

9 Accessories

9.1 Additional equipment for X20 modules and controllers

The following additional equipment is available for X20 modules and controllers:

X20 modules Plain text tag, accessory locking clip and tag holder that also serves as a terminal locking clip

X20 controller Plain text tag

Installation of these accessories is described in section ["Installing accessories" on page 162](#).



Figure 32: Additional equipment for X20 modules



Figure 33: Additional equipment for X20 controllers

9.1.1 Tag holder, terminal locking clip

Order number	Short description	Figure
	Tag holder, terminal locking clip	
X20AC0SC1	X20 terminal locking clip and tag holder for plain text tag	
X20AC0SC1.0100	X20 terminal locking clip and tag holder for plain text tag, 100 pcs. per package	

9.1.2 Plain text tag for X20 modules

A template file is available for X20 slide-in labels on the B&R website in the "Downloads" section under order number X20AC0LB2.0100. This template is in Excel format and makes it possible to enter the desired texts for the slide-in labels.

Order number	Short description	Figure
	Plain text cover	
X20AC0SH1	X20 plain text tag	
X20AC0SH1.0100	X20 plain text tag, package of 100 pcs.	
	X20 legend strips	
X20AC0LB2.0100	X20 slide-in labels for X20 plain text tags, paper, white, perforated, 88 strips on A4 sheets, 100 sheets per package	

9.1.3 Plain text tag for X20 controller

The plain text tag is labeled with commercially available adhesive labels. The adhesive labels are not available as accessories.

Order number	Short description	Figure
	PLC label	
X20AC0SH2.0010	X20 PLC labels, 10 pcs.	

9.1.4 Embedded controllers accessories package

Order number	Short description	Figure
	Accessory package for X20 Embedded PLC	
X20ACEMTB1	Accessories X20 Embedded PLCs: 2-pin terminal block for I/O power supply, 6-pin terminal block for RS485 interface and PLC power supply, X20 end cover plate, right (X20AC0SR1)	

Table 10: X20ACEMTB1 - Order data

9.1.5 Accessory locking clips

Order number	Short description	Figure
	Accessory locking clip	
X20AC0AX1	X20 accessory locking clip	
X20AC0AX1.0100	X20 accessory locking clip, 100 pcs. per package	

9.1.6 Batteries

Replacement batteries for X20CPx68x controllers.

Order number	Short description	Figure
	Batteries	
0AC201.91	Lithium batteries 4 pcs., 3 V / 950 mAh button cell	
4A0006.00-000	Lithium battery, 3 V / 950 mAh, button cell	

Table 11: 0AC201.91, 4A0006.00-000 - Order data

9.2 Locking plates

The locking plate protects the modules on the outside against dirt and damage.

Order number	Short description	Figure
	End cover plate	
X20AC0SL1	X20 end cover plate (left)	
X20AC0SR1	X20 end cover plate (right)	
X20AC0SL1.0010	X20 end cover plate (left), 10 pcs. per package	
X20AC0SR1.0010	X20 end cover plate (right), 10 pcs. per package	

9.3 Cover for interface modules

The cover protects the slots for interface modules from dirt and damage.

Order number	Short description	Figure
	Interface module slot cover	
X20AC0IC1.0010	X20 cover for interface module slot, 10-pc. package	

Table 12: X20AC0IC1.0010 - Order data

9.4 Cable shield clamp

For information on use, see section ["X20 cable shield clamp" on page 100](#).

Model number	Short description	Figure
	Cable shield clamp	
X20AC0SG1.0010	X20 cable shield grounding clamp, 10 pcs. per package	
X20AC0SG1.0100	X20 cable shield grounding clamp, 100 pcs. per package	

9.5 Shielding bracket

The X20 shielding bracket provides an easy and space-saving way to ground the cable shielding (see ["X20 shielding bracket" on page 100](#)).

Order number	Short description	Figure
	Shielding bracket	
X20AC0SF7.0010	X20 shielding bracket 66 mm 10 pcs.	
X20AC0SF9.0010	X20 shielding bracket 88 mm 10 pcs.	

Table 13: X20AC0SF7.0010, X20AC0SF9.0010 - Order data

9.6 End clamp set

Order number	Short description	Figure
	End clamp set	
X20AC0RF1	X20 end clamp set for high vibrations	

Table 14: X20AC0RF1 - Order data

9.7 Shield connection clamp



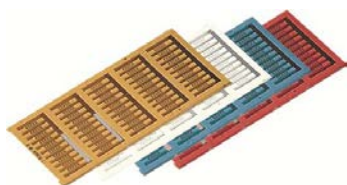
Order number	Short description
	Shield connection clamp
X20AC0SA08.0010	X20 shield connection clamp 3 to 8 mm, 10 pieces
X20AC0SA14.0010	X20 shield connection clamp 3 to 14 mm, 10 pieces
X20AC0SA20.0010	X20 shield connection clamp 5 to 20 mm, 10 pieces
X20AC0SA35.0010	X20 shield connection clamp 20 to 35 mm, 10 pieces

Table 15: X20AC0SA08.0010, X20AC0SA14.0010, X20AC0SA20.0010, X20AC0SA35.0010 - Order data

9.8 Terminal labeling

Each terminal connection is identified clearly directly on the terminal. It is also possible to attach tags to label the terminals individually.

The labeling tool is needed for attachment (see "Label tags" on page 166). For information about printing terminal labels, see "Printing support" on page 87.



