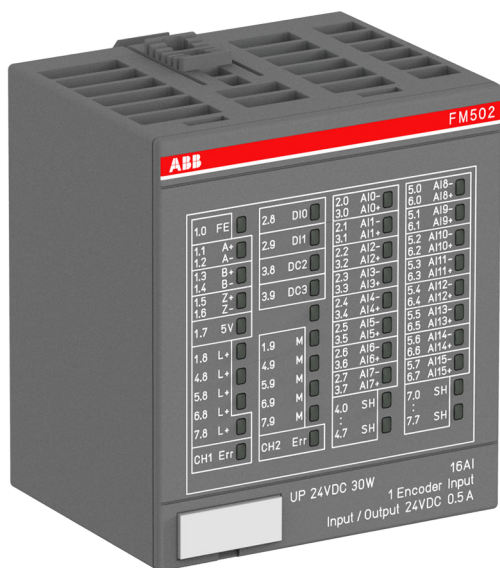


DATA SHEET

FM502

Function Module



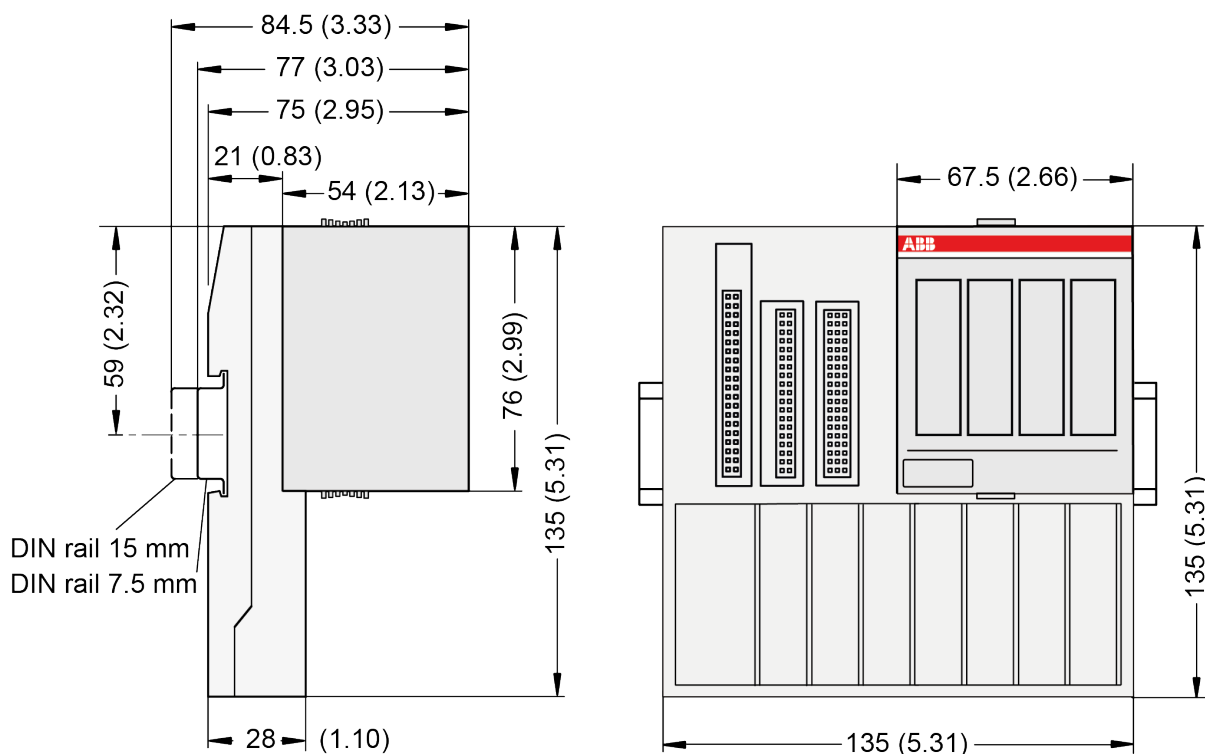
1 Ordering Data

Part no.	Description	Product Life Cycle Phase *)
1SAP260400R0001	Function module FM502-CMS	Active
1SAP460400R0001	Function module FM502-CMS-XC, XC version	Active



*) For planning and commissioning of new installations use modules in Active status only.

