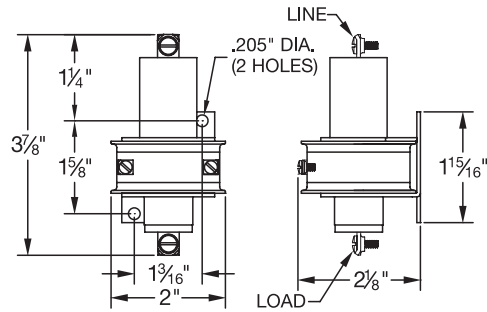


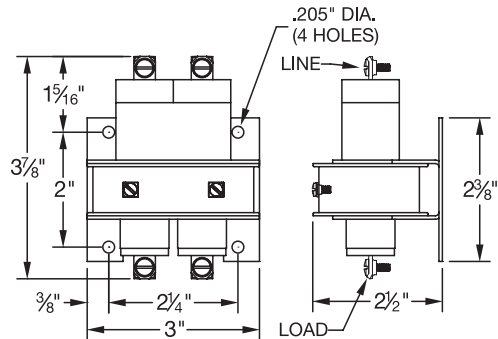
30-AMP NORMALLY OPEN CONTACTORS



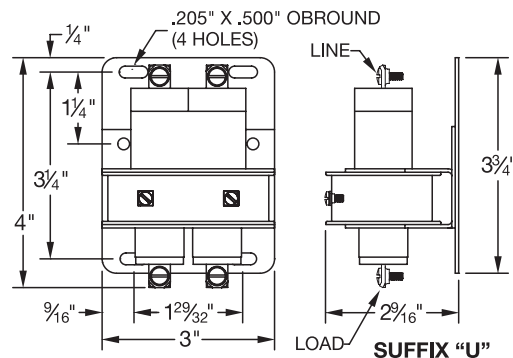
SINGLE POLE



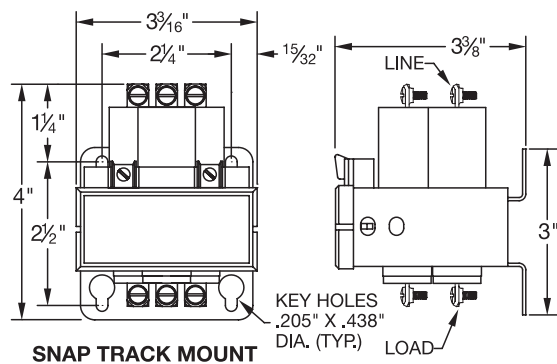
**TWO POLE
STANDARD MOUNT**



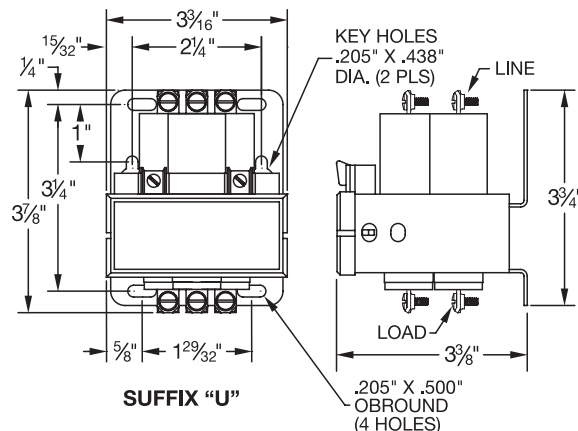
**TWO POLE
UNIVERSAL MOUNT**



**THREE POLE
STANDARD MOUNT**



**THREE POLE
UNIVERSAL MOUNT**



GENERAL INFORMATION

The 30 Amp model is designed to save space and simplify mounting methods. The standard mounting bracket on the three pole model allows the unit to be mounted in standard 3" snap track channel. If you do not use snap track mounting, the standard three pole bracket has key hole slots for easy mounting in any panel arrangement. The universal three pole mounting bracket has various mounting holes and key hole slots to meet a variety of mounting centers.

The 30 Amp series is a more compact line with a well proven switch which is the heart of mercury relays. It is the same switch design that is in our 35 and 60 Amp encapsulated MDR's, which have withstood the test of time and millions of cycles in many different applications.

TYPICAL SPECIFICATIONS

- ON NORMALLY OPEN UNITS:
OPERATE TIME: 50 milliseconds
RELEASE TIME: 80 milliseconds
- CONTACT RESISTANCE:
30-AMP = .003 ohm*
- DIELECTRIC WITHSTAND:
2500 VAC RMS
- LONGEVITY:
MILLIONS OF CYCLES
- TEMPERATURE RANGE:
-35°C to 85°C
- COIL TERMINALS:
#6 BINDING HEAD SCREWS
- LOAD TERMINALS:
#8 BINDING HEAD SCREWS
- UL LISTING: FILE #E62767
- C.S.A.: FILE #LR41198
- TO ORDER SEE PAGE 4

*AFTER CYCLING UNDER LOAD.



