

# ENGINEERING DATA SHEET

# SERIES H,HD,HP,HT,HTD,HPT

CONTACTOR  
60 AMP



**APPLICATION NOTES:**

- [101](#)
- [102](#)
- [104](#)
- [105](#)
- [007](#)

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, 1 Ø and 115/200 Vac, 400Hz, 3Ø**

Weight **14.0 Oz.**

Special units available upon request, including models with auxiliary contacts. Optional Ground Fault Protection (GFP) feature available. Contact factory for information on MIL-qualified part numbers.

**CONTACT ELECTRICAL CHARACTERISTICS**

Contact rating per pole and load type [1]	Load current in Amps					
	28 Vdc		115 Vac 400 Hz		115/200 Vac 400 Hz 3Ø	115 Vac 60 Hz DELTA
Resistive	50	50 [5]	60	65 [5]	60	30
Inductive [2]	20	20 [5]	60	65 [5]	60	30
Motor	20	-	-	-	40	30
Intermediate current	10	-	-	-	15	-
Load transfer [3]	-	-	12.5/60	12.5/60	12.5/60	-



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France

Tel: (33) 3 87 97 31 01  
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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 H,HD,HP,HT,HTD,HPT**

CODE	A Vdc	B Vdc	C Vdc	F Vac 400Hz	N [6] Vdc
Nominal operating voltage	28	12	6	115	28
Maximum operating voltage	29	14.5	7.3	124	29
Pick-up voltage, maximum					
- Nominal	18	9	4.5	90	18
- High temp test	20	10	5	95	20
- Continuous current test	22.5	11	5.7	100	22.5
Drop-out voltage, maximum	7	4.5	2.5	30	7
Coil resistance in Ohms $\pm 10\%$ at +25° C	200	50	12	-	200
Coil current max. mA at +25° C	-	-	-	90	-

**GENERAL CHARACTERISTICS**

Temperature range	-55°C to +71°C
Minimum operating cycles (life) at rated resistive load	50,000
Minimum operating cycles (life) at 25% rated resistive load	200,000
Dielectric strength at sea level	
- All circuits to ground and circuit to circuit	1500 Vrms
- Coil to ground and aux. contacts	1000 Vrms
Dielectric strength at altitude:50,000 feet	
- Main contacts	700 Vrms
- Coil and aux. contacts	500 Vrms
Insulation resistance	
- Initial	100 M $\Omega$ min
- After environmental tests	50 M $\Omega$ min
Sinusoidal vibration	10 G / 70 to 2000 Hz
Shock (6 ms duration)	50 G
Maximum contact opening time under vibration and shock	10 $\mu$ s
Operate time at nominal voltage (Including bounce)	50 ms max 35 ms max. [5]
Release time at nominal voltage (Including bounce)	
- DC	25 ms max
- AC	80 ms max
Contact bounce at nominal voltage	3 ms max
Weight	14.0 Oz. max. 11.5 Oz. max. [5]
Power requirements:	
- at pick-up +25° C	0.980 watt
- at nominal D.C. voltage	4.35 watt max.
Overload @ 115/200 Vac, 400Hz. @ 28 Vdc	400 Amp 125 Amp
Rupture @ 115/200 Vac, 400Hz. @ 28 Vdc	500 Amp 150 Amp

