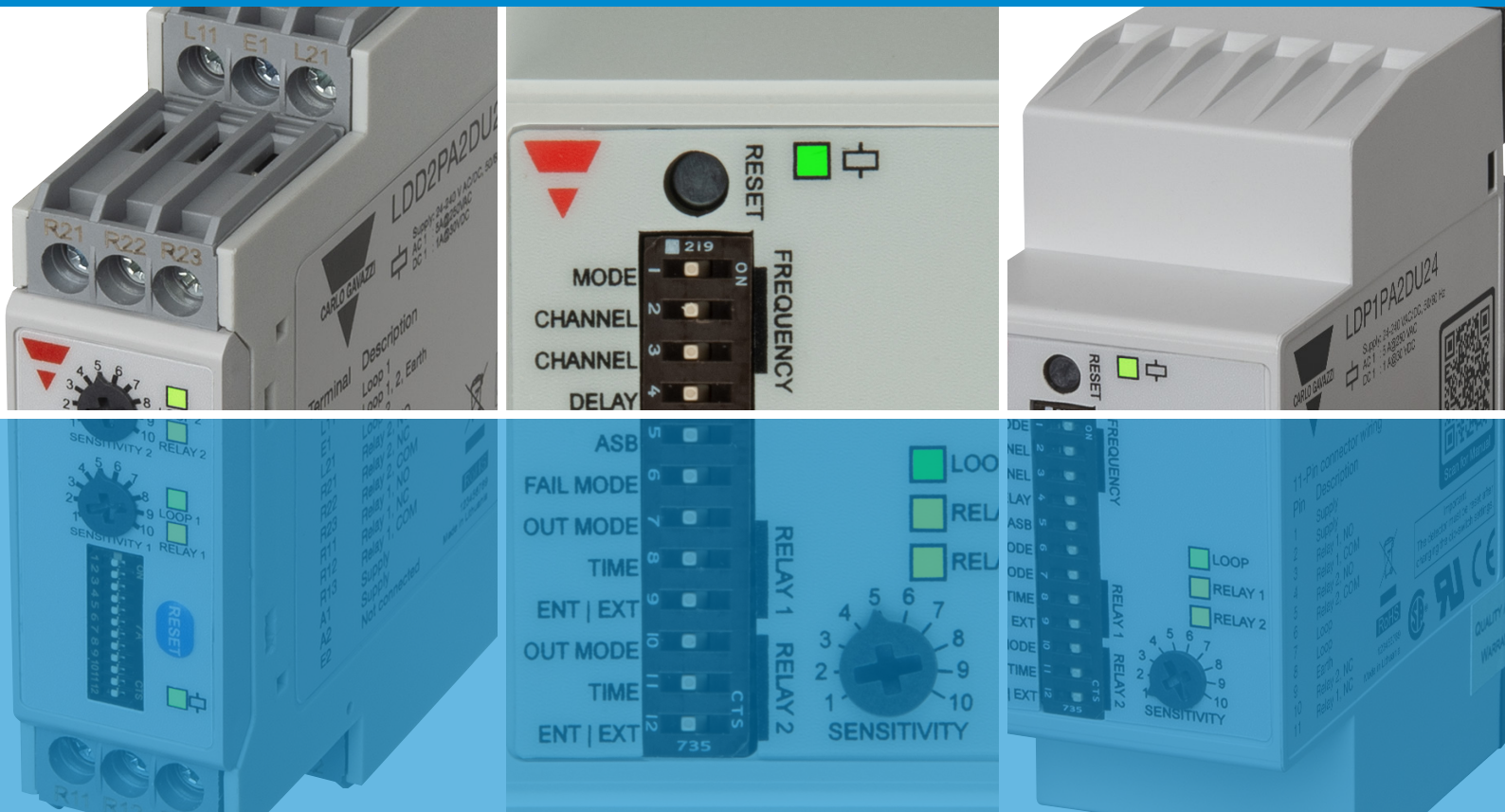




Loop detectors

Sensors

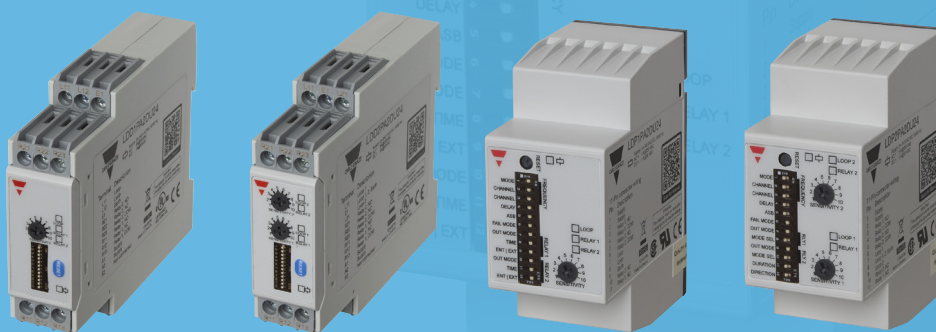
LD series

Loop detectors

LD series loop detectors are ideal to be used in car access applications to control barriers, gates, bollards and ticketing machines.

Loop detectors is the best solution in the market in detecting vehicles and can be found in carparks, toll gantries, traffic lights, on the streets, at the entrance/exit of any premises and in many other places.

LD series loop detectors come with many features that are designed specifically to simplify the installation process and also equipped with diagnostic capability to ease troubleshooting while providing a reliable and efficient way of vehicle detection.



Vehicle detection solution

Adjustable sensitivity

Loop input inductance: 20 μ H to 1000 μ H with adjustable sensitivity via 10 step potentiometer easily accessible from the front.

Automatic frequency tuning

Loop frequency is automatically tuned to avoid crosstalk between adjacent loops. If manual tuning is preferred, 4 frequency channels are available and can be easily set via dip switches.

Automatic sensitivity boost (ASB)

ASB function boosts the loop sensitivity to allow the detection of high bed vehicles such as trucks, buses and trailers.

Fail secure and fail safe

In case of power loss or loop fault, the configuration of the output will change to indicate detection (FAIL SAFE) or not detection (FAIL SECURE) of a vehicle and hence open or close the gate or barrier.

Wide power supply range

24-240 VAC/VDC rated operational voltage ensures full flexibility.

Independently configurable outputs

The loop detectors come with 2 x SPDT outputs. Each output is configurable independently and can be configured in pulse or presence mode. The pulse length and presence duration can also be set as well as whether pulse during entrance or exit of the loop. Independently configuring the 2 outputs provide great flexibility to meet different installation requirements.

Directional logic

Using the dual loop version, the direction of the vehicle can be ascertained via the directional logic function. Relay will activate accordingly to the vehicle direction.

Multicolour LED for easy diagnostic

Multicolor LEDs will indicate different colors depending on the status of the loop detector and of the 2 relay outputs. The Loop LED will indicate the loop status such as inductance too low or too high, loop short circuit or open circuit and many others. This makes the troubleshooting process easy, and enables constant monitoring of the loop health.

