

X20(c)HB2886

1 General information

The X20BC8084 POWERLINK bus controller and the X20HB8884 module are equipped with an integrated link selector function. An additional 1 or 2 slots are available, depending on the bus base used. The active X20HB2886 hub expansion module can be operated in these slots. Note that the hardware revision of the X20BC8084 and the X20HB8884 must be $\geq E0$.

The active hub expansion module is equipped with one integrated 2x hub and allows redundant wiring. This means that the connection between the two 100 Base-FX interfaces remains intact if there is a failure in the bus controller or Compact Link Selector. The Ethernet connection is made using 62.5/125 μm or 50/125 μm fiber optic multimode cable with a duplex LC connection. The status of the module and network are indicated by LEDs.

- Active hub expansion module
- 2x 100 BASE-FX hub for redundant wiring
- Hot-swap-capable

2 Coated modules

Coated modules are X20 modules with a protective coating for the electronics component. This coating protects X20c modules from condensation and corrosive gases.

The modules' electronics are fully compatible with the corresponding X20 modules.

For simplification purposes, only images and module IDs of uncoated modules are used in this data sheet.

The coating has been certified according to the following standards:

- Condensation: BMW GS 95011-4, 2x 1 cycle
- Corrosive gas: EN 60068-2-60, method 4, exposure 21 days



3 Order data


Model number	Short description	Figure
	System modules for X20 redundancy system	
X20HB2886	X20 hub expansion module, integrated active 2-port hub, 2 fiber optic interfaces	
X20cHB2886	X20 hub expansion module, coated, integrated active 2-port hub, 2 fiber optic interfaces	
	Required accessories	
	Expandable bus controllers	
X20BC8084	X20 bus controller, 1 POWERLINK interface, 1x link selector for POWERLINK cable redundancy, supports expansion with enabled X20 hub modules, 2x RJ45, order bus base, power supply module and terminal block separately!	
X20cBC8084	X20 bus controller, coated, 1 POWERLINK interface, 1x link selector for POWERLINK cable redundancy, supports expansion with active X20 hub modules, 2x RJ45, order bus base, power supply module and terminal block separately!	
	System modules for expandable bus controllers	
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 locking 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 two expansion slots for two X20 add-on modules (IF, HB, etc.), X20 locking plates (left and right) X20AC0SL1/X20AC0SR1 included	
	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.	

Table 1: X20HB2886, X20cHB2886 - Order data

4 Technical data

Model number	X20HB2886	X20cHB2886
Short description		
Hub	2 Fast Ethernet interfaces for fiber optic cable for redundant wiring	
General information		
Status indicators	Module status, bus function	
Diagnostics		
Module status	Yes, using status LED	
Bus function	Yes, using status LED	
Power consumption	2.3 W (Rev. <D0: 2.8 W)	
Additional power dissipation caused by actuators (resistive) [W]	-	
Certifications		
CE	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	
EAC	Yes	
KC	Yes	-
Interfaces		
Type	Active hub expansion module	
Variant	2x duplex LC female	
Transfer rate	100 Mbit/s	
Transfer		
Physical layer	100BASE-FX	
Half-duplex	Yes	
Full-duplex	No	
Autonegotiation	No	
Auto-MDI/MDIX	No	
Hub propagation delay	0.96 to 1 µs	
Wave length	Typ. 1300 nm Rx range: 1270 to 1380 nm Tx range: 1270 to 1380 nm	
Cable fiber type	Multimode fiber with 62.5/125 µm or 50/125 µm core diameter On both sides: Duplex LC male connector	
Optical power budget		
Glass fiber 62.5/125 µm, NA = 0.275	11 dB	
Glass fiber 50/125 µm, NA = 0.200	7.7 dB	
Cable length		
Half-duplex	Max. 400 m between 2 stations (segment length)	
POWERLINK	Max. 2 km between 2 stations (segment length)	
Electrical properties		
Electrical isolation	Power supply isolated from Ethernet (IF1 and IF2)	
Operating conditions		
Mounting orientation		
Horizontal	Yes	
Vertical	Yes	
Installation elevation above sea level		
0 to 2000 m	No limitations	
>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 (with ≥2 hubs)	-25 to 50°C (Rev. <D0: 0 to 40°C)	
Vertical mounting orientation (with ≥2 hubs)	-25 to 35°C (Rev. <D0: 0 to 35°C)	
Derating	-	
Storage	-40 to 85°C	
Transport	-40 to 85°C	