FILE #E-62767



FILE #LR 41198



Catalog No.	Resistance	Current	V.A.	Watts
30NO-24D	180 Ω	133 mA	3.2	3.2
230NO-24D	131 Ω	188 mA	4.5	4.5
330NO-24D	73 Ω	329 mA	7.9	7.9
30NO-24A	28 Ω	316 mA	7.6	2.8
230NO-24A	12.5 Ω	610 mA	14.6	4.7
330NO-24A	7.6 Ω	815 mA	19.6	5.0
30NO-120A	725 Ω	65 mA	7.8	3.1
230NO-120A	317 Ω	118 mA	14.2	4.4
330NO-120A	210 Ω	163 mA	19.6	5.6
30NO-220A	3,150 Ω	27 mA	6.0	2.2
230NO-220A	1,300 Ω	56 mA	12.3	4.1
330NO-220A	728 Ω	86 mA	18.9	5.5

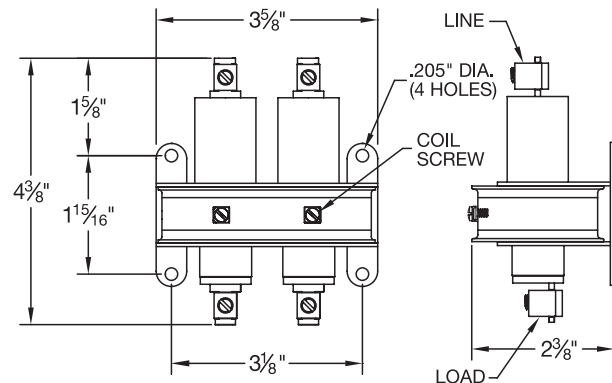
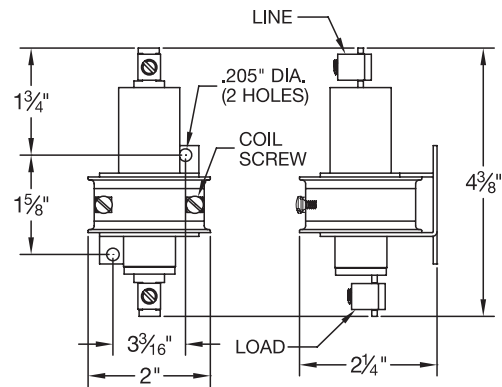
L35/L60-AMP NORMALLY OPEN CONTACTORS



**SINGLE POLE
NORMALLY OPEN**



**TWO POLE
NORMALLY OPEN**



TYPICAL SPECIFICATIONS

- ON NORMALLY OPEN UNITS:
OPERATE TIME: 50 milliseconds
RELEASE TIME: 80 milliseconds
- CONTACT RESISTANCE:
35-AMP = .003 ohm*
60-AMP = .002 ohm*
- DIELECTRIC WITHSTAND:
2500 VAC RMS
- LONGEVITY:
MILLIONS OF CYCLES
- TEMPERATURE RANGE:
-35°C TO 85°C
- COIL TERMINALS:
#6 BINDING HEAD SCREWS
- LOAD TERMINALS:
PRESSURE CONNECTORS FOR
A.W.G. #4-#14 ON 35-AMP AND
A.W.G. #2-#8 ON 60-AMP UNITS
- UL LISTING:
FILE #E62767 FOR L35 AND
L60-AMP N.O. UNITS 1-2 POLES
- C.S.A.:
FILE #LR41198 FOR L35 AND
L60-AMP N.O. UNITS 1-2 POLES



FILE #E-62767



FILE #LR 41198



The "L" version of the 35 and 60 amp normally open contactors are designed and manufactured to the same high quality specifications as the standard 35 and 60 amp models. The contactor switch is the same well proven design that has been manufactured since 1975. The mounting centers and physical size are identical to the standard single and two pole 35 and 60 amp molded versions.

The new design provides a cleaner appearance, and is a more economical design. It is available in the single and two pole models only, with top and bottom load terminals or with lead wires. Noted are the typical specifications and UL and CSA file numbers.

COIL DATA L35 AND L60 SERIES.

Catalog No.		Resistance	Current	V.A.	Watts
L35NO-24D	L60NO-24D	188 Ω	135 mA	3.3	3.3
L235NO-24D	L260NO-24D	92 Ω	260 mA	6.2	6.2
L35NO-24A	L60NO-24A	28 Ω	325 mA	7.8	3.0
L235NO-24A	L260NO-24A	10.3 Ω	660 mA	15.8	4.5
L35NO-120A	L60NO-120A	725 Ω	75 mA	9.0	4.0
L235NO-120A	L260NO-120A	350 Ω	115 mA	13.8	4.6
L35NO-220A	L60NO-220A	3,150 Ω	27 mA	5.9	2.2
L235NO-220A	L260NO-220A	1,000 Ω	69 mA	15.2	4.8

