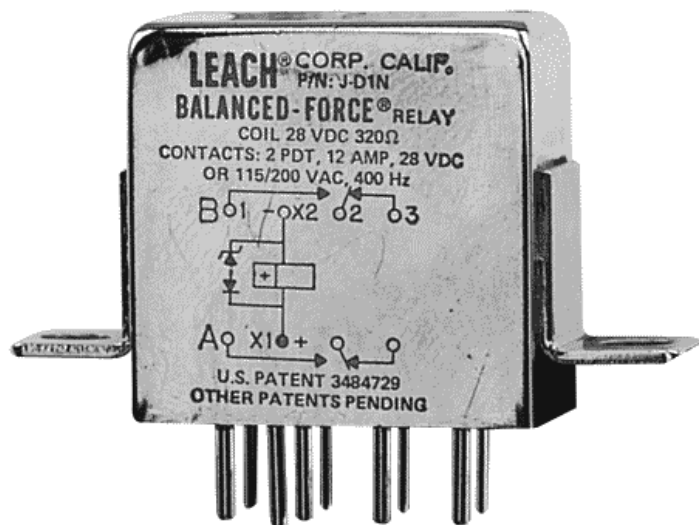


# ENGINEERING DATA SHEET

# SERIES J

RELAY - NONLATCH  
2 PDT, 12 AMPS



**APPLICABLE SOCKET:**  
[SO-1049-8309/8987](#)  
[SO-SSL](#)

All welded construction  
Contact arrangement **2 PDT**  
Qualified at 10 Amps to **MIL-PRF-83536**

## PRINCIPLE TECHNICAL CHARACTERISTICS

Contacts rated at **28 Vdc; 115 Vac, 400 Hz, 1 phase and 115/200 Vac, 400 Hz, 3 phases**

Weight **0.088lb max**

Dimensions of case **1.01in x .51in x 1.00in**

Special models available upon request.  
Hermetically sealed, corrosion resistant metal can.

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 | @115/200 Vac, 60 Hz, 3Ø [2] |
| Resistive                                 | 12                   | 12              | 12                       | 2.5                         |
| Inductive [3]                             | 8                    | 8               | 8                        | 2.5                         |
| Motor                                     | 4                    | 4               | 4                        | 2                           |
| Lamp                                      | 2                    | 2               | 2                        | -                           |
| Overload                                  | 40                   | 60              | 60                       | N/A                         |
| Rupture                                   | 50                   | 80              | 80                       | N/A                         |



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Data sheets are for initial product selection and comparison. Contact Leach International prior to choosing a component.

**COIL CHARACTERISTICS (Vdc)****SERIES J**

| CODE   | A    | B     | C   | M    | N [4] | R [4] | V [4] |
|--|------|-------|-----|------|-------|-------|-------|
| Nominal operating voltage  | 28   | 12    | 6   | 48   | 28    | 12    | 6     |
| Maximum operating voltage  | 29   | 14.5  | 7.3 | 50   | 29    | 14.5  | 7.3   |
| Maximum pickup voltage   |      |       |     |      |       |       |       |
| - Cold coil at +125° C   | 18   | 9     | 4.5 | 36   | 18    | 9     | 4.5   |
| - During high temp test at +125° C   | 19.8 | 9.9   | 5   | 38   | 19.8  | 9.9   | 5     |
| - During continuous current test at +125° C                                      | 22.5 | 11.25 | 5.7 | 42   | 22.5  | 11.25 | 5.7   |
| Maximum drop-out voltage   | 7    | 4.5   | 2.5 | 14   | 7     | 4.5   | 2.5   |
| Coil resistance $\Omega \pm 10\%$ at +25° C, except types "C" and "V" +20%, -10% | 320  | 80    | 20  | 1000 | 320   | 80    | 20    |

