



## Central Processing Unit with Dual Homing (CPD)

EN 50155  
EN 45545  
IEC 61131

### MODULE FUNCTIONS

The Trainnet® CPD can be used as a processor to manage train computers and sub-systems connected to them. The Trainnet® CPD module is also capable of storing digital media content.

The Trainnet® CPD can be used to develop, store and run applications for the control and diagnostics of on-board systems, making it suitable to develop Train Control and Management Systems (TCMS) or VCU. It can also implement Gateway functionalities by providing the necessary interfaces and routing capabilities.

### KEY FEATURES

The Dual Homing feature of CPD is realised by two 10/100 Mbit/s Full Duplex Ethernet Interfaces that can be used to connect to any Ethernet Communication Network, typically connecting the CPD with switches or other electronic equipment. The Ethernet interfaces can also be directly connected to any Ethernet enabled devices (e.g. network cameras). A bridge between two channels is also supported. The number

of Ethernet interfaces can be increased with one of the Trainnet® Ethernet Switches.

Four programmable isolated asynchronous or bit-synchronous SCC channels are available (RS 485) for the connection to compatible devices in the train.

The CODESYS® PLC kernel embedded in the CPU acts as the CPU's operating Software. Train management applications can be developed with the CODESYS® PLC Software in order to create the desired control and diagnostic functions of the train. The open platform runs on the Linux Operating Software and supports further Software development in C language, either as a CODESYS® extension or on top of the Linux kernel of the module. The PowerPC processor provides enough processing power for demanding applications with 400 MHz core speed and 64 megabytes of 64-bit wide 100 MHz SDRAM.

The Trainnet® Portable System Tester (PST) interface (usually serial link or Ethernet) enables the use of the PST as well as other tools for event log opera-

tions, maintenance, debugging, downloading and application development purposes.

The Trainnet® CPD real-time clock is powered by a back-up capacitor and will run for a minimum of 30 days from the time power is no longer applied.

The Trainnet CPD has extended event logging flash memory with 4 GB capacity. The Trainnet CPD can act as a low cost event recorder when limited protection is required.

### TECHNICAL SPECIFICATIONS

#### Dimensions (W x H x D)

8 TE x 3 U x 160 mm

#### Weight:

300 g

**Input Power:** 5 V DC  $\pm 5\%$  (1.5 A max., 1 A typ.)

#### Temperature Range (operational)

-40 °C...+70 °C

#### MTBF (40 °C ambient temperature)

1 320 000 h (CPD5594A)

#### Serial Interfaces

An isolated group of 4 RS 485 on front

1 RS 232 on front

(for maintenance, configuration or ESN dongle)

1 RS 485 on back for I/O bus connectivity

#### Ethernet Interfaces

2 x 10/100 Mbit, M12 connectors

#### Boot Flash Memory

8 MB

#### File System Flash Memory

512 MB

#### Event Logging Flash Memory

4 GB

#### Processor RAM

64 MB

#### VME Bus (IEC 821) Interface

A24/D16 Master or Slave