2 Dimensions



The dimensions are in mm and in brackets in inch.

3 Technical Data

The System Data of AC500 and S500 ↗ *Chapter 4 “System Data AC500” on page 8* are valid for standard version.

The System Data of AC500-XC ↗ *Chapter 5 “System Data AC500-XC” on page 12* are valid for the XC version.

Only additional details are therefore documented below.

The technical data are also valid for the XC version.

Table 1: Technical Data of Process Supply Voltage

Parameter	Value
Connections of terminals	The terminals 1.8, 4.8...7.8, 1.9, 4.9...7.9, 4.0...4.7, 7.0...7.7 are electrically interconnected within the TF5x1-CMS. Terminals 1.8, 4.8...7.8: process voltage L+ = +24 VDC Terminals 1.9, 4.9...7.9: process voltage M = 0 V Terminals 4.0...4.7, 7.0...7.7: analog shield clamps SH Terminal 1.0: FE shield clamp of encoder
Protection against reverse voltage	Yes
Rated protection fuse at UP	10 A fast

Parameter	Value
Rated value	24 VDC
Max. ripple	5 %
Current consumption from L+ (FM502-CMS and PM592-ETH, no communication module)	Max. 0.43 A + max. 0.5 A per output
Inrush current from L+ (at power up, FM502-CMS and PM592-ETH, no communication module)	1.2 A ² s
Galvanic isolation	Yes, PM592-ETH and FM502-CMS to other I/O bus modules
Max. power dissipation within the FM502-CMS	6.5 W (outputs unloaded)



NOTICE!

Attention:

All I/O channels (digital and analog) are protected against reverse polarity, reverse supply, short circuit and continuous overvoltage up to 30 VDC.



Multiple overloads

No effects of multiple overloads on isolated multi-channel modules occur, as every channel is protected individually by an internal smart high-side switch.

For maritime applications a metal cabinet is required

Table 2: Technical Data of the Device

Parameter	Value
Weight FM502-CMS	215 g
Weight FM502-CMS-XC	220 g
Mounting position	Horizontal Vertical with derating: max. temperature 40 °C
Cooling	The natural convection cooling must not be hindered by cable ducts or other parts in the switch-gear cabinet.
Deratings for operation of FM502-CMS-XC between +60 °C and +70 °C	No use of 24 V encoder mode. Analog inputs: maximum number of configured input channels limited to 75 % per group AI0...AI7 and AI8...AI15.
Required Terminal Base	TF501 or TF521

Table 3: Technical Data of the 5 V Encoder Supply

Parameter	Value
Number of supplies	1
Connections	Terminal 1.7

Parameter	Value
Rated value	5 VDC (+/- 5%)
Resistance to feedback against reverse polarity	No
Resistance to feedback against 24 V signals	Yes
Output current	100 mA max.
Output diagnosis	Yes, with diagnosis LED and error message