*AFTER CYCLING UNDER LOAD

35/60-AMP NORMALLY OPEN CONTACTORS

HAZARDOUS LOCATION & TRAFFIC CONTROL



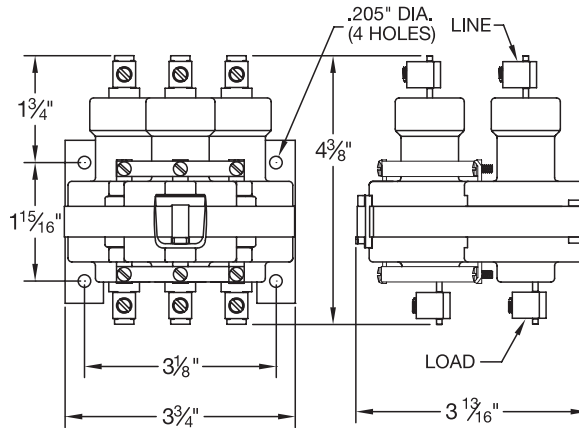
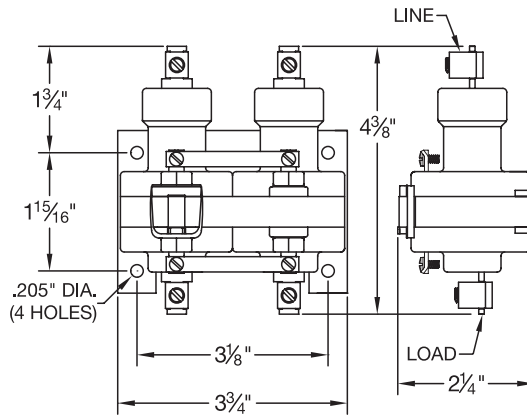
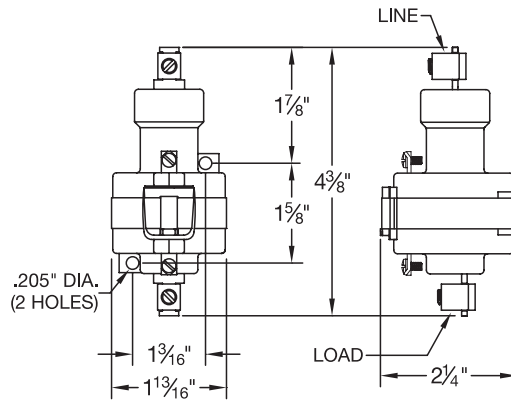
SINGLE POLE—NORMALLY OPEN



TWO POLE—NORMALLY OPEN



THREE POLE—NORMALLY OPEN



TYPICAL SPECIFICATIONS

- NORMALLY OPEN UNITS:
OPERATE TIME: 50 milliseconds
RELEASE TIME: 80 milliseconds
- NORMALLY CLOSED UNITS:
OPERATE TIME: 30 milliseconds
RELEASE TIME: 35 milliseconds
- CONTACT RESISTANCE:
35 AMP = .003 ohm*
60 AMP = .002 ohm*
- TEMPERATURE RANGE:
-35°C to 85°C
- COIL TERMINALS:
#6 WIRE BINDING SCREWS
- LOAD TERMINALS:
PRESSURE CONNECTORS
4 TO 14 AWG ON 35 AMP
2 TO 8 AWG ON 60 AMP
- RATINGS:
SEE PAGE 13 FOR COIL DATA
SEE PAGE 14 FOR CONTACTS
- UL LISTING: FILE #E-62767 FOR
- C.S.A.: FILE # LR 41198 FOR
- TO ORDER SEE PAGE 4



FILE #E-62767



FILE #LR 41198



HAZARDOUS LOCATIONS

SUFFIX "X"

Available in 1, 2 & 3 Pole Units
UL File E-71867

Auxiliary devices for use in hazardous locations

For CLASS 1, GROUPS A, B, C, & D - Division 2 only.

TRAFFIC CONTROL (CONSTANT DUTY)

SP-1132- VOLTAGE- (A or D)

35 AMPS @ 600 VAC

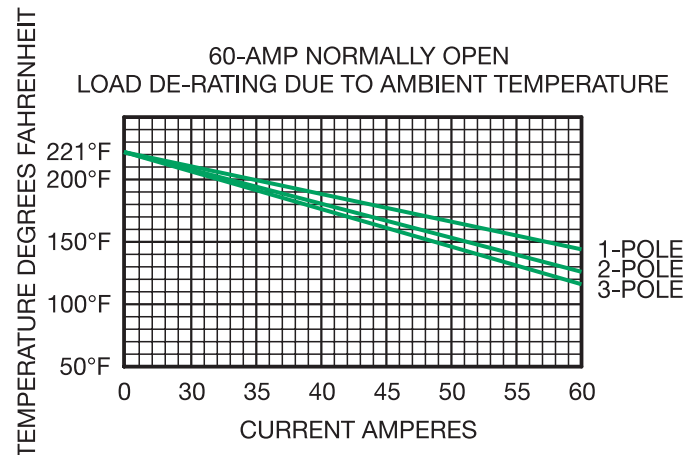
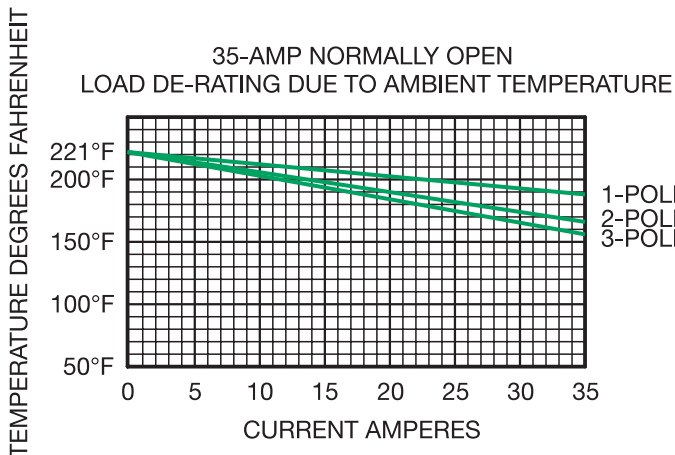
SP-1130- VOLTAGE- (A or D)

