

PRODUCT	DESCRIPTION	PAGES
E110 Series	1PDT, 10 AMP RELAY	2 - 6
E310 Series	3PDT, 10 AMP RELAY	7 - 12
E210 / E215 Series	2PDT, 10/15 AMP RELAY	13 - 19
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E610 / E615 Series	6PDT, 10/15 AMP RELAY	25 - 28
E210 / E215 Track Mount Series	2PDT, 10/15 AMP RELAY	29 - 33
E410 / E415 Track Mount Series	4PDT, 10/15 AMP RELAY	34 - 36



E110

General characteristics

No. of poles	1 Form C (1PDT)
Volume	3.3 cm ³ [.2 in ³]
Mass	17 grams [.037 lb. Max]

Switching characteristics

Operate time @ 25° C	6 ms max.
Release time @ 25° C	6 ms max.
Bounce time	1 ms max.
Mechanical Life	400,000 cycles

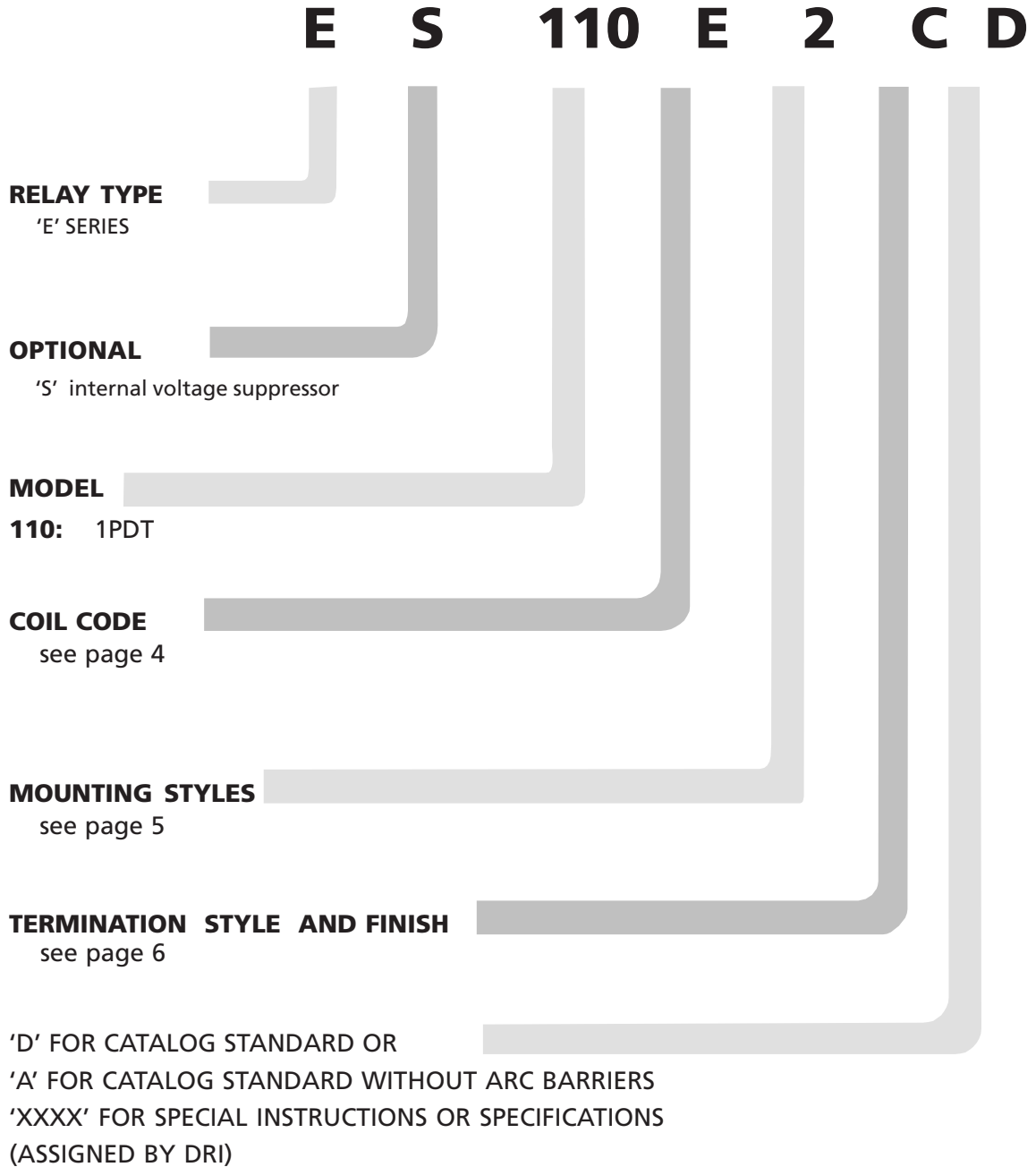
Contact rating	Type of load (High level)	cycles x 10 ³	28Vdc		115 Vac 400 Hz 1 phase	
	Resistive	50	10 amps	10 amps		
	Inductive	10	6 amps	n/a		
	Inductive	20	n/a	8 amps		
	Motor	50	4 amps	4 amps		
	Lamp	50	2 amps	2 amps		
	Overload current	n/a	30 amps	60 amps		
	Rupture current	n/a	32 amps	80 amps		

