

ENGINEERING DATA SHEET

T531

TIME DELAY RELAY
3 PDT, 25 AMP



APPLICABLE SOCKET:
[S502](#)

Time delay relay on operate or on release

Fixed or adjustable timing delay

Contact arrangement **3 PDT**

Power supply **28 Vdc**

PRINCIPLE TECHNICAL CHARACTERISTICS

Contacts rated at **25 Amps / 28 Vdc**

Weight **< 120 grams**

Dimensions of case **44mm x 39mm x 26mm max**

Hermetically sealed corrosion protected metal can (mounting flange tin plated)

CONTACT ELECTRICAL CHARACTERISTICS

Minimum operating cycles	Contact rating per pole and load type	Load current in Amps @28Vdc
50,000 cycles	on resistive load	25
10,000 cycles	on inductive load (L/R=5ms)	12
50,000 cycles	on motor load	10
50,000 cycles	on lamp load	5
50 cycles	resistive overload	50

NUMBERING SYSTEM

	T531	-	A	E	-	1001	-	B
Basic series designation								
1-Types Of Operation (A,B,D,U,W)								
2-Temperature range and timing accuracy (E,L,M,J,K,N)								
3-Timing range (4 digits)								
4-Mounting style and terminal types (B,C,D)[3]								



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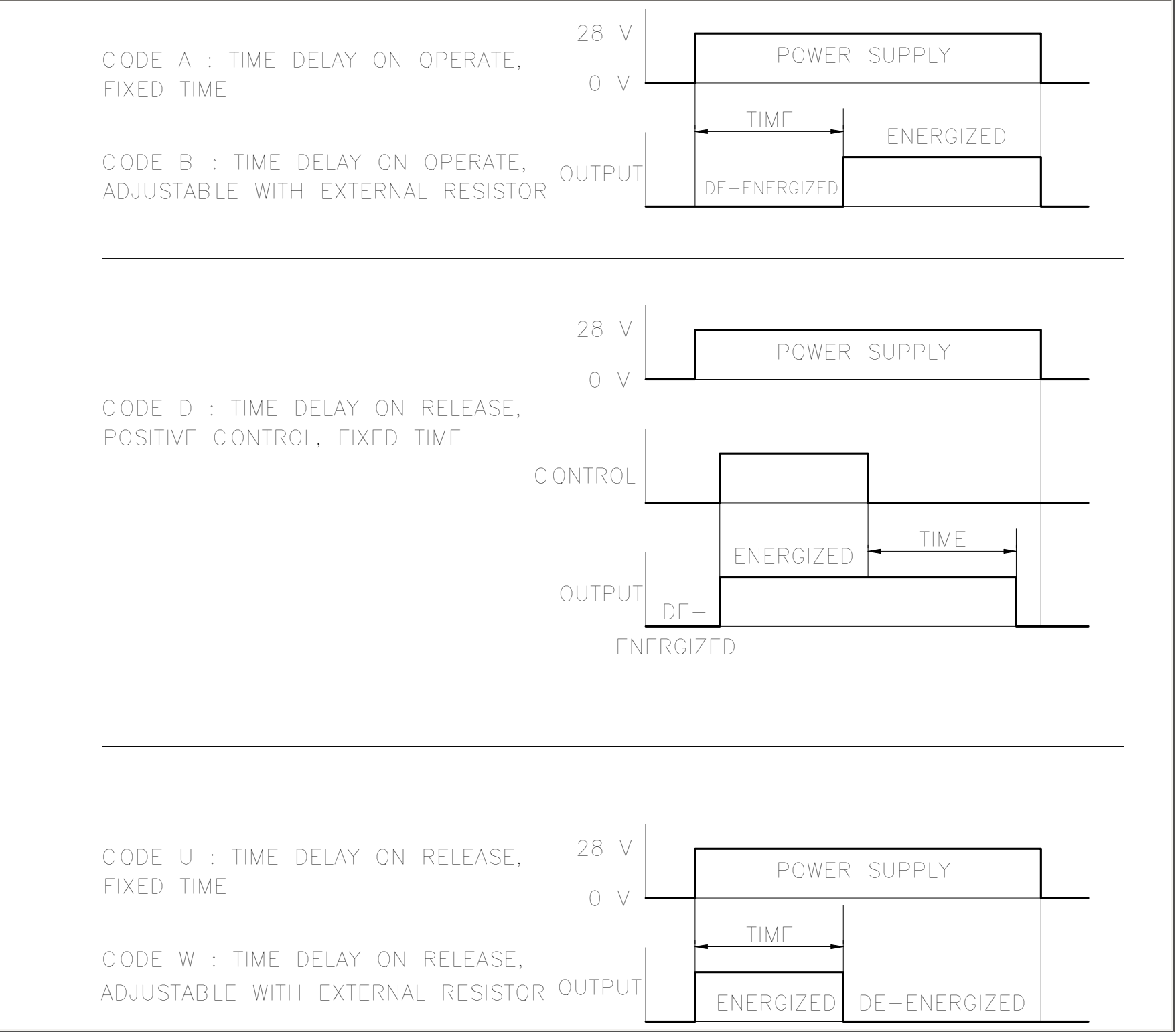
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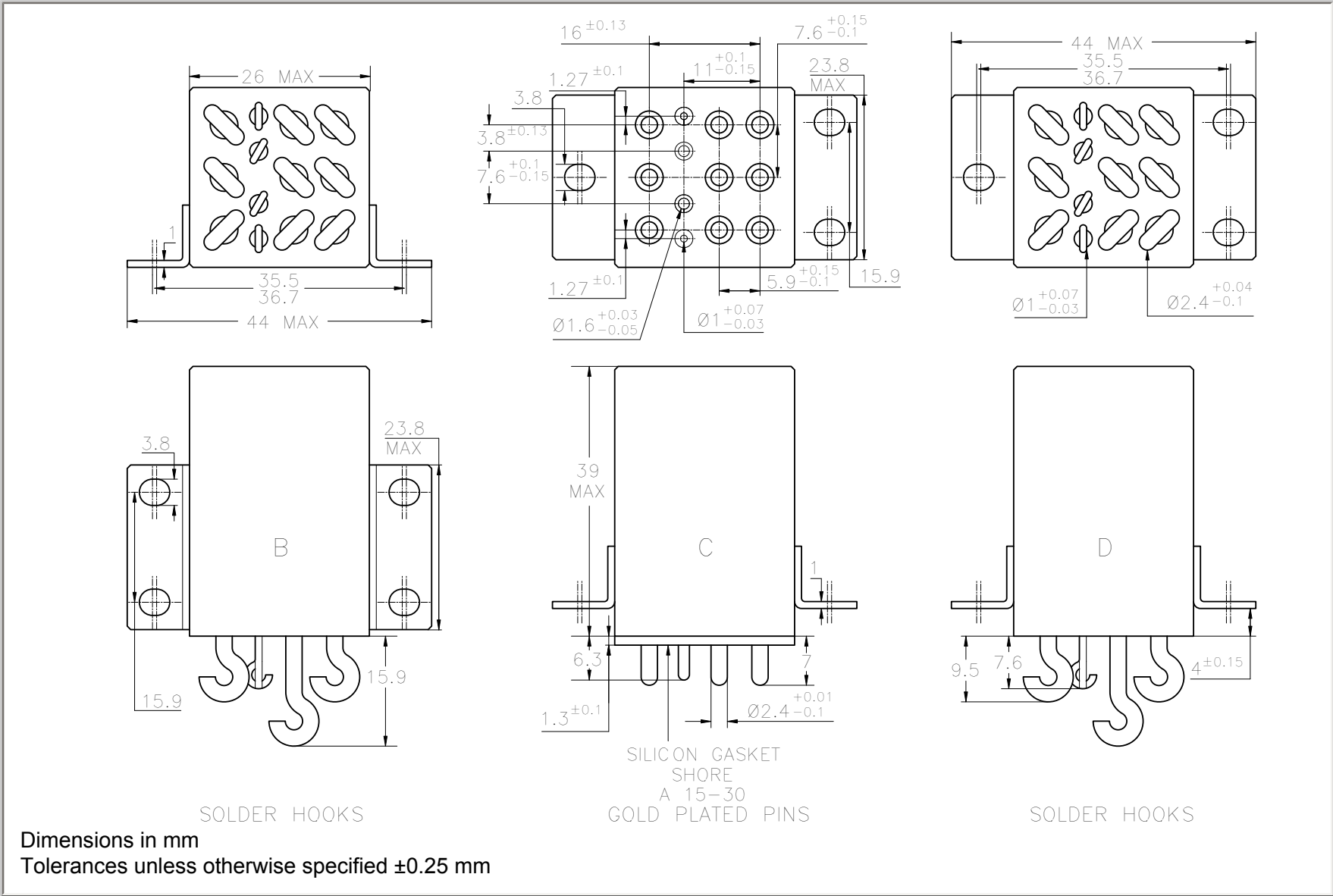
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Data sheets are for initial product selection and comparison. Contact Esterline Power Systems prior to choosing a component.

