



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

<b>product brand name</b>	SIMOCODE
<b>product designation</b>	Motor management system
<b>design of the product</b>	Basic device 0
<b>product type designation</b>	pro S
<b>General technical data</b>	
<b>certificate of suitability</b>	CE / UL / CSA / C-Tick (RCM) / GOST / NOM / ATEX
<b>product function</b>	
• 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
<b>product component</b>	
• input for thermistor connection	Yes
• digital input	Yes
• input for analog temperature sensors	No
• input for ground fault detection	No
• relay output	Yes
<b>product extension</b>	
• 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
<b>apparent power consumption</b>	4.7 VA
<b>consumed active power</b>	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>	
<ul style="list-style-type: none"> <li>when mounted on current measuring module according to IEC 60068-2-27</li> </ul>	10 g / 11 ms
<ul style="list-style-type: none"> <li><b>according to IEC 60068-2-27</b></li> </ul>	15 g / 11 ms
<ul style="list-style-type: none"> <li><b>vibration resistance</b></li> </ul>	1 ... 6 Hz / 15 mm; 6 ... 500 Hz / 2 g
<ul style="list-style-type: none"> <li>vibration resistance when mounted on current measuring module according to IEC 60068-2-6</li> </ul>	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>	
<ul style="list-style-type: none"> <li>at 24 V</li> </ul>	6 A
<ul style="list-style-type: none"> <li>at 120 V</li> </ul>	6 A
<ul style="list-style-type: none"> <li>at 230 V</li> </ul>	3 A
<b>switching capacity current of the NO contacts of the relay outputs at DC-13</b>	
<ul style="list-style-type: none"> <li>at 24 V</li> </ul>	2 A
<ul style="list-style-type: none"> <li>at 60 V</li> </ul>	0.55 A
<ul style="list-style-type: none"> <li>at 125 V</li> </ul>	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	
<ul style="list-style-type: none"> <li>at 50 °C</li> </ul>	6 A
<ul style="list-style-type: none"> <li>at 60 °C</li> </ul>	5 A
<b>type of input characteristic</b>	Type 1 in accordance with EN 61131-2
<b>Substance Prohibition (day/month/year)</b>	05/01/2012
<b>SVHC substance name</b>	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
<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>	
<ul style="list-style-type: none"> <li>due to burst according to IEC 61000-4-4</li> </ul>	2 kV (power ports) / 1 kV (signal ports)
<ul style="list-style-type: none"> <li>due to conductor-earth surge according to IEC 61000-4-5</li> </ul>	2 kV
<ul style="list-style-type: none"> <li>due to conductor-conductor surge according to IEC 61000-4-5</li> </ul>	1 kV
<ul style="list-style-type: none"> <li>due to high-frequency radiation according to IEC 61000-4-6</li> </ul>	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>	
<ul style="list-style-type: none"> <li>parameterizable inputs</li> </ul>	Yes
<ul style="list-style-type: none"> <li>parameterizable outputs</li> </ul>	Yes
<b>number of inputs</b>	4
<ul style="list-style-type: none"> <li>for thermistor connection</li> </ul>	1
number of digital inputs with a common reference potential	4
<b>digital input version</b>	
<ul style="list-style-type: none"> <li>type 1 acc. to IEC 61131</li> </ul>	Yes
<b>input voltage at digital input at DC</b>	
<ul style="list-style-type: none"> <li>rated value</li> </ul>	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