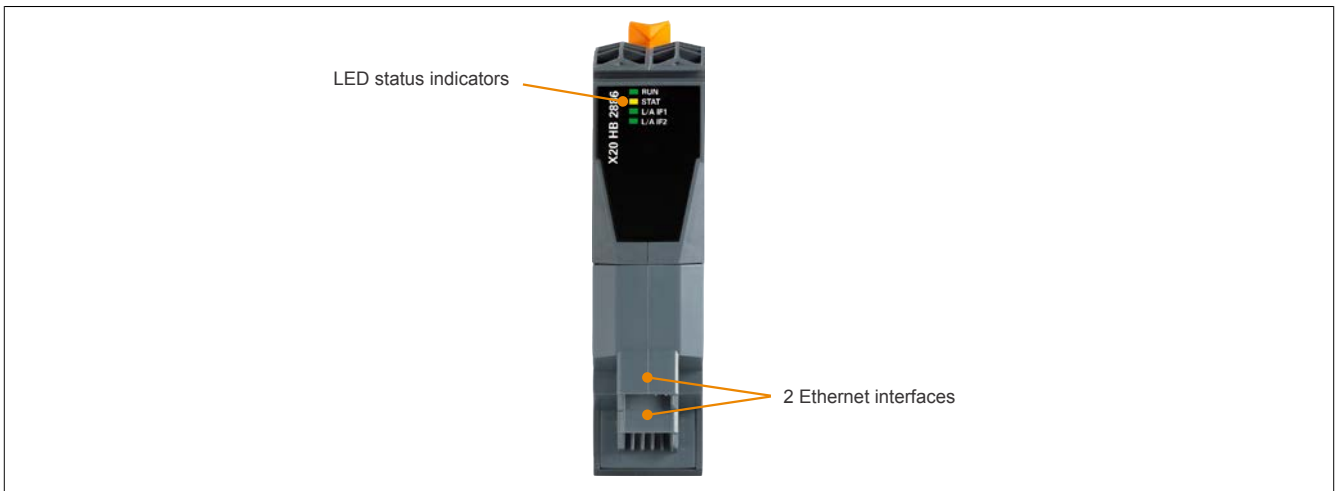
Table 2: X20HB2886, X20cHB2886 - Technical data

Model number	X20HB2886	X20cHB2886
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		
Slot	Hub expansion for X20BC8084 and X20HB8884 ¹⁾	Hub expansion for X20cBC8084 and X20cHB8884 ²⁾

Table 2: X20HB2886, X20cHB2886 - Technical data

- 1) The hardware revision of X20BC8084 and X20HB8884 must be ≥E0.
- 2) The hardware revision of X20cBC8084 and X20cHB8884 must be ≥E0.

5 Operating and connection elements



5.1 LED status indicators

Figure	LED	Color	Status	Description
	RUN	Red	On	Module inactive. Module is in the reset state.
		Green	On	Module active
	STAT	Orange	Off	Normal operation
			Blinking	No X20BC8084 or X20HB8884 found.
			On	Normal operation. However, the X20BC8084 or X20HB8884 was inserted after the system had booted.
	L/A IFx	Green	On	A link to the remote station has been established.
			Blinking	A link to the remote station has been established. Indicates Ethernet activity is taking place on the bus.

5.2 Ethernet interfaces

Figure	Description
	100 BASE-FX, Duplex LC female

5.2.1 Wiring guidelines for X20 modules with fiber optic cable

The following wiring guidelines must be observed:

- Cable fiber type: Multimode fiber with 62.5/125 μm or 50/125 μm core diameter
- On both sides: Duplex LC male connector
- Observe minimum cable flex radius (see data sheet for the cable)