Type MG-6 Auxiliary Relay Class 1E

Product Guide

Device Number: 94X, Y, Z
ZPA Rating 4.2g

Application

MG-6 relays have been specially designed and tested to establish their suitability for Class 1E application in accordance with the ABB program for Class 1 E Qualification Testing as detailed in bulletin STR-1.

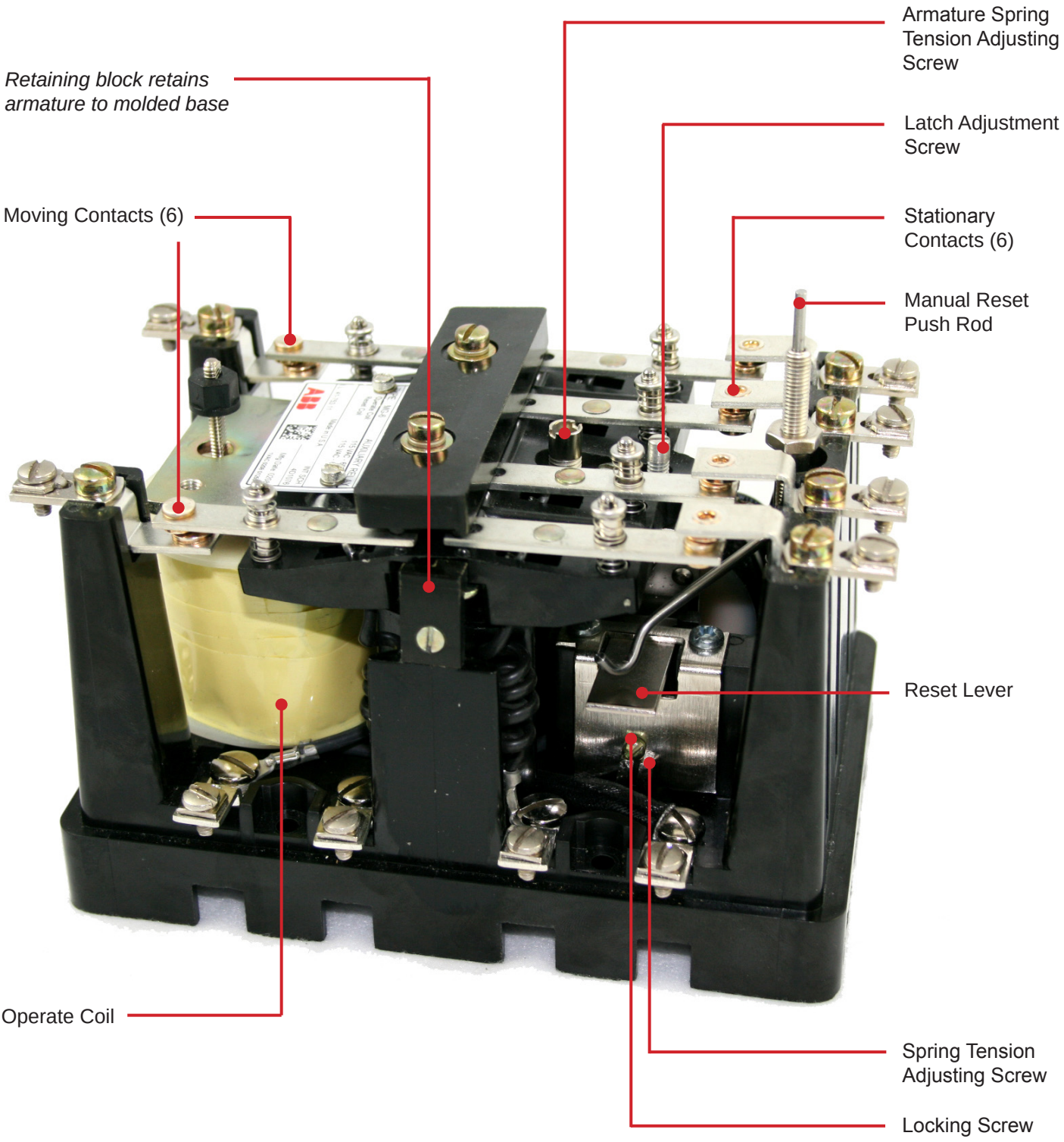
The MG-6 relays are used in protective relaying or control applications where electrically independent multiple contacts are required. They have six contact circuits, each capable of carrying 12 amperes continuously or 30 amperes for one minute.

Relays are available with either a self reset armature (which resets when the operating coil is de-energized), or with a latch-type mechanism which holds the armature in a closed position until the latch is tripped electrically or by hand.

Class 1E is the safety classification of the electrical equipment and systems in nuclear power generating stations that are essential to emergency shutdown of the reactor, containment isolation, cooling of the reactor, and heat removal from the containment and reactor, or otherwise are essential in preventing significant release of radioactive material to the environment.

Construction

The construction of MG-6 Class 1E relays is very similar in all aspects to their equivalent commercial relays. However, on Class 1E relays, a set of retaining blocks are attached to the base of both sides of the armature. The retaining blocks mechanically retain the armature to the relay's molded base, further stabilizing it, even under severe seismic conditions.