Table 4: Technical Data of the Digital Inputs

Parameter	Value
Number of channels	2 + 2 configurable inputs/outputs
Connections	Terminals 2.8, 2.9, 3.8, 3.9
Reference potential	Terminals 1.9, 4.9, 5.9, 6.9, 7.9 for M (0 V)
Indication of the input signals	One yellow LED per channel, the LED is ON when the input signal is high (signal 1)
Input type acc. to EN 61131-2	Type 1
Input delay (0->1 or 1->0)	Typ. 8 ms, configurable from 0.1 to 32 ms
Input signal voltage	24 VDC
Signal 0	-3 V...+5 V Due to the direct connection to the output, the demagnetizing varistor is also effective at the input. This is why the difference between L+ and the input signal must not exceed the clamp voltage of the varistor. The varistor limits the clamp voltage to approx. 36 V. The input voltage must range from -12 V to +30 V when L+ = 24 V and from -6 V to +30 V when L+ = 30 V.
Undefined signal	> +5 V...< +15 V
Signal 1	+15 V...+30 V
Ripple with signal 0	Within -3 V...+5 V
Ripple with signal 1	Within +15 V...+30 V
Input current per channel	
Input voltage +24 V	Typ. 5 mA
Input voltage +5 V	> 1 mA
Input voltage +15 V	> 5 mA
Input voltage +30 V	< 8 mA
Max. cable length	
Shielded	1000 m
Unshielded	600 m

Table 5: Technical Data of Digital Outputs

Parameter	Value
Number of channels per module	2 configurable inputs/outputs
Connection	Terminal 3.8, 3.9
Reference potential	Terminals 1.9, 4.9, 5.9, 6.9, 7.9 for M (0 V)

Parameter	Value
Indication of the output signal	One LED per channel
Power supply voltage	Terminals 1.8, 4.8, 5.8, 6.8, 7.8 for L+ (+24 V)
Output voltage for signal 1	L+ (-0.8 V)
Output delay (0->1 or 1->0)	On request
Output current	
Rated value, per channel: 500 mA at UP = 24 V	500 mA at L+ = 24 V
Maximum value: 1 A	1 A
Leakage current with signal 0	< 0.5 mA
Demagnetization when inductive loads are switched off	With varistors integrated in the module
Switching frequency	
With resistive load	On request
With inductive loads	Max. 0.5 Hz
With lamp loads	Max. 11 Hz with max. 5 W
Short-circuit proof / overload proof	Yes
Overload message (I > 0.7 A)	Yes, after ca. 100 ms
Output current limitation	Yes, automatic reactivation after short circuit/overload
Resistance to feedback against 24 V signals	Yes
Max. cable length	
Shielded	1000 m
Unshielded	600 m

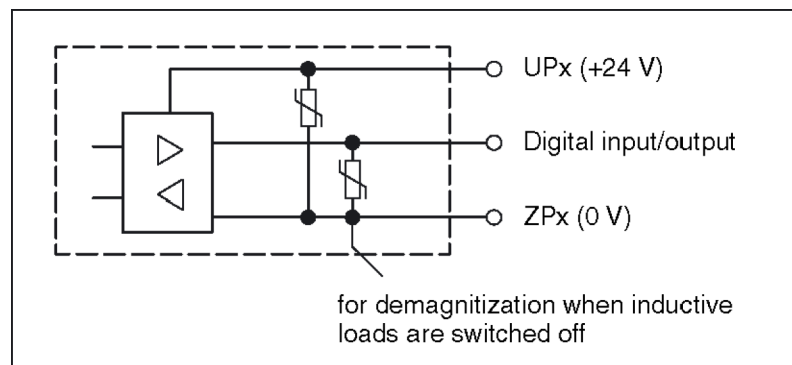


Fig. 1: Circuitry of a digital input/output with the varistors for demagnetization when inductive loads are switched off.

Table 6: Technical Data of High Speed Input (Encoder, A/B/Z)

Parameter	Value
Number of channels per module	3 (sampled synchronously with IEPE inputs)
Connection	Terminals 1.1, 1.2, 1.3, 1.4, 1.5, 1.6
Reference potential	Terminals 1.9, 4.9, 5.9, 6.9, 7.9 for M (0 V)
Indication of the input signals	One LED per channel

