

Thermal Overload Relays

Series N154

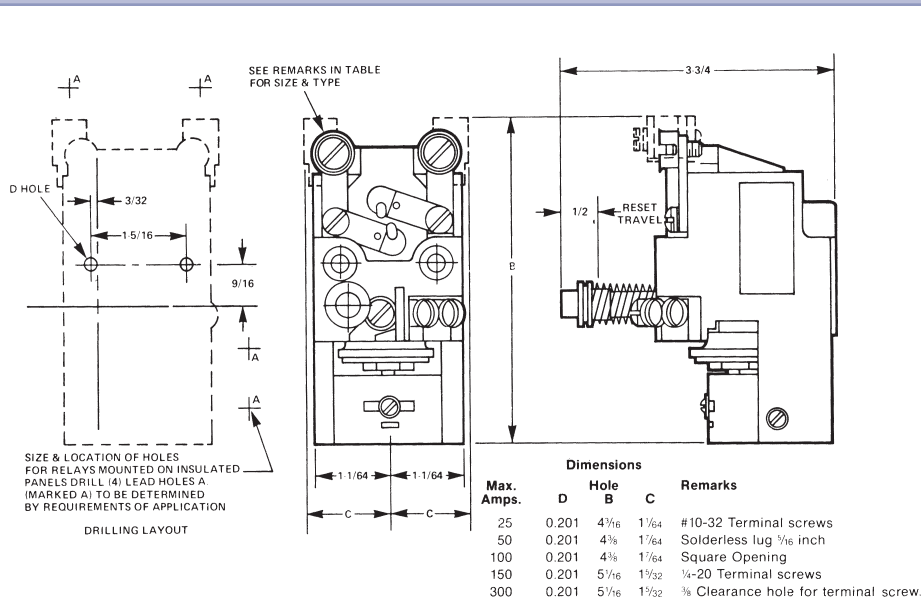
Type N154 Relay is an ambient compensated single pole inverse time thermal overload relay suitable for A.C. or D.C. service. It is specifically designed for use with motor starters and controllers that are to be applied on Navy Service A applications.

Specification	MIL-C-2212
Function	Motor overload protection
Operation	Thermal inverse time delay type, manual reset
Type	Series N154
Heaters	Interchangeable, Heaters available with current trip range 0.36 to 275 amps.
Compensation	Ambient compensation within 0.3% per degree change in ambient temperature between 20 oC and 70 oC.
Insulation	Class A
Adjustment	Trip current adjustable +/- 10% of heater rating.
Voltage	A.C. 600 volts max., D.C. 250 volts max.
Contact Rating	Normally closed contact will carry and break 6 amps. max. A.C. and 200 V.A. with a max. of 2 amps. D.C.



Series N154 Thermal Overload Relay

Dimensions (Approximate)



Use with Contactor Size	Ampere Rating Nominal	Catalog Number
0, 1	25	N154-1
2	50	N154-2
3	100	N154-3
4	150	N154-4
5	300	N154-5*

* Relays must be used with current transformer. Consult Factory for transformer selection.

Ordering Information

When ordering Series N154 Overload Relays, specify:

1. Catalog Number
2. Motor type, H.P. and nameplate amperes.

When ordering heaters, specify Heater Part Number and Motor Full Load Amperes. Heaters furnished separately.

Repair Parts

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

- 1 set of overload heaters (wt. 2 oz. each)

