

AT HOME THROUGHOUT THE WORLD!

TB20. Distributed Fieldbus I/O System

By using the TB20 I/O System you implement enduring and forward-looking automation concepts within your facilities.

AT HOME THROUGHOUT THE WORLD



Energy and environment

High energy consumption not only results in costs. A higher level of consumption can also suggest a defect or imminent maintenance work for machinery and drives. Only those who examine their energy needs precisely are sustainably prepared for increasing energy prices and new legal specifications. With the energy meter of the I/O system TB20, you can accurately analyze the energy needs of your power consumers and intervene in a timely fashion to avoid defects..



Packaging industry

In the case of serial machinery, like, for example, in the packaging industry, one is often faced with the problem that different bus systems must be deployed depending upon the country. The variety of bus couplers for the TB20 I/O system offers you the decisive advantage. Depending upon the target market and the application, the appropriate bus coupler is used while the module configuration remains unchanged.



Measurement technology

The recording of measurement data can be realized with a variety of fieldbuses. The distributed I/O system TB20 is available for the most common fieldbus systems. Thanks to the compact design of the system, the precise recording of measurement data can be carried out in even the most cramped areas with the usual tools, for example, with LabVIEW.



Chemicals industry

Reliability and precision are absolutely necessary when liquids need to be distributed and conveyed in complex pipe systems. It is thus important to avoid wiring errors during installation. With the free TB20 ToolBox software, you can import the already existing labeling from your plans and thus avoid a source of error.

CHARACTERISTICS



Bus couplers

All bus couplers feature an integrated power module. However, power modules are also available separately for users interested in segmenting the power supply for the I/O modules in their system.

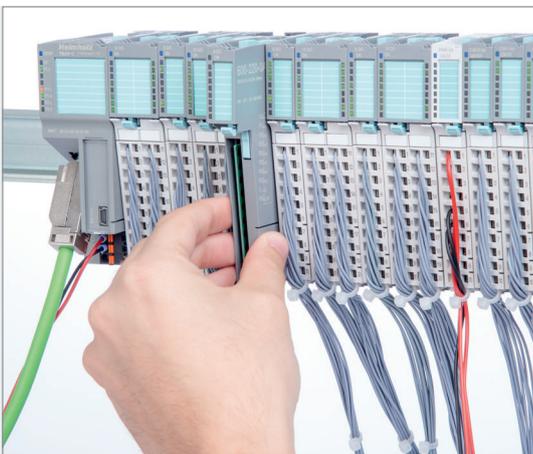
Bus couplers for PROFINET, PROFIBUS, CAN bus, Modbus/TCP, EtherNet/IP, and EtherCAT are currently available. Our portfolio is designed as an open and vendor-neutral fieldbus system and will gradually be expanded and added to.



Three-component module design

TB20 I/O modules have three components: a separate front connector, an electronic module, and a base module. A locking mechanism ensures that all modules can be quickly mounted and securely attached on DIN rails while guaranteeing a reliable electrical connection. Likewise, all modules can be easily and quickly removed for maintenance and/or system expansions.

Modules are delivered as complete assembled units (i.e., as a single assembly) and can be installed immediately.



Hot-plug capability

Individual modules can be easily and quickly replaced while the remaining system continues to run. This electronic module hot-plug functionality helps keep downtimes to a minimum.



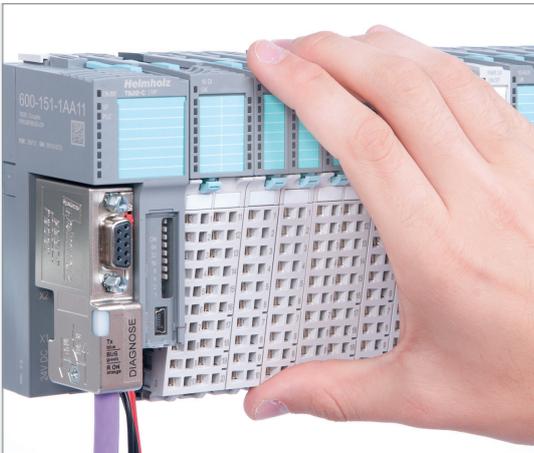
Freely definable auxiliary contact (auxiliary terminal)

This additional terminal can be used flexibly and from end to end, e.g., in order to provide an additional voltage as a reference ground or implement shielding as necessary. This flexibility makes wiring faster and frees up additional distributor terminals.



