

# PERTRONIC INDUSTRIES LTD

## INSTALLATION DATASHEET RS485 5-Way Repeater/Splitter RS485REP

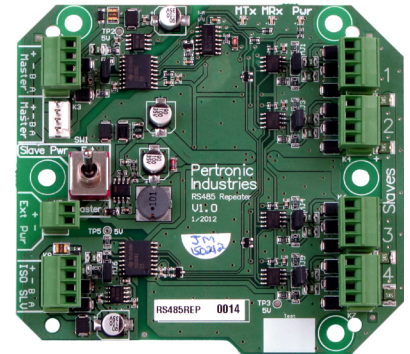


### Overview

The RS485 Repeater/Splitter provides a means of creating electrically separate RS485 bus segments. The unit provides bi-directional half-duplex communication between a Master RS485 port and up to five Slave ports.

The unit has three power supply inputs: K2 & K3 (Master), K5 (Slaves 1-4), and K8 (ISO Slave). The slave ports (Slaves 1-4) may be electrically isolated from the Master power circuit. The ISO Slave port may be electrically isolated from Slaves 1-4 and the Master channel. Alternatively, Slaves 1-4 and/or ISO Slave may be driven from the same power supply as the master power circuit.

The RS485 Repeater/Splitter may be installed inside a Pertronic fire alarm control panel, or it may be installed in a stand-alone enclosure such as a FiBox.



**Pertronic RS485 Repeater-Splitter**

### Features

- **Master Channel:** 1 x RS485 port (IDC plus Phoenix style) connection to/from fire alarm control panel
- **Slaves 1-4 Channel:** 4 x non-isolated slave RS485 ports
- **ISO Slave Channel:** 1 x isolated slave RS485 port
- 1 x switch for Master/External power to **Slaves 1-4** RS485 ports
- 1 x external DC input connection
- 6 x optional 95.3  $\Omega$  terminating resistors with jumper links (1 for each RS485 port)
- 3 x LEDs: DC power; RS485 RX; RS485 TX

### Specification

<b>Operating Voltage</b>	15..30 VDC, 24 V nominal
<b>Max Current (Non-Isolated Port)</b>	500 mA max (Including current drawn from RS485 power circuits)
<b>Maximum Data Rate</b>	115.2 kbit/s
<b>Dimensions</b>	112 mm x 102 mm x 30 mm
<b>Temperature</b>	-10 °C to 50 °C
<b>Humidity</b>	95 % RH non-condensing

<b>Current Consumption @ 24 V (excl. current drawn from RS485 power circuits)</b>			
<b>Connector</b>	<b>Channel</b>	<b>Idle (without data)</b>	<b>Maximum (with data transmission)</b>
K2 & K3	Master	15 mA	60 mA
K5	Slaves 1-4	15 mA	60 mA
K8	ISO Slave	15 mA	60 mA