Thermal Overload Relays

Series N154

Heaters

Full Load Motor Amperes	Heater Marking	Catalog Number	Full Load Motor Amperes	Heater Marking	Catalog Number
.28 - .30	.36	104.813.11	13.1 - 14.0	16.0	104.813.42
.31 - .34	.40	104.813.12	14.1 - 16.0	18.0	104.813.43
.35 - .39	.45	104.813.13	16.1 - 18.0	20.5	104.813.44
.40 - .44	.51	104.813.14	18.1 - 20.3	23.0	104.813.45
.45 - .50	.58	104.813.15	20.4 - 22.9	26.0	104.813.46
.51 - .56	.65	104.813.16	23.0 - 25.4	29.5	104.813.47
.57 - .64	.73	104.813.17	25.5 - 27.0	32.0	104.813.48
.65 - .73	.83	104.813.18	28 - 31	35.0	104.813.49
.74 - .30	.94	104.813.19	32 - 35	41.0	104.813.50
.82 - .92	1.06	104.813.20	36 - 38	44.0	104.813.51
.93 - 1.05	1.20	104.813.21	39 - 42	49.0	104.813.52
1.06 - 1.19	1.36	104.813.22	43 - 45	53.0	104.813.53
1.20 - 1.35	1.54	104.813.23	46 - 48	58.0	104.813.54
1.36 - 1.53	1.74	104.813.24	49 - 52	62.0	104.813.55
1.54 - 1.73	1.95	104.813.25	53 - 57	67.0	104.813.56
1.74 - 1.94	2.21	104.813.26	58 - 63	73.0	104.813.57
1.95 - 2.1	2.50	104.813.27	64 - 71	81.0	104.813.58
2.2 - 2.5	2.83	104.813.28	72 - 80	91.0	104.813.59
2.6 - 2.8	3.20	104.813.29	81 - 89	102.0	104.813.60
2.9 - 3.2	3.65	104.813.30	90 - 98	113.0	104.813.61
3.3 - 3.6	4.15	104.813.31	99 - 108	123.0	104.813.62
3.7 - 4.0	4.65	104.813.32	109 - 118	137.0	104.813.63
4.1 - 4.5	5.25	104.813.33	119 - 125	149.0	104.813.64
4.6 - 5.3	5.95	104.813.34	126 - 136	157.0	104.813.65
5.4 - 6.0	6.75	104.813.35	137 - 151	173.0	104.813.66
6.1 - 6.7	7.70	104.813.36	152 - 163	190.0	104.813.67
6.8 - 7.7	8.70	104.813.37	164 - 180	205.0	104.813.68
7.8 - 9.0	10.2	104.813.38	181 - 190	223.0	104.813.69
9.1 - 10.3	11.7	104.813.39	191 - 199	244.0	104.813.70
10.4 - 11.7	13.2	104.813.40	200 - 205	275.0	104.813.71
11.8 - 13.0	14.8	104.813.41			

Thermal Overload Relays

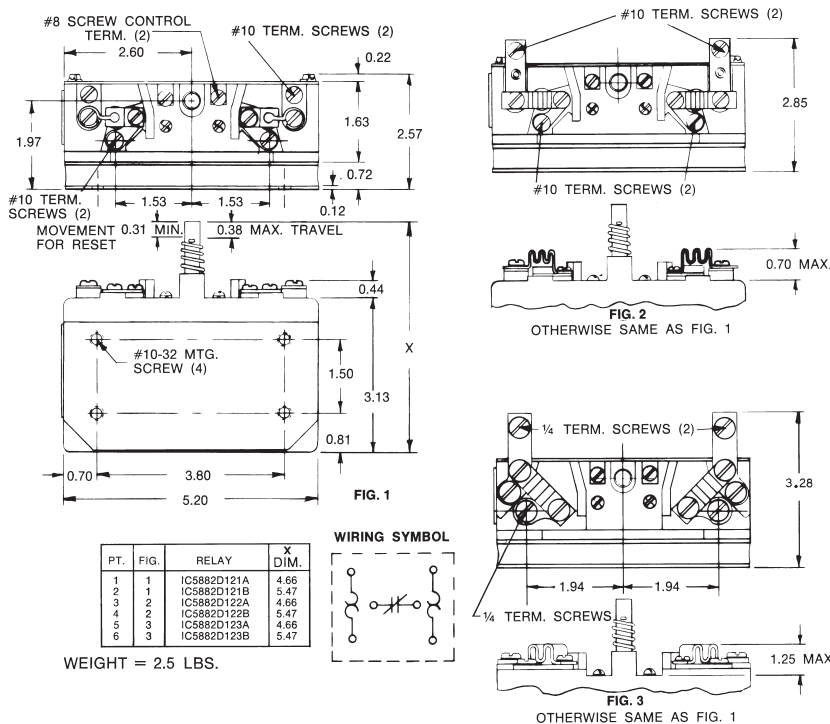
Type IC5882D

Specification	MIL-C-2212
Application	Use for motor overload protection.
Type	Heater type with interchangeable heater elements and adjustable trip setting. Trip current can be varied +/- 10% from factory setting.
Form	Dual element (two pole) with one N.C. contact. Use only one pole for single phase A.C. or D.C.
Voltage	600 volts maximum.



