

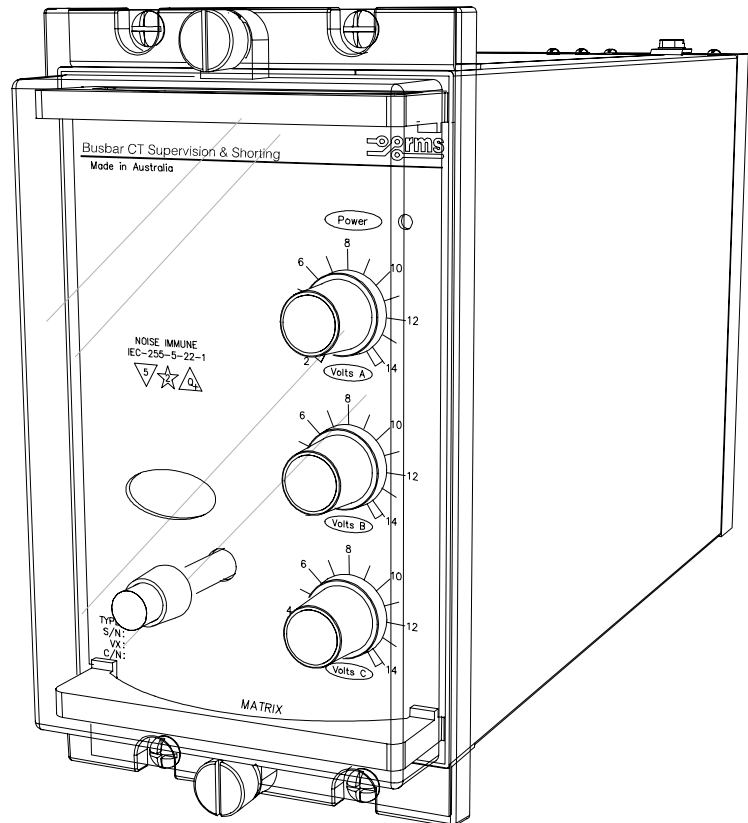
## Features

- Low AC burden
- No external resistors required
- 3 latching N/O (Hand reset), alarm contacts
- 3 latching N/O (Hand reset), buswire shorting contacts
- Hand reset flag
- 40-300V DC auxiliary supply  
40-275V AC auxiliary supply
- Optional 20-70V DC supply
- Auxiliary supply fail alarm
- 3 second fixed time delay
- 4M draw out case

## Application

The 2V68 is a three phase monitoring device designed to provide continuous supervision of the buswires in high impedance type buswire protection schemes. The relay will detect open circuited buswires as well as open circuited main current transformers.

The relay provides three (3) latching N/O alarm output contacts to signal faults. Three (3) additional N/O latching output contacts are provided for an integral buswire CT shorting facility.



2V68 depicted in a 4M28 case

## Operation

Made in Australia

The 2V68 type relays have a setting range of 2-14V adjusted on a per phase basis from calibrated potentiometers at the front panel. The relay is continuously rated at 300V RMS & no external components are required.

Isolation from the main CT's is achieved by using a transformer whose primary winding is connected in series with a high value and power rated resistor. The secondary output signal from this isolating transformer is fed into a current to voltage converter, then rectified for comparison with the front panel pre-set value.

The AC input is continuously monitored & when it exceeds the pre-set level. Latching contacts are actuated after a three (3) second time delay. Three (3) latching contacts are intended to be connected across the buswires of the busbar protection thus short-circuiting the busbar protection relay & rendering the protection of the zone concerned inoperative. The remaining three (3) latching contacts are available for alarm & signaling functions.

Operation of the relay is indicated by a hand reset flag.

A switchmode power supply provides a very wide auxiliary operating range. A relay fail alarm is provided in the form of a C/O contact which is picked up when the auxiliary supply is healthy.

