



Balanced-Force Design
 Hermetically sealed
 Designed to the performance standards of **MIL-PRF-6106**

PRINCIPLE TECHNICAL CHARACTERISTICS

Contacts rated at **28 Vdc and 115 Vac, and 115/200 Vac, 400Hz, 3 Ø**

Weight **See Mounting**

Special units available upon request, including models with auxiliary contacts.

APPLICATION NOTES:

- [101](#)
- [102](#)
- [007](#)

CONTACT ELECTRICAL CHARACTERISTICS

Contact rating per pole and load type	Load current in Amps					
	28 Vdc	115 Vac 400 Hz	115/200 Vac 400 Hz, 3 Ø	28 Vdc [3]	28 Vdc [7]	DELTA 115/200 Vac 60 Hz
Resistive	50	180	120	120	200	60
Inductive [2]	30	180	120	80	-	60
Motor	30	80	80	80	-	60
Load transfer, resistive[6]	-	-	120	-	-	-



Featuring **LEACH**® power and control solutions
www.esterline.com

AMERICAS
 6900 Orangethorpe Ave.
 P.O. Box 5032
 Buena Park, CA 90622

Tel: (01) 714-736-7599
 Fax: (01) 714-670-1145

EUROPE
 2 Rue Goethe
 57430 Sarralbe
 France

Tel: (33) 3 87 97 31 01
 Fax: (33) 3 87 97 96 86

ASIA
 Units 602-603 6/F Lakeside 1
 No.8 Science Park West Avenue
 Phase Two, Hong Kong Science Park
 Pak Shek Kok, Tai Po, N.T.
 Hong Kong

Tel: (852) 2 191 3830
 Fax: (852) 2 389 5803

Data sheets are for initial product selection and comparison. Contact Esterline Power Systems prior to choosing a component.

COIL CHARACTERISTICS (Vdc)**SERIES ZJ**

CODE	A	B	C	F Vac 400 Hz	N [5]	Y [8]	YN [5]
Nominal operating voltage	28	12	6	115	28	28	28
Maximum operating voltage	29	14.5	7.3	124	29	29	29
Maximum pickup voltage							
- Nominal	18	9	4.5	90	18	18	18
- High temp test	20	10	5	95	20	20	20
- Continuous current test	22.5	11	5.7	100	22.5	22.5	22.5
Drop-out voltage, maximum	7	4.5	2.5	30	7	7	7
Coil resistance in Ohms $\pm 10\%$ at +25° C	113	28	7	-	113	-	-
Coil current Amp max. @ Nom. Volt. and +25° C	0.31	0.60	1.2	0.12	0.31	-	-

GENERAL CHARACTERISTICS

Temperature range	-55°C to +71°C
Minimum operating cycles (life) at rated load	50,000
Minimum operating cycles (life) at 25% rated load	100,000
Dielectric strength at sea level	
- All circuits to ground and circuit to circuit	1500 Vrms
- Coil to ground and Aux. contacts	1250 Vrms
Dielectric strength at altitude	700 Vrms (Main contacts) 500 Vrms (Coil and Auxiliary contacts)
Insulation resistance	
- Initial (500 Vdc)	100 M Ω min
- After environmental tests (500 Vdc)	50 M Ω min
Sinusiodal vibration (55 to 1000 Hz)	10 G
Shock (10-12 ms duration)	15 G
Maximum contact opening time under vibration and shock	10 μ s
Operate time at nominal voltage (Including bounce)	60 ms max 25 ms max (Economizer coil)
Release time at nominal voltage (Including bounce)	
-DC	40 ms max
-AC	125 ms max
Release time at nominal voltage (Including bounce):Economizer	
-DC	35 ms max
-AC	100 ms max

