

Features

- 10:1 PU setting ranges
Select from two options:
5 - 50% or 20 - 200% of nominal input current
- 1A or 5A nominal CT's
- Fast reset times (<15ms at 20x setting, repeated offset)
- <5% transient over-reach
- 3 configurable instantaneous C/O contacts (Common or phase segregated)
- Relay initiate status input
- 40-300V DC auxiliary supply
Power supply fail relay drops out if the Auxiliary supply fails.
- Optional 20-70V DC supply
- Size 4M draw out case

Application

The 2C64 Series relays are adjustable AC current sensing relays for application in breaker fail protection schemes. The 2C64 is particularly suitable for breaker fail schemes where single/three pole breaker tripping is possible, since control of the current detector is provided on a per phase basis.

The 2C64 current check relay detects the circuit breaker failure to trip & to ensure discrimination has a fast reset time & minimum overshoot time.

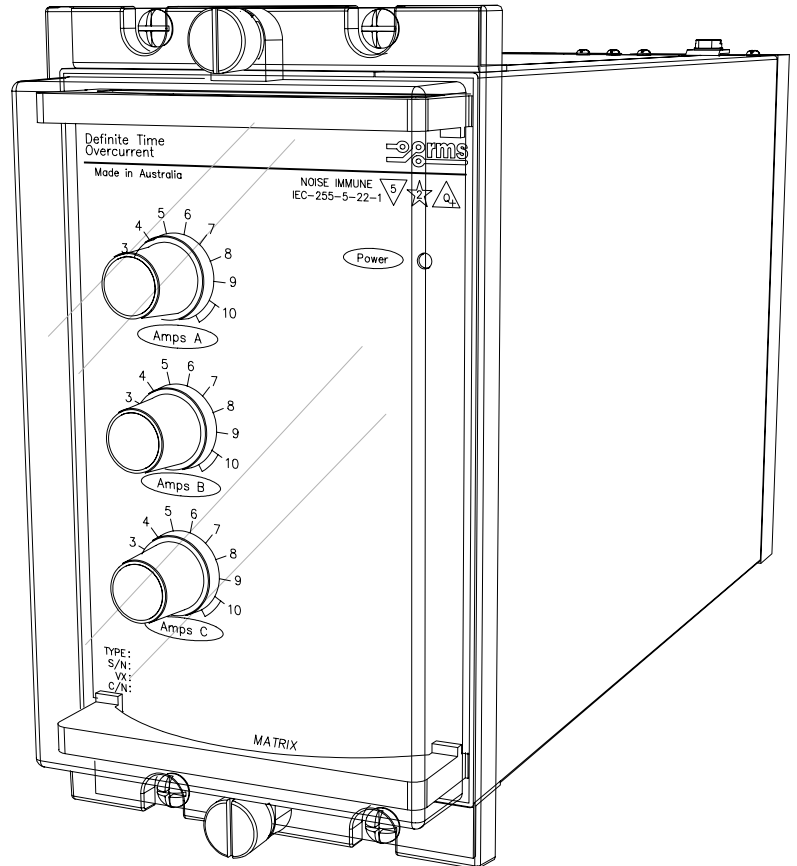
A status input signal is required to enable the output relay contacts. This allows the current pickup to be adjusted to a sensitive setting without the risk of false output relay operation due to transients & harmonics.

Integrated Time Delay Relay

The 2C63 definite time current check relay may be specified where an integrated delay timer is preferred. This relay has identical performance characteristics plus the time delay function & additional output contacts.

Zero Stand by Burden Relay

The 2C80 current check relay may be specified where a zero stand by burden is required. Initiation of the relay is achieved through application of the auxiliary supply on a single or three phase basis. The linear power supply provides high speed start up but results in higher operating burden & non continuous rating. The 2C80 may be specified with or without an integrated time delay element.



2C64 in a 4M56 case

Operation

Made in Australia

The 2C64 Series relay is a three pole current detector designed specifically for CB fail applications. A critical requirement is for a fast reset characteristic which is achieved through the use of air core CT's. The low burden auxiliary supply makes the relay suitable for continuous energisation.

Fully solid state sensing & measuring circuitry is employed with each phase current setting continuously adjustable on a front panel control.

