



DIN-Rail Input/Output Unit

FUNCTION

The DIN-Rail Input/Output Unit provides a voltage-free, single pole, change-over relay output, a single, monitored switch input and an unmonitored, non-polarised opto-coupled input.

FEATURES

The DIN-Rail 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 inputs is reported by means of two input bits.

The change-over contact is operated by a software command from the panel.

ELECTRICAL CONSIDERATIONS

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

PROTOCOL COMPATIBILITY

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

PROTOCOL BIT USAGE

See Table 1 overleaf.



Part No 55000–803

MECHANICAL CONSTRUCTION

The DIN-Rail 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.

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



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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.

DIMENSIONS AND WEIGHT

110 x 107 x 20mm 95g

ENCLOSURES

To meet EN54-18 requirements the DIN-Rail 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 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.

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

TECHNICAL DATA

Loop voltage	17–28V DC
Maximum current consumption at 28V	
switch-on surge, max 250ms	3.5mA
quiescent	1.2mA
<i>EOL fitted 20kΩ</i>	
switch input s/c, max (LED on)	6mA
LEDs disabled	2.2mA
any other condition (max 2 LEDs on)	4.5mA
Switch input monitoring voltage (open-circuit condition)	9–11V DC
Maximum cable resistance	50Ω
Opto-coupled input voltage max	35V DC
impedance	10kΩ
Relay output contact rating at 30V AC or DC	max 1A (inductive or resistive)
Relay output wetting current at 10mV DC	min 10μA
Operating temperature	–20°C to +70°C
Humidity (no condensation)	0–95%
IP rating	20

Resistance Status across input	Status	Analogue Value	2	1	0
<100Ω	Short-circuit fault	4	0	†	0
100–200Ω	Indeterminate	4 or 16	0	†	0 or 1
200–11kΩ <i>4.7kΩ</i>	Switch closed	16	0	†	1
11–15kΩ	Indeterminate	16	0	†	0 or 1
15–25kΩ <i>20kΩ</i>	Normal (switch open)	16	0	†	0
25–30kΩ	Indeterminate	4 or 16	0	†	0

The values in italics are recommended values. † See "input bit 1"