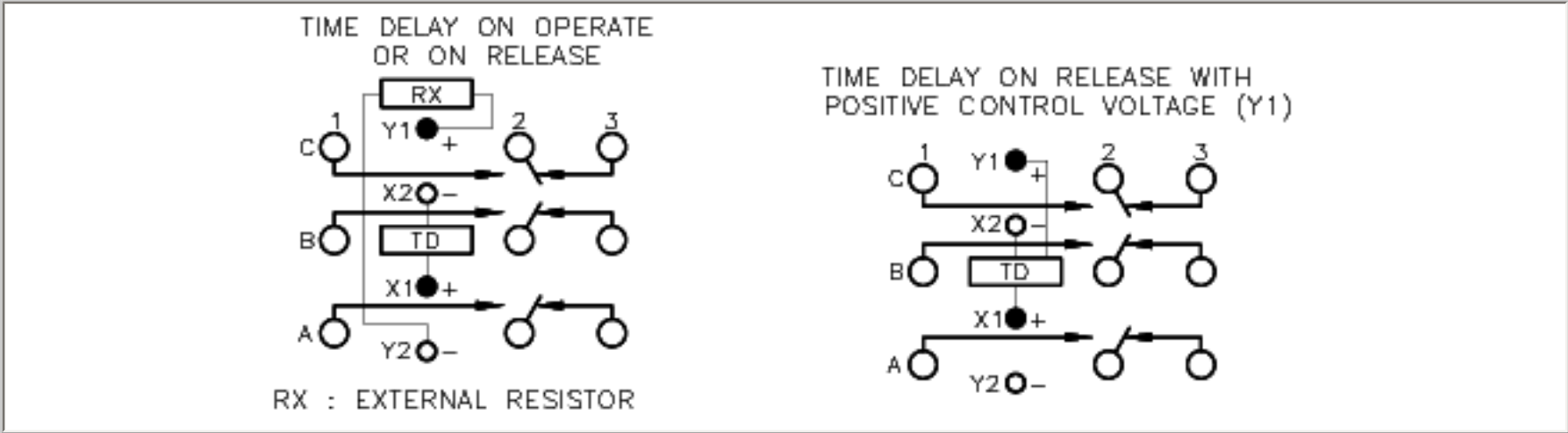


TEMPERATURE RANGE AND TIMING ACCURACY

Code	Temperature	Accuracy	Limitations
E	-55° C to +85° C	±10%	±10 ms below 200 ms
L [4]	-55° C to +85° C	±5%	not below 500 ms
M [4]	-55° C to +85° C	±3%	not below 1 s
J	-55° C to +125° C	±10%	±10 ms below 200ms
K [4]	-55° C to +100° C	±5%	not below 500 ms
N [4]	-55° C to +100° C	±3%	not below 1 s



SCHEMATIC DIAGRAM/TERMINAL LAYOUT



TIMING RANGE

ADJUSTABLE (For operation code B, F and W)

Code 1001: 0.1 to 1 second $R_x = (T / t_0 - 1) \times 100\text{kohm}$

Code 1002: 1 to 10 seconds

Code 1003: 10 to 100 seconds

Code 1004: 100 to 1000 seconds where R_x in kohms T: desired time in seconds, t_0 : time measured with $R_x = 0$.