### Terminating Resistors

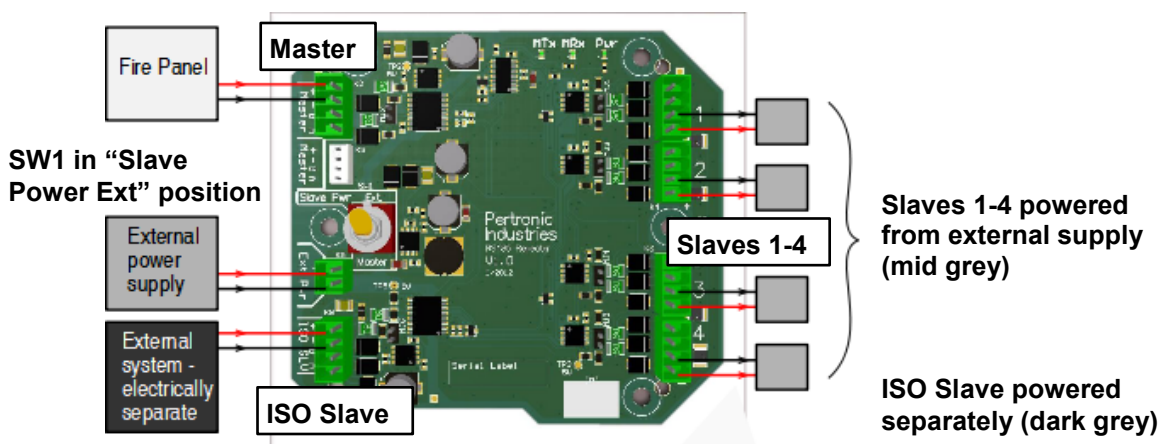
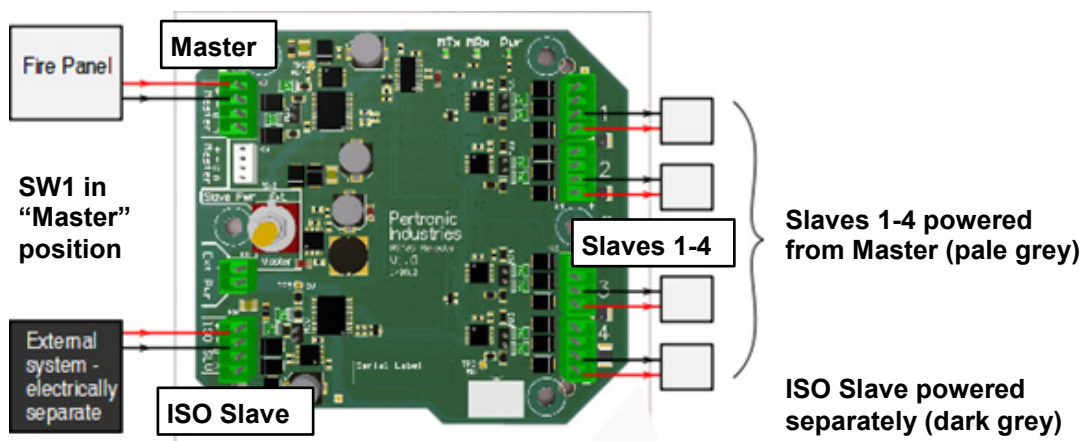
When operating at 9.6 kbit/s in Pertronic systems, local bus segments inside equipment cabinets may not need terminating resistors. For higher data rates and external cable runs, terminating resistors should be installed at both ends of each RS485 bus segment. A 90  $\Omega$  – 100  $\Omega$  resistor provides a suitable termination for typical fire-rated twisted-pair cable.

RS-485 data circuits (data A & data B) must be wired with twisted-pair cable. For installations subject to significant electrical noise, fibre-optic or shielded cable is recommended

A common misconception with RS485 systems is that they need only two wires: data A & data B. The RS485 specification also requires the ground or –ve connection. Many cases of errors and corrupt communication occur when the ground or –ve wire is not provided. Pertronic Industries strongly recommend that a minimum of three wires (A, B & –ve) should be installed to reduce the possibility of communications problems.

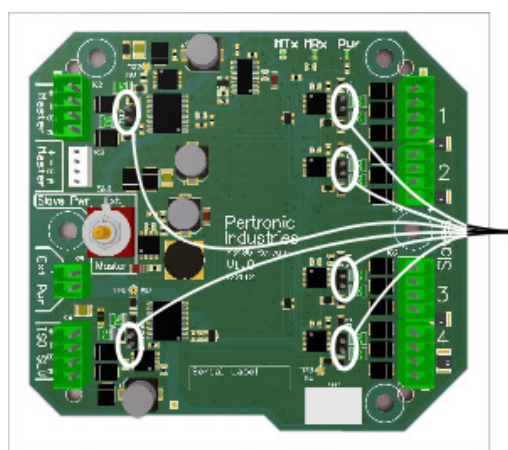
## Power Supply Connection

These examples illustrate alternative power supply configurations, with separate power for the isolated slave output. Power supply connections are identified by grey shades



Note: The ISO Slave channel (K8) must be provided with a power supply. If electrical isolation from other channels is not required, the ISO Slave supply may be looped from the Master (K2/K3) or Slaves 1-4 (K5) connectors.

## Terminating Resistors



Optional 95.3  $\Omega$  terminating resistors are enabled by placing jumper links in the positions indicated

## Ordering Information

Product Code	Description
RS485REP	RS485 5-Way Repeater/Splitter