

Features

- 1X10 fuse supervision version
- 1X20 Trip coil & DC supply supervision version
- Compact design
- Simple through hole panel mount
- De-mountable terminal block with retention screws
- Extra large LED
- Remote indication via relay output contact
- Custom front panel label
- Cost effective
- Range of supervision voltages

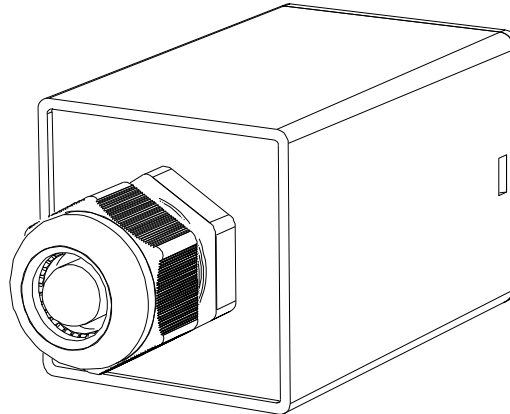
Application

The 1X10 Fuse Supervision relay has been designed as a simple and cost effective device for monitoring the condition of fuses, AC and DC supplies and protection and control circuits.

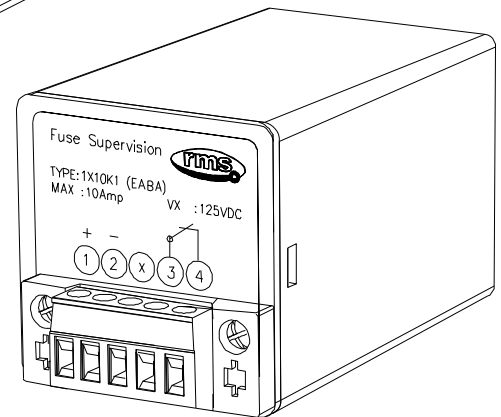
In addition to the DC supply supervision function, the 1X20 relay also supervises the CB coil.

Local visual indication of an AC or DC supply, fuse or circuit failure is provided by a large LED. Remote indication is made possible through a single alarm relay output contact.

Both the 1X10 and 1X20 relays are characterized by their compact size, plug in connection base and simple panel mounting configuration. A number of models are available to cover a range of system voltages and circuit applications.



Front view



Rear view

Operation

Made in Australia

The 1X10 and 1X20 relays comprise an electromechanical voltage operated relay which is wired across the circuit being monitored. The relay may be employed to operate in six (6) different application modes as described in the Application section.

The 1X20 version relay incorporates an electronic time delay to avoid nuisance alarm signals during normal operation of the circuit breaker.

The relay is designed for flush mounting utilizing the single 25mm mounting point which also houses the large LED indicator. Electrical termination is made via four screw terminals on the rear of the case. This terminal block is of a plug in type with integrated retention screws further simplifying installation.

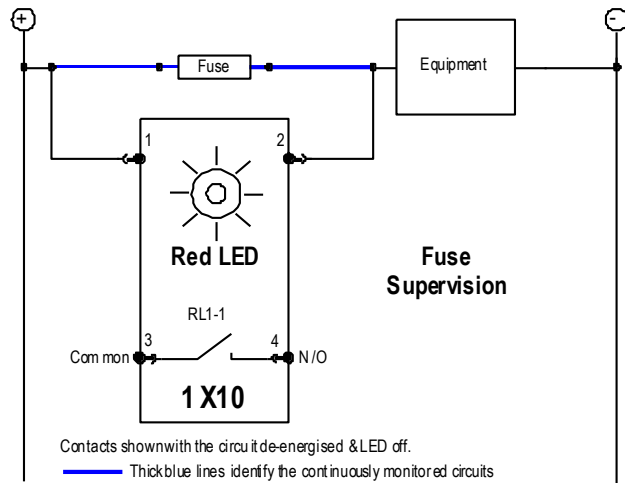
FUSE SUPERVISION – (N/O Contact)

In this application a 1X10 relay is being applied to supervise a fuse utilising a N/O alarm output contact with a red 'alarm' LED.

Order code: 1X10-xAAx or 1X20-xAAx

Under normal conditions the supervision relay remains dropped out, the alarm contact remains open and the red 'alarm' LED extinguished. Failure of the fuse will cause the supervision relay to pick up, the alarm contact to close and the red 'alarm' LED to be illuminated provided the supply has not been lost to the 1X10 relay.