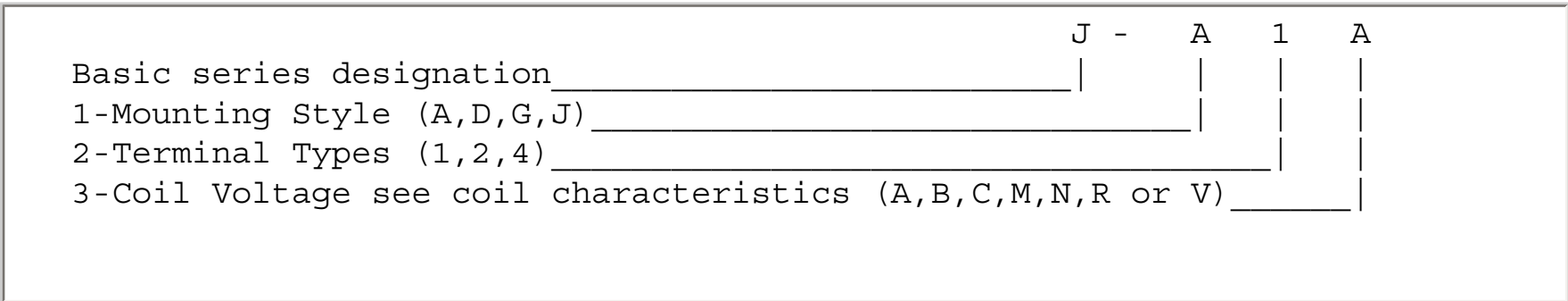
**GENERAL CHARACTERISTICS**

|  |  |
|--|--|
| 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                                    |
| Dielectric Strength at sea level - Coil to ground                                | 1000 Vrms                                    |
| Dielectric Strength at altitude 80,000 ft  | 500 Vrms [5]                                 |
| Insulation resistance - Initial (500 Vdc)  | 100 M $\Omega$ min                           |
| Insulation resistance - After environmental tests (500 Vdc)                      | 50 M $\Omega$ min                            |
| Sinusoidal vibrations (A, D and J mounting)                                      | 0.12DA / 10 to 70 Hz<br>30 g / 70 to 3000 Hz |
| Sinusoidal vibrations (G mounting)   | 0.12DA / 10 to 57 Hz<br>20g / 57 to 3000 Hz  |
| Random vibrations  |  |
| - 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                        |
| Shocks (A, D and J mounting)   | 200 g / 6 ms                                 |
| Shocks (G mounting)  | 100 g / 6 ms                                 |
| Maximum contact opening time under vibrations and shocks                         | 10 $\mu$ s                                   |
| Operate time at nominal voltage@25°C   | 10 ms max                                    |
| Release time at nominal voltage@25°C   | 10 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 [6]                               |
| Weight maximum   | 0.088lb                                      |

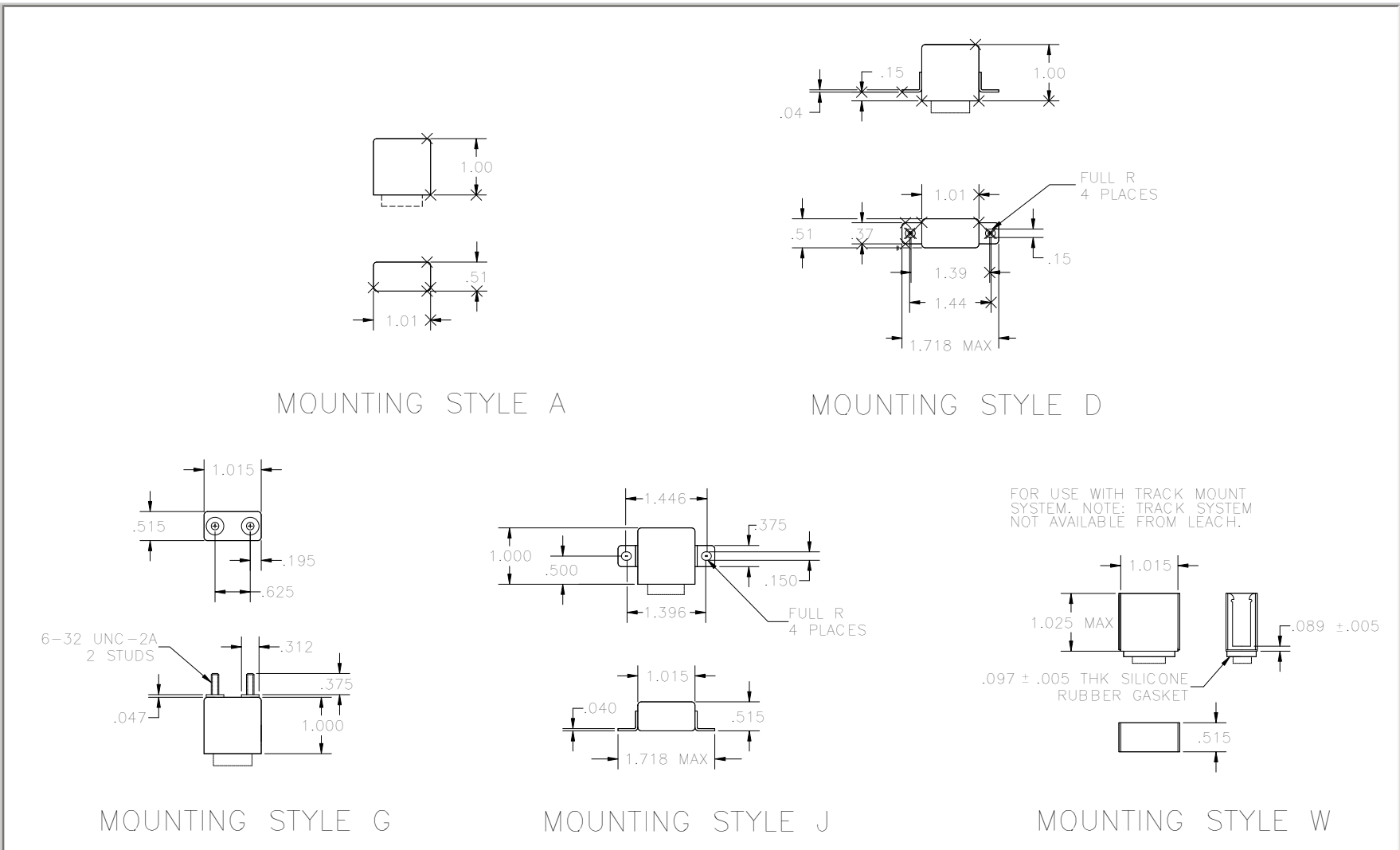
Unless otherwise noted, the specified temperature range applies to all relay characteristics.

