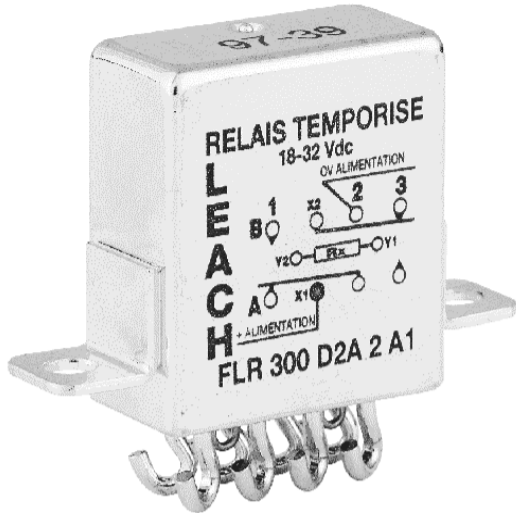


# ENGINEERING DATA SHEET

# FLR300

TIME DELAY RELAY  
2 PDT, 2 AMP



**APPLICABLE SOCKETS:**

- [S300](#)
- [S302](#)

Time delay relay (on operate, on release or repeat cycle timer)

Fixed or adjustable timing delay

Contact arrangement **2 PDT**  
Power supply **Direct current**

**PRINCIPLE TECHNICAL CHARACTERISTICS**

Contacts rated at **2 Amps / 28 Vdc**  
Weight **< 40 grams**  
Dimensions of case **44mm x 28.6mm x 13.3mm max**

Tin plated hermetically sealed metal can.

**CONTACT ELECTRICAL CHARACTERISTICS**

Minimum operating cycles	Contact rating per pole and load type	Load Current in Amps	
		@28VdC	@115Vac/60-400Hz
100,000 cycles	resistive load	2	0.3
100,000 cycles	inductive load (L/R=5ms)	0.75	-
500,000 cycles	low level (30µA/30mV max)	-	-
100 cycles	resistive overload	4	-

**NUMBERING SYSTEM**

	FLR300	-	B	4	A	0.1s	A	1
Basic series designation								
1-Mounting Styles (A,B,C,D,J)								
2-Terminal Types (1,2,4)								
3-Types Of Operation (A,B,C)								
4-Time range (1,2,3,4) or fixed time in s								
5-Temperature Range (A,B)								
6-Accuracy (1,2,3)								