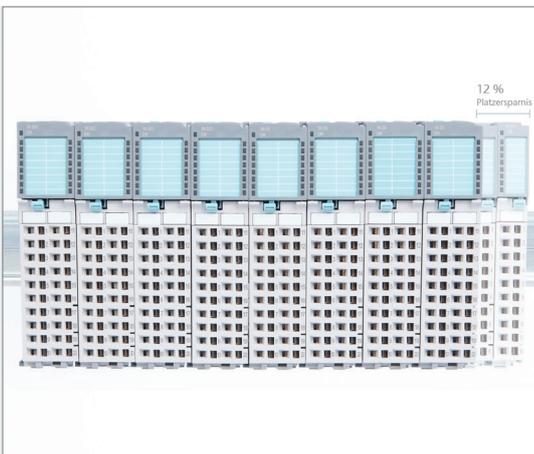
Clear, unique labels

The system's design ensures that each channel will be labeled clearly and uniquely. In fact, labels can be easily read during operation, making it possible to directly determine which terminals correspond to which LED indicators. Connector terminal assignment labels are placed on the electronic module, and the label strips can be used with any laser printer.



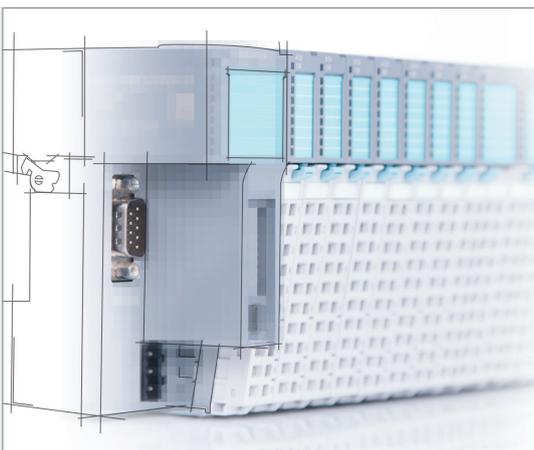
Ideal handling, achieved with a compact design

The system's ergonomic design makes it easy to handle. Moreover, the space-saving compact dimensions behind it do not take away from the system components' heavy-duty sturdiness and reliable electrical contacts for industrial applications, which are further complemented by an IP20 protection rating.



Total Solution Concept

An ideal variety of modules ensures that users will be able to easily select the products they need and conveniently order them. In addition, no additional accessories or add-on parts are required for any unit, and each individual I/O module is characterized by unparalleled quality and a large number of functionalities that come as standard. Moreover, using modules with up to 16 digital or 8 analog channels and digital mixed I/O modules makes it possible to implement a powerful system with a compact configuration.



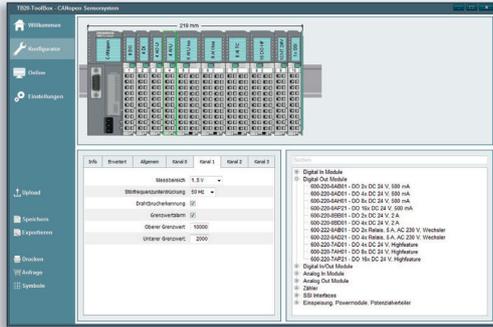
Free product macros for electrical engineering software

To be able to quickly and efficiently integrate your TB20 distributed I/O system into your designs, we provide you with free macros for WSCAD* and EPLAN Electric P8 (compatible with version 2.0 and higher).

* WSCAD is a registered trademark of WSCAD electronic GmbH.

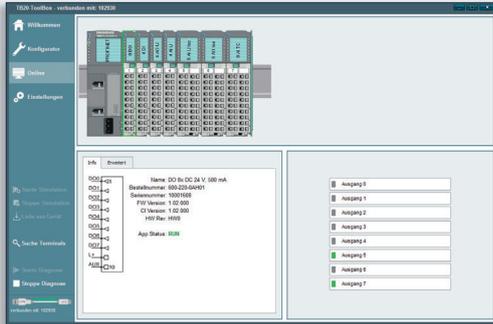
** EPLAN and EPLAN Electric P8 are registered trademarks of EPLAN Software & Service GmbH & Co. KG.