X20AC0M0x / X20AC0M1x



X20AC0M21

	Blank X20 tag labels (10.4 x 2.4 mm)
X20AC0M01	Blank X20 tag labels, white, set for 16 modules
X20AC0M02	Blank X20 tag labels, red, set for 16 modules
X20AC0M03	Blank X20 tag labels, blue, set for 16 modules
X20AC0M04	Blank X20 tag labels, orange, set for 16 modules
	Printed X20 tag labels (10.4 x 2.4 mm)
X20AC0M11	Printed X20 tag labels, white, set for 16 modules, label text: Module (modules 1 to 16), terminal (1 to 192)
X20AC0M12	Printed X20 tag labels, red, set for 16 modules, label text: +24 V
X20AC0M13	Printed X20 tag labels, blue, set for 16 modules, label text: GND
X20AC0M14	Printed X20 tag labels, orange, set for 16 modules, label text: Module (modules 1 to 16), terminal (1 to 192)
	Blank X20 tag labels, 10 pcs. per package (10.4 x 2.4 mm)
X20AC0M01.0010	Blank X20 tag labels, white, set for 16 modules, 10 pcs. per package
X20AC0M02.0010	Blank X20 tag labels, red, set for 16 modules, 10 pcs. per package
X20AC0M03.0010	Blank X20 tag labels, blue, set for 16 modules, 10 pcs. per package
X20AC0M04.0010	Blank X20 tag labels, orange, set for 16 modules, 10 pcs. per package
	Printed X20 tag labels, 10 pcs. per package (10.4 x 2.4 mm)
X20AC0M11.0010	Printed X20 tag labels, white, set for 16 modules, 10 pcs. per package, label text: Module (modules 1 to 16), terminal (1 to 192)
X20AC0M12.0010	Printed X20 tag labels, red, set for 16 modules, 10 pcs. per package, label text: +24 V
X20AC0M13.0010	Printed X20 tag labels, blue, set for 16 modules, 10 pcs. per package, label text: GND
X20AC0M14.0010	Printed X20 tag labels, orange, set for 16 modules, 10 pcs. per package, label text: Module (modules 1 to 16), terminal (1 to 192)
	Blank X20 tag labels, large (10.4 x 7.0 mm)
X20AC0M21	Blank X20 tag labels, large white, set for 48 modules
X20AC0M21.0010	Blank X20 tag labels, large white, set for 48 modules, 10 pcs. per package

9.9 Labeling tool

The labeling tool is needed to attach the tag labels.

Order number	Short description	Figure
X20AC0MT1	X20 labeling tool for X20 labeling system	

9.10 Screwdriver

This screwdriver has been specially designed for use with terminal blocks X20TB1E and X20TB1F to prevent possible damage to the terminals.

Order number	Short description	Figure
	Screwdriver	
X20AC0SD1	B&R screwdriver	

Table 16: X20AC0SD1 - Order data

9.11 Accelerometers

9.11.1 Order data

Order number	Short description	Figure
Sensors		
0ACS100A.00-1	Accelerometer, nominal sensitivity 100 mV/g, top exit	
0ACS100A.90-1	Accelerometer, nominal sensitivity 100 mV/g, side exit	
Required accessories		
Sensor cable		
0ACC0020.01-1	Cable for accelerometer, length 2 m, 2x 0.34 mm², female M12 connector on the sensor side, can be used in cable drag chains, UL listed	
0ACC0050.01-1	Cable for accelerometer, length 5 m, 2x 0.34 mm², female M12 connector on the sensor side, can be used in cable drag chains, UL listed	
0ACC0100.01-1	Cable for accelerometer, length 10 m, 2x 0.34 mm², female M12 connector on the sensor side, can be used in cable drag chains, UL listed	
0ACC0150.01-1	Cable for accelerometer, length 15 m, 2x 0.34 mm², female M12 connector on the sensor side, can be used in cable drag chains, UL listed	
0ACC0200.01-1	Cable for accelerometer, length 20 m, 2x 0.34 mm², female M12 connector on the sensor side, can be used in cable drag chains, UL listed	
0ACC0500.01-1	Cable for accelerometer, length 50 m, 2x 0.34 mm², female M12 connector on the sensor side, can be used in cable drag chains, UL listed	
0ACC1000.01-1	Cable for accelerometer, length 100 m, 2x 0.34 mm², female M12 connector on the sensor side, can be used in cable drag chains, UL listed	

Table 17: 0ACS100A.00-1, 0ACS100A.90-1 - Order data

9.11.2 Technical data

Order number	0ACS100A.00-1	0ACS100A.90-1
Sensor properties ¹⁾		
Natural resonance (installed)	22 kHz (rated)	
Sensitivity	100 mV/g ±10% nominal 80 Hz at 22°C	
Frequency response	2 Hz to 10 kHz ±5% 0.8 Hz to 15 kHz ±3 dB	
Isolation	Isolated base	
Measurement range	±50 g	
Cross-sensitivity	<5%	
Electrical properties		
Electrical disturbances	Max. 0.1 mg	
Broadband resolution	0.2 mg (200 µg) over 1 Hz to 15 kHz	
Spectral noise	10 Hz to 10 µg/Hz 100 Hz to 4 µg/Hz 1 kHz to 3 µg/Hz	
Current range	0.5 to 8 mA	
Bias voltage	10 to 12 VDC	
Settling time	2 s	
Output impedance	Max. 200 Ω	
Housing isolation	>10 ⁸ Ω at 500 V	
Operating conditions		
Degree of protection per EN 60529	IP67	
Ambient conditions		
Temperature		
Operation	-55 to 140°C	
Max. shock resistance	5000 g	
Emitted interferences	EN 61000-6-4:2001	
Immunity to interference	EN 61000-6-2:1999	
Mechanical properties		
Housing		
Material	Stainless steel	
Installation	M8 x 1.25 x 6 mm bolt, pre-assembled on the sensor	M8 x 1.25 x 33 mm screw, included in delivery
Weight	110 g	170 g