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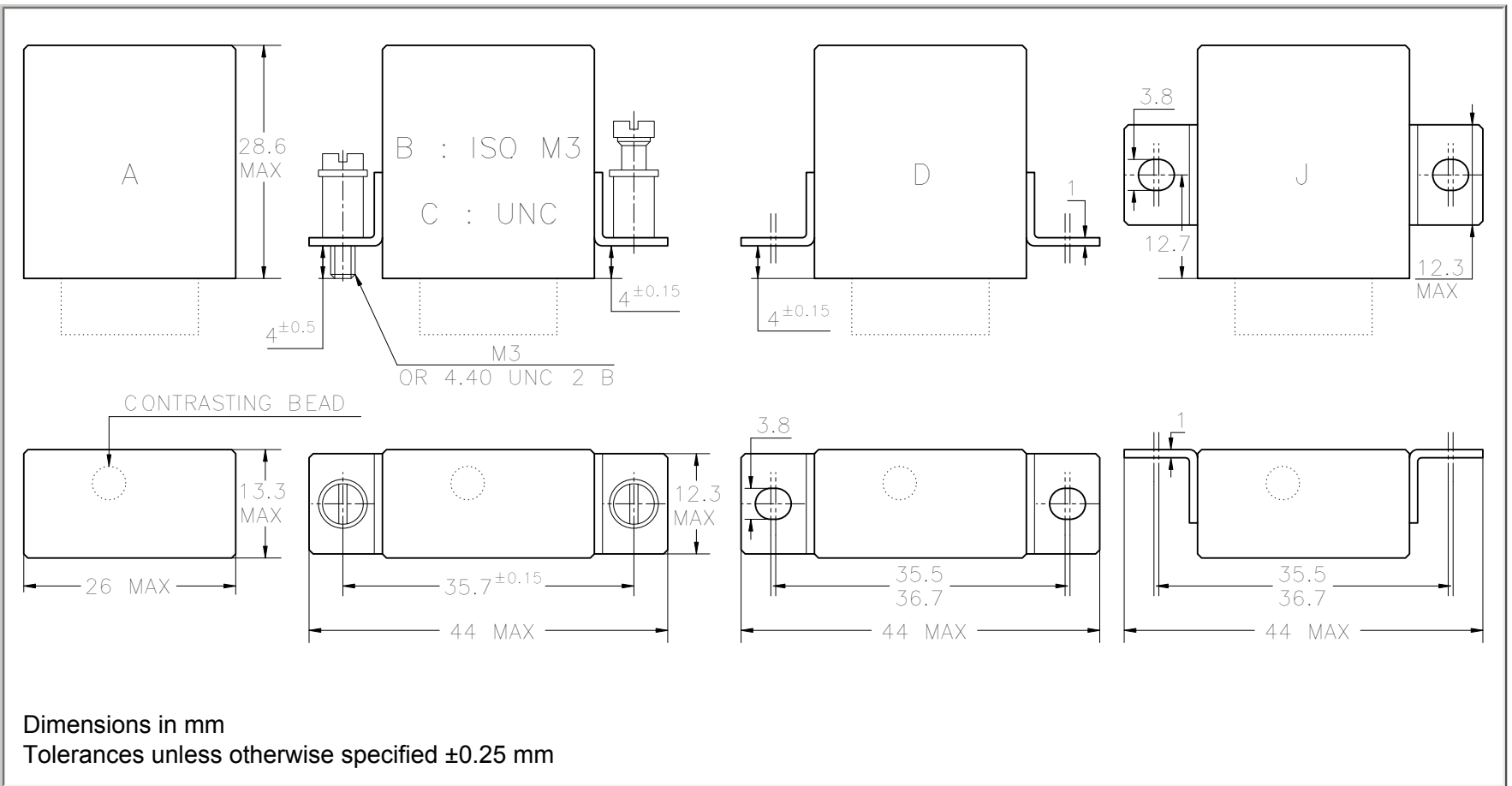
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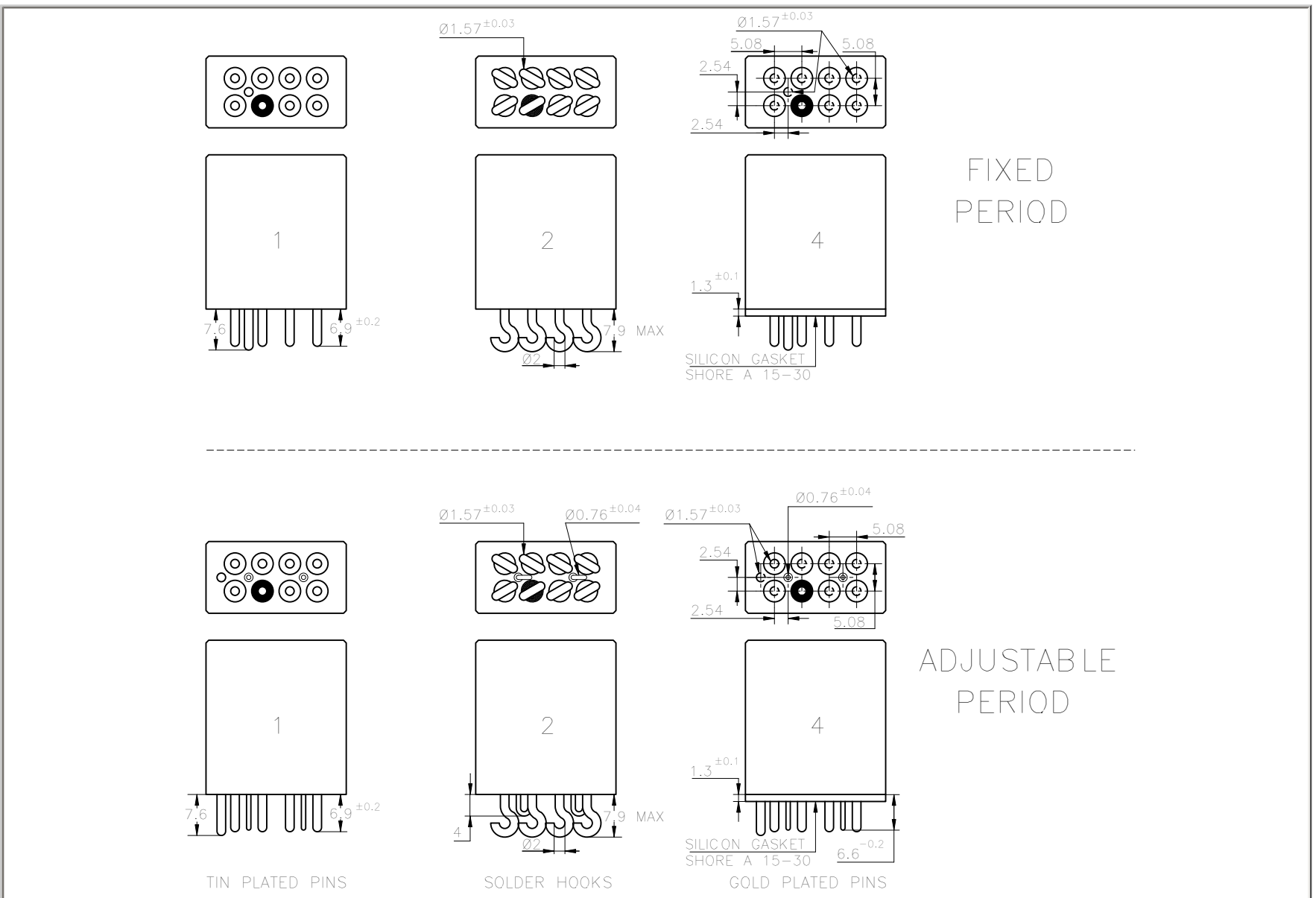
Data sheets are for initial product selection and comparison. Contact Esterline Power Systems prior to choosing a component.

