

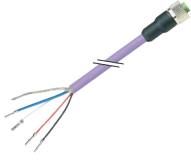
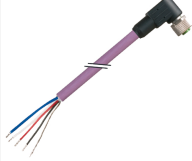
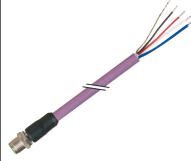

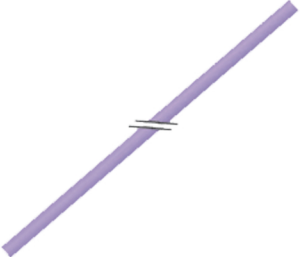


# X2X Link cables

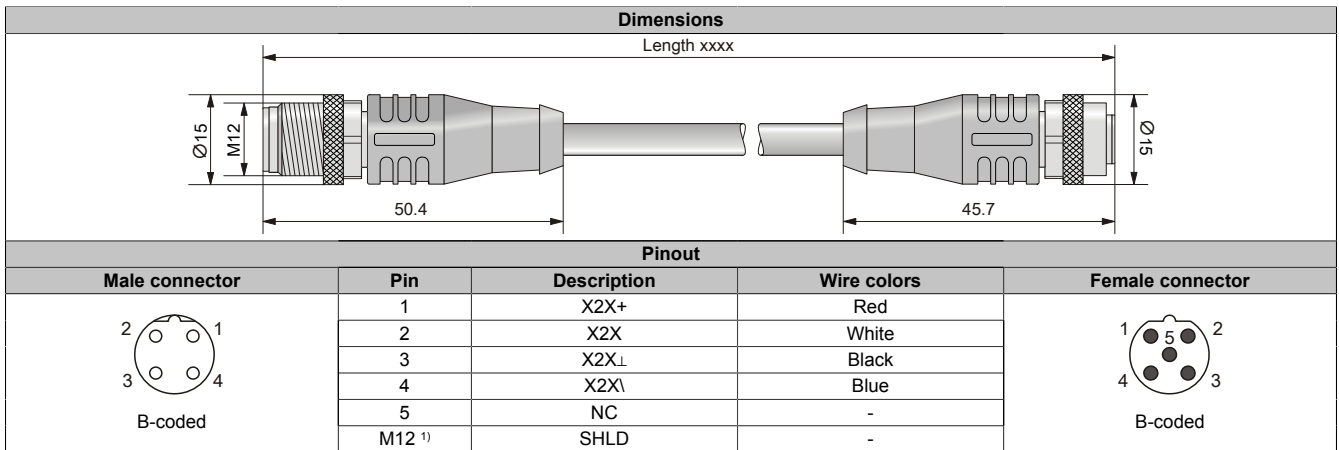
Length	Short description, model number					
	X2X Link connection cable		X2X Link attachment cable		X2X Link open-ended cables	
0.25 m <sup>1)</sup>	X67CA0X01.0002	X67CA0X11.0002				
0.3 m	X67CA0X01.0003					
0.5 m	X67CA0X01.0005	X67CA0X11.0005	X67CA0X21.0005			
1 m	X67CA0X01.0010	X67CA0X11.0010	X67CA0X21.0010		X67CA0X41.0010	
2 m	X67CA0X01.0020	X67CA0X11.0020		X67CA0X31.0020	X67CA0X41.0020	X67CA0X51.0020
5 m	X67CA0X01.0050	X67CA0X11.0050	X67CA0X21.0050	X67CA0X31.0050	X67CA0X41.0050	X67CA0X51.0050
10 m	X67CA0X01.0100	X67CA0X11.0100		X67CA0X31.0100	X67CA0X41.0100	
15 m	X67CA0X01.0150	X67CA0X11.0150	X67CA0X21.0150	X67CA0X31.0150		
20 m			X67CA0X21.0200			
25 m	X67CA0X01.0250	X67CA0X11.0250				
50 m	X67CA0X01.0500	X67CA0X11.0500	X67CA0X21.0500	X67CA0X31.0500		
						

1) Standard length = 0.2 m.

Length	Tolerances for cable lengths
0 to <1 m	+2 cm
1 m to <10 m	+5 cm
10 m to xx m	+10 cm

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

# 1 X67CA0X01.xxxx



1) Shielding 360° around M12 knurled-head screw.

