X20BM13, X20BM16, X20(c)BM33, X20BM36, X20BM23, X20BM26

1 General information

Bus modules serve as the basis for all SafeIO modules.
Depending on the bus module type, the internal I/O power supply is connected through or interrupted to the left.

With X20BMx6 bus modules, fixed addresses can be set via node number switches. This type of module at the beginning of an X20 block always generates a unique address. The subsequent modules then automatically increment from this address. This simple feature greatly increases the flexibility of applications.

Another advantage: Addresses can be set independently of specific I/O modules; only the necessary bus modules are required, which is logistically advantageous in terms of the cost and diversity of parts.

	X20BM13	X20BM16	X20BM33	X20BM36	X20BM23	X20BM26
Bus module type	X20 SafeIO modules				X20 SafeIO power supply module	
Formation of potential groups possible	No				Yes	
Internal I/O power supply	Connected through				Interrupted to the left	
Manual node number assignment possible	No	Yes	No	Yes	No	Yes
Single-width	Yes		No			

1.1 Coated modules

Coated modules are X20 modules with a protective coating for the electronics component. This coating protects X20c modules from condensation.
The modules' electronics are fully compatible with the corresponding X20 modules.

> **Information:**
>
> **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

Contrary to the specifications for X20 system modules without safety certification and despite the tests performed, X20 safety modules are **NOT suited for applications with corrosive gases (EN 60068-2-60)!**

2 Order data

X20BM13 X20BM16 X20BM33 X20BM36 X20BM23 X20BM26

Model number	Short description
	Bus modules
X20BM13	X20 bus module, for X20 SafeIO modules, internal I/O power supply continuous, single-width
X20BM16	X20 bus module, for X20 SafeIO modules, with node number switch, internal I/O power supply continuous, single-width
X20BM33	X20 bus module, for X20 SafeIO modules, internal I/O power supply continuous
X20cBM33	X20 bus module, coated, for X20 SafeIO modules, internal I/O power supply continuous
X20BM36	X20 bus module, for X20 SafeIO modules, with node number switch, internal I/O power supply continuous
X20BM23	X20 power supply bus module, for X20 SafeIO power supply modules, internal I/O power supply interrupted to the left
X20BM26	X20 power supply bus module, for X20 SafeIO power supply modules, with node number switch, internal I/O power supply interrupted to the left

Table 1: X20BM13, X20BM16, X20BM33, X20cBM33, X20BM36, X20BM23, X20BM26 - Order data

3 Technical data

Model number	X20BM13	X20BM16	X20BM33	X20cBM33	X20BM36	X20BM23	X20BM26
Short description							
Bus module	Bus module, for X20 SafeIO modules, internal I/O power supply continuous	Bus module, for X20 SafeIO modules, with node number switch, internal I/O power supply continuous	Bus module, for X20 SafeIO modules, internal I/O power supply continuous		Bus module, for X20 SafeIO modules, with node number switch, internal I/O power supply continuous	Power supply bus module, for X20 SafeIO power supply modules, internal I/O power supply interrupted to the left	Power supply bus module, for X20 SafeIO power supply modules, with node number switch, internal I/O power supply interrupted to the left
General information							
Power consumption							
Bus	0.13 W						
Internal I/O	-						
Certifications							
CE	Yes						
KC	-		Yes	-		Yes	-
EAC	Yes						
UL	cULus E115267 Industrial control equipment						
HazLoc	cCSAus 244665 Process control equipment for hazardous locations Class I, Division 2, Groups ABCD, T5	In preparation	cCSAus 244665 Process control equipment for hazardous locations Class I, Division 2, Groups ABCD, T5				
ATEX	Zone 2, II 3G Ex nA nC IIA T5 Gc IP20, Ta (see X20 user's manual) FTZÚ 09 ATEX 0083X	In preparation	Zone 2, II 3G Ex nA nC IIA T5 Gc IP20, Ta (see X20 user's manual) FTZÚ 09 ATEX 0083X				
DNV GL	In preparation		Temperature: **B** (0 - 55°C) Humidity: **B** (up to 100%) Vibration: **B** (4 g) EMC: **B** (bridge and open deck)		In preparation	Temperature: **B** (0 - 55°C) Humidity: **B** (up to 100%) Vibration: **B** (4 g) EMC: **B** (bridge and open deck)	In preparation
LR	-		ENV1		-	ENV1	-
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						
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	-						
Storage	-40 to 85°C						
Transport	-40 to 85°C						
Relative humidity							
Operation	5 to 95%, non-condensing			Up to 100%, condensing	5 to 95%, non-condensing		
Storage	5 to 95%, non-condensing						
Transport	5 to 95%, non-condensing						
Mechanical properties							
Spacing	$12.5^{+0.2}$ mm		$25^{+0.2}$ mm				