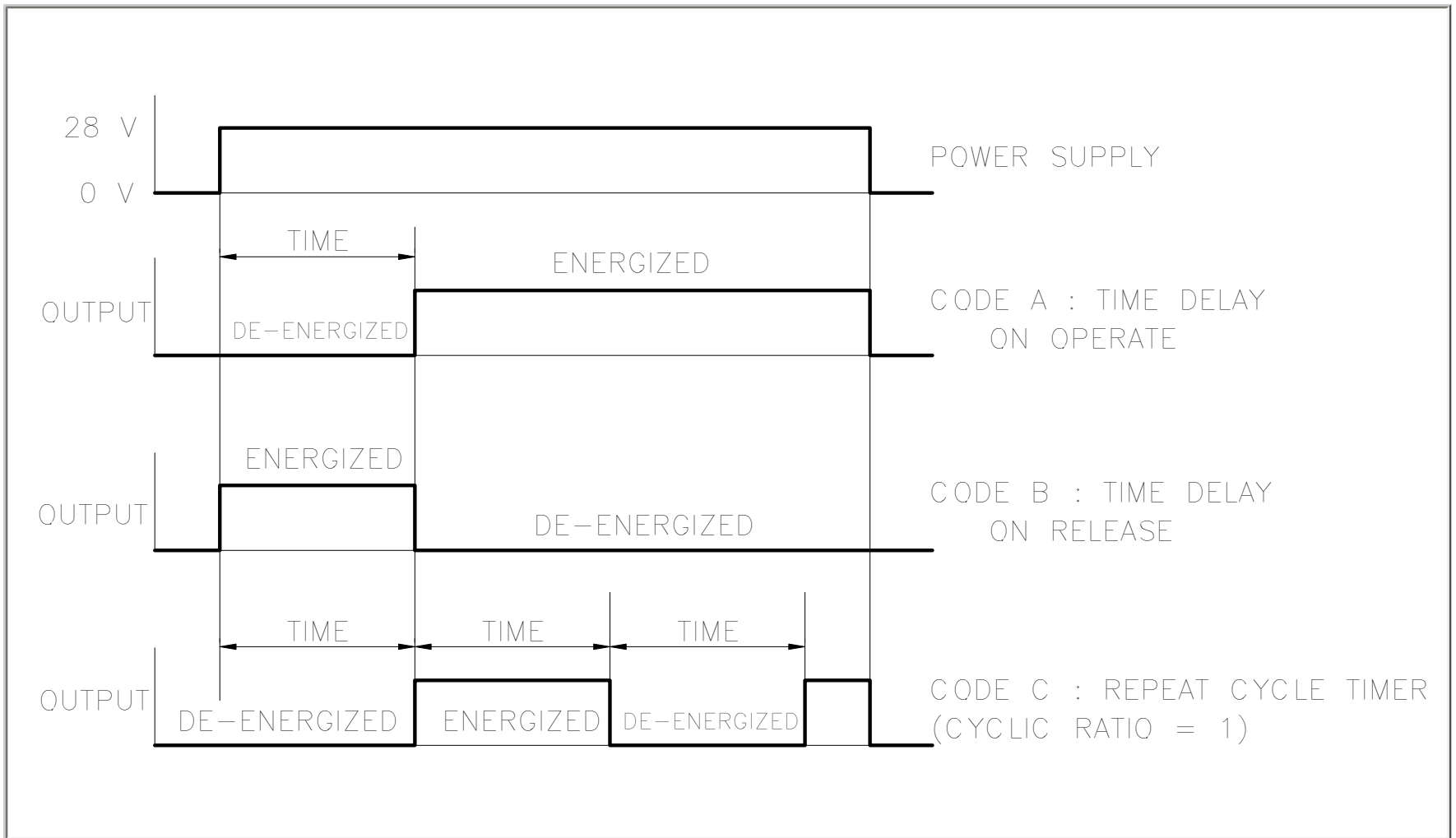
# MOUNTING STYLES

FLR300



# TERMINAL TYPES





**TIMING RANGE**

**ADJUSTABLE**

- Range 1: 0.1 to 2.5 seconds  $R_x = 356 * (T - t_o)$
- Range 2: 0.4 to 10 seconds  $R_x = 91.20 * (T - t_o)$
- Range 3: 3.2 to 80 seconds  $R_x = 11.38 * (T - t_o)$
- Range 4: 25 to 625 seconds  $R_x = 1.42 * (T - t_o)$

where  $R_x$  in kohms  
 T: desired time in seconds,  