## 1.1 Technical data

Model number	X67CA0X01.0002	X67CA0X01.0003	X67CA0X01.0005	X67CA0X01.0010	X67CA0X01.0020
<b>Short description</b>					
Accessories	X2X Link connection cable, M12, 4-pin, straight, 0.25 m	X2X Link connection cable, M12, 4-pin, straight, 0.3 m	X2X Link connection cable, M12, 4-pin, straight, 0.5 m	X2X Link connection cable, M12, 4-pin, straight, 1 m	X2X Link connection cable, M12, 4-pin, straight, 2 m
<b>General information</b>					
Note	Halogen-free				
Durability	Flame-retardant				
Type	Connection cables				
Cable cross section					
Data cables					
AWG	2x 24 AWG				
mm <sup>2</sup>	2x 0.25 mm <sup>2</sup>				
Supply lines					
AWG	2x 22 AWG				
mm <sup>2</sup>	2x 0.34 mm <sup>2</sup>				
<b>Cable construction</b>					
Signal lines					
Shield	Paired shield with aluminum foil				
Stranding	Twisted pair wires				
Cable stranding	0.35 mm <sup>2</sup> (22 AWG) with filler				
Complete shielding	Tinned copper braiding, coverage >85%				
Outer jacket					
Material	Thermoplastic polyurethane (TPU)				
Color	Violet				
Labeling	B&R X67CA0X01.0002 Rev. G0 ESCHA FC	B&R X67CA0X01.0003 Rev. G0 ESCHA FC	B&R X67CA0X01.0005 Rev. G0 ESCHA FC	B&R X67CA0X01.0010 Rev. G0 ESCHA FC	B&R X67CA0X01.0020 Rev. G0 ESCHA FC
Lines					
Type	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	Cell polyethylene (PE)				
Supply lines	Polypropylene (PP)				
<b>Electrical characteristics</b>					
Rated voltage	250 V				
Nominal current	Max. 4 A / contact at 40°C				
Operating voltage	Max. 250 V				
Degree of insulation	Category II per IEC 61076-2				
Conductor resistance	Data line: ≤78 Ω/km Supply line: ≤55 Ω/km				
Insulation resistance	≥100 MΩ				
<b>Operating conditions</b>					
Degree of protection per EN 60529					
Connector/Coupling	IP67, only when screwed in				
<b>Environmental conditions</b>					
Temperature					
Transport	-40 to 80°C				
Fixed installation	-40 to 80°C				
Flexible installation <sup>1)</sup>	-25 to 60°C				
<b>Mechanical properties</b>					
Dimensions					
Length	0.25 m	0.3 m	0.5 m	1 m	2 m
Diameter	6.9 mm ±0.2 mm				
Bend radius	≥15x outer diameter				
Drag chain data					
Acceleration	Max. 4 m/s <sup>2</sup>				
Flex cycles	Min. 2 million				
Speed	Max. 3 m/s				
Weight	0.063 kg/m				

Table 1: X67CA0X01.0002, X67CA0X01.0003, X67CA0X01.0005, X67CA0X01.0010, X67CA0X01.0020 - Technical data

1) In cable drag chain operation.

## X2X Link cables

Model number	X67CA0X01.0050	X67CA0X01.0100	X67CA0X01.0150	X67CA0X01.0250	X67CA0X01.0500
<b>Short description</b>					
Accessories	X2X Link connection cable, M12, 4-pin, straight, 5 m	X2X Link connection cable, M12, 4-pin, straight, 10 m	X2X Link connection cable, M12, 4-pin, straight, 15 m	X2X Link connection cable, M12, 4-pin, straight, 25 m	X2X Link connection cable, M12, 4-pin, straight, 50 m
<b>General information</b>					
Note	Halogen-free				
Durability	Flame-retardant				
Type	Connection cables				
Cable cross section					
Data cables					
AWG	2x 24 AWG				
mm <sup>2</sup>	2x 0.25 mm <sup>2</sup>				
Supply lines					
AWG	2x 22 AWG				
mm <sup>2</sup>	2x 0.34 mm <sup>2</sup>				
<b>Cable construction</b>					
Signal lines					
Shield	Paired shield with aluminum foil				
Stranding	Twisted pair wires				
Cable stranding	0.35 mm <sup>2</sup> (22 AWG) with filler				
Complete shielding	Tinned copper braiding, coverage >85%				
Outer jacket					
Material	Thermoplastic polyurethane (TPU)				
Color	Violet				
Labeling	B&R X67CA0X01.0050 Rev. G0 ESCHA FC	B&R X67CA0X01.0100 Rev. G0 ESCHA FC	B&R X67CA0X01.0150 Rev. G0 ESCHA FC	B&R X67CA0X01.0250 Rev. G0 ESCHA FC	B&R X67CA0X01.0500 Rev. G0 ESCHA FC
Lines					
Type	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	Cell polyethylene (PE)				
Supply lines	Polypropylene (PP)				
<b>Electrical characteristics</b>					
Rated voltage	250 V				
Nominal current	Max. 4 A / contact at 40°C				
Operating voltage	Max. 250 V				
Degree of insulation	Category II per IEC 61076-2				
Conductor resistance	Data line: ≤78 Ω/km Supply line: ≤55 Ω/km				
Insulation resistance	≥100 MΩ				
<b>Operating conditions</b>					
Degree of protection per EN 60529					
Connector/Coupling	IP67, only when screwed in				
<b>Environmental conditions</b>					
Temperature					
Transport	-40 to 80°C				
Fixed installation	-40 to 80°C				
Flexible installation <sup>1)</sup>	-25 to 60°C				
<b>Mechanical properties</b>					
Dimensions					
Length	5 m	10 m	15 m	25 m	50 m
Diameter	6.9 mm ±0.2 mm				
Bend radius	≥15x outer diameter				
Drag chain data					
Acceleration	Max. 4 m/s <sup>2</sup>				
Flex cycles	Min. 2 million				
Speed	Max. 3 m/s				
Weight	0.063 kg/m				