60 AMPS @ 480 VAC

A return spring replaces the buffer spring for this application

* AFTER CYCLING UNDER LOAD

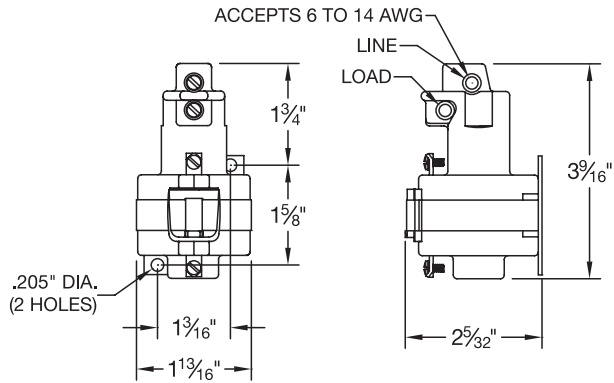
STANDARD MOUNTING SHOWN - SEE PAGE 12 FOR OPTIONS



35 AMP T-TOP CONTACTORS



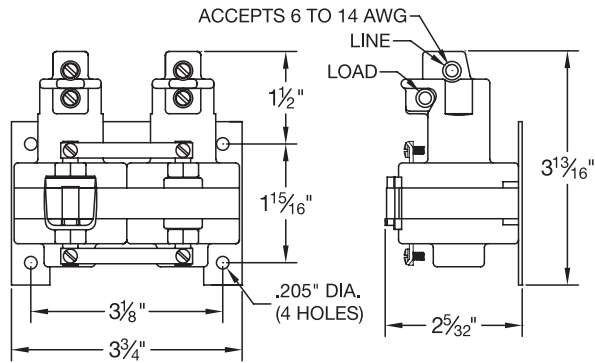
SINGLE POLE—NORMALLY OPEN



FILE #E-62767



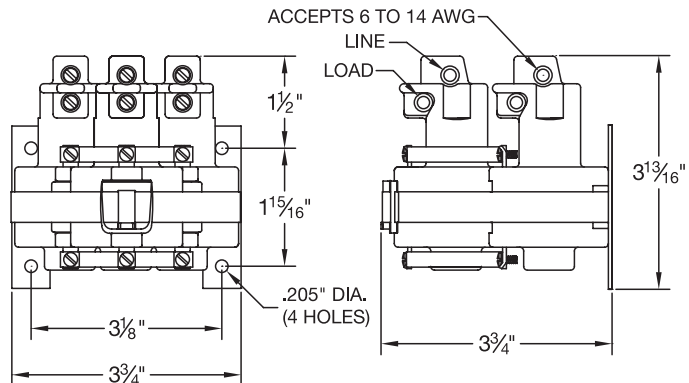
TWO POLE—NORMALLY OPEN



FILE #LR 41198

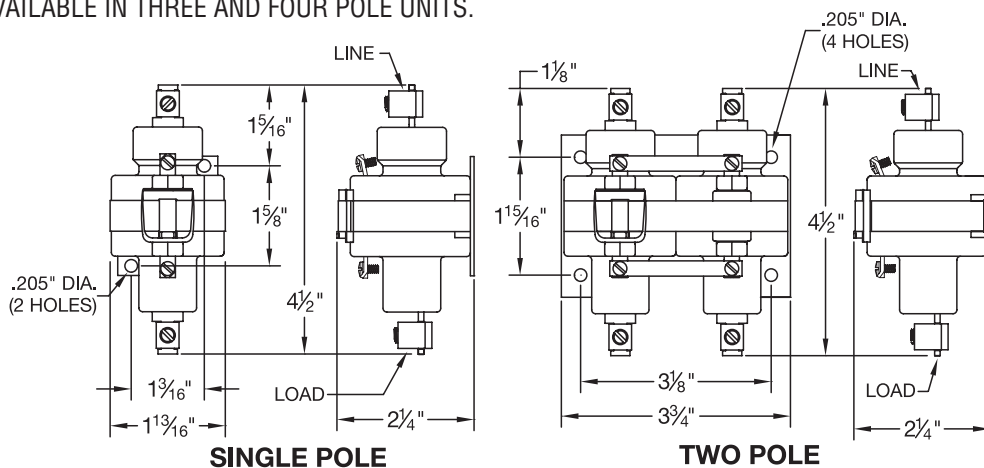


THREE POLE—NORMALLY OPEN



35/60 AMP NORMALLY CLOSED CONTACTORS

SIMILAR CONSTRUCTION AS THE NORMALLY OPEN UNITS BUT WITH THE COIL POSITIONED CLOSER TO THE TOP OF THE CONTACTOR AND A NORMALLY CLOSED CONTACTOR IN PLACE OF A NORMALLY OPEN CONTACTOR. ALSO AVAILABLE IN THREE AND FOUR POLE UNITS.



