DLA71T B48 3P
	DTA01C 115			DLA71D B23 2P
	PTA01C 115			DLA71T B23 3P
	DTA01C 230			DLA73T B23 2P
	PTA01C 230			DLA73T B48 2P
	DTA02C D48			
	PTA02C D48			
	DTA02C 115			
	PTA02C 115			
	DTA02C 230			
	PTA02C 230			

Surge arresters

Surge arresters for AC lines

Types	DSF A/P	DSB A 52	DSB P 53	DSB P 54
				
Dimensions HxWxD (mm)	90 x 18 x 72 [51] 90 x 36 x 72 [52] 90 x 54 x 72 [53] 90 x 72 x 72 [54]	90 x 36 x 72	90 x 54 x 72	90 x 72 x 72
Description	No backup fuse Surge arresters for AC lines single or 3phase network types TN-S; TT; IT; TN-C Removable cartridges No leakage current	Surge arresters for AC lines single phase. Removable cartridges	Surge arresters for AC lines three phase Removable cartridges	Surge arresters for AC lines three phase Removable cartridges
Output specifications				
Out (Alarm)	1 x SPDT relay	1 x SPDT relay (option)	1 x SPDT relay (option)	1 x SPDT relay (option)
General specifications				
SPD class	Class II	Class II	Class II	Class II
Max. continuous voltage U _c	150 VAC 300 VAC 385 VAC 460 VAC 550 VAC 750 VAC	275 VAC / 350 VDC 385 VAC / 500 VDC	275 VAC / 350 VDC 385 VAC / 500 VDC 440 VAC / 580 VDC	275 VAC / 350 VDC 385 VAC / 500 VDC 440 VAC / 580 VDC
I _n (8/20)	20 kA 10 kA [DSF5xCA750]	20 kA / pole	20 kA / pole	20 kA / pole
I _{max} (8/20)	50 kA 25 kA [DSF5xCA750]	40 kA / pole	40 kA / pole	40 kA / pole
I _{imp} (10/350)	-	-	-	-
Response time	< 25 ns	< 25 ms with GDT 25 ms (L-N), 100 ms (N-PE) without GDT	< 25 ms	< 25 ms with GDT 25 ms (L-N), 100 ms (N-PE) without GDT
Back-up fuse	Not required up to 200 kArms	125 A gL	125 A gL	125 A gL
Mounitng	DIN rail	DIN rail	DIN rail	DIN rail
Temperature range	-40°C to +80°C -40°F to +176°F	-40°C to +80°C -40°F to +176°F	-40°C to +80°C -40°F to +176°F	-40°C to +80°C -40°F to +176°F
Approvals/Marks	CE, UR (UL 1449 3rd ED.), CSA	CE: IEC61643	CE: IEC61643	CE: IEC61643
References				
For ordering key details, please refer to www.productselection.net				

Surge arresters

Surge arresters for PV systems		Surge arresters for communication lines		
Types	DSF D	DSC	DSB S	DSB DP
				
