X20(c)IF10X0

1 General information

Interface module for the operation of redundant CPUs.

- CPU-CPU data synchronization module for redundant CPU systems

1.1 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

1.2 Other applicable documents

For additional and supplementary information, see the following documents.

Other applicable documents

Document name	Title
MAX20	X20 system user's manual
MAEMV	Installation / EMC guide

Additional documentation

Document name	Title
MAREDSYS	Redundancy for control systems

2 Order data

Order number	Short description	Figure
	X20 interface module communication	
X20IF10X0	X20 interface module, 1 redundancy link interface 1000BASE-SX, CPU-CPU data synchronization module for controller redundancy	
X20cIF10X0	X20 interface module, coated, 1 redundancy link interface 1000BASE-SX, CPU-CPU data synchronization module for controller redundancy	

Table 1: X20IF10X0, X20cIF10X0 - Order data

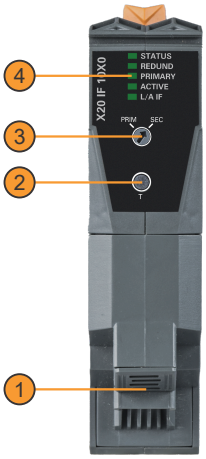
3 Technical description

3.1 Technical data

Order number	X20IF10X0	X20cIF10X0
Short description		
Communication module	CPU redundancy link module	
General information		
B&R ID code	0xC3B4	0xE239
Status indicators	Module status, bus function	
Diagnostics		
Module status	Yes, using LED status indicator and software	
Bus function	Yes, using LED status indicator and software	
Data transfer	Yes, using LED status indicator and software	
Power consumption	1.93 W	
Additional power dissipation caused by actuators (resistive) [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 - 55°C) Humidity: **B** (up to 100%) Vibration: **B** (4 g) EMC: **B** (bridge and open deck)	
LR	ENV1	
ABS	Yes	
EAC	Yes	
KC	Yes	-
Interfaces		
Fieldbus	Redundancy link	
Standard (compliance)	IEEE Std 802.3, 2002 edition, clause 38	
Variant	1x duplex LC	
Transfer rate	1 Gbit/s	
Transfer		
Physical layer	1000BASE-SX	
Wave length	850 nm	
Cable fiber type	Multimode fiber with 62.5/125 µm or 50/125 µm core diameter LC connector on both sides	
Line length		
MMF 50/125 µm	Min.: 2 m, max.: Up to 500 m	
MMF 62.5/125 µm	Min.: 2 m, max.: Up to 300 m	
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	See section "Derating".	
Storage	-40 to 85°C	
Transport	-40 to 85°C	
Relative humidity		
Operation	5 to 85%, non-condensing	Up to 100%, condensing
Storage	5 to 85%, non-condensing	
Transport	5 to 85%, non-condensing	
Mechanical properties		
Slot	Left IF slot of X20CP358x CPUs	Left IF slot of X20cCP358x CPUs

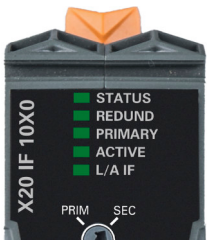
Table 2: X20IF10X0, X20cIF10X0 - Technical data

3.2 Operating and connection elements



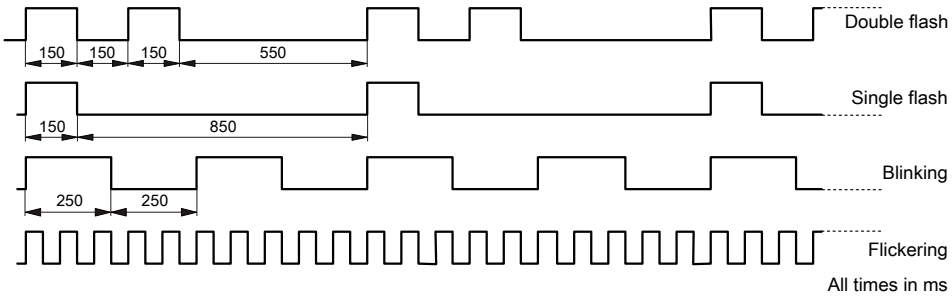
1	Ethernet connection with duplex LC interface	2	Button
3	Primary/Secondary rCPU selector switch	4	LED status indicators

3.2.1 LED status indicators

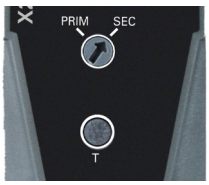
Figure	LED	Color	Status	Description
	STATUS[1)]	Green	On	Interface module active
		Red	Blinking	CPU starting up
	REDUND[1)]	Green	On	Bumpless switchover of CPU possible
			Blinking	Minor bump switchover of CPU possible
			Double flash	Major bump switchover of CPU possible
			Flickering	Application synchronization in progress
		Red	On	Switchover of CPU not possible. It is not differentiated whether it is not possible to switch over only for a short time or whether it is not possible to switch over permanently.
	PRIMARY[1)]	Green	On	rCPU = Primary CPU
			Off	rCPU = Secondary CPU
		Red	On	Impermissible operation of the selector switch: One rCPU must be configured as primary, the other as secondary. Modifying the switch position during operation is not permitted.
	ACTIVE	Green	On	rCPU actively controlling the process
			Off	rCPU inactive
	L/A IF[1)]	Green	On	Connection established to redundancy partner
			Blinking	Redundancy link active. Data traffic is taking place for synchronization purposes.
		Red	On	No connection to redundancy partner

1) This LED is a green/red dual LED.

LEDs - Blink times



3.2.2 Switch positions



The CPU can be set to primary or secondary using the "PRIM/SEC" selection switch.

During configuration, make sure that one rCPU is set as primary and the other rCPU as secondary.

Information:

It is not permitted to change the switch position during operation.

The "T" button is used for redundancy switchovers and manually synchronizing the application.

3.3 Derating

The temperatures listed in the technical data are valid when the unit is operated in the left IF slot of the X20CP358x CPUs.
When operated in the IF slot of the X20CP158x CPUs, the maximum temperature values are reduced by 5°C

3.4 Firmware

The module comes with preinstalled firmware. The firmware is part of the Automation Studio project. The module is automatically brought up to this level.

To update the firmware contained in Automation Studio, a hardware upgrade must be performed (see "Project management / Workspace / Upgrades" in Automation Help).