FILE #E-62767



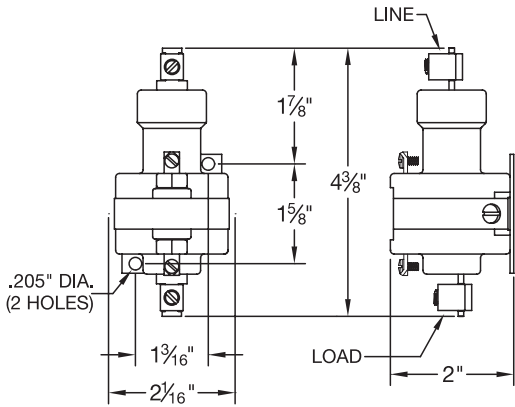
FILE #LR 41198

35/60 AMP METAL STRAPPED CONTACTORS

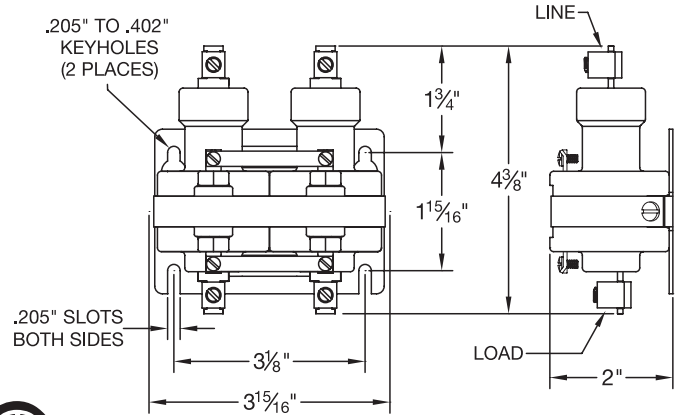
Add suffix -18 to catalog number for metal strap, i.e. 335NO-120A-18