 $t_o$ : time measured with  $R_x = 0$ .

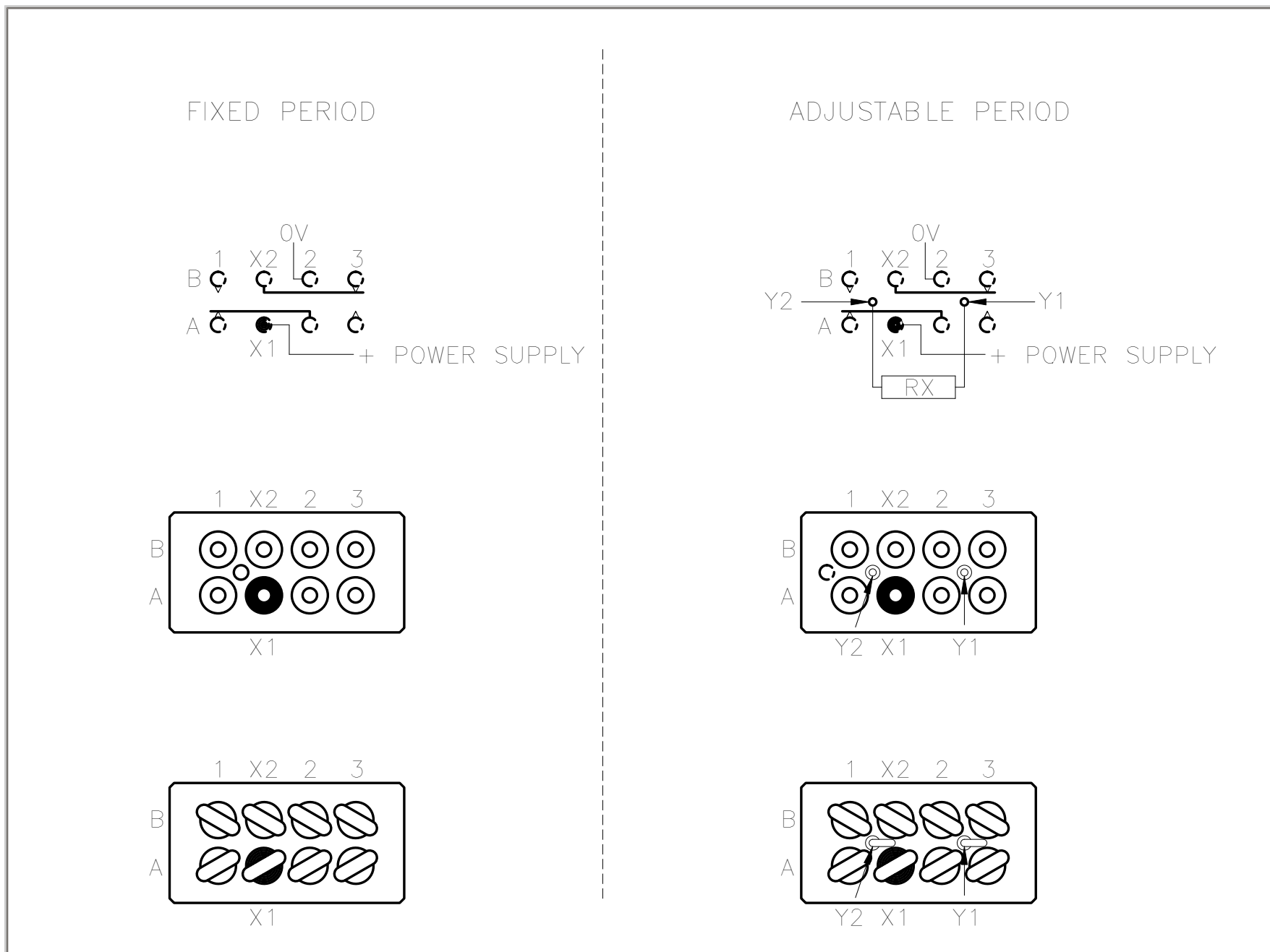
Example to determine  $R_x$  value for a T time of 10 seconds: Choose range 3; measure time with  $R_x = 0$  (for example :  $t_o = 3.1$  s); subtract  $t_o$  from 10 seconds ( $10s - 3.1s = 6.9s$ ); calculate  $R_x = 11.38 \text{ kohms/s (range 3)} \times 6.9s$  Theoretical resistance:  $R_x = 78.5 \text{ kohms}$