Parameter	Value		
Resolution	32 bits		
Input type	24 VDC	5 VDC	Differential RS-422 and 1 Vpp sine
Input current per channel			
Input voltage + 24 V	Typ. 6 mA		
Input voltage + 5 V	> 1 mA		
Input voltage + 15 V	> 5 mA		
Input voltage + 30 V	< 8 mA		
Input type acc. to EN61131-2	Type 1		
Input frequency max. (frequency measurement)	100 kHz (accuracy -0 %/+3 %)		
Input signal voltage	24 VDC	5 VDC	Differential
Input frequency max.	300 kHz	1 MHz	1 MHz
Signal 0	-30 V...+5 V	-30 V...+0.8 V	≤ 200 mV
Undefined signal	> +5 V...< +15 V	> +0.8 V...< +2.0 V	-
Signal 1	+15 V...+30 V	+2.0 V...+30 V	≥ +200 mV
Ripple with signal 0	Within -30 V...+5 V	Within -30 V...+0.8 V	-
Ripple with signal 1	Within +15 V...+30 V	Within +2.0 V...+30 V	-
Max. cable length, shielded (depending on sensor)	300 m	100 m	

Table 7: Technical Data of the Fast Outputs (SI CLK Output B for Optical Interface)

Parameter	Value
Number of channels	1
Connection	Terminals 1.3, 1.4
Reference potential	Terminals 1.9, 4.9, 5.9, 6.9, 7.9 for M (0 V)
Indication of output signal	One LED per channel, the LED is ON when SSI CLK output B is active
Differential output voltage for signal 1	> 2.4 V at 10 mA
Differential output voltage for signal 0	≤ -2.4 V at 10 mA
Output delay (0->1 or 1->0)	Max. 0.35 μs
Output current	≤ 10 mA
Switching frequency (selectable)	200 kHz, 500 kHz and 1 MHz
Short-circuit-proof/overload-proof	Yes
Output current limitation	Yes, automatic reactivation after short circuit/overload
Resistance to feedback against 24 V signals	Yes
Resistance to feedback against reverse polarity	Yes
Max. cable length, shielded (depending on sensor)	Typ. 12.5 m at 1MHz

Table 8: Technical Data of the Fast Outputs (SSI CLK output B, RS-422 Differential)

Parameter	Value
Number of channels	1
Connection	Terminals 1.3, 1.4
Reference potential	Terminals 1.9, 4.9, 5.9, 6.9, 7.9 for M (0 V)
Differential output voltage	≥ 2.4 V at 10 mA
Output delay (0->1 or 1->0)	Max. 0.35 μs
Switching frequency (selectable)	200 kHz, 500 kHz, 1 MHz
Short-circuit-proof/overload-proof	Yes
Output current limitation	Yes, automatic reactivation after short-circuit/overload
Resistance to feedback against 24 V signals	Yes
Resistance to feedback against reverse polarity	Yes
Max. cable length, shielded (depending on sensor)	100 m

Table 9: Technical Data of Analog Inputs

Parameter	Value
Number of channels per module	16 (synchronous sampled)
Connection	Terminals 2.0...2.7, 5.0...5.1 for AI-, 3.0...3.7, 6.0...6.7 for AI+
Indication of the input signal	One bicolor LED per channel for signal and error messages.
Measurement resolution	≥ 23 Bit
Resolution	32 bits external use
Accuracy at +25 °C	≤±/0.1 %
Accuracy over operating temperature and vibration	≤±/0.5 %
Sample rate/bandwidth high (0 dB)	50 kHz/20 kHz (min. -121 dB/22.5 kHz) 25 kHz/10 kHz (min. -116 dB/11.25kHz) 12.5 kHz/5 kHz (min. -116 dB/5.63 kHz) 6.25 kHz/2.5 kHz (min. -116 dB/2.81 kHz) 3.13 kHz/1.25 kHz (min. -116 dB/1.41 kHz) 1.56 kHz/0.625 kHz (min. -116 dB/0.70 kHz) 0.78 kHz/0.312 kHz (min. -120 dB/0.36 kHz) 0.39 kHz/0.156 kHz (min. -121 dB/0.18 kHz) 0.20 kHz/0.080 kHz (min. -121 dB/0.09 kHz) 0.10 kHz/0.040 kHz (min. -130 dB/0.05 kHz) selectable per channel
Data storage	128 MB
Measurement time	Selectable per channel
Input type default setting	unused
Input type (selectable per input)	IEPE -10 V...+10 V

