PERTRONIC INDUSTRIES LTD

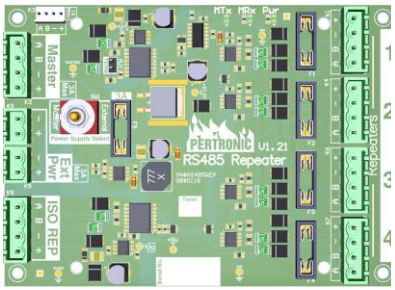
INSTALLATION DATASHEET
RS-485 5-Way Repeater/Splitter
RS485REP

Overview

The RS-485 Repeater/Splitter provides a means of creating electrically separate RS-485 bus segments. The unit provides bi-directional half-duplex communication between a master RS-485 port and up to five repeater ports.

The unit has three power supply inputs: from the Master (K2 & K3), from an external supply (K5 & K9), and from the Isolated RS-485 port (K8). The repeater ports 1-4 may be electrically isolated from the Master power circuit (switch SW1). The ISO Repeater port may be electrically isolated from Repeaters 1-4 and the Master channel. Alternatively, Repeaters 1-4 and/or ISO Repeater may be driven from the same power supply as the master power circuit.

The RS-485 Repeater/Splitter may be installed inside a Pertronic fire alarm control panel, or it may be installed in a stand-alone enclosure.



Pertronic RS-485 Repeater-Splitter

Features

- **Master Channel**: 1 x RS-485 port (IDC plus Phoenix style) connection to/from fire alarm control panel
- **Repeater Channels 1-4**: 4 x non-isolated repeater RS-485 ports
- **ISO Repeater Channel**: 1 x isolated repeater RS-485 port
- 1 x switch for Master or External power to Repeater RS-485 ports 1-4
- 1 x External power input (2 connectors)
- 1 x optional Master terminating resistor with jumper link
- Terminating resistors (120Ω) permanently enabled on Repeaters 1-4 and Iso Repeater.
- Additional connector for daisy chaining Repeater/Splitter units
- 3 x LEDs: DC power; Master RS-485 RX; Master RS-485 TX

Specification

Operating Voltage		15..30 V dc, 24 V nominal		
Current Consumption @ 24 V	**Master (K2 or K3)**	Idle (without data)	15 mA	Excluding current drawn from RS-485 circuit power outputs
		Maximum (with data transmission)	60 mA	
	Repeaters 1-4 (K2, K3, or K5, K9)	Idle	15 mA	
		Maximum	60 mA	
	Isolated Repeater (K8)	Idle	15 mA	
		Maximum	60 mA	
Maximum Current		3 A max per Repeater/Splitter unit. The unit is shipped with one 1 A blade fuse per repeater channel. The user can change these to meet their requirements as long as the total current does NOT exceed 3 A		**Note:** Power to a bus segment can be cut, leaving the communications lines intact, by removing a repeater's blade fuse.
Maximum Data Rate		115.2 kbit/s		
Dimensions		138 mm x 98 mm x 30 mm		
Operating Temperature		-10 °C to 50 °C		
Humidity		95 % RH non-condensing		

RS-485 Terminations and Wiring

With terminating resistors permanently installed on the board for the repeater channels 1-4 and the Isolated channel, terminating resistors should only be installed at the far end of each RS-485 bus segment. A 120 ohm resistor is suitable for terminating typical fire-rated twisted pair cables. RS-485 data circuits (data A & data B) must be wired with twisted-pair cable. For installations subject to significant electrical noise, fiber-optic cable is recommended

All remote RS-485 devices should use 4-wire connections or floating (non-earthed) dc power supplies.