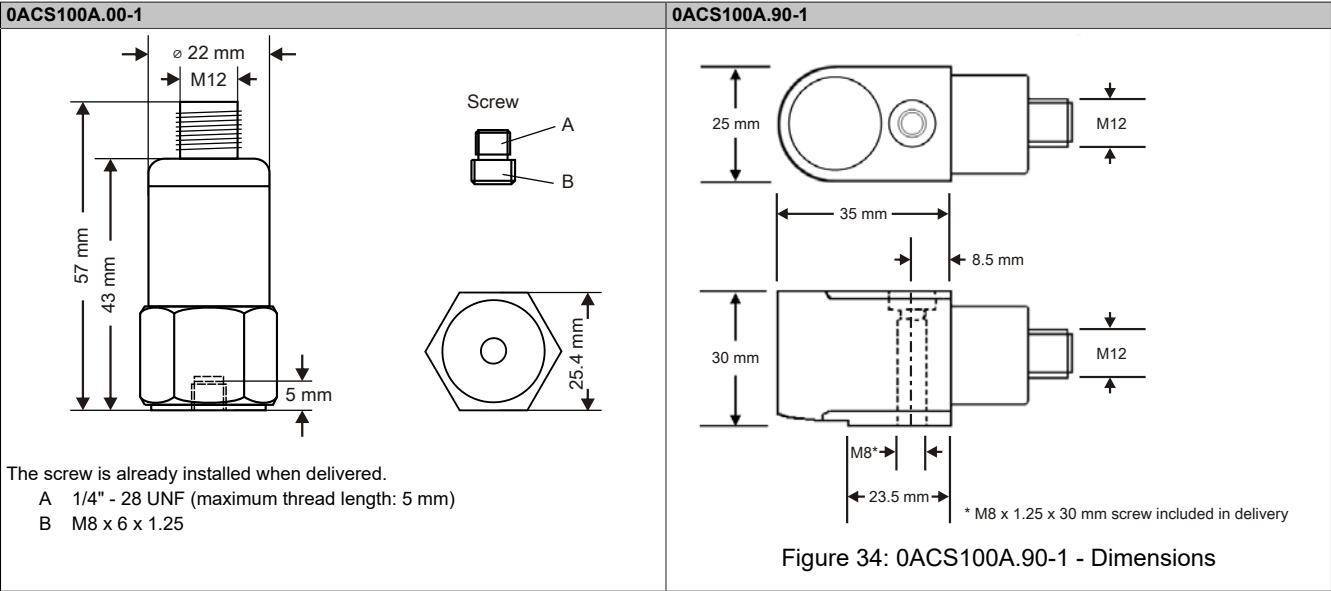
Table 18: 0ACS100A.00-1, 0ACS100A.90-1 - Technical data

Order number	0ACS100A.00-1	0ACS100A.90-1
Measurement element	PZT piezoelectric crystal (lead zirconate titanate)	
Measurement execution	Compressed	
Tightening torque	8 Nm	
Connectors	M12	

Table 18: 0ACS100A.00-1, 0ACS100A.90-1 - Technical data

1) The sensor is precalibrated at the factory. Recalibration is not necessary.

9.11.3 Dimension



9.11.4 Pinout

	Pin	Description
	1	Not assigned
	2	18 to 30 V (brown)
	3	Not assigned
	4	0 V (blue)

9.11.5 Installation direction

0ACS100A.00-1	0ACS100A.90-1
B&R vibration sensor 0ACS100A.00-1 is designed for measurements in the longitudinal axis.	B&R vibration sensor 0ACS100A.90-1 is designed for measurements in the transverse axis.

9.11.6 Frequency response

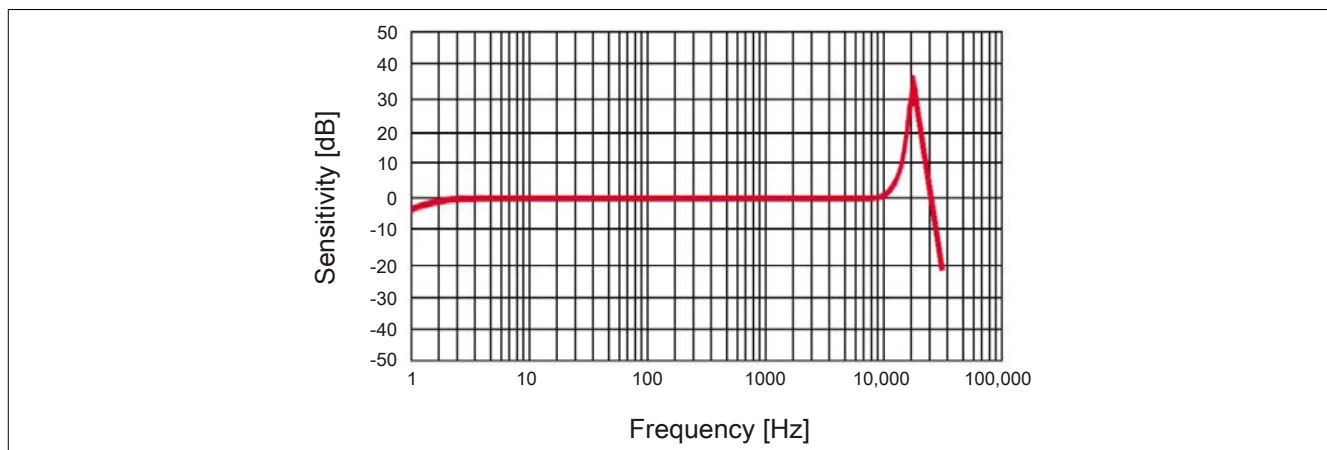


Figure 35: 0ACS100A.x0-1 - Frequency response

9.12 Safety Technology Guarding

9.12.1 Order data

Material number	Short description	Figure
	Accessories	
X20MK0223	X20 SafeKEY, 8 MB, for the X20SL81xx series, exclusively for mapp Safety	
X20cMK0223	X20 SafeKEY, coated, 8 MB, for X20SL81xx series, exclusive for mapp Safety	

Table 19: X20MK0223, X20cMK0223 - Material numbers

9.12.2 Technical data

Order number	X20MK0223	X20cMK0223
General information		
Memory size		8 MB
Application memory		
Guaranteed erase/write cycles		100,000
Certifications		
CE		Yes
UKCA		Yes
UL		cULus E115267
DNV		Industrial control equipment Temperature: B (0 to 55°C) Humidity: B (up to 100%) Vibration: B (4 g) EMC: B (bridge and open deck)
LR		ENV1
KR		Yes
ABS		Yes
BV		EC33B Temperature: 5 - 55°C Vibration: 4 g EMC: Bridge and open deck
Operating conditions		
Mounting orientation		
Horizontal		Yes
Vertical		Yes
Installation elevation above sea level		0 to 2000 m, no limitation
Degree of protection per EN 60529		IP20
Ambient conditions		
Temperature		
Operation		
Horizontal mounting orientation	0 to 60°C	-25 to 60°C
Vertical mounting orientation	0 to 60°C	-25 to 60°C
Derating		-
Storage		-40 to 85°C
Transport		-40 to 85°C

Table 20: X20MK0223, X20cMK0223 - Technical data

9.13 0CFCRD.xxxxE.02

9.13.1 Order data

Order number	Short description	Figure
	CompactFlash cards	
0CFCRD.0512E.02	CompactFlash 512 MB extended temp.	
0CFCRD.1024E.02	CompactFlash 1024 MB extended temp.	
0CFCRD.2048E.02	CompactFlash 2048 MB extended temp.	
0CFCRD.4096E.02	CompactFlash 4096 MB extended temp.	
0CFCRD.8192E.02	CompactFlash 8 GB extended temp.	
0CFCRD.016GE.02	CompactFlash 16 GB extended temp.	