Table 2: X67CA0X01.0050, X67CA0X01.0100, X67CA0X01.0150, X67CA0X01.0250, X67CA0X01.0500 - Technical data

1) In cable drag chain operation.

## 2 X67CA0X11.xxxx

Dimensions				
Pinout				
Male connector	Pin	Description	Wire colors	Female connector
 B-coded	1	X2X+	Red	 B-coded
	2	X2X	White	
	3	X2XL	Black	
	4	X2X\	Blue	
	5	NC	-	
	M12 <sup>1)</sup>	SHLD	-	

1) Shielding 360° around M12 knurled-head screw.

## 2.1 Technical data

Model number	X67CA0X11.0002	X67CA0X11.0005	X67CA0X11.0010	X67CA0X11.0020	X67CA0X11.0050
<b>Short description</b>					
Accessories	X2X Link connection cable, M12, 4-pin, angled, 0.25 m	X2X Link connection cable, M12, 4-pin, angled, 0.5 m	X2X Link connection cable, M12, 4-pin, angled, 1 m	X2X Link connection cable, M12, 4-pin, angled, 2 m	X2X Link connection cable, M12, 4-pin, angled, 5 m
<b>General information</b>					
Note	Halogen-free				
Durability	Flame-retardant				
Type	Connection cables				
Cable cross section					
Data cables					
AWG	2x 24 AWG				
mm <sup>2</sup>	2x 0.25 mm <sup>2</sup>				
Supply lines					
AWG	2x 22 AWG				
mm <sup>2</sup>	2x 0.34 mm <sup>2</sup>				
<b>Cable construction</b>					
Signal lines					
Shield	Paired shield with aluminum foil				
Stranding	Twisted pair wires				
Cable stranding	0.35 mm <sup>2</sup> (22 AWG) with filler				
Complete shielding	Tinned copper braiding, coverage >85%				
Outer jacket					
Material	Thermoplastic polyurethane (TPU)				
Color	Violet				
Labeling	B&R X67CA0X11.0002 Rev. G0 ESCHA FC	B&R X67CA0X11.0005 Rev. G0 ESCHA FC	B&R X67CA0X11.0010 Rev. G0 ESCHA FC	B&R X67CA0X11.0020 Rev. G0 ESCHA FC	B&R X67CA0X11.0050 Rev. G0 ESCHA FC
Lines					
Type	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	Cell polyethylene (PE)				
Supply lines	Polypropylene (PP)				
<b>Electrical characteristics</b>					
Rated voltage	250 V				
Nominal current	Max. 4 A / contact at 40°C				
Operating voltage	Max. 250 V				
Degree of insulation	Category II per IEC 61076-2				
Conductor resistance	Data line: ≤78 Ω/km Supply line: ≤55 Ω/km				
Insulation resistance	≥100 MΩ				
<b>Operating conditions</b>					
Degree of protection per EN 60529					
Connector/Coupling	IP67, only when screwed in				
<b>Environmental conditions</b>					
Temperature					
Transport	-40 to 80°C				
Fixed installation	-40 to 80°C				
Flexible installation <sup>1)</sup>	-25 to 60°C				
<b>Mechanical properties</b>					
Dimensions					
Length	0.25 m	0.5 m	1 m	2 m	5 m
Diameter	6.9 mm ±0.2 mm				
Bend radius	≥15x outer diameter				
Drag chain data					
Acceleration	Max. 4 m/s <sup>2</sup>				
Flex cycles	Min. 2 million				
Speed	Max. 3 m/s				
Weight	0.063 kg/m				

Table 3: X67CA0X11.0002, X67CA0X11.0005, X67CA0X11.0010, X67CA0X11.0020, X67CA0X11.0050 - Technical data

1) In cable drag chain operation.