Example to determine R_x value for a T time of 5 seconds: Choose code 1002; measure time with $R_x = 0$ (for example : $t_0 = 1$ s); calculate $R_x = (5/1 - 1) \times 100000$

Theoretical resistance: $R_x = 400$ kohms

FIXED

The timing code consists of 4 digits. To determine this code, convert the value to milliseconds value. Use the first 3 digits of this value and add a fourth digit to indicate the number of zeros which must follow the three digits to show complete milliseconds value.

Examples: 250 ms --> Code 2500 300 s --> Code 3003

GENERAL CHARACTERISTICS**T531**

Operating Voltage	18 to 32 Vdc (AIR norm 2021 E)
Recycle Time	less than or equal to 50 ms
Dielectric strength at sea level	
- all pins connected together and can	500 V / 50 Hz
- between open contacts	500 V / 50 Hz
Dielectric strength at altitude 25,000 m, all points	250 V / 50 Hz
Initial insulation resistance at 500 Vdc	greater than or equal to 500 M Ω
Sinusoidal vibration	20G / 10 to 2000 Hz
Shock	100G / 6 ms
Power loss protection	0.5 ms max
Undamaged against positive transients	+ 80 Vdc
Spike susceptibility	$\pm$ 600 Vdc
Self generated spikes	$\pm$ 50 Vdc

NOTES

1. Relays with C mounting are compatible with socket families S 502, SF 502 ..
2. Isolation spacer pads for PCB mounting available on request.
3. For other mounting styles or terminal types, please contact the factory.
4. Codes L, M, K and N not available for adjustable timing.



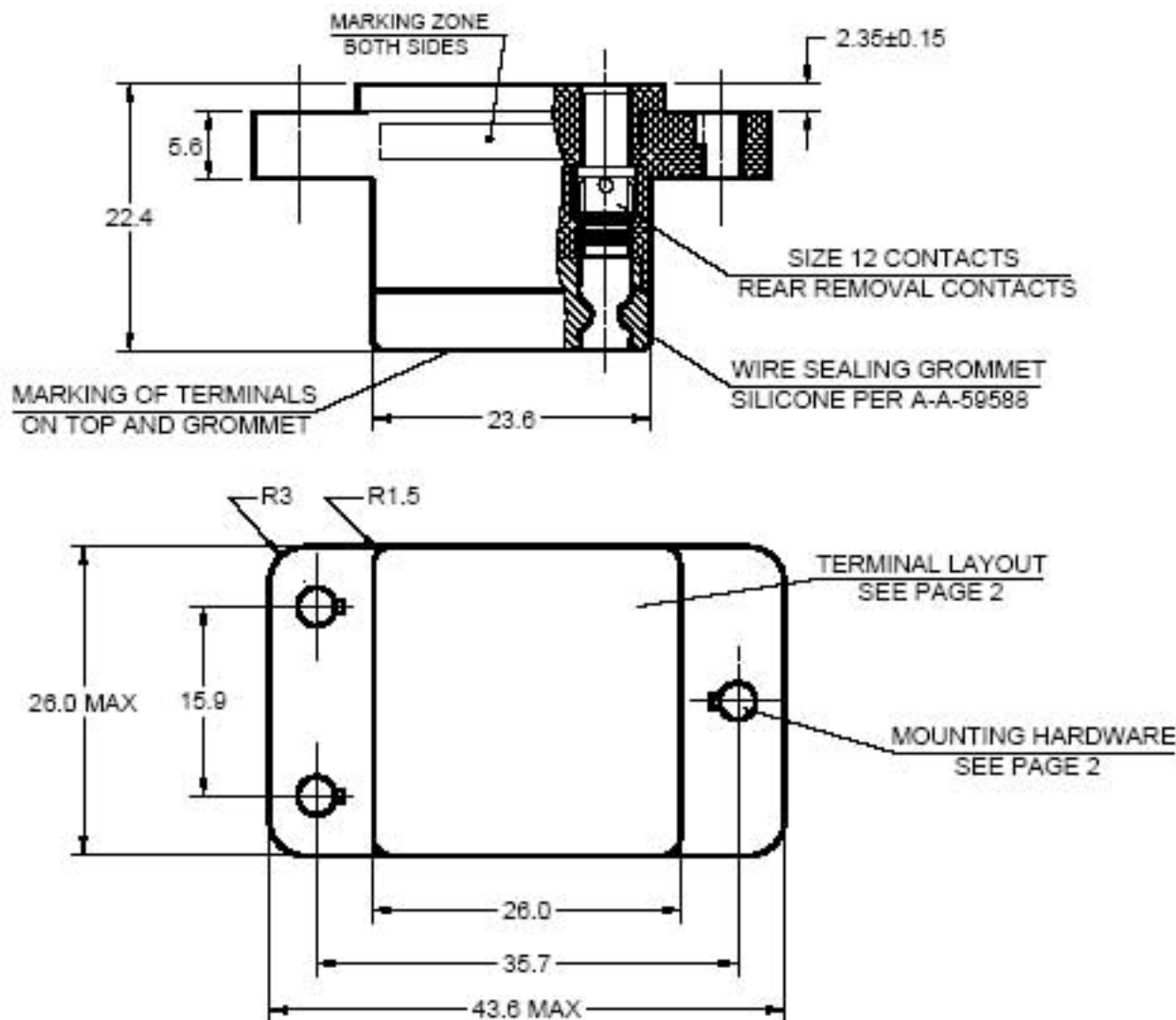
BASIC SOCKET SERIES DESIGNATION FOR:

