



RS485 Repeater/Splitter Issue: 1.0

Overview

The RS485 Repeater provides a means of creating electrically separate RS485 bus segments; this is especially useful to overcome connection difficulties due to non-standard hardware or wiring.

The unit provides bi-directional half-duplex communication between one 'Master' channel and up to five slave channels. Power supply connections have been provided with flexibility in mind: The master channel may optionally be fully electrically isolated from the slave channels, additionally one slave channel is available with full isolation from the four other slave channels.

As well as standard gear-plate mounting, the repeater has been designed to fit a FiBox standalone enclosure or mount directly on a fire panel master board in the SGD/Brigade interface board position.

Features

- 1 x RS485 port (IDC plus Phoenix style) connection to/from Fire panel
- 4 x non-isolated slave RS485 ports
- 1 x isolated slave RS485 port
- 1 x switch for master/external power
- 1 x external DC in connection
- 6 x optional 120Ω bus termination with Jumper link (1 for each RS485 connection)
- 3 x LEDs, 1 for DC power, 1 for RS485 RX, 1 for RS485 TX
- Easy to install

Specification

Operating Voltage	15..30VDC, 24V nominal	
non-isolated port +/- DC current	500mA max, to include any mimic supply requirement	
Supply currents:		
Master	15mA Idle	60mA @ 24V max (add mimic supply currents)
4x Slaves	15mA Idle	60mA @ 24V max (add mimic supply currents)
Isolated Slaves	15mA Idle	60mA @ 24V max (add mimic supply currents)
Total if all powered from same source:	45mA Idle	180mA peak – 120 Ohm terminators both ends of all segments, data transmission at maximum throughput. (add mimic supply currents)
Dimensions	112mm x 102mm x 30mm	
Mounting Orientation	Any	
Environmental	-10°C to 40°C, 95%RH non-condensing	

