

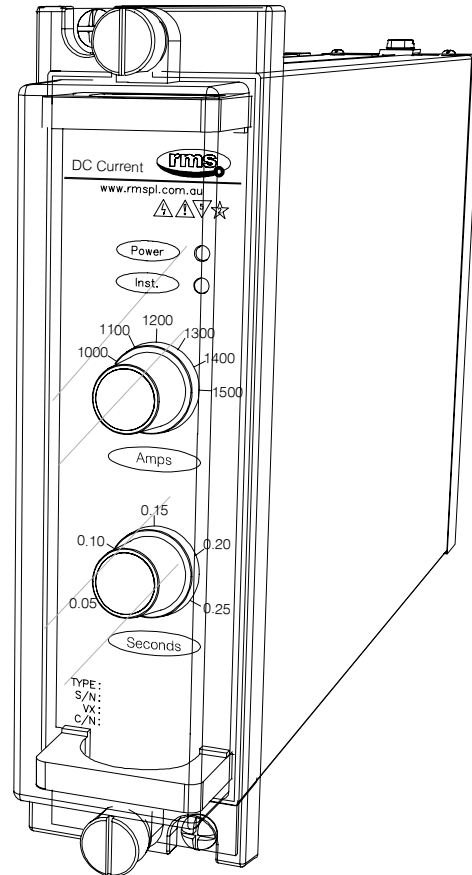
## Features

- High sensitivity
- 40-300V DC auxiliary supply  
Power supply fail relay drops out if the auxiliary supply fails.
- Optional 20-70V DC supply
- Optional mV input range
- Custom front dial calibration range scale
- Two C/O output contacts
- One C/O fail alarm contact
- Current pick up LED indication
- Optional delay timer
- Power healthy LED indication
- Size 2M draw out case

## Application

The 2C81 relay may be applied to provide a trip signal to a circuit breaker in a DC system in the event of a short circuit on the downstream side of the CB.

The 2C81 may be specified with instantaneous operating contacts or with an integrated adjustable timer where coordination with other protective devices is required.



2C81 depicted in a 2M28-S case

## Description

Made in Australia

The 2C81 is a DC current measuring relay. The measured input current is derived from a mV drop across a current shunt.

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.



#### BURDEN

Auxiliary supply: (at 110V DC nominal supply)  
Less than 2W independent of range with  
output relays picked up.

#### SENSING INPUT

The mV sensing input range is specified as part of the order code.  
The front plate current setting range scale is specified as part of the  
order code.

Scale ratio: 1.5x or 2x depending on mV scale selected  
Overload: 2x nominal input continuously

#### CURRENT SETTING ACCURACY

+/-5% of setting

#### HYSTERISIS

>90% pick up / drop out ratio

#### OPERATING TIME OF OUTPUT CONTACTS

Instantaneous: ~20ms

Time delayed: Range B: 0.05 to 0.25s  
Range C: 0.1 to 1.0s

Accuracy: +/-5% of maximum scale  
Repeatability: +/-2% of setting

## Technical Data

#### AUXILIARY SUPPLY

40-275V AC / 40-300V DC or 20-70V DC switchmode supply.

#### FRONT PANEL INDICATORS

Power - Green: On solid when auxiliary supply healthy  
Current PU - Red: On solid when current above setting

#### OUTPUT CONTACTS

2 C/O self reset contacts

#### RELAY FAIL ALARM

A C/O alarm contact is maintained in the energized state provided  
the auxiliary supply is applied & the internal 24V DC rail is within  
acceptable limits.

#### OUTPUT CONTACT RATINGS

IEC60255-0-2

Carry continuously	5A AC or DC
Make & carry	0.5s 20A AC or DC
L/R $\leq$ 40ms & V $\leq$ 300V	0.2s 30A AC or DC
	AC resistive 1,250VA
Break capacity	AC inductive 250VA @ PF $\leq$ 0.4
I $\leq$ 5A & V $\leq$ 300V	DC resistive 75W
	DC inductive 30W @ L/R $\leq$ 40ms
	50W @ L/R $\leq$ 10ms
	10 <sup>6</sup> at maximum load
Minimum number of operations	0.5W limit 10mA / 5V
Minimum recommended load	

#### TRANSIENT OVERVOLTAGE

IEC60255-5 CLASS III

Between all terminals & earth	5kV 1.2/50us 0.5J
Between independent circuits without damage or flashover	5kV 1.2/50us 0.5J