Model number	X67CA0X11.0100	X67CA0X11.0150	X67CA0X11.0250	X67CA0X11.0500
<b>Short description</b>				
Accessories	X2X Link connection cable, M12, 4-pin, angled, 10 m	X2X Link connection cable, M12, 4-pin, angled, 15 m	X2X Link connection cable, M12, 4-pin, angled, 25 m	X2X Link connection cable, M12, 4-pin, angled, 50 m
<b>General information</b>				
Note	Halogen-free			
Durability	Flame-retardant			
Type	Connection cables			
Cable cross section				
Data cables				
AWG	2x 24 AWG			
mm <sup>2</sup>	2x 0.25 mm <sup>2</sup>			
Supply lines				
AWG	2x 22 AWG			
mm <sup>2</sup>	2x 0.34 mm <sup>2</sup>			
<b>Cable construction</b>				
Signal lines				
Shield	Paired shield with aluminum foil			
Stranding	Twisted pair wires			
Cable stranding	0.35 mm <sup>2</sup> (22 AWG) with filler			
Complete shielding	Tinned copper braiding, coverage >85%			
Outer jacket				
Material	Thermoplastic polyurethane (TPU)			
Color	Violet			
Labeling	B&R X67CA0X11.0100 Rev. G0 ESCHA FC	B&R X67CA0X11.0150 Rev. G0 ESCHA FC	B&R X67CA0X11.0250 Rev. G0 ESCHA FC	B&R X67CA0X11.0500 Rev. G0 ESCHA FC
Lines				
Type	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	Cell polyethylene (PE)			
Supply lines	Polypropylene (PP)			
<b>Electrical characteristics</b>				
Rated voltage	250 V			
Nominal current	Max. 4 A / contact at 40°C			
Operating voltage	Max. 250 V			
Degree of insulation	Category II per IEC 61076-2			
Conductor resistance	Data line: ≤78 Ω/km Supply line: ≤55 Ω/km			
Insulation resistance	≥100 MΩ			
<b>Operating conditions</b>				
Degree of protection per EN 60529				
Connector/Coupling	IP67, only when screwed in			
<b>Environmental conditions</b>				
Temperature				
Transport	-40 to 80°C			
Fixed installation	-40 to 80°C			
Flexible installation <sup>1)</sup>	-25 to 60°C			
<b>Mechanical properties</b>				
Dimensions				
Length	10 m	15 m	25 m	50 m
Diameter	6.9 mm ±0.2 mm			
Bend radius	≥15x outer diameter			
Drag chain data				
Acceleration	Max. 4 m/s <sup>2</sup>			
Flex cycles	Min. 2 million			
Speed	Max. 3 m/s			
Weight	0.063 kg/m			

Table 4: X67CA0X11.0100, X67CA0X11.0150, X67CA0X11.0250, X67CA0X11.0500 - Technical data

1) In cable drag chain operation.

### 3 X67CA0X21.xxxx

Dimensions				
Pinout				
Female connector	Pin	Description	Wire colors	Open-ended
<p>B-coded</p>	1	X2X+	Red	For custom Wiring
	2	X2X	White	
	3	X2X <sub>L</sub>	Black	
	4	X2X\	Blue	
	5	NC	-	
	M12 <sup>1)</sup>	SHLD	-	

1) Shielding 360° around M12 knurled-head screw.

### Information:

See note in section ["Connection of X2X Link interfaces with internal power supply"](#) on page 18.