Table 2: X20BM13, X20BM16, X20BM33, X20cBM33, X20BM36, X20BM23, X20BM26 - Technical data

4 Voltage routing

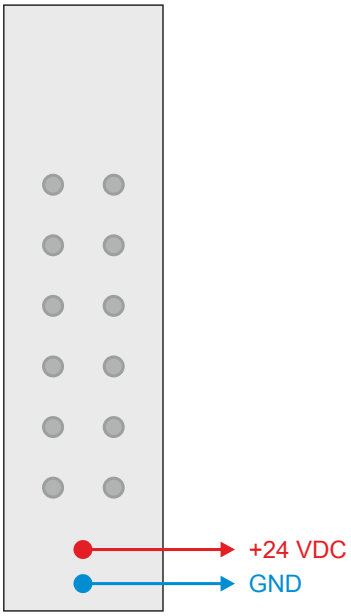

Figure 1: X20BM2x - Voltage routing

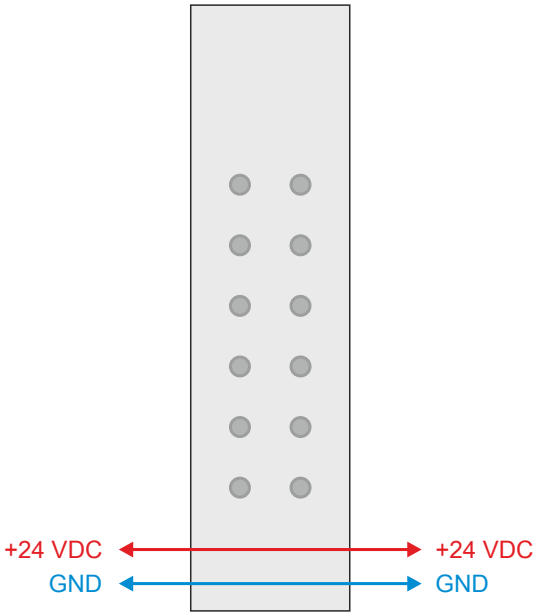

Figure 2: X20BM1x / X20BM3x - Voltage routing

Voltage routing identification

A symbol is printed on the locking lever on bus modules interrupted to the left. This makes it clear from the outside of a fully assembled X20 system that bus modules interrupted to the left are used in this slot.