1X10-xAAx or 1X20-xAAx



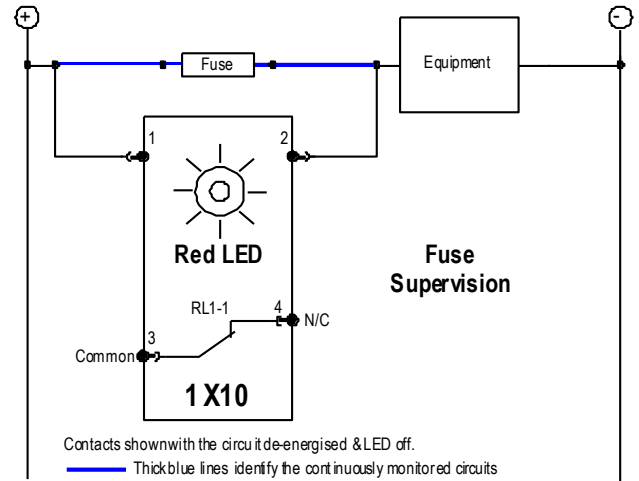
FUSE SUPERVISION – (N/C Contact)

In this application a 1X10 relay is being applied to supervise a fuse utilising a N/C alarm output contact with a red 'alarm' LED.

Order code: 1X10-xABx or 1X20-xABx

Under normal conditions the supervision relay remains dropped out, the alarm contact remains closed and the red 'alarm' LED extinguished. Failure of the fuse will cause the supervision relay to pick up, the alarm contact to open and the red 'alarm' LED to be illuminated provided the supply has not been lost to the 1X10 relay.

1X10-xABx or 1X20-xABx



FUSE SUPERVISION FUNCTION SUMMARY

Relay Model	Fuse Healthy			Fuse Failure		
	LED	Relay Picked-up	Contact	LED	Relay Picked-up	Contact
1X10-xxAx	OFF	NO	OPEN	ON	YES	CLOSED
1X20-xxAx	OFF	NO	OPEN	ON	YES	CLOSED
1X10-xxBx	OFF	NO	CLOSED	ON	YES	OPEN
1X20-xxBx	OFF	NO	CLOSED	ON	YES	OPEN

Table 1

BUS SUPPLY SUPERVISION – (N/O Contact)

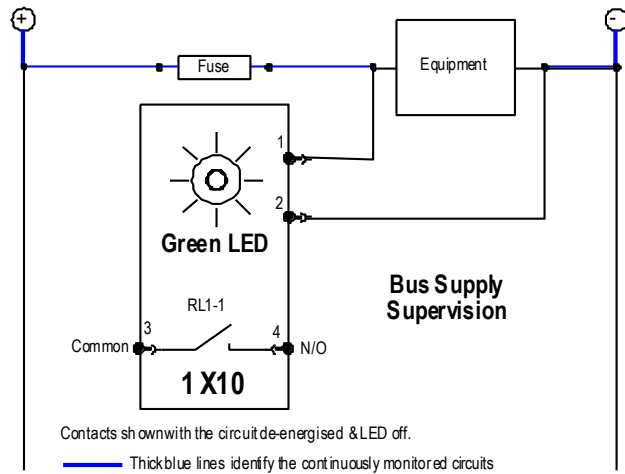
In this application a 1X10 relay is being applied to supervise an AC or DC BUS supply.

In this example the N/O Alarm Output Contact version is employed with a green 'healthy' LED.

Order code: 1X10-xBAx or 1X20-xBAx

Under normal conditions the supervision relay remains picked up, the alarm contact remains closed and the green 'healthy' LED illuminated. Failure of the DC BUS supply or an open circuit will cause the supervision relay to drop out, the 'healthy' LED to be extinguished and the alarm contact to open signaling an abnormal condition.