GENERAL CHARACTERISTICS CONTINUED**SERIES ZJ**

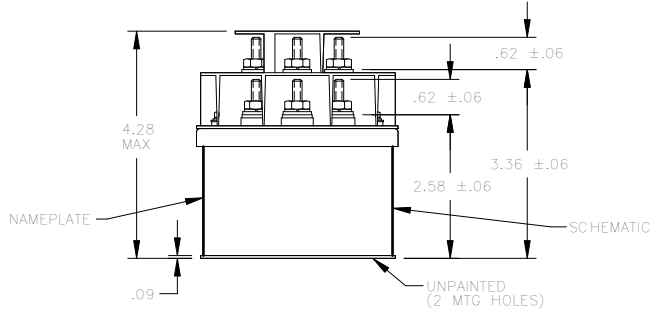
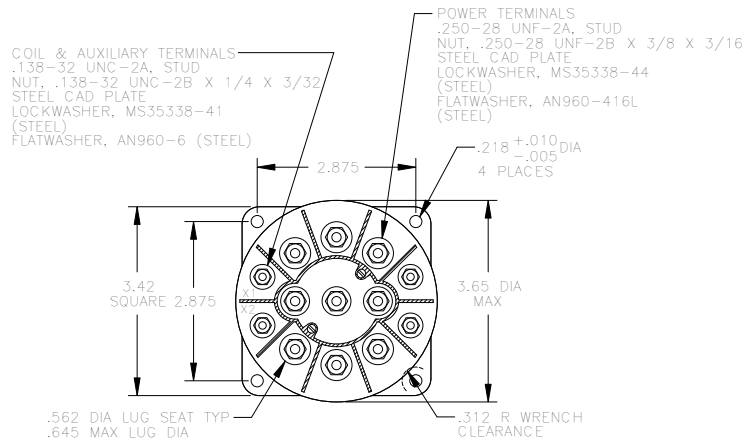
Contact bounce at nominal voltage	4 ms max
Weight	Noted
Overload	1000 Amp @ 115/200 Vac, 400 Hz
Rupture	1500 Amp @ 115/200 Vac, 400 Hz
Altitude	50,000 Feet

NUMBERING SYSTEM

	ZJ	-	X	0	X
Relay family_____					
1-Mounting Style(A,B,Etc.)_____					
2-Terminal & Circuit(1,2,3,Etc) _____					
3-Coil Voltage(A,B,C,F,N,Y,YN)_____					

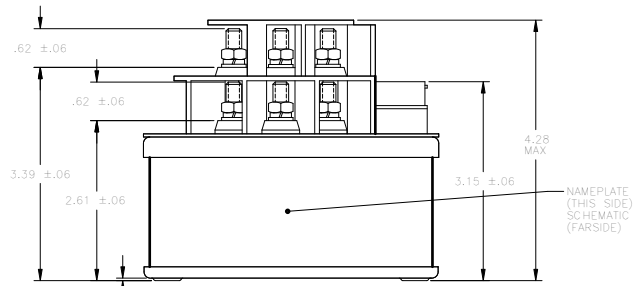
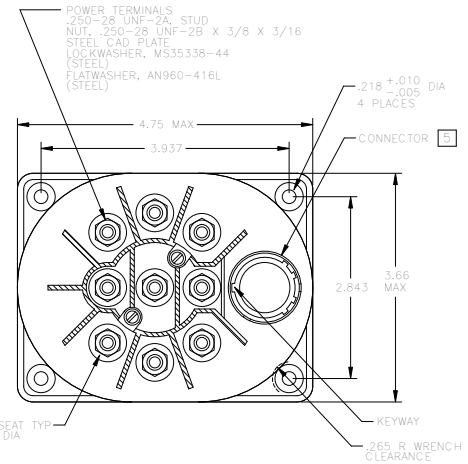
NOTES

- [1] Auxiliary contact rating - see page 5, note [2].
- [2] Inductive load life, 20,000 cycles.
- [3] Rating are for double break/make terminal type 6.
- [4] Alternate contact configurations and other special models available upon request. Please contact factory.
- [5] Back EMF suppression to 62 Volts Max.
- [6] Suitable for transfer between unsynchronized AC power sources at rating shown.
- [7] 200 Amps resistive, 25,000 cycles only, terminal style 6.
- [8] Economizer coils have a lower resistance primary coil for faster operate time. Once relay operates, the coil switches to a higher resistance for lower power drain. Do not ramp up voltage on these coils.
- 9. This series drawing is for general use only. Please consult factory for special requirements.



