



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
<b>General technical data</b>	
certificate of suitability	CE / UL / CSA / C-Tick (RCM) / GOST / NOM / ATEX
product function	<ul style="list-style-type: none"> <li>• current measurement</li> <li>• voltage measurement</li> <li>• active power measurement</li> <li>• energy measurement</li> <li>• frequency measurement</li> <li>• bus communication</li> <li>• data acquisition function</li> <li>• diagnostics function</li> <li>• password protection</li> <li>• test function</li> <li>• maintenance function</li> <li>• MRRT redundancy procedure</li> </ul>
	No No No No No Yes Yes Yes Yes Yes Yes Yes Yes No
product component	<ul style="list-style-type: none"> <li>• input for thermistor connection</li> <li>• digital input</li> <li>• input for analog temperature sensors</li> <li>• input for ground fault detection</li> <li>• relay output</li> </ul>
	Yes Yes No No Yes
product extension	<ul style="list-style-type: none"> <li>• temperature monitoring module</li> <li>• current measuring module</li> <li>• current/voltage measuring module</li> <li>• fail-safe digital I/O module</li> <li>• ground-fault monitoring module</li> <li>• decoupling module</li> <li>• analog I/O module</li> <li>• digital I/O module with monostable outputs</li> <li>• digital I/O module with bistable outputs</li> <li>• control unit with display</li> <li>• control unit</li> </ul>
	Yes Yes No No Yes No No Yes No No 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

<b>surge voltage resistance rated value</b>	4 000 V
<b>shock resistance</b>	
• when mounted on current measuring module according to IEC 60068-2-27	10 g / 11 ms
• <b>according to IEC 60068-2-27</b>	15g / 11 ms
<b>• vibration resistance</b>	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
<b>switching capacity current of the NO contacts of the relay outputs at AC-15</b>	
• at 24 V	6 A
• at 120 V	6 A
• at 230 V	3 A
<b>switching capacity current of the NO contacts of the relay outputs at DC-13</b>	
• at 24 V	2 A
• at 60 V	0.55 A
• at 125 V	0.25 A
<b>mechanical service life (operating cycles) typical</b>	10 000 000
electrical endurance (operating cycles) typical	100 000
<b>buffering time in the event of power failure</b>	0.05 s
<b>reference code according to IEC 81346-2</b>	F
continuous current of the NO contacts of the relay outputs	
• at 50 °C	6 A
• at 60 °C	5 A
<b>type of input characteristic</b>	Type 1 in accordance with EN 61131-2
<b>Substance Prohibitance (Date)</b>	05/01/2012
<b>SVHC substance name</b>	Lead - 7439-92-1 Lead monoxide (lead oxide) - 1317-36-8 2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol - 79-94-7 6,6'-di-tert-butyl-2,2'-methylene-di-p-cresol - 119-47-1
<b>Net Weight</b>	0.238 kg
<b>Electromagnetic compatibility</b>	
EMC emitted interference according to IEC 60947-1	class A
EMC immunity according to IEC 60947-1	corresponds to degree of severity 3
<b>conducted interference</b>	
• 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
<b>field-based interference according to IEC 61000-4-3</b>	10 V/m
<b>electrostatic discharge according to IEC 61000-4-2</b>	6 kV contact discharge / 8 kV air discharge
<b>conducted HF interference emissions according to CISPR11</b>	corresponds to degree of severity A
<b>field-bound HF interference emission according to CISPR11</b>	corresponds to degree of severity A
<b>Inputs/ Outputs</b>	
<b>product function</b>	
• parameterizable inputs	Yes
• parameterizable outputs	Yes
<b>number of inputs</b>	4
• for thermistor connection	1
number of digital inputs with a common reference potential	4
<b>digital input version</b>	
• type 1 acc. to IEC 61131	Yes
<b>input voltage at digital input at DC</b>	
• rated value	24 V
<b>number of outputs</b>	2
<b>number of semiconductor outputs</b>	0
<b>number of outputs as contact-affected switching element</b>	2