TB20 TOOLBOX



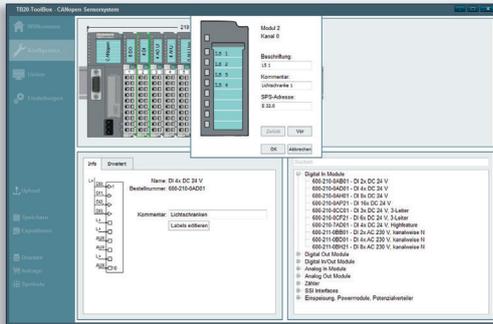
Smart planning and configuration

TB20 ToolBox makes it easy to methodically design TB20 systems. From selecting and positioning components and configuring their parameters to printing label strips and documentation for projects, every single step is combined into one single intuitive software package. Integrated terminal mapping, system width calculations, and current-carrying capacity monitoring all make it possible to quickly design systems without making any mistakes.



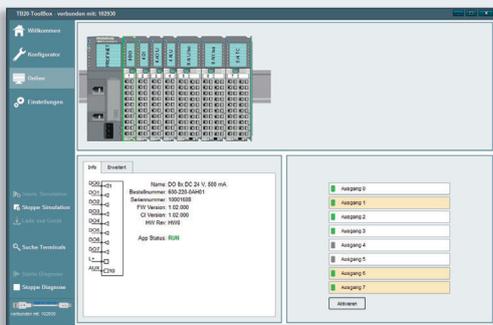
Real-time diagnosis

TB20 ToolBox is a practical setup and servicing tool used to import configurations, display a system's current status, and analyze parameter configuration and setup errors. An I/O map, the current parameter configuration, and diagnostic messages can all be displayed in real-time.



Importing/exporting symbols

TB20 ToolBox can be used to define the following for each channel in the configuration: labeling of the strip label, a symbol description, and a PLC address. This information can be imported or exported in a variety of formats, making it possible to efficiently use TB20 ToolBox as a configuration tool together with electrical engineering software and with PLC programming software.



Simulation (I/O check)

The option of setting up TB20 I/O systems without a higher-level controller by directly reading and writing to inputs and outputs and configuring parameters for functionality testing purposes makes it easier to check the system's wiring and entire design.



TB20 ToolBox Training

A few minutes is all you need to learn more about our ToolBox and how to use it.

www.youtube.com/user/SystemeHelmholz

ORDERING DATA

Bus Coupler

TB20-C, Bus Coupler PROFINET IO
 TB20-C, Bus Coupler PROFIBUS-DP Slave
 TB20-C, Bus Coupler CANopen® Slave
 TB20-C, Bus Coupler ModbusTCP
 TB20-C, Bus Coupler EtherNet/IP
 TB20-C, Bus Coupler EtherCAT

Order no.

600-180-1AA11
 600-151-1AA11
 600-160-1AA11
 600-170-1AA11
 600-175-1AA11
 600-185-1AA11

Digital Input Modules

DI 2x DC 24 V
 DI 4 x DC 24 V
 DI 8 x DC 24 V
 DI 16 x DC 24 V
 DI 3 x DC 24 V, 3-wire
 DI 6 x DC 24 V, 3-wire
 DI 2 x AC 230 V, per chanel N, type 1
 DI 4 x AC 230 V, per chanel N, type 1
 DI 8 x AC 230 V, per chanel N, type 1

Order no.

600-210-0AB01
 600-210-0AD01
 600-210-0AH01
 600-210-0AP21
 600-210-0CC01
 600-210-0CF21
 600-211-0BB01
 600-211-0BD01
 600-211-0BH21

Digital Output Modules

DO 2 x DC 24 V, 500 mA
 DO 4 x DC 24 V, 500 mA
 DO 8 x DC 24 V, 500 mA
 DO 16 x DC 24 V, 500 mA
 DO 4 x DC 24 V, 700 mA, HF
 DO 8 x DC 24 V, 700 mA, HF
 DO 16 x DC 24 V, 700 mA, HF
 DO 2 x DC 24 V, 2 A
 DO 4 x DC 24 V, 2 A
 DO 2 x relays, 5 A, AC 230 V, change-over
 DO 4 x relays, 5 A, AC 230 V, change-over

Order no.