MOUNTING STYLE A

WEIGHT: 2 LB MAXIMUM
 WEIGHT IS DEPENDENT UPON CONFIGURATION REQUIRED.
 PLEASE CONSULT FACTORY.

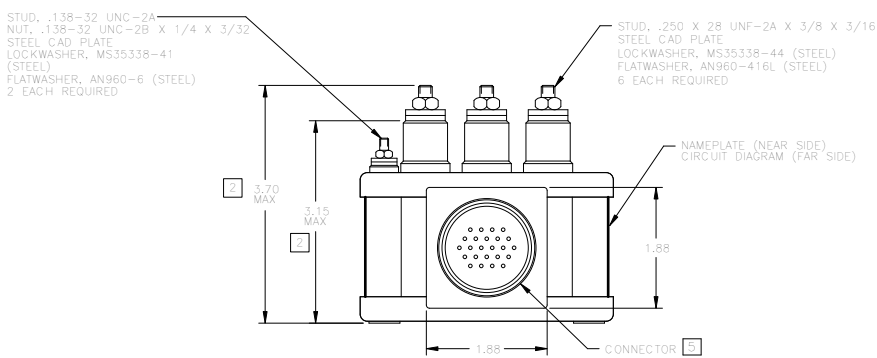
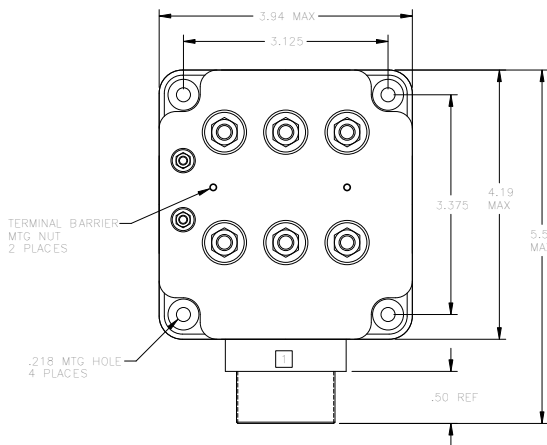


MOUNTING STYLE B

WEIGHT: 2 LB 12 OZ MAXIMUM
 WEIGHT IS DEPENDENT UPON CONFIGURATION REQUIRED.
 PLEASE CONSULT FACTORY.

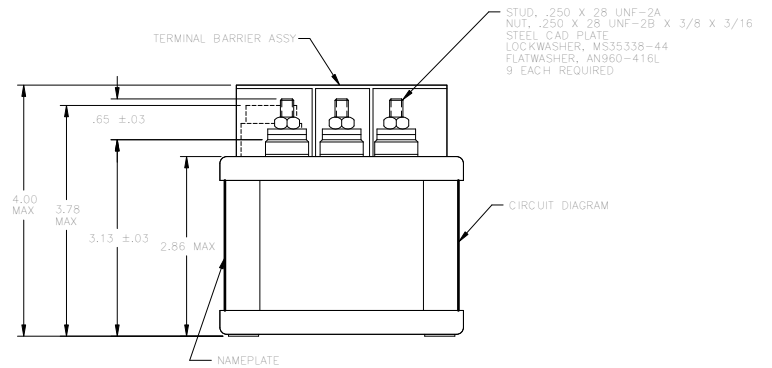
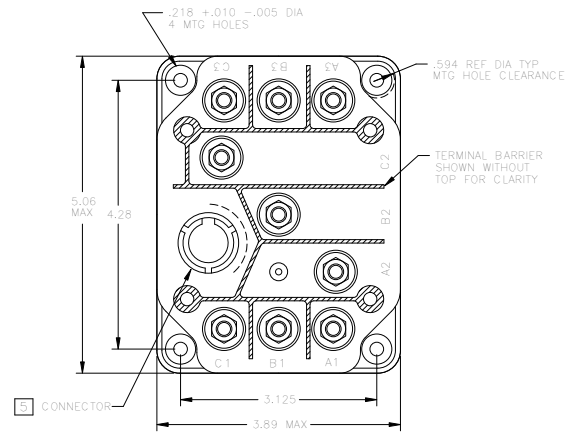
MOUNTING STYLE H