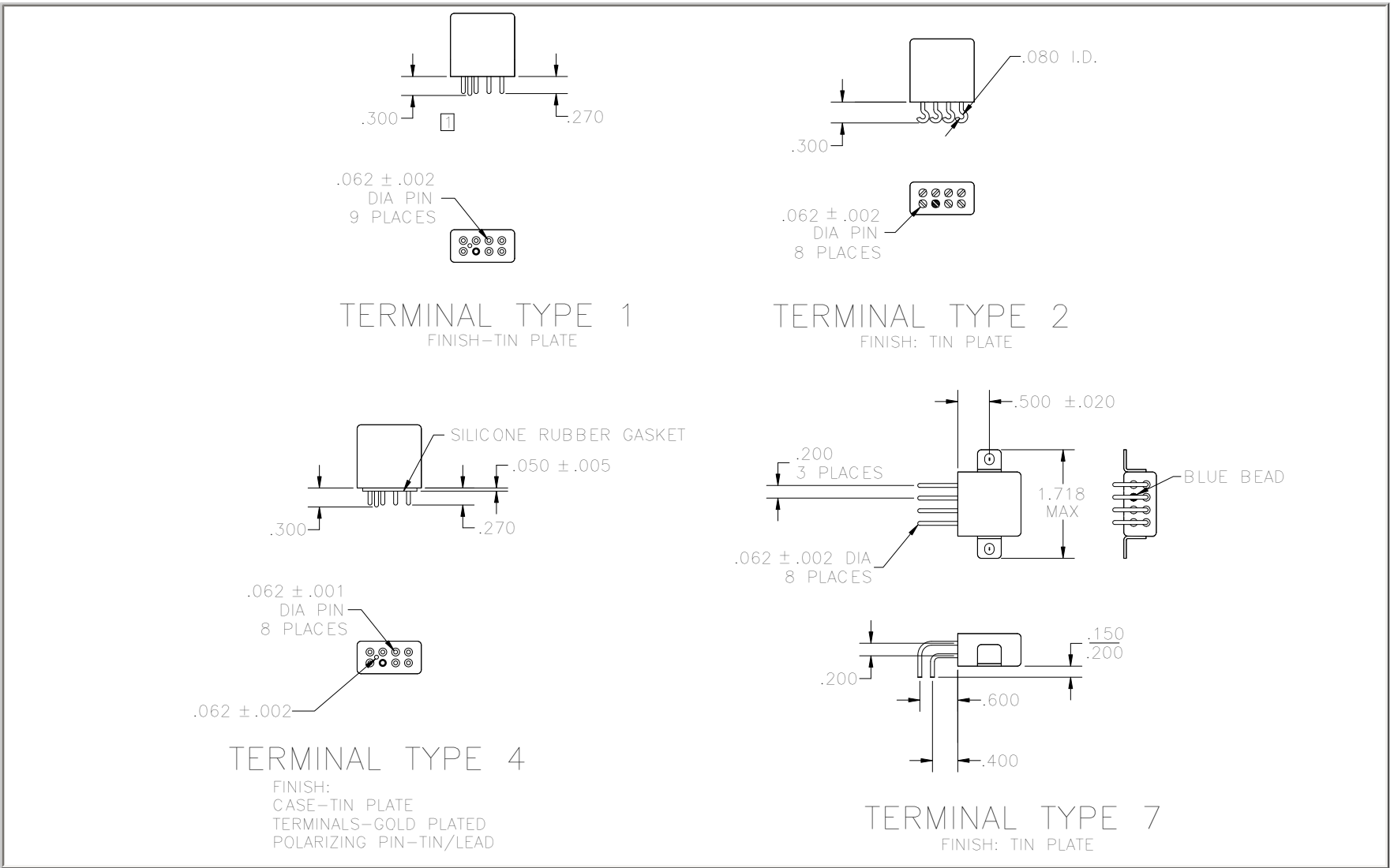
- [1] Standard Intermediate current test applicable.
- [2] 60 Hz load life, 10,000 cycles.
- [3] Inductive load life, 20,000 cycles.
- [4] "N" R & V coils have back EMF suppression to 42 volts maximum.
- [5] 500 Vrms with silicone gasket compressed, 350 Vrms all other conditions.
- [6] Applicable to suppressed coils only.
- 7. Applicable military specification: MIL-PRF-83536.
- 8. Special models available: Dry circuit, established reliability testing, etc.
- 9. Time current relay characteristics per MIL-PRF-83536.
- 10. Relay will not operate, but will not be damaged by application of reverse polarity to coil.