Environmental characteristics

Temperature Range	-70°C to +125°C
Vibration (Sinusoidal)	30 g 70-3000 Hz
Shock, any axis	200 g 6 ms
- Mounting style 3	100 g 6 ms
Seal	Hermetic (1 x 10 ⁻⁸ atm cm ³ /s)

Electrical characteristics

Contact voltage drop (@ Rated resistive load)	
- Initial	150 mV Max.
- After guaranteed life	175 mV Max.
Dielectric strength @ sea level	
- Initial @ 60Hz	Coil to Case 1000 Vrms All other points 1250 Vrms
- After guaranteed life @ 60 Hz	750 Vrms 1000 Vrms
Insulation Resistance	
- Initial	100 Megohms min. @ 500 Vdc
- After life tests	50 Megohms min. @ 500 Vdc
Reference Military Specifications	MIL-PRF-83536

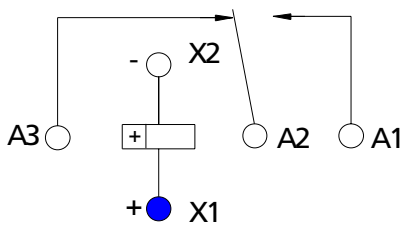


Coil characteristics

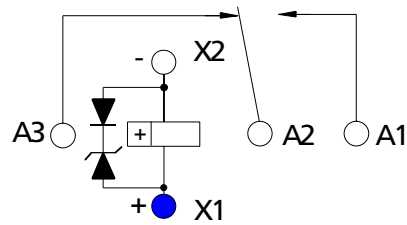
COIL CODE	DC				
	A	B	D	E	G
Nominal coil voltage	6	12	26.5	28	48
Maximum pick-up voltage at 25°C	3.3	6.5	13.5	13.5	24
Maximum pick-up voltage at 125°C	4.5	9	18	18	36
Maximum hold voltage at 125°C	2.3	4.5	7	7	12
Minimum drop-out voltage at -70°C	0.25	0.5	1.2	1.5	2.4
Coil resistance (ohms ± 10% at 25° C)	23	90	440	500	1400
Max coil transient suppression (where applicable) VDC	42	42	42	42	100