Two output configurations are available: 3 C/O 3 ϕ instantaneous outputs or 3 x 1 C/O instantaneous phase segregated

Breakers can fail to clear a fault for several reasons:

- The trip circuit can be open due to broken wire, blown fuse, open trip coil
- The interrupting mechanism can stick, leaving a single phase of a three phase circuit connected
- The interrupter can flash-over due to loss of dielectric strength through contamination or damage
- The operating mechanism can fail to operate

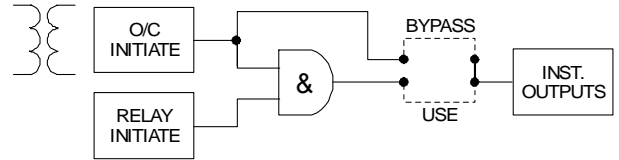
The purpose of the CB fail relay is to detect this condition & initiate contingency or backup procedures.

The wide range switchmode power supply, input current transformer, output relays & status inputs form the essential barriers against high voltage line transients.

INSTANTANEOUS OUTPUT CONTACT FUNCTION

The instantaneous output contacts can be configured to operate in two modes:

1. P/U when the current exceeds the user selectable setting & the internal instantaneous contacts link is set to BYPASS;
2. If the link is moved to USE, the instantaneous contacts will only P/U when both the current exceeds the user selectable setting & a voltage is applied to the relay initiate status input.



STATUS INPUT FUNCTION

The status input function is factory set to enable the output relay contacts during the application of a control voltage. This allows the current pickup to be adjusted to a sensitive setting without the risk of false output relay operation due to transients & harmonics.

INSTANTANEOUS OUTPUT CONTACTS

Three (3) self reset C/O contacts (Schrack type).

- ◆ Specify 3 C/O 3 ϕ instantaneous output or
- ◆ 3 x 1 C/O instantaneous phase segregated

INSTANTANEOUS OUTPUT CONTACT RATINGS

Make & carry

30A AC or DC (Limits L/R=40ms & 300V max.) for 0.2s
 20A AC or DC (Limits L/R=40ms & 300V max.) for 0.5s
 5A AC or DC continuously

Break (Limits 5A & 300V max.)

1,250VA AC resistive
 250VA at 0.4PF AC inductive
 75W DC resistive
 30W DC inductive L/R = 40ms
 50W DC inductive L/R = 10ms

Minimum recommended load

0.5W, 10mA or 5V minimum.

BURDENS

Auxiliary supply: (at 110V DC nominal supply)
 Less than 2.5 watts when dropped out.
 Less than 3.5 watts with output relays energized.
 Sensing circuits: VA per phase all settings.

I amps	1A CT input	5A CT input
1	1.25	0.01
5	6	0.18
10	25	0.70
20	100	2.9
25	-	4.5
30	-	6.5

CT INPUT THERMAL WITHSTAND (Per phase)

	1A CT	5A CT *
Continuous	3.5	25
4.5s	39	250
3s	75	450
2s	90	550
1s	120	800
0.5s	180	1,000

Note: * M Series case terminals & CT shorting switches are limited to 400A for 1s.

OPERATING TIME OF INSTANTANEOUS CURRENT ELEMENT

- At 2 X Setting: Less than 20ms on pick up.
 Drop out less than 15 ms when:
- Relay is energized by symmetrical or fully offset current of either polarity, or by three successive applications of fully offset currents of same polarity with time interval of not less than 5 sec between each application. (Current duration of 5 cycles).
 - Steady state current magnitudes up to 20 x setting are switched off at or near a current zero with the current prior to switch off being + ve going, & at or near a current zero with the current prior to switch off being -ve going. (X/R ratios of the circuit from which the relay is energized lie in the range 10 to 30).

DROPOUT PICKUP RATIO

85% approximately.

ACCURACY OF SETTINGS

Repeatability: $\pm 2\%$ of setting
 Setting: $\pm 5\%$ of maximum setting

AUXILIARY SUPPLY

40 – 275V AC & 40-300V DC switchmode supply with power on LED
 20 – 70V DC switchmode supply with power on LED.

POWER SUPPLY FAIL ALARM CONTACT

One C/O contact picked up when auxiliary supply healthy. (Schrack type).

