

# Magnetic Overload Relays

## Series N147

Series N147 Overload Relays are of the magnetically operated self reset type, designed for use on A.C. or D.C. motor starters and controllers for Navy Service A applications.

<b>Specification</b>	<b>MIL-R-2033</b>
<b>Function</b>	Motor overload protection.
<b>Operation</b>	Magnetic inverse time delay type, self reset.
<b>Compensation</b>	Ambient compensated between 20° C and 70° C
<b>Adjustment</b>	Trip current adjustable +/- 10% of nominal current rating.
<b>Insulation</b>	Class A
<b>Voltage</b>	Normally closed contact will carry and break 5 amps 440 volts max. A.C. and 1 amp D.C



N147 Magnetic Overload Relay

### Ordering Information

When ordering N147 Magnetic Overload Relays, the following information is requested:

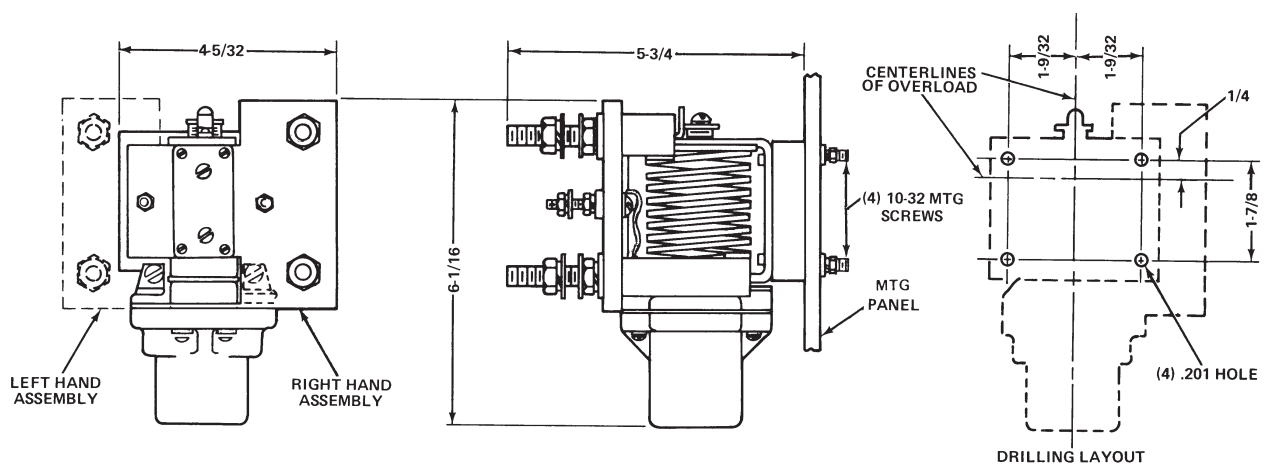
1. Series No. of relay
2. Motor type, H.P. and nameplate amperes
3. Location of coil terminal studs (left or right hand side of relay)

### Repair Parts

Repair parts normally furnished in accordance with applicable part allowance list include:

