

Definite Time Sensitive Current Check Relay

Features

- 4:1 PU setting ranges
Select from five options:
20, 40, 80, 200 or 400% of
nominal input current
- 1A or 5A nominal CT's
- Fast operate time (less than 15
ms at 2 x setting)
- Fast reset times (<15ms at 20x
setting, repeated offset)
- <5% transient over-reach
- Zero DC auxiliary burden until
external initiate signal applied
- Single & three pole models
- 0-510ms delay in 2ms steps &
0-32.64s delay in 128ms steps
- Range of auxiliary supplies
- Range of case styles
- Made in Australia

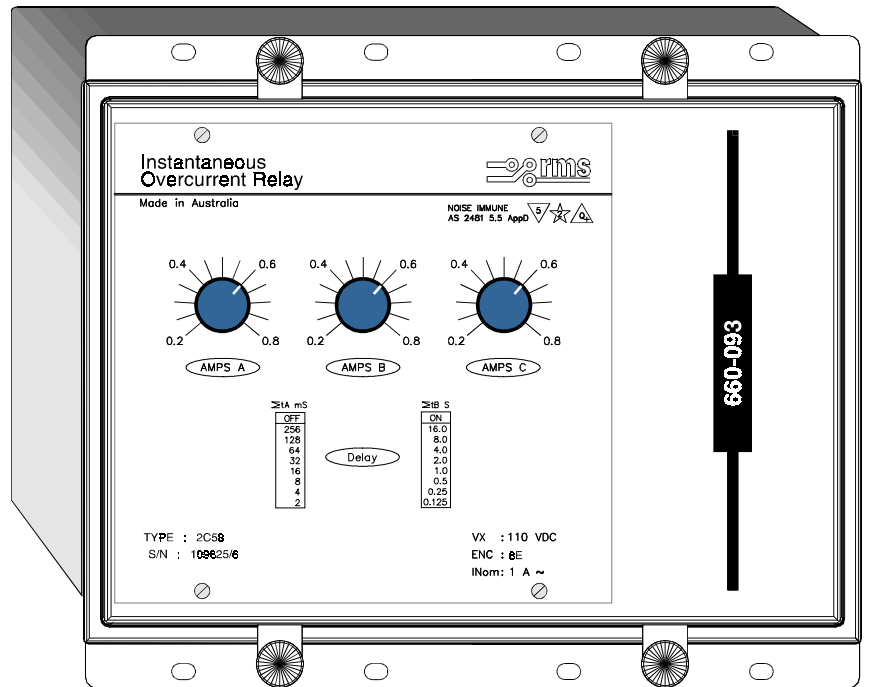
Application

The 2C58 Series relays are adjustable AC current sensing relays for application in breaker fail protection schemes. The 2C58 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 2C58 current check relay detects the circuit breaker failure to trip & to ensure discrimination has a fast reset time & minimum overshoot time.

Each current level detector initiates a time delay, set by the user, which delays operation of the output contacts.

Definite time overcurrent relays offer advantages over inverse time protection in power systems which have a wide variation in source impedance. Faults can be cleared in relatively short times irrespective of the magnitude of the fault current, & coordination of several relays in a system can be obtained at all times regardless of fault current variation.



2C58 depicted in an 8E rack mount case

Operation

Made in Australia

Each pole of the 2C58 is phase segregated & operates independently via its current level detector. Inputs from the line current transformers are connected to the primary of an internal interposing current transformer. The 2C58 is enabled by application of the DC auxiliary supply.

The internal time delay element is then initiated when the current exceeds the user selectable setting. The output contact(s) corresponding to the phase initiate input is operated after the user selectable time delay.

The standard output contact configuration is 2 N/O.

If desired the 2C58 time delay can be set to instantaneous & the external timer initiate output used to operate an external time delay element.

It should be noted that the 2C58 relay has been designed specifically to provide a zero DC auxiliary burden until initiated. The relay is not suitable for use in applications where the DC auxiliary is continuously applied or where the output contacts are to be energised continuously. For these applications the RMS 2C63 which incorporates a switchmode power supply should be employed.

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.

**CURRENT SETTINGS RANGE**

5-20%, 10-40%, 20-80%, 50-200% or 100-400% of 1 or:
5 Amp AC continuously variable over a linear scale.

ACCURACY

Repeat: $\pm 2\%$ of setting

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

WITHSTAND

5 times maximum setting continuously

(30 Amp AC absolute maximum)

20 times maximum setting for 3 seconds.

BURDENS

Vx: Approx. 10 watt once initiated (dependent on options fitted, conditions of output relays, etc.)

Is: Less than 0.5 VA per phase at rated current

DROPOUT - PICKUP RATIO

85% approximately (standard)

TRANSIENT OVER-REACH

Less than 5%

PICKUP - DROPOUT TIMES

Pick up less than 20 ms at 2 x setting.

Drop out less than 15 ms when:

- Relay is energised 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 energised lie in the range 10 to 30).

TIMING FUNCTION

Low range: 0 - 510ms in 2ms steps

High range: 0 - 31.64s in 128ms steps

Repeatability: $\pm 2\%$ of setting

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

INSULATION WITHSTAND

In accordance with IEC 255-5:

2KV RMS between input & frame, output & frame, & output & input. 1.2/50 5KV impulse between each terminal & earth, between circuits not normally connected together & between terminals of the same circuit.

NOISE IMMUNITY

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

OUTPUT CONTACTS

The output relay is fitted with 2 normally open self reset fine silver contacts as standard. Magnetic blowouts are fitted to increase contact switching performance.

6R RELAY CONTACT RATINGS**Make & Carry Continuously**

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

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

Make & Carry for 0.5 Seconds

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

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

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	0.4	0.2
		b	30	15	5.5	3.5
	1K operations (N3 Rating)	b	12	12	5	2.5

a = Without magnetic blowouts b = With magnetic blowouts



QUALITY MANAGEMENT SYSTEM
ISO9001 NATA CERTIFIED



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Due to RMS continuous product improvement policy this information is subject to change without notice. 2C58/Issue D/07/03/00/2/2

2C58 Options

Check the appropriate box under each section to accurately specify the relay configuration required & return with request for quotation:

AUXILIARY SUPPLY (-25% to + 20%)

32V DC

48V DC

110V DC

125V DC

250V DC

CURRENT SETTING (One phase may be different)

5-20% Phase: _____

10-40% Phase: _____

20-80% Phase: _____

50-200% Phase: _____

100-400% Phase: _____

CT RATING (Nominal)

1A Phase: _____

5A Phase: _____

NUMBER OF POLES

One pole

Three pole

HYSTERESIS

85%

Other _____

DEFINITE TIME DELAY FUNCTION

Required

Not required

ENCLOSURE STYLE (Refer Part B Section 6 for details)**Withdrawable**

Size 8 Case for rack mounting (4u high, 1/2 width)

Size 8 Case for flush mounting in vertical format

Size 8 Case for flush mounting in horizontal format

Non-withdrawable

G Series rear connected flush mount

G Series rear connected projection mount

G Series front connected flush mount

CONNECTION TERMINALS

2BA studs

2BA screws