NUMBERING SYSTEM

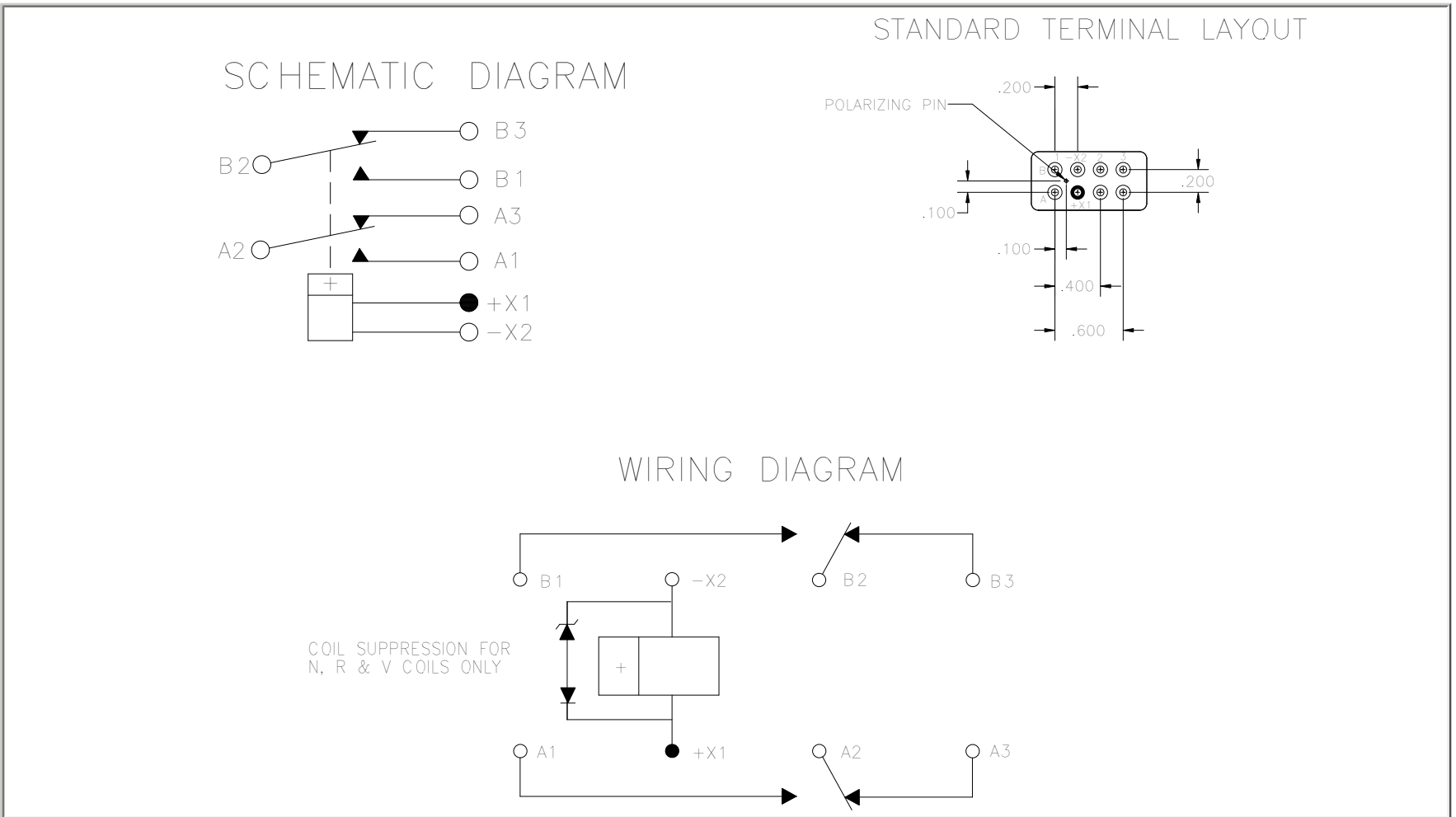


MOUNTING STYLES





Standard Tolerance:  $\pm .010$  1. Insulator P/N RC-RP800060-5 or RC-RP920060-1 available from Robison Electronics, San Luis Obispo, CA



STANDARD TOL:  $\pm .010$

# ENGINEERING DATA SHEET

# SO-1049-8309/8987

RELAY SOCKET  
12 AMP



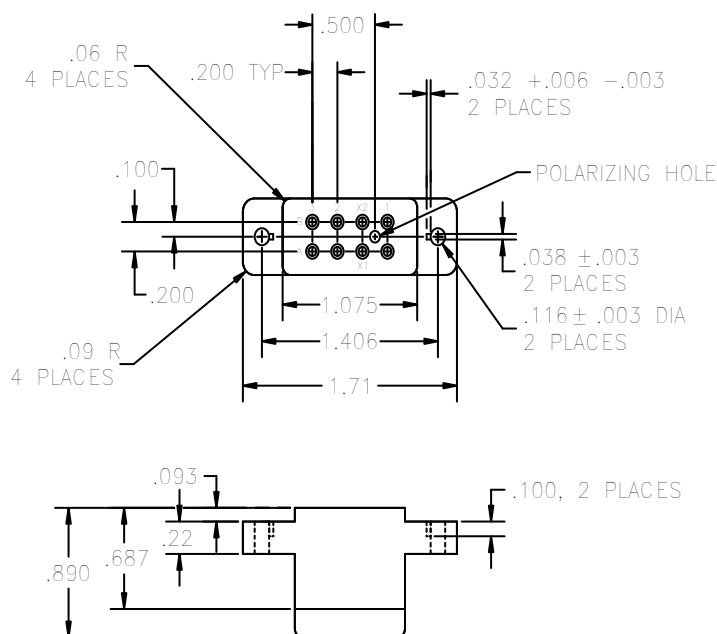
BASIC SOCKET SERIES DESIGNATION FOR:

**Series J**

DESIGNED TO THE STANDARDS AND REQUIREMENTS OF:

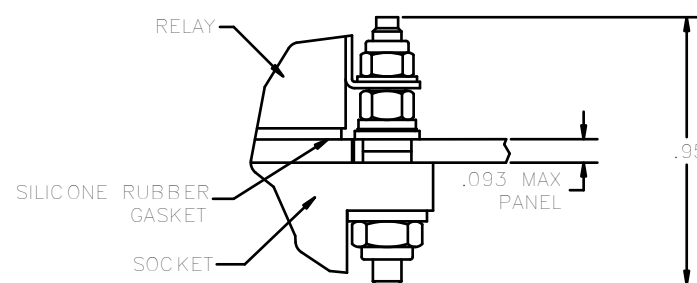
**MIL-S-12883/41**

## SOCKET DRAWING

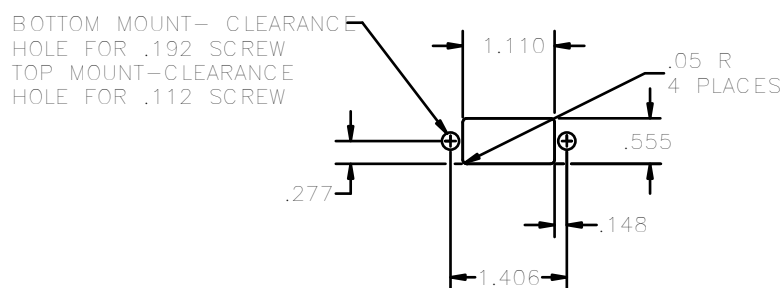


## HARDWARE MOUNTING

### MOUNTING DETAIL



## MOUNTING DIMENSIONS



## GENERAL CHARACTERISTICS

1. Supplied with mounting hardware and No. 16 contacts, No. 16 crimp (see socket drawing illustration SO-1049-8309); No. 16 contacts, No. 20 crimp for SO-1049-8987 (not illustrated)