1X10-xBAx or 1X20-xBAx



BUS SUPPLY SUPERVISION – (N/C Contact)

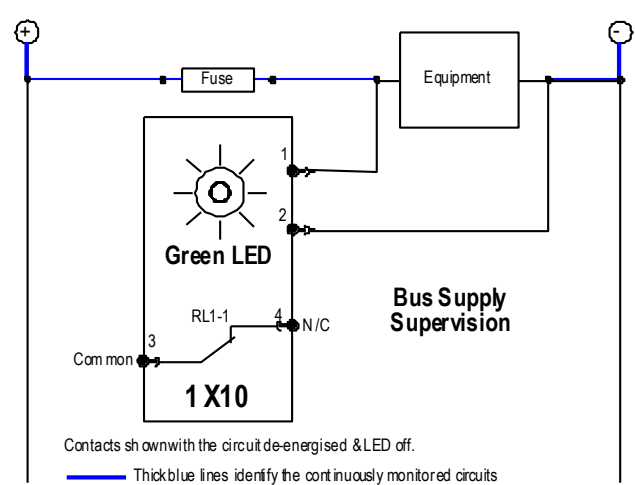
In this application a 1X10 relay is being applied to supervise an AC or DC BUS supply.

In this example the N/C Alarm Output Contact version is employed with a green 'healthy' LED.

Order code: 1X10-xBBx or 1X20-xBBx

Under normal conditions the supervision relay remains picked up, the alarm contact remains open and the green 'healthy' LED illuminated. Failure of the DC BUS supply or an open circuit will cause the supervision relay to drop out, the 'healthy' LED to be extinguished and the alarm contact to close signaling an abnormal condition.

1X10-xBBx or 1X20-xBBx



BUS SUPPLY SUPERVISION FUNCTION SUMMARY

Relay Model	Auxiliary Supply and Fuse Healthy			Auxiliary Supply or Fuse Failure		
	LED	Relay Picked-up	Contact	LED	Relay Picked-up	Contact
1X10-xxAx	ON	YES	CLOSED	OFF	NO	OPEN
1X20-xxAx	ON	YES	CLOSED	OFF	NO	OPEN
1X10-xxBx	ON	YES	OPEN	OFF	NO	CLOSED
1X20-xxBx	ON	YES	OPEN	OFF	NO	CLOSED

Table 2

TRIP COIL AND DC SUPPLY SUPERVISION – (N/O Contact)

In this application a 1X20 relay is being applied to supervise a CB trip coil and the DC supply.

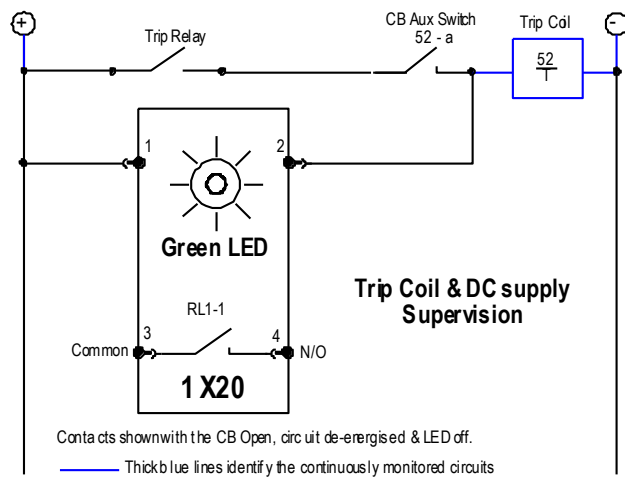
In this example the N/O Alarm Output Contact version is employed with a green 'healthy' LED.

Order code: 1X20-xBAx

Under normal conditions the supervision relay remains picked up, the alarm contact remains closed and the green 'healthy' LED illuminated. Failure of the DC BUS supply or an open circuit in the trip coil will cause the supervision relay to drop out, the 'healthy' LED to be extinguished and the alarm contact to open after a short time delay signaling an abnormal condition.

The time delay is incorporated in the 1X20 version to hold in the alarm contact during CB operation.

1X20-xBAx



TRIP COIL AND DC SUPPLY SUPERVISION – (N/C Contact)

In this application a 1X20 relay is being applied to supervise a CB trip coil and the DC supply.