## NUMBERING SYSTEM

## SERIES H,HD,HP,HT,HTD,HPT

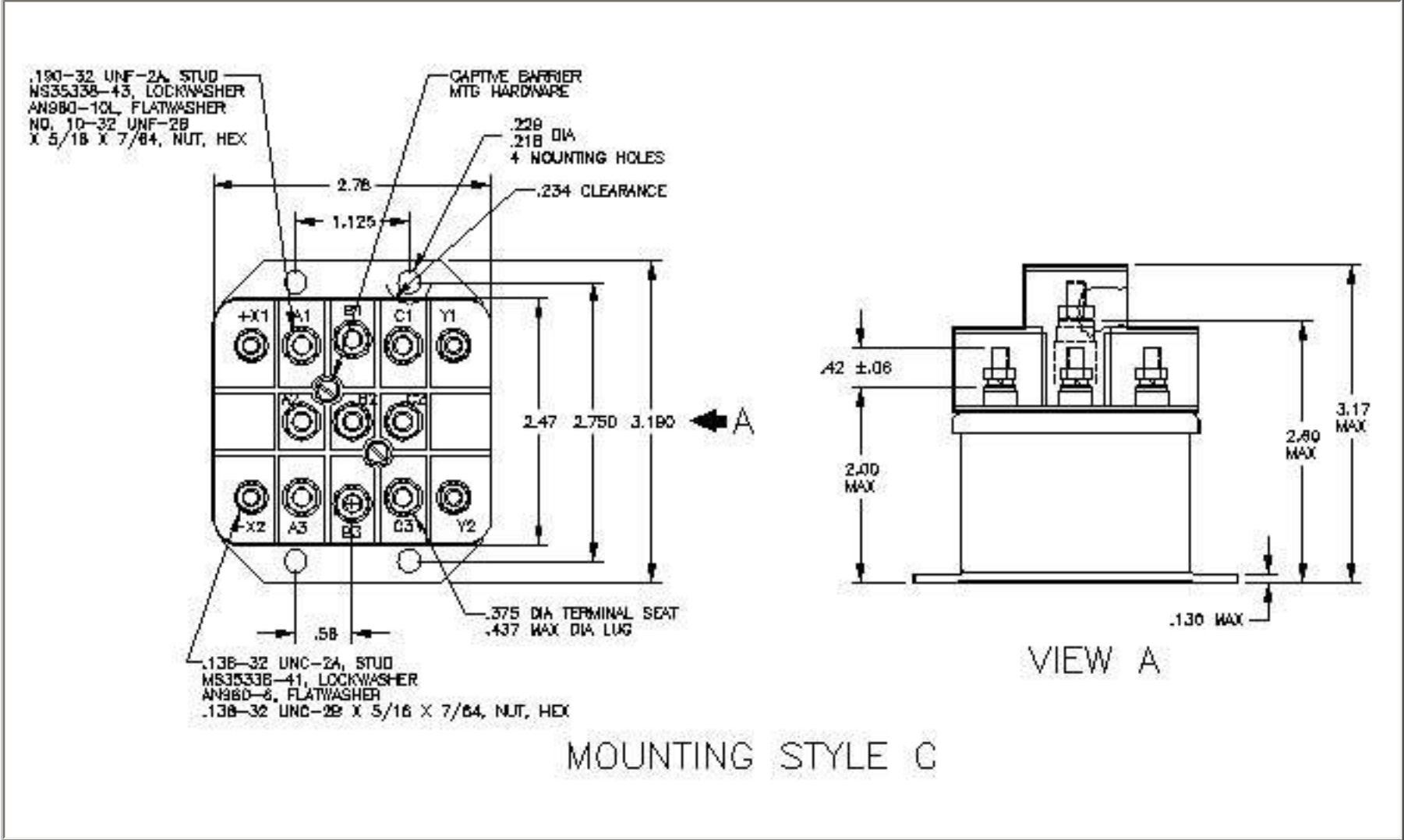
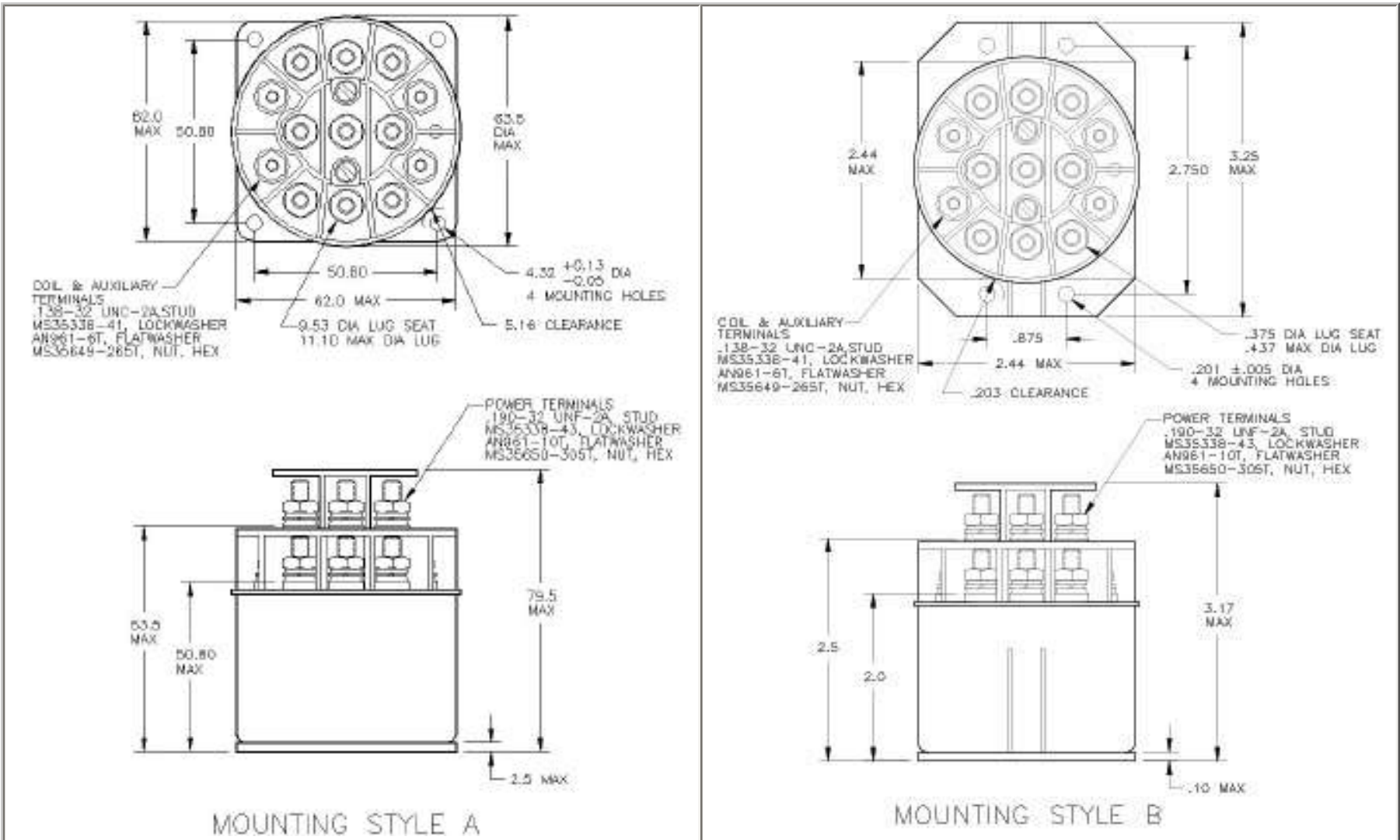
	H	-	X	0	X
	[7] HD	-	X	0	X
	[8] HP	-	X	0	X
	[4] HT	-	X	0	X
	[7]HTD	-	X	0	X
	[8]HPT	-	X	0	X
Relay family_____					
1-Mounting Style(A,B,Etc.)_____					
2-Terminal & Circuit (1,2,3,Etc.)_____					
3-Coil Voltage(A,B,C,F & N)_____					

