

#### Applicable sockets:

SO-1049-8772/8774

SO-SSL



#### Application Notes:

102  
007  
023

- 115 Vac and 28 Vac, 400 Hz and 50/400 Hz Coil Voltages
- All weld construction

• Contact arrangement **2 PDT**

• Qualified to **MIL-PRF-83536**

### PRINCIPLE TECHNICAL CHARACTERISTICS

- **Contacts rated at** 28 Vdc; 115 Vac, 400 Hz, 1Ø and 115/200 Vac, 400 Hz, 3Ø
- **Weight** 0.088 lbs. max
- **Dimensions** 1.01 in x .51 in x 1.12 in
- **Special models available upon request**
- **Hermetically sealed, corrosion resistant metal can**

### CONTACT ELECTRICAL CHARACTERISTICS

| Contact rating per pole and load type [1] | Load current in Amps |                    |                            |                               |                                |
|---|----------------------|--------------------|----------------------------|-------------------------------|--------------------------------|
|   | @28 Vdc              | @115 Vac<br>400 Hz | @115/200 Vac<br>400 Hz, 3Ø | @115/200 Vac<br>60 Hz, 3Ø [6] | @230/400 Vac<br>400 Hz, 3Ø [8] |
| Resistive                                 | 10                   | 10                 | 10                         | 2.5                           | 5                              |
| Inductive [5]                             | 8                    | 8                  | 8                          | 2.5                           | 5                              |
| Motor                                     | 4                    | 4                  | 4                          | 2                             | 2                              |
| Lamp                                      | 2                    | 2                  | -                          | -                             | -                              |
| Overload                                  | 40                   | 60                 | 60                         | N/A                           | N/A                            |
| Rupture                                   | 50                   | 80                 | 80                         | N/A                           | N/A                            |

#### AMERICAS.

Tel: +1 714-736-7599  
<http://www.esterline.com/powersystems>

#### EUROPE.

Tel: +33 3 87 97 31 01  
Fax: +33 3 87 97 96 86

#### ASIA

Tel: +852 2 191 3830  
Fax: +852 2 389 5803

## COIL CHARACTERISTICS (Vac)

| CODE  | Vac 400 Hz |       | Vac 50 through 400 Hz |     | Vac 400 Hz [6] |
|---|------------|-------|-----------------------|-----|----------------|
|   | E          | F     | J                     | K   | T              |
| Nominal operating voltage                   | 28         | 115   | 28                    | 115 | 230            |
| Maximum operating voltage                   | 30         | 122   | 30                    | 122 | 248            |
| Maximum pickup voltage                      |            |       |                       |     |                |
| - Cold coil at +125° C                      | 22         | 90    | 23                    | 95  | 180            |
| - During high temp test at +125° C          | 24.4       | 95.4  | 24.6                  | 100 | 185            |
| - During continuous current test at +125° C | 25.6       | 103.5 | 25.9                  | 105 | 195            |
| Maximum drop-out voltage                    | 10         | 30    | 10                    | 30  | 60             |
| Coil current max milliAmperes at +25° C     | 240        | 40    | 100                   | 24  | 22             |

