



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, 400 Hz, 1Ø and 115/200 Vac 400Hz, 3Ø**
 Weight **See Mounting**
 Auxiliary contact models available.
 Special units available upon request.

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, 3Ø	28 Vdc [2]	DELTA 115/200 Vac 60 Hz
Resistive	50	100	100	120	60
Inductive [1]	30	100	100	80	60
Motor	30	60	60	80	40
Load transfer, resistive[7]	-	-	50	-	-



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

COIL CHARACTERISTICS (Vdc)**SERIES ZC, ZCD**

CODE	A	B	C	F Vac 400 Hz	N Suppressed[6]	Y [8]	YN [6]
Nominal operating voltage	28	12	6	115	28	28	28
Maximum operating voltage	29	14.5	7.2	124	29	29	29
Pick-up voltage maximum							
- 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 $\pm 20\%$ at $+25^{\circ}\text{C}$	150	38	9.3	-	150	xx/xxx	xx/xxx
Coil current Amp max. @ Nom. Volt. and $+25^{\circ}\text{C}$	-	-	-	0.09	-	-	-

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
Sinusoidal vibration (70 to 500 Hz)	5 G
Shock (6 ms duration)	15 G
Maximum contact opening time under vibration and shock	10 μs
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	80 ms max
Release time at nominal voltage (Including bounce) : Economizer coil	
-DC	25 ms max
-AC	35 ms max

GENERAL CHARACTERISTICS CONTINUED

SERIES ZC, ZCD

Contact bounce at nominal voltage	4 ms max
Weight	Noted
Overload	600 Amp @ 115/200 Vac, 400 Hz
Rupture	800 Amp @ 115/200 Vac, 400 Hz
Altitude	50,000 Feet

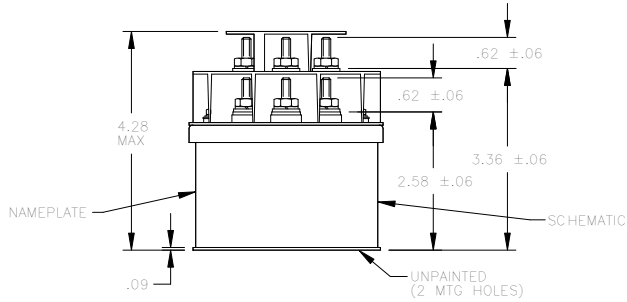
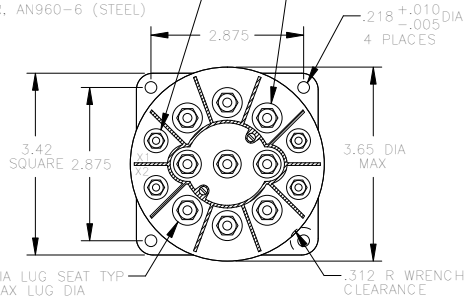
NUMBERING SYSTEM

	ZC	-	X	O	X
	[9] ZCD	-	X	O	X
Relay family_____					
1-Mounting Style(A,B,Etc.)_____					
2-Terminal & Circuit_____					
3-Coil Voltage(A,B,C,F & N)_____					

NOTES

- [1] Inductive load life, 20,000 cycles.
- [2] Ratings are for double make terminal type 2, 4 & 6.
- 3. Alternate contact configurations and other special models available upon request. Please contact factory.
- [4] Greater values for suppressed coils.
- 5. Terminal strength per para. 3,4,8,2,1 of MIL-R-6106.
- [6] Suppressed "N & NY" coils have back EMF suppression to 62 Volts max.
- [7] Suitable for transfer between unsynchronized power sources at rating shown.
- [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] Non hermetic gasket sealed version.
- 10. This series drawing is for general use only. Please consult factory for special requirements.

