SIEMENS

Data sheet 3UF7020-1AU01-0

basic device SIMOCODE pro S, PROFIBUS DP interface 1.5 Mbps, 4 I/2 O freely configurable, Us: 110...240 V AC/DC, input for thermistor connection monostable relay outputs, expandable by a multifunction module

product brand name	SIMOCODE
product designation	Motor management system
design of the product	Basic device 0
product type designation	pro S
General technical data	
certificate of suitability	CE / UL / CSA / C-Tick (RCM) / GOST / NOM / ATEX
product function	
● current measurement	No
● voltage measurement	No
● active power measurement	No
● energy measurement	No
● frequency measurement	No
● bus communication	Yes
● data acquisition function	Yes
● diagnostics function	Yes
● password protection	Yes
● test function	Yes
● maintenance function	Yes
● MRRT redundancy procedure	No
product component	
● input for thermistor connection	Yes
● digital input	Yes
● input for analog temperature sensors	No
● input for ground fault detection	No
● relay output	Yes
product extension	
● temperature monitoring module	Yes
● current measuring module	Yes
● current/voltage measuring module	No
● fail-safe digital I/O module	No
● ground-fault monitoring module	Yes
● decoupling module	No
● analog I/O module	No
● digital I/O module with monostable outputs	Yes
● digital I/O module with bistable outputs	No
● control unit with display	No
● control unit	Yes
apparent power consumption	4.7 VA
consumed active power	2.5 W
insulation voltage with degree of pollution 3 at AC rated value	300 V
surge voltage resistance rated value	4 000 V
shock resistance	
● when mounted on current measuring module according to IEC 60068-2-27	10 g / 11 ms
● **according to IEC 60068-2-27**	15 g / 11 ms
● **vibration resistance**	1 … 6 Hz / 15 mm; 6 … 500 Hz / 2 g
● vibration resistance when mounted on current measuring module according to IEC 60068-2-6	1 ... 4 Hz / 15 mm, 4 ... 500 Hz / 1g

switching capacity current of the NO contacts of the relay outputs at AC-15	
● at 24 V	6 A
● at 120 V	6 A
● at 230 V	3 A
switching capacity current of the NO contacts of the relay outputs at DC-13	
● at 24 V	2 A
● at 60 V	0.55 A
● at 125 V	0.25 A
mechanical service life (operating cycles) typical	10 000 000
electrical endurance (operating cycles) typical	100 000
buffering time in the event of power failure	0.05 s
reference code according to IEC 81346-2	F
continuous current of the NO contacts of the relay outputs	
● at 50 °C	6 A
● at 60 °C	5 A
type of input characteristic	Type 1 in accordance with EN 61131-2
Substance Prohibitance (day/month/year)	05/01/2012
SVHC substance name	Lead CAS-No. 7439-92-1 Lead monoxide (lead oxide) CAS-No. 1317-36-8 2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol CAS-No. 79-94-7 2-methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one CAS-No. 71868-10-5 Melamine CAS-No. 108-78-1 6,6'-di-tert-butyl-2,2'-methylenedi-p-cresol CAS-No. 119-47-1
Net Weight	0.238 kg
Electromagnetic compatibility	
EMC emitted interference according to IEC 60947-1	class A
EMC immunity according to IEC 60947-1	corresponds to degree of severity 3
conducted interference	
● due to burst according to IEC 61000-4-4	2 kV (power ports) / 1 kV (signal ports)
● due to conductor-earth surge according to IEC 61000-4-5	2 kV
● due to conductor-conductor surge according to IEC 61000-4-5	1 kV
● due to high-frequency radiation according to IEC 61000-4-6	10 V
field-based interference according to IEC 61000-4-3	10 V/m
electrostatic discharge according to IEC 61000-4-2	6 kV contact discharge / 8 kV air discharge
conducted HF interference emissions according to CISPR11	corresponds to degree of severity A
field-bound HF interference emission according to CISPR11	corresponds to degree of severity A
Inputs/ Outputs	
product function	
● parameterizable inputs	Yes
● parameterizable outputs	Yes
number of inputs	4
● for thermistor connection	1
number of digital inputs with a common reference potential	4
digital input version	
● type 1 acc. to IEC 61131	Yes
input voltage at digital input at DC	
● rated value	24 V
number of outputs	2
number of semiconductor outputs	0
number of outputs as contact-affected switching element	2
switching behavior	monostable
number of relay outputs	2
type of relay outputs	Monostable
wire length for digital signals maximum	300 m
wire length for thermistor connection	
● with conductor cross-section = 0.5 mm² maximum	50 m