Sensors

LD series

Loop detectors

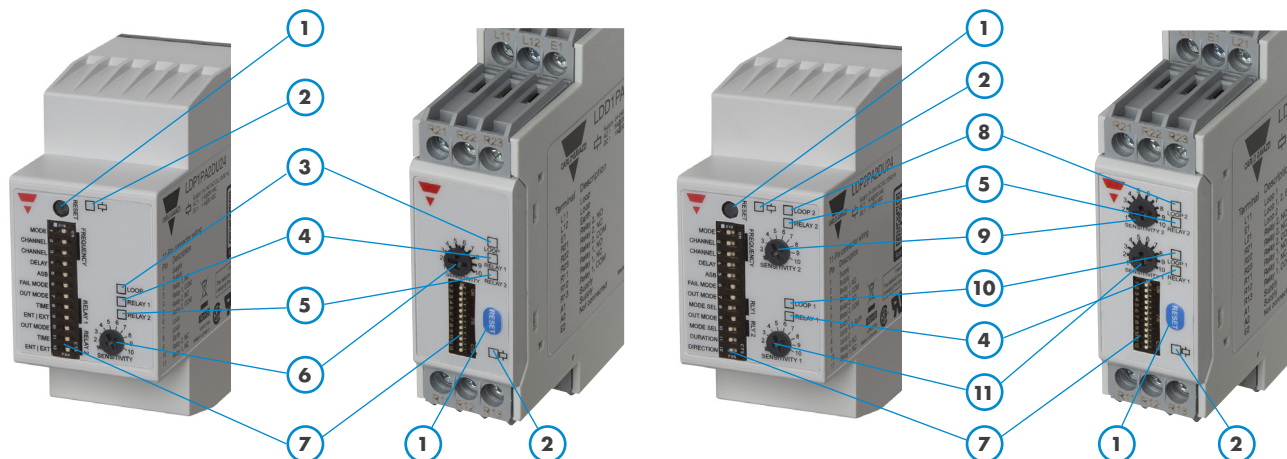
Structure

LDP1PA2DU24

LDD1PA2DU24

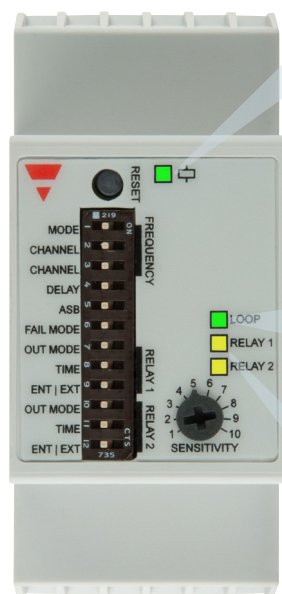
LDP2PA2DU24

LDD2PA2DU24



1	Reset button	7	Dip switches
2	Power / fault LED	8	Loop 2 LED
3	Loop LED	9	Potentiometer loop 2
4	Relay 1 LED	10	Loop 1 LED
5	Relay 2 LED	11	Potentiometer loop 1
6	Potentiometer		

Multicolour LEDs for easy troubleshooting



Power / fault indicator

LED colour	LED constant	LED Flashing
Green	All OK (ASB OFF)	DIP switch changed, but changes not in effect
Blue	All OK (ASB ON)	-
Yellow	Low signal indication	-
Red	Channel crosstalk	-
White	-	Indication of the frequency channel

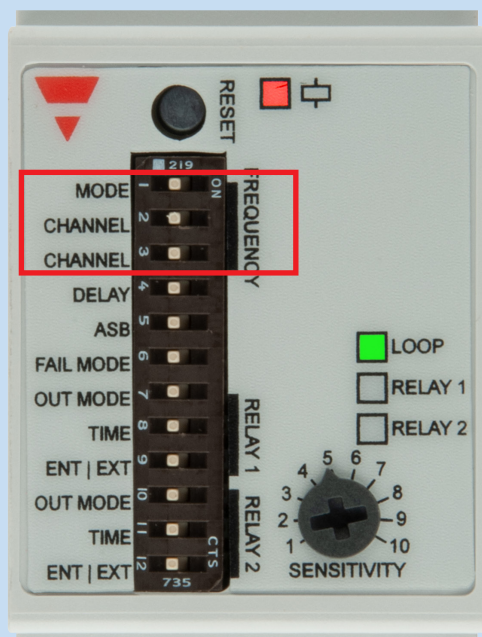
Loop state LED

LED colour	LED constant	LED Flashing
Green	Inductance ok	-
Yellow	Inductance too high	Inductance too low
Red	Loop is open circuit	Loop is short circuit

Relay state LED

LED colour	Mode	Relay deactivated	Relay activated
	Presence mode	LED OFF	LED ON
Yellow	Pulse mode, 0.1 s	LED OFF	LED ON for 0.5 s
	Pulse mode, 0.5 s	LED OFF	LED ON for 1.0 s

