



DIN-Rail Mains Switching Input/Output Unit

FUNCTION

The DIN-Rail Mains Switching Input/Output Unit provides a voltage-free, single pole change-over relay output and a monitored switch input.

FEATURES

The DIN-Rail Mains Switching Input/Output Unit supervises one or more normally-open switches connected to a single pair of cables. It is set to return an analogue value of 4 in the event of an open or short-circuit fault and 16 during normal operation. The status of the input is reported by means of an input bit.

ELECTRICAL CONSIDERATIONS

The DIN-Rail Mains Switching Input/Output Unit is loop powered and operates at 17–28V DC with protocol voltage pulses of 5–9V. The loop connections are polarity sensitive.

PROTOCOL COMPATIBILITY

The unit will operate only with control equipment using the Apollo XP95© or Discovery© protocol.

PROTOCOL BIT USAGE

See table 1 overleaf.

MECHANICAL CONSTRUCTION

The DIN-Rail Mains Switching Input/Output Unit is supplied in a housing which is clipped onto a standard 35mm DIN-Rail (DIN 46277) using end stops, part number 27447–528 (which must be ordered separately).

Connections are made via plug in terminal blocks which accept wires up to 2.5mm².



Part no 55000-797

Three LEDs, two red and one yellow, are visible through the front cover of the enclosure.

One red LED is illuminated to indicate that the relay is set. The second red LED is illuminated to indicate that the switch input is closed. The yellow LED is illuminated whenever a fault condition (open or short circuit) has been detected.

If the indicating LEDs are not required or the extra loop current to illuminate them is not available, they can be disabled by using segment 8 of the DIL switch.



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DIMENSIONS AND WEIGHT

110 x 107 x 20mm 95g

ENCLOSURES

To meet EN54-18 requirements the DIN-Rail Mains Switching Input/Output Unit should be installed within a steel enclosure weighing greater than 4.75kg, available from electrical wholesalers and distributors.

EMC DIRECTIVE 2004/108/EC

The DIN-Rail Mains Switching Input/Output Unit complies with the essential requirements of the EMC Directive 2004/108/EC, provided that it is used as described in this PIN sheet and that the contact is not operated more than five times a minute or twice in any two seconds.

A copy of the Declaration of Conformity is available from Apollo on request, or at www.apollo-fire.co.uk

Conformity of the DIN-Rail Mains Switching Input/Output Unit with the EMC Directive does not confer compliance with the directive on any apparatus or systems connected to it.

PROTOCOL BIT TABLE

Protocol Bits	Function
Output Bit 2	Not used
Output Bit 1	Not used
Output Bit 0	1 = relay set
Analogue value Bits	4 = open or short-circuit fault 16 = normal operation
Input Bit 2	Not used
Input Bit 1	Not used
Input Bit 0	1 = switch closed
Interrupt	Not Used
XP Flag Set	Yes
Alarm Flag Set	No

Table 1 Protocol Bit Usage

TECHNICAL DATA

Loop voltage	17–28V DC
Maximum current consumption at 28V	
<i>LED enabled</i>	
switch-on surge, max 150ms	6mA
quiescent, 20k Ω EOL fitted	1.5mA
switch input closed & 'switch closed' LED on	5.5mA
any other condition, max 2 LEDs on	5mA
<i>LED disabled</i>	
switch-on surge, max 150ms	6mA
quiescent, 20k Ω EOL fitted	1.5mA
switch input closed,	2.5mA
any other condition	2.5mA
Rated load at 65°C ambient (resistive)	5A at 250V AC 2A at 48V DC (resistive)
Rated load at 55°C ambient (resistive)	8A at 250V AC
Max switching capacity	2kVA
Switch input monitoring voltage (open-circuit condition)	9–11V DC
Maximum cable resistance	50 Ω
Isolation between relay contacts & other contacts tested to	2.2KV
Operating temperature	–20°C to +65°C See Note A*
Humidity (no condensation)	0–95%RH
Surface temperature under max load	BS EN 60950:2006
Rigidity IEC 60950:2005	
IP rating	20

*Note A - The operating ambient temperature is that at the outer surface of the Mains I/O case. Consideration should be made of the temperature rise within the protective enclosure which may contain other sources of heat—depending on the installation.