Mounting Options

Enclosure A
Semi-Flush Mount,
Rear Connected,
Molded Base

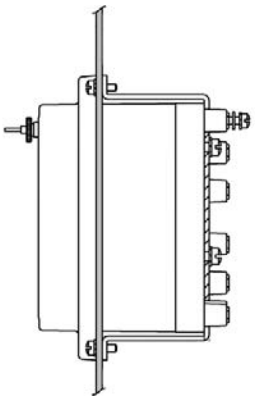


Figure 1

Enclosure C
Surface Mount,
Front Connected,
Molded Base
(without cover)

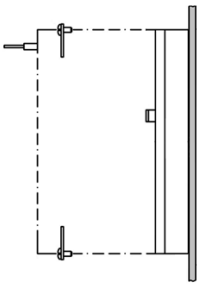


Figure 2

Enclosure F
Surface Mount,
Front Connected,
Molded Base
(with cover)

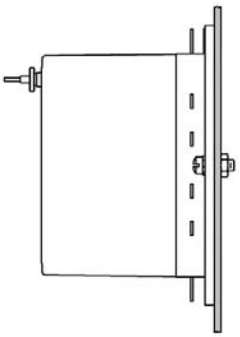


Figure 3

Enclosure B
Projection Mount,
Rear Connected,
Molded Base

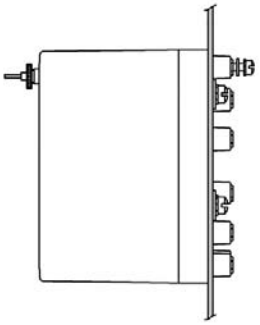


Figure 4

Enclosure D
Semi-Flush Mount,
Rear Connected,
in Flexitest FT-22 case

Allows for easy removal and testing of the relay.

Figure 5

Contacts and Operation

Each of the six MG-6 relay contacts will carry 12 Amps continuously, and will close and carry 30 Amps for one minute.

MG-6 relay contacts can be ordered as either “Make” (circuit closing) or “Break” (circuit opening) within the following guidelines:

AC Operated Relays: AC operated relays can have any combination of “Make” or Break” contacts

DC Operated Relays: In DC operated relays, the number of “Break” contacts is limited to four, if normal contact pressure and travel are to be maintained. If more than four “Break” contacts are required, please consult with the factory.

See Ordering Information (on page 7).

Multiples of Rated VAC Applied to Operate Coil	Dropout Time Cycles (ms)	Time required to “make” contact Cycles (ms)
1	2.0 (32)	1.2 (20)
2**	1.0 (17)	1.2 (20)

** = Operate coil will withstand 2X rated VAC for 2 minutes

Multiples of Rated VDC Applied to Operate Coil	Dropout Time Cycles (ms)	Time required to “make” contact Cycles (ms)
1	1.5 (24)	5.0 (83)
2	-	2.5 (42)
3	-	2.0 (32)
4	-	1.5 (24)
5*	-	1.0 (17)

* = Operate coil will withstand 5X rated VDC for 1 minute

Control Circuit Voltage		Interrupting Rating (in amps)	
DC	*AC (60 Hz)*	*1 Contact*	*2 Contacts in Series*
12	-	30	30
24	-	15	30
32	-	10	20
48	-	8	16
125	-	3	6
250	-	1	2
	115	30	30
	230	20	30
	460	15	30
	575	10	20

Electrical Characteristics

Pickup
MG-6 relays will pickup at 80% of rating (both AC and DC)

Dropout
DC relays will not dropout above 30% of rating
AC relays will not dropout above 50% rating

Coil Ratings
Operate Coil

Continuous:	110% of rated voltage
1 minute DC:	500% of rated voltage
10 minutes DC:	200% of rated voltage
2 minutes AC:	200% of rated voltage

Reset Coil

5 minute:	100% of rating

Burden Data - Operate Coil

Hertz	Closed Gap		Open Gap	
	Watts	Volt-Amperes	Watts	Volt-Amperes
25	6.8	23	19.6	53
50	9.8	31	17.4	78
60*	12	37	17.6	92
DC	7.8 cold	-	7.8 cold	-
DC	6.5 hot	-	6.5 hot	-

Burden Data - Reset Coil

Hertz	Closed Gap		Open Gap	
	Watts	Volt-Amperes	Watts	Volt-Amperes
25	48	51.6	52	54
50	46	58.2	57	63.8
60*	84	104.5	97	112.8
DC	66 cold	-	-	-

* = Rated voltage is 115V or multples thereof

Additonal Reference

- Meets IEEE C37.98, C37.107, 323-1983 & 344-1987 Standards.
- UL Listed.
- Instructional Leaflet 41-753.11
- Descriptive Bulletin 41-803