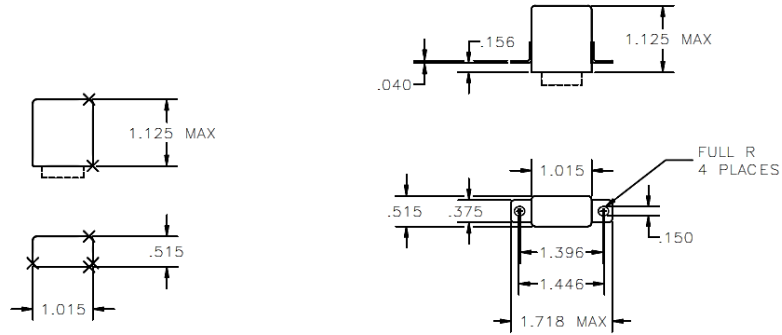
## GENERAL CHARACTERISTICS

|  |  |
|--|--|
| Temperature range                                      | -70°C to +125°C                                |
| Minimum operating cycles (life) at rated load          | 100,000  |
| Minimum operating cycles (life) at 25% rated load      | 400,000  |
| Dielectric strength at sea level                       |  |
| - All circuits to ground and circuit to circuit        | 1250 Vrms                                      |
| - Coil to ground                                       | 1000 Vrms                                      |
| Dielectric strength at altitude 80,000 ft              | 500 Vrms [2]                                   |
| Insulation resistance                                  |  |
| - Initial (500 Vdc)                                    | 100 M Ω min                                    |
| - After environmental tests (500 Vdc)                  | 50 M Ω min                                     |
| Sinusoidal vibration (A, D and J mounting)             | 0.12 d.a. / 10 to 70 Hz<br>30G / 70 to 3000 Hz |
| Sinusoidal vibration (G mounting)                      | 0.12 d.a. / 10 to 57 Hz<br>20G / 57 to 3000 Hz |
| Random vibration                                       |  |
| - Applicable specification                             | MIL-STD-202                                    |
| - Method   | 214  |
| - Test condition - A, D and J mounting                 | 1G (0.4G <sup>2</sup> /Hz, 50 to 2000 Hz)      |
| - Test condition - G mounting (E in track)             | 1E (0.2G <sup>2</sup> /Hz, 50 to 2000 Hz)      |
| - Duration   | 15 minutes each plane                          |
| Shock (A, D and J mounting)                            | 200G / 6 ms                                    |
| Shock (G mounting)                                     | 100G / 6 ms                                    |
| Maximum contact opening time under vibration and shock | 10 μs  |
| Operate time at nominal voltage@25°C                   | 15 ms max                                      |
| Release time at nominal voltage@25°C                   | 50 ms max                                      |
| Contact make bounce at nominal voltage@25°C            | 1 ms max                                       |
| Contact release break bounce at nominal voltage@25°C   | 0.1 ms max                                     |
| Weight maximum   | 0.088lb  |

Unless otherwise noted, the specified temperature range applies to all relay characteristics.

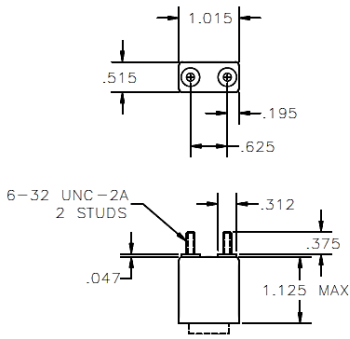
Dimensions in inches  
 Tolerances, unless otherwise specified, ± 0.03 in