2. Standard tolerances

.xx ±.01; xxx ±.005

3. Weight

.073 lb. max

4. Temperature range

-70° C to +125° C



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Data sheets are for initial product selection and comparison. Contact Leach International prior to choosing a component.

|  |  |                         |                         |            |                                   |                    |                         |            |               |             |                                       |         |                                     |          |                        |          |   |                   |                         |
|--|--|-------------------------|-------------------------|------------|-----------------------------------|--------------------|-------------------------|------------|---------------|-------------|---------------------------------------|---------|-------------------------------------|----------|------------------------|----------|---|-------------------|-------------------------|
|  <p style="text-align: right;">2 POLE</p>  <p style="text-align: right;">4 POLE</p> | <p>SNAP AND LOCK SOCKET SERIES DESIGNATION FOR:</p> <p style="text-align: center;"><b>SERIES J, JA, K, KA, KL, TDX</b></p> <p>DESIGNED TO THE STANDARDS AND REQUIREMENTS OF:</p> <table border="0"> <tr> <td>2-pole, 10A relays</td> <td><b>MIL-PRF-12883/41</b></td> </tr> <tr> <td>Mates with</td> <td><b>M83536, M83726 and MS27709</b></td> </tr> <tr> <td>4-pole, 10A relays</td> <td><b>MIL-PRF-12883/40</b></td> </tr> <tr> <td>Mates with</td> <td><b>M83536</b></td> </tr> </table> <p><b>FEATURES</b><br/>                 Low profile<br/>                 Bottom panel mount<br/>                 Snaps into panel<br/>                 Other models available</p> <p><b>MATERIALS</b></p> <table border="0"> <tr> <td>Socket body</td> <td><b>Polyetherimide per MIL-P-46184</b></td> </tr> <tr> <td>Grommet</td> <td><b>Silicone rubber per ZZ-R-765</b></td> </tr> <tr> <td>Hardware</td> <td><b>Stainless Steel</b></td> </tr> <tr> <td>Contacts</td> <td><b>Copper alloy, hard gold plated per MIL-G-45204</b></td> </tr> <tr> <td>Contact retainers</td> <td><b>Beryllium copper</b></td> </tr> </table> | 2-pole, 10A relays      | <b>MIL-PRF-12883/41</b> | Mates with | <b>M83536, M83726 and MS27709</b> | 4-pole, 10A relays | <b>MIL-PRF-12883/40</b> | Mates with | <b>M83536</b> | Socket body | <b>Polyetherimide per MIL-P-46184</b> | Grommet | <b>Silicone rubber per ZZ-R-765</b> | Hardware | <b>Stainless Steel</b> | Contacts | <b>Copper alloy, hard gold plated per MIL-G-45204</b> | Contact retainers | <b>Beryllium copper</b> |
|  | 2-pole, 10A relays   | <b>MIL-PRF-12883/41</b> |                         |            |                                   |                    |                         |            |               |             |                                       |         |                                     |          |                        |          |   |                   |                         |
| Mates with   | <b>M83536, M83726 and MS27709</b>  |                         |                         |            |                                   |                    |                         |            |               |             |                                       |         |                                     |          |                        |          |   |                   |                         |
| 4-pole, 10A relays   | <b>MIL-PRF-12883/40</b>  |                         |                         |            |                                   |                    |                         |            |               |             |                                       |         |                                     |          |                        |          |   |                   |                         |
| Mates with   | <b>M83536</b>  |                         |                         |            |                                   |                    |                         |            |               |             |                                       |         |                                     |          |                        |          |   |                   |                         |
| Socket body  | <b>Polyetherimide per MIL-P-46184</b>  |                         |                         |            |                                   |                    |                         |            |               |             |                                       |         |                                     |          |                        |          |   |                   |                         |
| Grommet  | <b>Silicone rubber per ZZ-R-765</b>  |                         |                         |            |                                   |                    |                         |            |               |             |                                       |         |                                     |          |                        |          |   |                   |                         |
| Hardware   | <b>Stainless Steel</b>   |                         |                         |            |                                   |                    |                         |            |               |             |                                       |         |                                     |          |                        |          |   |                   |                         |
| Contacts   | <b>Copper alloy, hard gold plated per MIL-G-45204</b>  |                         |                         |            |                                   |                    |                         |            |               |             |                                       |         |                                     |          |                        |          |   |                   |                         |
| Contact retainers  | <b>Beryllium copper</b>  |                         |                         |            |                                   |                    |                         |            |               |             |                                       |         |                                     |          |                        |          |   |                   |                         |

**GENERAL CHARACTERISTICS**

|                                 |  |
|---------------------------------|--|
| Insulation resistance           | 1000 M $\Omega$ min.                       |
| Dielectric withstanding voltage | 1500 VRMS sea level; 500 VRMS at 80,000 ft |
| Weight                          | 15.3g max.                                 |
| Temperature range               | -65°C to +125°C                            |
| Vibration                       | MIL-STD-202, Method 204, Test Condition G  |
| Shock                           | MIL-STD-202, Method 213, Test Condition C  |

This socket is designed to snap and lock into a panel to reduce hardware requirement and mounting time. Contacts and hardware are provided disassembled in a plastic bag. Standard tolerances are .xx=±.01; .xxx=±.005 unless otherwise noted.



