

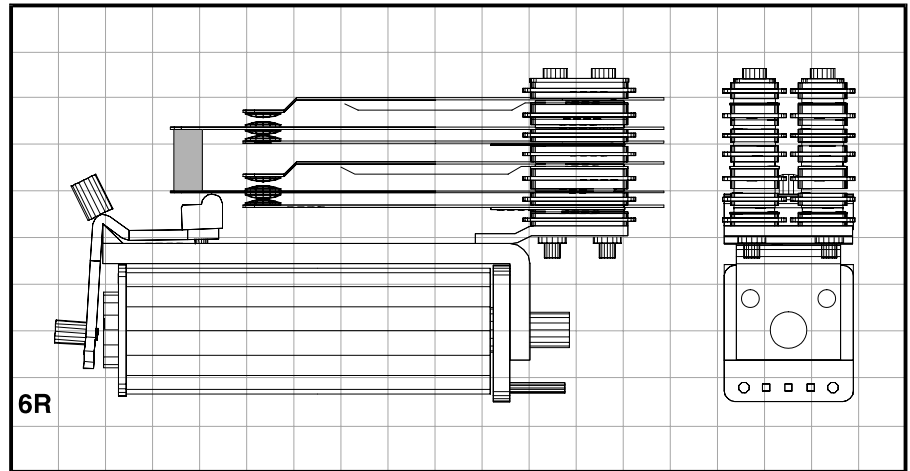
Features

- Standard operating & reset coils are available for 12, 24, 32, 48, 110, 125, 220, 240 & 250 V DC
- Contacts are of fine silver designed & manufactured to ensure low resistance & high reliability
- Optional gold plated contacts suitable for low currents
- Magnetic blowouts to improve contact switching capability may be fitted if required
- High visibility electro-mechanical flag indication
- DC voltage coils
- AC voltage coils
- Current coils
- High speed trip versions
- Low or high burden coils
- Latching or self reset flags
- Latching or self reset contacts
- Electrical reset versions
- Custom contact configurations
- Trip circuit supervision versions
- Voltage sensing versions
- Current sensing versions
- Delay on pick up slugs
- Delay on drop out slugs
- Micro switch assemblies
- Wide range of case styles

Applications

The 6R Series relay element is a general purpose relay designed to be configured to meet a wide range of demanding tasks such as high speed multi trip, event flagging, contact logic arrangements, trip circuit supervision, pilot wire isolation & voltage & current monitoring.

The relay can be fitted with a wide range of accessories to enhance their flexibility for numerous applications within a power system while providing outstanding durability & reliability.



Attributes

Made in Australia

Despite the age of the technology electro-mechanical relays have a number of useful characteristics. These include:

- High levels of electrical isolation between input & output circuits
- A huge range of resistance between switch-on/switch-off
- Many independent isolated outputs may be associated with one input
- Physical ruggedness. Most relays can withstand massive short term overloads across both actuating & switching components.
- Relays are largely immune to electrical, radio frequency & other forms of radiation
- Actuating voltages & currents are relatively uncritical
- The operation of the relay is largely self evident making fault finding simpler
- Innumerable switching configurations are possible

The purpose of this technical bulletin is to describe the various accessories which may be fitted to the basic 6R relay element & how to generate a unique descriptive part number for a specific configuration.

The following RMS publications should be consulted for further information:

	Title	Section
For detailed technical specifications	6R Technical Data Supplement	11
Modular 6R case system	6R MATRIX	11
Enclosures	M & Y Series	6
Selection guide	Manufacturers cross reference guide	11

Flag Indicators

◆ TYPE 2F

2F flags drop on energisation of the relay coil & are hand reset. The 2F flag may also be used to operate contacts & can therefore provide on a single relay both hand reset (flag operated) & self reset (armature operated) contacts.

◆ TYPE 3F

3F flags drop on de-energisation of the relay coil & are hand reset.

The 3F flag may also be used to operate contacts & can therefore provide on a single relay both hand reset (flag operated) & self reset (armature operated) contacts.

◆ TYPE 22F

22F flags are designed for use in relays adjusted for high sensitivity applications. It is available as a hand reset flag to drop on energisation of the relay coil & may be fitted with up to two flag operated contacts.

◆ TYPE 4F

4F flags are self reset flags which follow the movement of the armature & indicate energisation of the relay coil.

◆ TYPE 5F

5F flags are self reset flags which follow the movement of the armature & indicate de-energisation of the relay coil.

◆ TYPE 45F

45F flags are self reset flags which follow the movement of the armature & indicate both states of the relay with ON / OFF designations.

Flag & Contact Latches

◆ TYPE 2X, 3X & 22X

Contacts operated by 2F, 3F & 22F flags, being hand reset, are considered as latching contacts. They are known as 2X when operated by 2F flags, 3X when operated by 3F flags & 22X when operated by 22F flags.

In specifying the contacts the normal position is with the relay de-energised & with the 2F or 22F (operate) flags reset or the 3F (release) flag dropped.

◆ TYPE 4X

The 4X is a hand reset latch which retains the armature in the closed position on energisation of the relay.

◆ TYPE 4K SX

The type 4K SX has a break contact wired in series with the coil. This enables a short time rated high power coil to be fitted to improve the speed of operation which is protected by the late break cut throat contact.

◆ TYPE 5X & 5EKSX

These types are similar to the 4X series except that they are electrically reset. The type 5EKSX has a make contact on the operating relay in series with the reset coil & a break contact operated by the latch bar in series with the operating coil.