**MOUNTING STYLES**

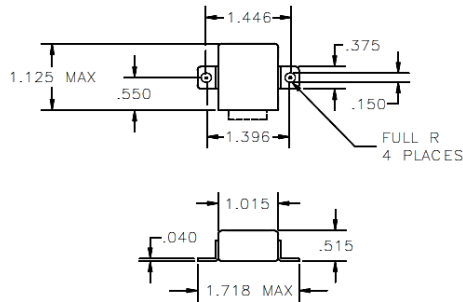


MOUNTING STYLE A

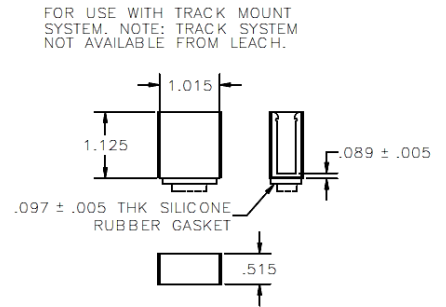
MOUNTING STYLE D



MOUNTING STYLE G

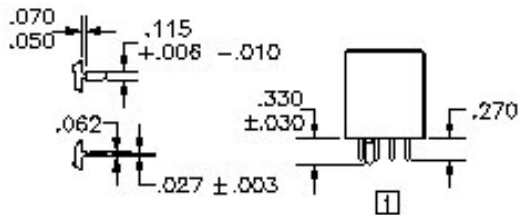


MOUNTING STYLE J



MOUNTING STYLE W

**TERMINAL TYPES**



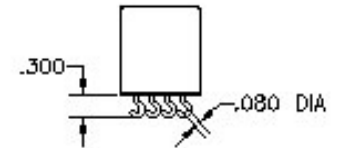
COIL CODE E,J



COIL CODE F,K

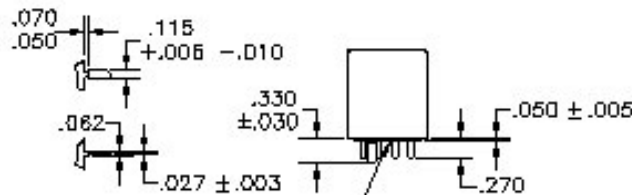
.062 DIA PIN  
 +.002 -.001  
 8 PLACES

**TERMINAL TYPE 1**  
 FINISH: TIN/LEAD PLATE



.062 DIA PIN  
 +.002 -.001  
 8 PLACES

**TERMINAL TYPE 2**  
 FINISH: TIN/LEAD PLATE



SILICON RUBBER GASKET



COIL CODE E,J



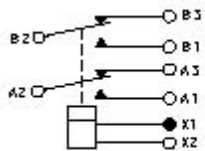
COIL CODE F,K

.062 ±.002  
 DIA PIN  
 8 PLACES

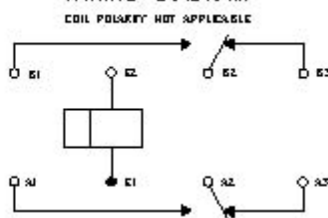
**TERMINAL TYPE 4**  
 FINISH:  
 CASE: TIN/LEAD PLATE  
 PINS: GOLD PLATE  
 POLARIZING PIN: TIN/LEAD PLATE

## SCHEMATIC DIAGRAM

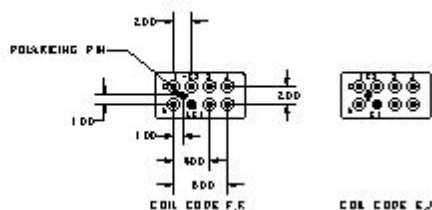
SCHEMATIC DIAGRAM



WIRING DIAGRAM

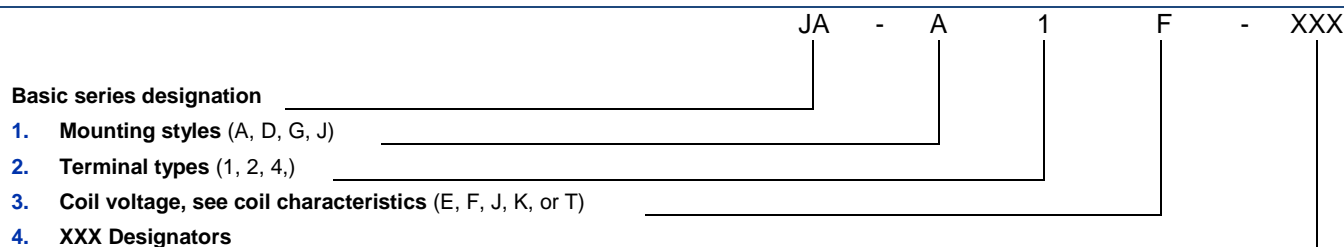


STANDARD TERMINAL LAYOUT



STANDARD TOLERANCE: = ±.010  
 [1] COIL POLARITY NOT APPLICABLE TO AC VERSIONS.

## NUMBERING SYSTEM



Example : JA-A1F-XXX

JA-A1F (Commercial)  
 JA-A1F-300 L,M (MIL)  
 JA-A1F-123 (Customer Part)

## NOTES

- Standard Intermediate current test applicable.
- 500 Vrms with silicone gasket compressed, 350 Vrms all other conditions.
- Applicable military specification: MIL-PRF-83536/11.
- Special models available: Dry circuit, established reliability testing, etc.
- Inductive load life, 20,000 cycles for AC and 10,000 cycles for DC.
- 60 Hz load life, 10,000 cycles.
- Time current relay characteristics per MIL-R-83536
- Temperature range: Non-operating -62° C to +95° C      Operating -54° C to +71° C

For any inquiries, please contact your local Esterline Power Systems representative  
<http://www.esterline.com/powersystems/Contact/TheAmericas.aspx>