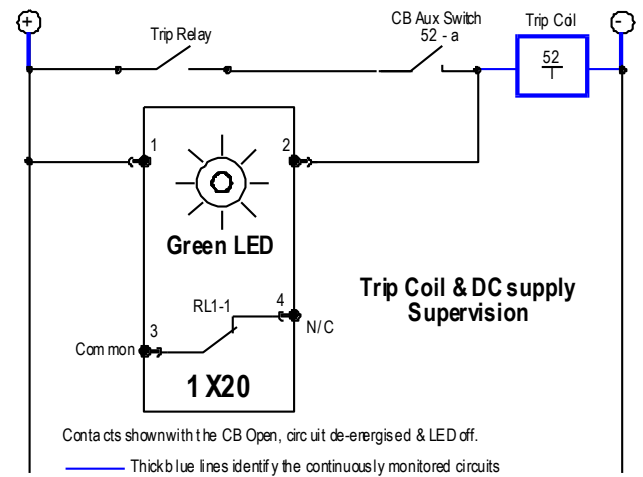
In this example the N/C Alarm Output Contact version is employed with a green 'healthy' LED.

Order code: 1X20-xBBx

Under normal conditions the supervision relay remains picked up, the alarm contact remains open and the green 'healthy' LED illuminated. Failure of the DC BUS supply or an open circuit in the trip coil will cause the supervision relay to drop out, the 'healthy' LED to be extinguished and the alarm contact to close after a short time delay signaling an abnormal condition.

The time delay is incorporated in the 1X20 version to hold in the alarm contact during CB operation.

1X20-xBBx



TRIP COIL AND DC SUPPLY SUPERVISION FUNCTION SUMMARY

Relay Model	Auxiliary Supply and Trip Coil Healthy			Auxiliary Supply or Trip Coil Failure		
	LED	Relay Picked-up	Contact	LED	Relay Picked-up	Contact
1X20-xxAx	ON	YES	CLOSED	OFF	NO	OPEN
1X20-xxBx	ON	YES	OPEN	OFF	NO	CLOSED

Table 3

SUPERVISION OPERATING CURRENT

The 1X10 and 1X20 circuit designs are optimized to minimize the supervision current in the circuit being monitored. The following supervision currents and burdens apply when the relay and LED are energized.

Nominal supply	Supervision Circuit		
	Resistance (ohms)	Supervision current	Nominal burden
24V DC	640	<40mA	<0.9W
32V DC	1,200	<30mA	<1.0W
48V DC	2,600	<20mA	<1.0W
110V DC	13,600	<10mA	<1.2W
125V DC	16,000	<10mA	<1.3W
220V DC	28,000	<10mA	<2.0W
250V DC	31,000	<10mA	<2.2W
110V AC 50/60Hz	6,600	<20mA	<2.0VA
230V AC 50/60 Hz	9,200	<30mA	<6.0VA

Table 4

Technical Data

OPERATING RANGE

Pickup: 80% Max
Dropout: Not less than 15%

Maximum voltage: 120% of nominal continuous

BURDEN

Picked-up: Refer Table 4
Dropped-out: Zero

INSULATION WITHSTAND in accordance with IEC 255-5:
2KV RMS and 1.2/50 5KV impulse between input and output

NOISE IMMUNITY

Withstands the high frequency interference test detailed in IEC 255-22-1.

ALARM DELAY (1X20 version only)
>150ms

OUTPUT CONTACT

One N/O or N/C contact with 1 KV isolation across open contacts

CONTACT RATINGS

Rated load

AC 1 10A / 250V AC
DC 1 10A / 24V DC

Rated current

10A

Maximum inrush current

20A

Maximum break capacity

3,000VA

ELECTRICAL LIFE

>500,000 operations at 5A 240VAC resistive

WIRING

Screw terminals mounted in moulded plug in base for easy wiring and removal.

VISUAL INDICATOR

Panel mounted extra large red, green, yellow or white LED.

MOUNTING

Panel mounting through LED indicator assembly.

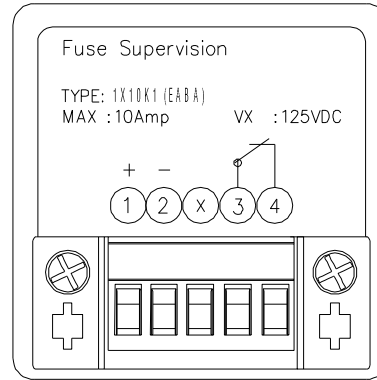
CASE STYLE

Double insulated high impact plastic case moulded in polycarbonate.