SINGLE POLE—NORMALLY OPEN



TWO POLE—NORMALLY OPEN



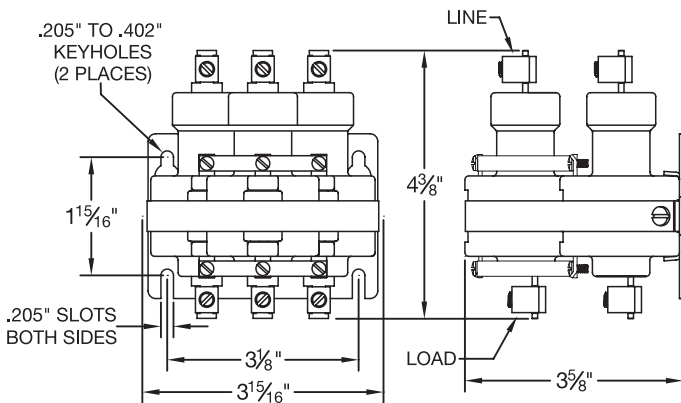
FILE #E-62767



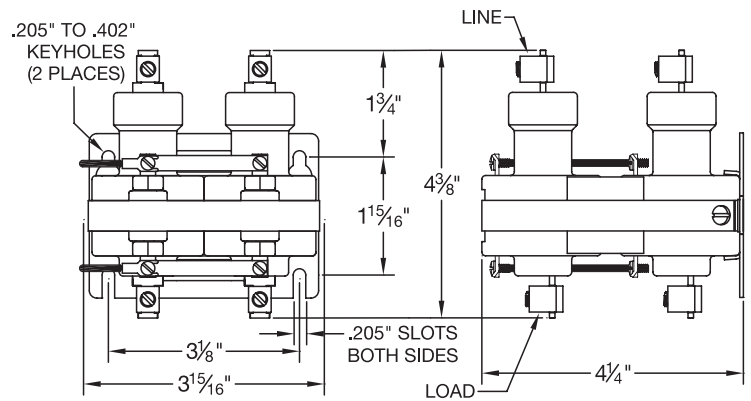
FILE #LR 41198



THREE POLE—NORMALLY OPEN



FOUR POLE—NORMALLY OPEN



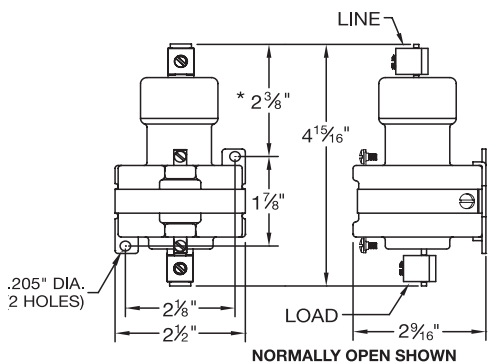
100-AMP CONTACTORS



NORMALLY OPEN UNIT



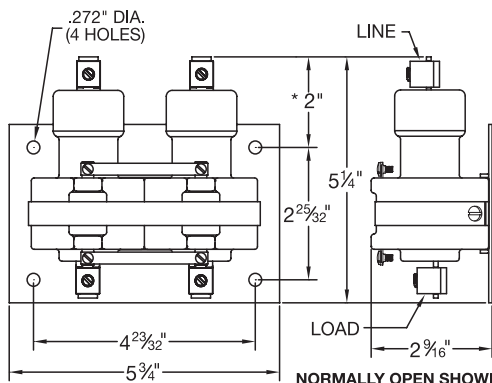
NORMALLY CLOSED UNIT



* THIS DIMENSION IS 1 3/8" FOR NORMALLY CLOSED SINGLE POLE UNITS



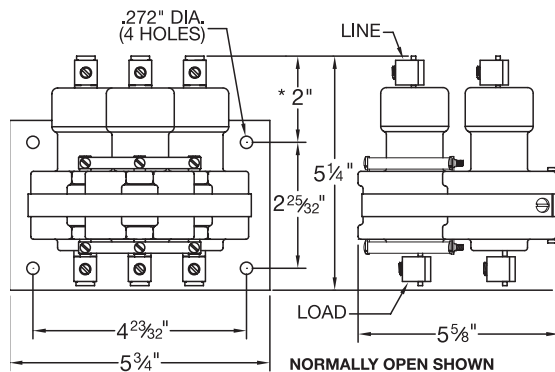
TWO POLE—NORMALLY OPEN



* THIS DIMENSION IS 1 5/16" FOR NORMALLY CLOSED TWO POLE UNITS



THREE POLE—NORMALLY OPEN



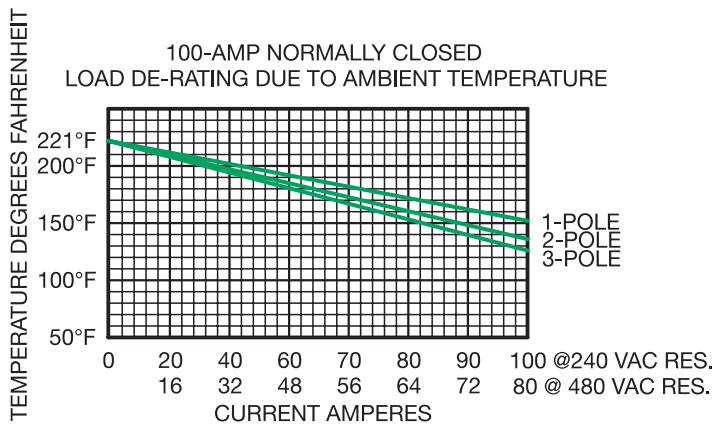
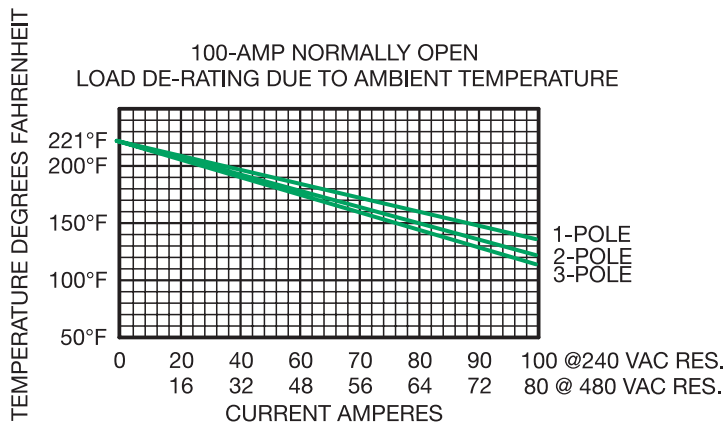
* THIS DIMENSION IS 1 5/16" FOR NORMALLY CLOSED THREE POLE UNITS

TYPICAL SPECIFICATIONS

- ON NORMALLY OPEN UNITS:
OPERATE TIME: 50 milliseconds
RELEASE TIME: 80 milliseconds
- ON NORMALLY CLOSED UNITS:
OPERATE TIME: 45 milliseconds
RELEASE TIME: 60 milliseconds
- CONTACT RESISTANCE:
.001 ohm*
- DIELECTRIC WITHSTAND:
2500VAC RMS
- LONGEVITY:
MILLIONS OF CYCLES
- TEMPERATURE RANGE:
-35°C TO 85°C
- COIL TERMINALS:
#6 BINDING HEAD SCREWS
- LOAD TERMINALS:
PRESSURE CONNECTORS.
STANDARD ACCEPTS A.W.G.
#2 to #8.
FOR A.W.G. #1 to #8,
ADD SUFFIX -5 to CATALOG
NUMBER (i.e. 100NO-120A-5)
- RATINGS:
Derate over 240VAC Res.
See Page 13 for Coil Data.
See Page 14 for Contacts.
- TO ORDER SEE PAGE 4.