◆ TYPE 6X & 6ESX

These types are magnetic latch relays which use a remanent (permanent magnet) core as the latching method. The standard unit has separate operate & reset coils wound over a common core. The operate coil winding is pulsed to set the relay while the reset coil winding is pulsed for a reset operation. A single coil may also be used provided that the operate & reset pulses are made with reverse current directions.

The type 6ESX has a make contact wired in series with the reset coil to limit the possibility of an overvoltage picking up the relay on reverse flux.

6R Accessories

Time Delay Slugs

◆ ARMATURE END SLUGS

Armature end slugs can be specified to provide delayed pick up times of up to 150ms.

◆ HEEL END SLUGS

Heel end slugs can be specified to provide delayed drop out times of up to 500ms.

Magnetic Blowouts

Magnetic blowouts are available as an option on 6R Relay elements. Their fitment provides greatly enhanced switching capabilities for DC loads by extinguishing the electrical arcs initiated when the load is broken.

Micro Switch Assemblies

◆ TYPE 2MS

The type 2MS assembly uses standard 15 Amp micro switches of which up to two can be fitted. Typical switches are Honeywell series BZ or Burgess series AR.

◆ TYPE 3MS

This assembly uses the popular V3 series miniature switches. Up to three V3 switches may be fitted per relay element.

Adjustment Accessories

◆ TYPE 2A & 22A

Types 2A & 22A adjustment levers provide means of adjusting, with some independence, the lever pressure in both the un-operated & operated positions. In this way both the pick up & drop out characteristics of the relay can be adjusted. The back screw adjusts the initial pressure (pick up adjustment) & the front screw adjusts the final pressure (drop out adjustment). Both types take the place of a contact stack. The 2A provides the widest range of adjustment & has a lever thickness of 0.14".

The pick up adjustment varies considerably with the number & type of contacts fitted. In general, for 2 C/O contacts, the maximum pick up is approximately 2 to 3 times the minimum pick up.

The adjustment of pick up will also adjust the drop out. The normal differential (drop out as a % of pick up) is approximately 30%. For the 2A adjustment levers a differential of approximately 50% can be obtained. For differentials up to 95% the 2V25 relay assembly is recommended.

6R 2000

AE

2EX 2F

UY

ENCLOSURES

UY Front connection Y Series
VY Back connection Y Series
VPY Back connection plug-in Y Series
2M, 4M Flush or rack mount M Series
QC DIN rail mounting, quick connect terminals
ZA16 DIN rail mount screw terminal base, plug in module

ACCESSORIES

2F Hand reset operate flag
22F Hand reset operate flag
3F Hand reset release flag
4F Self reset operate flag
5F Self reset release flag
45F Self reset operate and release flag (Marked ON/OFF)

Latches

2 (Contact Code) X 2F flag operated contacts
22 (Contact Code) X 22F flag operated contacts
3 (Contact Code) X 3F flag operated contacts
4X Armature latch hand reset
4KSX Armature latch hand reset with break contact in series with coil
5X Armature latch electrical reset - M Series case only
5EKSX Armature latch electrical reset with break coil in series with operate coil and make contact in series with release coil - M Series case only
6X Magnetic latch (Remanent core)
6ESX Magnetic latch with make contact in series with reset coil

Adjustment Accessories

2A Adjustment bar with 0.50mm lever
22A Adjustment bar with 0.36mm lever

CONTACTS

A 1 C/O	F 2 N/O	K 1 N/C	P 6 N/C
B 2 C/O	G 3 N/O	L 2 N/C	Q 1 MBB
C 3 C/O	H 4 N/O	M 3 N/C	R 2 MBB
D 4 C/O	I 5 N/O	N 4 N/C	S 3 MBB
E 1 N/O	J 6 N/O	O 5 N/C	T 4 MBB

Note: Contact code letters are added in alphabetic order to specify additional or mixed contacts.

Make before break (MBB) contacts may be either C/O type (3 lever) or separate N/O and N/C type (4 lever). To specify prefix contact with "3" or "4", eg. 3Q equals a C/O contact with make before break action.

Micro switches and magnetic blowouts are coded with the switch number, the contact code and (MS) or (MB) as appropriate, eg. 3AE(MB) = 1 C/O and 1 N/O type 3MB magnetic blowout.

COILS

Numerals equal coil resistance in Ohms OR A for AC (includes rectifiers), D for DC and numerals for voltage OR AS for AC series, DS for DC series and numerals for current in Amps.

Note: Give details of any pickup or dropout requirements.

Code both coils for double coil relays. For 5X or 6X latches quote operating coil first, eg. D50/A240 means 2 coils, 1st 50V DC, 2nd 240V AC.

NOTE 1: HIGH SPEED RELAYS

For flag operated latching contacts the minimum operating time is largely determined by the delay caused by the armature completing its travel before the flag begins starts to drop. Armature operated contacts are therefore required for high speed contact operation. Where a latching function is required the 4X or 5X should be selected. If a flag is also required the 4F, 5F or 45F flags may be specified.

NOTE 2: CONTACT BREAKING DUTY DURING RESET

Flag operated contacts may not be suitable for breaking heavy DC inductive loads during a reset operation due to the indefinite speed of hand resetting the flag. When this function is required the 4X, 5X or 6X contact latches which reset with a snap action are recommended.

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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