Automatic frequency tuning

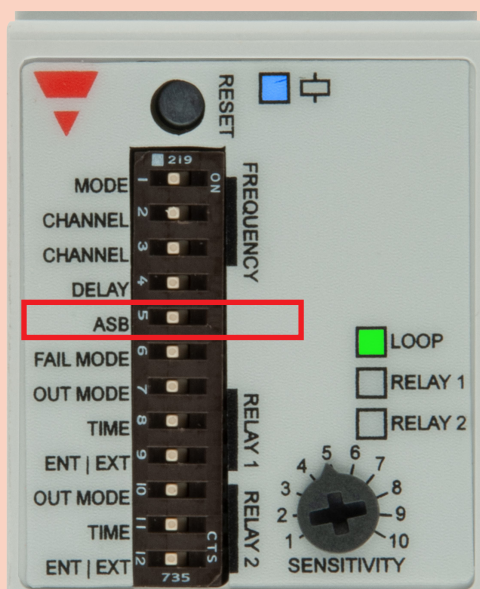


When two or more loops are installed in too close proximity, they may interfere with each other and cause false detections. In order to avoid cross talk issues there are two possibilities:

If the loop detector automatic frequency tuning mode is selected, the loop detector will automatically select the best frequency channel.

If manual tuning is preferred, the user can select one of the 4 channels available.

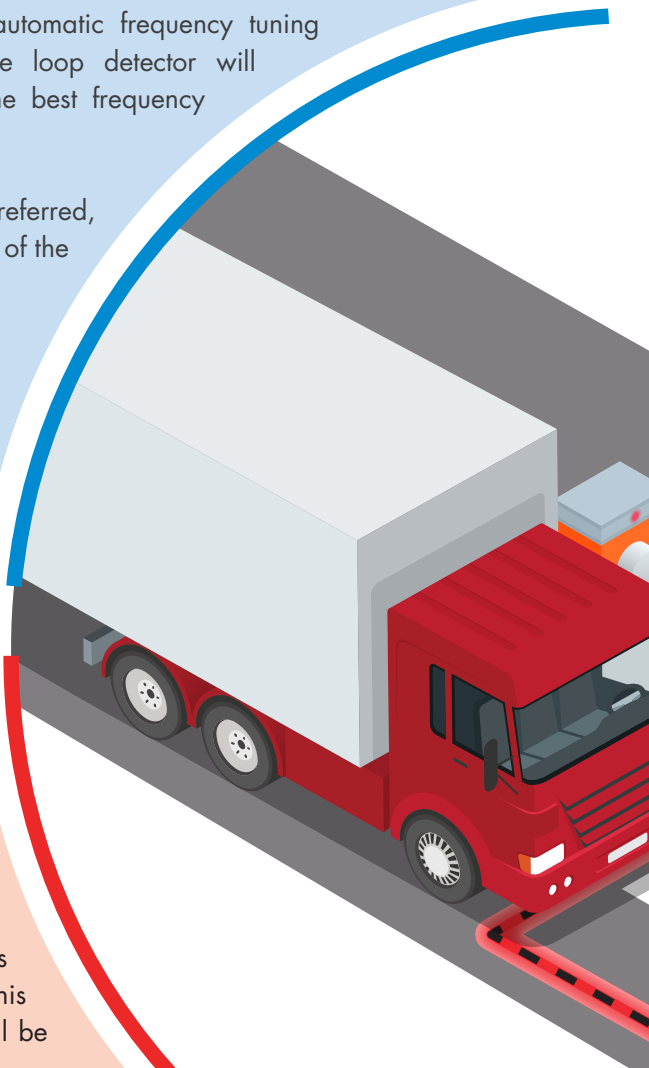
Automatic sensitivity boost



When enabled, the Loop detector will boost the loop sensitivity to detect high bed vehicles such as trucks, buses and trailers. This ensure the vehicle will be detected correctly.

ASB function can be turned on manually using the dip switch. Blue color power LED will indicate that the ASB mode is ON.