**SERIES M500 (DC Coil), M501 (AC Coil),
M502 (DC Coil), M550 (DC Coil), T531, CS500**

DESIGNED TO THE STANDARDS AND REQUIREMENTS OF:

MIL-PRF-12883/48 & /54

DIMENSIONS



GENERAL CHARACTERISTICS

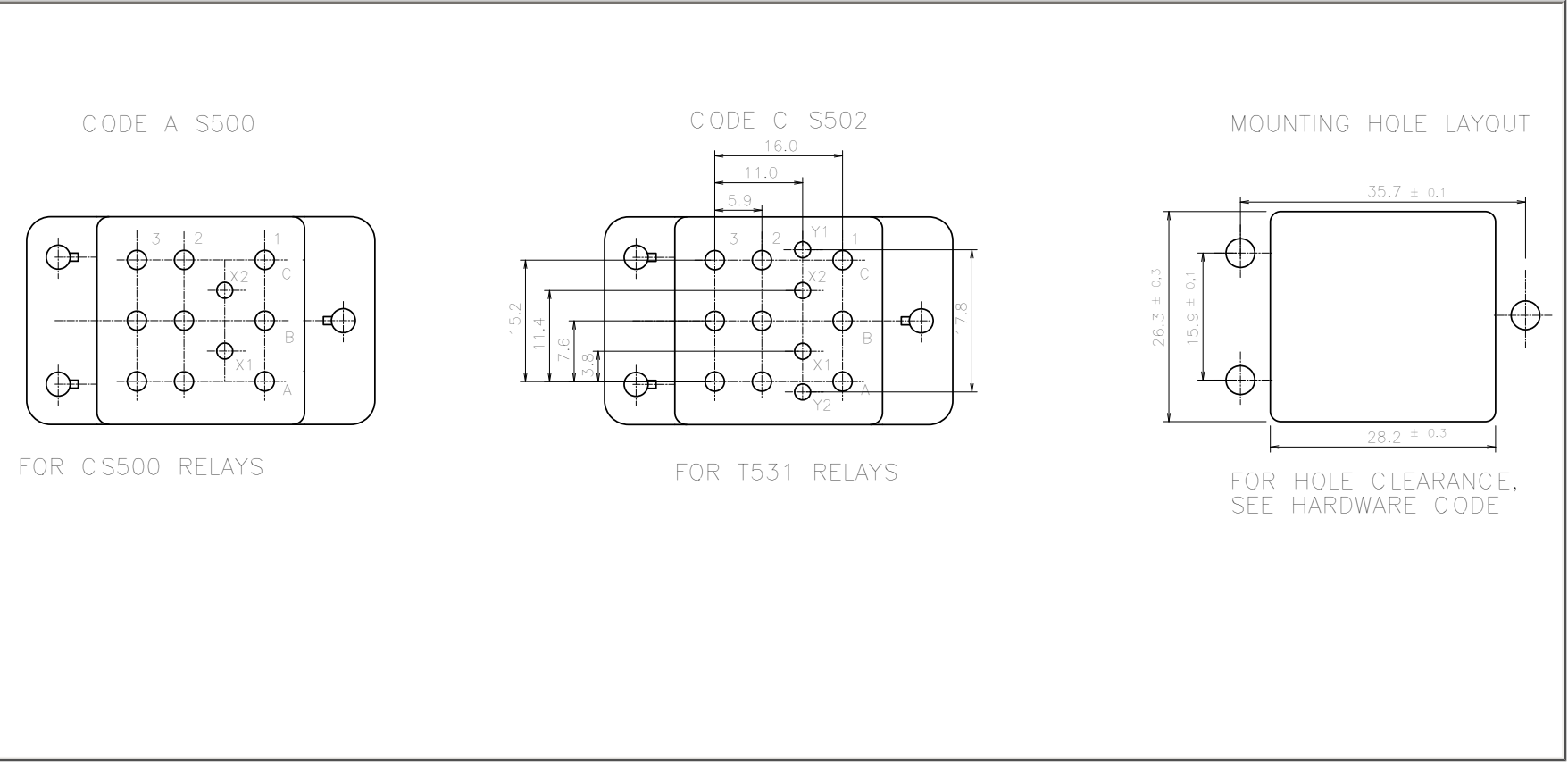
Crimp tool for contacts	M 22520/1-01, Positioner M22520/1-02
Insertion / removal tool	#16: M81969/14-03 #12: M81969/14-04
Weight	45 grams Max
Temperature range	-70°C to +125°C
Contact and mounting hardware supplied in a separate plastic bag. Standard tolerances, ±0.25mm	