Table 21: 0CFCRD.0512E.02, 0CFCRD.1024E.02, 0CFCRD.2048E.02, 0CFCRD.4096E.02, 0CFCRD.8192E.02, 0CFCRD.016GE.02 - Order data

9.13.2 Technical data

Caution!

A sudden power failure can result in data loss. In very rare cases, the mass storage device may also become damaged.

In order to prevent data loss or damage, B&R recommends the use of a UPS.

Information:

The following specifications, properties and limit values apply only to this accessory and may deviate from those that apply to the complete system. For the complete system in which this accessory is installed, the data specified for that complete system applies.

Order number	0CFCRD. 0512E.02	0CFCRD. 1024E.02	0CFCRD. 2048E.02	0CFCRD. 4096E.02	0CFCRD. 8192E.02	0CFCRD. 016GE.02
General information						
Capacity	512 MB	1024 MB	2048 MB	4096 MB	8192 MB	16 GB
Data retention	10 years (when new) to 1 year (end of service life)					
Data reliability	<1 unrecoverable error per 10 ¹⁷ bits read					
Lifetime monitoring	Yes					
MTBF	>3,000,000 hours (at 25°C)					
Servicing	None					
Supported operating modes	Up to UDMA6 / MDMA4 / PIO6					
Continuous reading						
Typical	32.2 MB/s	64.1 MB/s	62.9 MB/s	62 MB/s	64.3 MB/s	64.4 MB/s
Continuous writing						
Typical	19.9 MB/s	29 MB/s	28.6 MB/s	37.5 MB/s	39.0 MB/s	43.6 MB/s
Certifications						
CE	Yes					
UKCA	Yes					
UL	cULus E115267 Industrial control equipment					
DNV	In preparation				-	
Endurance						
SLC flash memory	Yes					
Erase/Write cycles						
Guaranteed	100,000					
Wear leveling	Global, dynamic and static					
Error-correcting code (ECC)	Yes					
S.M.A.R.T. support	Yes					
Storage health data support ¹⁾	Yes					
Support						
Hardware	X20CPxxxx					

Table 22: 0CFCRD.0512E.02, 0CFCRD.1024E.02, 0CFCRD.2048E.02, 0CFCRD.4096E.02, 0CFCRD.8192E.02, 0CFCRD.016GE.02 - Technical data

Order number	0CFCRD. 0512E.02	0CFCRD. 1024E.02	0CFCRD. 2048E.02	0CFCRD. 4096E.02	0CFCRD. 8192E.02	0CFCRD. 016GE.02
Ambient conditions						
Temperature						
Operation				-40 to 85°C		
Storage				-50 to 100°C		
Transport				-50 to 100°C		
Relative humidity						
Operation				Max. 85% at 85°C		
Storage				Max. 85% at 85°C		
Transport				Max. 85% at 85°C		
Vibration						
Storage				20 g peak, 10 to 2000 Hz		
Transport				20 g peak, 10 to 2000 Hz		
Shock						
Storage				1500 g peak (JESD ₂₂ , method B ₁₁₀)		
Transport				1500 g peak (JESD ₂₂ , method B ₁₁₀)		
Mechanical properties						
Dimensions						
Width				42.8 ±0.10 mm		
Length				36.4 ±0.15 mm		
Height				3.3 ±0.10 mm		
Weight				10 g		

Table 22: 0CFCRD.0512E.02, 0CFCRD.1024E.02, 0CFCRD.2048E.02, 0CFCRD.4096E.02, 0CFCRD.8192E.02, 0CFCRD.016GE.02 - Technical data

1) For details about *storage health data*, see Automation Help.

