



Basic unit SIMOCODE pro V MR, MODBUS RTU interface 57.6 Kbps, RS 485, 4I/3O freely parameterizable, Us: 110...240 V AC/DC, input for thermistor connection Monostable relay outputs, expandable by extension modules

product brand name	SIRIUS
product designation	Motor management system
design of the product	basic unit 2
product type designation	SIMOCODE pro V MR
General technical data	
product function	
• bus communication	Yes
• data acquisition function	Yes
• diagnostics function	Yes
• password protection	Yes
• test function	Yes
• maintenance function	Yes
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	Yes
• fail-safe digital I/O module	Yes
• ground-fault monitoring module	Yes
• control unit with display	Yes
• control unit	Yes
• analog I/O module	Yes
apparent power consumption	8.3 VA
consumed active power	3.6 W
insulation voltage with degree of pollution 3 at AC rated value	300 V
surge voltage resistance rated value	4 000 V
protection class IP	IP20
shock resistance	
• according to IEC 60068-2-27	15g / 11 ms
• vibration resistance	1-6 Hz / 15 mm; 6-500 Hz / 2 g
switching capacity current of the NO contacts of the relay outputs at AC-15	
• at 24 V	6 A
• at 120 V	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> <li>• at 60 V</li> <li>• at 125 V</li> </ul>	2 A 0.55 A 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 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> <li>• at 60 °C</li> </ul>	6 A 5 A
<b>type of input characteristic</b>	Type 1 in accordance with EN 61131-2
<b>Substance Prohibittance (Date)</b>	05/01/2012
<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, ITS21UKEX0455X
explosion device group and category according to ATEX directive 2014/34/EU	II (2) G, II (2) D, I (M2)
<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> <li>• due to conductor-earth surge according to IEC 61000-4-5</li> <li>• due to conductor-conductor surge according to IEC 61000-4-5</li> <li>• due to high-frequency radiation according to IEC 61000-4-6</li> </ul>	2 kV (power ports) / 1 kV (signal ports) 2 kV 1 kV 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> <li>• parameterizable outputs</li> </ul>	Yes 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
input voltage at digital input at DC rated value	24 V
<b>number of outputs</b>	3
<b>number of semiconductor outputs</b>	0
<b>number of outputs as contact-affected switching element</b>	3
<b>switching behavior</b>	monostable
<b>type of relay outputs</b>	Monostable
<b>wire length for digital signals maximum</b>	300 m
<b>wire length for thermistor connection</b>	
<ul style="list-style-type: none"> <li>• with conductor cross-section = 0.5 mm<sup>2</sup> maximum</li> <li>• with conductor cross-section = 1.5 mm<sup>2</sup> maximum</li> <li>• with conductor cross-section = 2.5 mm<sup>2</sup> maximum</li> </ul>	50 m 150 m 250 m
<b>Protective and monitoring functions</b>	
<b>product function</b>	
<ul style="list-style-type: none"> <li>• asymmetry detection</li> <li>• blocking current evaluation</li> <li>• power factor monitoring</li> </ul>	Yes Yes Yes

<ul style="list-style-type: none"> <li>• ground fault detection</li> <li>• phase failure detection</li> <li>• phase sequence recognition</li> <li>• voltage detection</li> <li>• monitoring of number of start operations</li> <li>• overvoltage detection</li> <li>• overcurrent detection 1 phase</li> <li>• undervoltage detection</li> <li>• undercurrent detection 1 phase</li> <li>• active power monitoring</li> </ul>	Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes
<b>product function</b>	
<ul style="list-style-type: none"> <li>• current detection</li> <li>• overload protection</li> <li>• evaluation of thermistor motor protection</li> </ul>	Yes Yes 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
<ul style="list-style-type: none"> <li>• of the short-circuit control</li> </ul>	9 Ω
<b>release value of thermoresistor</b>	1 500 ... 1 650 Ω
<b>Motor control functions</b>	
<b>product function</b>	
<ul style="list-style-type: none"> <li>• parameterizable overload relay</li> <li>• circuit breaker control</li> <li>• direct start</li> <li>• reverse starting</li> <li>• star-delta circuit</li> <li>• star-delta reversing circuit</li> <li>• Dahlander circuit</li> <li>• Dahlander reversing circuit</li> <li>• pole-changing switch circuit</li> <li>• pole-changing switch reversing circuit</li> <li>• slide control</li> <li>• valve control</li> </ul>	Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes
<b>Communication/ Protocol</b>	
<ul style="list-style-type: none"> <li>• protocol is supported PROFIBUS DP protocol</li> <li>• protocol is supported PROFINET IO protocol</li> <li>• protocol is supported PROFI-safe protocol</li> <li>• protocol is supported Modbus RTU</li> <li>• protocol is supported EtherNet/IP</li> <li>• protocol is supported OPC UA Server</li> <li>• protocol is supported LLDP</li> <li>• protocol is supported Address Resolution Protocol (ARP)</li> <li>• protocol is supported SNMP</li> <li>• protocol is supported HTTPS</li> <li>• protocol is supported NTP</li> <li>• protocol is supported Media Redundancy Protocol (MRP)</li> <li>• product function is supported Device Level Ring (DLR)</li> </ul>	No No No Yes No No No No No No No No No
<b>number of interfaces</b>	
<ul style="list-style-type: none"> <li>• according to PROFINET</li> <li>• according to PROFIBUS</li> <li>• according to Ethernet/IP</li> <li>• according to Modbus RTU</li> </ul>	0 0 0 1
<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 PROFINET system redundancy (S2)</li> <li>• supports PROFIenergy measured values</li> <li>• supports PROFIenergy shutdown</li> </ul>	No No No No No No No No

