

IMPORTANT:

The protector(s) described in this Installation Instruction shall be installed in accordance to the applicable requirements

described in the National Electric Code, ANSI/NFPA70, Article 800, Section C.

General

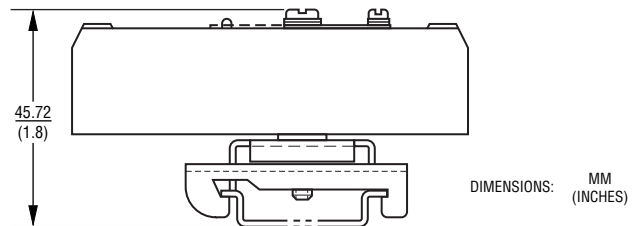
The Bourns® Model 1830-T1E1 is intended for indoor use for protection of customer premises telephone equipment connected to DLC 'span' lines. This unit protects one wire pair, so two Model 1830-T1E1 protectors must be used for T1 and E1 services (one for transmit and one for receive). This is a multi-function protector, able to be employed either

internationally as a Primary protector or in North America as a Secondary protector (as established by the protector orientation to the incoming service) and can be used on either Powered or Unpowered span lines (as established by a two-position link on the protector).

Mounting / Grounding

- The Bourns® Model 1830-T1E1 is equipped with a vibration-proof mounting clamp designed for attachment to a DIN-3 rail (35 mm symmetric). The protector ground screw, and hence the clamp and rail, is the protector ground terminal. The protector mounting rail, therefore, must be connected to the equipment master ground bar via a wire of size AWG #14 (2 mm²) or larger. The protector/rail assembly should be located so that the length of the ground wire to the ground bar is minimized. To mount the protector to the rail, loosen the Grounding Screw (large screw head on the protector face) about four turns, then seat the protector with its clamp positioned on the mounting rail and re-tighten until the clamp is secured to the rail.

- If bolting of the protector to a ground bar is desired, unthread and remove the lower clamp section; then by grasping the edge of the spring retaining washer with long-nose pliers (to prevent rotation), unthread and remove the screw. The upper clamp section will then drop away. See drawing for hole spacing. If not needed, the Alignment Pin can be removed with side-cutters.



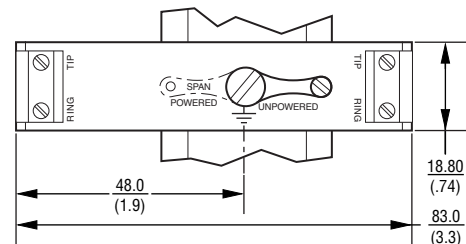
Orientation and Connection

The screw terminal blocks on the Model 1830-T1E1 accommodate a wire size range of AWG 22 - 14 (0.3 mm² to

2 mm²). Connect the transmit wire pair to one protector and the receive pair to the second protector.

North American Installation

When using the Model 1830-T1E1 as a Secondary protector, observe the following conditions: The incoming wire pair must be connected to the black terminal block marked "FIELD SECONDARY". When the Model 1830-T1E1 is used as a Secondary protector, it shall be placed on the equipment side of a UL Listed primary telephone protector.



Installation Outside North America

When using the Model 1830-T1E1 as a Primary protector, observe the following conditions: The incoming wire pairs should be connected to the orange terminal block marked

“FIELD PRIMARY”. The Model 1830-T1E1 may not, and shall not, be used as a Primary protector in North America.

Powered vs. Unpowered Spans

- If the carrier lines at the point where the protectors are to be installed are absent of repeater power (typically $\pm 20\text{ V}$ to $\pm 150\text{ Vdc}$) or -48 Vdc office battery voltage (an unusual condition), the Link on the face of the protector should be in the UNPOWERED position (as shipped).
- If the protector is connected to powered lines (that is, on the field side of the NTU or “Smart Jack”), the Link should be moved to the POWERED position. This is accomplished by loosening the larger ground screw, removing the smaller link screw, rotating the link 180° and securing it over the plastic detent pin. Then retighten the ground screw and reinstall the small link screw.

Troubleshooting Tests

- In service, series resistance Tip-Tip and Ring-Ring should be 8.5 - 12.5 ohms. Values outside these limits suggest significant surge duty has occurred.
- In service, resistance from each line to ground (Link in Unpowered position) and between each line (Link in Powered position) should exceed 100K ohms.

DC Breakdown and Impulse Voltage

DC Breakdown Rating

Tip/Ring-G: 6.5 Vdc
Tip-Ring: 15 Vdc

Impulse Voltage Rating

Tip/Ring-G: 10 Vpk
Tip-Ring: 20 Vpk



Asia-Pacific: Tel: +886-2 2562-4117 • Fax: +886-2 2562-4116
Europe: Tel: +41-41 768 5555 • Fax: +41-41 768 5510
The Americas: Tel: +1-951 781-5500 • Fax: +1-951 781-5700
www.bourns.com