Parameter	Value	
Bandwidth low	min. 3 dB/< 0.1 Hz	min. 3 dB/< 0.1 Hz or DC (selectable)
Dynamic range (SFDR)	> 100 dB	
SINAD (300 Hz/1 kHz sine, 50 k SPS)		
0 dB from full scale	< -90 dB	< -95 dB
-20 dB from full scale	< -75 dB	< -80 dB
-40 dB from full scale	< -55 dB	< -60 dB
Input range	+2 V...+18 V	-10 V...+10 V
Measurement range	+/-6 V (DC coupled)	-10 V...+10 V
Input DC bias range, common mode range	+8 V...+12 V	+/-1 V
Current source per channel	Typ. 4.2 mA (+/- 7 % over temperature)	-
Input resistance AI- to M	Typ. 27 Ohm (PTC)	
Channel input impedance (AI+/AI-)		
< 1 kHz	> 1 MOhm	> 2 MOhm
5 kHz	> 100 kOhm	> 40 kOhm
10 kHz	> 60 kOhm	> 25 kOhm
20 kHz	> 40 kOhm	> 8 kOhm
Error detection	Short circuit, open wire	-
Max. cable length, shielded (depending on sensor)	100 m	

4 System Data AC500

4.1 Environmental Conditions

Table 10: Process and supply voltages

Parameter	Value
24 VDC	
Voltage	24 V (-15 %, +20 %)
Protection against reverse polarity	Yes
120 VAC	
Voltage	120 V (-15 %, +10 %)
Frequency	50/60 Hz (-6 %, +4 %)
230 VAC	
Voltage	230 VAC (-15 %, +10 %)
Frequency	50/60 Hz (-6 %, +4 %)
120 VAC...240 VAC wide range supply	
Voltage	120 V...240 V (-15 %, +10 %)
Frequency	50/60 Hz (-6 %, +4 %)
Allowed interruptions of power supply, according to EN 61131-2	

Parameter	Value
DC supply	Interruption < 10 ms, time between 2 interruptions > 1 s, PS2
AC supply	Interruption < 0.5 periods, time between 2 interruptions > 1 s

**NOTICE!**

Exceeding the maximum power supply voltage for process or supply voltages could lead to unrecoverable damage of the system. The system could be destroyed.

**NOTICE!**

Improper voltage level or frequency range which cause damage of AC inputs:

- AC voltage above 264 V
- Frequency below 47 Hz or above 62.4 Hz

**NOTICE!**

Improper connection leads cause overtemperature on terminals.

PLC modules may be destroyed by using wrong cable type, wire size and cable temperature classification.

Parameter	Value
Temperature	
Operating	0 °C...+60 °C: Horizontal mounting of modules. 0 °C...+40 °C: Vertical mounting of modules. Output load reduced to 50 % per group.
Storage	-40 °C...+70 °C
Transport	-40 °C...+70 °C
Humidity	Max. 95 %, without condensation
Air pressure	
Operating	> 800 hPa / < 2000 m
Storage	> 660 hPa / < 3500 m
Ingress protection	IP20

4.2 Creepage Distances and Clearances

The creepage distances and clearances meet the requirements of the overvoltage category II, pollution degree 2.