9.13.3 Dimensions

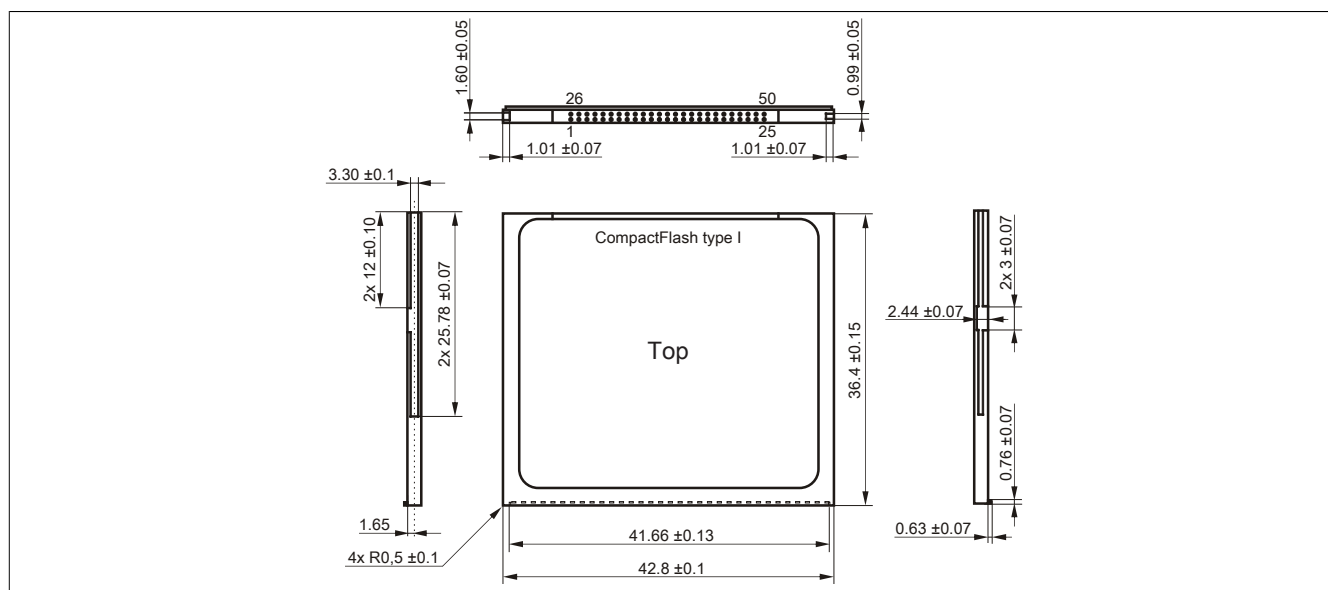


Figure 36: CompactFlash card type I dimensions

9.13.4 Temperature/Humidity diagram for operation and storage

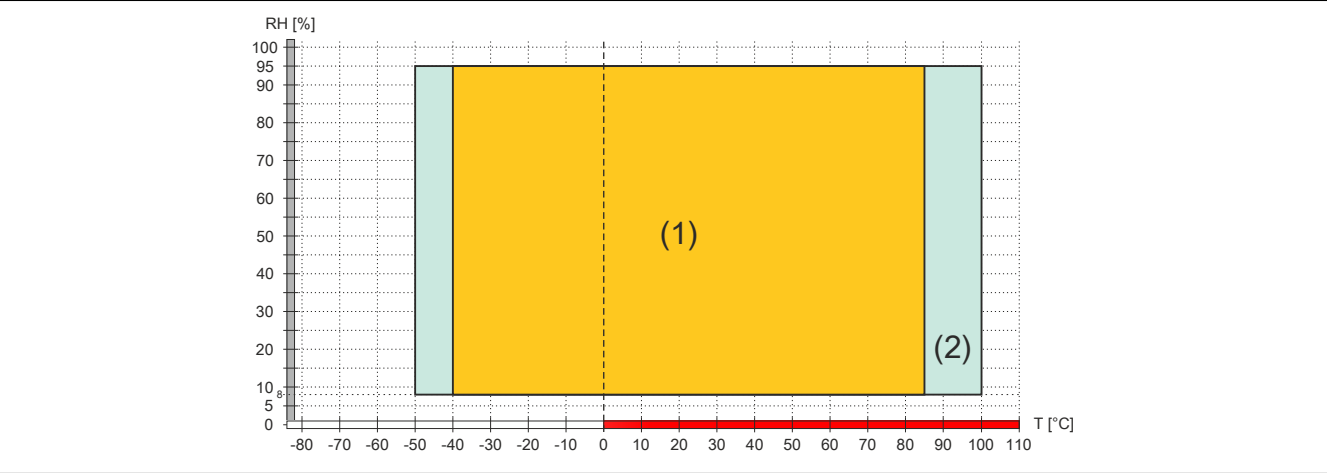


Figure 37: 0CFCRD.xxxxE.01 CompactFlash cards - Temperature/Humidity diagram

Diagram legend			
(1)	Operation	T [°C]	Temperature in °C
(2)	Storage and transport	RH [%]	Relative humidity (RH) in percent and non-condensing

9.14 Pre-assembled cables

9.14.1 X20 POWERLINK cables

POWERLINK cables					
Length	X20 to X20			X20 to X67	
0.2 m	X20CA0E61.00020				
0.25 m	X20CA0E61.00025				
0.3 m	X20CA0E61.00030				
0.35 m	X20CA0E61.00035				
0.4 m	X20CA0E61.00040				
0.5 m	X20CA0E61.00050				
1 m	X20CA0E61.00100			X67CA0E41.0010	
1.5 m	X20CA0E61.00150				
2 m	X20CA0E61.00200			X67CA0E41.0020	
3 m				X67CA0E41.0030	
5 m	X20CA0E61.00500			X67CA0E41.0050	
10 m	X20CA0E61.01000		X20CA3E61.0100		
15 m	X20CA0E61.01500		X20CA3E61.0150	X67CA0E41.0150	X67CA3E41.0150
20 m	X20CA0E61.02000		X20CA3E61.0200		
30 m		X20CA0E61.0300			
40 m		X20CA0E61.0400			
50 m		X20CA0E61.0500		X67CA0E41.0500	
100 m		X20CA0E61.1000			
					

Length	Tolerances for cable lengths
X20CA0E61.xxxx	
20 to 100 m	+2% of the length
X20CA0E61.xxxxx	
0.2 to 0.5 m	+0.01 m
1 to 5 m	+0.04 m
6 to 20 m	+1% of the length
X67CAxE41.xxxx	
0 to 10 m	+0.01 m
10 m to 50 m	+2% of the length

