TB20. DISTRIBUTED FIELDBUS I/O SYSTEM

With the TB20 I/O system you generate efficient and functional added value for a variety of application areas – irrespective of the fieldbus and proven in practice!

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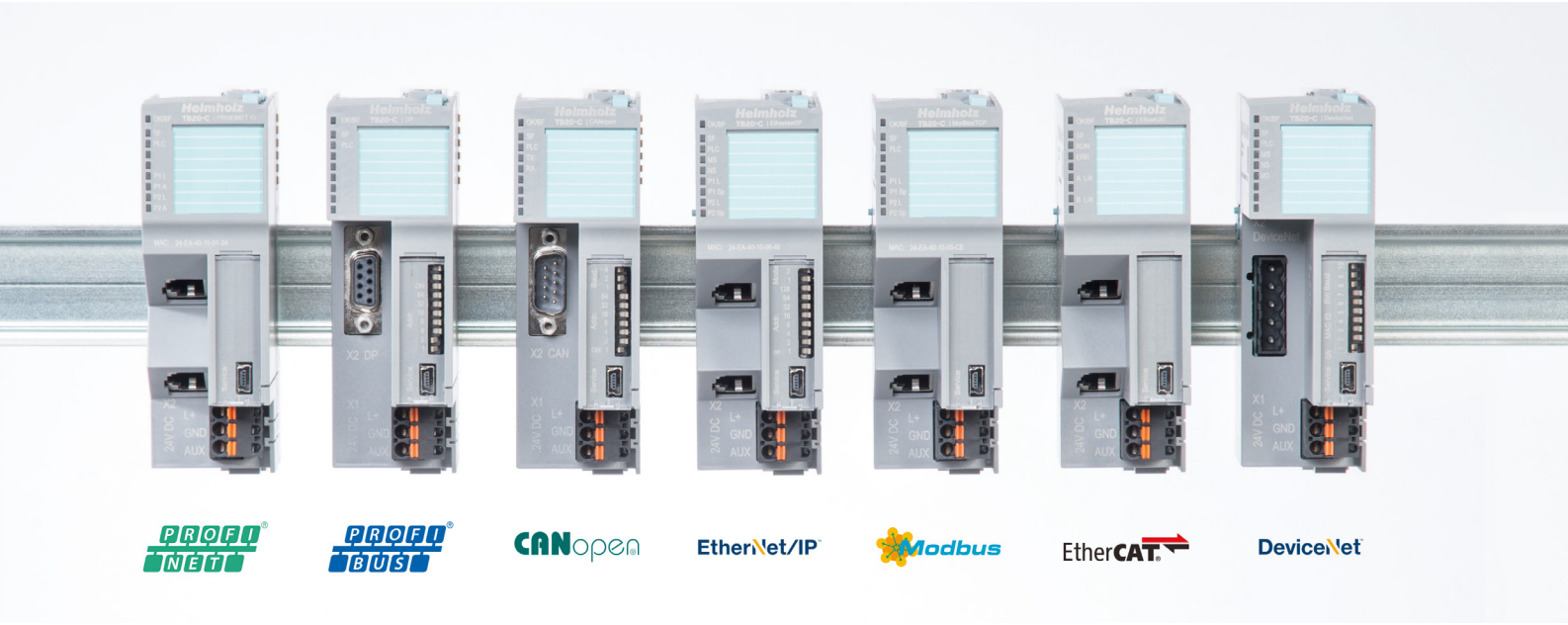
Helmholz®
COMPATIBLE WITH YOU



Energy efficiency and condition monitoring

Of course, excessive energy consumption in your systems results in costs, but is also often a sign of a defect or of maintenance work being due. The energy meter assists you in precisely analyzing and evaluating the operating data of the relevant energy consumer. With the findings gained here, you can initiate targeted measures that can increase the energy efficiency, failure security, and not least the profitability of your systems.

Retrofit versus new investment

Large machines are generally long-term investment items and can often be used mechanically long beyond the service life of individual control system components. However, in order to also be able to continue using these, adaptations to new bus systems and current standards usually need to be made.
System integrators that have to unite machines of all kinds to form a functioning production line also face similar problems.
With the GND reading digital input modules of the TB20 I/O system it is possible to update many existing machines to the latest standard at an optimized price and prepare them for international use. Labor-intensive rewiring is dispensed with in the process.