## 3.1 Technical data

Model number	X67CA0X21.0005	X67CA0X21.0010	X67CA0X21.0050	X67CA0X21.0150	X67CA0X21.0200	X67CA0X21.0500
<b>Short description</b>						
Accessories	X2X Link attachment cable, M12, 4-pin, straight, 0.5 m	X2X Link attachment cable, M12, 4-pin, straight, 1 m	X2X Link attachment cable, M12, 4-pin, straight, 5 m	X2X Link attachment cable, M12, 4-pin, straight, 15 m	X2X Link attachment cable, M12, 4-pin, straight, 20 m	X2X Link attachment cable, M12, 4-pin, straight, 50 m
<b>General information</b>						
Note	Halogen-free					
Durability	Flame-retardant					
Type	Attachment cables					
<b>Cable cross section</b>						
Data cables						
AWG	2x 24 AWG					
mm <sup>2</sup>	2x 0.25 mm <sup>2</sup>					
Supply lines						
AWG	2x 22 AWG					
mm <sup>2</sup>	2x 0.34 mm <sup>2</sup>					
<b>Cable construction</b>						
Signal lines						
Shield	Paired shield with aluminum foil					
Stranding	Twisted pair wires					
Cable stranding	0.35 mm <sup>2</sup> (22 AWG) with filler					
Complete shielding	Tinned copper braiding, coverage >85%					
Outer jacket						
Material	Thermoplastic polyurethane (TPU)					
Color	Violet					
Labeling	B&R X67CA0X21.0005 Rev. G0 ESCHA FC	B&R X67CA0X21.0010 Rev. G0 ESCHA FC	B&R X67CA0X21.0050 Rev. G0 ESCHA FC	B&R X67CA0X21.0150 Rev. G0 ESCHA FC	B&R X67CA0X21.0200 Rev. G0 ESCHA FC	B&R X67CA0X21.0500 Rev. G0 ESCHA FC
Lines						
Type	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	Cell polyethylene (PE)					
Supply lines	Polypropylene (PP)					
<b>Electrical characteristics</b>						
Rated voltage	250 V					
Nominal current	Max. 4 A / contact at 40°C					
Operating voltage	Max. 250 V					
Degree of insulation	Category II per IEC 61076-2					
Conductor resistance	Data line: ≤78 Ω/km Supply line: ≤55 Ω/km					
Insulation resistance	≥100 MΩ					
<b>Operating conditions</b>						
Degree of protection per EN 60529	IP67, only when screwed in					
<b>Environmental conditions</b>						
Temperature						
Transport	-40 to 80°C					
Fixed installation	-40 to 80°C					
Flexible installation <sup>1)</sup>	-25 to 60°C					
<b>Mechanical properties</b>						
Dimensions						
Length	0.5 m	1 m	5 m	15 m	20 m	50 m
Diameter	6.9 mm ±0.2 mm					
Bend radius	≥15x outer diameter					
Drag chain data						
Acceleration	Max. 4 m/s <sup>2</sup>					
Flex cycles	Min. 2 million					
Speed	Max. 3 m/s					
Weight	0.063 kg/m					

Table 5: X67CA0X21.0005, X67CA0X21.0010, X67CA0X21.0050, X67CA0X21.0150, X67CA0X21.0200, X67CA0X21.0500 - Technical data

1) In cable drag chain operation.

## 4 X67CA0X31.xxxx

Dimensions				
Pinout				
Female connector	Pin	Description	Wire colors	Open-ended
<p>B-coded</p>	1	X2X+	Red	For custom Wiring
	2	X2X	White	
	3	X2X <sub>L</sub>	Black	
	4	X2X <sub>\</sub>	Blue	
	5	NC	-	
	M12 <sup>1)</sup>	SHLD	-	

1) Shielding 360° around M12 knurled-head screw.

### Information:

See note in section ["Connection of X2X Link interfaces with internal power supply"](#) on page 18.