LOOP 1

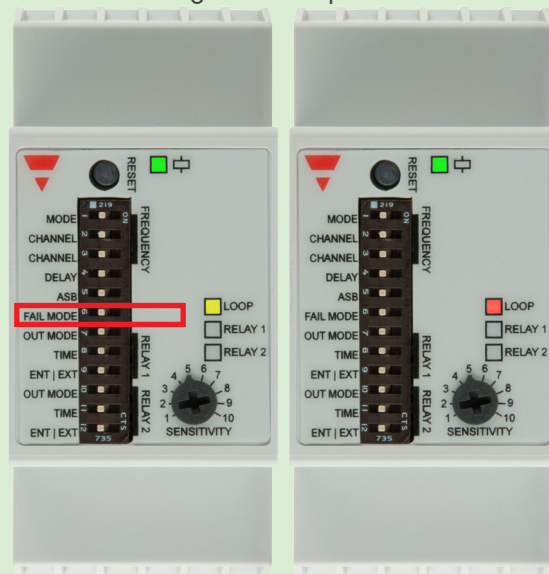


Diagnostic capability

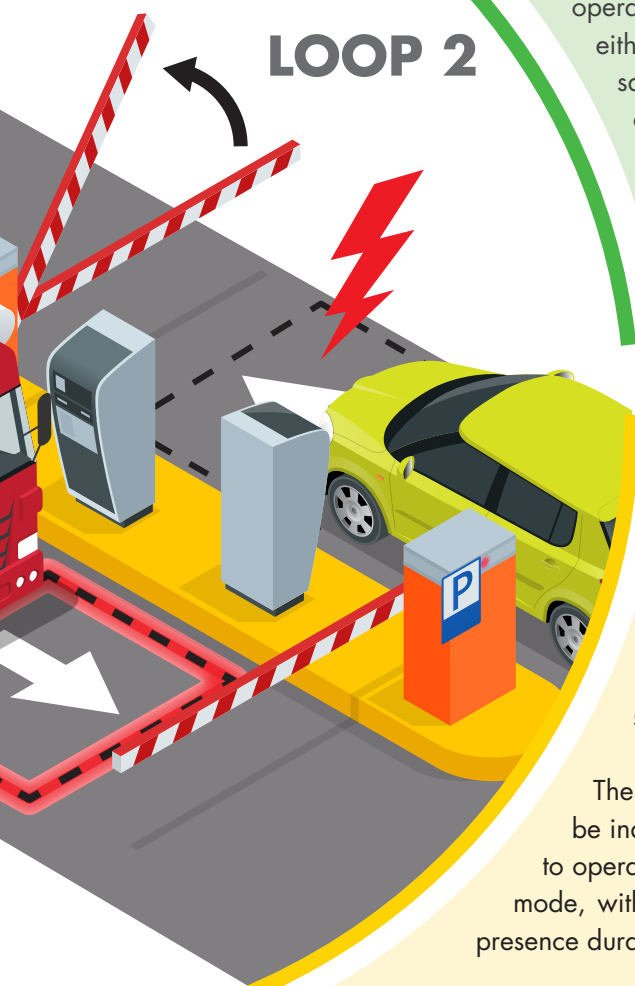
Most of the time, it is indeed a hassle for installer to ascertain the health of the loop.

The multicolour loop LED diagnostic features will definitely reduce troubleshooting time and provide an effective monitoring of the loop status. Different colors will indicate cross talk, short circuit, open circuit, inductance too low or too high.

In case of power loss or loop fault, the Loop detector can be configured to operate appropriately either to open (fail safe mode) or close (fail secure mode) the barrier.



LOOP 2



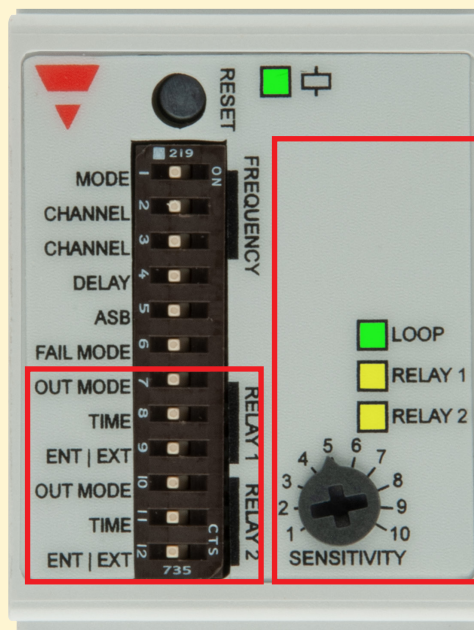
Flexibility

The sensitivity of each loop can be independently and easily adjusted via the 10-step rotary switch on the front.