## AC VOLTAGE SENSING

Sensing Range:	2 to 14V		
Dropout/Pickup Ratio:	85% minimum		
Accuracy:	+/-5% of full scale		
Frequency range:	47-61Hz		
Burdens (VA) approx:	0.1	$\times 10^{-3}$	@2V 50 Hz
	2	$\times 10^{-3}$	@8V 50 Hz
	7	$\times 10^{-3}$	@14V 50 Hz
	<4		@300V 50 Hz

## OPERATE TIME

Fixed time delay:	3s
Accuracy:	+/-5%

## THERMAL RATING

Continuous:	300V RMS per phase
Peak withstand:	2KV for 3s on all 3 phases 3KV for 0.5s on all 3 phases

## OUTPUT RELAY OPERATION INDICATOR

Hand reset flag

## ALARM CONTACTS

3 N/O latching hand reset contacts

## BUSWIRE SHORTING CONTACTS

3 N/O latching hand reset contacts

## 6R RELAY CONTACT RATINGS

### Make & Carry Continuously

3,000 VA AC resistive with maximums of 660V & 12A  
3,000 W DC resistive with maximums of 660V & 12A

### Make & Carry for 3 Seconds

7,500 VA AC resistive with maximums of 660V & 30A  
7,500 W DC resistive with maximums of 660V & 30A

### Carry for 0.5s

150A rms peak withstand for 0.5s

### AC Break Capacity

3,000 VA AC resistive with maximums of 660V & 12A

### DC Break Capacity (Amps)

Voltage		24V	48V	125V	250V
Resistive rating	a	12	1.5	0.5	0.25
	b	12	12	10	5
L/R=40ms	Maximum break	a	12	1	0.25

### Isolation Across Open Contacts

3KV rms

## AMBIENT OPERATING TEMPERATURE RANGE

-5 to 55 degrees C.

## AUXILIARY SUPPLY

20-70V DC switchmode supply or  
40-275V AC / 40-300V DC switchmode supply  
Burden: Less than 5 watts at 110V DC

### Inputs:

A high efficiency switchmode power supply is incorporated which provides a low burden to the auxiliary supply.

### Input Transients:

Withstands multiple high-energy transients & ring waves in accordance with IEEE28 - ANSI C26.1 Cat. II, accordingly:

- 0.5uS 100KHz 6KV O/C, 500A S/C, 4J
  - 1.2/50uS 6KV O/C
  - 8/20uS 3KA S/C, 80J clamped at 1,000V
- Mains conducted EMI within limits specified by AS 3548 Class B.

### Isolation:

The inputs are isolated from the outputs in accordance with AS3260 Class II Limited Current Circuitry, accordingly:

- Withstand voltage of 2.5Kv RMS 50Hz for one minute
- Creepage & clearance distance greater than 4mm
- Output leakage current less than 0.25A to earth

### Output Protection:

Outputs will withstand continuous short circuit. Output regulators & switching control regulator are thermally protected.

## INSULATION WITHSTAND

IEC60255-5 2KV RMS & 1.2/50 5KV impulse between:

- ◆ all input terminals & frame
- ◆ all output terminals & frame
- ◆ all input & output terminals
- ◆ each input group
- ◆ each output group