Dimensions HxWxD (mm)	90 x 36 x 72 [52] 90 x 54 x 72 [53]	90 x 72 x 72	90 x 12 x 71.5	90 x 12 x 71.5
Description	No backup fuse, 2-pole [52] or 3-pole [53] surge arresters for P.V. installations No leakage	Class I and II Surge arresters for DC systems	Surge arresters for RS485 communication lines Removable cartridges	Surge arresters for Dupline® and Smarthouse communication lines Removable cartridges
Output specifications				
Out (Alarm)	1 x SPDT relay	1 x SPDT relay	None	None
General specifications				
SPD class	Class II	Class I, II	Class C1/C2/C3 (IEC 60643-21)	Class C1/C2/C3 (IEC 60643-21)
Max. continuous voltage U _c	600 VDC [600, 1200] 1000 VDC [1000] 1200 VDC [1200]	1000 V	6 VDC	18 VDC
I _n (8/20)	20 kA [600, 1200] 12.5 kA [1000]	20 kA / pole	10 kA / pole	10 kA / pole
I _{max} (8/20)	40 kA [600, 1200] 25 kA [1000]	40 kA / pole	20 kA / pole	20 kA / pole
I _{imp} (10/350)	-	12.5 kA / pole	-	-
Response time	< 25 ns	<25 ns	<1 ns	<1 ns
Back-up fuse	Not required up to 200 kArms	N.A.		
Mounting	DIN rail	DIN rail	DIN rail	DIN rail
Temperature range	-40°C to +80°C -40°F to +176°F	-40°C to +80°C -40°F to +176°F	-40°C to +80°C -40°F to +176°F	-40°C to +80°C -40°F to +176°F
Approvals/Marks	CE, UR (UL 1449 3 rd ED.), UTE C 61-740-51, CSA	CE: IEC616431; UTE C61-740-51	CE: IEC 60643-21	CE: IEC 60643-21
References				
	DSF52XD600PV	DSC54CD1000PV	DSB51XXS	DSB51XXDP
	DSF52CD600PV	DSC54XD1000PV		
	DSF52XD1000PV			
	DSF52CD1000PV			
	DSF53XD1200PV			
	DSF53CD1200PV			

Motor protection units

DMPU series

Types	Main module	Measurement module (5 A)	Measurement module (65 A)	I/O module
				
Dimensions HxWxD (mm)	90 x 35.5 x 63.2	90 x 53.5 x 63.2	90 x 53.5 x 92	90 x 17.5 x 63.2
Features	Motor start/stop, reverse, start/delta, ANSI motor protection functions, remote control and management, warning, dataloggers	3-phase voltage and split-core current measurement	3-phase voltage and pass through current measurement	Connected to DMPUC-PRB or DMPUC-MBT adds 2 inputs and 2 outputs to the system. Up to 10 modules can be used

Technical specifications

Power supply	24 VDC $\pm 20\%$	24 VDC from the main module	24 VDC from the main module	24 VDC from the main module
Inputs	3, configurable as contact or temperature	3-phase voltage: 100 to 690 V 3-phase current: 5 A (for higher current use CTD currents transformers series)	3-phase voltage: 100 to 690 V 3-phase current: up to 65 A	2, configurable as contact or temperature
Outputs		2 x SPST relay	2 x SPST relay	2 x SPST relay
Communication	Profibus DPV1 (DMPUC-PRB), Modbus TCP/IP (DMPUC-MBT), Modbus RTU (all)	Via cable to the main module	Via cable to the main module	Plugged in to the main module

General specifications

Operating temperature	-25°C to +55°C (-13°F to 131°F)	-25°C to +55°C (-13°F to 131°F)	-25°C to +55°C (-13°F to 131°F)	-25°C to +55°C (-13°F to 131°F)
Degree of protection	IP 20	IP 20	IP 20	IP 20
Mounting	DIN-rail	DIN-rail	DIN-rail	DIN-rail
Approvals	CE - cULus listed - C-TIC	CE - cULus listed - C-TIC	CE, cULus listed, C-TIC	CE - cULus listed - C-TIC

References

DMPUC-PRB DMPUC-MBT	DMPUC-05	DMPUC-65	DMPUC-R2
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Motor protection units

DMPU series

Types	Operator interface	Earth leakage module	Core balance transformers	Programming software
				
Dimensions HxWxD (mm)	48 x 96 x 88.5	90 x 17.5 x 63.2	Hole Ø 35, 70, 120 or 210	
Features	Provides 2x8 characters lines display and 4 fully programmable keys	Connected to DMPUC-PRB or DMPUC-MBT adds direct earth leakage measurement and protection according to EN 60947-2. Ranges: 30 mA to 30 A	Core balance transformers for DMPUC-EL	Set parameters, program the control and monitoring functions of the system, monitor data, download dataloggers. Program operator interface pages and key functions
Technical specifications				
Power supply	24 VDC $\pm 20\%$	24 VDC from the main module	None	
Inputs		Earth leakage, for transformers 250/1 to 1000/1, 3 as contact		Motor data, desired functions
Outputs		1 x SPST relay dedicated to earth leakage alarm		Configuration file, dataloggers in Excel format files
Communication	RS485 Modbus RTU ports	Plugged in to the main module		Using Modbus RTU or TCP/IP port of the main module
General specifications				
Operating temperature	-25°C to +60°C (-13°F to 140°F)	-25°C to +55°C (-13°F to 131°F)		
Degree of protection	Front: IP 65 Connections: IP 20	IP 20		
Mounting	Front panel	DIN-rail	Back panel	Windows XP, Windows Vista, Windows 7
Approvals	cULus listed	CE - cULus - C-TIC (with CTG)	CE - cULus - C-TIC (with DMPUC-EL)	
References				
	DMPUC-HMI	DMPUC-EL	CTG035 CTG070 CTG120 CTG210	DMPU-PS DMPU-PSHMI