Mobility with a future

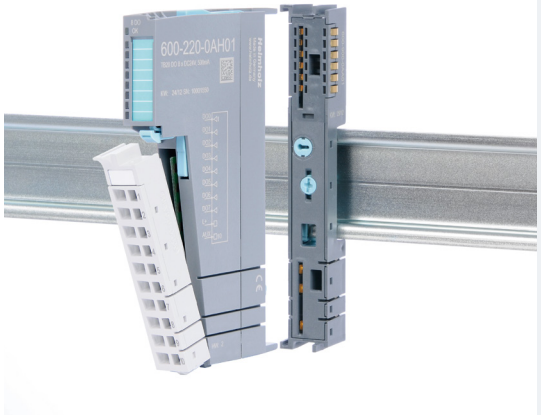
Energy storage is a central theme, especially in the field of renewable energy. Measurement and information systems, such as those used in the electromobility sector and for generating energy, often require precise parameters with regard to the voltage of the batteries used.
With the ISO analog input modules you measure these values reliably and securely: The individual channels are isolated from one another. With an expanded voltage range of up to 100 V, our modules are now also available for even more applications.

That's cool

Production materials often need to be stored under stable environmental conditions prior to further processing. Even minor fluctuations of temperature and air humidity can then have a decisive impact on the quality of the final product.
Even in office buildings, precise control is often absolutely necessary in order to prevent damage to the substance of a building and to ensure a pleasant climate.
With the PT100/climate module you can evaluate these critical values to two decimal places and counter them in a timely fashion before damage occurs. And the energy meter module helps you control the energy consumption of the climate control system.

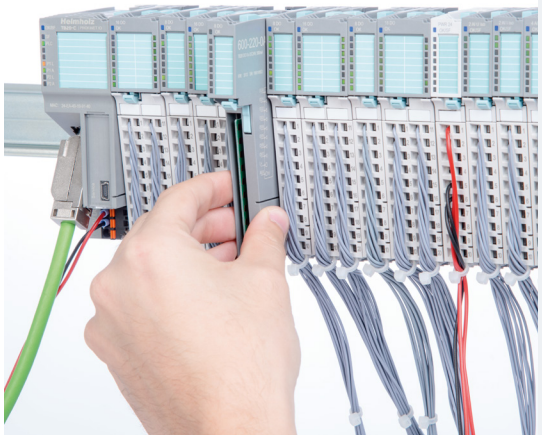
The right mixture is key

Strict quantity limits often need to be absolutely observed in your dispensing and filling system. Just a little bit too much can make the finished product unusable for the consumer, and even dangerous in the worst case.
The strain gauge module assists you in monitoring the defined filling quantities and in reliably observing the limit values. The module offers you the optimal solution for all applications in which strain gauge sensors are used, regardless of whether you want to measure weight, force, or torque.



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.
This makes keeping expenisve special parts in stock obsolete.

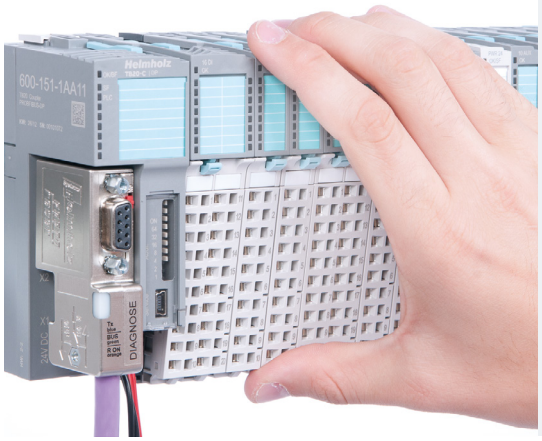


Hot-swap capability

Individual modules can be replaced quickly and easily while the rest of the system keeps running. The hot-swap-compatible electronic module helps keep downtimes to a minimum.

Clear, unique labels

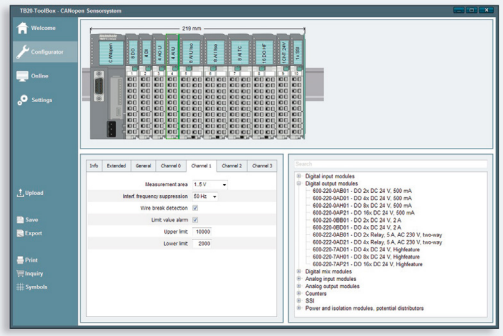
The system's design ensures that each channel will be labeled clearly and uniquely, in a way that can be easily read during operation. This allows direct allocation of the terminal to the respective LED display. The labeling strips are suitable for laser printers.