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

RADIO FREQUENCY INTERFERENCE

EN61000-4-3:1995 10V/m Level 3

FAST TRANSIENT DISTURBANCE

EN61000-4-4:1995 4KV Level 4

AMBIENT OPERATING TEMPERATURE RANGE

-5 to 55 degrees C.

HUMIDITY

40 degrees C & 95% RH non condensing

CASE

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

SHIPPING DETAILS

Each relay is supplied individually packed in pre formed cardboard cartons with internal moulded polystyrene former.

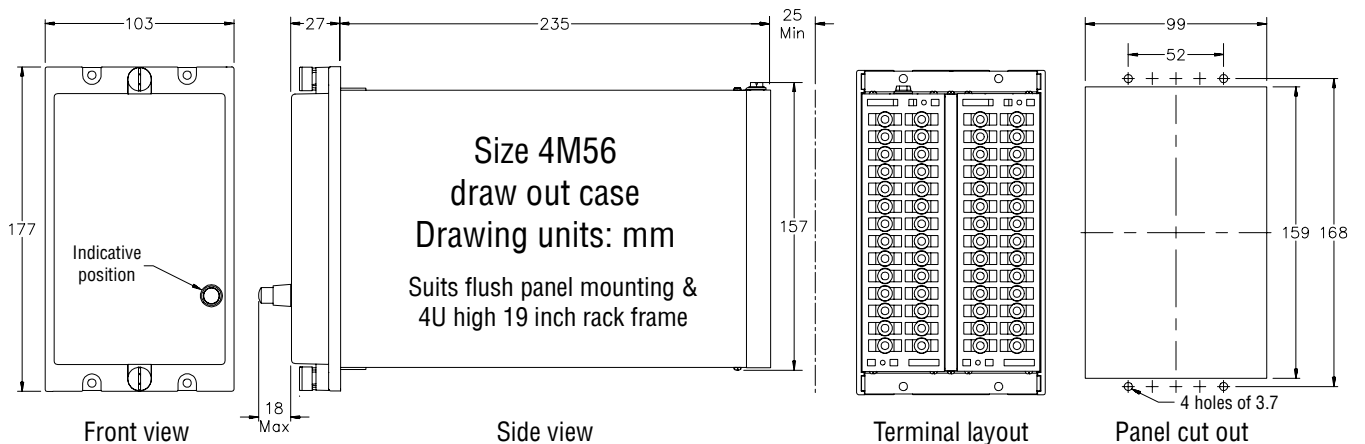
Weight: 3.3Kg

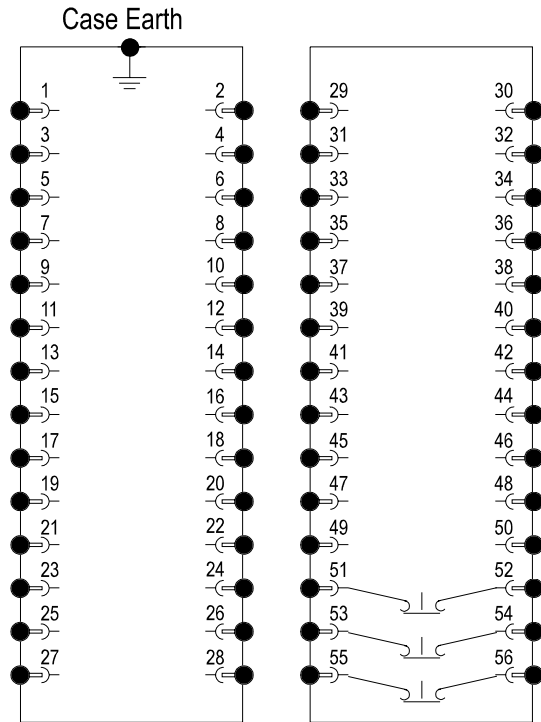
Size: 370(L) x 240(W) x 145(D)mm - Size 4 case

For large shipment individual cartons are packed in sturdy cardboard pallet boxes & surrounded by loose fill to absorb vibration & shock during transit.