Complies with EN54-18:2005

Resistance across input	Status	Analogue value	Input Bit		
			2	1	0
<100Ω	Short-circuit fault	4	0	0	0
100–200Ω	Indeterminate	4 or 16	0	0	0 or 1
200–11kΩ 470Ω	Switch closed	16	0	0	1
11–15kΩ	Indeterminate	16	0	0	0 or 1
15–25kΩ 20kΩ	Normal (switch open)	16	0	0	0
25–30kΩ	Indeterminate	4 or 16	0	0	0
>30kΩ	Open-circuit fault	4	0	0	0

The values in italics are recommended values and resistors are supplied with the unit.

Table 2 input conditions and status

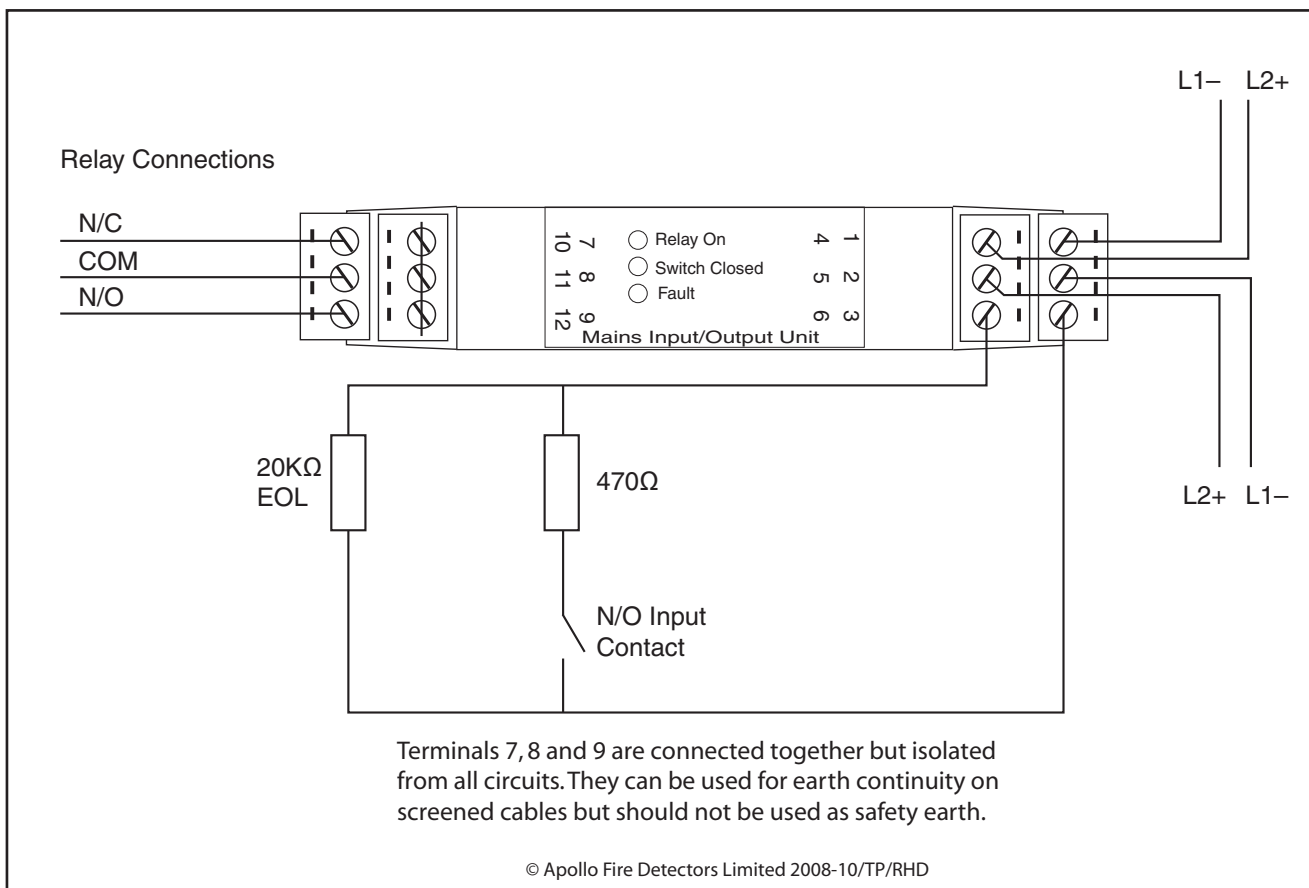


Fig 1 Schematic Diagram and Wiring Connections

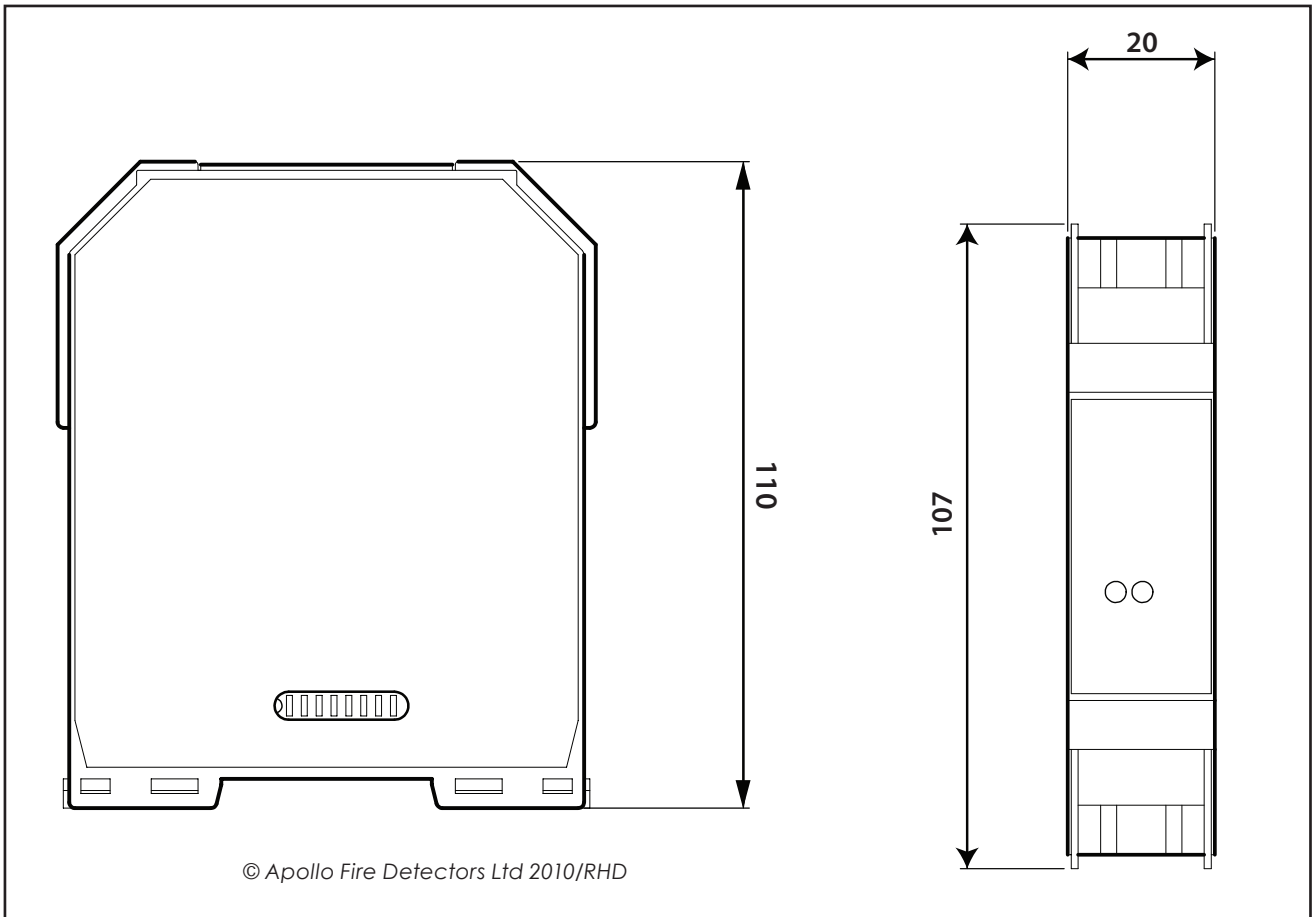


Fig 2 Dimensional views—front and top