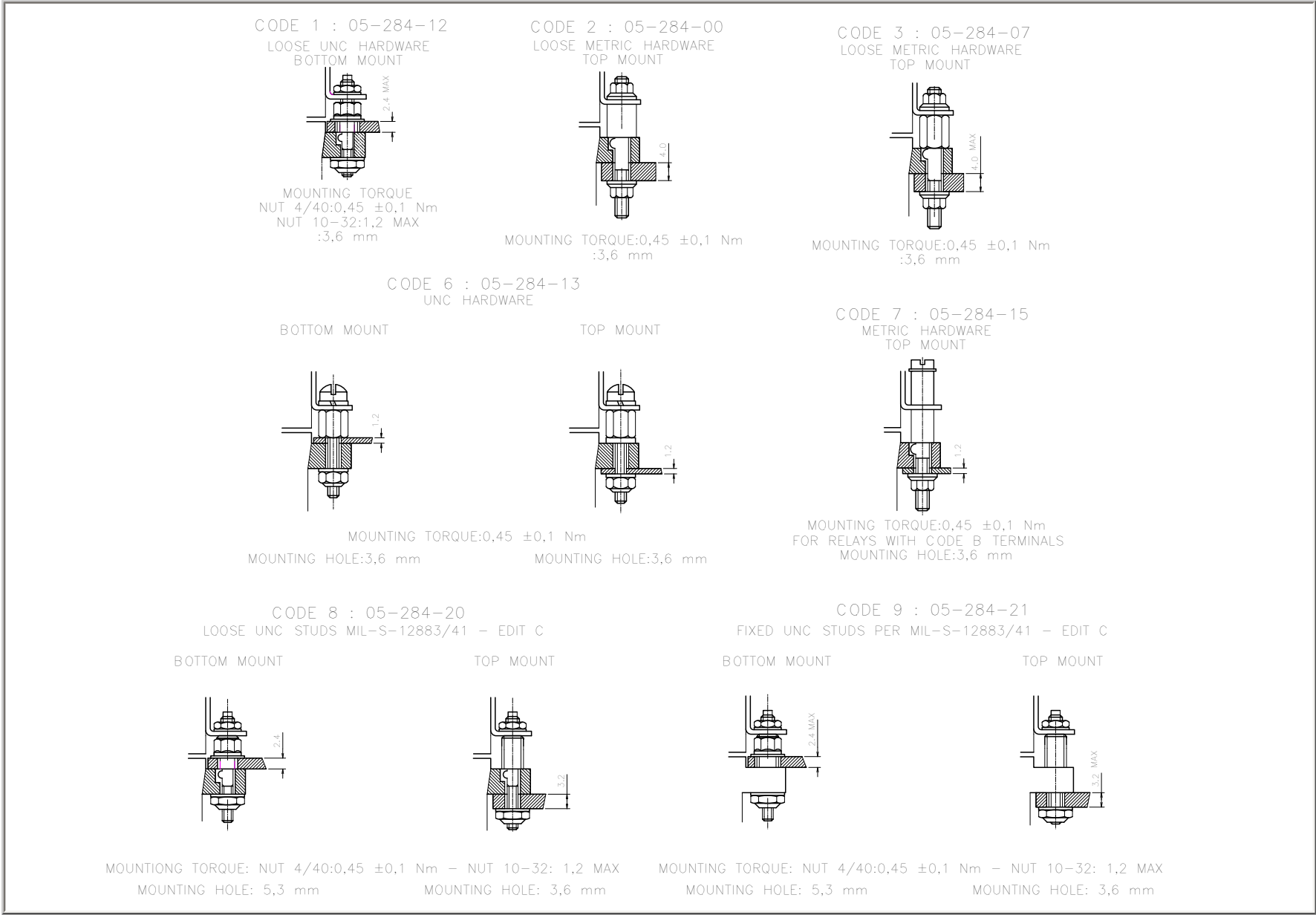
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MOUNTING HARDWARE