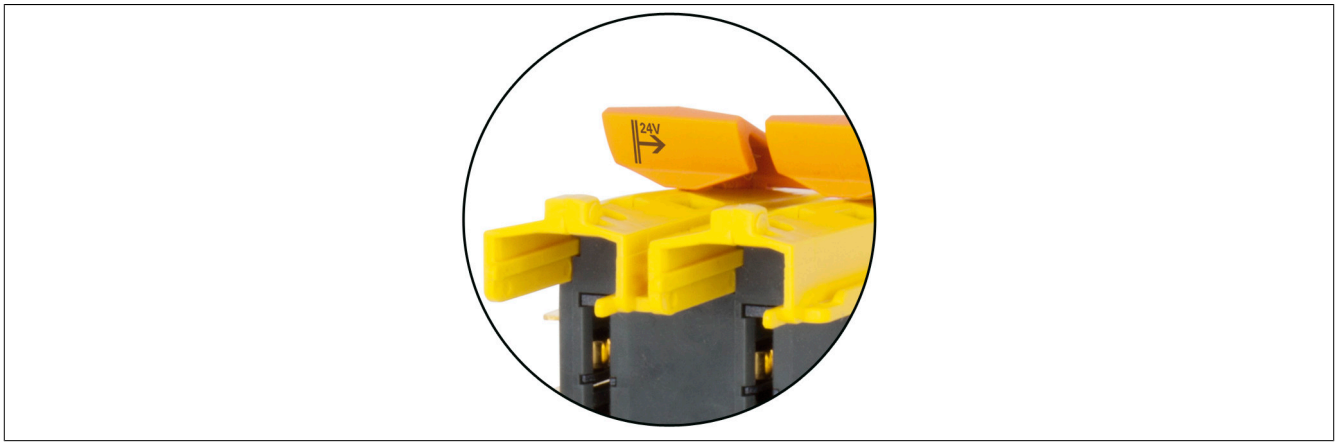

Figure 3: X20BM2x - Voltage routing identification

5 Manual node number assignment in the X20 safe I/O system

With the X20 safety bus modules X20BM16, X20BM26 and X20BM36, permanent addresses can be set using node number switches. One of these modules placed at the beginning of an X20 safety block always creates a unique address. The subsequent module addresses are assigned automatically in ascending order starting with this address. This simple feature greatly increases the flexibility of applications.

Another advantage: Addresses can be set independently of which specific I/O modules are used. All that is required are the respective bus modules. This provides logistical advantages with respect to cost and the variety of parts.

5.1 Node number switches

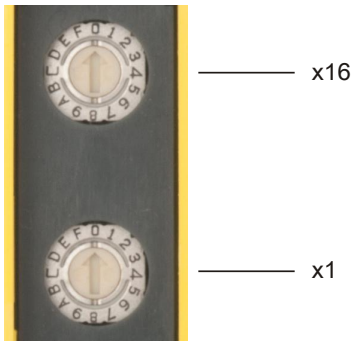

Figure 4: X20BMx6 - Node number switches

The X2X Link address of the module is set using the node number switches (0x01 to 0xFD).
Setting node number 0x00 causes the X2X Link address to be assigned automatically.

Node number switch identification

Symbols are printed on the locking lever of bus modules with node number switches. This provides a way to see from outside that the X20 system mounted in this slot is using node number switches.

Figure 5: X20BMx6 - Node number switch identification

6 Version history

Version	Date	Comment
1.141	April 2019	• Chapter 3 "Technical data": Updated standards.
1.140	February 2019	• Chapter 3 "Technical data": Limited installation elevation to 2000 m. • Updated standards. • Editorial changes.
1.120	January 2018	Added X20BM16 bus module. • Chapter 3 "Technical data": Updated standards.
1.101	November 2016	Added bus module X20cBM23. • Chapter 3 "Technical data": Updated standards.
1.100	February 2016	Merged coated/uncoated modules. Added bus module X20BM13. • Chapter 3 "Technical data": Updated technical data.
1.80	August 2014	• Chapter 3 "Technical data": Added I/O power supply. • Chapter 4 "Voltage routing": Updated marking for voltage routing. • Chapter 5.1 "Node number switches": Updated marking for node number switch.
1.50	March 2012	Bus modules X20BM23, X20BM26 and X20BM36 included
1.00	March 2012	First edition as a product-specific manual

Table 3: Version history

7 EC declaration of conformity

This document was originally written in the German language. The German edition therefore represents the original documentation in accordance with the 2006/42/EC Machinery Directive. Documents in other languages are to be interpreted as translations of the original documentation.

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The place of jurisdiction, in accordance with article 17 of the European Convention on Courts of Jurisdiction and Enforcement, is A-4910

Ried im Innkreis, Austria, commercial register court: Ried im Innkreis, Austria

Commercial register number: FN 111651 v.

The place of fulfillment in accordance with article 5 of the European Convention on Courts of Jurisdiction and Enforcement is A-5142 Eggelsberg, Austria

VATIN: ATU62367156

The EC declarations of conformity for B&R products can be downloaded from the B&R website www.br-automation.com.