<b>switching behavior</b>	monostable
<b>number of relay outputs</b>	2
<b>type of relay outputs</b>	Monostable
<b>wire length for digital signals maximum</b>	300 m
<b>wire length for thermistor connection</b>	
• with conductor cross-section = 0.5 mm <sup>2</sup> maximum	50 m
• with conductor cross-section = 1.5 mm <sup>2</sup> maximum	150 m
• with conductor cross-section = 2.5 mm <sup>2</sup> maximum	250 m
<b>Protective and monitoring functions</b>	
<b>product function</b>	
• 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
<b>product function</b>	
• current detection	Yes
• overload protection	Yes
• evaluation of thermistor motor protection	Yes
<b>total cold resistance number of sensors in series maximum</b>	1.5 kΩ
<b>response value of thermoresistor</b>	3 400 ... 3 800 Ω
• of the short-circuit control	9 Ω
<b>release value of thermoresistor</b>	1 500 ... 1 650 Ω
<b>Motor control functions</b>	
<b>product function</b>	
• 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
<b>Communication/ Protocol</b>	
<b>protocol is supported</b>	
• 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
<b>product function</b>	
• 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 PROFlenergy measured values	No
• supports PROFlenergy shutdown	No
<b>transfer rate maximum</b>	1.5 Mbit/s
<b>identification &amp; maintenance function</b>	
• 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)
<b>Installation/ mounting/ dimensions</b>	
<b>mounting position</b>	any
<b>fastening method</b>	screw and snap-on mounting
<b>height</b>	100 mm
<b>width</b>	22.5 mm
<b>depth</b>	124.5 mm
<b>required spacing</b>	
• top	40 mm
• bottom	40 mm
• left	0 mm
• right	0 mm
<b>Connections/ Terminals</b>	
product component removable terminal for auxiliary and control circuit	Yes
<b>type of electrical connection</b>	
• for auxiliary and control circuit	screw-type terminals
<b>type of connectable conductor cross-sections</b>	
• solid	1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x ( 0.5 ... 1.5 mm <sup>2</sup> )
• finely stranded with core end processing	1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x (0.5 ... 1 mm <sup>2</sup> )
• 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
<b>type of connectable conductor cross-sections for PROFIBUS wire</b>	2x 0.34 mm <sup>2</sup> , AWG 22
<b>Ambient conditions</b>	
installation altitude at height above sea level maximum	2 000 m
• note	Restrictions apply to higher installation altitudes, see: <a href="https://support.industry.siemens.com/cs/document/109995153">https://support.industry.siemens.com/cs/document/109995153</a>
<b>ambient temperature</b>	
• during operation	-25 ... +60 °C
• during storage	-40 ... +80 °C
• during transport	-40 ... +80 °C
<b>environmental category</b>	
• 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
<b>relative humidity</b>	
• during operation	10 ... 95 %
<b>contact rating of auxiliary contacts according to UL</b>	B300 / R300
<b>Short-circuit protection</b>	

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)
<b>Electrical Safety</b>	
<b>touch protection against electrical shock</b>	finger-safe
<b>ATEX</b>	
<b>certificate of suitability</b>	
<ul style="list-style-type: none"> <li>according to ATEX directive 2014/34/EU</li> <li>acc. to Equipment and Protective System Intended for Use in Potentially Explosive Atmospheres Regulations 2016 (S.I. 2016 No.1107)</li> <li>according to UKCA</li> </ul>	BVS 06 ATEX F001 ITS21UKEX0464, ITS21UKEX0455X ITS21UKEX0464
explosion device group and category according to ATEX directive 2014/34/EU	II (2) G, II (2) D, I (M2)
<b>Galvanic isolation</b>	
<b>(electrically) protective separation according to IEC 60947-1</b>	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)
<b>design of the electrical isolation</b>	Protective separation in accordance with IEC 60947-1 for all circuits Test report No. A0258 must be observed ( <a href="https://support.industry.siemens.com/cs/document/109748152">https://support.industry.siemens.com/cs/document/109748152</a> )
<b>Control circuit/ Control</b>	
<b>product function soft starter control</b>	Yes
<b>type of voltage of the control supply voltage</b>	AC/DC
<b>control supply voltage at AC</b>	
<ul style="list-style-type: none"> <li>at 50 Hz rated value</li> <li>at 60 Hz rated value</li> </ul>	110 ... 240 V 110 ... 240 V
<b>control supply voltage frequency</b>	
<ul style="list-style-type: none"> <li>1 rated value</li> <li>2 rated value</li> </ul>	50 Hz 60 Hz
<b>relative symmetrical tolerance of the control supply voltage frequency</b>	5 %
<b>control supply voltage at DC rated value</b>	110 ... 240 V
<b>operating range factor control supply voltage rated value at DC</b>	
<ul style="list-style-type: none"> <li>initial value</li> <li>full-scale value</li> </ul>	0.85 1.1
<b>operating range factor control supply voltage rated value at AC at 50 Hz</b>	
<ul style="list-style-type: none"> <li>initial value</li> <li>full-scale value</li> </ul>	0.85 1.1
<b>operating range factor control supply voltage rated value at AC at 60 Hz</b>	
<ul style="list-style-type: none"> <li>initial value</li> <li>full-scale value</li> </ul>	0.85 1.1
<b>inrush current peak</b>	
<ul style="list-style-type: none"> <li>at 240 V</li> </ul>	10 A
<b>duration of inrush current peak</b>	
<ul style="list-style-type: none"> <li>at 240 V</li> </ul>	1 ms
<b>Approvals Certificates</b>	
<b>General Product Approval</b>	EMV



EMV	For use in hazardous locations	Test Certificates
		<a href="#">Miscellaneous</a>

## Test Certificates

## Maritime application

[Type Test Certificates/Test Report](#)

[Special Test Certificate](#)



## other



[Confirmation](#)



[Environmental Confirmations](#)



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](https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3UF7020-1AU01-0&lang=en)