## HIGH FREQUENCY DISTURBANCE

IEC60255-22-1 2.5KV 1MHz common mode  
1.0KV 1MHz differential mode

## ELECTROSTATIC DISCHARGE

EN61000-4-2:1995 8KV Level 3

## FAST TRANSIENT DISTURBANCE

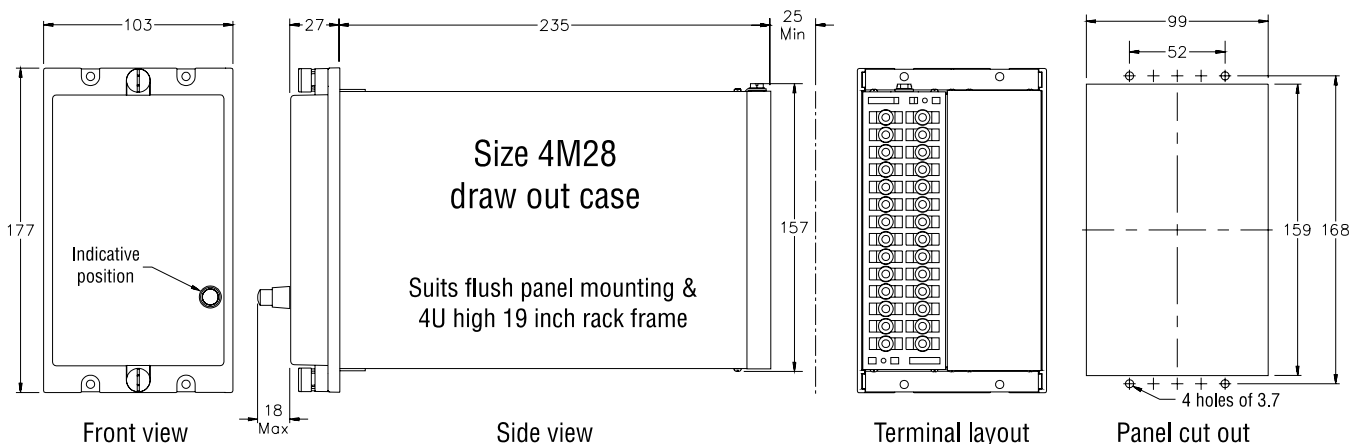
EN61000-4-4:1995 4KV Level 4

## CASE

Size 4 draw out  
28 M4 screw terminals  
Flush panel mount or 4U high 1/4 width 19 inch rack mount  
IP51 rating

## ACCESSORIES SUPPLIED WITH EACH RELAY

1 x M4 self threading mounting screw kit P/N 290-406-151  
1 x M4 terminal screw kit (28 per kit) P/N 290-407-153  
1 x Product Test Manual