Timers

Delay on operate

Types	DAA 01 PAA 01	DAA 51 DAA 71	FAA 01 FAA 08
			
Dimensions HxWxD (mm)			
DIN RAIL housing	80 x 22.5 x 99.5 [D] 80 x 36 x 94 [P]	81 x 17.5 x 67.2 [Mini-D] 81 x 35.5 x 67.2 [Mini-D]	
Plug-in housing			48 x 48 x 83.4
Function	Delay on operate (manual start).	Delay on operate (automatic start).	Delay on operate. Symmetrical recycler. Interval. One shot.

Input specifications

	0.1 s - 1 s 1 s - 10 s 6 s - 60 s 60 s - 600 s 0.1 h - 1 h 1 h - 10 h 10 h - 100 h	0.1 s - 1 s 1 s - 10 s 6 s - 60 s 60 s - 600 s 0.1 h - 1 h 1 h - 10 h 10 h - 100 h	Full scale 12 0.02 - 1.2 s 0.2 - 12 s 2 - 120 s 0.2 - 12 m 2 - 120 m 0.2 - 12 h 2 - 120 h	Full scale 30 0.05 - 3 s 0.5 - 30 s 5 - 300 s 0.5 - 30 m 5 - 300 m 0.5 - 30 h 5 - 300 h
Time range				

Output specifications

	1 x SPDT relay [C] 2 x SPDT relays [D]	1 x SPDT relay [C] 1 x DPDT relay [D]	1 x DPDT relay 11-pin [01] 8-pin [08]
Max. load AC1	8 A / 250 VAC	5 A / 250 VAC	5 A / 250 VAC
Max. load DC12	5 A / 24 VDC	5 A / 24 VDC	5 A / 24 VDC
Electrical life	>1 x 10 ⁵ operations	>1 x 10 ⁵ operations	>1 x 10 ⁵ operations

General specifications

Power supply	24 VDC / 24 - 240 VAC [C] 24 - 240 VAC/DC [D]	24 VDC / 24-240 VAC [CM24] 24-240 VAC / DC [DM24] 12-240 VAC / DC [DW24]	12-240 VAC / DC
Approvals/Marks	CE - UL - CSA	CE - UL - CSA - RINA [DAA51 only] - CCC [DAA51_B001 only]	CE - UL - CSA