- 1 Relay operating coil

### Dimensions (Approximate)



# Magnetic Overload Relays

## Series N147

Full Load Motor Current Amperes		Relay Tripping Amps.	Coil Nos.	Full Load Motor Current Amperes		Relay Tripping Amps.	Coil Nos.
Min.	Max.			Min.	Max.		
0.50	0.54	0.625	151L901	22.1	24.0	27.7	151L43
0.61	0.67	0.77	151L1	24.1	26.5	30.4	151L44
0.68	0.72	0.84	151L2	26.6	29.0	33.3	151L45
0.73	0.79	0.91	151L3	29.1	32.0	36.3	151L146*
0.80	0.86	0.99	151L4	32.1	35.0	39.7	151L147*
0.87	0.94	1.08	151L5	35.1	38.0	43.4	151L148*
0.95	1.03	1.18	151L6	38.1	41.0	48.3	151L149*
1.04	1.13	1.30	151L7	41.1	43.1	50.2	151L150*
1.14	1.24	1.43	151L8	43.1	46.0	52.8	151L151*
1.25	1.35	1.57	151L9	46.1	49.0	58.0	151L152*
1.36	1.47	1.68	151L10	49.1	52.0	61.0	151L153*
1.48	1.61	1.85	151L11	52.1	55.0	64.5	151L154*
1.62	1.75	2.03	151L12	55.1	59.0	68.3	151L155*
1.76	1.86	2.14	151L13	59.1	62.0	72.5	151L156*
1.87	1.96	2.26	151L14	62.1	67.0	77.3	151L157*
1.97	2.16	2.47	151L15	67.1	72.0	83.0	151L158*
2.17	2.37	2.72	151L16	72.1	77.0	89.3	151L159*
2.38	2.61	2.98	151L17	77.1	84.0	96.7	151L160*
2.62	2.80	3.27	151L18	84.1	91.9	105.5	151L161*
2.81	2.96	3.41	151L19	92.1	101	116	151L162*
2.97	3.23	3.70	151L20	102	114	129	151L163*
3.24	3.53	4.05	151L21	115	126	145	151L164*
3.54	3.87	4.43	151L22	127	131	150	151L172*
3.88	4.23	4.85	151L23	132	143	165	151L165*
4.24	4.61	5.30	151L24	144	153	174	151L173*
4.62	5.04	5.79	151L25	154	167	192	151L166*
5.05	5.50	6.33	151L26	168	183	210	151L174*
5.51	5.97	6.84	151L27	184	201	231	151L167*
5.98	6.52	7.47	151L28	202	209	254	151L175*
6.53	7.10	8.16	151L29	210	230	263	151L176*
7.11	7.52	8.60	151L30	231	252	289	151L168*
7.53	8.24	9.40	151L31	253	278	318	151L177*
8.25	8.95	10.3	151L32	279	306	350	151L178*
8.96	9.67	11.0	151L33	307	337	385	151L169*
9.68	10.6	12.1	151L34	338	369	424	151L179*
10.7	11.6	13.3	151L35	418	457	525	151L180*
11.7	12.6	14.6	151L36	462	501	578	151L170*
12.7	13.9	16.1	151L37	507	550	635	151L181*
14.0	15.1	17.4	151L38				
15.2	16.7	19.1	151L39				
16.8	18.2	21.0	151L40				
18.3	20.0	23.0	151L41				
20.1	22.0	25.3	151L42				

**NOTE:** Full load columns based on coil rating of 115% to 125% of full load current.

\* These coils used with overload relays employing terminal boards.

# AC and DC Magnetic Relays

## Series N130

Series N130 Magnetic Relays are recommended for applications where the pilot or control circuit must be established and interrupted repeatedly. These auxiliary control relays in one, two, three and four pole combinations are available for operation on A.C. (480 volts max.) and D.C. (250 volts max.) circuits. All pole combinations can be obtained with or without magnetic blowouts. Optional Features Contact assemblies other than those listed are available with or without blowouts.

<b>Specification</b>	MIL-C-2212*
<b>Operation</b>	Magnetic
<b>Function</b>	Auxiliary Control Relay
<b>Duty</b>	Continuous
<b>Ambient</b>	50° C
<b>Insulation</b>	Class B
<b>Enclosure</b>	For enclosed service
<b>Vibration</b>	MIL-STD-167 (ships) Type 1

\*For use where opening and closing of contacts, in excess of 10 milliseconds, under shock, does not affect the operation of associated equipment.

### Optional Features

Contact assemblies other than those listed are available with or without blowouts. Special coil insulation other than Class "A" applied as standard, can be furnished. In certain instances where ambient conditions or space limitations dictate, Class "H" coil insulation can be supplied at additional cost.

Similarly, Class "B" insulation can be furnished where required at additional cost.

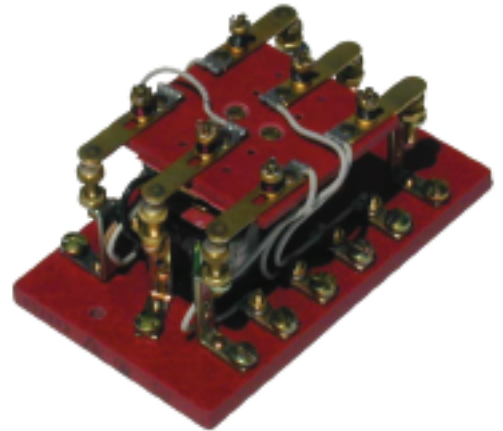
Enclosure either dripproof or watertight are available on special order.

Special requirements such as destructive tests, relays for special applications, should be referred to the Home Office.

### Contact Ratings\*

Max. Volts	Amps A.C. (60 Hz)	Amps D.C.	
		without Blowouts	with Blowouts
125	25	3	30
250	25	1	30
480	15	-	-

\* Ratings are non-inductive



N130 Relay: 3 pole N.O. and 3 pole N.C.



N130 Relay: 2 pole N.O.

### Drawings

Dimension sketches for all contact combinations are available without charge. Master plans and special drawings will be quoted on request.