ACCESSORIES SUPPLIED WITH EACH RELAY

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





4M56 Case terminations (REAR VIEW)

Ordering Information

Generate the required ordering code as follows: e.g. 2C64 BAABD

2C64

1	2	3	4	5
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1 AUXILIARY SUPPLY RANGE

A 20-70V DC B 40-300V DC

2 CURRENT SETTING (% of nominal)

A 5-50% B 20-200%

3 CT RATING (Nominal)

A 1A B 5A

4 EXTRA CUSTOMER SPECIFIED OUTPUT CONTACTS

A 3 C/O 3 ϕ instantaneous output
B 3 x 1 C/O instantaneous phase segregated

5 RELAY INITIATE STATUS INPUT

Relay coil input

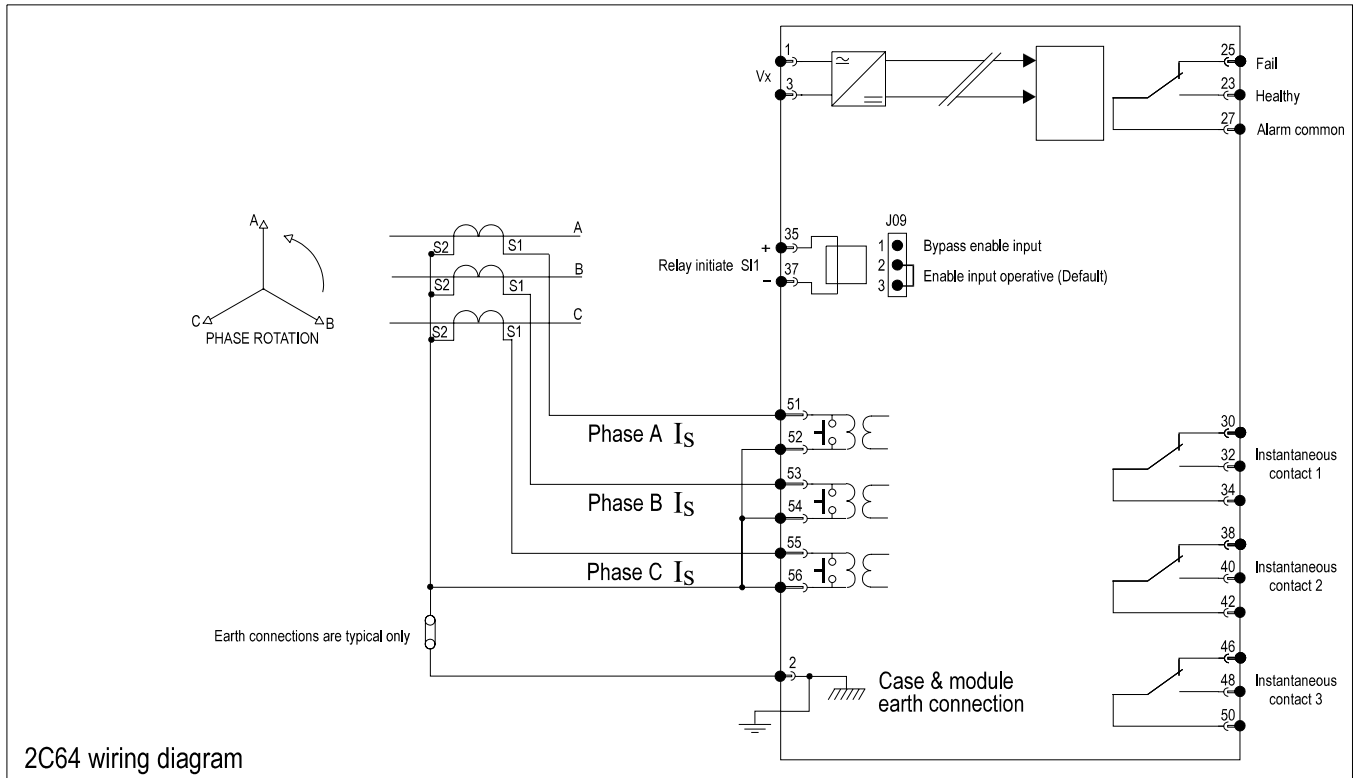
A Always enabled B 24V DC
C 48V DC D 110V DC

Integrated Time Delay Relay

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Zero Standby Burden Relay

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2C64 wiring diagram

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 ISO9001-2000. 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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