S100NO - SERIES

AVAILABLE IN 1, 2 & 3 POLES
RATINGS: 100 AMPS @ 480 VAC
SEE PAGE 14 FOR RATINGS



COIL DATA PER POLE RATINGS ON STANDARD COILS

CATALOG NUMBER	VOLTAGE	RESISTANCE (D.C. OHMS)	CURRENT (MILLIAMPERES)	VOLT AMPERES (V/A)	POWER (WATTS)
30 AMP SERIES (SEE PAGE 5)	SEE PAGE 5	SEE PAGE 5	SEE PAGE 5	SEE PAGE 5	SEE PAGE 5
35NO-24A	24 VAC	50 Ω	242 mA	5.8 V/A	2.9 W
35NO-120A	120 VAC	1,250 Ω	53 mA	6.4 V/A	3.5 W
35NO-208A	208 VAC	3,400 Ω	30 mA	6.2 V/A	3.1 W
35NO-220A	220 VAC	4,800 Ω	28 mA	6.2 V/A	3.8 W
35NO-277A	277 VAC	7,900 Ω	20 mA	5.5 V/A	3.2 W
35NO-480A	480 VAC	20,000 Ω	12 mA	5.9 V/A	3.0 W
35NO-6D	6 VDC	13 Ω	462 mA	2.8 V/A	2.8 W
35NO-12D	12 VDC	36 Ω	333 mA	4.0 V/A	4.0 W
35NO-24D	24 VDC	176 Ω	136 mA	3.3 V/A	3.3 W
35NO-48D	48 VDC	636 Ω	75 mA	3.6 V/A	3.6 W
35NO-125D	125 VDC	3,400 Ω	37 mA	4.6 V/A	4.6 W
35NO-250D	250 VDC	14,800 Ω	17 mA	4.2 V/A	4.2 W
35NC-24A	24 VAC	36 Ω	310 mA	7.4 V/A	3.5 W
35NC-120A	120 VAC	860 Ω	65 mA	7.8 V/A	3.6 W
35NC-220A	220 VAC	3,400 Ω	31 mA	6.8 V/A	3.3 W
35NC-12D	12 VDC	36 Ω	333 mA	4.0 V/A	4.0 W
35NC-24D	24 VDC	176 Ω	136 mA	3.3 V/A	3.3 W
35NC-48D	48 VDC	560 Ω	86 mA	4.1 V/A	4.1 W
35NC-125D	125 VDC	3,400 Ω	37 mA	4.6 V/A	4.6 W
60NO-24A	24 VAC	50 Ω	259 mA	6.2 V/A	3.4 W
60NO-120A	120 VAC	1,250 Ω	48 mA	5.8 V/A	2.9 W
60NO-208A	208 VAC	3,400 Ω	30 mA	6.2 V/A	3.1 W
60NO-220A	220 VAC	4,800 Ω	27 mA	5.9 V/A	3.5 W
60NO-277A	277 VAC	7,900 Ω	19 mA	5.3 V/A	2.9 W
60NO-480A	480 VAC	20,000 Ω	12 mA	5.8 V/A	2.9 W
60NO-12D	12 VDC	36 Ω	333 mA	4.0 V/A	4.0 W
60NO-24D	24 VDC	176 Ω	136 mA	3.3 V/A	3.3 W
60NO-48D	48 VDC	636 Ω	75 mA	3.6 V/A	3.6 W
60NO-125D	125 VDC	3,400 Ω	37 mA	4.6 V/A	4.6 W
60NO-250D	250 VDC	14,800 Ω	17 mA	4.3 V/A	4.3 W
60NC-24A	24 VAC	36 Ω	325 mA	7.8 V/A	5.3 W
60NC-120A	120 VAC	860 Ω	69 mA	8.3 V/A	4.1 W
60NC-220A	220 VAC	3,400 Ω	34 mA	7.5 V/A	3.9 W
60NC-277A	277 VAC	7,900 Ω	26 mA	7.3 V/A	5.5 W
60NC-12D	12 VDC	36 Ω	333 mA	4.0 V/A	4.0 W
60NC-24D	24 VDC	140 Ω	171 mA	4.1 V/A	3.3 W
60NC-48D	48 VDC	560 Ω	86 mA	4.1 V/A	4.1 W
60NC-125D	125 VDC	3,400 Ω	37 mA	4.6 V/A	4.6 W
100NO-24A	24 VAC	16 Ω	646 mA	15.5 V/A	6.7 W
100NO-120A	120 VAC	380 Ω	137 mA	16.4 V/A	7.1 W
100NO-220A	220 VAC	1,400 Ω	73 mA	16.1 V/A	7.5 W
100NO-277A	277 VAC	2,400 Ω	55 mA	15.2 V/A	7.3 W
100NO-480A	480 VAC	6,300 Ω	35 mA	16.8 V/A	7.7 W
100NO-24D	24 VDC	65 Ω	369 mA	8.9 V/A	8.9 W
100NO-48D	48 VDC	350 Ω	137 mA	6.6 V/A	6.6 W
100NO-125D	125 VDC	2,400 Ω	52 mA	6.5 V/A	6.5 W
100NC-24A	24 VAC	16 Ω	515 mA	12.4 V/A	4.2 W
100NC-120A	120 VAC	380 Ω	110 mA	13.2 V/A	4.6 W
100NC-208A	220 VAC	1,400 Ω	55 mA	11.4 V/A	4.2 W
100NC-240A	240 VAC	1,685 Ω	49 mA	11.8 V/A	4.0 W
100NC-480A	480 VAC	6,300 Ω	27 mA	13.0 V/A	4.6 W
100NC-12D	12 VDC	28 Ω	433 mA	5.2 V/A	5.2 W
100NC-24D	24 VDC	121 Ω	198 mA	4.8 V/A	4.8 W
100NC-48D	48 VDC	380 Ω	126 mA	6.1 V/A	6.1 W
100NC-125D	125 VDC	2,400 Ω	52 mA	6.5 V/A	6.5 W