#### INSULATION COORDINATION

IEC60255-5 CLASS III

Between all terminals & earth	2.0kV RMS for 1 minute
Between independent circuits	2.0kV RMS for 1 minute
Across normally open contacts	1.0kV RMS for 1 minute

#### AUXILIARY SUPPLY

IEC60255-11

Allowable breaks / dips in supply  $\leq$  20ms  
Collapse to zero from nominal voltage

#### HIGH FREQUENCY DISTURBANCE

IEC60255-22-1 CLASS III

2.5kV 1MHz common mode  $\leq$  3% variation  
1.0kV 1MHz differential mode

#### ELECTROSTATIC DISCHARGE

IEC60255-22-2 CLASS III

6kV contact discharge  $\leq$  5% variation

#### FAST TRANSIENT

IEC60255-22-4

4kV, 5/50ns, 2.5KHz repetitive  $\leq$  3% variation

#### TEMPERATURE RANGE

IEC68-2-1/2

Operating: -5 to +55°C  
Storage: -25 to +75°C

#### HUMIDITY

IEC68-2-78

40°C & 95% RH non condensing

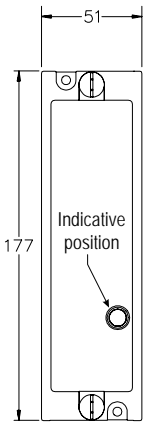
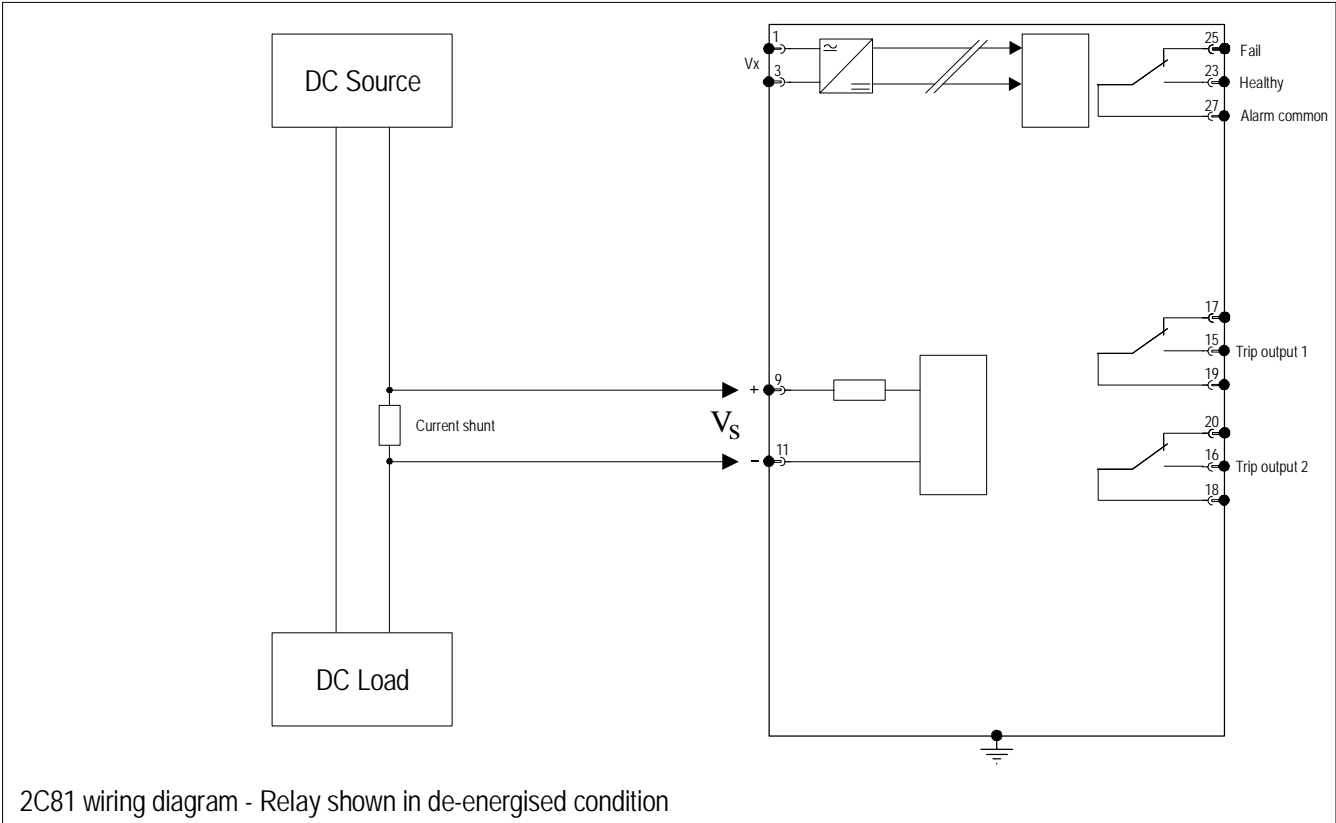
#### CASE