# Ordering Information

Generate the required ordering code as follows: e.g. 2V68 B

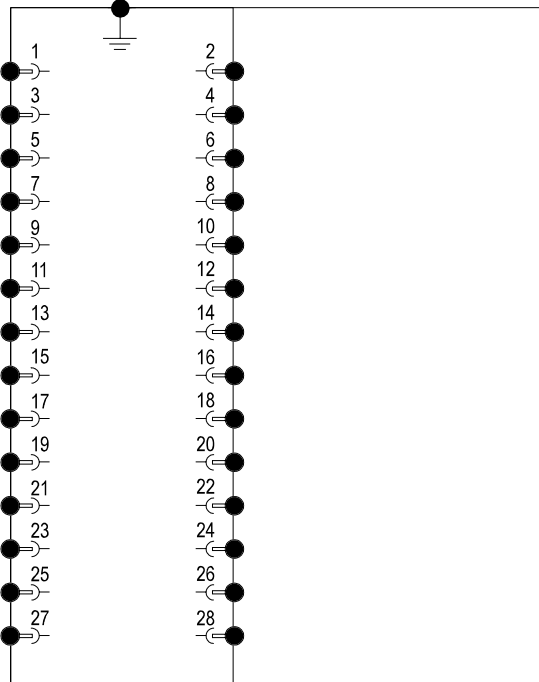
**2V68**

**1**

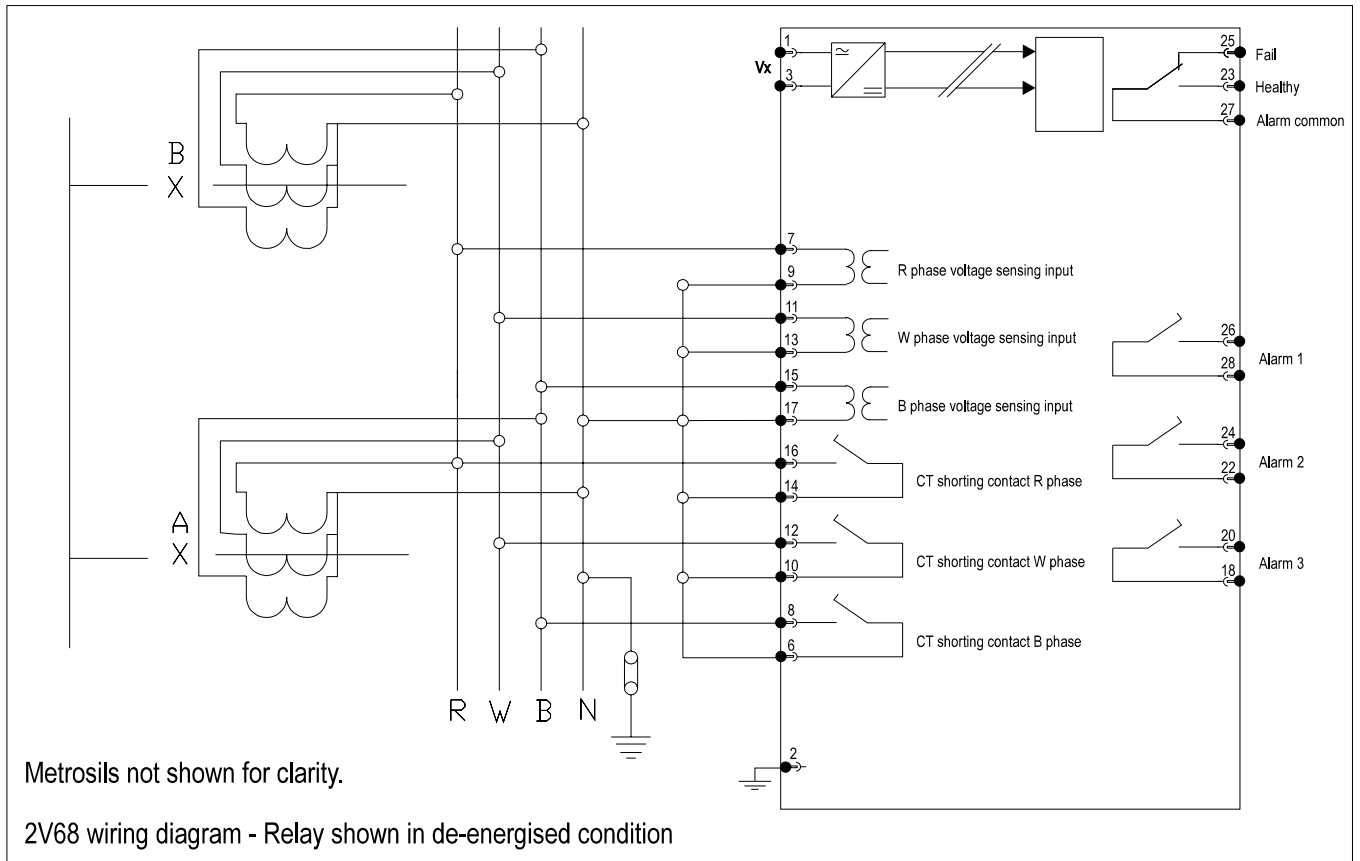
**1 AUXILIARY SUPPLY RANGE**

- A 20-70V DC
- B 40-300V DC / 40-275V AC

Case Earth



4M28 Case terminations (REAR VIEW)



## **Australian Content**

Unless otherwise stated the product(s) quoted are manufactured by RMS at our production facility in Melbourne Australia. Approximately 60% of our sales volume is derived from equipment manufactured in house with a local content close to 90%. Imported components such as semi-conductors are sourced from local suppliers & preference is given for reasonable stock holding to support our build requirements.

## **Quality Assurance**

RMS holds NCSI (NATA Certification Services International), registration number 6869 for the certification of a quality assurance system to AS/NZS ISO9001-2008. Quality plans for all products involve 100% inspection and testing carried out before despatch. Further details on specific test plans, quality policy & procedures may be found in section A4 of the RMS product catalogue.

## **Product Packaging**

Protection relays are supplied in secure individual packing cardboard boxes with moulded styrene inserts suitable for recycling. Each product & packing box is labeled with the product part number, customer name & order details.

## **Design References**

The products & components produced by RMS are based on many years of field experience since Relays Pty Ltd was formed in 1955. A large population of equipment is in service throughout Australia, New Zealand, South Africa & South East Asia attesting to this fact. Specific product & customer reference sites may be provided on application.

## **Product Warranty**

All utility grade protection & auxiliary relay products, unless otherwise stated, are warranted for a period of 24 months from shipment for materials & labour on a return to factory basis. Repair of products damaged through poor application or circumstances outside the product ratings will be carried out at the customer's expense.

## **Standard Conditions of Sale**

Unless otherwise agreed RMS Standard Terms & Conditions (QF 907) shall apply to all sales. These are available on request or from our web site.



## **Relay Monitoring Systems Pty Ltd**

6 Anzed Court, Mulgrave, Victoria 3170, AUSTRALIA

Tel: +61 3 8544 1200 Fax: +61 3 8544 1201 Email: [rms@rmspl.com.au](mailto:rms@rmspl.com.au) Web: [www.rmspl.com.au](http://www.rmspl.com.au)