● with conductor cross-section = 1.5 mm² maximum	150 m
● with conductor cross-section = 2.5 mm² maximum	250 m
Protective and monitoring functions	
product function	
● asymmetry detection	Yes
● blocking current evaluation	Yes
● power factor monitoring	No
● ground fault detection	Yes
● ground-fault monitoring	No
● phase failure detection	Yes
● phase sequence recognition	No
● voltage detection	No
● monitoring of number of start operations	Yes
● overvoltage detection	No
● overcurrent detection 1 phase	Yes
● undervoltage detection	No
● undercurrent detection 1 phase	Yes
● active power monitoring	No
product function	
● current detection	Yes
● overload protection	Yes
● evaluation of thermistor motor protection	Yes
total cold resistance number of sensors in series maximum	1.5 kΩ
response value of thermoresistor	3 400 ... 3 800 Ω
● of the short-circuit control	9 Ω
release value of thermoresistor	1 500 ... 1 650 Ω
Motor control functions	
product function	
● parameterizable overload relay	Yes
● circuit breaker control	Yes
● direct start	Yes
● reverse starting	Yes
● star-delta circuit	Yes
● star-delta reversing circuit	No
● Dahlander circuit	No
● Dahlander reversing circuit	No
● pole-changing switch circuit	No
● pole-changing switch reversing circuit	No
● slide control	No
● valve control	No
Communication/ Protocol	
protocol is supported	
● PROFIBUS DP protocol	Yes
● PROFINET IO protocol	No
● PROFIsafe protocol	No
● Modbus RTU	No
● EtherNet/IP	No
● OPC UA Server	No
● LLDP	No
● Address Resolution Protocol (ARP)	No
● SNMP	No
● HTTPS	No
● NTP	No
● Media Redundancy Protocol (MRP)	No
product function	
● web server	No
● shared device	No
● at the Ethernet interface Autocrossover	No
● at the Ethernet interface Autonegotiation	No

● at the Ethernet interface Autosensing	No
● is supported Device Level Ring (DLR)	No
● is supported PROFINET system redundancy (S2)	No
● supports PROFIenergy measured values	No
● supports PROFIenergy shutdown	No
transfer rate maximum	1.5 Mbit/s
identification & maintenance function	
● I&M0 - device-specific information	Yes
● I&M1 - higher level designation/location designation	Yes
● I&M2 - installation date	Yes
● I&M3 - comment	Yes
type of electrical connection of the communication interface	Screw-type terminal (1.5 Mbit)
Installation/ mounting/ dimensions	
mounting position	any
fastening method	screw and snap-on mounting
height	100 mm
width	22.5 mm
depth	124.5 mm
required spacing	
● top	40 mm
● bottom	40 mm
● left	0 mm
● right	0 mm
Connections/ Terminals	
product component removable terminal for auxiliary and control circuit	Yes
type of electrical connection	
● for auxiliary and control circuit	screw-type terminals
type of connectable conductor cross-sections	
● solid	1x (0.5 ... 2.5 mm²), 2x (0.5 ... 1.5 mm²)
● finely stranded with core end processing	1x (0.5 ... 2.5 mm²), 2x (0.5 ... 1 mm²)
● for AWG cables solid	1x (20 ... 14), 2x (20 ... 16)
tightening torque with screw-type terminals	0.6 ... 0.8 N·m
tightening torque [lbf·in] with screw-type terminals	5.2 ... 7 lbf·in
type of connectable conductor cross-sections for PROFIBUS wire	2x 0.34 mm², AWG 22
Ambient conditions	
installation altitude at height above sea level maximum	2 000 m
● note	Restrictions apply to higher installation altitudes, see: https://support.industry.siemens.com/cs/document/109995153
ambient temperature	
● during operation	-25 ... +60 °C
● during storage	-40 ... +80 °C
● during transport	-40 ... +80 °C
environmental category	
● during operation according to IEC 60721	3K6 (no formation of ice, no condensation, relative humidity 10 ... 95%), 3C3 (no salt mist), 3S2 (sand must not get into the devices), 3M6
● during storage according to IEC 60721	1K6 (no condensation, relative humidity 10 ... 95%), 1C2 (no salt mist), 1S2 (sand must not get into the devices), 1M4
● during transport according to IEC 60721	2K2, 2C1, 2S1, 2M2
relative humidity	
● during operation	10 ... 95 %
contact rating of auxiliary contacts according to UL	B300 / R300
Short-circuit protection	
design of short-circuit protection per output	Fuse links: gG 6 A, quick-response 10 A (IEC 60947-5-1), miniature circuit-breaker C char.: 1.6 A (IEC 60947-5-1) or 6 A (I_K < 500 A)
Electrical Safety	
touch protection against electrical shock	finger-safe
ATEX	
certificate of suitability	