## NOTES

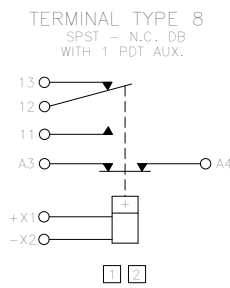
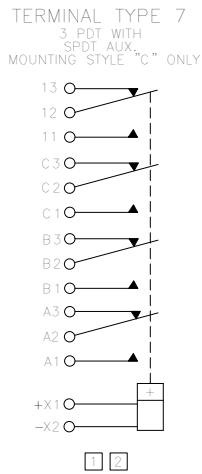
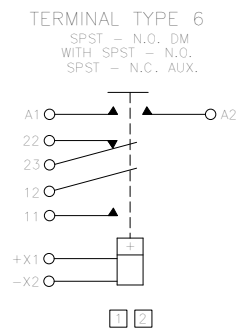
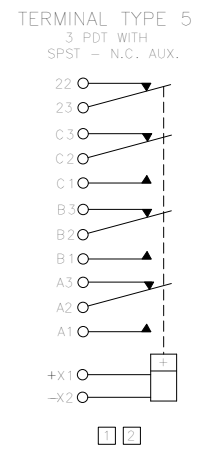
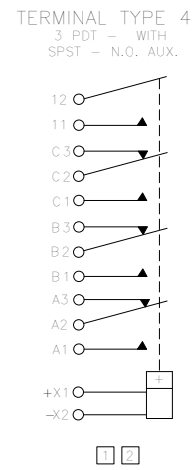
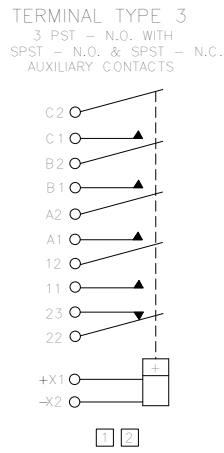
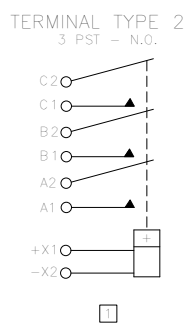
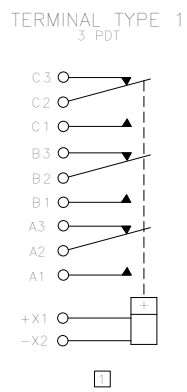
- [1] Auxiliary contact rating - see page 5, note [2].
- [2] Inductive load life, 20,000 cycles.
- [3] Applicable military specification: MS27751, MIL-R6106/26, MIL-R6106/43.
- [4] Suitable for transfer between unsynchronized A.C. power sources at the ratings indicated: 12.5 amperes for series "H, HD, HP"; (MS27751-1,-7,-8,-9,-10 & -15).  
60 Amperes for series "HT, HTD, HTP"; (MS27751-11,-12,-17,-18,-19 & -20).
- [5] Terminal type 6, 8, & 10.
- [6] Suppressed "N" coil has back EMF suppression to 42 volts max. Consult factory.
- [7] Non-hermetic, gasket sealed version.
- [8] Non-hermetic, non-metallic cover gasket sealed version. (Not available with mounting style C).

**CONFIGURATION STYLES**

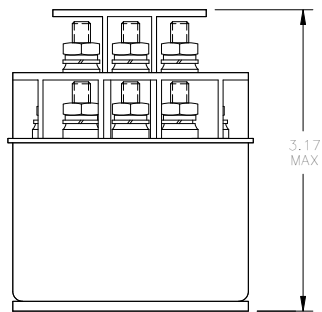
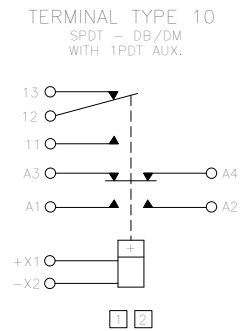
**SERIES H,HD,HP,HT,HTD,HPT**



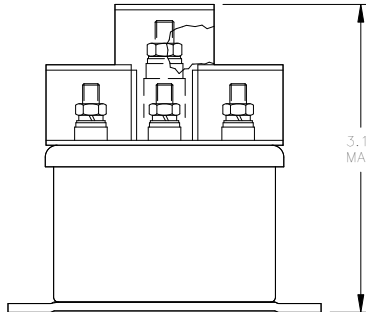
STANDARD TOLERANCE: XX ± .03, XXX ± .010



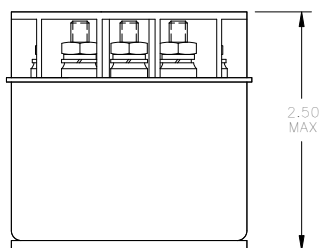
TERMINAL TYPE 9  
IS A GENERAL CATEGORY USED FOR ALL  
TERMINAL TYPES NOT ILLUSTRATED  
FOR OTHER VARIATIONS OF TERMINAL  
CONFIGURATIONS  
PLEASE CONTACT FACTORY.



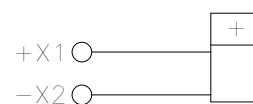
TERMINAL TYPE 1, 4, 5



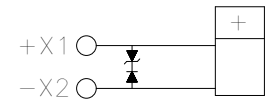
TERMINAL TYPE 7



TERMINAL TYPE 2, 3, 6, 8, 10



STANDARD  
COIL  
"A", "B", "C", "F"



SUPPRESSED  
COIL  
"N"

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

CONTACT BOUNCE AT NOMINAL  
VOLTAGE (SECONDS) .004 MAX

NOTE: OTHER AUXILIARY CONTACT FORMS ARE  
AVAILABLE. PLEASE CONTACT FACTORY.

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.