1.3 Order data

Order number	Short description	Figure
	X20 redundancy systems	
X20HB8884	X20 Compact link selector, 2x RJ45, order bus base, power supply module and terminal block separately!	
X20cHB8884	X20 Compact link selector, coated, 2x RJ45, order bus base, power supply module and terminal block separately!	
	Required accessories	
	System modules for X20 hub systems	
X20HB2880	X20 hub expansion module, integrated 2-port hub, 2x RJ45	
X20PS8002	X20 power supply module, for standalone hub and compact link selector	
X20cHB2880	X20 hub expansion module, coated, integrated 2-port hub, 2x RJ45	
X20cPS8002	X20 power supply module, coated, for standalone hub and compact link selector	
	System modules for X20 redundancy systems	
X20HB2885	X20 hub expansion module, integrated active 2-port hub, 2x RJ45	
X20cHB2885	X20 hub expansion module, coated, integrated active 2-port hub, 2x RJ45	
	System modules for expandable bus controllers	
X20BB81	X20 bus base, for X20 base module (BC, HB, etc.) and X20 power supply module, with one expansion slot for X20 add-on module (IF, HB, etc.), X20 end cover plates (left and right) X20AC0SL1/X20AC0SR1 included	
X20BB82	X20 bus base, for X20 base module (BC, HB, etc.) and X20 power supply module, with 2 expansion slots for 2 X20 add-on modules (IF, HB, etc.), X20 end cover plates (left and right) X20AC0SL1/X20AC0SR1 included	
X20cBB81	X20 bus base, coated, for X20 base module (BC, HB, etc.) and X20 power supply module, with one expansion slot for X20 add-on module (IF, HB, etc.), X20 end cover plates (left and right) X20AC0SL1/X20AC0SR1 included	
X20cBB82	X20 bus base, coated, for X20 base module (BC, HB, etc.) and X20 power supply module, with 2 expansion slots for 2 X20 add-on modules (IF, HB, etc.), X20 end cover plates (left and right) X20AC0SL1/X20AC0SR1 included	
	Terminal blocks	
X20TB12	X20 terminal block, 12-pin, 24 VDC keyed	

Table 1: X20HB8884, X20cHB8884 - Order data

1.4 Module description

With the compact link selector module, it is possible to connect any POWERLINK device to a redundant POWERLINK network.

Functions:

- POWERLINK
- POWERLINK redundancy system

POWERLINK

POWERLINK is a standard protocol for Fast Ethernet equipped with hard real-time characteristics.

Redundancy system

In cable redundancy systems, data is fed into 2 cable lines simultaneously via a corresponding mechanism.

In ring redundancy systems, multiple nodes are connected within a ring and data packets can be transmitted in both directions if needed.

2 Technical description

2.1 Technical data

Order number	X20HB8884	X20cHB8884
Short description		
POWERLINK compact link selector	Connects POWERLINK devices to a redundant POWERLINK network	
General information		
Status indicators	Module status, bus function	
Diagnostics		
Module status	Yes, using LED status indicator	
Bus function	Yes, using LED status indicator	
Power consumption	2 W	
Certifications		
CE	Yes	
UKCA	Yes	
ATEX	Zone 2, II 3G Ex nA nC IIA T5 Gc IP20, Ta (see X20 user's manual) FTZÚ 09 ATEX 0083X	
UL	cULus E115267 Industrial control equipment	
HazLoc	cCSAus 244665 Process control equipment for hazardous locations Class I, Division 2, Groups ABCD, T5	
DNV	Temperature: **B** (0 to 55°C) Humidity: **B** (up to 100%) Vibration: **B** (4 g) EMC: **B** (bridge and open deck)	
CCS	Yes	-
LR	ENV1	
KR	Yes	
ABS	Yes	
BV	**EC33B** Temperature: 5 - 55°C Vibration: 4 g EMC: Bridge and open deck	
KC	Yes	-
Interfaces		
Type	POWERLINK compact link selector	
Variant	2x shielded RJ45	
Line length	Max. 100 m between 2 stations (segment length)	
Transfer rate	100 Mbit/s	
Transfer		
Physical layer	100BASE-TX	
Half-duplex	Yes	
Full-duplex	No	
Autonegotiation	Yes	
Auto-MDI/MDIX	Yes	
Hub propagation delay	0.96 to 1 µs	
Electrical properties		
Electrical isolation	Power supply isolated from POWERLINK (IF1 and IF2)	
Operating conditions		
Mounting orientation		
Horizontal	Yes	
Vertical	Yes	
Installation elevation above sea level		
0 to 2000 m	No limitation	
>2000 m	Reduction of ambient temperature by 0.5°C per 100 m	
Degree of protection per EN 60529	IP20	
Ambient conditions		
Temperature		
Operation		
Horizontal mounting orientation	-25 to 60°C	
Vertical mounting orientation	-25 to 50°C	
Derating	-	
Starting temperature	-	Yes, -40°C
Storage	-40 to 85°C	
Transport	-40 to 85°C	