The 2 x SPDT outputs can be independently configured to operate in pulse or presence mode, with adjustable pulse and presence duration.

The dual loop version can also detect the vehicle direction.

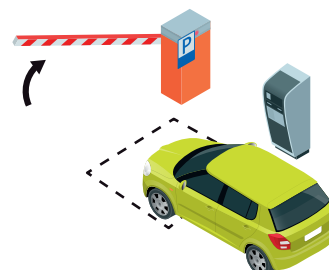
24-240 VAC/VDC universal power supply ensures full flexibility.



Applications

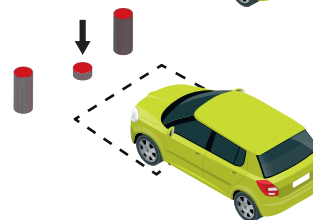
Carpark barriers

Activation of carpark barriers.
Used in public car parks, apartments, shopping malls, hotels and others.
Used also to activate ticketing machine and for occupancy counting.



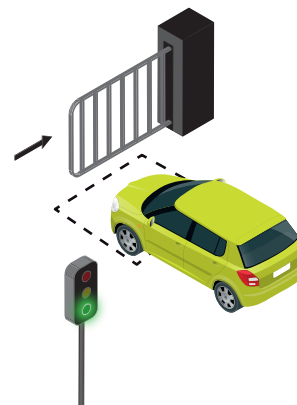
Bollards

Activation of bollards.
Used in streets, single parking space, pedestrian areas, residential security installations.



Gates and industrial doors

Activation of gates and industrial doors.
Used in factories, warehouses, premises gates, private residential.



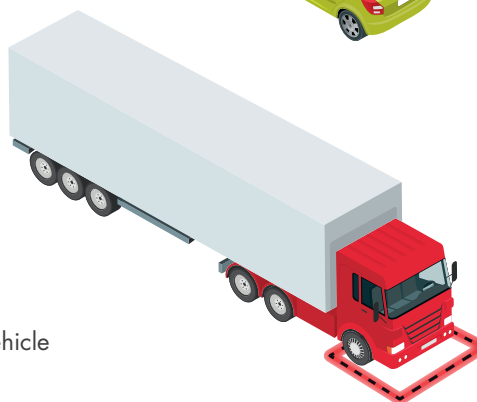
Traffic lights

Used in conjunction with smart street traffic lights, gates traffic lights to optimize traffic flow.
Used on the streets, premises gates, up/down ramps, toll gantries.



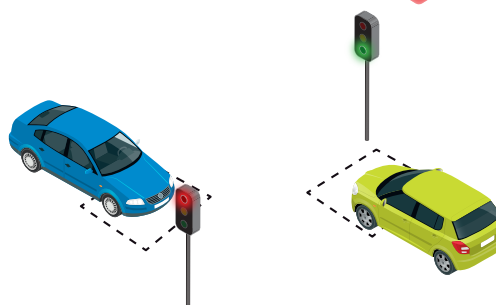
High bed vehicles

Used to detect high bed vehicles.
Used in car parks, streets, factories, warehouses.
Automatic sensitivity boost (ASB) ensures a reliable detection of high bed vehicle such as buses and trucks.



Traffic flow

Detect vehicles from both direction especially in single lane using the directional logic function for smooth traffic flow.