<b>transfer rate maximum</b>	0.057 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	9-pin D-sub socket (57.6 Kbit) / screw terminal (57.6 Kbit)
<b>Installation/ mounting/ dimensions</b>	
<b>mounting position</b>	any
<b>fastening method</b>	screw and snap-on mounting
<b>height</b>	111 mm
<b>width</b>	45 mm
<b>depth</b>	124 mm
<b>required spacing</b>	
• top	40 mm
• bottom	40 mm
• left	0 mm
• right	0 mm
<b>Connections/ Terminals</b>	
<b>product component removable terminal for auxiliary and control circuit</b>	Yes
<b>type of connectable conductor cross-sections</b>	
• solid	1x (0.5 ... 4.0 mm²), 2x (0.5 ... 2.5 mm²)
• finely stranded with core end processing	1x (0.5 ... 2.5 mm²), 2x (0.5 ... 1.5 mm²)
• for AWG cables solid	1x (20 ... 12), 2x (20 ... 14)
• for AWG cables stranded	1x (20 ... 14), 2x (20 ... 16)
tightening torque with screw-type terminals	0.8 ... 1.2 N·m
tightening torque [lbf·in] with screw-type terminals	7 ... 10.3 lbf·in
<b>type of connectable conductor cross-sections for PROFIBUS wire</b>	2x 0.34 mm², AWG 22
<b>Ambient conditions</b>	
<b>installation altitude at height above sea level</b>	
• 1 maximum	2 000 m
• 2 maximum	3 000 m; max. +50 °C (no protective separation)
• 3 maximum	4 000 m; max. +40 °C (no protective separation)
<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	5 ... 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>Safety related data</b>	
<b>touch protection against electrical shock</b>	finger-safe
<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>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>	
• at 50 Hz rated value	110 ... 240 V

• at 60 Hz rated value	110 ... 240 V
<b>control supply voltage frequency</b>	
• 1 rated value	50 Hz
• 2 rated value	60 Hz
<b>relative symmetrical tolerance of the control supply voltage frequency</b>	5 %
<b>control supply voltage at DC</b>	
• rated value	110 ... 240 V
<b>operating range factor control supply voltage rated value at DC</b>	
• initial value	0.85
• full-scale value	1.1
<b>operating range factor control supply voltage rated value at AC at 50 Hz</b>	
• initial value	0.85
• full-scale value	1.1
<b>operating range factor control supply voltage rated value at AC at 60 Hz</b>	
• initial value	0.85
• full-scale value	1.1
<b>inrush current peak</b>	
• at 240 V	15 A
<b>duration of inrush current peak</b>	
• at 240 V	1 ms

#### Certificates/ approvals

General Product Approval	EMC
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[Confirmation](#)



For use in hazardous locations	Declaration of Conformity
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[Explosion Protection Certificate](#)



Declaration of Conformity	Test Certificates	Marine / Shipping
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[Special Test Certificate](#)

[Type Test Certificates/Test Report](#)

[Special Test Certificate](#)



Marine / Shipping	other
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[Confirmation](#)



#### Further information

Siemens has decided to exit the Russian market (see here).

<https://press.siemens.com/global/en/pressrelease/siemens-wind-down-russian-business>

Siemens is working on the renewal of the current EAC certificates.

Please contact your local Siemens office on the status of validity of the EAC certification if you intend to import or offer to supply these products to an EAC relevant market (other than the sanctioned EAEU member states Russia or Belarus).

Information on the packaging

<https://support.industry.siemens.com/cs/ww/en/view/109813875>

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=3UF7012-1AU00-0>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3UF7012-1AU00-0>