#### Protective and monitoring functions

<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






#### Motor control functions

<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

#### Communication/ Protocol

<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

<ul style="list-style-type: none"> <li>• SNMP</li> <li>• HTTPS</li> <li>• NTP</li> <li>• Media Redundancy Protocol (MRP)</li> </ul>	No
<b>product function</b>	
<ul style="list-style-type: none"> <li>• web server</li> <li>• shared device</li> <li>• at the Ethernet interface Autocrossover</li> <li>• at the Ethernet interface Autonegotiation</li> <li>• at the Ethernet interface Autosensing</li> <li>• is supported Device Level Ring (DLR)</li> <li>• is supported PROFINET system redundancy (S2)</li> <li>• supports PROFINET energy measured values</li> <li>• supports PROFINET energy shutdown</li> </ul>	No
<b>transfer rate maximum</b>	1.5 Mbit/s
<b>identification &amp; maintenance function</b>	
<ul style="list-style-type: none"> <li>• I&amp;M0 - device-specific information</li> <li>• I&amp;M1 - higher level designation/location designation</li> <li>• I&amp;M2 - installation date</li> <li>• I&amp;M3 - comment</li> </ul>	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>	
<ul style="list-style-type: none"> <li>• top</li> <li>• bottom</li> <li>• left</li> <li>• right</li> </ul>	40 mm 40 mm 0 mm 0 mm
<b>Connections/ Terminals</b>	
<b>product component removable terminal for auxiliary and control circuit</b>	Yes
<b>type of electrical connection</b>	
<ul style="list-style-type: none"> <li>• for auxiliary and control circuit</li> </ul>	screw-type terminals
<b>type of connectable conductor cross-sections</b>	
<ul style="list-style-type: none"> <li>• solid</li> <li>• finely stranded with core end processing</li> <li>• for AWG cables solid</li> </ul>	1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x ( 0.5 ... 1.5 mm <sup>2</sup> ) 1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x (0.5 ... 1 mm <sup>2</sup> ) 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
<ul style="list-style-type: none"> <li>• note</li> </ul>	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>	
<ul style="list-style-type: none"> <li>• during operation</li> <li>• during storage</li> <li>• during transport</li> </ul>	-25 ... +60 °C -40 ... +80 °C -40 ... +80 °C
<b>environmental category</b>	
<ul style="list-style-type: none"> <li>• during operation according to IEC 60721</li> <li>• during storage according to IEC 60721</li> <li>• during transport according to IEC 60721</li> </ul>	3K6 (no formation of ice, no condensation, relative humidity 10 ... 95%), 3C3 (no salt mist), 3S2 (sand must not get into the devices), 3M6 1K6 (no condensation, relative humidity 10 ... 95%), 1C2 (no salt mist), 1S2 (sand must not get into the devices), 1M4 2K2, 2C1, 2S1, 2M2
<b>relative humidity</b>	

<ul style="list-style-type: none"> <li>during operation</li> </ul>	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 <sub>K</sub> < 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	
<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	
<ul style="list-style-type: none"> <li>note</li> </ul>	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>Environment</b>	<b>General Product Approval</b>	
<a href="#">Environmental Confirmations</a>	    	
<b>General Product Approval</b>	<b>EMV</b>	<b>For use in hazardous locations</b>



For use in hazardous locations	Test Certificates	Maritime application
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[Miscellaneous](#)

[Special Test Certificate](#)

[Type Test Certificates/Test Report](#)



Maritime application	other	Industrial Communication
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[Confirmation](#)

[Confirmation](#)



Further information
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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