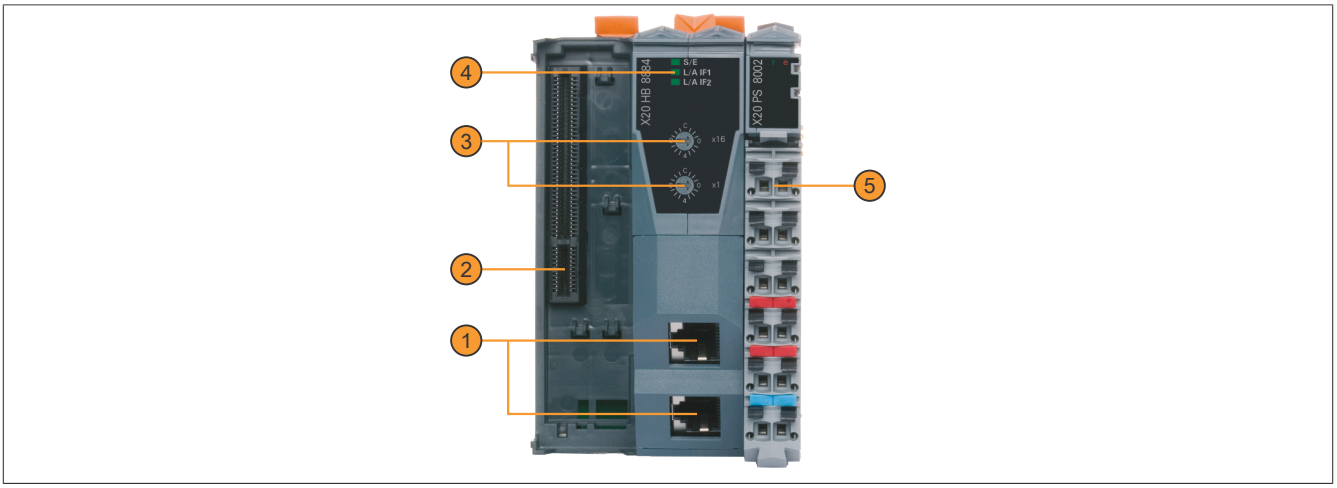
Table 2: X20HB8884, X20cHB8884 - Technical data

Order number	X20HB8884	X20cHB8884
Relative humidity		
Operation	5 to 95%, non-condensing	Up to 100%, condensing
Storage	5 to 95%, non-condensing	
Transport	5 to 95%, non-condensing	
Mechanical properties		
Note	Order 1x terminal block X20TB12 separately. Order 1x power supply module X20PS8002 separately. Order 1x hub expansion module X20HB2880 or 2x hub expansion module X20HB2885. Order 1x bus base X20BB81 or X20BB82 separately.	Order 1x terminal block X20TB12 separately. Order 1x power supply module X20cPS8002 separately. Order 1x hub expansion module X20cHB2880 or 2x hub expansion module X20cHB2885. Order 1x bus base X20cBB81 or X20cBB82 separately
Pitch [1]		
X20BB81	62.5$^{+0.2}$ mm	
X20BB82	87.5$^{+0.2}$ mm	

Table 2: X20HB8884, X20cHB8884 - Technical data

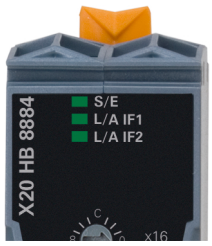
1) Pitch is based on the width of bus base X20BB81 or X20BB82. 1 X20HB2880 hub expansion module or 2 X20HB2885 hub expansion modules and 1 X20PS8002 power supply module are also always required for the compact link selector.

2.2 Operating and connection elements



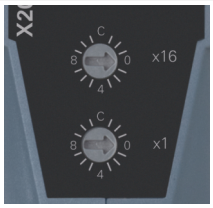
1	POWERLINK connection with 2x RJ45 for simple wiring	2	Slot for hub expansion module
3	POWERLINK node number	4	LED status indicators
5	Terminal block for compact link selector power supply	6	-

2.2.1 LED status indicators

Figure	LED	Color	Status	Description
	S/E[1]	Green	On	An active POWERLINK network was detected on both networks.
		Red	Single flash	Network 2 is active. Disturbances detected on network 1 or there is no POWERLINK network active. Note: Several red blinking signals are displayed immediately after the device is switched on. This is not an error, however.
			Double flash	Network 1 is active. Disturbances detected on network 2 or there is no POWERLINK network active. Several red blinking signals are displayed immediately after the device is switched on. This is not an error, however.
			On	Failure of both networks.
	L/A IFx	Green	Blinking	A link to the peer station has been established. The LED blinks when Ethernet activity is taking place on the bus.
			On	A link to the remote station has been established.

1) The Status/Error LED is a green/red dual LED.

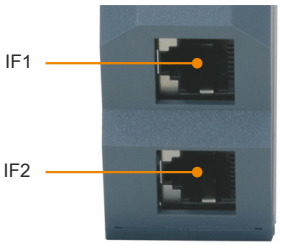
2.2.2 POWERLINK node numbers

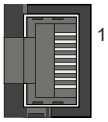


The number switches have no function during operation. They are only used for product testing.

2.2.3 Ethernet interface

For information about wiring X20 modules with an Ethernet interface, see section "Mechanical and electrical configuration - Wiring guidelines for X20 modules with Ethernet cables" in the X20 user's manual.



Interface	Pinout		
	Pin	Ethernet	
 1 Shielded RJ45	1	RXD	Receive data
	2	RXD\	Receive data\
	3	TXD	Transmit data
	4	Termination	
	5	Termination	
	6	TXD\	Transmit data\
	7	Termination	
	8	Termination	