OTHER VOLTAGES AVAILABLE FROM FACTORY ON REQUEST

Circuit diagram



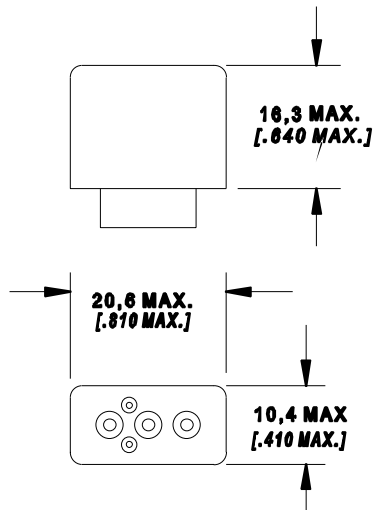
E110



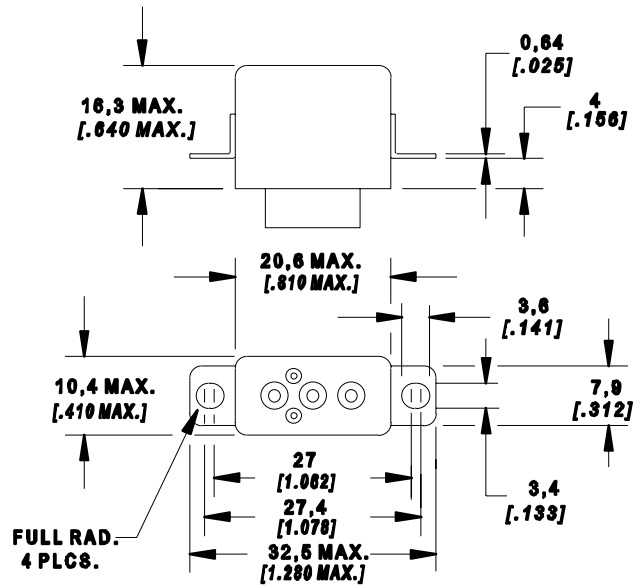
ES110
OPTIONAL INTERNAL
VOLTAGE SUPPRESSOR

Mounting Styles

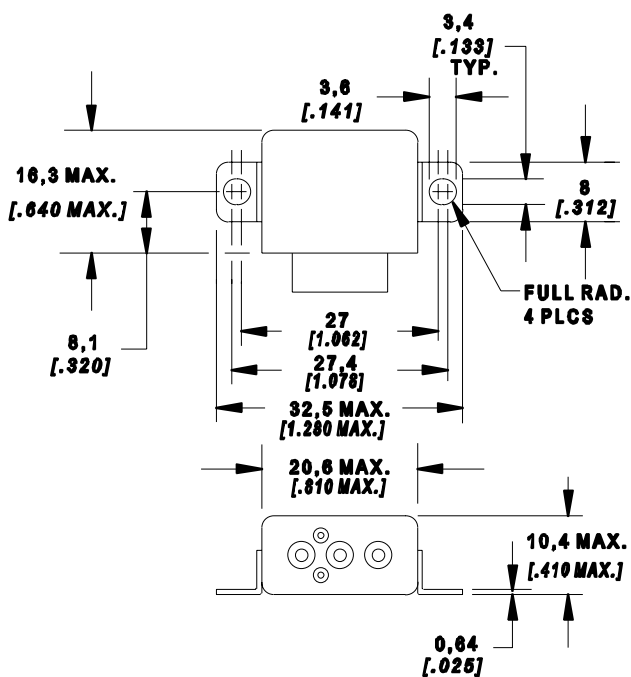
DIMENSIONS ARE IN MM (IN.)
UNLESS OTHERWISE SPECIFIED, TOLERANCE IS $\pm 0,25$ [.010]



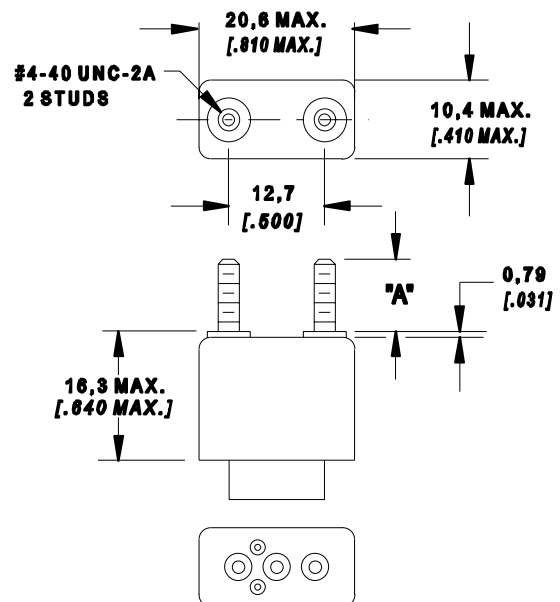
STYLE 1
NO MOUNT



STYLE 2
RAISED VERTICAL FLANGE MOUNT



STYLE 3
HORIZONTAL FLANGE MOUNT

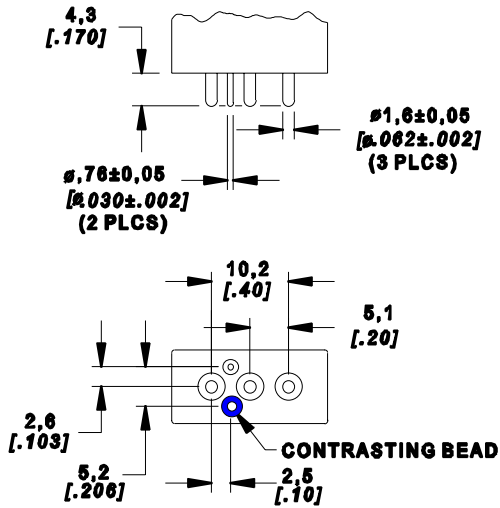


STYLE M and R
TOP STUD MOUNT

STYLE	DIM "A"
M	8,5 [.375]
R	6,35 [.250]