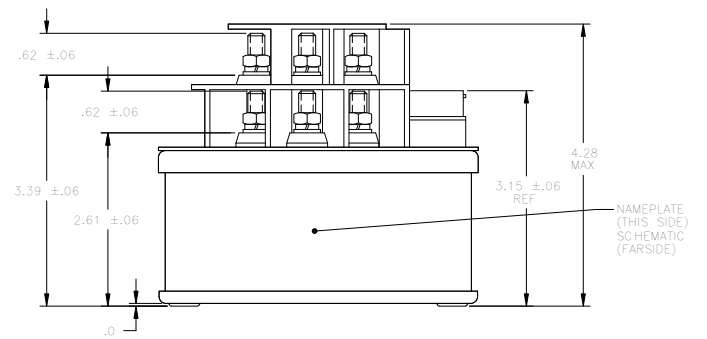
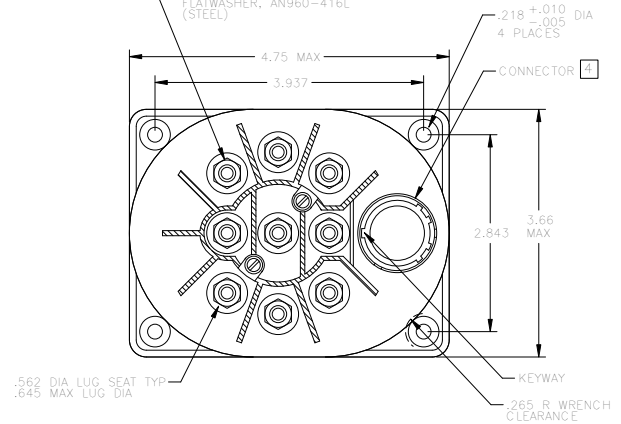
COIL & AUXILIARY TERMINALS
 .138-32 UNC-2A, STUD
 NUT, .138-32 UNC-2B X 1/4 X 3/32
 STEEL CAD PLATE
 LOCKWASHER, MS35338-41
 (STEEL)
 FLATWASHER, AN960-6 (STEEL)



MOUNTING STYLE A

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

POWER TERMINALS
 .250-28 UNF-2A, STUD
 NUT, .250-28 UNF-2B X 3/8 X 3/16
 STEEL CAD PLATE
 LOCKWASHER, MS35338-44
 (STEEL)
 FLATWASHER, AN960-416L
 (STEEL)

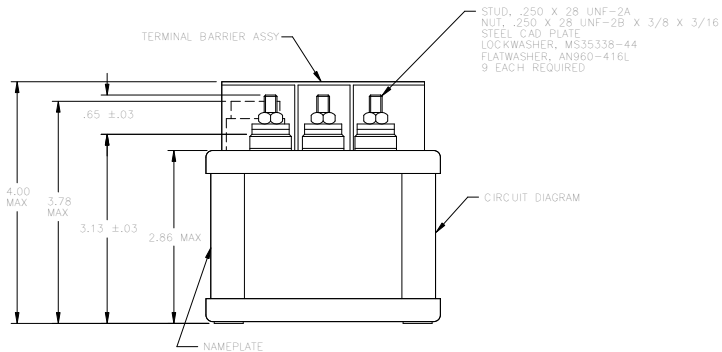
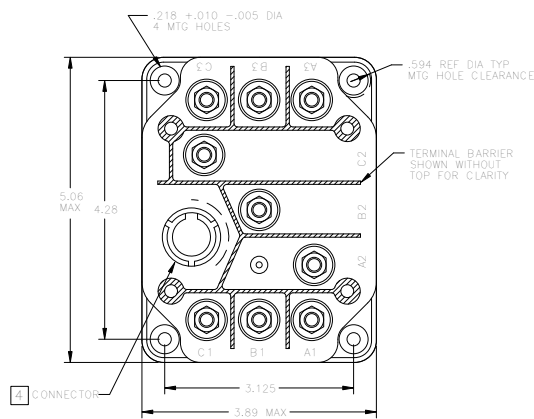


MOUNTING STYLE B

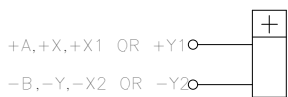
WEIGHT: 2 LB 6 OZ MAXIMUM
 WEIGHT IS DEPENDENT UPON CONFIGURATION REQUIRED.
 PLEASE CONSULT FACTORY.

