

## High Speed Tripping Relay

For fast and secure multi-trip protection applications.

- > High speed operation
- > High burden
- > Self reset contacts
- > Hand reset flag indicator
- > 5 or 10 contacts
- > Equivalent function to MVAJ21
- > 2HSM512 specification





## Contact Operation

Self reset contacts. N/O contacts pick up when the relay is energised & drop out when the operate voltage is removed.

## Flag Operation

Drops on coil energisation.  
Hand reset when the contacts are in the reset position.

## AC Voltages

Standard 6RJ relays are not intended for operation with AC voltages. Application of continuous AC voltage below the pick up level will cause excessive power dissipation in the capacitor discharge resistor & likely result in thermal damage to the device.

## Contacts

5 or 10 contacts  
User to specify combination of make & break contacts  
For 20 contact version refer to the 6RJ21-20 Technical Bulletin

## Operating Burden

High burden relays	150W Maximum
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## Operated Burden

Self reset contacts	6W Maximum
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## Coil Thermal Rating

Operating Circuit	Withstand 120% at Nominal Voltage Continuously
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## Operating Time

<10ms at nominal operating voltage
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## Operating Voltage Range

Between 65% and 120% of nominal rated operating voltage
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Note: The 65% of nominal value allows for correct operation of the tripping systems even when there is a loss of battery charger supply for considerable periods.

To ensure guaranteed operation at 65% of nominal voltage the relay is manufactured to operate at a lower level to guarantee operation if the voltage falls to 65% of nominal voltage. Consequently, it will be found that these relays will operate below 65% of nominal voltage, this is normal and correct and does not affect relay stability due to the high burden characteristics of the relay.

The 65% of nominal voltage figure does not indicate the relay pickup voltage.

## Nominal Operating Voltages

24, 32, 48, 110, 125, 220, 240 & 250V DC available
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## Minimum Operating Current

High Burden Relays	100mA
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## Contact Ratings

Operating Voltage	Voltage free			
Isolation across open contacts	1 kV rms			
Make and carry: Continuous	3,000 VA AC resistive 3,000 W DC resistive Limited at both 660 V and 12 A 7,500 VA AC resistive			
Make and carry for 3s	7,500 W DC resistive Limited at both 660 V and 30 A			
AC break capacity	3,000 VA AC resistive Limited at both 660 V and 12 A			
DC break capacity (Amps)				
Voltage	24V	48V	125V	300V
Resistive Rating	12	2	0.5	0.3
Inductive Rating L/R=40ms	12	1	0.25	0.15

## Insulation

Standard	IEC 60255-5
Category	3
Between all terminals and earth	2.0 kV rms for 60 s
Between Independent Circuits	2.0 kV rms for 60 s
Across Normally Open Contacts	1.0 kV rms for 60 s
3 Positive and 3 negative Impluses:	
Between all terminals and earth	5.0 kV 1.2/50 $\mu$ s 0.5 J
Between Independent circuits	5.0 kV 1.2/50 $\mu$ s 0.5 J

## Capacitor Discharge

Standard	ENA TS 48-4 2010 ISSUE 4
Nominal voltage	Capacitor discharge test compliance
32 V dc	Not applicable
48 V dc	
110 V dc	No mal op. for Capacitor discharge: C = 10 $\mu$ F
125 V dc	V = 120% of Vnominal
230 V dc *	(* 275V Maximum)
240 V dc *	
250 V dc *	

## Temperature

Standard	IEC 60068-2-1/2
Operating Range	-10 to +55 degrees Celsius
Storage Range	-25 to +70 degrees Celsius

## Humidity

Standard	IEC 60068-2-78
Operating Range	40 degrees Celsius and 93% RH non condensing

## Enclosure protection

Standard	IEC 60529
Installed	IP5x

## Vibration - Sinusoidal

Standard	IEC 60255-21-1 Class I	
Vibration Response	0.5gn	$\leq$ 5%
Vibration Endurance	1.0gn	$\leq$ 5%