4.3 Insulation Test Voltages, Routine Test

According to EN 61131-2

Parameter	Value	
230 V circuits against other circuitry	2500 V	1.2/50 μ s
120 V circuits against other circuitry	1500 V	1.2/50 μ s
120 V...240 V circuits against other circuitry	2500 V	1.2/50 μ s
24 V circuits (supply, 24 V inputs/outputs, analogue inputs/outputs), if they are electrically isolated against other circuitry	500 V	1.2/50 μ s
COM interfaces, electrically isolated	500 V	1.2/50 μ s
COM interfaces, electrically not isolated	Not applicable	Not applicable
FBP interface	500 V	1.2/50 μ s
Ethernet	500 V	1.2/50 μ s
ARCNET	500 V	1.2/50 μ s
230 V circuits against other circuitry	1350 V	AC 2 s
120 V circuits against other circuitry	820 V	AC 2 s
120 V...240 V circuits against other circuitry	1350 V	AC 2 s
24 V circuits (supply, 24 V inputs/outputs, analogue inputs/outputs), if they are electrically isolated against other circuitry	350 V	AC 2 s
COM interfaces, electrically isolated	350 V	AC 2 s
COM interfaces, electrically not isolated	Not applicable	Not applicable
FBP interface	350 V	AC 2 s
Ethernet	350 V	AC 2 s
ARCNET	350 V	AC 2 s

4.4 Power Supply Units

For the supply of the modules, power supply units according to PELV specifications must be used.

4.5 Electromagnetic Compatibility

Electromagnetic Compatibility		
Device suitable for:		
	Industrial applications	Yes
	Domestic applications	No
Immunity against electrostatic discharge (ESD):		According to IEC 61000-4-2, zone B, criterion B
	Electrostatic voltage in case of air discharge	8 kV
	Electrostatic voltage in case of contact discharge	4 kV, in a closed switch-gear cabinet 6 kV ¹⁾
	ESD with communication connectors	In order to prevent operating malfunctions, it is recommended, that the operating personnel discharge themselves prior to touching communication connectors or perform other suitable measures to reduce effects of electrostatic discharges.
	ESD with connectors of Terminal Bases	The connectors between the Terminal Bases and Processor Modules or Communication Modules must not be touched during operation. The same is valid for the I/O-Bus with all modules involved.
Immunity against the influence of radiated (CW radiated):		According to IEC 61000-4-3, zone B, criterion A
	Test field strength	10 V/m
Immunity against fast transient interference voltages (burst):		According to IEC 61000-4-4, zone B, criterion B
	Supply voltage units (DC)	2 kV
	Supply voltage units (AC)	2 kV
	Digital inputs/outputs (24 VDC)	1 kV
	Digital inputs/outputs (120 VAC...240 VAC)	2 kV
	Analog inputs/outputs	1 kV
	CS31 system bus	1 kV
	Serial RS-485 interfaces (COM)	1 kV
	Serial RS-232 interfaces (COM, not for PM55x and PM56x)	1 kV
	ARCNET	1 kV
	FBP	1 kV
	Ethernet	1 kV
	I/O supply (DC-out)	1 kV
Immunity against the influence of line-conducted interferences (CW conducted):		According to IEC 61000-4-6, zone B, criterion A
	Test voltage	3V zone B, 10 V is also met.
High energy surges		According to IEC 61000-4-5, zone B, criterion B
	Power supply DC	1 kV CM / 0.5 kV DM ²⁾
	DC I/O supply	0.5 kV CM / 0.5 kV DM ²⁾

Electromagnetic Compatibility		
	Communication Lines, shielded	1 kV CM ²⁾)
	AC I/O unshielded	2 kV CM / 1 kV DM ²⁾)
	I/O analog, I/O DC unshielded	1 kV CM / 0.5 kV DM ²⁾)
Radiation (radio disturbance)		According to IEC 55011, group 1, class A

¹⁾ High requirement for shipping classes are achieved with additional specific measures (see specific documentation).