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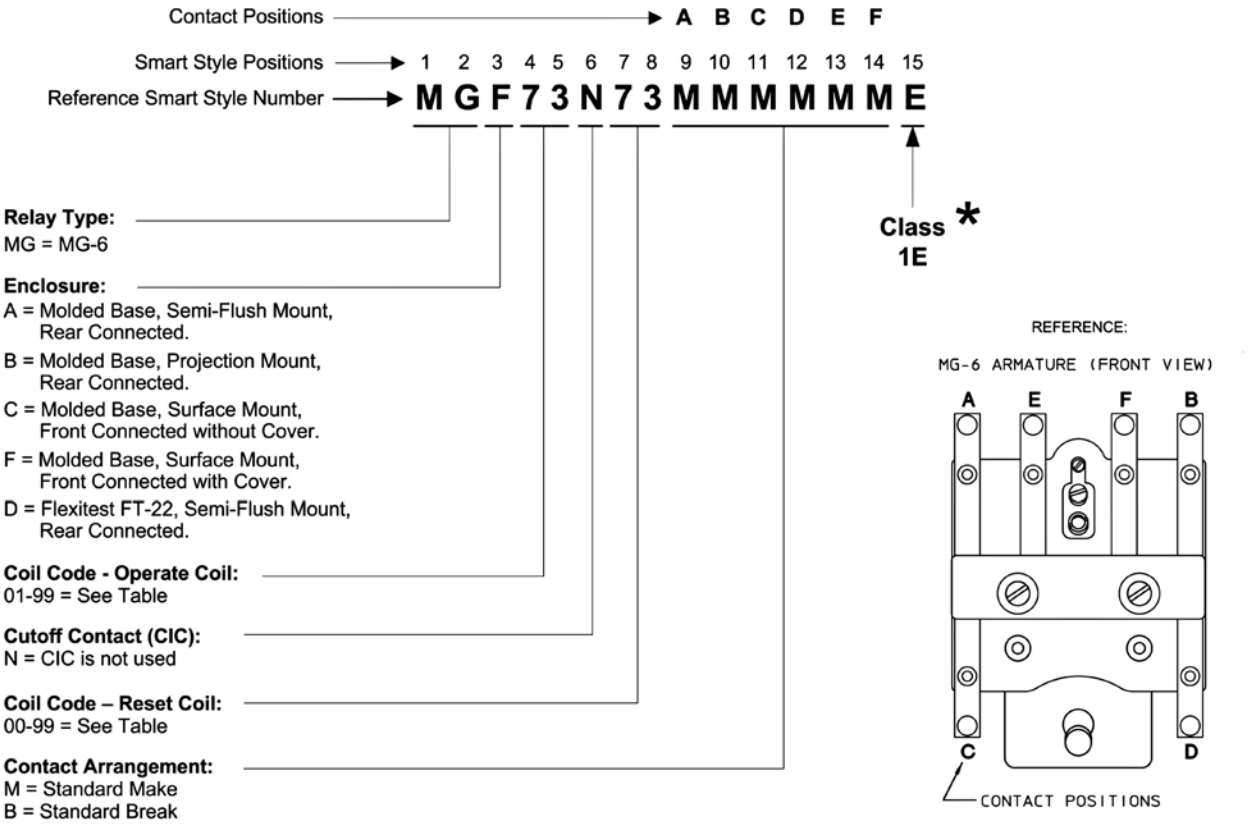
Ordering Information - MG-6 Class 1E Relay



*** = Class 1E Style Number:**

- **Use this page as a reference tool to configure MG-6 Class 1E Relay, as needed.**
- **Factory will assign official Part Number based on Smart Style.**

Rating		Coil Code
NONE		00 **
AC Coils		
12 Volts	25 Hz	18
12 Volts	50 Hz	02
12 Volts	60 Hz	01
24 Volts	25 Hz	19
24 Volts	50 Hz	04
24 Volts	60 Hz	03
48 Volts	25 Hz	07
48 Volts	50 Hz	06
48 Volts	60 Hz	05
60 Volts	50 Hz	29
60 Volts	60 Hz	23
92 Volts	60 Hz	27 *
115 Volts	25 Hz	20
115 Volts	50 Hz	09
115 Volts	60 Hz	08
120 Volts	60 Hz	24

Rating		Coil Code
208 Volts	50 Hz	26
208 Volts	60 Hz	10
220 Volts	50 Hz	25 **
230 Volts	25 Hz	21
230 Volts	50 Hz	12 *
230 Volts	60 Hz	11
460 Volts	25 Hz	16
460 Volts	50 Hz	22
460 Volts	60 Hz	13
575 Volts	25 Hz	17 *
575 Volts	50 Hz	15
575 Volts	60 Hz	14
5 Amps	60 Hz	28 *
DC Coils		
6 Volts dc		77
12 Volts dc		64
24 Volts dc		65
28 Volts dc		66 *

Rating	Coil Code
32 Volts dc	67
36 Volts dc	68 *
38 Volts dc	69 *
40 Volts dc	78 *
48 Volts dc	70
62 Volts dc	71
79 Volts dc	72 *
125 Volts dc	73
200 Volts dc	74
220 Volts dc	75 *
250 Volts dc	76
500 Volts dc	80
0.1 Amp dc	79 *
1 Amp dc	63 *
2 Amps dc	62 *
3 Amps dc	61 *
4 Amps dc	60 *
5 Amps dc	59 *

* = Not available for Reset Coil.
** = Not available for Operate Coil.

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