Ideal handling, achieved with a compact design

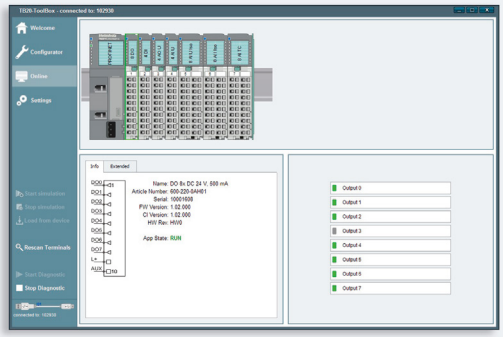
The system's ergonomic design makes it easy to handle. Moreover, the space-saving compact dimensions behind it do not take away from the system components' heavy-duty sturdiness and reliable electrical contacts for industrial applications, which are further complemented by an IP20 protection rating.
An optimal systems engineering breadth can be achieved through the use of modules with up to 16 digital or 8 analog channels and digital mix in/out modules.

TB20-TOOLBOX



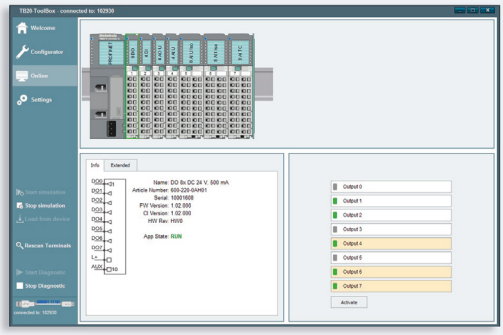
Smart design and configuration

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.



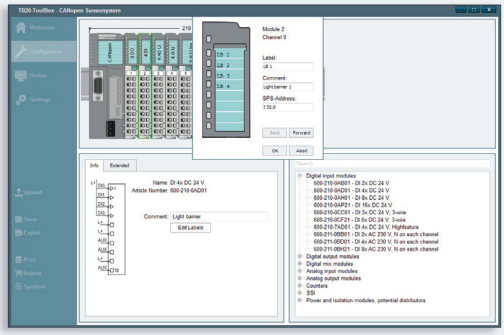
Real-time diagnostics

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



Simulation operation (I/O check)

The option of setting up the TB20 I/O system 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.
This way, you can rest assured knowing that your TB20 I/O system is ideally configured and ready for use before your machine is delivered.



Import/Export ensures seamless cooperation

With the TB20-ToolBox, the labeling, a symbol description, and the PLC address is defined, exported, and imported for each channel.
In combination with the TB20 CANopen coupler, the relevant SDOs can be seamlessly exported as an EDS file into the engineering tool of the CANopen master. Even the concrete configuration of a TB20 CANopen slave can be issued as a DCF file including node ID and Baud rate.
With PDO mapping in combination with the TB20 CANopen coupler you also have the possibility to flexibly adapt the configuration for any application.

TB20 ToolBox training
Learn about and how to use our ToolBox in only a few minutes.

https://www.youtube.com/watch?v=1IAyW1TtHLM

MODULE RANGE

Bus Coupler	Order no.
TB20-C, Bus Coupler PROFINET IO	600-180-1AA11
TB20-C, Bus Coupler PROFIBUS-DP Slave	600-151-1AA11
TB20-C, Bus Coupler CANopen® Slave	600-160-1AA11
TB20-C, Bus Coupler DeviceNet Slave	600-165-1AA11
TB20-C, Bus Coupler ModbusTCP	600-170-1AA11
TB20-C, Bus Coupler EtherNet/IP	600-175-1AA11
TB20-C, Bus Coupler EtherCAT	600-185-1AA11

Digital Input Modules	Order no.
DI 2x DC 24 V	600-210-0AB01
DI 4 x DC 24 V	600-210-0AD01
DI 8 x DC 24 V	600-210-0AH01
DI 16 x DC 24 V	600-210-0AP21
DI 8 x DC 24 V, GND reading	600-210-0DH01
DI 16 x DC 24 V, GND reading	600-210-0DP21
DI 3 x DC 24 V, 3-wire	600-210-0CC01
DI 6 x DC 24 V, 3-wire	600-210-0CF21
DI 2 x AC 230 V, per channel N, type 1	600-211-0BB01
DI 4 x AC 230 V, per channel N, type 1	600-211-0BD01
DI 8 x AC 230 V, per channel N, type 1	600-211-0BH21

