

Switch Monitor with Isolator



Product Overview

Product Type	Switch Monitor with Isolator
Part No.	55000-843
Digital Communication Protocol	XP95®, Discovery® & CoreProtocol® compatible

Product Information

The Switch Monitor with Isolator is designed to monitor the state of one or more single pole, volt-free contacts connected on a single pair of cables. It also reports the status to Apollo compatible control equipment.

The Switch Monitor with Isolator provides four input states to the control equipment: 'Normal', 'Fault', 'Pre-alarm' and 'Alarm'. These are derived from the switched resistive values shown in Table 2 overleaf. The Switch Monitor with Isolator has a red LED to indicate an alarm and two yellow LEDs to indicate a switch input wiring fault or a loop short-circuit wiring fault.

The Switch Monitor with Isolator is fitted with a bi-directional short-circuit isolator and will be unaffected by a single short-circuit on either loop input or output. For further information on isolators please refer to datasheet PP2090, available on request.

Electrical Consideration

The Switch Monitor with Isolator (see Figure 1) is loop powered and operates at 17–28V DC with protocol voltage pulses of 5–9V. It is designed to accept a maximum line resistance of 50Ω. The end-of-line resistor required is 20kΩ.

Technical Data

All data is supplied subject to change without notice. Specifications are typical at 24V, 25°C and 50% RH unless otherwise stated.

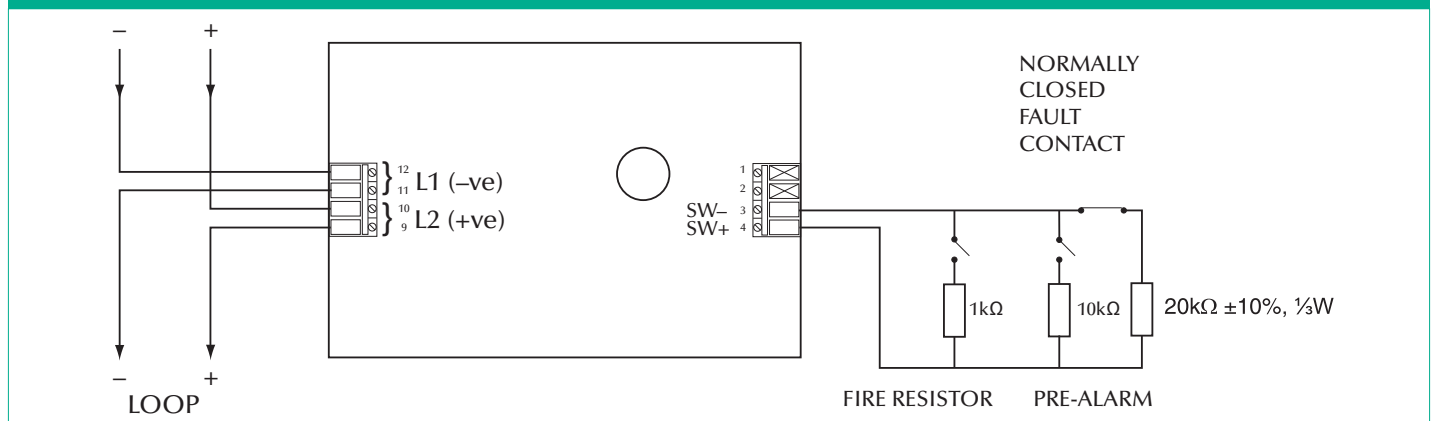
Supply voltage (V_{min}–V_{max})	17-28V DC
Digital communications protocol	XP95, Discovery & CoreProtocol compatible 5-9V Peak to Peak
Current consumption (max) at 24V DC	
Power up surge (150ms max)	3.5mA
Quiescent (20kΩ End-of-Line fitted)	1.25mA
LED off, switch input closed	1.5mA
LED on, switch input closed	3.5mA
LED on, switch input s/c	3.6mA
Maximum continuous current	1A
Maximum switching current	3A
On resistance	0.2Ω
Switch input monitoring voltage	9–11V DC
Maximum cable resistance	50Ω
Operating temperature	-20°C to 70°C
Humidity	0% to 95%RH (no condensation or icing)
Vibration, impact and shock	EN 54-17 & EN 54-18
IP Rating	Designed to IP54
Approvals & standards	EN 54-17, EN 54-18, CPD, LPCB, VdS, CCCF, CCS & VNIPO
Dimensions	48mm height x 150mm width x 90mm depth
Weight	240g

Table 1 Digital communications protocol compatibility

Protocol	Device behaviour
XP95/Discovery	XP95
CoreProtocol (fire control panel dependant)	XP95

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Figure 1 Switch Monitor with Isolator Wiring Diagram



Mechanical Construction

The Switch Monitor with Isolator (see Figure 2) is supplied with a back box for surface mounting and is intended for indoor use only. The backbox is moulded from the same white self-extinguishing polycarbonate as Apollo detectors.