9.14.1.1 Technical data

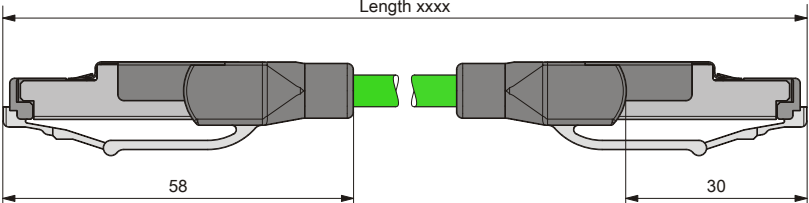
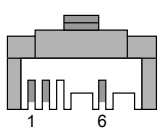
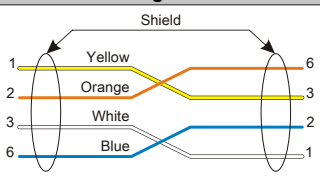
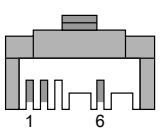
Order number	X20CA0E61.xxxxx	X20CA0E61.xxxx	X20CA3E61.xxxx	X67CA0E41.xxxx	X67CA3E41.xxxx
Short description					
Accessories	POWERLINK/Ethernet connection cable RJ45 to RJ45		POWERLINK/Ethernet connection cable RJ45 to RJ45, can be used in cable drag chains	POWERLINK/Ethernet connection cable, RJ45 to M12, 4-pin, straight	POWERLINK/Ethernet connection cable, RJ45 to M12, can be used in cable drag chains, 4-pin, straight
General information					
Durability	Flame-retardant per IEC 60332-3-24 ROHS 2011/65/EU	Flame-retardant per IEC 60332-1-2 ROHS 2011/65/EU			
Type	Connection cables				
Cable cross section					
AWG	4x 2x 26 AWG	4x 22 AWG			
mm²	4x 2x 0.14 mm²	4x 0.34 mm²			
Cable construction					
Inner jacket	Halogen-free, flame-retardant				
Outer jacket					
Material	PVC	Polyurethane (PUR) GN			
Properties	-	Halogen-free			
Color	Black (RAL 9005)	Green			
Wires					
Wire insulation		Polyethylene (PE)			
Wire colors	Blue-white, blue, orange-white, orange, green-white, green, brown-white, brown	White, yellow, blue, orange			
Shield		Overlapping aluminum-clad foil, tinned copper braiding, 85% coverage			
Type	Tinned copper strand 26/7 AWG	Tinned copper strand 22/7 AWG			
Stranding	Pair stranding - 4 pairs Blue-white with blue, orange-white with orange, green-white with green, brown-white with brown	Complete stranding 4 wires to the star quad			
Electrical properties					
Operating voltage	Max. 125 V	Max. 60 V for PoE			
Test voltage					
Wire - Wire	1000 V	2000 V			
Wire - Shield	1000 V	2000 V			
Conductor resistance	≤145 Ω/km at 20°C	≤120 Ω/km at 20°C			
Transfer properties	Category 5 per EN 50288-2-2 (2004) / IEC 61156-6 (2002)	Category 5 / Class D up to 100 MHz per ISO/IEC 11801 (EN 50173-1), ISO/IEC 24702 (EN 50173-3)			
Transfer rate	10/100/1000 Mbit/s	10/100 Mbit/s			
Insulation resistance	≥5 GΩ/km at 20°C	≥500 MΩ/km at 20°C			
Operating conditions					
Degree of protection per EN 60529					
Cables		IP65		IP67	
Male M12 connector	-	-		IP67, only when screwed in	
RJ45 connector	IP20, only when properly connected				
Ambient conditions					
Temperature					
Transport	-40 to 80°C	-50 to 70°C			
Fixed installation	-40 to 80°C	-40 to 70°C			
Flexible installation	-10 to 60°C	-20 to 60°C			
Mechanical properties					
Dimensions					
Diameter	6.7 mm ±0.2 mm	6.5 mm ±0.2 mm			
Bend radius					
Fixed installation	≥4x outer diameter	≥3x outer diameter			
Flexible installation	≥8x outer diameter	≥7x outer diameter			
Drag chain data					
Acceleration	-	-	4 m/s²	-	4 m/s²
Flex cycles	-	-	Min. 3 million	-	Min. 3 million
Velocity	-	-	4 m/s	-	4 m/s
Bend radius	-	-	200 mm	-	200 mm
Weight	0.058 kg/m	0.062 kg/m	0.061 kg/m	0.062 kg/m	0.064 kg/m

Table 23: X20CA0E61.xxxxx, X20CA0E61.xxxx, X20CA3E61.xxxx, X67CA0E41.xxxx, X67CA3E41.xxxx - Technical data

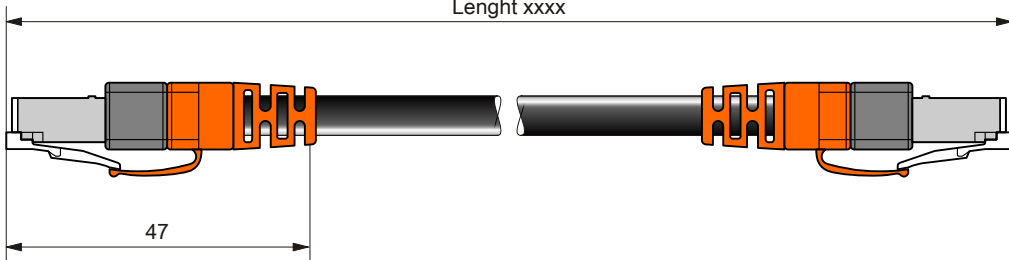
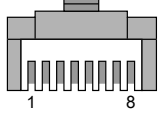
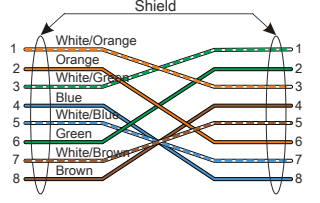
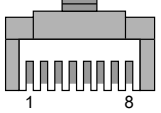
9.14.1.2 X20CA0E61.xxxx and X20CA3E61.xxxx

This cable is offered in 2 variants:

- X20CA0E61: Standard design
- X20CA3E61: Can be used in cable drag chains

Dimensions				
				
Pinout				
RJ45 connector	Pin	Name	Diagram	RJ45 connector
	1 - 3	TXD		
	2 - 6	TXD\		
	3 - 1	RXD		
	6 - 2	RXD\		

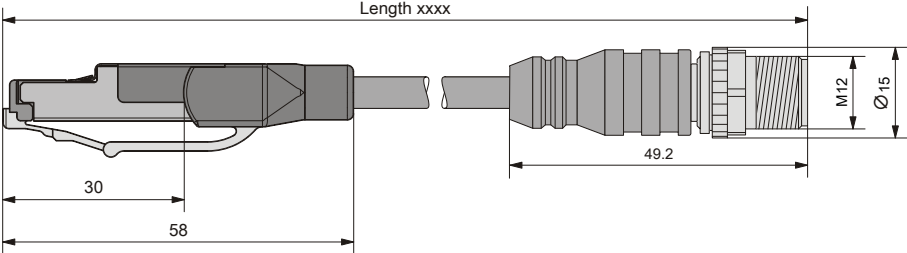
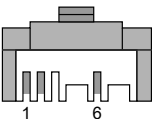
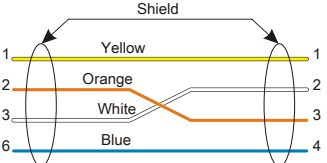
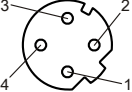
9.14.1.3 X20CA0E61.xxxxx

