Active EIA-485 Terminator

The 485-TER is a standalone active terminator that is used on popular EIA-485 networks such as Modbus RTU and BACnet MS/TP that provide sufficient termination and biasing to the network to ensure reliable operation. Fail-safe bias ensures that an un-driven line assumes a defined state. When a head-end device does not have internal bias and termination two 485-TER devices should be installed – one at each end of the network. This will provide stability and error free communication.

The 485-TER is a compact device that can be applied in the field quickly and easily. It comes with an isolated cover allowing it to be installed almost anywhere. The 485-TER can be installed to stabilize the physical layer of an EIA-485 network by providing the proper voltage bias (greater than 200mV) and termination (120 Ohms) to the network. The 485-TER requires 24VAC +/-10% 1VA or 20-30VDC 0.5W power. Power can be shared with the same power source used by the controller. The 485-TER continues to provide a termination resistance of 120 Ohms to the network even when power is not provided. The 485-TER can be used with either 2-wire non-isolated EIA-485 networks or 3-wire isolated EIA-485 networks.

A simplified schematic of the isolated EIA-485 bias and termination circuit is shown.
Wire Color Chart

<table>
<thead>
<tr>
<th>Pin</th>
<th>Function</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>D+</td>
<td>Signal High</td>
<td>White</td>
</tr>
<tr>
<td>D−</td>
<td>Signal Low</td>
<td>Green</td>
</tr>
<tr>
<td>REF</td>
<td>Reference</td>
<td>Blue</td>
</tr>
<tr>
<td>HOT</td>
<td>24 VAC / VDC</td>
<td>Red</td>
</tr>
<tr>
<td>COM</td>
<td>Common</td>
<td>Black</td>
</tr>
</tbody>
</table>
**Specifications**

**Power Requirements**
24 VAC (±10%) drawing no more than 1.0 VA or 20-30 VDC drawing no more than 0.5 Watt

**Power Terminations**
Two-wire 22 AWG 8” long whip (Red 24 V Hot, and Black 24 V Com) with tinned leads

**Data Terminations**
Three-Wire 22 AWG 8” long whip (White D+, Green D-, blue Ref reference) with tinned leads

**Isolation**
500 VDC between power and data/reference

**Circuit Protection**
10 second protection from 24 VAC applied across the two data signals or one data signal and earth

**Input Impedance**
120 Ω (±10%)

**Bias Voltage**
D+ to Ref: 2.7 VDC typical
D- to Ref: 2.3 VDC typical

**Ambient Operating Temperature**
0 to 60°C

**Dimensions**
2-1/2”H x 1-1/4”W x 1/2”D typical

**Compliance**
CE Mark

**Ordering Information**

<table>
<thead>
<tr>
<th>Model</th>
<th>RoHS</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BAS-485-TER</td>
<td>✔️</td>
<td>Active EIA-485 terminator (package 5 pieces)</td>
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