Type IC5882D Overload Relay

Outline and Mounting Dimensions (in inches)



Ordering Information

To order overload relay with heaters specify overload relay catalog number and heater catalog number.

Example: IC5882D122B with two Type 81D363 heaters.

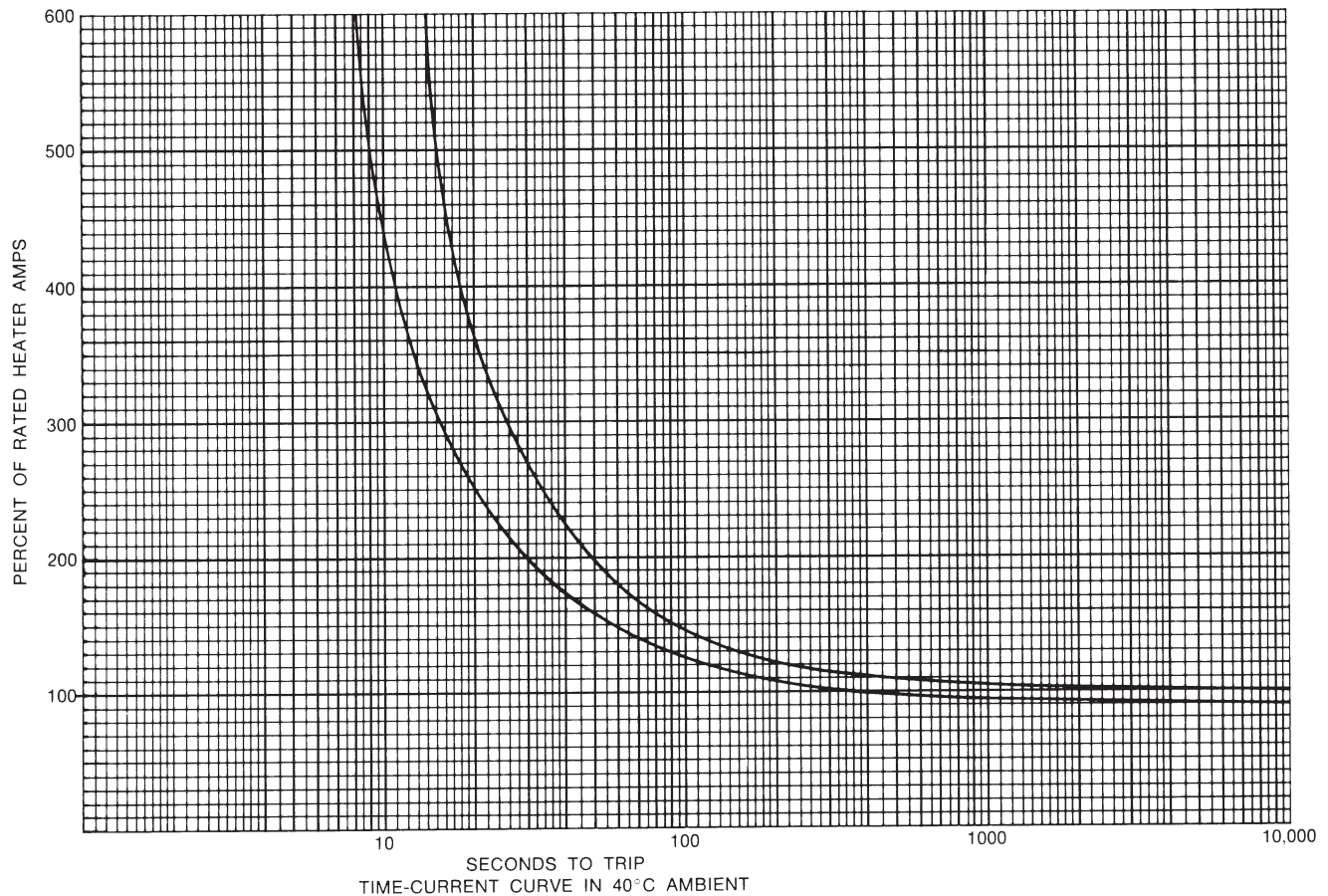
Overload relay or heaters may be ordered as separate items (not assembled together) by specifying appropriate catalog number and quantity of each required.