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

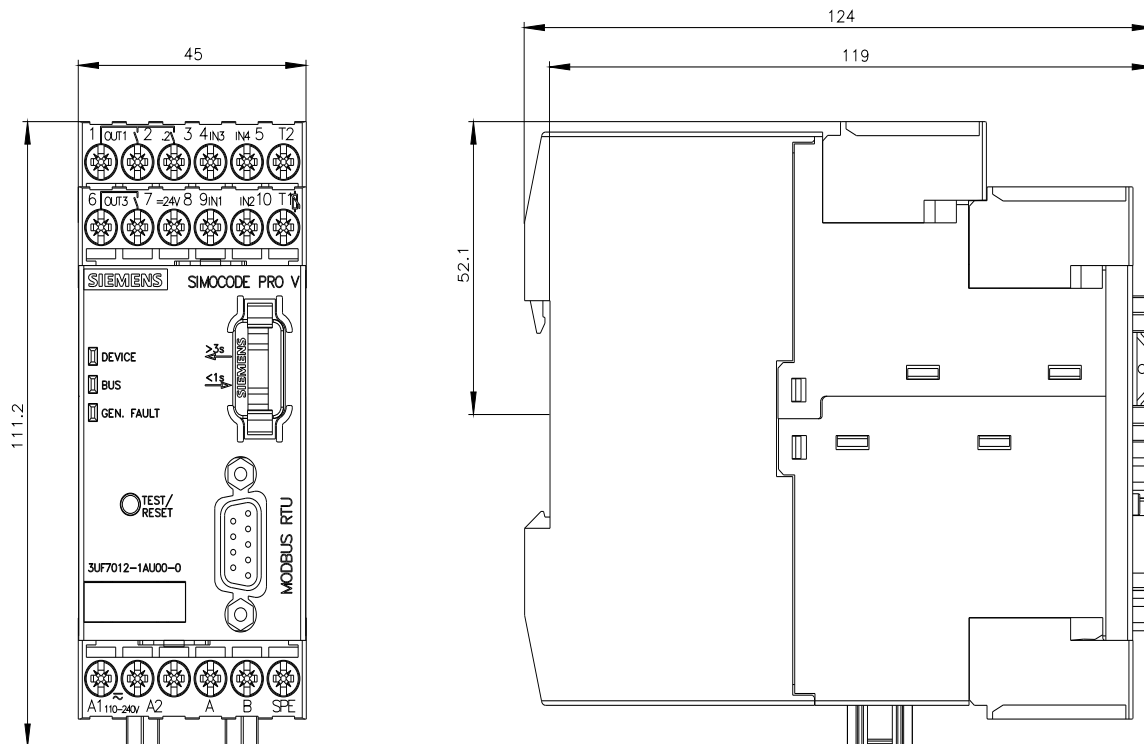
<https://support.industry.siemens.com/cs/ww/en/ps/3UF7012-1AU00-0>

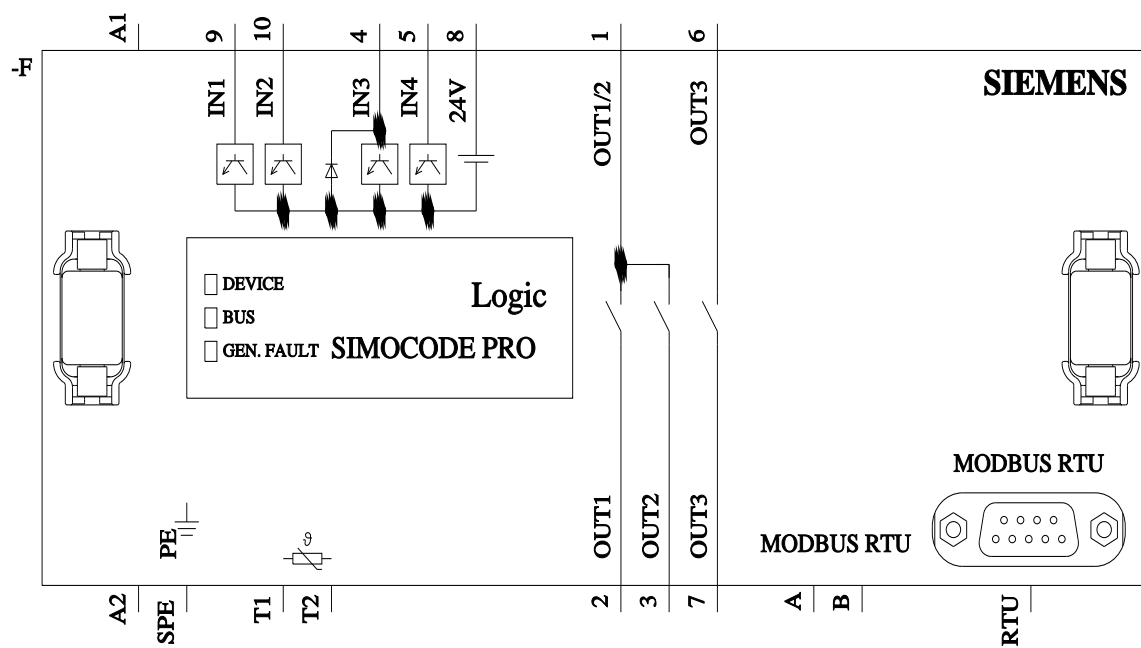
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3UF7012-1AU00-0&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3UF7012-1AU00-0&lang=en)

Test report No. A0258, protective separation

<https://support.industry.siemens.com/cs/ww/en/view/109748152>





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