Dimensions				
				
Pinout				
Male RJ45 connector	Pin	Name	Diagram	Male RJ45 connector
	1 - 3	TXD		
	2 - 6	TXD\		
	4 - 8	RXD		
	6 - 2	RXD\		

9.14.1.4 X67CA0E41.xxxx and X67CA3E41.xxxx

This cable is offered in 2 variants:

- X67CA0Exx: Standard variant
- X67CA3Exx: Can be used in cable drag chains

Dimensions				
				
Pinout				
Male RJ45 connector	Pin	Name	Diagram	M12 connector
	1 - 1	TXD		 D-coded
	2 - 3	TXD\		
	3 - 2	RXD		
	6 - 4	RXD\		

9.14.2 X2X Link cables

Short description, model number		
Length	Attachment cables	Connection cables
0.3 m		X20CA0X68.0003
1 m	X20CA0X48.0010	X20CA0X68.0010
2 m	X20CA0X48.0020	X20CA0X68.0020
5 m	X20CA0X48.0050	X20CA0X68.0050
10 m	X20CA0X48.0100	X20CA0X68.0100
20 m	X20CA0X48.0200	
		

Length	Tolerances for cable lengths
0 to <10 m	+10 cm
10 m to <50 m	+2% of the length

Short description, model number	
Length	X2X Link cable for custom assembly
100 m	X67CA0X99.1000
500 m	X67CA0X99.5000
	

9.14.2.1 General specifications for X2X Link cables

When using a non-B&R cable for field wiring, it is important that the cable satisfies the following general specifications. For X2X Link segments up to 30 m, any cable that meets these specifications can be used. Cable lengths over this value must be inspected and approved by B&R.

	Data line	Supply line
Wires	2 x 0.25 mm ² (AWG 24), stranded wire	2 x 0.34 mm ² (AWG 22), stranded wire
Cable construction	Pair stranding, paired shield, aluminum foil	
Conductor resistance	Approx. 90 Ω/km	Approx. 55 Ω/km
Wave impedance	120 - 150 Ω	
Operating capacitance	<40 pF/m	
Cable shield	Tinned copper wire braiding, optical coverage ≥85%	

Table 24: General specifications for X2X Link cables

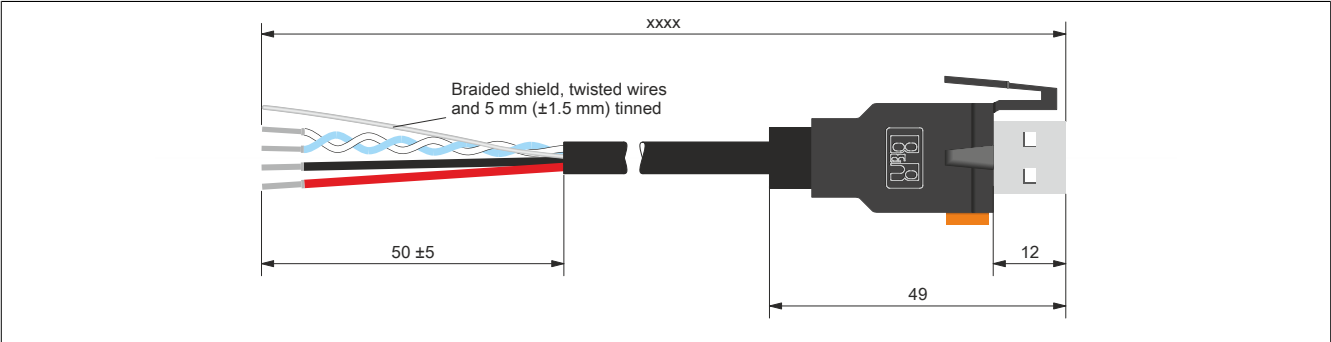
9.14.2.2 Technical data

Product ID	X20CA0X48	X20CA0X68	X67CA0X99
General information			
Note			Halogen-free
Durability	Flame-retardant according to VW-1 and FT1		Flame-retardant
Connection	USB A, male		-
Type	Attachment cables	Connection cables	-
Cable cross section			
Data cables			
AWG	2x 24 AWG		
mm²	2x 0.25 mm²		
Supply lines			
AWG	2x 22 AWG		
mm²	2x 0.34 mm²		
RoHS-compliant¹)	Yes		
Cable construction			
Signal lines			
Shield	Paired shield with aluminum foil		
Stranding	Twisted pair wires		
Cable stranding	7/36 (28 AWG) with filler	0.35 mm² (22 AWG) with filler	
Complete shielding	Tinned copper braiding, coverage >85%		
Outer sheathing			
Material	Polyvinyl chloride(PVC)	Thermoplastic polyurethane (TPU)	
Color	Black	Violet	
Labeling	"B&R" + Model number + Revision number	B&R X67CA0X99.xxxx	
Lines			
Type	Tinned copper stranded wire	Tinned copper ETB1 Data line: Fine stranded wire (19x 0.13 mm) Supply line: Fine stranded wire (19x 0.15 mm)	
Wire colors			
Data cables	Blue, white		
Supply lines	Red, black		
Wire insulation			
Data cables	Polyethylene foam	Cell polyethylene (PE)	
Supply lines	SR PVC	Polyethylene (PE)	
Electrical characteristics			
Operating voltage	30 V	Max. 2500 VAC	
Degree of insulation	-	Category II in accordance with IEC 61076-2	
Conductor resistance	Data line: <93.2 Ω/km at 20°C Supply line: <55 Ω/km at 20°C	Data line: ≤78 Ω/km Supply line: ≤55 Ω/km	
Operating conditions			
EN 60529 protection			
Connector/Coupling	IP20, only when connected properly	-	
Environmental conditions			
Temperature	-25 to 80°C	-40 to 80°C	
Fixed installation	-25 to 80°C	-40 to 80°C	
Flexible installation	-20 to 80°C	-25 to 60°C	
Mechanical characteristics			
Dimensions			
Length	Various		
Diameter	7 mm ± 0.19 mm	6.9 mm ±0.2 mm	
Bend radius	≥8x outer diameter	≥15x outer diameter	
Drag chain data			
Acceleration	-	Max. 4 m/s²	
Flex cycles	-	Min. 2 million	
Speed	-	Max. 3 m/s	
Weight	-	0.063 kg/m	