Size 2M28-S draw out  
28 M4 screw terminals  
Flush panel mount or 4U high 1/8 width 19 inch rack mount

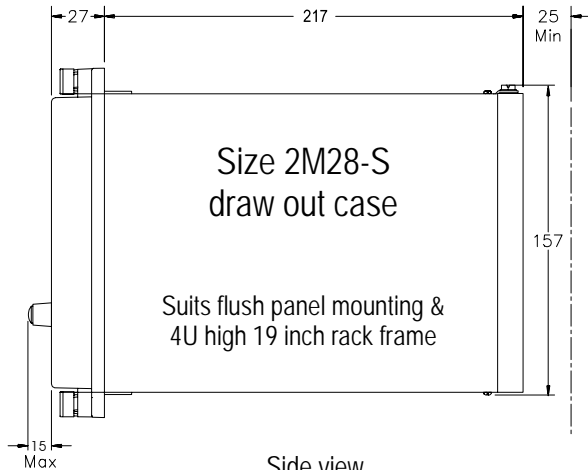


Visit [www.rmspl.com.au](http://www.rmspl.com.au) for the latest product information.

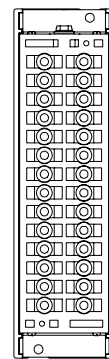
Due to RMS continuous product improvement policy this information is subject to change without notice. 2C81/Issue 1/27/02/08 - 2/4



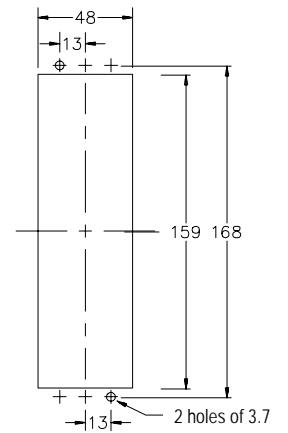
Front view



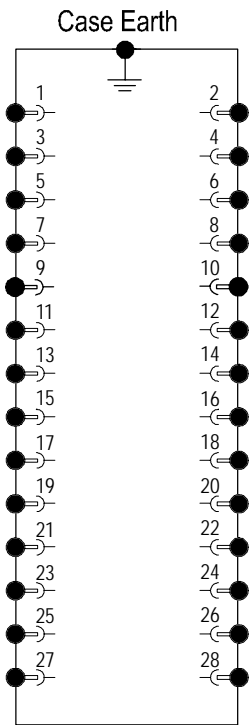
Side view



Terminal layout



Panel cut out



2M28 Case terminations (REAR VIEW)

## Ordering Information

### ORDER CODE

The order code determines the production build in the factory & cannot be changed in the field.

Generate the required order code as follows:  
e.g. 2C81-BBA 100-150

General Type	Order Code			
	1	2	3	4
2C81				to

### 1 AUXILIARY SUPPLY RANGE

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

### 2 SENSING RANGE

- A 50-100mV 1:2 scale ratio
- B 100-150mV 1:1.5 scale ratio
- C 100-200mV 1:2 scale ratio
- D 250-500mV 1:2 scale ratio
- E 500-1,000mV 1:2 scale ratio

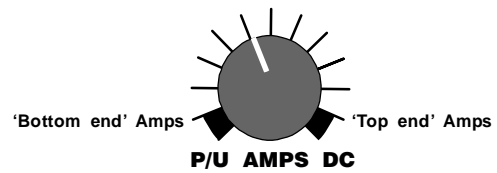
### 3 INTEGRATED TIME DELAY

- A Not required
- B 0.05 to 0.25s
- C 0.1 to 1.0s

### 4 FRONT DIAL SETTING SCALE ENGRAVING \*

'Bottom end' Amps to 'Top end' Amps

Note: \* The current setting scale ratio is determined by the sensing range selected in order code 2. i.e. Bottom end x Top end must equal the specified scale ratio.



## **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.



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