



## TB20 bus coupler PROFINET

A functioning TB20 configuration will always require a bus coupler and at least one peripheral module.

**Note: Individual modules cannot be combined with the IO systems of other manufacturers.**

The PROFINET bus coupler is designed to connect a PROFINET bus to up to 63 modules of any kind connected in series with the bus coupler. The bus coupler supports hot-swapping for replacing modules during operation.

In addition, it will recognize all connected peripheral modules and assign each module the corresponding inputs/outputs from the process image table.

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### Features

- ✔ Modules can be replaced during operation (hot-swapping)
- ✔ 24 V DC 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 commissioning the I/O system without a higher-level controller in order to test the system's operation (I/O check)
- ✔ Concealed "factory reset" switch for restoring the module to its factory settings
- ✔ I/O device as per PROFINET IO (IEC 61158-6-10)
- ✔ Integrated 2-port switch
- ✔ Full-duplex transmission rate of 100 Mbps
- ✔ 340 byte I/O data
- ✔ Up to 63 peripheral modules
- ✔ Conformance Class C
- ✔ Media Redundancy Protocol (MRP)
- ✔ Automatic addressing / hot-swapping (LLDP, DCP)
- ✔ Topology detection
- ✔ I&M data
- ✔ Diagnostic alarms, process alarms, pull/plug alarms
- ✔ Integration using GSDML file
- ✔ 7 LEDs, one of them of color

### General information

Order number	600-180-1AA11
Article name	TB20-C, PROFINET IO bus coupler
Scope of delivery	Bus coupler PROFINET IO, 24 V power supply connector, bus cover element, base module
Dimensions (DxWxH)	73 x 35 x 110 mm
Weight	Approx. 115 g
Number of modules that can be connected in series	63
Voltage supply	24 V DC, 18...28 V DC
Power dissipation	Max. 8 W
Permissible cable cross-section	AWG 16 .. 22
Mounting position	Any

### PROFINET interface

Number	2
Protocol	PROFINET IO as defined in IEC 61158-6-10
Physical layer	Ethernet
Transmission rate	100 Mbps full duplex
I/O image size	340 bytes
Connection	RJ45
integrated switch	Yes
Features	Conformance Class C, Media Redundancy Protocol (MRP), automatic addressing / topology detection (LLDP, DCP), PTCP, statistics counter

Alarm functions	Diagnostic alarms, process alarms, pull/plug alarms
Minimum cycle time	250 µsec.
IRT bridge delay	< 3 µsec.

## USB interface

Number	1
Protocol	Full-speed USB 1.1 device
Connection	Mini-USB
Isolation voltage	1.5 kV
Electrical isolation	Yes

## Current draw

Current draw without modules (internal)	75 mA
Power supply for modules	5 V DC, max 2.5 A

## 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 60068-2-6:2008 „Vibration“, DIN EN 60068-2-27:2010 „Shock"