Table 25: X20CA0Xx8 / x67CA0X99 - Technical data

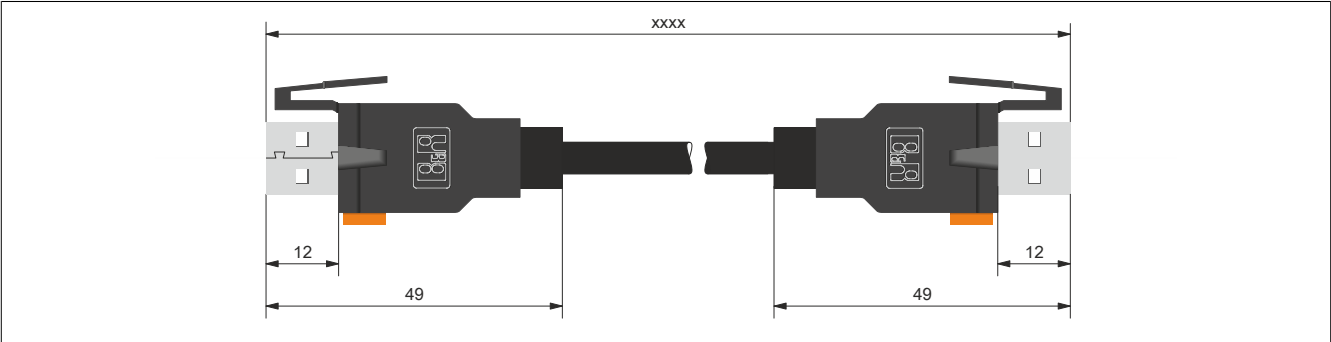
- 1) RoHS (Restriction of the use of certain Hazardous Substances) limits the use of the following substances in electrical and electronic devices: lead, mercury, cadmium, chrome VI as well as flame-retardant polybrominated biphenyl (PBB) and polybrominated diphenyl ether (PBDE).

9.14.2.3 X20CA0X48.xxxx



Pinout				
Open	Pin	Name	Wire color	Male connector
For custom Wiring	1	X2X+	Red	 Shield 1 4 Keying for X3A
	2	X2X\	Blue	
	3	X2X	White	
	4	X2X⊥	Black	
	Male connector	SHLD	Shield	

9.14.2.4 X20CA0X68.xxxx



Pinout				
Male connector	Pin	Name	Wire color	Male connector
 Shield 1 4	1	X2X+	Red	 Shield 1 4
	2	X2X\	Blue	
	3	X2X	White	
	4	X2X⊥	Black	
	Male connector	SHLD	Shield	

9.14.2.5 X67CA0X99.xxxx

Dimensions			
 The diagram shows a cable assembly with a length of 99 mm.			
Pinout			
For custom Wiring	Description	Wire colors	For custom Wiring
	X2X+	Red	
	X2X	White	
	X2X⊥	Black	
	X2X\	Blue	
	SHLD	-	

9.14.3 Sensor cables

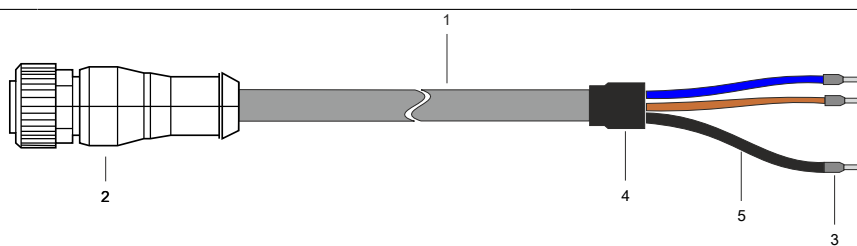
9.14.3.1 Order data

Model number	Length	Short description
0ACC0020.01-1	2 m	Cable for accelerometer, 2x 0.34 mm ² , 1x 0.25 mm ² , M12 female connector on sensor side, 1x 25 mm ² shield connection, can be used in cable drag chains, UL/CSA listed
0ACC0050.01-1	5 m	
0ACC0100.01-1	10 m	
0ACC0150.01-1	15 m	
0ACC0200.01-1	20 m	
0ACC0500.01-1	50 m	
0ACC1000.01-1	100 m	

9.14.3.2 Technical data

Name	0ACC0xx0.01-1
General information	
Number of pins	3
Cable length	x
Characteristic values of the wire	
Cable type	PUR halogen-free black shielded
AWG signal lead	22
Conductor design signal lead	42x 0.10 mm
Wire diameter incl. insulation	1.27 mm ±0.02 mm
Wall thickness insulation	≥0.21 mm (wire insulation) Approx. 1.1 mm (outer jacket)
External diameter of cable	5.9 mm ±0.15 mm
Insulation resistance	≥100 GΩ*km (at 20°C)
Conductor resistance	Max. 58 Ω/km (at 20°C)
Shielding	Braided copper wires
Cable weight	44 kg/km
Smallest bend radius, fixed	29.5 mm
Smallest bend radius, movable	59 mm
Number of flex cycles	4000000
Bend radius	59 mm
Travel path	10 m
Movement speed	3 m/s
Acceleration	10 m/s²
Ambient temperature (during operation)	-40°C ... 80°C (cable, inflexible installation) -25°C ... 80°C (cable, flexible installation)
Degree of protection per EN 60529	IP67

9.14.3.3 Sensor cables with female M12 connector



Pos.	Pieces	Description	Note
1	1	Sensor cable	2x 0.34 mm² (1501702 3x 0.34)
2	1	Female M12 connector (axial)	Female M12 connector (M12x1 A-keyed)
3	2	Wire end sleeve (2x sensor cables)	3203066 AI 0.34-8 TQ
4	1	Heat shrink tubing	
5	1	Shield connection	1x 0.25 mm² black
6	1	Wire end sleeve (1x shield connection)	3200632 AI 0.25-12 BU

9.14.3.4 Cable diagram

