

# X20TB1F

## 1 General information

X20 24 VDC modules with 16 connections are wired using the X20TB1F terminal block.

- Tool-free wiring with push-in technology
- Simple wire release using a screwdriver
- Ability to label each terminal
- Plain text labeling also possible
- Test access for standard probes
- Can be customer-coded

## 2 Order data


Model number	Short description	Figure
	<b>Terminal blocks</b>	
X20TB1F	X20 terminal block, 16-pin, 24 VDC keyed	

Table 1: X20TB1F - Order data

### Information:

To avoid damaging the terminals, the **B&R X20AC0SD1** screw driver should be used.

### 3 Technical data

Model number	X20TB1F
<b>General information</b>	
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
DNV GL	Temperature: <b>B</b> (0 - 55°C) Humidity: <b>B</b> (up to 100%) Vibration: <b>B</b> (4 g) EMC: <b>B</b> (bridge and open deck)
LR	ENV1
KR	Yes
<b>Terminal block</b>	
Number of pins	16
Type of terminal block	Push-in terminal
Push-in force per contact	Typ. 10 N
Cable type	Only copper wires (no aluminum wires!)
Wire stripping length	7 to 9 mm
Connection cross section	
Solid wires	0.08 to 1.50 mm <sup>2</sup> / 28 to 16 AWG
Fine-stranded wires	0.25 to 1.50 mm <sup>2</sup> / 24 to 16 AWG
With wire end sleeves	0.25 to 0.75 mm <sup>2</sup> / 24 to 20 AWG
Distance between contacts	
Left - Right	4.2 mm
Above - Below	8.25 mm
<b>Electrical properties</b>	
Nominal voltage	24 VDC
Max. voltage	50 VDC
Nominal current <sup>1)</sup>	2 A / contact
Contact resistance	≤5 mΩ
<b>Ambient conditions <sup>2)</sup></b>	
Temperature	
Operation	Corresponds to the X20 module used
Relative humidity	
Operation	Corresponds to the X20 module used

Table 2: X20TB1F - Technical data

- 1) Take the respective limit data for the I/O modules into consideration!  
2) Identical for operation, storage and transport.

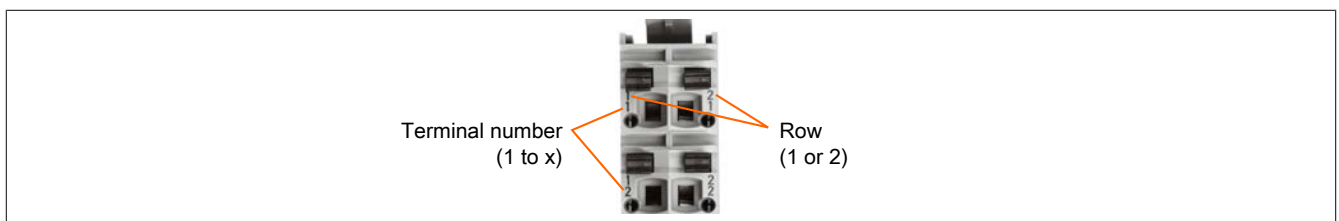
## Warning!

**It is possible to come into contact with parts that carry voltage when the terminal block is disconnected. For this reason, working on a disconnected terminal block is not permitted at voltages starting at 50 V.**

### 4 Unique terminal numbering

Each terminal connection is unique and can be identified by the numbers in the plastic. In this way, terminal assignments can be clearly assigned in the planning stage without any danger of mix-up.

- Upper number: Row number 1 or 2
- Lower number: Terminal numbers 1 to 3 (6-pin terminal block), 1 to 6 (12-pin terminal block), 1 to 8 (16-pin terminal block)



## 5 Wiring

In order to achieve a secure connection in the terminal blocks, wires must be stripped accordingly.

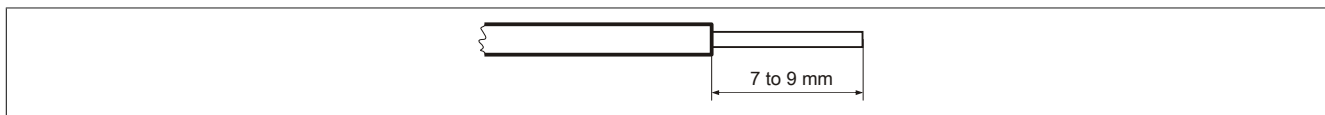


Figure 1: Wire stripping length for a secure connection

### Information:

The wire stripping length is not permitted to be more or less than 7 to 9 mm.

## 6 Cable holding force of contacts

To ensure secure contact of a cable with the terminal block, it is not permitted to be subjected to too much tension. If the cable holding force is exceeded, the cable will disconnect from the terminal block and result in a malfunction.

Cable in mm <sup>2</sup>	Fine-stranded wires			Solid wires				With wire end sleeves	
	0.25	1.5	2.5	0.08	0.25	1.5	2.5	0.25	1.5
Standard specification (min. value in newtons)	12.5	40	50	4	12.5	40	50	12.5	40

### Information:

Fine-stranded wires must be twisted in order to maintain the cable holding forces.

#### Use of wire end sleeves

In order to achieve an optimal cable holding force, the following points must be observed:

- Square crimping with the roughest possible surface should be carried out.
- The end of the wire end sleeve should not be cut in order to avoid a reduction of the cross section.
- No wires should protrude at the end of the sleeve.
- The wire end sleeve must be inserted completely to the end.
- The length of the wire end sleeve corresponds to the [wire stripping length](#).

## 7 Access for test probes

Each contact is equipped with an additional opening for using a test probe.