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

The red LED can be illuminated by the fire control panel in the event of an alarm being detected.

One yellow LED is illuminated in the event of a fault condition being detected in the monitoring circuit and cannot be controlled by the panel.

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

Figure 2 Switch Monitor with Isolator

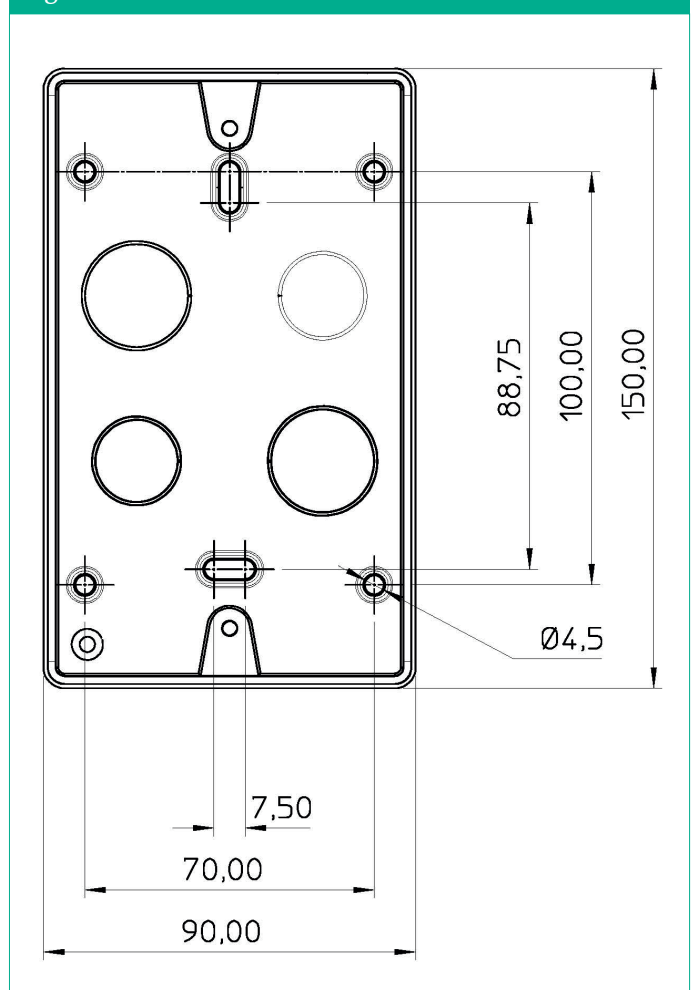


Table 2 Analogue Values Related to Circuit Status and Zone Load (Input Resistance)

Status	Analogue Value	Switch Monitor with Isolator (55000-843)
Short Circuit Fault	4	< 0.1kΩ
Indeterminate	4 or 64	0.1kΩ – 0.2kΩ
Alarm	64	0.2kΩ – 2kΩ (1kΩ)*
Indeterminate	45–51 or 64	2kΩ – 3kΩ
Pre-alarm	45–51	3kΩ – 11kΩ (10kΩ)*
Indeterminate	16 or 45–51	11kΩ – 15kΩ
Normal	16	15kΩ – 25kΩ (20kΩ)*
Indeterminate	4 or 16	25kΩ – 30kΩ
Open Circuit Fault	4	> 30kΩ

* Note: The values shown in brackets are recommended values, recommended value resistors supplied with the unit

EMC Directive 2004/108/EC

The Switch Monitor with Isolator complies with the essential requirements of the EMC Directive 2004/108/EC, provided that it is used as described in this data sheet.

A copy of the Declaration of Conformity is available from Apollo on request.

Construction Products Directive 89/106/EEC

The Switch Monitor with Isolator complies with the essential requirements of the Construction Products Directive 89/106/EEC.

A copy of the Declaration of Performance is available from Apollo on request.