# X20(c)IF10X0

## 1 General information

### 1.1 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 |

### 1.2 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

### 1.3 Order data

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

Table 1: X20IF10X0, X20cIF10X0 - Order data

### 1.4 Module description

Interface module for redundant operation of controllers.

- Controller-Controller data synchronization module for controller redundancy system

# 2 Technical description

## 2.1 Technical data

| Order number | X20IF10X0 | X20cIF10X0 |
|---|---|---|
| **Short description** | | |
| Communication module | Controller 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<br>IP20, Ta (see X20 user's manual)<br>FTZÚ 09 ATEX 0083X | |
|    UL | cULus E115267<br>Industrial control equipment | |
|    HazLoc | cCSAus 244665<br>Process control equipment<br>for hazardous locations<br>Class I, Division 2, Groups ABCD, T5 | |
|    DNV | Temperature: **B** (0 to 55°C)<br>Humidity: **B** (up to 100%)<br>Vibration: **B** (4 g)<br>EMC: **B** (bridge and open deck) | |
|    LR | ENV1 | |
|    ABS | Yes | |
|    BV | **EC33B**<br>Temperature: 5 - 55°C<br>Vibration: 4 g<br>EMC: Bridge and open deck | |
|    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<br>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 | |

Table 2: X20IF10X0, X20cIF10X0 - Technical data

| Order number | X20IF10X0 | X20cIF10X0 |
|---|---|---|
| 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 X20CP368x PLC | Left IF slot of X20cCP368x PLC |

Table 2: X20IF10X0, X20cIF10X0 - Technical data

## 2.2 Operating and connection elements
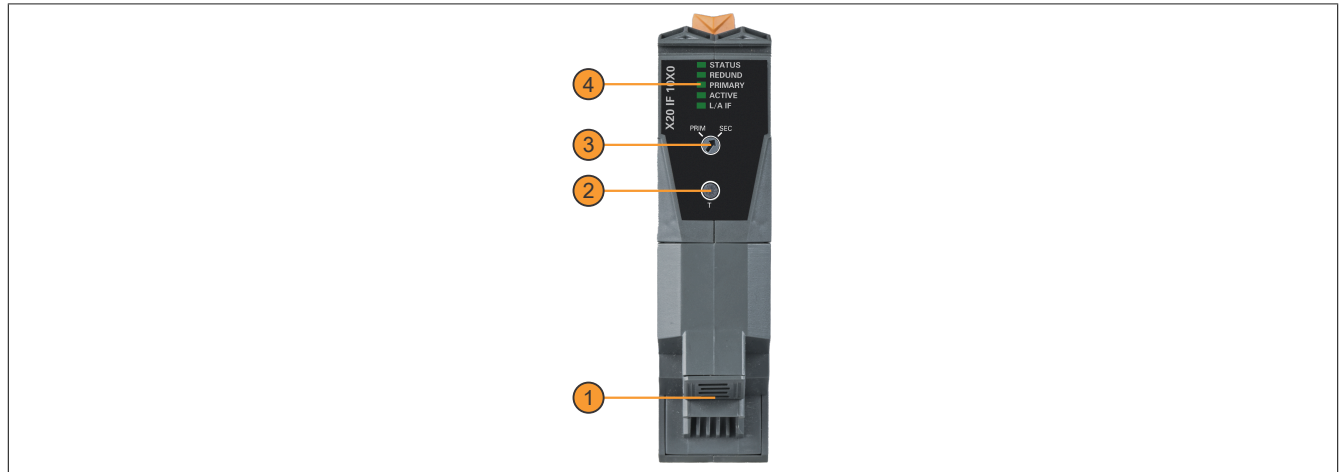


| 1 | Ethernet connection with duplex LC interface | 2 | Button |
|---|---|---|---|
| 3 | Primary/Secondary controller selector switch | 4 | LED status indicators |

### 2.2.1 LED status indicators

| Figure | LED | Color | Status | Description |
|---|---|---|---|---|
|  | STATUS[1] | Green | On | Interface module active |
| | | Red | Blinking | The controller is starting up. |
| | REDUND[1] | Green | On | A bumpless switchover of the controller is possible. |
| | | | Blinking | A minor bump switchover of the controller is possible. |
| | | | Double flash | A major bump switchover of the controller is possible. |
| | | | Flickering | Application synchronization in progress |
| | | Red | On | A switchover not possible of the controller is not possible. No distinction is made here as to whether a switchover is only temporarily not possible or whether switching over is permanently not possible. |
| | PRIMARY[1] | Green | On | The redundant controller is the primary controller. |
| | | | Off | The redundant controller is the secondary controller. |
| | | Red | On | Impermissible operation of the selector switch: One controller must be configured as primary, the other as secondary. The switch position is not permitted to be changed during operation. |
| | ACTIVE | Green | On | The redundant controller has active control of the process. |
| | | | Off | The redundant controller is not active. |
| | 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
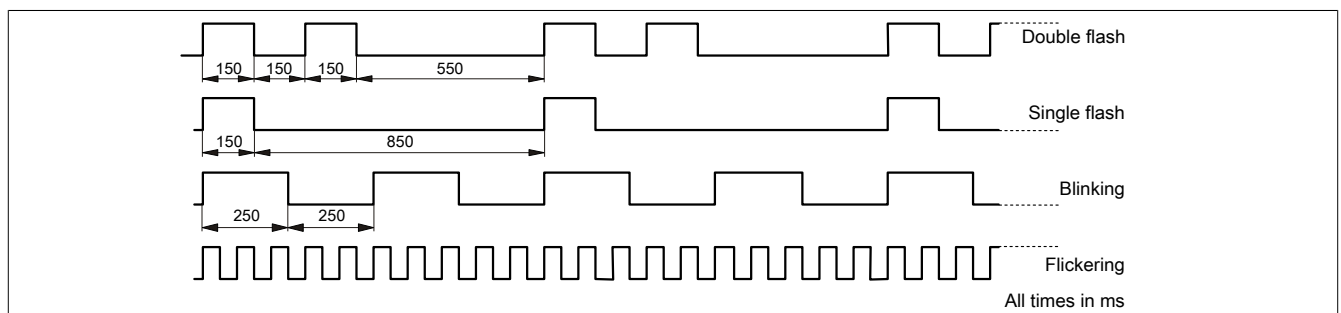
### 2.2.2 Switch positions
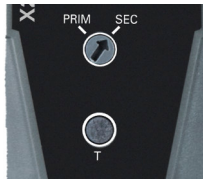


Selector switch "PRIM SEC" can be used to set the controller as a primary or secondary controller.

When configuring, it is important to ensure that one controller is configured as primary and the other controller 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.

### 2.3 Derating

The temperatures specified in the technical data apply to operation in the left IF slot of X20CP368x controllers. When operated in the IF slot of X20CP168x controllers, the maximum temperature specifications are reduced by 5°C.

# 3 Commissioning

### 3.1 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.

A hardware upgrade must be performed to upgrade the firmware included in Automation Studio (see Help "Project management - Workspace - Upgrades" in Automation Help).