



# DIN–Rail Zone Monitor

## FUNCTION

The DIN–Rail Zone Monitor powers and controls the operation of a zone of up to 20 conventional fire detectors from a loop of XP95 addressable detectors and ancillary devices.

This unit needs to be installed in a suitable enclosure and secured using end stops, part no 27447-528 or equivalent.

## FEATURES

The DIN–Rail Zone Monitor is factory preset to return an analogue value of 16 when all detectors on the zone are in the quiescent state and 64 when a detector changes to the alarm state. The unit latches in the alarm state.

A 5.1k $\Omega$  end-of-line resistor is used to monitor cables for open and short-circuit faults. Alternatively, an active end-of-line monitor may be used in conjunction with diode bases and a capacitor of up to 50 $\mu$ F fitted at the unit wiring terminals.

In either case an analogue value of 4 is transmitted during open or short-circuit faults.

The DIN–Rail Zone Monitor is fitted with a bi-directional short-circuit isolator and will be unaffected by loop short-circuits on either loop input or output.

For IS applications use DIN-Rail IS Zone Monitor, part number 55000-798. For further details on the DIN-Rail IS Zone Monitor please see PP2336.



*DIN-Rail Zone Monitor Part no. 55000–812*

## TWO DIN–RAIL ENCLOSURES ARE AVAILABLE:

4 way	29600–239
10 way	29600–240

## ELECTRICAL CONSIDERATIONS

The DIN–Rail Zone Monitor is loop powered and operates at 17–28V DC with protocol pulses of 5–9V.

## PROTOCOL COMPATIBILITY

The DIN–Rail Zone Monitor will operate only with control equipment using the Apollo XP95 or Discovery protocol.



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## PROTOCOL USAGE

Output Bits	
2	Increase zone current for LED
1	Initiate self test
0	Activate Zone reset
Interrupt	No
Analogue Value	
64	Alarm
16	Quiescent
4	Zone fault
Input Bits	
2	Increase zone current confirmed
1	Self test confirmed
0	Zone reset active
Flag Setting	
XP95 Flag	Yes
Alarm Flag	Yes

Table 1

## MECHANICAL CONSTRUCTION

The DIN–Rail Zone Monitor is supplied in a standard housing which is clipped onto a standard 35mm DIN rail (DIN 46277) using end stops part number 27447-528.

Connections are made via plug-in terminal blocks which accept wires up to 2.5mm<sup>2</sup>.

Two LEDs are visible through the top cover of the enclosure.

The red LED illuminates in the event of an alarm condition being detected.

The yellow LED is illuminated whenever the built in isolator has sensed a short-circuit loop fault.

## DIMENSIONS AND WEIGHT:

110 x 107 x 20mm                      95g

## TABLE OF ANALOGUE VALUES RELATED TO CIRCUIT STATUS AND ZONE LOAD (INPUT RESISTANCE)

Safe area circuit value	Status	Analogue value
<150Ω	Short-circuit fault	4
150Ω to 200Ω	Indeterminate	4 or 64
200Ω to 2.6kΩ	Alarm	64
2.6kΩ to 3.5kΩ	Indeterminate	64 or 16
3.5kΩ to 6.8kΩ	Normal	16
6.8kΩ to 7.5kΩ	Indeterminate	4 or 16
>7.5kΩ	Open-circuit fault	4

## TECHNICAL DATA

Loop voltage	17–28V DC
Zone voltage	
(Loop voltage > 22V)	19V ±1V
(Loop voltage < 22V)	loop voltage –1.5V
Maximum current consumption at 28V	
switch-on surge, max 250ms	2.8mA
quiescent	4mA + detector load
alarm	11mA
short-circuit	11mA
Maximum quiescent detector load	2mA
Maximum current through isolator	
	1A continuous 3A peak
Isolating voltage	14V
End-of-line resistor value	5.1kΩ + 5% 1/3W
Stabilisation time on power-up	4 seconds
Maximum capacitor on zone terminals	50µF
Operating temperature	–20° C to +70° C
Humidity (no condensation)	0% – 95%
IP rating	20
Complies with EMC Directive 2004/108/EC	
Complies with EN54-18:2005 and EN54-17:2005	

## NOTES ON USE

1. Zone voltage is regulated to 19V±1V for any loop voltage greater than 22V. If the loop voltage falls below 22V, the zone voltage is approximately 1.5V below the loop voltage. It is important to ensure that under worst-case conditions, the zone voltage is above the minimum operating voltage for the conventional detectors.

2. Alarm conditions are latched internally by the Zone Monitor. It is therefore necessary to reset the alarm even if non-latching conventional detectors are used.

3. To comply with BS5839: Part 1 response time requirements, manual call points can only be incorporated into zones connected by the Zone Monitor to XP95 systems if the control panel is programmed to recognise the alarm flag.