## 4.1 Technical data

Model number	X67CA0X31.0020	X67CA0X31.0050	X67CA0X31.0100	X67CA0X31.0150	X67CA0X31.0500
<b>Short description</b>					
Accessories	X2X Link attachment cable, M12, 4-pin, angled, 2 m	X2X Link attachment cable, M12, 4-pin, angled, 5 m	X2X Link attachment cable, M12, 4-pin, angled, 10 m	X2X Link attachment cable, M12, 4-pin, angled, 15 m	X2X Link attachment cable, M12, 4-pin, angled, 50 m
<b>General information</b>					
Note	Halogen-free				
Durability	Flame-retardant				
Type	Attachment cables				
Cable cross section					
Data cables					
AWG	2x 24 AWG				
mm <sup>2</sup>	2x 0.25 mm <sup>2</sup>				
Supply lines					
AWG	2x 22 AWG				
mm <sup>2</sup>	2x 0.34 mm <sup>2</sup>				
<b>Cable construction</b>					
Signal lines					
Shield	Paired shield with aluminum foil				
Stranding	Twisted pair wires				
Cable stranding	0.35 mm <sup>2</sup> (22 AWG) with filler				
Complete shielding	Tinned copper braiding, coverage >85%				
Outer jacket					
Material	Thermoplastic polyurethane (TPU)				
Color	Violet				
Labeling	B&R X67CA0X31.0020 Rev. G0 ESCHA FC	B&R X67CA0X31.0050 Rev. G0 ESCHA FC	B&R X67CA0X31.0100 Rev. G0 ESCHA FC	B&R X67CA0X31.0150 Rev. G0 ESCHA FC	B&R X67CA0X31.0500 Rev. G0 ESCHA FC
Lines					
Type	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	Cell polyethylene (PE)				
Supply lines	Polypropylene (PP)				
<b>Electrical characteristics</b>					
Rated voltage	250 V				
Nominal current	Max. 4 A / contact at 40°C				
Operating voltage	Max. 250 V				
Degree of insulation	Category II per IEC 61076-2				
Conductor resistance	Data line: ≤78 Ω/km Supply line: ≤55 Ω/km				
Insulation resistance	≥100 MΩ				
<b>Operating conditions</b>					
Degree of protection per EN 60529					
Connector/Coupling	IP67, only when screwed in				
<b>Environmental conditions</b>					
Temperature					
Transport	-40 to 80°C				
Fixed installation	-40 to 80°C				
Flexible installation <sup>1)</sup>	-25 to 60°C				
<b>Mechanical properties</b>					
Dimensions					
Length	2 m	5 m	10 m	15 m	50 m
Diameter	6.9 mm ±0.2 mm				
Bend radius	≥15x outer diameter				
Drag chain data					
Acceleration	Max. 4 m/s <sup>2</sup>				
Flex cycles	Min. 2 million				
Speed	Max. 3 m/s				
Weight	0.063 kg/m				

Table 6: X67CA0X31.0020, X67CA0X31.0050, X67CA0X31.0100, X67CA0X31.0150, X67CA0X31.0500 - Technical data

1) In cable drag chain operation.

## 5 X67CA0X41.xxxx

Dimensions				
Pinout				
Male connector	Pin	Description	Wire colors	Open-ended
<p>B-coded</p>	1	X2X+	Red	For custom Wiring
	2	X2X	White	
	3	X2X.L	Black	
	4	X2X\	Blue	
	M12 <sup>1)</sup>	SHLD	-	

1) Shielding 360° around M12 knurled-head screw.

### Information:

See note in section ["Connection of X2X Link interfaces with internal power supply"](#) on page 18.

## 5.1 Technical data

Model number	X67CA0X41.0010	X67CA0X41.0020	X67CA0X41.0050	X67CA0X41.0100
<b>Short description</b>				
Accessories	X2X Link open-ended cable, M12, 4-pin, straight, 1 m	X2X Link open-ended cable, M12, 4-pin, straight, 2 m	X2X Link open-ended cable, M12, 4-pin, straight, 5 m	X2X Link open-ended cable, M12, 4-pin, straight, 10 m
<b>General information</b>				
Note	Halogen-free			
Durability	Flame-retardant			
Type	Open-ended cables			
<b>Cable cross section</b>				
Data cables				
AWG	2x 24 AWG			
mm <sup>2</sup>	2x 0.25 mm <sup>2</sup>			
Supply lines				
AWG	2x 22 AWG			
mm <sup>2</sup>	2x 0.34 mm <sup>2</sup>			
<b>Cable construction</b>				
Signal lines				
Shield	Paired shield with aluminum foil			
Stranding	Twisted pair wires			
Cable stranding	0.35 mm <sup>2</sup> (22 AWG) with filler			
Complete shielding	Tinned copper braiding, coverage >85%			
Outer jacket				
Material	Thermoplastic polyurethane (TPU)			
Color	Violet			
Labeling	B&R X67CA0X41.0010 Rev. G0 ESCHA FC	B&R X67CA0X41.0020 Rev. G0 ESCHA FC	B&R X67CA0X41.0050 Rev. G0 ESCHA FC	B&R X67CA0X41.0100 Rev. G0 ESCHA FC
Lines				
Type	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	Cell polyethylene (PE)			
Supply lines	Polypropylene (PP)			
<b>Electrical characteristics</b>				
Rated voltage	250 V			
Nominal current	Max. 4 A / contact at 40°C			
Operating voltage	Max. 250 V			
Degree of insulation	Category II per IEC 61076-2			
Conductor resistance	Data line: ≤78 Ω/km Supply line: ≤55 Ω/km			
Insulation resistance	≥100 MΩ			
<b>Operating conditions</b>				
Degree of protection per EN 60529				
Connector/Coupling	IP67, only when screwed in			
<b>Environmental conditions</b>				
Temperature				
Transport	-40 to 80°C			
Fixed installation	-40 to 80°C			
Flexible installation <sup>1)</sup>	-25 to 60°C			
<b>Mechanical properties</b>				
Dimensions				
Length	1 m	2 m	5 m	10 m
Diameter	6.9 mm ±0.2 mm			
Bend radius	≥15x outer diameter			
Drag chain data				
Acceleration	Max. 4 m/s <sup>2</sup>			
Flex cycles	Min. 2 million			
Speed	Max. 3 m/s			
Weight	0.063 kg/m			