References

DAA01C M24	DAA51C M24	FAA01D W24
PAA01C M24	DAA71D M24	FAA08D W24
DAA01D M24	DAA71D W24	
PAA01D M24		

Timers

	Delay on operate	Delay on release	
Types	HAA 08 HAA 14	DBA 02 PBA 02	DBA 52
			
Dimensions HxWxD (mm)			
DIN RAIL housing		80 x 22.5 x 99.5 [D]	81 x 17.5 x 67.2 [Mini-D]
Plug-in housing	28 x 21.5 x 64	80 x 36 x 94 [P]	
Function	Delay on operate. Symmetrical recycler with ON or OFF first. Interval.	Delay on release.	Delay on release.
Input specifications			
Time range	0.1 s - 1 s 1 s - 10 s 6 s - 60 s 60 s - 600 s 0.1 h - 1 h 1 h - 10 h 10 h - 100 h	0.1 s - 1 s / 1 s - 10 s 6 s - 60 s / 60 s - 600 s 0.1 h - 1 h / 1 h - 10 h 10 h - 100 h	0.1 s - 1 s / 1 s - 10 s 6 s - 60 s / 60 s - 600 s 0.1 h - 1 h / 1 h - 10 h 10 h - 100 h
Output specifications			
	1 x 4PDT relay [Q] 1 x DPDT relay [D] 14-pin [14] 8-pin [08]	1 x SPDT relay	1 x SPDT relay
Max. load AC1	5 A / 250 VAC	8 A / 250 VAC	5 A / 250 VAC
Max. load DC12	5 A / 24 VDC	5 A / 24 VDC	5 A / 24 VDC
Electrical life	>1 x 10 ⁵ operations	>1 x 10 ⁵ operations	>1 x 10 ⁵ operations
General specifications			
Power supply	24-240 VAC / DC	24 VDC / 24-240 VAC	24 VDC / 24-240 VAC
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA
References			
	HAA14Q M24	DBA02C M24	DBA52C M24
	HAA08D M24	PBA02C M24	

Timers

	True delay on release		Recycler	
Types	D/PBB 01 D/PBB 02	DBB 51	DCB 01 PCB 01	DCB 51
				
Dimensions HxWxD (mm)	80 x 22.5 x 99.5 [D] 80 x 36 x 94 [P]	81 x 17.5 x 67.2 [Mini-D]	80 x 22.5 x 99.5 [D] 80 x 36 x 94 [P]	81 x 17.5 x 67.2 [Mini-D]
Function	True delay on release.	True delay on release.	Asymmetrical recycler with ON and OFF time first. One shot. Two state delay on operate.	Asymmetrical recycler with ON or OFF first.
Input specifications				
Time range	D/PBB01: 0.1 s - 1 s / 1 s - 10 s 6 s - 60 s / 60 s - 600 s D/PBB02: 60 s - 600 s / 0.1 h - 1 h 1 h - 10 h	1 s - 10 s [10S] 6 s - 60 s [1M] 60 s - 600 s [10M]	0.1 - 1 s / 1 - 10 s 6 - 60 s / 60 s - 600 s 0.1 h 1 h / 1 h - 10 h 10 h - 100 h	0.1 - 1 s / 1 - 10 s 6 - 60 s / 60 s - 600 s 0.1 h 1 h / 1 h - 10 h 10 h - 100 h
Output specifications				
	1 x SPDT relay [C] 1 x DPDT relay [D]	1 x SPDT relay	1 x SPDT relay [C] 2 x SPDT relays [D]	1 x SPDT relay
Max. load AC1	8 A / 250 VAC	5 A / 250 VAC	8 A / 250 VAC	5 A / 250 VAC
Max. load DC12	5 A / 24 VDC	5 A / 24 VDC	5 A / 24 VDC	5 A / 24 VDC
Electrical life	>1 x 10 ⁵ operations	>1 x 10 ⁵ operations	>1 x 10 ⁵ operations	>1 x 10 ⁵ operations
General specifications				
Power supply	24-240 VAC / DC [M24] 12-24 VDC [724]	24 VDC / 24-240 VAC	24 VDC / 24-240 VAC [C] 24-240 VAC / DC [D]	24 VDC / 24-240 VAC
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA
References				
	DBB01C M24	DBB51C M24 10S	DCB01C M24	DCB51C M24
	PBB01C M24	DBB51C M24 1M	PCB01C M24	
	DBB01D M24	DBB51C M24 10M	DCB01D M24	
	PBB01D M24		PCB01D M24	
	DBB01C 724			
	PBB01C 724			
	DBB01D 724			
	PBB01D 724			
	DBB02C M24			
	PBB02C M24			
	DBB02D M24			
	PBB02D M24			

