

Basic unit SIMOCODE pro S, PROFIBUS DP interface 1.5 Mbit/s, 4I/2O freely parameterizable, Us: 110...240 V AC/DC, input for thermistor connection Monostable relay outputs, expandable by a multifunctional module



Product brand name	SIRIUS
Product designation	Motor management system
Design of the product	Basic device 0
Product type designation	SIMOCODE pro S

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	No
• failsafe digital I/O module	No
• Ground fault monitoring module	Yes
• Control unit with display	No
• Control unit	Yes
• analog I/O module	No
Apparent power consumption	4.7 V·A
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
Protection class IP	IP20
Shock resistance	
• when mounted on current measuring module acc. to IEC 60068-2-27	10 g / 11 ms
• acc. to IEC 60068-2-27	15g / 11 ms
Vibration resistance	
• when mounted on current measuring module acc. to IEC 60068-2-6	1-6 Hz / 15 mm; 6-500 Hz / 2 g 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 (switching cycles)	
• typical	10 000 000
Electrical endurance (switching cycles)	
• typical	100 000
Buffering time in the event of power failure	0.02 s
Reference code acc. to DIN EN 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

Certificate of suitability	
<ul style="list-style-type: none"> • according to ATEX directive 2014/34/EU 	BVS 06 ATEX F001
Explosion device group and category according to ATEX directive 2014/34/EU	II (2) G, II (2) D, I (M2)

Electromagnetic compatibility

EMC emitted interference	
<ul style="list-style-type: none"> • acc. to IEC 60947-1 	class A
EMI immunity acc. to IEC 60947-1	corresponds to degree of severity 3
Conducted interference	
<ul style="list-style-type: none"> • due to burst acc. to IEC 61000-4-4 	2 kV (power ports) / 1 kV (signal ports)
<ul style="list-style-type: none"> • due to conductor-earth surge acc. to IEC 61000-4-5 	2 kV
<ul style="list-style-type: none"> • due to conductor-conductor surge acc. to IEC 61000-4-5 	1 kV
<ul style="list-style-type: none"> • due to high-frequency radiation acc. to IEC 61000-4-6 	10 V
Field-bound parasitic coupling acc. to IEC 61000-4-3	10 V/m
Electrostatic discharge acc. to IEC 61000-4-2	6 kV contact discharge / 8 kV air discharge
Conducted HF-interference emissions acc. to CISPR11	corresponds to degree of severity A
Field-bound HF-interference emission acc. to CISPR11	corresponds to degree of severity A

Inputs/ Outputs

Product function	
<ul style="list-style-type: none"> • Parameterizable inputs 	Yes
<ul style="list-style-type: none"> • Parameterizable outputs 	Yes
Number of inputs	4
<ul style="list-style-type: none"> • for thermistor connection 	1
Number of digital inputs	
<ul style="list-style-type: none"> • with a common reference potential 	4
Digital input version	
<ul style="list-style-type: none"> • 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
Type of relay outputs	Monostable
Wire length for digital signals maximum	300 m
Wire length for thermistor connection	
<ul style="list-style-type: none"> • with conductor cross-section = 0.5 mm² maximum 	50 m

• with conductor cross-section = 1.5 mm ² maximum	150 m
• with conductor cross-section = 2.5 mm ² maximum	250 m

Protective and monitoring functions

Product function	
• Phase unbalance	Yes
• blocking current evaluation	Yes
• power factor monitoring	No
• Ground fault detection	Yes
• 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 k Ω
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
- Protocol is supported PROFINET IO protocol No
- Protocol is supported PROFI-safe protocol No
- Protocol is supported Modbus RTU No
- Protocol is supported EtherNet/IP No
- Protocol is supported OPC UA Server No
- Protocol is supported LLDP No
- Protocol is supported Address Resolution Protocol (ARP) No
- Protocol is supported SNMP No
- Protocol is supported HTTPS No
- Protocol is supported NTP No
- Protocol is supported Media Redundancy Protocol (MRP) No
- Product function is supported Device Level Ring (DLR) No