Contact Ratings (Amperes)

Carry	Make	Break			
		115 VAC	440 VAC	115 VDC	230 VDC
Continuous	Momentary	15	5	0.35	0.17
10	30	15	5	0.35	0.17

Thermal Overload Relays

Type IC5882D



Heaters

Use With Contactor Size	Reset Rod Length	Catalog Number
0, 1	Short	IC5882D121A
	Long	IC5882D121B
2	Short	IC5882D122A
	Long	IC5882D122B
3	Short	IC5882D123A
	Long	IC5882D123B
4, 5, 6*	—	—

*Size 4: USE induction overload relay on page 26

Size 5 & 6:

USE overload relay Cat. No. IC5882D121 with two 200:5 current transformers.



Thermal Overload Relays

Type IC5882D

Heaters

Max. Cont. Full Load Motor Amp for 40° C Rise Motors	Heater Rating Amps @ 40° C	Catalog Number	Max. Cont. Full Load Motor Amp for 40° C Rise Motors	Heater Rating Amps @ 40° C	Catalog Number
Size 0, 1, 2			Size 0, 1, 2		
0.37 - 0.38	0.44	81D303	9.71 - 10.6	12.2	81D338
0.39 - 0.42	0.48	81D304	10.7 - 11.7	13.4	81D339
0.43 - 0.46	0.53	81D305	11.8 - 12.7	14.5	81D340
0.47 - 0.50	0.58	81D306	12.8 - 13.9	15.9	81D341
0.51 - 0.56	0.64	81D307	14.0 - 15.2	17.4	81D342
0.57 - 0.62	0.71	81D308	15.3 - 16.8	19.3	81D343
0.63 - 0.67	0.77	81D309	16.9 - 18.5	21.3	81D344
0.68 - 0.74	0.85	81D310	18.6 - 20.6	23.6	81D345
0.75 - 0.82	0.94	81D311	20.7 - 22.5	25.9	81D346
0.83 - 0.90	1.03	81D312	22.6 - 24.9	28.5	81D360
0.91 - 0.99	1.14	81D313	25.0 - 27.3	31.3	81D361
1.00 - 1.09	1.25	81D314	27.4 - 30.0	34.5	81D362
1.10 - 1.20	1.37	81D315	30.1 - 33.0	37.9	81D363
1.21 - 1.31	1.50	81D316	33.1 - 36.4	41.9	81D364
1.32 - 1.44	1.65	81D317	36.5 - 44.0	46.0	81D365
1.45 - 1.59	1.82	81D318	40.1 - 44.2	50.6	81D366
1.60 - 1.74	2.00	81D319	Size 3		
1.75 - 1.92	2.20	81D320	22.6 - 24.9	28.5	81D400
1.93 - 2.11	2.42	81D321	25.0 - 27.3	31.3	81D401
2.12 - 2.31	2.65	81D322	27.4 - 30.0	34.5	81D402
2.32 - 2.55	2.92	81D323	30.1 - 33.0	37.9	81D403
2.56 - 2.80	3.20	81D324	33.1 - 36.4	41.7	81D404
2.81 - 3.09	3.54	81D325	36.5 - 40.0	46.0	81D405
3.10 - 3.42	3.92	81D326	40.1 - 44.2	50.6	81D406
3.43 - 3.75	4.3	81D327	44.3 - 48.6	55.7	81D407
3.76 - 4.10	4.7	81D328	48.7 - 53.6	61.3	81D408
4.11 - 4.54	5.2	81D329	53.7 - 58.8	67.4	81D409
4.55 - 4.98	5.7	81D330	58.9 - 64.7	74.1	81D410
4.99 - 5.45	6.25	81D331	64.8 - 71.1	81.5	81D411
5.46 - 6.03	6.9	81D332	71.2 - 78.3	89.7	81D412
6.04 - 6.65	7.6	81D333	78.4 - 86.0	98.6	81D413
6.66 - 7.25	8.3	81D334	86.1 - 94.0	108	81D414
7.26 - 8.05	9.2	81D335	94.1 - 103.0	119	81D415
8.06 - 8.83	10.1	81D336			
8.84 - 9.70	11.1	81D337			

Note: Ultimate trip current will be 90%-100% of heater rating.

