

### 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.

## ORDERING DATA

Bus coupler	Order no.
TB20-C, Bus Coupler ModbusTCP	600-170-1AA11
TB20-C, Bus Coupler EtherNet/IP	600-175-1AA11
Digital input modules	Order no.
DI 8 x DC 24 V	600-210-0AH01
DI 16 x DC 24 V	600-210-0AP21
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 2 x DC 24 V, 2 A	600-220-0BB01
DO 4 x DC 24 V, 2 A	600-220-0BD01
Digital mixed modules	Order no.
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 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, 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
System modules	Order no.
Power and isolation Module DC 24 V, 8 A	600-710-0AA01
Potential Distributor 9 x DC 24 V	600-720-0AH01
Potential Distributor 9 x GND	600-720-0BH01



### We are always glad to help you!

Would you like more information?

Our team will be happy to assist you:

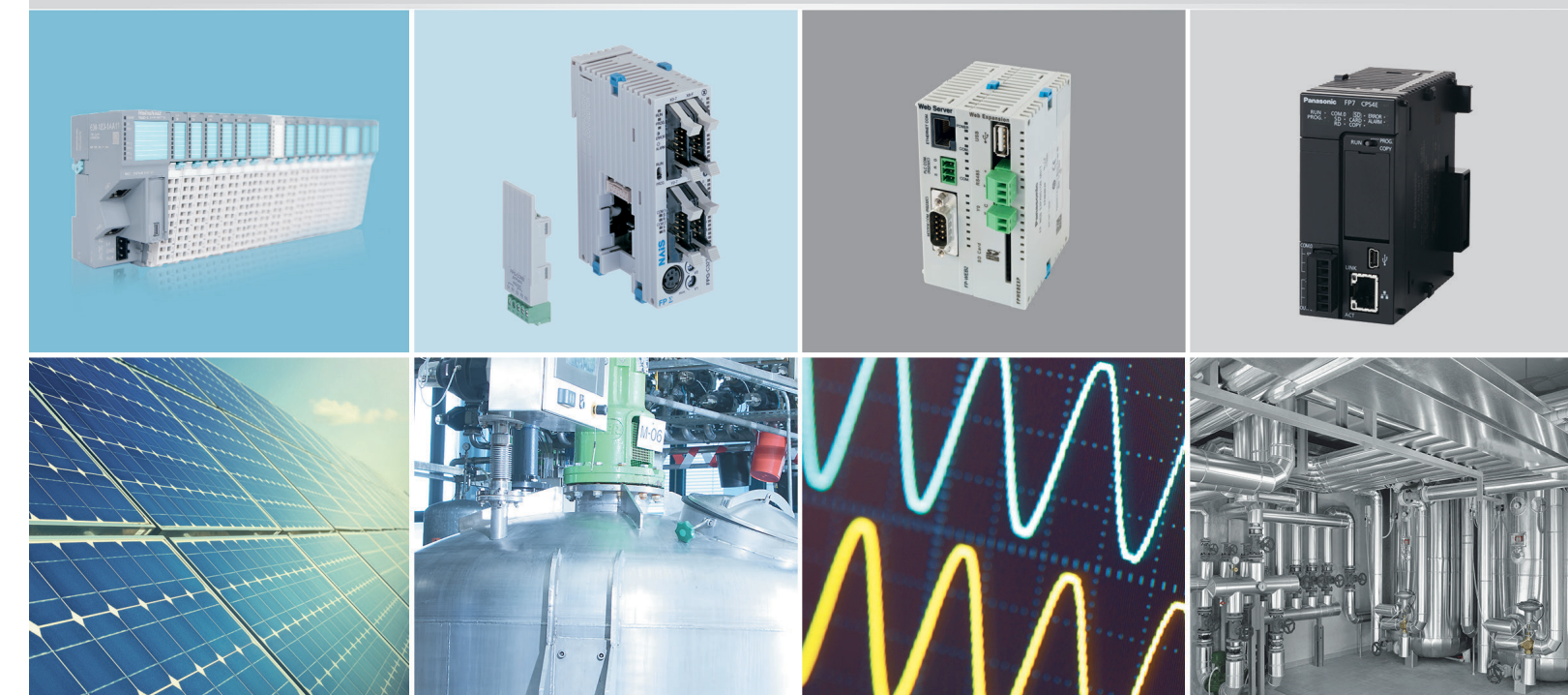
Tel. +49 89 45354-1000

e-mail: info.peweu@eu.panasonic.com

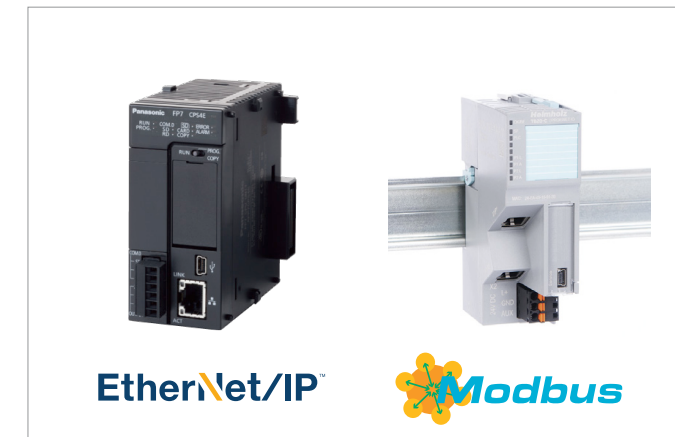
[www.panasonic-electric-works.com](http://www.panasonic-electric-works.com)

## TB20 Series

### Distributed Fieldbus I/O System







**FP7 series – modular PLC**

The FP7 CPUs with Ethernet interface are equipped with the communications standard protocols EtherNet/IP and Modbus TCP. They can be combined with the TB series Fieldbus I/O system, a modular and compact distributed peripheral system for decentralized applications. The FP7 CPUs can be connected directly to the bus couplers for Modbus/TCP and EtherNet/IP.