● according to ATEX directive 2014/34/EU	BVS 06 ATEX F001
● acc. to Equipment and Protective System Intended for Use in Potentially Explosive Atmospheres Regulations 2016 (S.I. 2016 No.1107)	ITS21UKEX0464, ITS21UKEX0455X
● according to UKCA	ITS21UKEX0464
Galvanic isolation	
(electrically) protective separation according to IEC 60947-1	All circuits with protective separation (double creepage paths and clearances), the information in the "Protective Separation" test report, No. A0258, must be observed (link see further information)
design of the electrical isolation	Protective separation in accordance with IEC 60947-1 for all circuits
● note	Test report No. A0258 must be observed (https://support.industry.siemens.com/cs/document/109748152)
Control circuit/ Control	
product function soft starter control	Yes
type of voltage of the control supply voltage	AC/DC
control supply voltage at AC	
● at 50 Hz rated value	110 ... 240 V
● at 60 Hz rated value	110 ... 240 V
control supply voltage frequency	
● 1 rated value	50 Hz
● 2 rated value	60 Hz
relative symmetrical tolerance of the control supply voltage frequency	5 %
control supply voltage at DC rated value	110 ... 240 V
operating range factor control supply voltage rated value at DC	
● initial value	0.85
● full-scale value	1.1
operating range factor control supply voltage rated value at AC at 50 Hz	
● initial value	0.85
● full-scale value	1.1
operating range factor control supply voltage rated value at AC at 60 Hz	
● initial value	0.85
● full-scale value	1.1
inrush current peak	
● at 240 V	10 A
duration of inrush current peak	
● at 240 V	1 ms

Approvals Certificates

Environment	General Product Approval				
Environmental Confirmations					

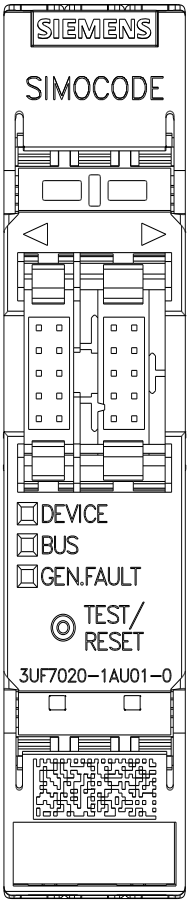
General Product Approval		EMV		For use in hazardous locations	

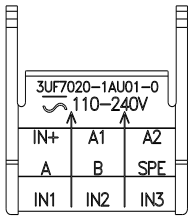
For use in hazardous locations		Test Certificates		Maritime application	
	Miscellaneous	Special Test Certificate	Type Test Certificates/Test Report		

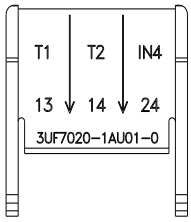
Maritime application	other			Industrial Commu-nication
LRS	RMRS	产品合格 QC PASS	Confirmation	Confirmation	Profibus

Further information

Information on the packaging
https://support.industry.siemens.com/cs/ww/en/view/109813875
Information for data generation and storage
https://support.industry.siemens.com/cs/ww/en/view/109995012
Information- and Downloadcenter (Catalogs, Brochures,…)
https://www.siemens.com/ic10
Industry Mall (Online ordering system)
https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3UF7020-1AU01-0
Cax online generator
https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3UF7020-1AU01-0
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)
https://support.industry.siemens.com/cs/ww/en/ps/3UF7020-1AU01-0
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)
https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3UF7020-1AU01-0&lang=en







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