Specifications

Code	LDP1PA2DU24	LDD1PA2DU24	LDP2PA2DU24	LDD2PA2DU24
Type	Single loop Plug IN	Single loop DIN rail	Dual loop Plug IN	Dual loop DIN rail
Loop input inductance	20 μ H ... 1000 μ H			
Adjustable sensitivity	0,01% ... 1,00%			
Number of adjustable steps	10			
Number of frequency channels	4			
Frequency range	10 ... 130 kHz			
Loop fault detection	Short circuit, open circuit, inductance out of range, frequency crosstalk			
Response time	130 ms			
Output type	Relay			
No of output	2 x SPDT			
Output mode	Pulse or presence; selectable via dip switch			
Output Assignment	2 x SPDT for loop 1		1 x SPDT for loop 1 and 1 x SPDT for loop 2	
Rated operational voltage (Output)	250 VAC/VDC			
Rated operational current (Ie)	AC1: 5 A @ 250 VAC DC1: 1 A @ 30 VDC			
Mechanical lifetime	15 x 10 ⁶			
Electrical lifetime	>100 000 operations (@5A load)			
Protection	Reverse polarity and overvoltage			
Rated operational voltage (UB)	24 ... 240 VAC/VDC			
Power consumption	24 VAC/VDC < 2 W / 2.5 VA 115 VAC/VDC < 2 W / 3 VA 240 VAC/VDC < 2 W / 4 VA		24 VAC/VDC < 2.5 W / 3.5 VA 115 VAC/VDC < 2.5 W / 4 VA 240 VAC/VDC < 2.5 W / 5 VA	
Rated supply frequency	45 to 65 Hz			
Rated insulation voltage	800 V			
Rated impulse withstand voltage	4 kV (1.2/50 μ s)			
Power-ON delay (tv)	5 s for manual frequency tuning, 10 s for automatic frequency tuning			
Protection (output)	Reverse polarity, transients			
Ambient temperature	-40° ... +70°C (-40° ... +158°F) (operating) -40° ... +70°C (-40° ... +158°F) (storage)			
Ambient humidity range	0% ... 90%			
Overvoltage category	III (IEC)			
Degree of protection	IP30 (IEC)	IP20 (IEC)	IP30 (IEC)	IP20 (IEC)
Pollution degree	2 (IEC)			
Connection type	11 pin circular plug-in	Screw terminal	11 pin circular plug-in	Screw terminal
Connection at socket (ZPD11A)	Screw terminal	-	Screw terminal	-
Housing material	PPO PX9406-802, PPO Noryl SE1			
Colour	RAL 7035 (Grey)			
Dimensions	LDP: 81 mm (h) x 35.5 mm (w) x 60.2 mm (d) LDD: 84 mm (h) x 22 mm (w) x 99 mm (d)			
Weight	105 g	134 g	108 g	139 g
Approvals	CE, CSA, RU	CE, cULus	CE, CSA, RU	CE, cULus

OUR SALES NETWORK IN EUROPE

AUSTRIA - Carlo Gavazzi GmbH
Ketzergrasse 374, A-1230 Wien
Tel: +43 1 888 4112
Fax: +43 1 889 10 53
office@carlogavazzi.at

BELGIUM - Carlo Gavazzi NV/SA
Mechelsesteenweg 311, B-1800 Vilvoorde
Tel: +32 2 257 4120
Fax: +32 2 257 41 25
sales@carlogavazzi.be

DENMARK - Carlo Gavazzi Handel A/S
Over Hadstenvej 40, DK-8370 Hadsten
Tel: +45 89 60 6100
Fax: +45 86 98 15 30
handel@gavazzi.dk

FINLAND - Carlo Gavazzi OY AB
Ahventie 4 B, FI-02170 - Espoo
Tel: +358 9 756 2000
myynti@gavazzi.fi

FRANCE - Carlo Gavazzi Sarl
Zac de Paris Nord II,
69, rue de la Belle Etoile,
F-95956 Roissy CDG Cedex
Tel: +33 1 49 38 98 60
Fax: +33 1 48 63 27 43
french.team@carlogavazzi.fr

GERMANY - Carlo Gavazzi GmbH
Pfnorstr. 10-14
D-64293 Darmstadt
Tel: +49 6151 81000
Fax: +49 6151 81 00 40
info@gavazzi.de

GREAT BRITAIN - Carlo Gavazzi UK Ltd
4.4 Frimley Business Park,
Frimley, Camberley, Surrey GU16 7SG
Tel: +44 1 276 854 110
Fax: +44 1 276 682 140
sales@carlogavazzi.co.uk

ITALY - Carlo Gavazzi SpA
Via Milano 13, I-20020 Lainate
Tel: +39 02 931 761
Fax: +39 02 931 763 01
info@gavazziacbu.it