Timers

Multifunction

Types	DMB 01 PMB 01	DMB 51 DMB 71	FMB 01	DMC 01 PMC 01
				
Dimensions HxWxD (mm) DIN RAIL housing	80 x 22.5 x 99.5 [D]	81 x 17.5 x 67.2 [Mini-D] 81 x 35.5 x 67.2 [Mini-D]		80 x 22.5 x 99.5 [D] 80 x 45 x 99.5 [D] 80 x 36 x 94 [P]
Plug-in housing	80 x 36 x 94 [P]		48 x 48 x 83.4	
Function	Multifunction: • Delay on operate - manual start • Delay on release • Interval - manual start • Symmetrical recycler • Double interval • Interval on trigger open	Multifunction: • Delay on operate - manual start • Delay on release • Interval - manual start • Symmetrical recycler • Double interval • Interval on trigger open	Multifunction: (Trigger, Gate and Reset inputs) • Delay on operate - manual start • Delay on release • Interval - manual start • Symmetrical recycler • Double interval • Interval on trigger open	Multifunction: • Delay on operate - manual start • Delay on operate - automatic and manual start • Delay on release • Interval - manual start • Interval - automatic and manual start • Interval - manual start with no time reset • Interval - automatic and manual start with no time reset

Input specifications

Time range	0.1 s - 1 s / 1 s - 10 s 6 s - 60 s / 60 s - 600 s 0.1 h - 1 h / 1 h - 10 h 10 h - 100 h	0.1 s - 1 s / 1 s - 10 s 6 s - 60 s / 60 s - 600 s 0.1 h - 1 h / 1 h - 10 h 10 h - 100 h	Full scale: 12 0.02 - 1.2 s / 0.2 - 12 s 2 - 120 s / 0.2 - 12 m 2 - 120 m / 0.2 - 12 h 2 - 120 h Full scale: 30 0.05 - 3 s / 0.5 - 30 s 5 - 300 s / 0.5 - 30 m 5 - 300 m / 0.5 - 30 h 5 - 300 h	0.1 s - 1 s / 1 s - 10 s 6 s - 60 s / 60 s - 600 s 0.1 h - 1 h / 1 h - 10 h 10 h - 100 h
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Output specifications

	1 x SPDT relay [C] 1 x DPDT relay [D]	1 x SPDT relay [C] 1 x DPDT relay [D]	1 x DPDT relay	1 x SPDT relay [C] 2 x SPDT relay [D]
Max. load AC1	8 A / 250 VAC	5 A / 250 VAC	5 A / 250 VAC	8 A / 250 VAC
Max. load DC12	5 A / 24 VDC	5 A / 24 VDC	5 A / 24 VDC	5 A / 24 VDC
Electrical life	>1 x 10 ⁵ operations	>1 x 10 ⁵ operations	>1 x 10 ⁵ operations	>1 x 10 ⁵ operations

General specifications

Power supply	24 VDC & 24-240 VAC [C] 24-240 VAC/DC [D]	24 VDC & 24-240 VAC [M24] 12-240 VAC/DC [W24]	12-240 VAC/DC	24 VDC [724] 24 / 48 VAC [B48] 115 / 230 VAC [B23] 24 VAC [024] 115 VAC [115] 230 VAC [230]
Approvals/Marks	CE - UL - CSA - RINA [DMB01 only]	CE - UL - CSA - RINA [DMB51 only] - CCC [DMB51_B006 only]	CE - UL - CSA	CE - UL - CSA

References

DMB01C M24	DMB51C M24	FMB01D W24	DMC01C xxx
PMB01C M24	DMB51C W24		PMC01C yyy
DMB01D M24	DMB71D M24		DMC01D xxx
PMB01D M24	DMB71D W24		PMC01D yyy