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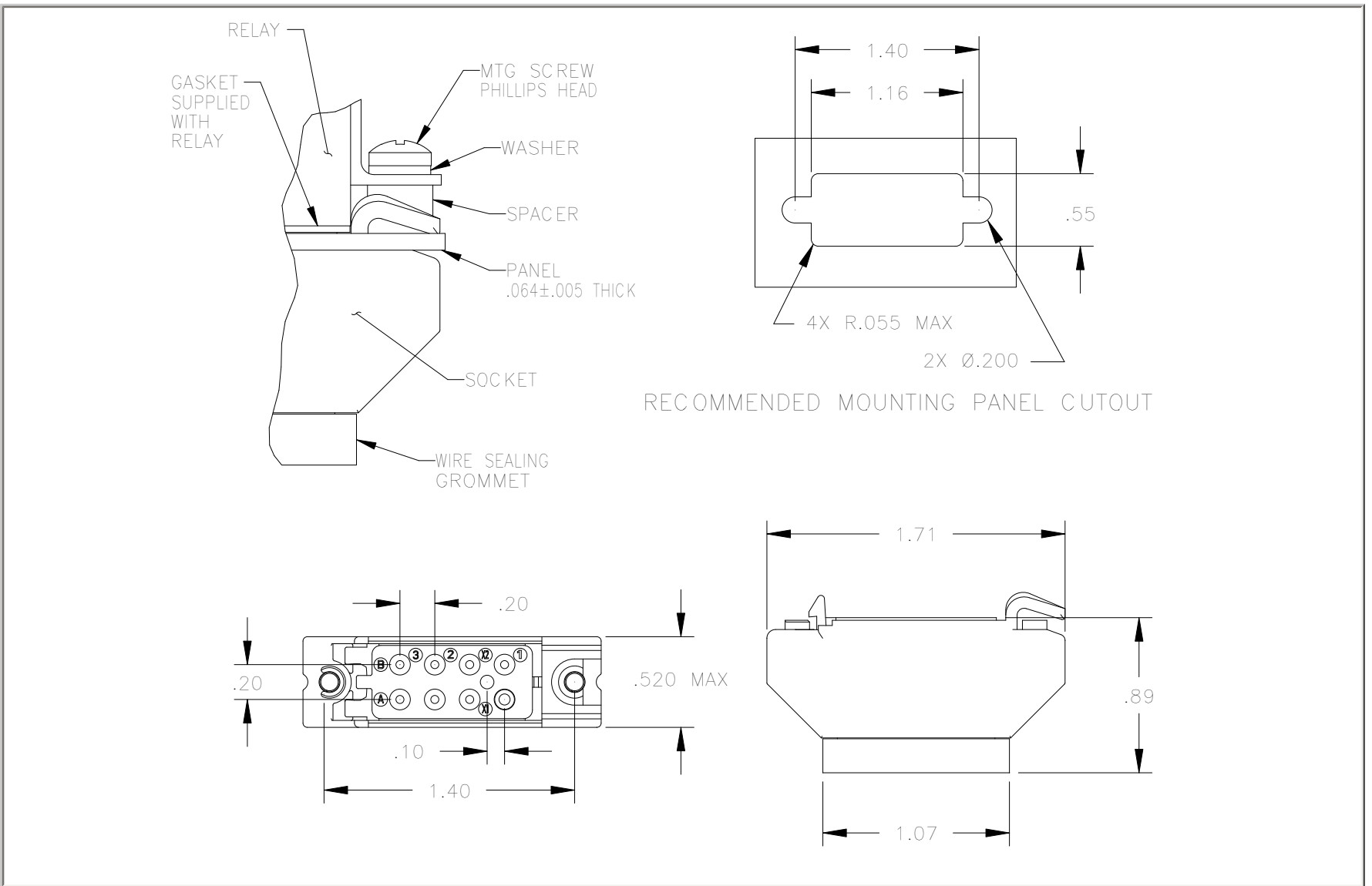
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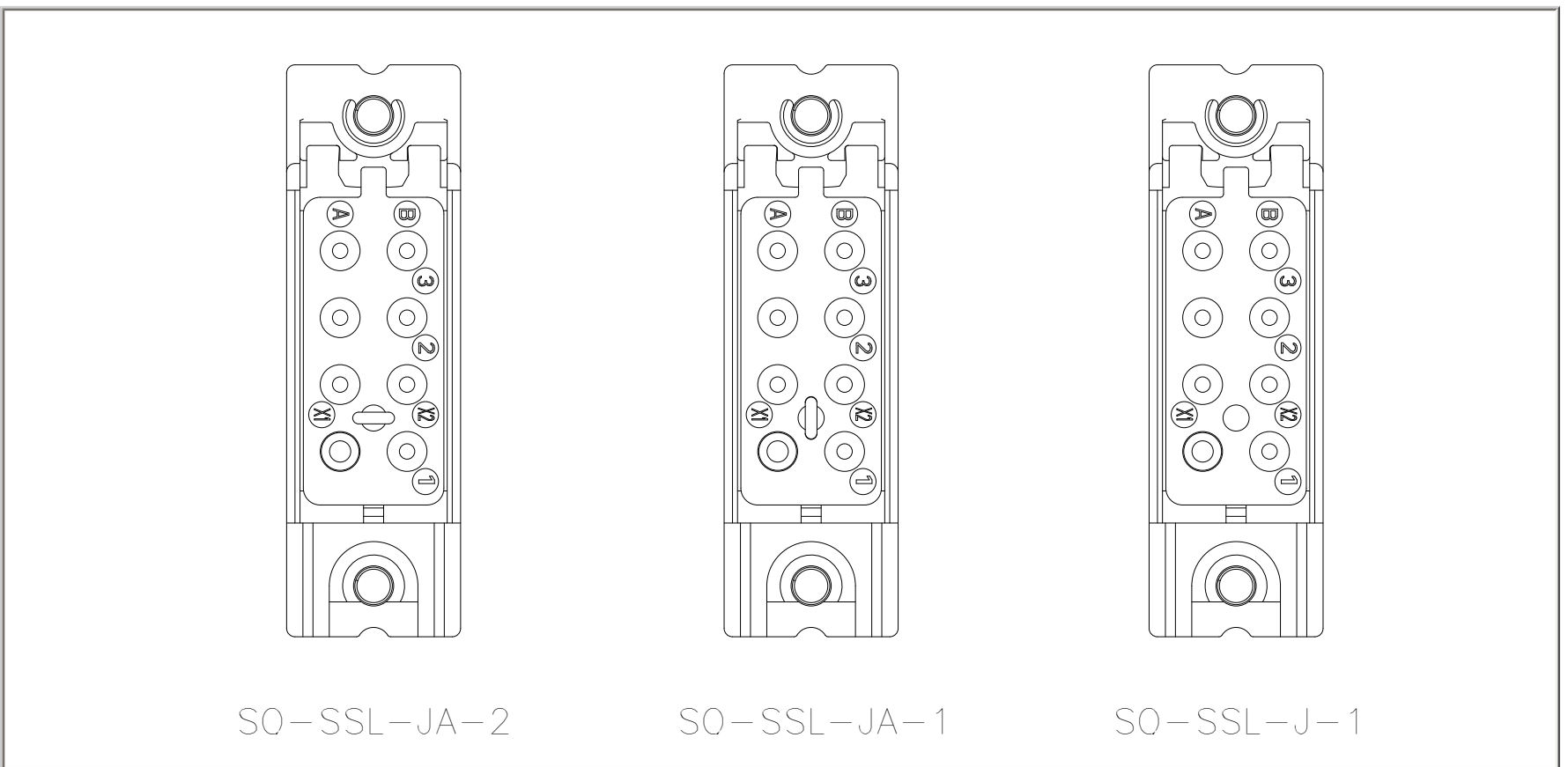
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# SOCKET DIMENSIONS