WEIGHT: 2 LB 8 OZ MAXIMUM

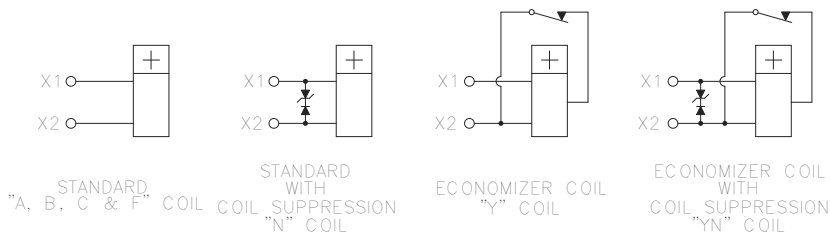


MOUNTING STYLE K

WEIGHT: 2 LB 13 OZ MAXIMUM



COIL CIRCUIT CONFIGURATION 3 4

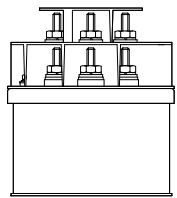
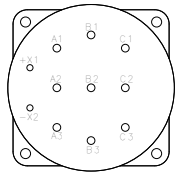
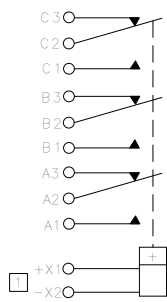


NOTES:

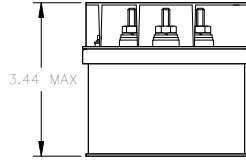
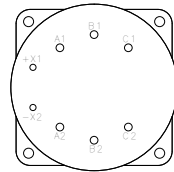
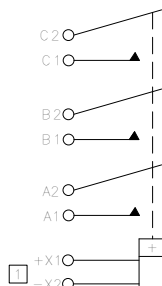
- 1 CAN BE DELETED.
- 2 MAXIMUM DIMENSIONS CAN BE REDUCED BY .500 INCH.
- 3 POLARITY INDICATION APPLIES TO D.C. COILS ONLY.
- 4 COIL TERMINALS MAY BE IDENTIFIED AS A-B OR X1-X2.
- 5 CIRCULAR CONNECTOR MS-STYLE OR EQUIVALENT

Standard Tolerance: .XX ±.03. .XXX ±.010

TERMINAL TYPE 1
3 PDT

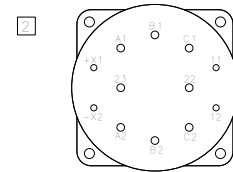
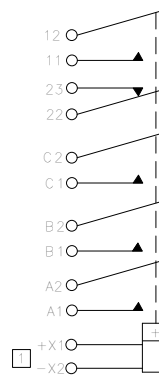


TERMINAL TYPE 2
3 PST-N.O.