4. Manual call points can be located at any point in the zone wiring if active end-of-line monitoring with diode detector bases is used. If a 5.1 kΩ resistor is used for monitoring, manual call points must be connected between the Zone Monitor and the first detector (see Figure 2).

5. The zone monitor includes a bi-directional isolator; therefore a single short-circuit on the loop wiring adjacent to the zone monitor will not affect the operation of the conventional detector zone.

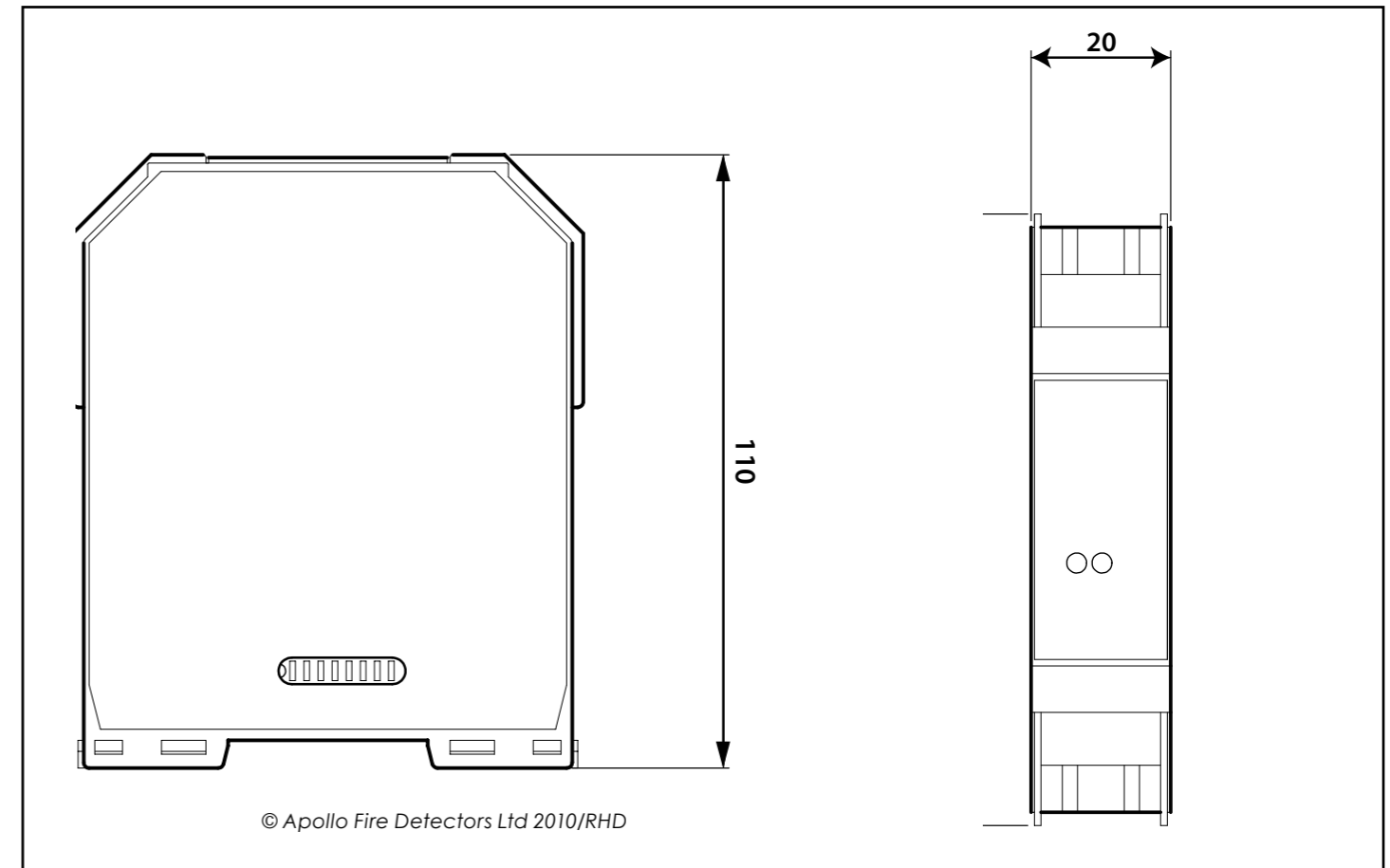
## EMC DIRECTIVE 2004/108/EC

The DIN–Rail Zone Monitor complies with the essential requirements of the EMC Directive 2004/108/EC, provided that it is used as described in this PIN sheet.

A copy of the Declaration of Performance is available from Apollo on request, or at [www.apollo-fire.co.uk](http://www.apollo-fire.co.uk)

Conformity of the DIN–Rail Zone Monitor with the EMC Directive does not confer compliance with the directive on any apparatus or systems connected to it.

## DIMENSIONAL DRAWINGS



Dimensional views—front and top

# WIRING DIAGRAM

