



## Power Supply Over Ethernet Module (PSE)

EN 50155  
EN 45545

### MODULE FUNCTIONS

The Trainnet® Power Supply Over Ethernet (PSE) module provides 48 V DC output power to the Trainnet® Ethernet Switching Unit (1U ESU). The Trainnet® PSE enables the Power-over-Ethernet (PoE) functionality of the Trainnet® 1U ESU.

### KEY FEATURES

The Trainnet® PSE is used to power up the PoE output on the Trainnet® 1U ESU. In practice, one PSE provides power to 4 Ethernet ports on the 1U ESU. When using two Trainnet® 1U ESU simultaneously, the Trainnet® PSE can provide power to both of them, and provide a total of 8 ports.

The output voltage of the Trainnet® PSE is 48 V DC. The input voltage can be 36-52 V DC (PSE2524A) or 110 V DC (PSE2217B). The Trainnet® PSE can provide a maximum power output of 62 W to be split between the powered ports: for example, 15.4 W for 4 ports or 7 W for 8 ports.

The Trainnet® PSE has built-in circuitry to detect and control

the input current in the event of a power-up. Controlling the in-rush current prevents component damages.

When input supply voltage is below the set minimum value, Trainnet® PSE minimizes current consumption in order to prevent the deep discharge of train batteries.

The Trainnet® PSE grace supply function enables the module to continue working for a short period of time when the power is cut off. The PSE module withstands 10 ms input power breaks without disrupting any of the normal operations (Voltage Supply Interruption as per EN50155 Class S2 and Supply change over as per EN50155 Class C1).

The PSE module works only together with the Trainnet® Ethernet Switch Supply (ESS) module which takes power from the train batteries and transfers it to the Trainnet® PSE.

### OPTION

#### Bypass Unit Module

When the external devices requiring PoE consume little power (Class 1, 0.44 - 3.54 W), the Trainnet® PSE Bypass Unit Module (PBU) can be used. The Trainnet® PBU takes power from the PSE module and distributes it to another set of 4 ports (8 if using two 1U ESU modules). Two PBU modules can be used with one PSE module, sharing the PSE's 62 W between 12 ports of the 1U ESU (up to 24 ports if using a second 1U ESU module).

### TECHNICAL SPECIFICATIONS

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

24 TE x 1 U x 160 mm

#### Weight:

280 g

#### Temperature Range (operational)

-40 °C...+70 °C

#### MTBF (40 °C ambient temperature)

800 000 h

#### Input Voltage

36-52 V DC (PSE2524A)

110 V DC (PSE2217B)

#### Input Voltage Range

25.2 ... 65.0 V DC (PSE2524A)

77.0 ... 137.5 V DC (PSE2217B)

#### Input Power

80 W max.

#### Output Voltage

48 V DC ± 2 % (at nominal line, nominal load)

46 V DC min. (at line range, load range)

#### Output Voltage Hold-on

10 ms (at nominal load)

### Trainnet® Ethernet Switch Supply (ESS)

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

12 TE x 1 U x 160 mm

#### Weight:

60 g

#### Temperature Range (operational)

-40 °C...+70 °C

#### MTBF (40 °C ambient temperature)

5 000 000 h

#### Input Voltage

36-52 V DC (ESS2525A) or 110 V DC (ESS2184A)



Trainnet® ESS Module



Trainnet® PBU Module