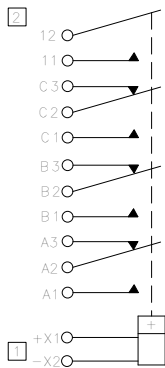
AVAILABLE MOUNTING STYLES: A (SHOWN), B, H AND K

TERMINAL TYPE 3
3 PST-N.O. WITH
SPST-N.O. & SPST-N.C.
AUXILIARY CONTACTS



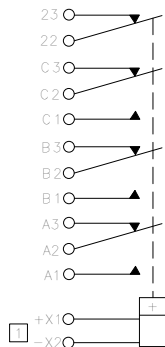
AVAILABLE MOUNTING STYLES: A (SHOWN), B, H AND K

TERMINAL TYPE 4
3 PDT WITH SPST-N.O.
AUXILIARY CONTACTS

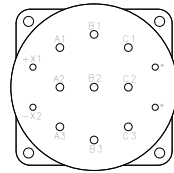


AVAILABLE MOUNTING STYLES: A, B AND K

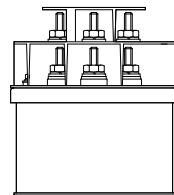
TERMINAL TYPE 5
3 PDT WITH SPST-N.C.
AUXILIARY CONTACTS



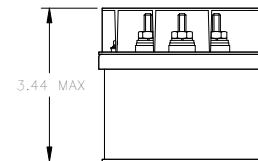
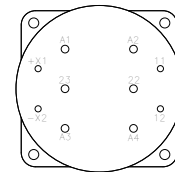
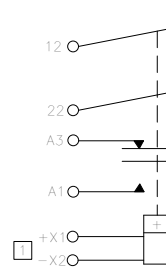
AVAILABLE MOUNTING STYLES: A (SHOWN), B AND K



*SEE CIRCUIT DIAGRAM FOR AUX CONTACT TERMINAL IDENTIFICATION

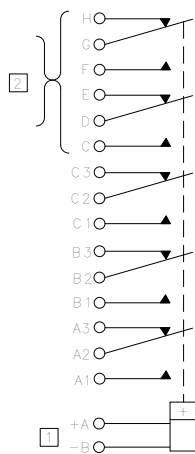


TERMINAL TYPE 6
SPDT-DOUBLE BREAK/MAKE
WITH SPST-N.O. & SPST-N.C.
AUXILIARY CONTACTS



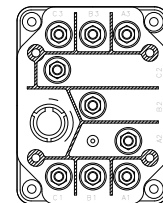
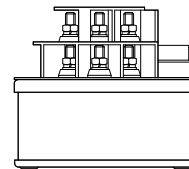
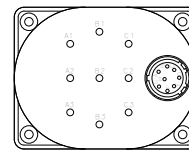
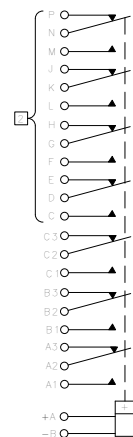
AVAILABLE MOUNTING STYLES: A (SHOWN), B AND K

TERMINAL TYPE 7
3 PDT WITH 2 PDT
AUXILIARY CONTACTS



AVAILABLE MOUNTING STYLES: B AND K

TERMINAL TYPE 8
3 PDT WITH 4 PDT
AUXILIARY CONTACTS



AVAILABLE MOUNTING STYLES: B AND K (BOTH SHOWN)

TERMINAL TYPE 9

IS A GENERAL CATEGORY USED FOR ALL TERMINAL TYPES NOT ILLUSTRATED. FOR OTHER VARIATIONS OF TERMINAL CONFIGURATIONS—PLEASE CONTACT FACTORY.

1 POLARITY INDICATION APPLIES TO D.C. COILS ONLY

2 AUXILIARY CONTACT RATING 28 VDC OR 115 VAC

RESISTIVE 5 AMP

INDUCTIVE 3 AMP

LAMP 1 AMP

BOUNCE AT NOMINAL VOLTAGE .004 SEC MAX

OTHER AUXILIARY CONTACT FORMS AVAILABLE, INCLUDING LOW LEVEL CAPACITY

NOTE: Although all configuration and/or terminal type options are available, some combinations may require a setup charge and be subject to minimum order size.