xxx= 724, B23, B48
yyy= 724, 024, 115, 230

Timers

	Mini-E timers	Star delta	
Types	EAS EBS ECS	DAC 01 PAC 01	DAC 51
			
Dimensions HxWxD (mm)			
DIN RAIL housing	56 x 22.5 x 49 [Mini-E]	80 x 22.5 x 99.5 [D]	81 x 17.5 x 67.2 [Mini-D]
Plug-in housing	56 x 22.5 x 44 [Mini-E] [F]	80 x 36 x 94 [P]	
Function	EAS - Delay on operate (automatic start). EBS - Interval (automatic start). ECS - Symmetrical recycler (ON/OFF automatic start) thyristor output. Screw or fast-ON connection. DIN-rail or chassis mounting	Star delta	Star delta
Input specifications			
Time range	[10S] : 0.5 s - 10 s [1M] : 0.1 m - 1 m [10M] : 1 m - 10 m	0.1 s - 1 s / 1 s - 10 s 6 s - 60 s / 60 s - 600 s	0.1 s - 1 s / 1 s - 10 s 6 s - 60 s / 60 s - 600 s
Star to delta relay (neutral centre position)		50 - 130 ms between star to delta position	50 - 130 ms between star to delta position
Output specifications			
	Static output 500 mA, 700 mA [F]	1 x SPDT relay (with neutral centre position)	1 x SPDT relay (with neutral centre position)
Max. load AC1		8 A / 250 VAC	5 A / 250 VAC
Max. load DC12		5 A / 24 VDC	5 A / 24 VDC
Electrical life		>1 x 10 ⁵ operations	>1 x 10 ⁵ operations
General specifications			
Power supply	24-230 VAC / DC [EAS] 24-230 VAC [EBS], [ECS]	24-240 VAC / DC [M24] 380-415 VAC [M40]	24-240 VAC / DC
Approvals/Marks	CE - UL - CSA	CE - UL - CSA	CE - UL - CSA
References			
	EAS S M23 ...	DAC01C M24	DAC51C M24
	EAS S M23 ... F	PAC01C M24	
	EBS S M23 ...	DAC01C M40	
	EBS S M23 ... F	PAC01C M40	
	ECS S M23 A ...		
	ECS S M23 B ...		
	ECS S M23 A ... F		
	ECS S M23 B ... F		
	... = insert code for Time Range		

Counters

Electromechanical counters

Types	EMCT46/EMCT47	E2CT4	E1CT4	ECH4
				
Version	Micro	Mini	Standard	Combination time and energy meter
Dimensions HxWxD (mm)	13.8 x 25 x 35.2 20 x 30 x 36.2	24 x 48 x 53.8	24 x 48 x 49	48 x 48 x 38
Technical data				
Number of digit	6/7	5	6	7/8
Reset	no	yes	no	no
Digit height, visible (mm)	4 x 1.7 / 4 x 1.2	4 x 1.7	4 x 1.7	4 x 1.7
Panel cut-out (mm)	e.g. 27 x 14	45 x 22 / 31 x 20	45 x 22 / 31 x 20	46 x 46 X Ø50.5
Mounting type	Panel / PCB	Panel / base mount / PCB	Panel / base mount / PCB	Panel / DIN-rail
Degree of protection	up to IP 65	IP 41	IP 41	IP 52 front side
Pulse voltage min. / max.	1.5 to 24 VDC	24 to 230 VAC 12 to 24 VDC	24 to 230 VAC 12 to 24 VDC	0 to 260 VAC 0 to 260 VDC
Max. count frequency	10 Hz	10 Hz	10 Hz	10 Hz
Min. power consumption	70 mW	0.75 VA (115 VAC) 1.5 VA (230 VAC) 130 mW VDC	0.75 VA (115 VAC) 1.5 VA (230 VAC) 50 mW VDC	1 W / 1.43 VA

References

	EMCT46xxxxxx EMCT47xxxxxx	E2CT4xxxxxx	E1CT4xxxxxx	ECH4
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Electronic counters