- NOTES: 1. Inrush current = 1.5 times the steady state current. (No inrush on DC coils).
2. Minimum operation voltage is 90% of nominal voltage.
3. All AC voltages are 50/60 Hz.
4. For other coils voltages contact the factory
5. Ratings shown are per pole. (Coils are in parallel).

MERCURY CONTACTOR RATINGS

RATINGS ARE IN AMPS UNLESS OTHERWISE SPECIFIED

		30 NO	35 NO	35 NO (H) 35 NC	60 NO	60 NO (H) 60 NC	100 NO S100NO	100 NO (H) 100 NC	S100 NO (H)	
A.C. RESISTIVE	240 V	30	35	35	60	60	100	100	100	
	480 V	30	35	35	60	60	80	100	100	
	600 V	30	35	-	48	-	70	80	80	
A.C. INDUCTIVE P.F. .4 OR GREATER	120 V	-	-	25	-	30	-	100		
	240 V	-	-	15	-	20	-	100		
GENERAL PURPOSE P.F. .7 OR GREATER	240 V	-	-	35	-	60	-	100	100	
	480 V	-	-	35	-	60	-	80	100	
D.C. RESISTIVE HEATING	48 V	-	-	35	-	60	-	100		
	125 V	-	-	16	-	40	-	50		
	250 V	-	-	12	-	20	-	30		
TUNGSTEN LAMP	120 V	30	35	35	60	60	100	100		
MOTOR LOADS	SINGLE PHASE	120 V	-	1 H.P.	2 H.P.	-	3 H.P.	-	7.5 H.P.	
		240 V	-	1 H.P.	3 H.P.	-	5 H.P.	-	10 H.P.	
	THREE PHASE	240 V	-	-	5 H.P.	-	7.5 H.P.	-	15 H.P.	
		480 V	-	-	7.5 H.P.	-	10 H.P.	-	20 H.P.	

KEY:  SHADED AREA FOR UL LISTING AND/OR COMPONENT RECOGNITION.
 - NOT RECOMMENDED FOR THIS TYPE OF LOAD.

SOLID STATE RELAY RATINGS

CATALOG NUMBER	HPR48A25 HPR48D25	HPR48A50 HPR48D50	HPR48A75 HPR48D75	3PSS60A75
Rated operational current AC51 @ Ta=25°C AC53a @ Ta=25°C	25 AMPS rms 5 AMPS rms	50 AMPS rms 15 AMPS rms	75 AMPS rms 20 AMPS rms	75 AMPS rms 20 AMPS rms
Minimum operational current	150 mA rms	250 mA rms	400 mA rms	400 mA rms
Rep. overload current t=1 s	< 55 A rms	< 125 A rms	< 150 A rms	< 150 A rms
Non-rep. surge current t = 10 ms	325 A _p	600 A _p	1150 A _p	1150 A _p
Off-state leakage current	< 3 mA rms	< 3 mA rms	< 3 mA rms	< 3 mA rms
I _t for fusing t = 10 ms	525 A2s	1800 A2s	6600 A2s	6600 A2s
On-state voltage drop	1.6 V rms	1.6 V rms	1.6 V rms	1.6 V rms
Critical dV/dt off-state	1000 V/μs	1000 V/μs	1000 V/μs	500 V/μs

CATALOG NUMBER	SS20AE SS20AU SS20DE SS20DU	SS30AU SS30DU	SS50AE SS50AU SS50DE SS50DU	SS70AU SS70DU
Rated operational current AC51 @ Ta=25°C AC53a @ Ta=25°C	20 AMPS rms 5 AMPS rms	30 AMPS rms 15 AMPS rms	50 AMPS rms 30 AMPS rms	70 AMPS rms 30 AMPS rms
Minimum operational current	350 mA rms	150 mA rms	150 mA rms	150 mA rms
Rep. overload current t=1 s	< 35 A rms	< 125 A rms	< 200 A rms	< 200 A rms
Non-rep. surge current t = 10 ms	250 A _p	400 A _p	1900A _p	1900A _p
Off-state leakage current	< 3 mA rms	< 3 mA rms	< 3 mA rms	< 3 mA rms
I _t for fusing t = 10 ms	310 A2s	1800 A2s	1800 A2s	1800 A2s
On-state voltage drop	1.6 V rms	1.6 V rms	1.6 V rms	1.6 V rms
Critical dV/dt off-state	500 V/μs	500 V/μs	500 V/μs	500 V/μs