Thermal Overload Relays

Induction Type IC5882-34

Specification	MIL-C-2212
Application	Use for overload protection of A.C. motors where highly accurate, ambient compensated overload relays are required. Choose medium-trip relay for most applications. Use slowtrip relay if it is necessary to have motor ride through long overload periods. Use fast-trip relay for motors that heat rapidly. See characteristic curves for comparative time-current characteristics.
Type	Induction type with interchangeable coils and adjustable trip setting. Trip current can be varied +/- 10% from factory setting. Compensation is such that trip current will not vary more than 3 percent for each 10 ⁰ C change in ambient temperature.
Form	Single element (one pole) with one N.C. contact. Use two relays in two lines of a three phase circuit.
Reset	Reset manually with one reset button or electrically with reset relay on page 32
Voltage	600 volts maximum.

Ordering Information

To order overload relay with heating coil, specify overload relay catalog number with heating coil suffix number.

Example: IC5882-34JJ200

To order overload relay only (less coil) specify overload relay catalog number only.

Example: IC5882-34JJ

To order heating coil only specify heating coil catalog number plus suffix number.

Example: 1D5G200

Contact Ratings

Amperes			
Carry	Make	Break	
		115 VAC	440 VAC
10	30	20	5

Type of Trip	Overload Relay Catalog Number
Slow	IC5882-34KK
Medium	IC5882-34JJ
Fast	IC5882-34MM



Thermal Overload Relays

Induction Type IC5882-34

Heaters Coils (Sizes 0-4)

Max. Cont. Full Load Motor Amp for 40° C Rise Motors	Coil Rating in Amps	Coil Catalog Number is ID5G Plus Suffix Listed Below			Max. Cont. Full Load Motor Amp for 40° C Rise Motors	Coil Rating in Amps	Coil Catalog Number is ID5G Plus Suffix Listed Below		
		Medium-trip IC5882-34JJ	Slow-trip IC5882-34KK	Fast-trip IC5882-34MM			Medium-trip IC5882-34JJ	Slow-trip IC5882-34KK	Fast-trip IC5882-34MM
		Coil Suffix					Coil Suffix		
0.57 - 0.62	0.71	200	200	-	18.3 - 20.0	22.9	237	237	236
0.63 - 0.69	0.78	201	201	200	20.1 - 22.0	25	238	238	237
0.70 - 0.76	0.86	202	202	201	22.1 - 24.4	27.5	239	239	238
0.77 - 0.82	0.94	203	203	202	24.5 - 26.1	29.5	240	240	*
0.83 - 0.91	1.03	204	204	203	26.2 - 27.1	30.6	*	*	239
0.92 - 1.00	1.13	205	205	204	27.2 - 27.4	31.2	241	241	*
1.01 - 1.10	1.24	206	206	205	27.5 - 28.7	32.4	*	*	240
1.11 - 1.20	1.36	207	207	206	28.8 - 29.4	33.3	242	242	*
1.21 - 1.33	1.50	208	208	207	29.5 - 30.4	34.4	*	*	241
1.34 - 1.45	1.65	209	209	208	30.5 - 31.4	35.7	243	243	*
1.46 - 1.60	1.80	210	210	209	31.5 - 32.5	36.7	*	*	242
1.61 - 1.77	2.00	211	211	210	32.6 - 33.9	38.5	244	244	*
1.78 - 1.94	2.20	212	212	211	34.0 - 34.8	39.3	*	*	243
1.95 - 2.13	2.42	213	213	212	34.9 - 35.9	41.7	245	245	*
2.14 - 2.33	2.65	214	214	213	36.0 - 38.4	43.3	*	*	244
2.34 - 2.58	2.92	215	215	214	38.5 - 40.3	45.5	246	246	*
2.59 - 2.82	3.22	216	216	215	40.4 - 40.6	45.8	*	*	245
2.83 - 3.10	3.52	217	217	216	40.7 - 44.1	50	247	247	246
3.11 - 3.40	3.87	218	218	217	44.2 - 49.0	55	248	248	247
3.41 - 3.74	4.25	219	219	218	49.1 - 53.7	61	*	*	248
3.75 - 4.12	4.68	220	220	219	53.8 - 55.3	62.5	249	249	*
4.13 - 4.54	5.15	221	221	220	55.4 - 60.5	68.8	253	253	*
4.55 - 4.94	5.65	222	222	221	60.6 - 60.8	69	*	*	249
4.95 - 5.48	6.20	223	223	222	60.9 - 63.0	71.5	250	250	*
5.49 - 6.03	6.85	224	224	223	63.1 - 63.9	72.5	*	*	253
6.04 - 6.66	7.55	225	225	224	64.0 - 69.5	78.7	254	254	*
6.67 - 7.32	8.34	226	226	225	69.6 - 69.6	79	*	*	250
7.33 - 8.03	9.16	227	227	226	69.7 - 73.1	83	*	*	254
8.04 - 8.83	10.0	228	228	227	73.2 - 74.0	83.5	251	251	*
8.84 - 9.70	11.1	229	229	228	74.1 - 81.0	92	255	255	251
9.71 - 10.8	12.2	230	230	229	81.1 - 85.0	96.6	*	*	255
10.9 - 11.9	13.5	231	231	230	85.1 - 88.2	100	252	252	*
12.0 - 13.0	14.9	232	232	231	88.3 - 96.9	110	*	*	252
13.1 - 14.2	16.1	233	233	232	97 - 98	110	256	256	*
14.3 - 15.7	17.8	234	234	233	99 - 106.5	121	*	*	269
15.8 - 17.1	19.6	235	235	234	106.6 - 111	125	64	64	*
17.2 - 18.2	21.7	236	236	235	112 - 121	137	85	85	64
					122 - 127	144	*	*	85
					128 - 133	150	272	272	*