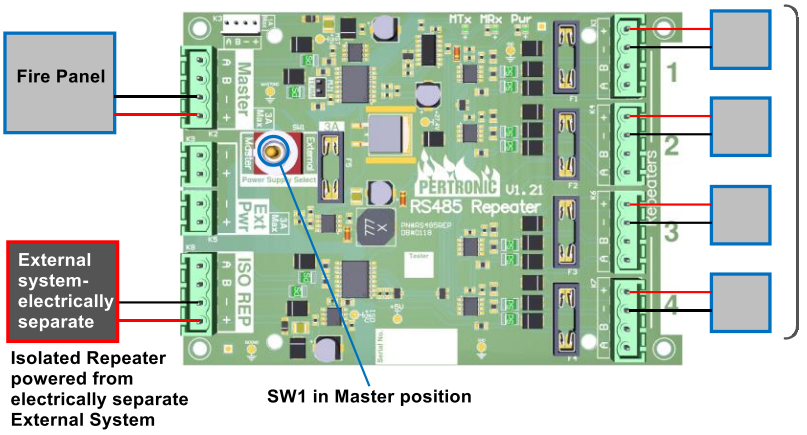
Power Supply Connection

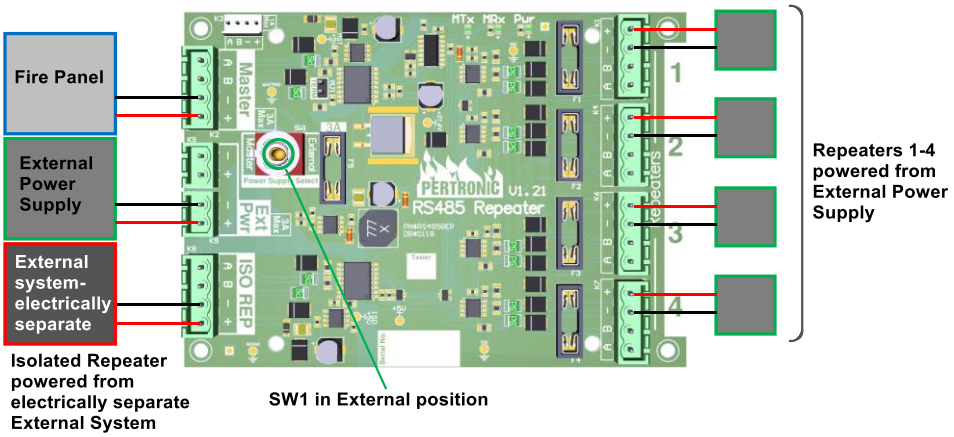
These examples illustrate alternative power supply configurations, with separate power for the isolated slave output.

Border colour code: Master- blue, External – green, Isolated – red

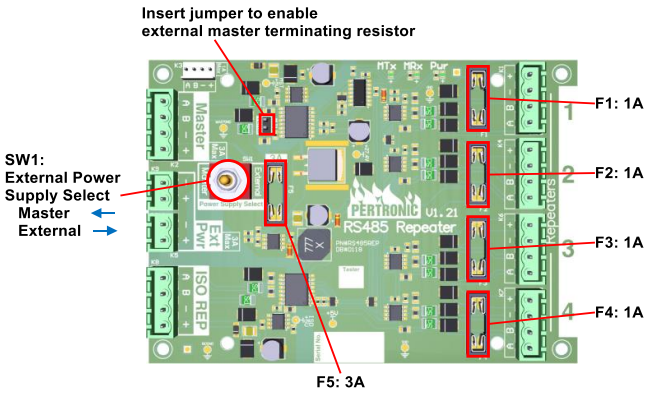
Note:

The ISO Repeater channel (K8) must be provided with a power supply. If electrical isolation from other channels is not required, the ISO Repeater supply may be looped from the Master (K2/K3) or Repeaters 1-4 (K5, K9) connectors.

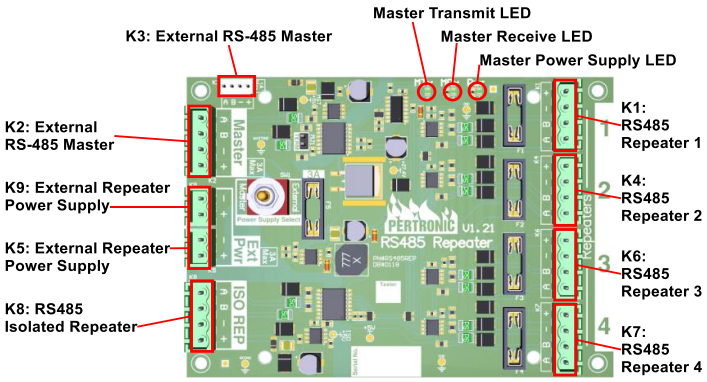




Fuses, External Power, Bus Termination,



Connectors, LEDs



Issue Number	Reason for Update	Change Note	Author
Issue 2.0 20210719	PCB revision	CN3214	RJK

Ordering Information

Product Code	Description
RS485REP	RS-485 5-Way Repeater/Splitter