

# X20(c)BM31

Data sheet  
2.37 (February 2025)



**Publishing information**

B&R Industrial Automation GmbH

B&R Strasse 1

5142 Eggelsberg

Austria

Telephone: +43 7748 6586-0

Fax: +43 7748 6586-26

[office@br-automation.com](mailto:office@br-automation.com)

**Disclaimer**

All information in this document is current as of its creation. The contents of this document are subject to change without notice. B&R Industrial Automation GmbH assumes unlimited liability in particular for technical or editorial errors in this document only (i) in the event of gross negligence or (ii) for culpably inflicted personal injury. Beyond that, liability is excluded to the extent permitted by law. Liability in cases in which the law stipulates mandatory unlimited liability (such as product liability) remains unaffected. Liability for indirect damage, consequential damage, business interruption, loss of profit or loss of information and data is excluded, in particular for damage that is directly or indirectly attributable to the delivery, performance and use of this material.

B&R Industrial Automation GmbH notes that the software and hardware designations and brand names of the respective companies used in this document are subject to general trademark, brand or patent protection.

Hardware and software from third-party suppliers referenced in this document is subject exclusively to the respective terms of use of these third-party providers. B&R Industrial Automation GmbH assumes no liability in this regard. Any recommendations made by B&R Industrial Automation GmbH are not contractual content, but merely non-binding information for which no liability is assumed. When using hardware and software from third-party suppliers, the relevant user documentation of these third-party suppliers must additionally be consulted and, in particular, the safety guidelines and technical specifications contained therein must be observed. The compatibility of the products from B&R Industrial Automation GmbH described in this document with hardware and software from third-party suppliers is not contractual content unless this has been separately agreed in individual cases; in this respect, warranty for such compatibility is excluded in any case, and it is the sole responsibility of the customer to verify this compatibility in advance.

**Version history**

B&R makes every effort to keep documents as current as possible. The most current versions are available for download on the B&R website ([www.br-automation.com](http://www.br-automation.com)).

# 1 General information

## 1.1 Other applicable documents

For additional and supplementary information, see the following documents.

### Other applicable documents

| Document name | Title                                    |
|---------------|------------------------------------------|
| MAX20         | <a href="#">X20 System user's manual</a> |

## 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



### 1.2.1 Starting temperature

The starting temperature describes the minimum permissible ambient temperature in a voltage-free state at the time the coated module is switched on. This is permitted to be as low as -40°C. During operation, the conditions as specified in the technical data continue to apply.



#### Information:

It is important to absolutely ensure that there is no forced cooling by air currents in the closed control cabinet, e.g. due to the use of a fan or ventilation slots.

## 1.3 Order data

| Order number | Short description                                                                                           | Figure                                                                              |
|--------------|-------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|              | <b>Bus modules</b>                                                                                          |                                                                                     |
| X20BM31      | X20 bus module, for double-width modules, 24 VDC keyed, internal I/O power supply connected through         |  |
| X20cBM31     | X20 bus module, coated, for double-width modules, 24 VDC keyed, internal I/O power supply connected through |                                                                                     |

Table 1: X20BM31, X20cBM31 - Order data

## 1.4 Module description

The bus module serves as a basis for all double-width X20 I/O modules. The internal I/O supply is interconnected.

- Bus module for double-width I/O modules
- The internal I/O supply is interconnected

## 2 Technical description

### 2.1 Technical data

| Order number                                                     | X20BM31                                                                                                                                   |                        | X20cBM31 |
|------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|------------------------|----------|
| Short description                                                |                                                                                                                                           |                        |          |
| Bus module                                                       | Bus module, for double-width modules, 24 VDC keyed, internal I/O power supply connected through                                           |                        |          |
| General information                                              |                                                                                                                                           |                        |          |
| Power consumption                                                |                                                                                                                                           |                        |          |
| Bus                                                              | 0.13 W                                                                                                                                    |                        |          |
| Internal I/O                                                     | -                                                                                                                                         |                        |          |
| 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>B</b> (0 to 55°C)<br>Humidity: <b>B</b> (up to 100%)<br>Vibration: <b>B</b> (4 g)<br>EMC: <b>B</b> (bridge and open deck) |                        |          |
| CCS                                                              | Yes                                                                                                                                       | -                      |          |
| LR                                                               | ENV1                                                                                                                                      |                        |          |
| KR                                                               | Yes                                                                                                                                       |                        |          |
| ABS                                                              | Yes                                                                                                                                       |                        |          |
| BV                                                               | <b>EC33B</b><br>Temperature: 5 - 55°C<br>Vibration: 4 g<br>EMC: Bridge and open deck                                                      |                        |          |
| KC                                                               | Yes                                                                                                                                       | -                      |          |
| I/O power supply                                                 |                                                                                                                                           |                        |          |
| Nominal voltage                                                  | 24 VDC                                                                                                                                    |                        |          |
| Permissible contact load                                         | 10 A                                                                                                                                      |                        |          |
| 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                                                                                                                               |                        |          |
| 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                                            |                                                                                                                                           |                        |          |
| Pitch                                                            | 25 <sup>+0.2</sup> mm                                                                                                                     |                        |          |

Table 2: X20BM31, X20cBM31 - Technical data

## 2.2 Voltage routing