**GENERAL CHARACTERISTICS**

Temperature range	
- Code A	-55° C to +125° C
- Code B	-40° C to +85° C
Operating Voltage	18 to 32 Vdc (AIR norm 2021 E)
Recycle Time	less than or equal to 50 ms
Dielectric strength between all pins connected together and can	750 V / 50 Hz
Insulation resistance at 100 Vdc (same condition as above)	greater than or equal to 100 M $\Omega$
Sinusoidal vibration	20G / 10 to 2000 Hz
Shock	50G / 11 ms

	fixed period	adjustable period	
			Accuracy resistor Rx to choose
<b>Code 3</b>	±10%	±10%	5% 100 ppm /° C
<b>Code 2</b>	±5%	±5%	2% 100 ppm /° C
<b>Code 1</b>	±3%	±3%	1% 50 ppm /° C

**SCHEMATIC DIAGRAM/TERMINAL LAYOUT**



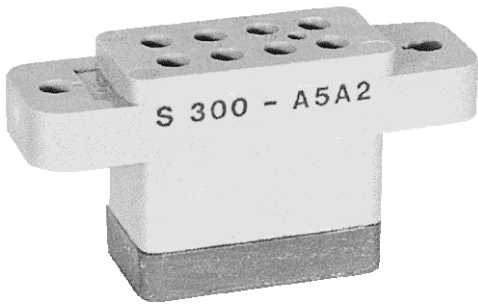
**NOTES**

1. Relays with B,C,D mounting and terminal 4 are compatible with socket families S300, SF300, S302, SF302...
2. Isolation spacer pads for PCB mounting available on request.
3. For other mounting styles or terminal types, please contact the factory.

# S300, S301, S302

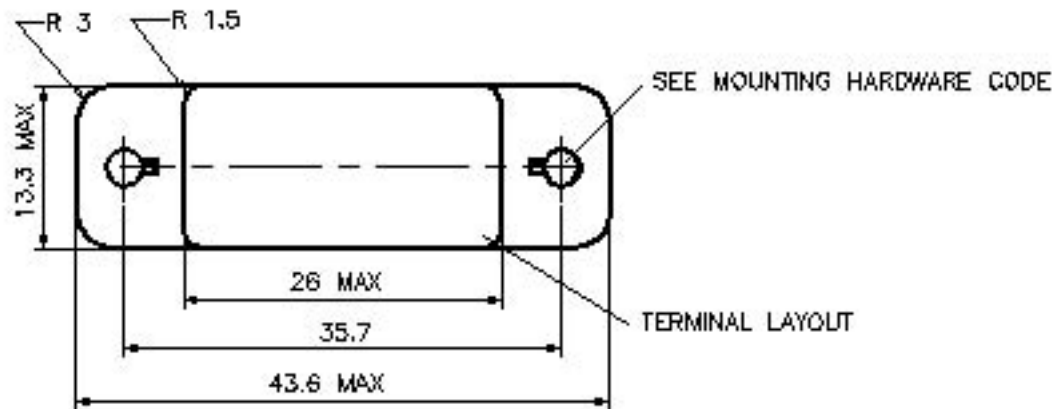
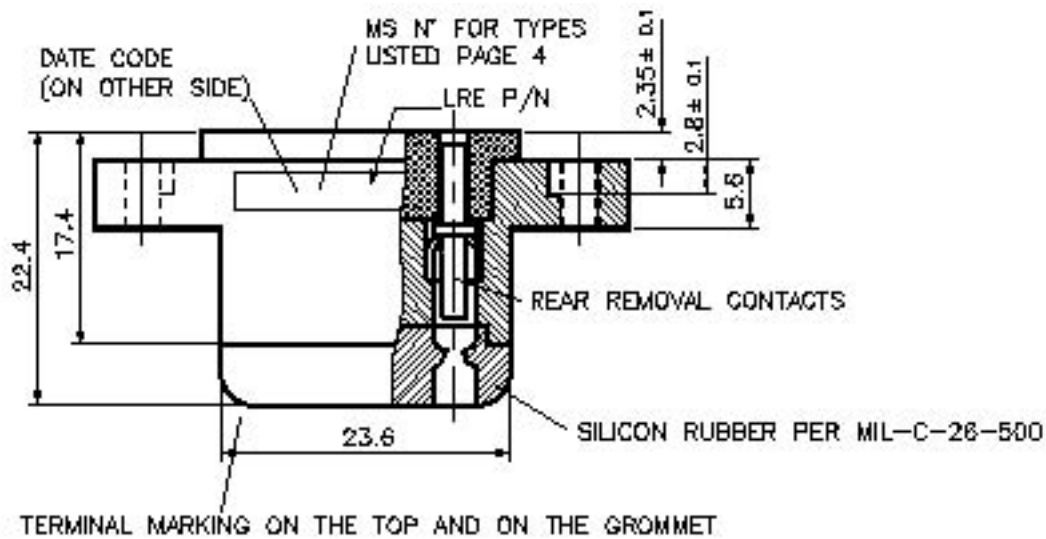
## ENGINEERING DATA SHEET