NETHERLANDS - Carlo Gavazzi BV
Wijkmeerweg 23,
NL-1948 NT Beverwijk
Tel: +31 251 22 9345
Fax: +31 251 22 60 55
info@carlogavazzi.nl

NORWAY - Carlo Gavazzi AS
Melkeveien 13, N-3919 Porsgrunn
Tel: +47 35 93 0800
Fax: +47 35 93 08 01
post@gavazzi.no

PORTUGAL - Carlo Gavazzi Lda
Rua dos Jerónimos 38-B,
P-1400-212 Lisboa
Tel: +351 21 361 7060
Fax: +351 21 362 13 73
carlogavazzi@carlogavazzi.pt

SPAIN - Carlo Gavazzi SA
Avda. Iparraguirre, 80-82,
E-48940 Leioa (Bizkaia)
Tel: +34 94 480 4037
Fax: +34 94 431 6081
gavazzi@gavazzi.es

SWEDEN - Carlo Gavazzi AB
V:a Kyrkogatan 1,
S-652 24 Karlstad
Tel: +46 54 85 1125
Fax: +46 54 85 11 77
info@carlogavazzi.se

SWITZERLAND - Carlo Gavazzi AG
Verkauf Schweiz/Vente Suisse
Sumpfstrasse 3,
CH-6312 Steinhausen
Tel: +41 41 747 4535
Fax: +41 41 740 45 40
info@carlogavazzi.ch

OUR SALES NETWORK IN THE AMERICAS

USA - Carlo Gavazzi Inc.
750 Hastings Lane,
Buffalo Grove, IL 60089, USA
Tel: +1 847 465 6100
Fax: +1 847 465 7373
sales@carlogavazzi.com

CANADA - Carlo Gavazzi Inc.
2660 Meadowvale Boulevard,
Mississauga, ON L5N 6M6, Canada
Tel: +1 905 542 0979
Fax: +1 905 542 22 48
gavazzi@carlogavazzi.com

MEXICO - Carlo Gavazzi Mexico S.A. de C.V.
Circuito Puericultores 22, Ciudad Satélite
Naucalpan de Juárez, Edo Mex. CP 53100
Mexico
T +52 55 5373 7042
F +52 55 5373 7042
mexicosales@carlogavazzi.com

BRAZIL - Carlo Gavazzi Automação Ltda.
Av. Francisco Matarazzo, 1752
Conj 2108 - Barra Funda - São Paulo / SP
CEP 01401-000
Tel: +55 11 3052 0832
Fax: +55 11 3057 1753
info@carlogavazzi.com.br

OUR SALES NETWORK IN ASIA AND PACIFIC

SINGAPORE - Carlo Gavazzi Automation
Singapore Pte. Ltd.
61 Tai Seng Avenue
#05-06 UE Print Media Hub
Singapore 534167
Tel: +65 67 466 990
Fax: +65 67 461 980
info@carlogavazzi.com.sg

MALAYSIA - Carlo Gavazzi Automation
(M) SDN. BHD.
D12-06-G, Block D12,
Pusat Perdagangan Dana 1,
Jalan PJU 1A/46, 47301 Petaling Jaya,
Selangor, Malaysia.
Tel: +60 3 7842 7299
Fax: +60 3 7842 7399
sales@gavazzi-asia.com

CHINA - Carlo Gavazzi Automation
(China) Co. Ltd.
Unit 2308, 23/F.,
News Building, Block 1, 1002
Middle Shennan Zhong Road,
Shenzhen, China
Tel: +86 755 83699500
Fax: +86 755 83699300
sales@carlogavazzi.cn

HONG KONG - Carlo Gavazzi
Automation Hong Kong Ltd.
Unit 3 12/F Crown Industrial Bldg.,
106 How Ming St., Kwun Tong,
Kowloon, Hong Kong
Tel: +852 23041228
Fax: +852 23443689

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Kunshan

HEADQUARTERS

Carlo Gavazzi Automation SpA
Via Milano, 13 - I-20020
Lainate (MI) - **ITALY**
Tel: +39 02 931 761
info@gavazziautomation.com



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