## Shock and Bump

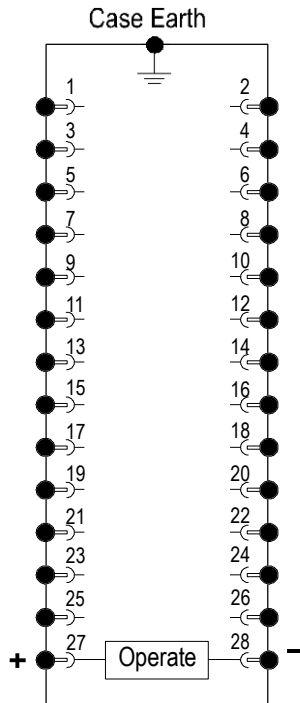
Standard	IEC 60255-21-2 Class I	
Shock Response	5gn, 11ms	$\leq$ 5%
Shock Withstand	15gn, 11ms	$\leq$ 5%
Bump Test	10gn, 16ms	$\leq$ 5%

## Seismic

Standard	IEC 60255-21-3 Class 2	
Seismic Response Type	Level	Variation
Horizontal	2.0 gn	$\leq$ 5%
Vertical	1.0 gn	$\leq$ 5%

## Mechanical Classification

Durability - 0.1 Hz maximum repetition rate	$>10^5$ operations at no load $>10^4$ operations at full load
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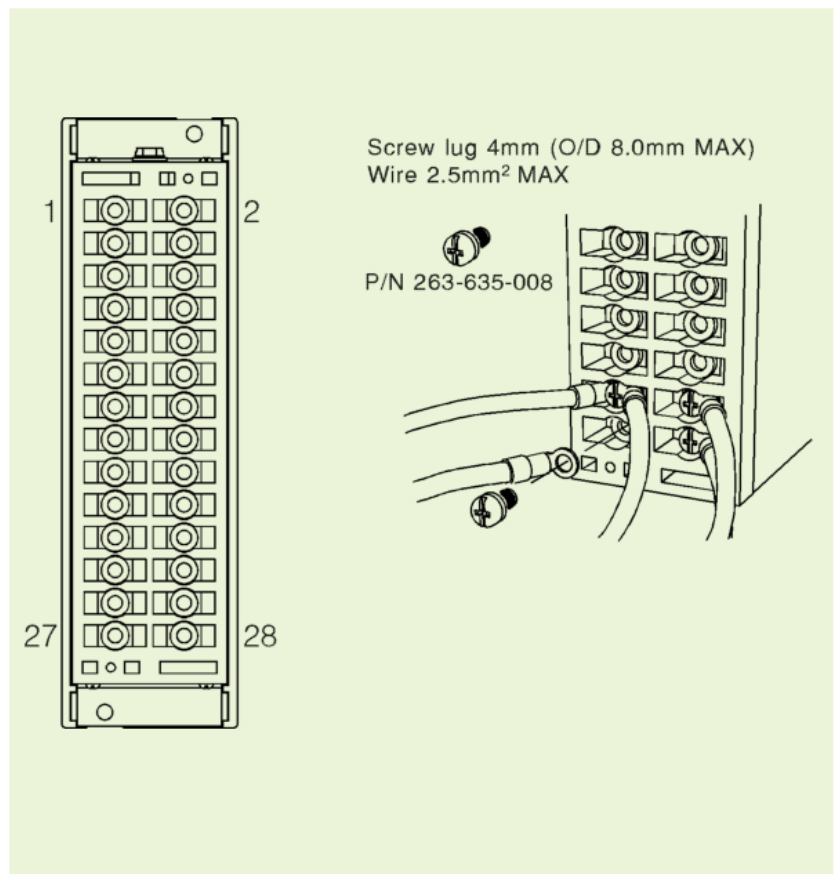
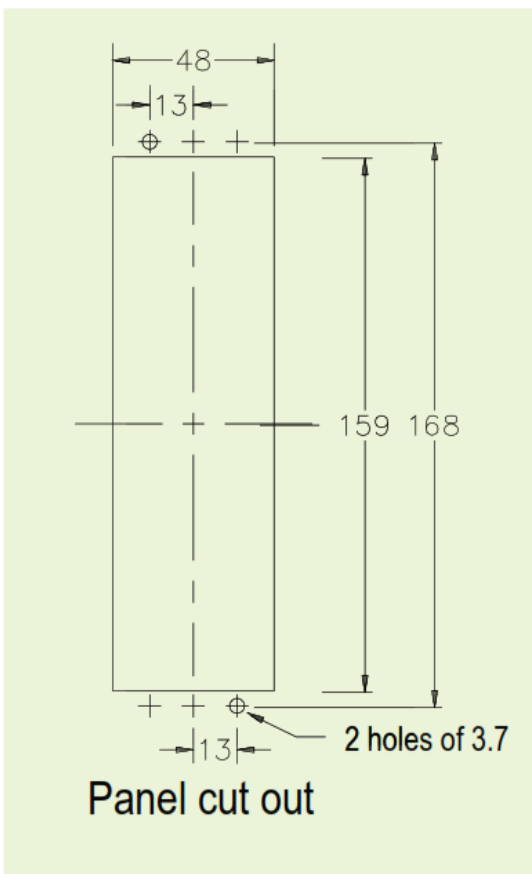
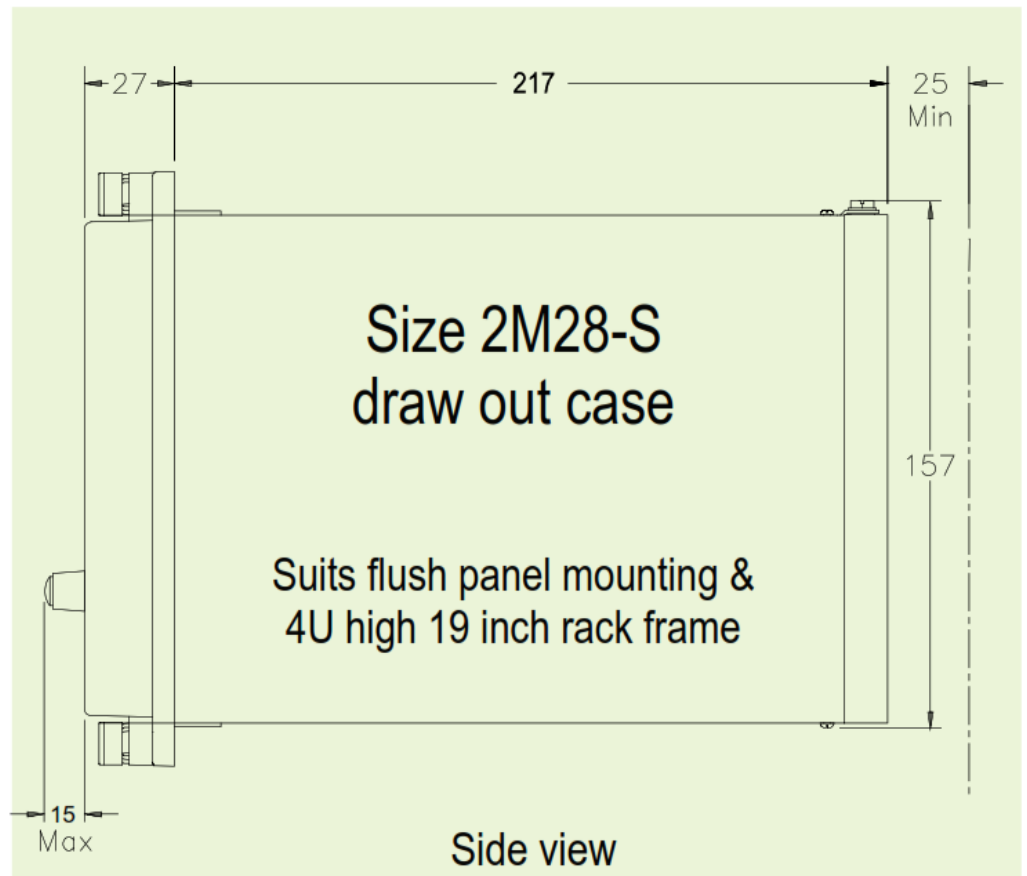
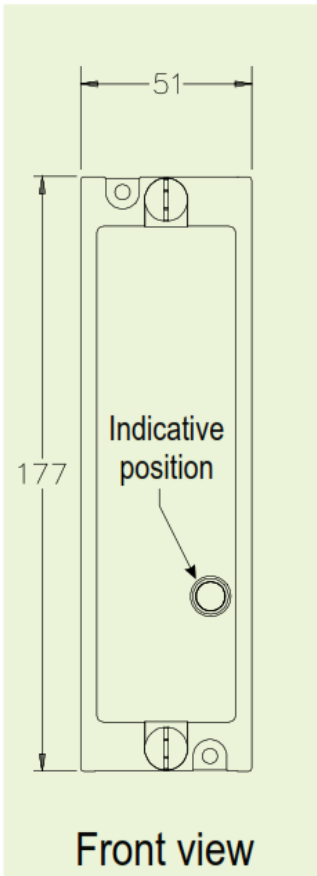
Case terminations  
(REAR VIEW)