Types	FKA	DCT86	DMF861	DMF862
				
Version	LCD-Panel mount	LED-Panel mount	LED-Panel mount	LED-Panel mount
Dimensions HxWxD (mm)	DIN 48 x 24	DIN 48 x 24	DIN 48 x 24	DIN 48 x 24
Function				
Totaliser	yes			2 pulse counters, Pulse counter and timer, Pulse and frequency meter or 2 timers
Pulse counter		yes	yes	
Position display for encoders			yes	
Frequency meter/Tachometer			yes	
Timer			yes	
Technical data				
Number of digit	8	6	6	6
Reset	manual / electric	manual / electric	manual / electric	manual / electric
Digit height, visible (mm)	8	8	8	8
Panel cut-out(mm)	45 x 22	45 x 22	45 x 22	45 x 22
Degree of protection	IP 65 front side	IP 65 front side	IP 65 front side	IP 65 front side
Power supply	Lithium battery	10 to 30 VDC	10 to 30 VDC	10 to 30 VDC
Count inputs	NPN/PNP 10 to 260 VAC/DC	NPN/PNP	NPN/PNP	NPN/PNP
References				
	FKAxxxxxx	DCT86xxxxxx	DMF861xxxxxx	DMF862xxxxxx

Controls

Counters

Digital multifunction

Types	DMF1461	DMF1462
 		
Version	LED - Panel mount	LED - Panel mount
Dimensions HxWxD (mm)	DIN 96 x 48	DIN 96 x 48
Function		
Pulse counter	Yes	2 pulse counters, Pulse counter and timer, Pulse and frequency meter or 2 timers
Position display for encoders	Yes	
Frequency meter / Tachometer	Yes	Yes
Timer	Yes	Yes
Technical data		
Number of digit	6	6
Reset	manual / electric	manual / electric
Preset	-	-
Digit height, visible (mm)	14	14
Panel cut-out (mm)	92 x 45	92 x 45
Degree of protection	IP 65 front side	IP 65 front side
Max. count frequency (Hz)	60000	60000
Supply voltage	90...260 VAC / 10...30 VDC	90...260 VAC / 10...30 VDC
Count inputs	Schmitt-Trigger	Schmitt-Trigger
References		
	DMF1461xxx0	DMF1462xxx0

Hour meter electromechanical

Types	E1HM4	E2HM4	E2HM35	E1HM35
   				
Version	Panel mount	Panel mount	Panel mount	DIN rail
Dimensions HxWxD (mm)	DIN 48 x 24 - DIN 28 x 53	DIN 48 x 48	Ø71.1 - Ø58,7	90 x 36 x 66
Technical data				
Number of digit	7/8	7/8	6	7
Time range	0.01~99999.99h	0.01~99999.99h	0.01~99999.9h	0.01~99999.99h
Digit height, visible (mm)	4	4	3.5	3.5
Panel cut-out (mm)	45 x 22 / 50 x 25	46 x 46	Ø50.08	-
Degree of protection	IP 65 front side	IP 65 front side	IP 65 front side	IP 65 front side
Min. power consumption (W/VA)	0.5 / 1.2	0.5 / 1.2	0.7 / 0.4	1 / 2.5
Voltage range	20...264 VAC 10...130 VDC	20...440 VAC 10...30 VDC	115...230 VAC 10...80 VDC	24 / 115 / 230 VAC 10...27 VDC
References				
	E1HM4xxxxxx	E2HM4xxxxxx	E2HM35xxxxxx	E1HM35xxxxxx

Counters

	Hour meter electronic LCD		Electronic multifunction counters
Types	FSA01	FSA02	DMF61 / DMF62
			
Version	LCD panel mount	LCD panel mount	LCD panel mount
Dimensions HxWxD (mm)	DIN 24 x 48	DIN 24 x 48	DIN 48 x 48
Technical data			
Number of digit	7	8	2 x 6
Time range	0.01 h; h.min	0.01 h; h.min	
Max. Count frequency (Hz)			50000
Preset			61 : 1 / 62 : 2
Reset	manual / electrical	manual / electrical	electronic
Digit height, visible (mm)	8	8	
Panel cut-out (mm)	45 x 22	45 x 22	45 x 45
Mounting type	Panel mount	Panel mount	Panel mount
Degree of protection	IP 65 front side	IP 65 front side	IP 65 front side
Power supply	Lithium battery (>8years)	Lithium battery (>8years)	90 to 260 VAC 10 to 30 VDC
Output			Relay or Optocoupler
Input			2 count inputs, gate, reset, lock, MPI, 4 optional inputs
References			
	FSA01xxxxxx	FSA02xxxxxx	DMF6101xxxx0
			DMF6201xxxx0

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