Code A	Dia: 2.83.4mm
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CONTACT SIZE AND STYLE

Y1 - Y2 Crimp end to accomodate AWG 20-20-24 05 913 00 (for contact code 8 +10) <u>Contact mating end #20</u> 31 236 00 (for contact code 11 + 13) MIL-C-3902/92-532 Bin Code color bands or Bin Code numbering on crimpside <u>Contact mating end #20</u>	Code 8 Crimp end to 05 910 00 accomodate AWG12-14 <u>Contact mating end #12</u>	Code 10 Crimp end to 05 910 01 accomodate AWG16 <u>Contact mating end #12</u>
	Coil contacts X1-X2 Crimp end to 05 911 00 accomodate AWG16-18-20 <u>Contact mating end #16</u>	Coil contacts X1-X2 Crimp end to 05 910 01 accomodate AWG16-18-20 <u>Contact mating end #16</u>
Code 0 Without contacts	Code 11 MIL-C-39029/92-535 30 976 00 Bin Code color bands or Bin Code numbering on crimpside Crimp end to accomodate AWG 12 <u>Contact mating end #12</u>	Code 13 MIL-C-39029/92-536 31 099 00 Bin Code color bands or Bin Code numbering on crimpside Crimp end to accomodate AWG 16 <u>Contact mating end #12</u>
	Coil contacts MIL-C-39029/92-533 X1-X2 Bin Code color bands 30 315 00 or Bin Code numbering on crimpside Crimp end to accomodate AWG16-18-20 <u>Contact mating end #16</u>	Coil contacts MIL-C-39029/92-533 X1-X2 Bin Code color bands 30 315 00 or Bin Code numbering on crimpside Crimp end to accomodate AWG16-18-20 <u>Contact mating end #16</u>

SOCKET NUMBERING SYSTEM

S500, S501, S502

	S500	A	1	A	8
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

	MS - Number	LEACH P/N	Number Of Contacts	Hardware
MIL-S-12883/48A	-01	S500-A8A11	9xMIL-C-39029/92-535 2xMIL-C-39029/92-533	Loose Stud
	-02	S500-A9A11	9xMIL-C-39029/92-535 2xMIL-C-39029/92-533	Fixed Stud
	-05	S501-E8A11	9xMIL-C-39029/92-535 2xMIL-C-39029/92-533	Loose Stud
	-03	S501-E9A11	9xMIL-C-39029/92-535 2xMIL-C-39029/92-533	Fixed Stud