# AC and DC Magnetic Relays

## Series N130

No. of Poles	Type of Contacts	Dimensions (in Inches)					
		Without Blowouts			With Blowouts		
		A	B	C	A	B	C
1 - Single Break	SPNO or SPNC SPNO and SPNC	2 1/2	4 7/8	3 3/16	2 1/2	5 3/4	3 1/2
		2 1/2	6	3 3/16	2 1/2	7 11/16	3 1/2
1 - Double Break	SPNO or SPNC	2 1/2	4 7/8	3 3/16	3 5/8	5 3/4	3 1/2
2 - Single Break	DPNO or DPNC DPNO and DPNC	2 1/2	4 7/8	3 3/16	3 5/8	5 3/4	3 1/2
		2 1/2	6	3 3/16	3 5/8	7 11/16	3 1/2
3 - Single Break	3 PNO	3 5/8	4 7/8	3 3/16	4 7/16	5 1/2	3 1/2
	3 PNC	3 5/8	5 1/8	3 3/16	4 7/16	6	3 1/2
	3 PNC and 3 PNO	3 5/8	6 5/8	3 3/16	4 7/16	7 11/16	3 1/2
4 - Single Break	4 PNO	4 3/4	4 7/8	3 3/16	5 7/8	6 3/4	3 1/2
	4 PNC	4 3/4	5 1/8	3 3/16	5 7/8	7 1/4	3 1/2
	4 PNC and 4 PNO	4 3/4	6 7/8	3 3/16	5 7/8	8 3/8	3 1/2



1/32" insulator (furnished with relay) must be used for steel panel mounting.

### Single Pole, Single Break

Coil Voltage	D.C.			A.C.		
	1 Pole N.O.	1 Pole N.C.	1 Pole N.O. 1 Pole N.C.	1 Pole N.O.	1 Pole N.C.	1 Pole N.O. 1 Pole N.C.
115	N130-6410	N130-6411	N130-6419	N130-6510	N130-6511	N130-6519
230	N130-7410	N130-7411	N130-7419	—	—	—
440	—	—	—	N130-8510	N130-8511	N130-8519

When ordering relays with blowouts, specify Cat. No. followed by the letter "B". Example: N130-6410B.

### Ordering Information

When ordering catalog listed N130 Relays specify:

1. Catalog Number
2. Contact current, voltage, and frequency
3. Coil voltage and frequency
4. Application
5. Repair parts, if required

For special assemblies furnish:

1. Number of poles and contact arrangement (include number and location of blowouts if required)

### Repair Parts

Repair parts normally furnished in accordance with applicable part allowance list include:

- 1 set of contacts
- 1 set of spring
- 1 shunt of coil

# AC and DC Magnetic Relays

## Series N130

### Single Pole, Double Break

Coil Voltage	D.C.		A.C.	
	1 Pole N.O.	1 Pole N.C.	1 Pole N.O.	1 Pole N.C.
115	N130-6413	N130-6414	N130-6513	N130-6514
230	N130-7413	N130-7414	–	–
440	–	–	N130-8513	N130-8514

### Double Pole, Single Break

Coil Voltage	D.C.			A.C.		
	2 Poles N.O.	2 Poles N.C.	2 Poles N.O. 2 Poles N.C.	2 Poles N.O.	2 Poles N.C.	2 Poles N.O. 2 Poles N.C.
115	N130-6420	N130-6421	N130-6429	N130-6520	N130-6521	N130-6529
230	N130-7420	N130-7421	N130-7429	–	–	–
440	–	–	–	N130-8520	N130-8521	N130-8529

### Three Pole, Single Break

Coil Voltage	D.C.			A.C.		
	3 Poles N.O.	3 Poles N.C.	3 Poles N.O. 3 Poles N.C.	3 Poles N.O.	3 Poles N.C.	3 Poles N.O. 3 Poles N.C.
115	N130-6430	N130-6431	N130-6439	N130-6530	N130-6531	N130-6539
230	N130-7430	N130-7431	N130-7439	–	–	–
440	–	–	–	N130-8530	N130-8531	N130-8539

### Four Pole, Single Break

Coil Voltage	D.C.			A.C.		
	4 Poles N.O.	4 Poles N.C.	4 Poles N.O. 4 Poles N.C.	4 Poles N.O.	4 Poles N.C.	4 Poles N.O. 4 Poles N.C.
115	N130-6440	N130-6441	N130-6449	N130-6540	N130-6541	N130-6549
230	N130-7440	N130-7441	N130-7449	–	–	–
440	–	–	–	N130-8540	N130-8541	N130-8549

When ordering relays with blowouts, specify Cat. No. followed by the letter "B". Example: N130-6410B.