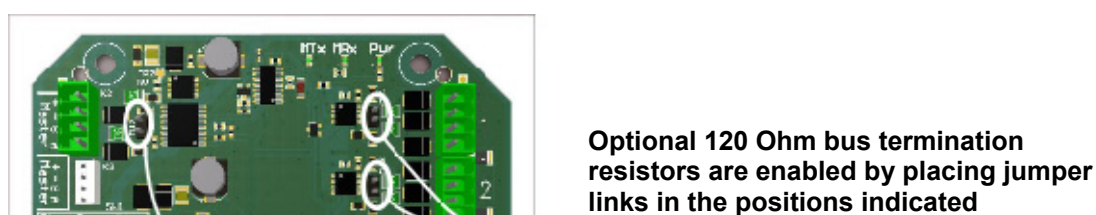
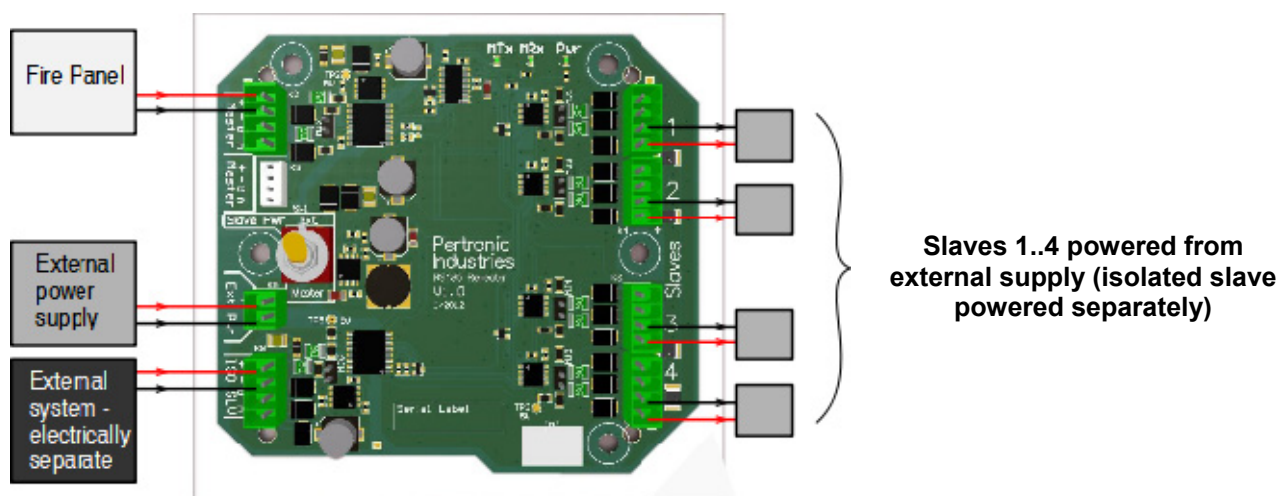
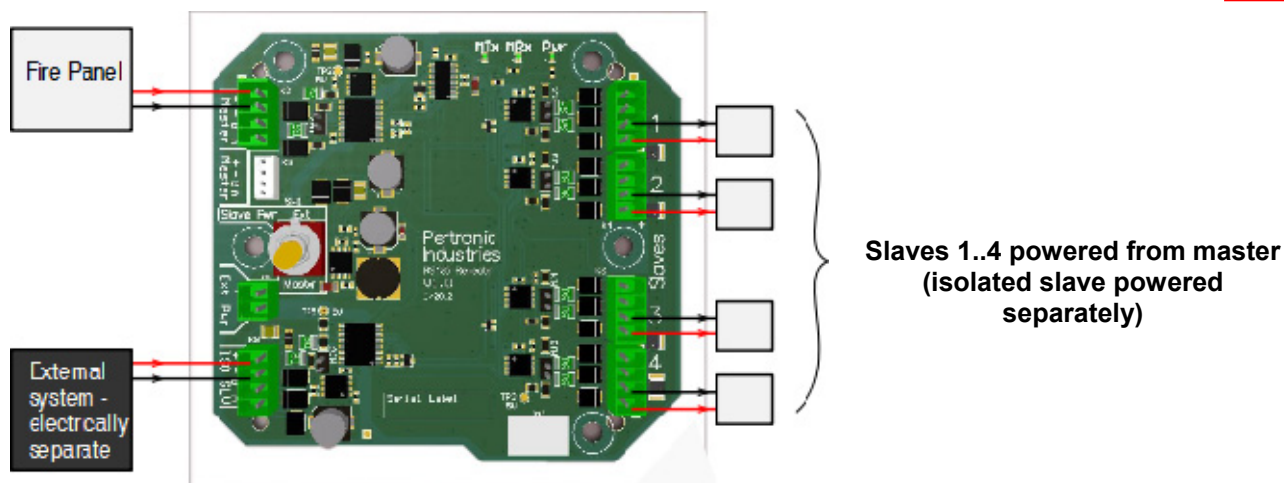
Termination resistors

As this unit is primarily designed to work at 9600 Baud for use in Pertronic installations, bus segments connected locally inside equipment cabinets may not always need 120 Ohm terminators installed. For long cable runs outside the equipment cabinet it is recommended to use the 120 Ohm terminators at **both** ends of the bus to ensure data integrity.

A common misconception with RS485 systems is that they only require two wires: data A & B. The RS485 specification also requires the ground or –ve connection, many cases of errors and corrupt communication occur when this wire is not provided. It is our recommendation to always run these **three** wires as a minimum to limit the possibility of communications problems.

Power supply connections

Shown below are examples of how the power supplies may be configured, different colours indicating the various supplies present:



Note: A power supply input must be provided for the 'isolated slave'

channel. If electrical isolation from other channels is not required this may be simply looped off the master or slave channels 1..4.

Order Code:

Product	Order Code
RS485 5 Way Repeater/Slider	RS485REP