Digital Output Modules	Order no.
DO 2 x DC 24 V, 500 mA	600-220-0AB01
DO 4 x DC 24 V, 500 mA	600-220-0AD01
DO 8 x DC 24 V, 500 mA	600-220-0AH01
DO 16 x DC 24 V, 500 mA	600-220-0AP21
DO 8 x DC 24 V, 300 mA, sink	600-220-0DH01
DO 16 x DC 24 V, 300 mA, sink	600-220-0DP21
DO 4 x DC 24 V, 700 mA, High Feature	600-220-7AD01
DO 8 x DC 24 V, 700 mA, High Feature	600-220-7AH01
DO 16 x DC 24 V, 700 mA, High Feature	600-220-7AP21
DO 2 x DC 24 V, 2 A	600-220-0BB01
DO 4 x DC 24 V, 2 A	600-220-0BD01
DO 2 x relays, 5 A, AC 230 V, change-over	600-222-0AB01
DO 4 x relays, 5 A, AC 230 V, change-over	600-222-0AD21

Digital Mix Modules	Order no.
DIO 2 x In/2 x Out DC 24 V, 500 mA	600-230-0AD01
DIO 4 x In/4 x Out DC 24 V, 500 mA	600-230-0AH01
DIO 8 x Out/8 x In DC 24 V, 500 mA	600-230-0AP21

Analog Input Modules	Order no.
AI 2 x I, 0/4–20 mA, ±20 mA, 12 Bit	600-250-4AB01
AI 4 x I, 0/4–20 mA, ±20 mA, 12 Bit	600-250-4AD01
AI 2 x I, 0/4–20 mA, ±20 mA, Iso., 16 Bit	600-250-7BB01
AI 4 x I, 0/4–20 mA, ±20 mA, Iso., 16 Bit	600-250-7BD01
AI 8 x I, 0/4–20 mA, ±20 mA, Iso., 16 Bit	600-250-7BH21
AI 2 x U, ±10 V, 0–10 V, 1–5 V, 12 Bit	600-252-4AB01
AI 4 x U, ±10 V, 0–10 V, 1–5 V, 12 Bit	600-252-4AD01
AI 2 x U, ±10 V, 0–10 V, 1–5 V, Iso., 16 Bit	600-252-7BB01
AI 4 x U, ±10 V, 0–10 V, 1–5 V, Iso., 16 Bit	600-252-7BD01
AI 8 x U, ±10 V, 0–10 V, 1–5 V, Iso., 16 Bit	600-252-7BH21
AI 2 x U, ±24 V, 0–24 V, 12 Bit	600-252-4CB01
AI 4 x U, ±24 V, 0–24 V, 12 Bit	600-252-4CD01
AI 4 x U, ±100V, 0–100 V, Iso., 16 Bit	600-252-7DD01
AI 8 x U, ±100V, 0–100 V, Iso., 16 Bit	600-252-7DH21
AI 1/2 x R, RTD, 16 Bit, 2/3/4-Draht	600-253-4AB01
AI 2/4 x R, RTD, 16 Bit, 2/3/4-Draht	600-253-4AD01
AI 2 x TC, 16 Bit	600-254-4AB01
AI 4 x TC, 16 Bit	600-254-4AD01
AI 2 x TC, Iso., 16 Bit	600-254-4AB02
AI 4 x TC, Iso., 16 Bit	600-254-4AD02
AI 8 x TC, Iso., 16 Bit	600-254-4AH22

Analog Output Modules	Order no.
AO 2 x I, 0/4–20 mA, 12 Bit	600-260-4AB01
AO 4 x I, 0/4–20 mA, 12 Bit	600-260-4AD01
AO 2 x U, ±10 V, 0–10 V, 1–5 V, 12 Bit	600-261-4AB01
AO 4 x U, ±10 V, 0–10 V, 1–5 V, 12 Bit	600-261-4AD01

Function Modules	Order no.
1 x counter 24 V, 500 kHz, 32 Bit	600-300-7AA01
1 x counter 5 V (RS422), 4 MHz, 32 Bit	600-310-7AA01
1 x SSI encoder interface	600-320-7AA01
2 x Counter Economy 24 V, 1 KHz, 32 Bit	600-300-1AB01
4 x Counter Economy 24 V, 1 KHz, 32 Bit	600-300-1AD01
Energy meter, 1 A	600-255-7AA21
Energy meter, 5 A	600-255-7BA21
Strain gauge weighing module	600-256-7AA01

Communication Modules	Order no.
1SI serial port	600-400-7BA31

System Modules	Order no.
Power and isolation Module DC 24 V, 8 A	600-710-0AA01
Potential Distributor 4 x DC 24 V, High Feature	600-730-4AD01
Potential Distributor 9 x DC 24 V	600-720-0AH01
Potential Distributor 9 x GND	600-720-0BH01
Potential Distributor 10 x AUX	600-720-0CH01
Potential Distributor 4 x DC 24 V + 4 x GND	600-720-0DH01
Potential Distributor 9 x free Pot.	600-720-0XH01
Power Module DC 24 V	600-700-0AA01

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