Table 7: X67CA0X41.0010, X67CA0X41.0020, X67CA0X41.0050, X67CA0X41.0100 - Technical data

1) In cable drag chain operation.

## 6 X67CA0X51.xxxx

Dimensions				
Pinout				
Male connector	Pin	Description	Wire colors	Open-ended
<p>B-coded</p>	1	X2X+	Red	For custom Wiring
	2	X2X	White	
	3	X2XL	Black	
	4	X2X\	Blue	
	M12 <sup>1)</sup>	SHLD	-	

1) Shielding 360° around M12 knurled-head screw.

### Information:

See note in section ["Connection of X2X Link interfaces with internal power supply"](#) on page 18.

## 6.1 Technical data

Model number	X67CA0X51.0020	X67CA0X51.0050
<b>Short description</b>		
Accessories	X2X Link open-ended cable, M12, 4-pin, angled, 2 m	X2X Link open-ended cable, M12, 4-pin, angled, 5 m
<b>General information</b>		
Note	Halogen-free	
Durability	Flame-retardant	
Type	Open-ended cables	
Cable cross section		
Data cables		
AWG	2x 24 AWG	
mm <sup>2</sup>	2x 0.25 mm <sup>2</sup>	
Supply lines		
AWG	2x 22 AWG	
mm <sup>2</sup>	2x 0.34 mm <sup>2</sup>	
<b>Cable construction</b>		
Signal lines		
Shield	Paired shield with aluminum foil	
Stranding	Twisted pair wires	
Cable stranding	0.35 mm <sup>2</sup> (22 AWG) with filler	
Complete shielding	Tinned copper braiding, coverage >85%	
Outer jacket		
Material	Thermoplastic polyurethane (TPU)	
Color	Violet	
Labeling	B&R X67CA0X51.0020 Rev. G0 ESCHA FC	B&R X67CA0X51.0050 Rev. G0 ESCHA FC
Lines		
Type	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	Cell polyethylene (PE)	
Supply lines	Polypropylene (PP)	
<b>Electrical characteristics</b>		
Rated voltage	250 V	
Nominal current	Max. 4 A / contact at 40°C	
Operating voltage	Max. 250 V	
Degree of insulation	Category II per IEC 61076-2	
Conductor resistance	Data line: ≤78 Ω/km Supply line: ≤55 Ω/km	
Insulation resistance	≥100 MΩ	
<b>Operating conditions</b>		
Degree of protection per EN 60529		
Connector/Coupling	IP67, only when screwed in	
<b>Environmental conditions</b>		
Temperature		
Transport	-40 to 80°C	
Fixed installation	-40 to 80°C	
Flexible installation <sup>1)</sup>	-25 to 60°C	
<b>Mechanical properties</b>		
Dimensions		
Length	2 m	5 m
Diameter	6.9 mm ±0.2 mm	
Bend radius	≥15x outer diameter	
Drag chain data		
Acceleration	Max. 4 m/s <sup>2</sup>	
Flex cycles	Min. 2 million	
Speed	Max. 3 m/s	
Weight	0.063 kg/m	

Table 8: X67CA0X51.0020, X67CA0X51.0050 - Technical data

1) In cable drag chain operation.