Table 2 Input conditions and status

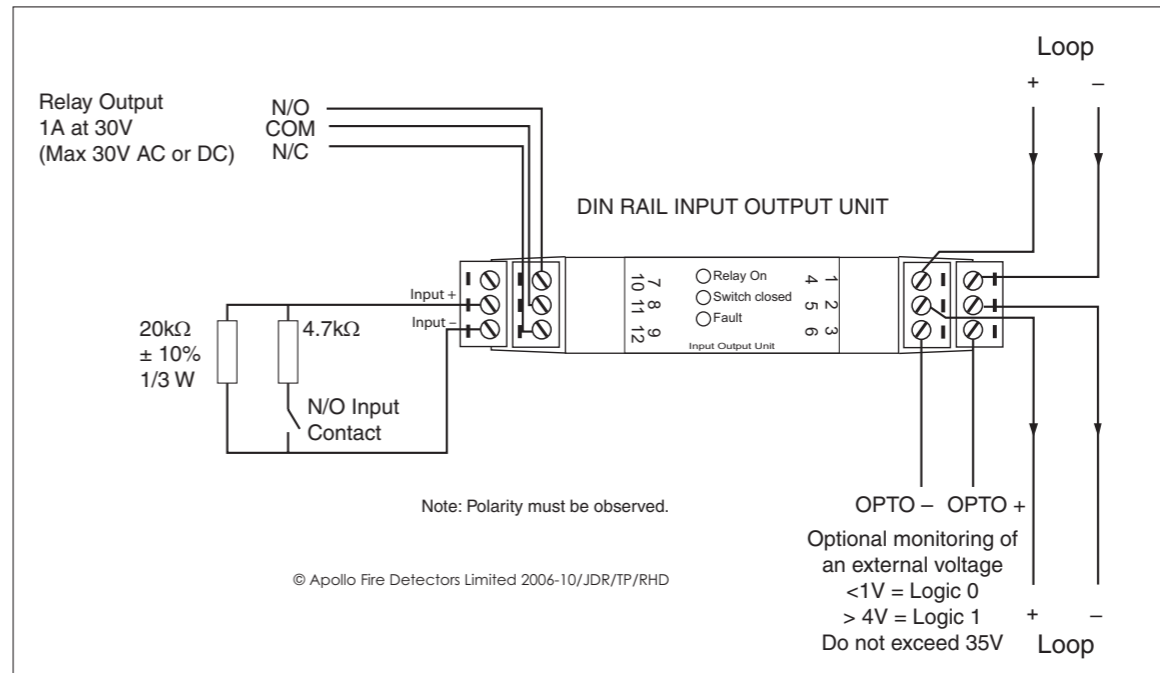
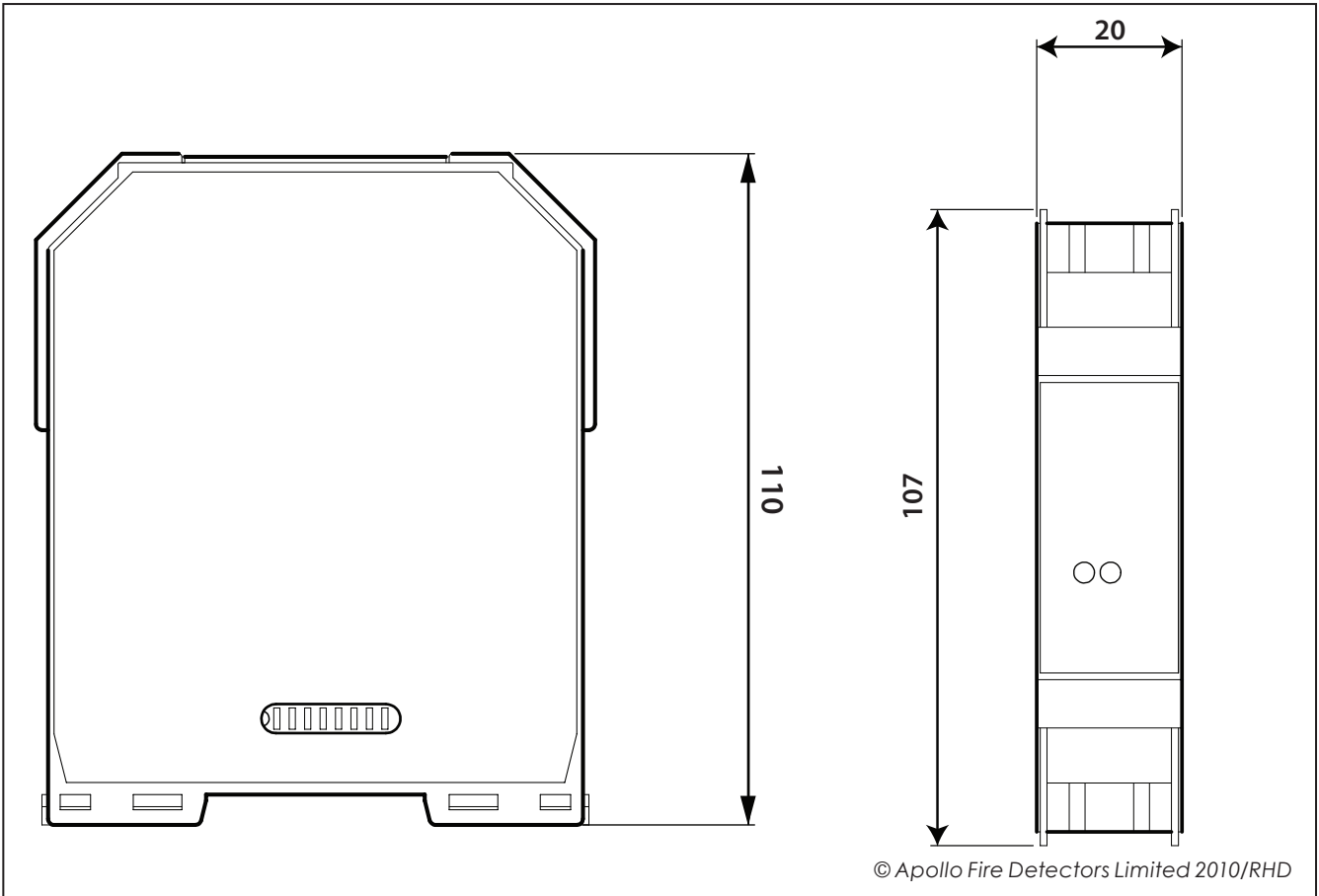


Fig 1 Schematic wiring and connection diagram

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	0 = opto input <1V 1 = opto input >4V (1–4V = indeterminate)
Input Bit 0	0 = switch open or fault 1 = switch closed
Interrupt	Not Used
XP Flag Set	Yes
Alarm Flag Set	No

Table 1 Protocol Bit Usage



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Fig 2 Dimensional Drawing (mm)