²⁾ CM = Common Mode, DM = Differential Mode

4.6 Mechanical Data

Parameter	Value
Mounting	Horizontal
Degree of protection	IP 20
Housing	Classification V-2 according to UL 94
Vibration resistance acc. to EN 61131-2	all three axes 2 Hz...8.4 Hz, continuous 3.5 mm 8.4 Hz...150 Hz, continuous 1 g (higher values on request)
Shock test	All three axes 15 g, 11 ms, half-sinusoidal
Mounting of the modules:	
DIN rail according to DIN EN 50022	35 mm, depth 7.5 mm or 15 mm
Mounting with screws	Screws with a diameter of 4 mm
Fastening torque	1.2 Nm

4.7 Approvals and certifications

Information on approvals and certificates can be found in the corresponding chapter of the *Main catalog, PLC Automation*.

5 System Data AC500-XC



Assembly, construction and connection of devices of the variant AC500-XC is identical to AC500 (standard). The following description provides information on general technical data of AC500-XC system.

5.1 Environmental Conditions

Table 11: Process and Supply Voltages

Parameter	Value
24 VDC	
Voltage	24 V (-15 %, +20 %)
Protection against reverse polarity	Yes
120 VAC...240 VAC wide range supply	
Voltage	120...240 V (-15 %, +10 %)
Frequency	50/60 Hz (-6 %, +4 %)
Allowed interruptions of power supply	
DC supply	Interruption < 10 ms, time between 2 interruptions > 1 s, PS2



NOTICE!

Exceeding the maximum power supply voltage for process or supply voltages could lead to unrecoverable damage of the system. The system could be destroyed.



NOTICE!

For the supply of the modules, power supply units according to PELV or SELV specifications must be used.



The creepage distances and clearances meet the requirements of the overvoltage category II, pollution degree 2.

Parameter	Value
Temperature	
Operating	<p>-40 °C...+70 °C</p> <p>-40 °C...-30 °C: Proper start-up of system; technical data not guaranteed</p> <p>-40 °C...0 °C: Due to the LCD technology, the display might respond very slowly.</p> <p>-40 °C...+40 °C: Vertical mounting of modules possible, output load limited to 50 % per group</p> <p>+60 °C...+70 °C with the following deratings:</p> <ul style="list-style-type: none"> • System is limited to max. 2 communication modules per terminal base • Applications certified for cULus up to +60 °C • Digital inputs: maximum number of simultaneously switched on input channels limited to 75 % per group (e.g. 8 channels => 6 channels) • Digital outputs: output current maximum value (all channels together) limited to 75 % per group (e.g. 8 A => 6 A) • Analog outputs only if configured as voltage output: maximum total output current per group is limited to 75 % (e.g. 40 mA => 30 mA) • Analog outputs only if configured as current output: maximum number of simultaneously used output channels limited to 75 % per group (e.g. 4 channels => 3 channels)
Storage / Transport	-40 °C...+85 °C
Humidity	Operating / Storage: 100 % r. H. with condensation
Air pressure	<p>Operating:</p> <p>-1000 m...4000 m (1080 hPa...620 hPa)</p> <p>> 2000 m (< 795 hPa):</p> <ul style="list-style-type: none"> • max. operating temperature must be reduced by 10 K (e.g. 70 °C to 60°C) • I/O module relay contacts must be operated with 24 V nominal only
Immunity to corrosive gases	<p>Operating: Yes, according to:</p> <p>ISA S71.04.1985 Harsh group A, G3/GX</p> <p>IEC 60721-3-3 3C2 / 3C3</p>
Immunity to salt mist	<p>Operating: Yes, horizontal mounting only, according to IEC 60068-2-52 severity level: 1</p>

**NOTICE!****Risk of corrosion!**

Unused connectors and slots may corrode if XC devices are used in salt-mist environments.

Protect unused connectors and slots with TA535 protective caps for XC devices
TA535.