**FP Series - compact PLCs**

With the FP Web-Server and the Modbus TCP protocol, all FP series compact logic controllers (FP0R, FPX0, FPX, FPΣ) can be combined with the TB series Fieldbus I/O system.



**PLCs FP series and TB series I/O system**

The best connection for distributed applications and for improving the production performance:

- Up to 64 peripheral units can be connected in series to a bus coupler
- The bus coupler is equipped with a two-port switch with two RJ45 connectors and a USB device port for online diagnostics, configuring parameters, setup and firmware updates with the software "TB20 ToolBox"
- Cost-saving, maximum performance, and flexible system configuration
- PLCs Panasonic open to Web technologies to meet the needs of Industry 4.0.



**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.

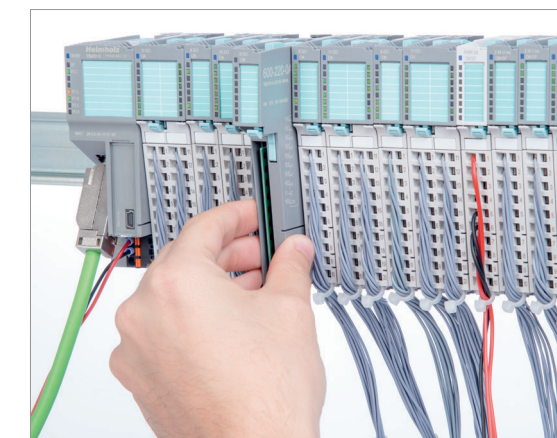
Bus couplers for Modbus/TCP and EtherNet/IP are currently available. Our portfolio is designed as an open and vendor-neutral fieldbus system and will gradually be expanded and added to.



**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 to 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 completely assembled units (i.e., as a single assembly) and can be installed immediately.



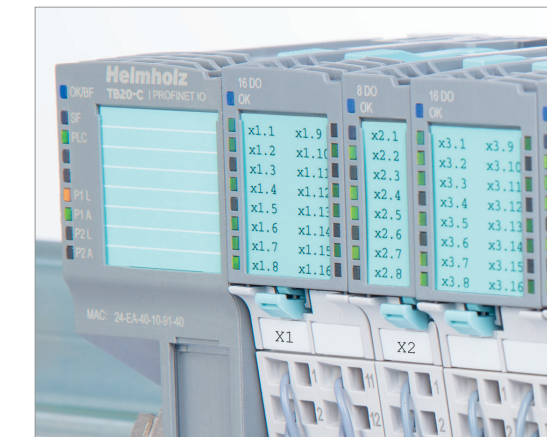
**Hot-plug capability**

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.



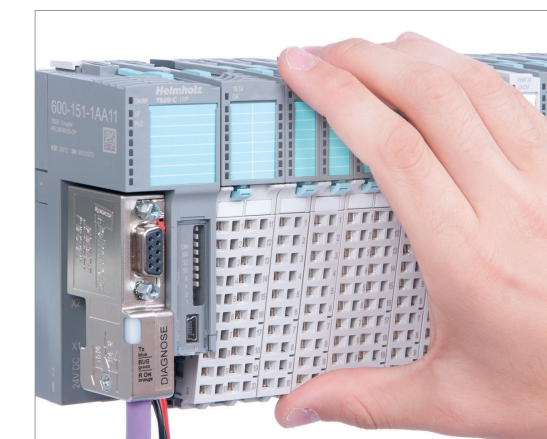
**Freely definable auxiliary contact (auxiliary terminal)**

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.



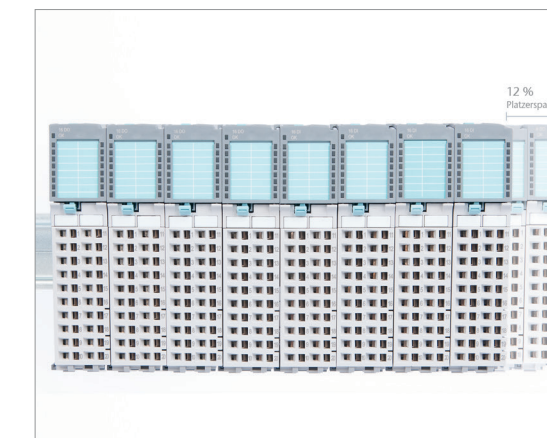
**Clear, unique labels**

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.



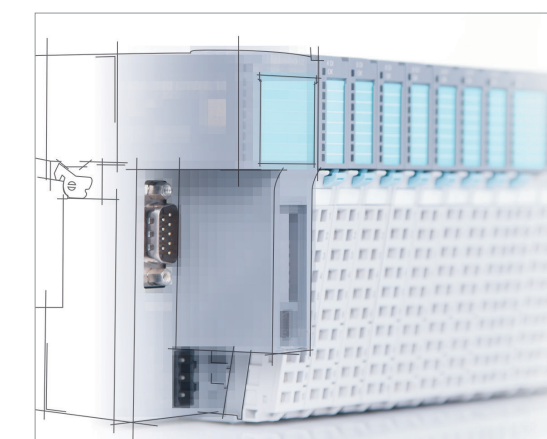
**Ideal handling, achieved with a compact design**

The system's ergonomic design makes it easy to handle. Moreover, the space-saving compact dimensions 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. What is more, 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.