RELAY SOCKET  
10 AMP



BASIC SOCKET SERIES DESIGNATION FOR:

**Series M300 (DC Coil), M301 (DC Coil),  
M302 (DC Coil), FD300, FLS300, FLR300**



### GENERAL CHARACTERISTICS

Crimp tool contact #22	M 22520/2-01 with turret M 22520/2-14.
Insertion and extraction tool #22	M 81969/14-01.
Crimp tool contact #16	M 22520/1-01 with turret M 22520/1-02 or MS 3191-1.
Insertion and extraction tool #16	M 81969/14-03 .
Weight	35g max.
Temperature range	70° C to +125° C.



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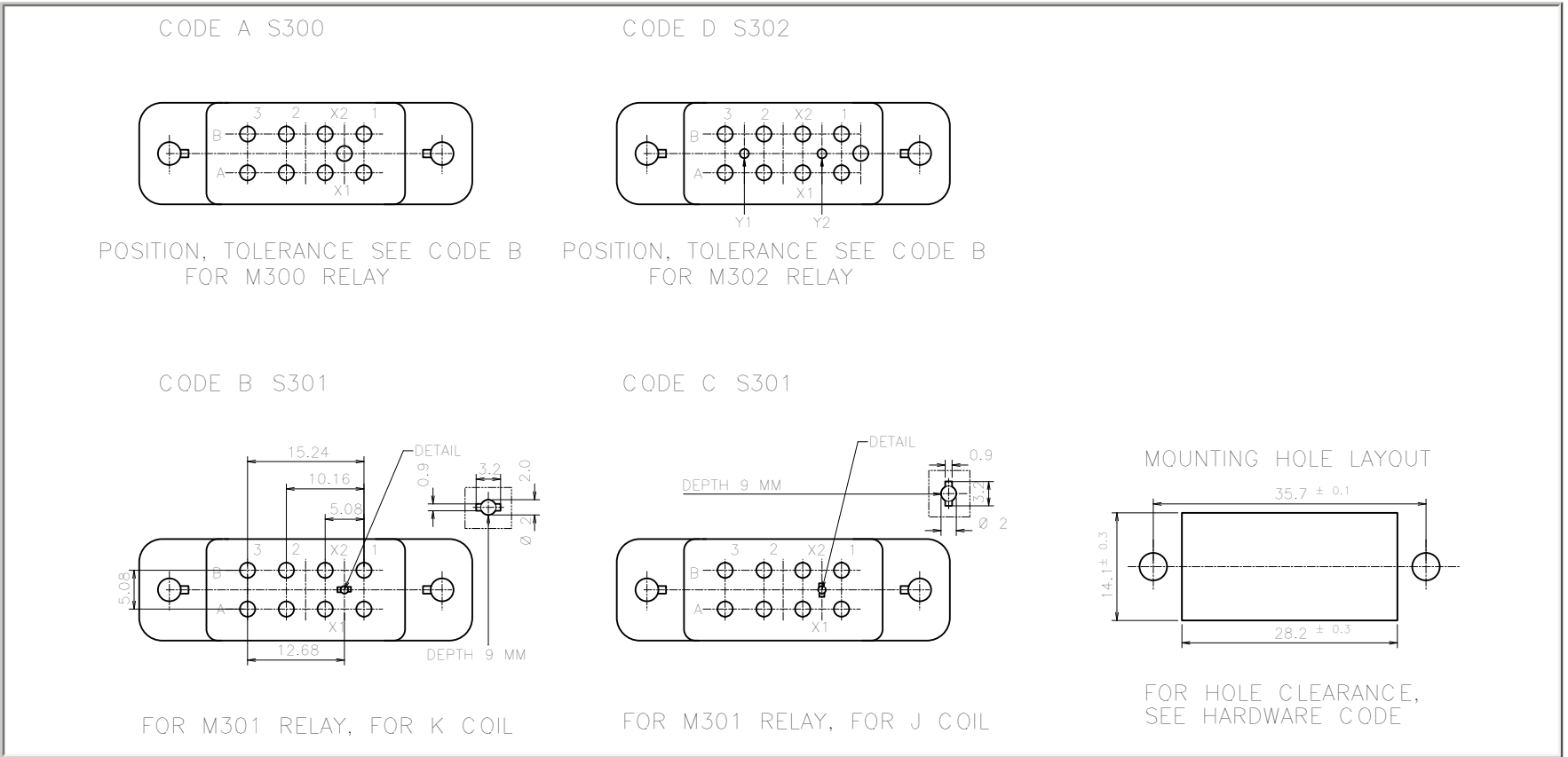
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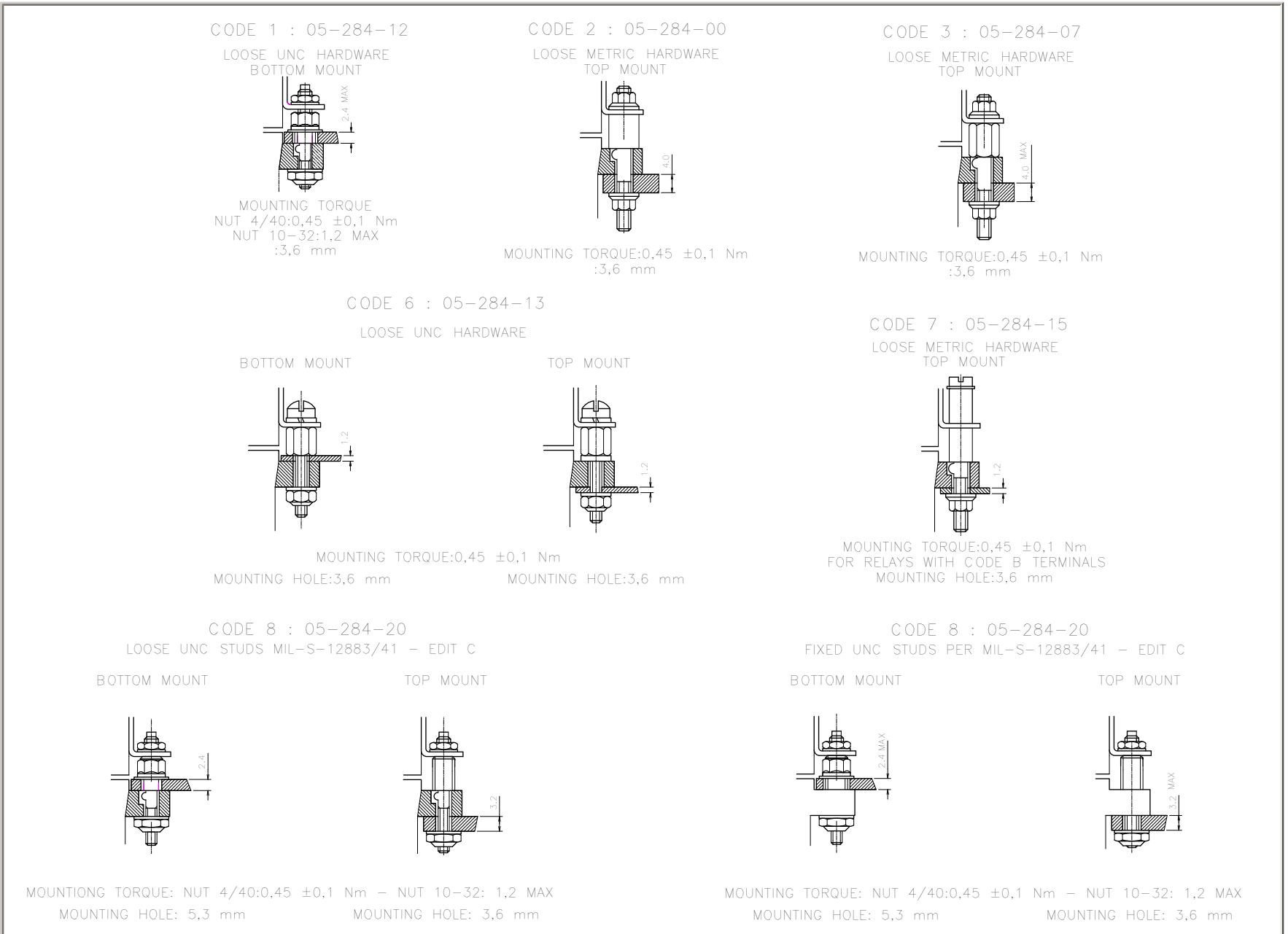
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# TERMINAL LAYOUT