600-220-0AB01
 600-220-0AD01
 600-220-0AH01
 600-220-0AP21
 600-220-7AD01
 600-220-7AH01
 600-220-7AP21
 600-220-0BB01
 600-220-0BD01
 600-222-0AB01
 600-222-0AD21

Digital Mix Modules

DIO 2 x In/2 x Out DC 24 V, 500 mA
 DIO 4 x In/4 x Out DC 24 V, 500 mA
 DIO 8 x Out/8 x In DC 24 V, 500 mA

Order no.

600-230-0AD01
 600-230-0AH01
 600-230-0AP21

Analog Input Modules

AI 2 x I, 0/4–20 mA, ±20 mA, 12 Bit
 AI 4 x I, 0/4–20 mA, ±20 mA, 12 Bit
 AI 2 x I, 0/4–20 mA, ±20 mA, Iso., 16 Bit
 AI 4 x I, 0/4–20 mA, ±20 mA, Iso., 16 Bit
 AI 8 x I, 0/4–20 mA, ±20 mA, Iso., 16 Bit
 AI 2 x U, ±10 V, 0–10 V, 1–5 V, 12 Bit
 AI 4 x U, ±10 V, 0–10 V, 1–5 V, 12 Bit
 AI 2 x U, ±10 V, 0–10 V, 1–5 V, Iso., 16 Bit
 AI 4 x U, ±10 V, 0–10 V, 1–5 V, Iso., 16 Bit
 AI 8 x U, ±10 V, 0–10 V, 1–5 V, Iso., 16 Bit
 AI 2 x U, ±24 V, 0–24 V, 12 Bit
 AI 4 x U, ±24 V, 0–24 V, 12 Bit
 AI 1/2 x R, RTD, 16 Bit, 2/3/4-Draht
 AI 2/4 x R, RTD, 16 Bit, 2/3/4-Draht
 AI 2 x TC, Iso., 16 Bit
 AI 4 x TC, Iso., 16 Bit
 AI 8 x TC, Iso., 16 Bit

Order no.

600-250-4AB01
 600-250-4AD01
 600-250-7BB01
 600-250-7BD01
 600-250-7BH21
 600-252-4AB01
 600-252-4AD01
 600-252-7BB01
 600-252-7BD01
 600-252-7BH21
 600-252-4CB01
 600-252-4CD01
 600-253-4AB01
 600-253-4AD01
 600-254-4AB02
 600-254-4AD02
 600-254-4AH22

Analog Output Modules

AO 2 x I, 0/4–20 mA, 12 Bit
 AO 4 x I, 0/4–20 mA, 12 Bit
 AO 2 x U, ±10 V, 0–10 V, 1–5 V, 12 Bit
 AO 4 x U, ±10 V, 0–10 V, 1–5 V, 12 Bit

Order no.

600-260-4AB01
 600-260-4AD01
 600-261-4AB01
 600-261-4AD01

Function Modules

1 x counter 24 V, 500 kHz, 32 Bit
 1 x counter 5 V (RS422), 4 MHz, 32 Bit
 1 x SSI encoder interface
 Energy meter, 1 A
 Energy meter, 5 A

Order no.

600-300-7AA01
 600-310-7AA01
 600-320-7AA01
 600-255-7AA21
 600-255-7BA21

Communication Modules

1 SI serial port

Order no.

600-400-7BA31

System Modules

Power and isolation Module DC 24 V, 8 A
 Potential Distributor 4 x DC 24 V, HF
 Potential Distributor 9 x DC 24 V
 Potential Distributor 9 x GND
 Potential Distributor 10 x AUX
 Potential Distributor 4 x DC 24 V + 4 x GND
 Potential Distributor 9 x Frei Pot.
 Power Module DC 24 V

Order no.

600-710-0AA01
 600-730-4AD01
 600-720-0AH01
 600-720-0BH01
 600-720-0CH01
 600-720-0DH01
 600-720-0XH01
 600-700-0AA01

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