# SO-SSL (2 POLE)

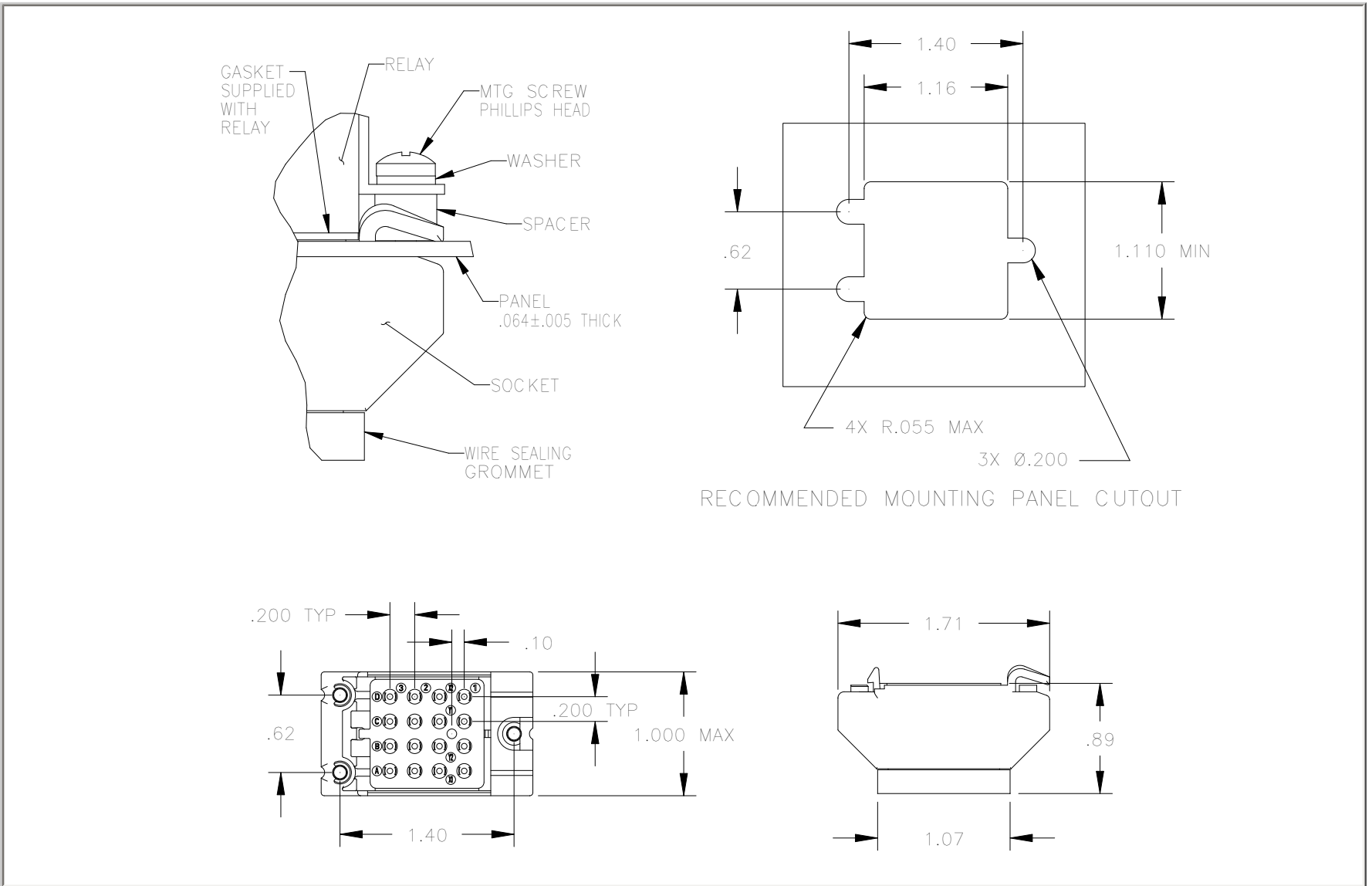


# TERMINAL LAYOUT

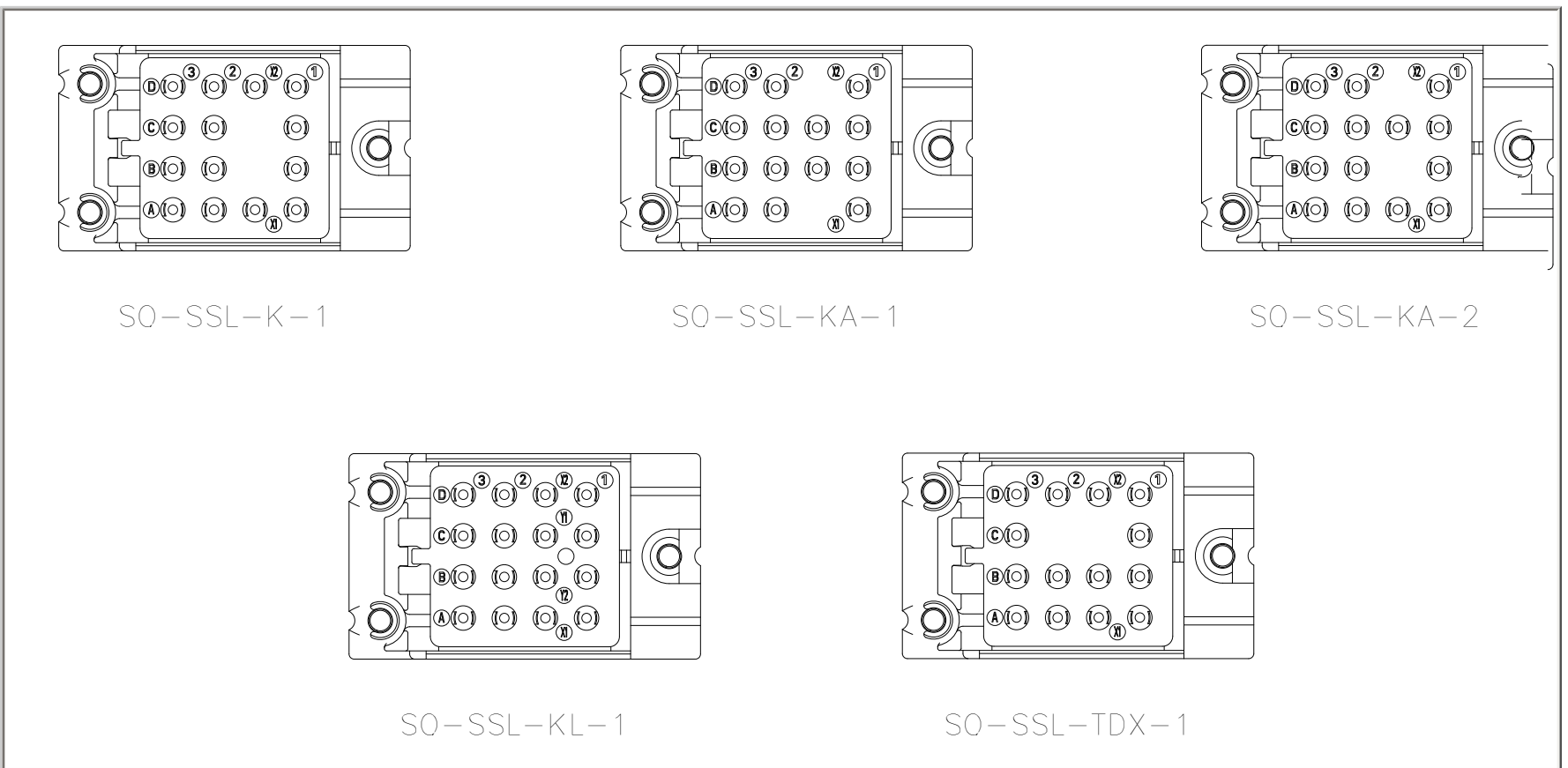


# SOCKET DIMENSIONS

# SO-SSL (4 POLE)



# TERMINAL LAYOUT



|  | SO | SSL | KA | 001 |
|--|----|-----|----|-----|
| 1-Basic socket designation_____                    |    |     |    |     |
| 2-Body style (short snap lock)_____                |    |     |    |     |
| 3-Mating relay (J, JA, K, KA, KL, TDX)_____        |    |     |    |     |
| 4-Polarization (see terminal layout)_____          |    |     |    |     |
| 5-Hardware (0=less hardware, 1=with hardware)_____ |    |     |    |     |
| 6-Contacts (0=less contacts, 1=with contacts)_____ |    |     |    |     |