Number of interfaces

- acc. to PROFINET 0
- acc. to PROFIBUS 1
- according to Ethernet/IP 0

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 PROFINET system redundancy 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
Mounting type	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 function	
• removable terminal for auxiliary and control circuit	Yes
Type of electrical connection	
• for auxiliary and control current circuit	screw-type terminals
Type of connectable conductor cross-sections	
• solid	1x (0.5 ... 2.5 mm ²), 2x (0.5 ... 1.5 mm ²)
• finely stranded with core end processing	1x (0.5 ... 2.5 mm ²), 2x (0.5 ... 1 mm ²)
• at AWG conductors 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 mm ² , AWG 22

Ambient conditions

Installation altitude at height above sea level	
• 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)
Ambient temperature	
• during operation	-25 ... +60 °C
Environmental category	
• during operation acc. 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 acc. 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 acc. to IEC 60721	2K2, 2C1, 2S1, 2M2
Relative humidity	
• during operation	10 ... 95 %

Contact rating of auxiliary contacts according to UL	B300 / R300
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Short-circuit protection

Design of short-circuit protection <ul style="list-style-type: none"> 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)
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Safety related data

Protection against electrical shock	finger-safe
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Galvanic isolation

(electrically) protective separation acc. 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)
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Control circuit/ Control

Product function soft starter control	Yes
Type of voltage of the control supply voltage	AC/DC
Control supply voltage at AC <ul style="list-style-type: none"> at 50 Hz rated value at 60 Hz rated value 	110 ... 240 V 110 ... 240 V
Control supply voltage frequency <ul style="list-style-type: none"> 1 rated value 2 rated value 	50 Hz 60 Hz
Relative symmetrical tolerance of the control supply voltage frequency	5 %
Control supply voltage at DC <ul style="list-style-type: none"> rated value 	110 ... 240 V
Operating range factor control supply voltage rated value at DC <ul style="list-style-type: none"> initial value Full-scale value 	0.85 1.1
Operating range factor control supply voltage rated value at AC at 50 Hz <ul style="list-style-type: none"> initial value Full-scale value 	0.85 1.1
Operating range factor control supply voltage rated value at AC at 60 Hz <ul style="list-style-type: none"> initial value Full-scale value 	0.85 1.1

Certificates/ approvals

General Product Approval	EMC	For use in hazardous locations
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For use in hazardous locations	Declaration of Conformity	Test Certificates	Marine / Shipping
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[Explosion Protection Certificate](#)



[Miscellaneous](#)

[Type Test Certificates/Test Report](#)

[Special Test Certificate](#)



Marine / Shipping	other
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[Confirmation](#)



[PROFINET-Certification](#)

Further information

Information- and Downloadcenter (Catalogs, Brochures,...)

