



TB20-C, Bus coupler PROFIBUS-DP

PROFIBUS-DP

- Modules can be replaced during operation (hot-swapping)
- 24 VDC power supply
- Integrated power supply unit for powering peripheral modules (2.5 A)
- Supplies the system's I/O voltage (24 VDC)
- USB device port for online diagnostics, configuring parameters, setup, and firmware updates with TB20 ToolBox
- TB20 ToolBox simulation for setting up the I/O system without a higher-level controller in order to test the system's operation (I/O check)
- PROFIBUS DP slave as defined in EN 50170/IEC 61158
- Supports all PROFIBUS baud rates
- DP-V0 and DP-V1 support
- Up to 64 peripheral modules
- Up to 244 bytes of input data and 244 bytes of output data
- One class 1 master connection with 240 bytes of payload data
- Up to three class 2 master connections with 240 bytes of payload data (as a DP-V1 slave)
- I&M data
- 3 LEDs, one of them bi-color
- Concealed "factory reset" switch for restoring the module to its factory settings

The PROFIBUS-DP bus coupler is designed to connect a PROFIBUS bus to TB20 peripheral modules. It supports the DP-V0 and DP-V1 protocols. It will recognize all connected peripheral modules and assign each module the corresponding inputs/outputs from the process image table. A functioning TB20 configuration will always require a bus coupler and at least one peripheral module, but can accommodate up to 64 modules of any kind connected in series with the bus coupler. The bus coupler supports hot-swap for replacing modules during operation.

Bit packing: Starting with firmware version 1.20, the states of 2-bit and 4-bit I/O modules can be packed together in bytes, making it possible to take full advantage of all the space in the process image table.

Parameters

Diagnostic alarm: On | Off

Process alarm: On | Off

Pull/plug alarm: On | Off

Startup when expected/actual configuration differ: On | Off (hot-swapping allowed: Yes | No)

Identifier-related diagnostics: On | Off

Submodule status: On | Off

Channel-related diagnostics: On | Off

Technical specifications

General information	
Order number	600-151-1AA11
Article name	TB20-C, PROFIBUS-DP bus coupler
Scope of delivery	Bus coupler PROFIBUS-DP, 24 V power supply connector, bus cover element, base module
Dimensions (DxWxH)	110 x 35 x 73 mm
Weight	Approx. 115 g
PROFIBUS interface	
Number	1
Protocol	PROFIBUS DP/V0 & DP/V1

Transmission rate	9.6 Kbaud ... 12 Mbaud, automatic detection
I/O image size	244/244 bytes
Parameter configuration length	244 bytes
Interface	RS485
Connection	9-pin D-sub female connector
USB interface	
Number	1
Protocol	Full-speed USB 1.1 device
Connection	Mini-USB
Isolation voltage	1.5 kV
Electrical isolation	Yes
Number of modules that can be connected in series	64
Voltage supply	24 VDC, 18–28 VDC
Current draw	
Current draw without modules (internal)	75 mA
Power supply for modules	5 V DC, max 2.5 A
Power dissipation	Max. 8 W
Installation position	Any
Ambient conditions	
Ambient temperature	0 °C ... +60 °C
Transport and storage temperature	-20 °C ... +80 °C
Relative air humidity	95 % r H without condensation
Protection rating	IP 20
Certifications	CE, UL
UL	
Surrounding Air Temperature	0 °C ... +50 °C
Pollution degree	2
CE	
Noise immunity	DIN EN 61000-6-2 "EMC Immunity"
Interference emission	DIN EN 61000-6-4 "EMC Emission"
Vibration and shock resistance	DIN EN 60068-2-8:2008 "Vibration", DIN EN 60068-27:2010 "Shock"
RoHS	Yes
REACH	Yes