S300, S301, S302



# MOUNTING HARDWARE



**WIRE INSULATION DIAMETER FOR SEAL TO GROMMET**

**S300, S301, S302**

<p><b>Code A</b></p> <p style="text-align: center;">Recommended for contact code 2 contact code 8 <b>Dia: 1.2 .....2.4mm</b></p>	<p><b>Code B</b></p> <p style="text-align: center;">Recommended for contact code 3 contact code 9 <b>Dia: 0.8 .....1.6mm</b></p>
--	--

**CONTACT SIZE AND STYLE**

<p>Y1-Y2 Crimpend to accomodate AWG22 05 912 00 (for product code 2+3)  31 036 00 <u>Contact mating end dia 0.8mm</u> (for contact code 8+9) MIL-C-39029/92-531 Bin Code colour bands or Bin Code numbering on crimpside  <u>Contact mating end dia 0.8mm</u></p>	<p>Code 2 05 911 00</p>	<p>Crimpend to accomodate AWG16-18-20</p>	<p>Code 3 05 911 10</p>	<p>Crimpend to accomodate AWG20-22-24</p>
	<u>Contact mating end #16</u>		<u>Contact mating end #16</u>	
<p>Code 0 Without contacts</p>	<p>Code 8 30 315 00</p>	<p>Crimpend to accomodate AWG16-18-20  MIL-C-39029/92- 533 Bin Code colour bands or Bin Code numbering on crimpside</p>	<p>Code 9 30 315 10</p>	<p>Crimpend to accomodate AWG20-22-24  MIL-C-39029/92- 534 Bin Code colour bands or Bin Code numbering on crimpside</p>
	<u>Contact mating end #16</u>		<u>Contact mating end #16</u>	

**SOCKET NUMBERING SYSTEM**

	S300	A	1	A	2
1-Basic socket designation_____					
2-Terminal Layout_____					
3-Mounting Hardware_____					
4-Grommet to seal on wire insulation_____					
5-Contact size and style_____					

**MS/LEACH CROSS PART NO. AND MATING RELAYS**

**S300, S301, S302**

	<b>MS - Number</b>	<b>LEACH P/N</b>	<b>Contacts to accomodate wire #</b>		<b>Applicable for relays</b>
<b>MIL-S-12883/41</b>	-01	S300-A6A2	16-18-20	Loose terminals Above/below panel mounting	M300-D4A /-L/-N/-B/-C
	-04	S300-A6B3	20-22-24		M 301-D4F/-K
	-02	S301-B6A2	16-18-20		M 301-D4E/-J
	-03	S301-C6A2	16-18-20		
	<b>MS - Number</b>	<b>LEACH P/N</b>	<b>Contacts to accomodate wire #</b>		<b>Applicable for relays</b>
<b>MIL-S-12883/41B</b>	-11	S300-A1A2	16-18-20	Loose terminals below panel mounting	M300-D4A /-L/-N/-B/-C
	-14	S300-A1B3	20-22-24		M 301-D4F/-K
	-12	S301-B1A2	16-18-20		M 301-D4E/-J
	-13	S301-C1A2	16-18-20		
	<b>MS - Number</b>	<b>LEACH P/N</b>	<b>Contacts to accomodate wire #</b>		<b>Applicable for relays</b>
<b>MIL-S-12883/41C</b>	-11S	S300-A8A8	16-18-20	Loose terminals Above/below panel mounting	M300-D4A /-L/-N/-B/-C
	-14S	S300-A8B9	20-22-24		M301-D4F/-K
	-12S	S301-B8A8	16-18-20		M301-D4F/-J
	-13S	S301-C8A8	16-18-20		M302-D4A/ -L/-N/-B/-C
	-15S	S302-D8A8	16-18-20		
<b>MIL-S-12883/41C</b>	-16S	S300-A9A8	16-18-20	Fixed terminals Above/below panel mounting	M300-D4A /-L/-N/-B/-C
	-19S	S300-A9B9	20-22-24		M 301-D4F/-K
	-17S	S301-B9A8	16-18-20		M 301-D4E/-J
	-18S	S301-C9A8	16-18-20		M 302-D4A/ -L/-N/-B/-C
	-20S	S302-D9A8	16-18-20		