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

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

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

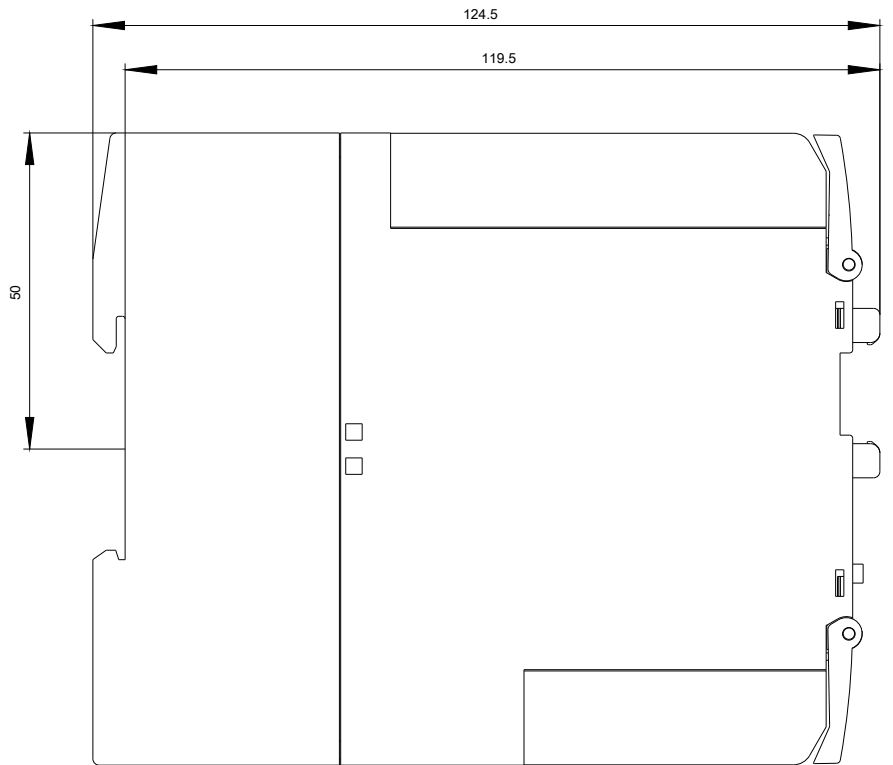
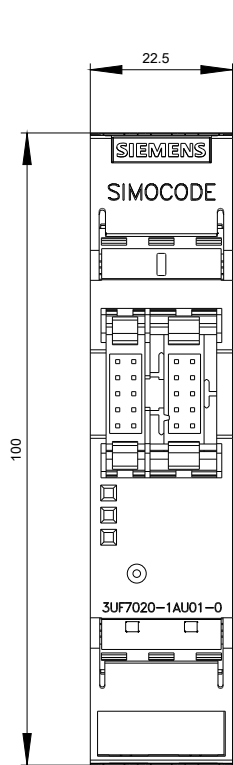
<https://support.industry.siemens.com/cs/ww/en/ps/3UF7020-1AU01-0>

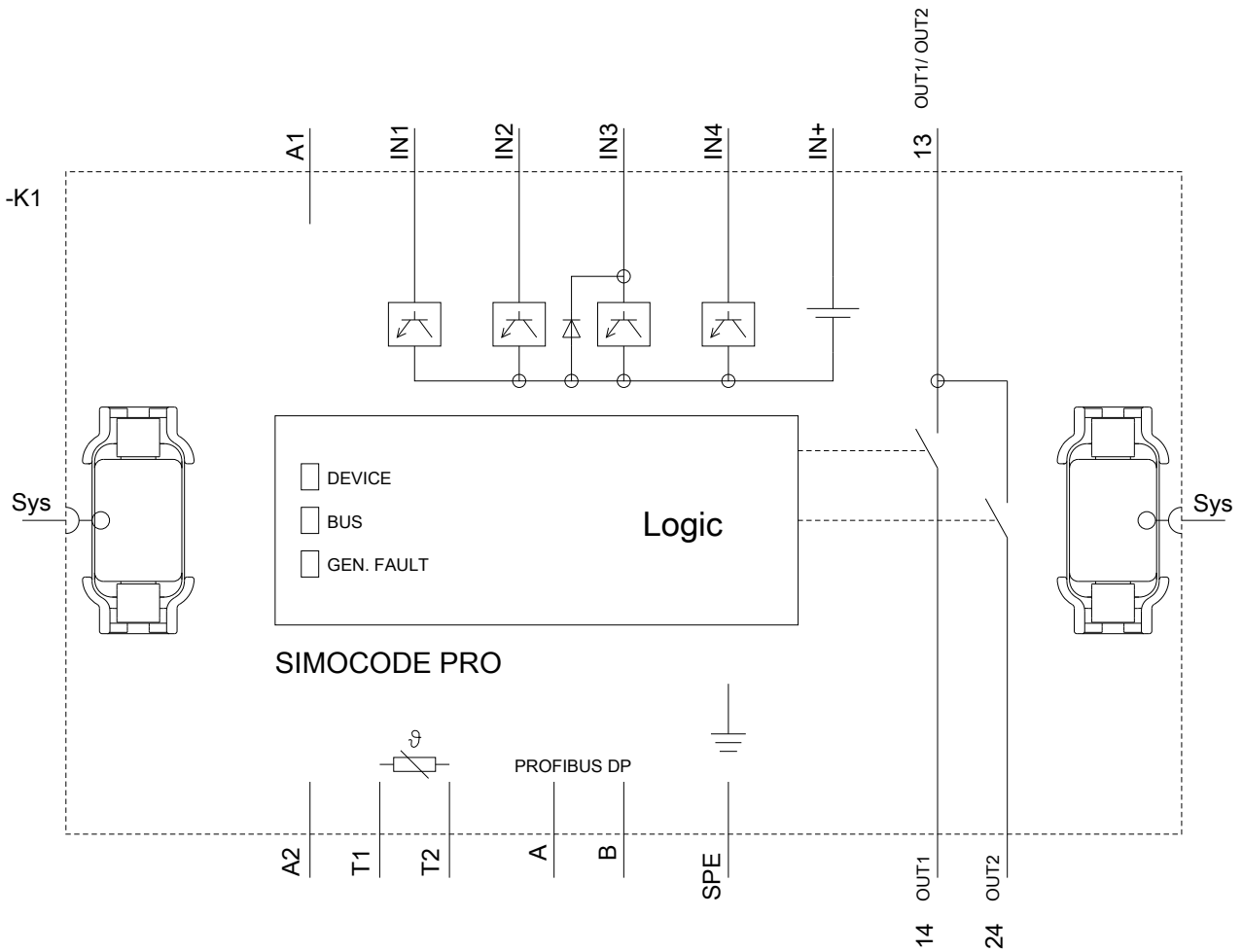
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)