6RJ21-5 Terminal Numbers

Contacts	1-3	2-4	5-7	6-8	9-11
5M	M	M	M	M	M
4M+1B	M	M	M	M	B
3M+2B	M	M	M	B	B
2M+3B	M	M	B	B	B
1M+4B	M	B	B	B	B
5B	B	B	B	B	B

6RJ21-10 Terminal Numbers

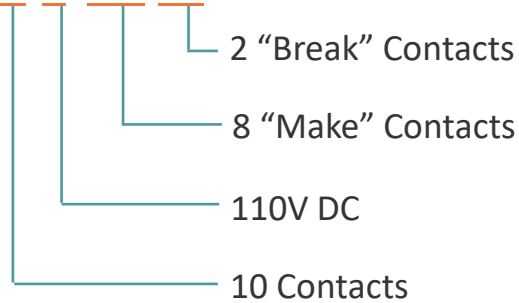
Contacts	1-3	2-4	5-7	6-8	9-11	10-12	13-15	14-16	17-19	18-20
10M	M	M	M	M	M	M	M	M	M	M
9M+1B	M	M	M	M	M	M	M	M	M	B
8M+2B	M	M	M	M	M	M	M	M	B	B
7M+3B	M	M	M	M	M	M	M	B	B	B
6M+4B	M	M	M	M	M	M	B	B	B	B
5M+5B	M	M	M	M	M	B	B	B	B	B
4M+6B	M	M	M	M	B	B	B	B	B	B
3M+7B	M	M	M	B	B	B	B	B	B	B
2M+8B	M	M	B	B	B	B	B	B	B	B
1M+9B	M	B	B	B	B	B	B	B	B	B
10B	B	B	B	B	B	B	B	B	B	B



## Relay Order Code

6RJ21 -			
Number of Contacts	5		5 Contacts
	10		10 Contacts
Nominal Operate Voltage	A		24V DC
	B		32V DC
	C		48V DC
	D		110V DC
	E		125V DC
	F		250V DC
	G		220V DC
	H		240V DC
Contact Arrangement	0 M		Specify the number of "MAKES" followed by M
	0 B		Specify the number of "BREAKS" followed by B

Example Ordering Code: **6RJ21-10-D-8M 2B**





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Relay Monitoring Systems Pty Ltd design, manufacture and market a wide range of electrical protection and control products for application on high voltage power systems. The company's depth of local manufacturing and engineering expertise is backed up by many years of experience since the formation of its predecessor, Relays Pty Ltd (RPL), in 1955. This experience combined with a broad base of field proven product types enables RMS to service specific customer needs by producing relays on demand with typically short lead times.

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### ISO9001 Quality Accreditation

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

Due to RMS continuous product improvement policy the information contained in this document is subject to change without prior notice.  
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