MOUNTING STYLE K

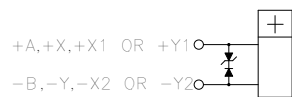
WEIGHT: 2 LB 13 OZ MAXIMUM



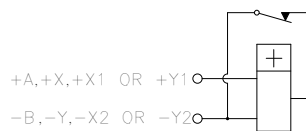
COIL CIRCUIT CONFIGURATION 3



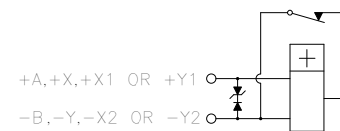
STANDARD
 "A, B, C & F" COIL



STANDARD
 WITH
 COIL SUPPRESSION
 "N" COIL

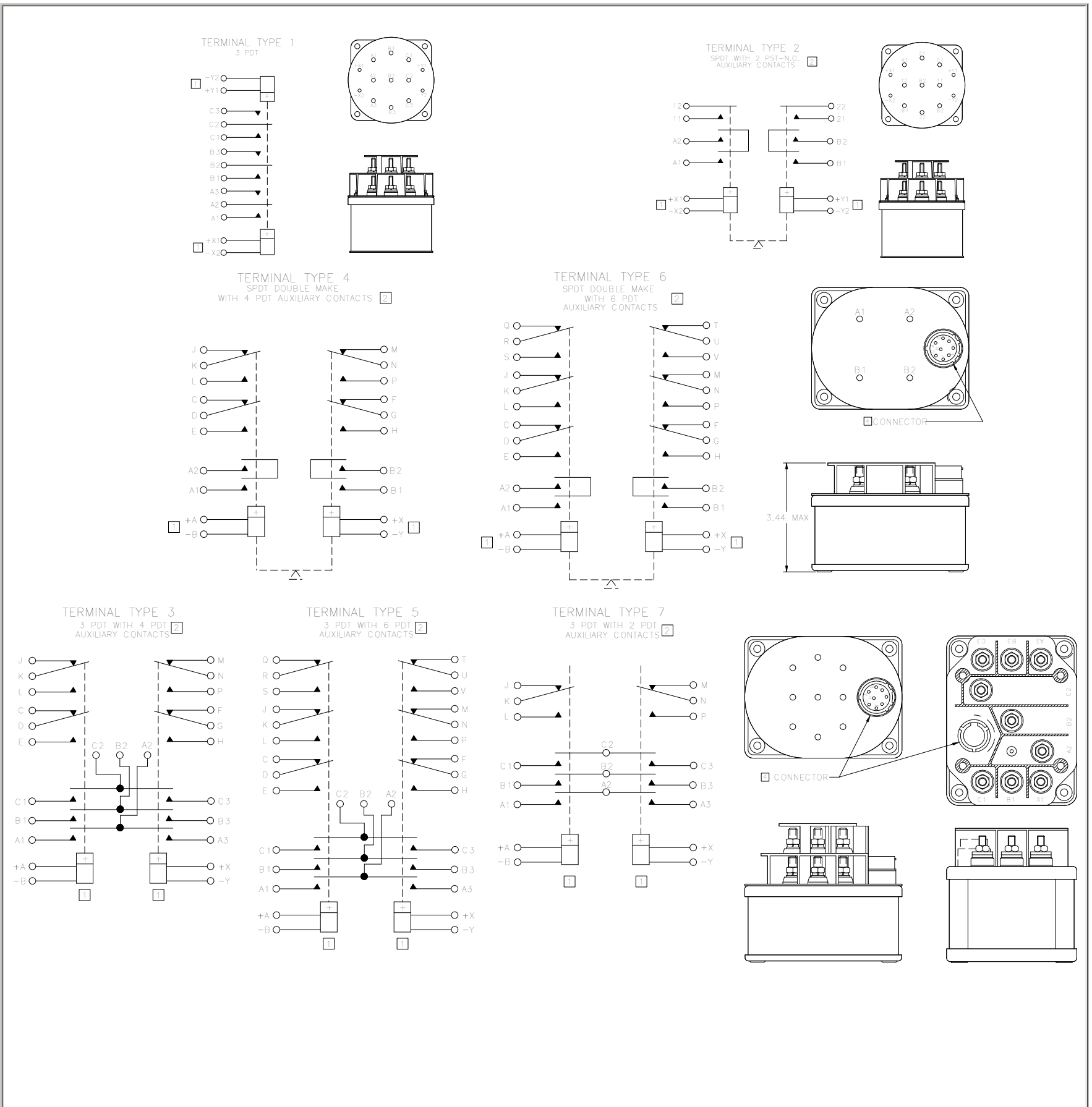


ECONOMIZER COIL
 "Y" COIL



ECONOMIZER COIL
 WITH
 COIL SUPPRESSION
 "YN" COIL

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



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
- 3 COIL TERMINALS MAY BE IDENTIFIED AS
 A-B, X1-X2, Y1-Y2 OR X-Y.
- OTHER AUXILIARY CONTACT FORMS AVAILABLE,
 PLEASE CONTACT FACTORY.
- 4 CIRCULAR CONNECTOR MS-STYLE OR EQUIVALENT

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.