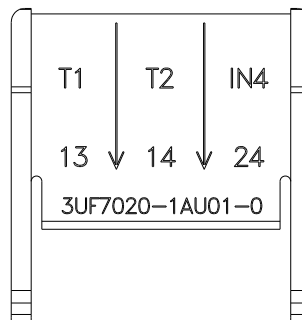
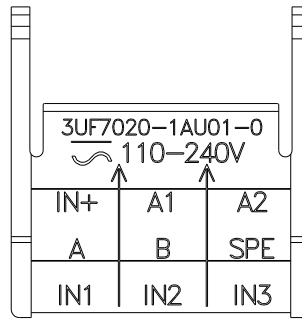
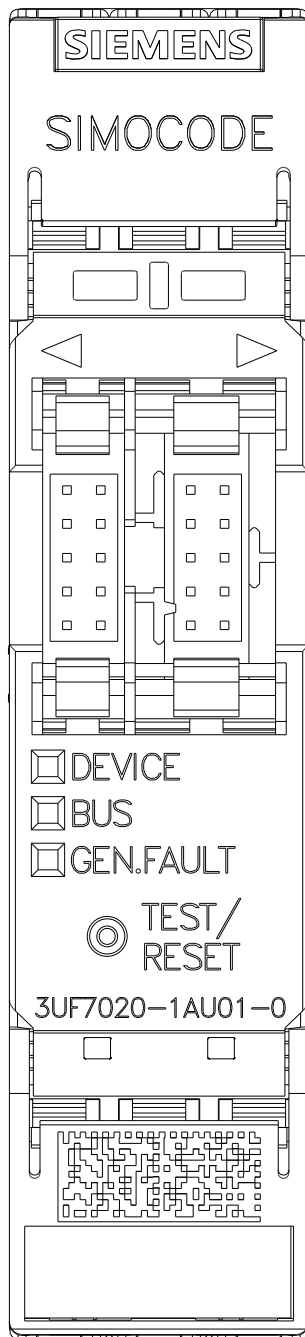
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3UF7020-1AU01-0&lang=en

Test report No. A0258, protective separation

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







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