## 7 X67CA0X99.xxxx

### Dimensions



### Pinout

		Description	Wire colors		
For custom Wiring		X2X+	Red	For custom Wiring	
		X2X	White		
		X2X <sub>L</sub>	Black		
		X2X <sub>\</sub>	Blue		
		SHLD	-		



## 7.1 Technical data

Model number	X67CA0X99.1000	X67CA0X99.5000
<b>Short description</b>		
Accessories	X2X Link cable for custom assembly, 100 m	X2X Link cable for custom assembly, 500 m
<b>General information</b>		
Note	Halogen-free	
Durability	Flame-retardant	
Type	Custom assembly	
Cable cross section		
Data cables		
AWG	2x 24 AWG	
mm <sup>2</sup>	2x 0.25 mm <sup>2</sup>	
Supply lines		
AWG	2x 22 AWG	
mm <sup>2</sup>	2x 0.34 mm <sup>2</sup>	
<b>Cable construction</b>		
Signal lines		
Shield	Paired shield with aluminum foil	
Stranding	Twisted pair wires	
Cable stranding	0.35 mm <sup>2</sup> (22 AWG) with filler	
Complete shielding	Tinned copper braiding, coverage >85%	
Outer jacket		
Material	Thermoplastic polyurethane (TPU)	
Color	Violet	
Labeling	B&R X67CA0X99.1000 Rev. G0 ESCHA FC	B&R X67CA0X99.5000 Rev. G0 ESCHA FC
Lines		
Type	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	Cell polyethylene (PE)	
Supply lines	Polypropylene (PP)	
<b>Electrical characteristics</b>		
Rated voltage	250 V	
Nominal current	Max. 4 A / contact at 40°C	
Operating voltage	Max. 250 V	
Degree of insulation	Category II per IEC 61076-2	
Conductor resistance	Data line: ≤78 Ω/km Supply line: ≤55 Ω/km	
Insulation resistance	≥100 MΩ	
<b>Operating conditions</b>		
Degree of protection per EN 60529		
Connector/Coupling	IP67, only when screwed in	
<b>Environmental conditions</b>		
Temperature		
Transport	-40 to 80°C	
Fixed installation	-40 to 80°C	
Flexible installation <sup>1)</sup>	-25 to 60°C	
<b>Mechanical properties</b>		
Dimensions		
Length	100 m	500 m
Diameter	6.9 mm ±0.2 mm	
Bend radius	≥15x outer diameter	
Drag chain data		
Acceleration	Max. 4 m/s <sup>2</sup>	
Flex cycles	Min. 2 million	
Speed	Max. 3 m/s	
Weight	0.063 kg/m	

Table 9: X67CA0X99.1000, X67CA0X99.5000 - Technical data

1) In cable drag chain operation.

## 8 Connection of X2X Link interfaces with internal power supply

### Information:

Power is supplied to the X2X Link network via the red wire. Power is supplied to the X2X Link network internally on the IF789 or LS189. An external power supply is therefore not needed.

In order to prevent short circuits on the housing, braided shield or cable shield, the red wire end must be insulated, e.g. using a heat shrink tubing.

To improve EMC immunity, the cable shield must be grounded on both sides. The supply line to the IF789 and LS189 should be grounded over a wide area close to the shield. The grounding on the X67 side is done via the connector on pre-assembled cables.

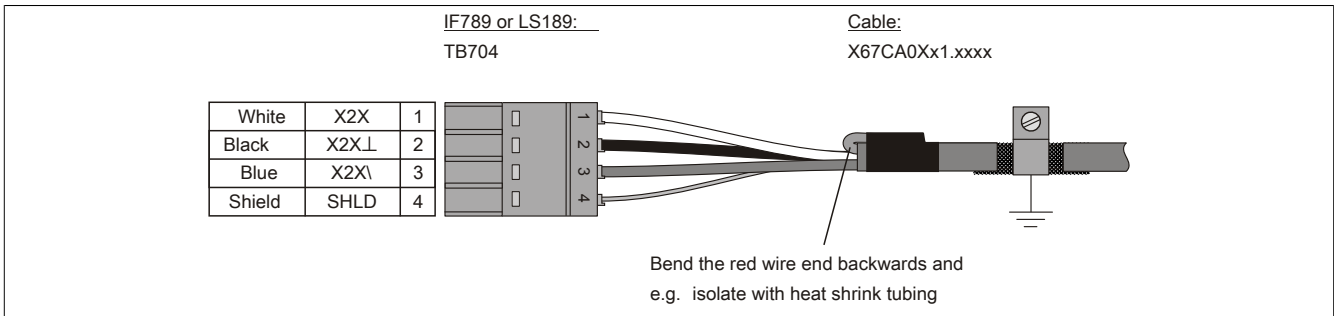


Figure 1: X2X Link attachment cable - Installation diagram

### Information:

If the cable shield is not grounded, transmission errors may occur when strong electromagnetic interference occurs.