NOTE: Ultimate trip current will be 90-100% of coil rating.

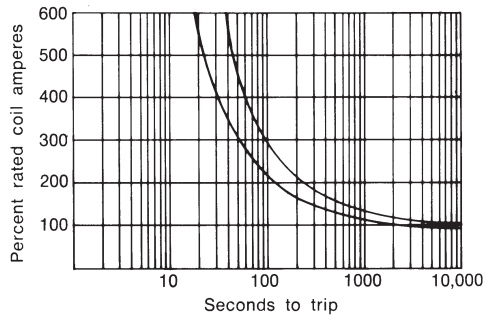
* Use next higher rating



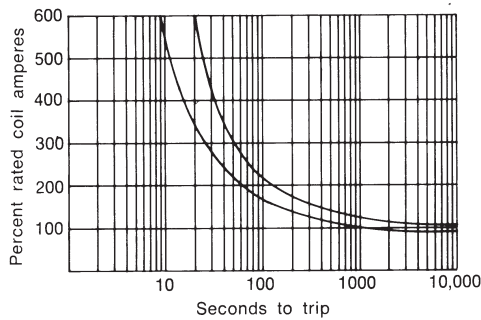
Thermal Overload Relays

Induction Type IC5882-34

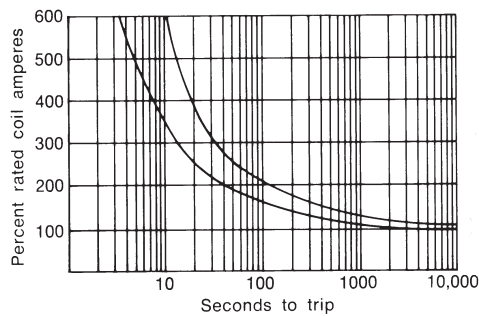
Characteristic Curves



Time-current curve, slow-trip form, 60 hertz, 40°C ambient temperature.

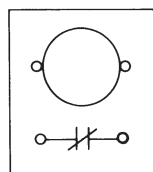


Time-current curve, medium-trip form, 60 hertz, 40°C ambient temperature.



Time-current curve, fast-trip form, 60 hertz, 40°C ambient temperature.

Wiring Symbol



Outline and Mounting Dimensions (In Inches)