Table 12: Electromagnetic Compatibility

Parameter	Value
Device suitable for:	
Industrial applications	Yes
Domestic applications	No
Radiated emission (radio disturbances)	Yes, according to: CISPR 16-2-3
Conducted emission (radio disturbances)	Yes, according to: CISPR 16-2-1, CISPR 16-1-2
Electrostatic discharge (ESD)	Yes, according to: IEC 61000-4-2, zone B, cri- terion B
Fast transient interference voltages (burst)	Yes, according to: IEC 61000-4-4, zone B, cri- terion B
High energy transient interference voltages (surge)	Yes, according to: IEC 61000-4-5, zone B, cri- terion B
Influence of radiated disturbances	Yes, according to: IEC 61000-4-3, zone B, cri- terion A
Influence of line-conducted interferences	Yes, according to: IEC 61000-4-6, zone B, cri- terion A
Influence of power frequency magnetic fields	Yes, according to: IEC 61000-4-8, zone B, cri- terion A



In order to prevent malfunctions, it is recommended, that the operating personnel discharge themselves prior to touching communication connectors or perform other suitable measures to reduce effects of electrostatic discharges.



NOTICE!
Risk of malfunctions!

Unused slots for communication modules are not protected against accidental physical contact.

- Unused slots for communication modules must be covered with dummy communication modules (TA524) to achieve IP20 rating.
- I/O bus connectors must not be touched during operation.

5.2 Mechanical Data

Parameter	Value
Wiring method	Spring terminals
Degree of protection	IP 20
Vibration resistance	Yes, according to: IEC 61131-2 IEC 60068-2-6 IEC 60068-2-64
Shock resistance	Yes, according to: IEC 60068-2-27
Assembly position	Horizontal Vertical (no application in salt mist environment)
Assembly on DIN rail	
DIN rail type	According to IEC 60715 35 mm, depth 7.5 mm or 15 mm
Assembly with screws	
Screw diameter	4 mm
Fastening torque	1.2 Nm

5.3 Environmental Tests

Parameter	Value
Storage	IEC 60068-2-1 Test Ab: cold withstand test -40 °C / 16 h IEC 60068-2-2 Test Bb: dry heat withstand test +85 °C / 16 h
Humidity	IEC 60068-2-30 Test Db: Cyclic (12 h / 12 h) damp-heat test 55 °C, 93 % r. H. / 25 °C, 95 % r. H., 6 cycles IEC 60068-2-78, stationary humidity test: 40 °C, 93 % r. H., 240 h
Insulation Test	IEC 61131-2
Vibration resistance	IEC 61131-2 / IEC 60068-26: 5 Hz...500 Hz, 2 g (with SD memory card inserted) IEC 60068-2-64: 5 Hz...500 Hz, 4 g rms
Shock resistance	IEC 60068-2-27: all 3 axes 15 g, 11 ms, half-sinusoidal

Table 13: EMC Immunity

Parameter	Value
Electrostatic discharge (ESD)	Electrostatic voltage in case of air discharge: 8 kV Electrostatic voltage in case of contact discharge: 6 kV
Fast transient interference voltages (burst)	Supply voltage units (DC): 4 kV Digital inputs/outputs (24 VDC): 2 kV Analog inputs/outputs: 2 kV Communication lines shielded: 2 kV I/O supply (DC-out): 2 kV

Parameter	Value
High energy transient interference voltages (surge)	Supply voltage units (DC): 1 kV CM *) / 0.5 kV DM *) Digital inputs/outputs (24 VDC): 1 kV CM *) / 0.5 kV DM *) Digital inputs/outputs (AC): 4 kV Analog inputs/outputs: 1 kV CM *) / 0.5 kV DM *) Communication lines shielded: 1 kV CM *) I/O supply (DC-out): 0,5 kV CM *) / 0.5 kV DM *)
Influence of radiated disturbances	Test field strength: 10 V/m
Influence of line-conducted interferences	Test voltage: 10 V
Power frequency magnetic fields	30 A/m 50 Hz 30 A/m 60 Hz

*) CM = Common Mode, * DM = Differential Mode