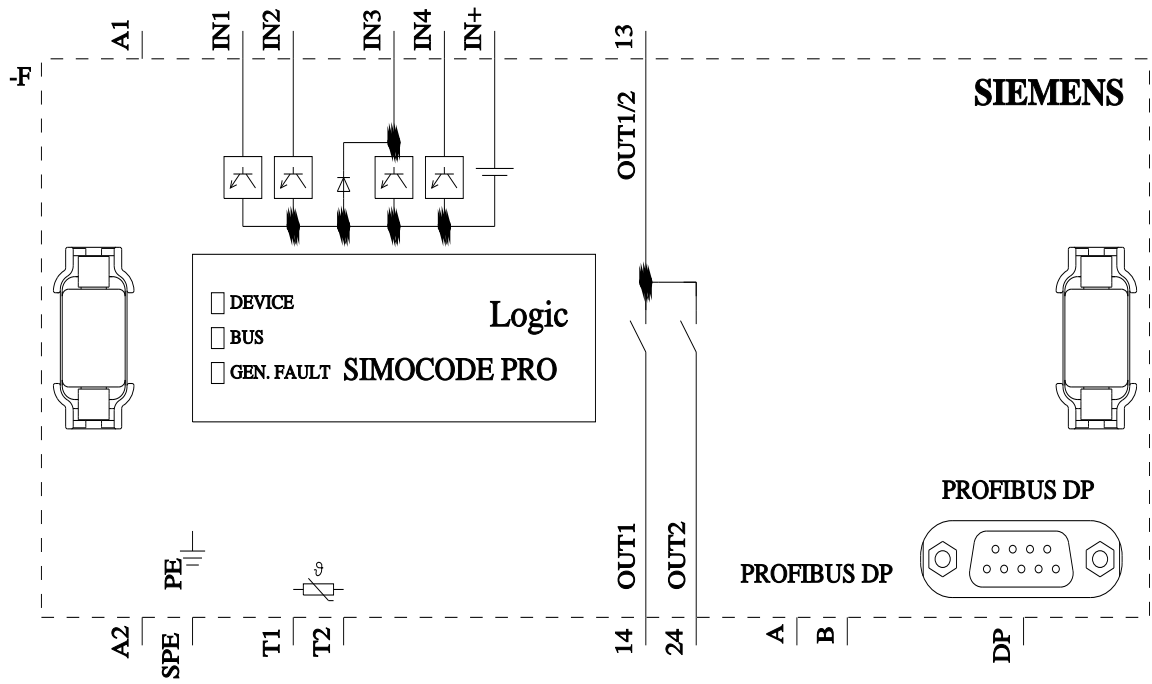
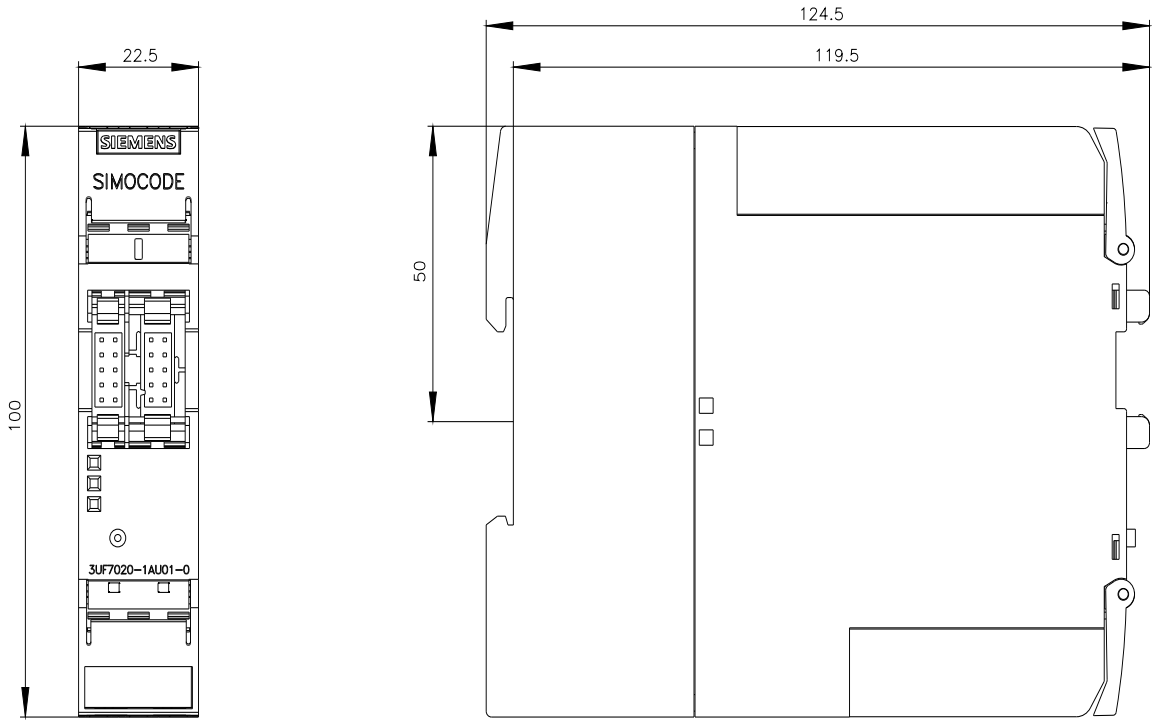
<https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3UF7020-1AU01-0>

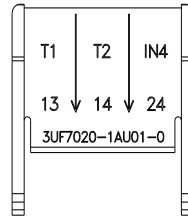
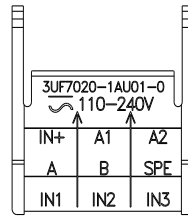
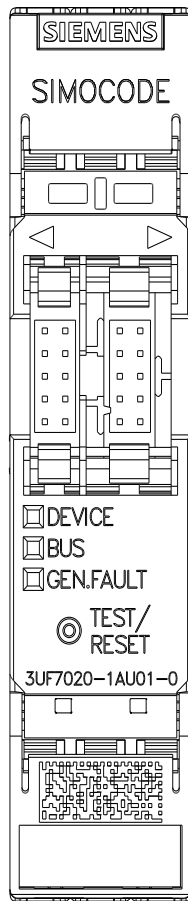
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

<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)





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