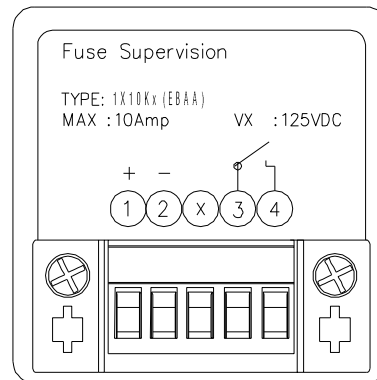
TEMPERATURE RANGE

-5 to +55 deg C

Case Details

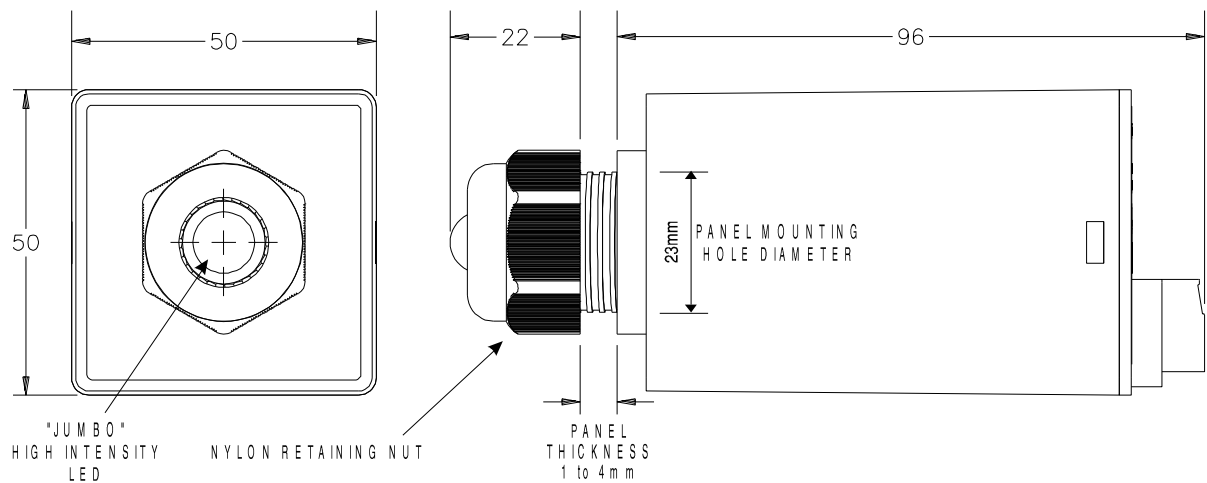


Typical rear terminal layout – N/C alarm contact option depicted



Typical rear terminal layout – N/O alarm contact option depicted

CASE DIMENSIONS



Ordering Information

Generate the required ordering code as follows: e.g. 1X10-DABA

General Type		Order Code			
	M	1	2	3	4
1X					

M MODEL

- 10 Instantaneous operation
- 20 Time delayed operation

1 SUPERVISION VOLTAGE

- A 24V DC
- B 32V DC
- C 48V DC
- D 110V DC
- E 125V DC
- F 250V DC
- G 220V DC
- L 110V AC 50/60Hz
- P 230V AC 50/60Hz

2 LED COLOUR

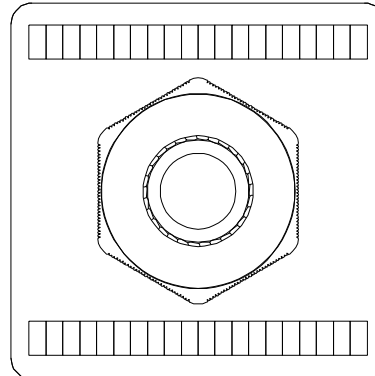
- A Red
- B Green
- C Yellow
- D White

3 FUNCTION CODE

- A N/O
- B N/C

4 CUSTOM FRONT PANEL LABEL

- A Not required
- B Required Advise 2 x 20 characters (Maximum) of custom text for custom front panel label with order.



Maximum 2 X 20 characters



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Relay Monitoring Systems Pty Ltd

6 Anzed Court
Mulgrave, Victoria 3170
AUSTRALIA
Ph: +61 3 8544 1200
Fax +61 3 8544 1201
Sales: rms@rmspl.com.au
www.rmspl.com.au
www.relays.com.au

ISO9001 Quality Accreditation

RMS holds BSI (British Standards Institute) registration number 6869 for the certification of a quality system to AS/NZS ISO9001:2008.

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