Termination styles

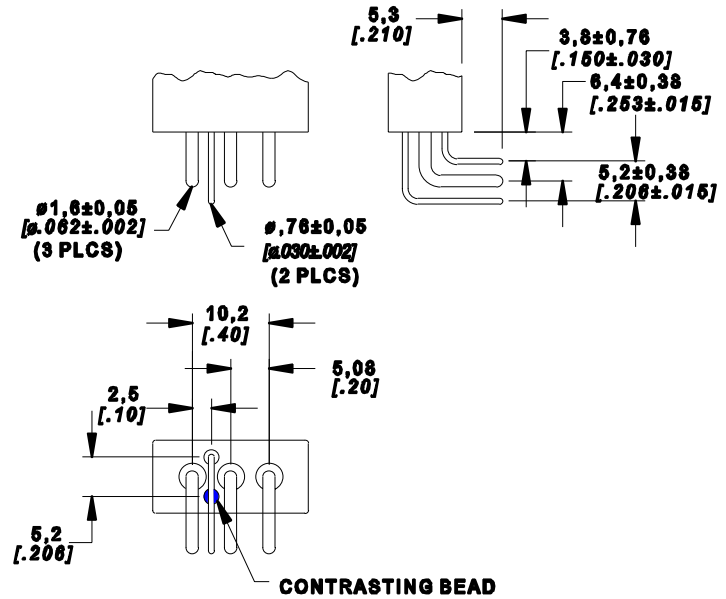
DIMENSIONS ARE IN MM (IN.)
UNLESS OTHERWISE SPECIFIED, TOLERANCE IS $\pm 0,25$ [.010]



SOLDER PIN

STYLE A: TIN PLATED

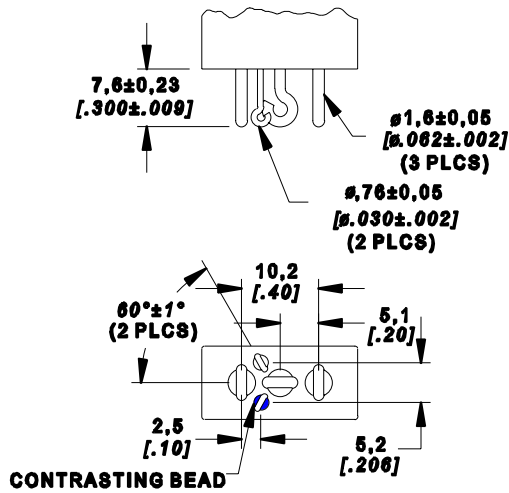
STYLE B: SOLDER DIPPED



90° SOLDER PIN

STYLE D: TIN PLATED

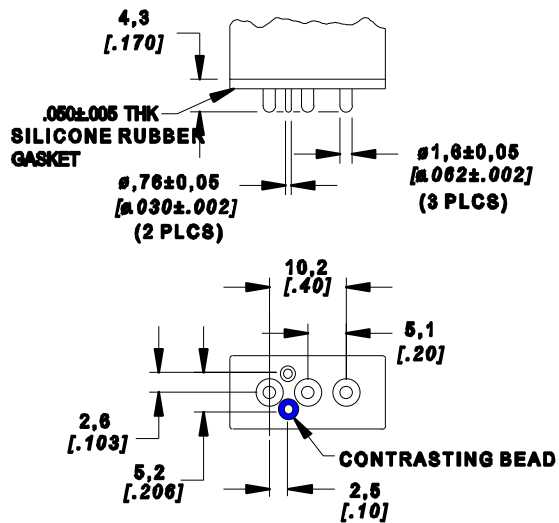
STYLE E: SOLDER DIPPED



SOLDER HOOK

STYLE H: TIN PLATED

STYLE J: SOLDER DIPPED



PLUG IN

STYLE M: GOLD PLATED



General characteristics

E310

No. of poles	3 Form C (3PDT)
Volume	6.9 cm ³ [.42 in ³]
Mass	28.2 grams [.062 lb. Max]

Switching characteristics

Operate time @ 25° C	6 ms max.
Release time @ 25° C	6 ms max.
Bounce time	1 ms max.
Mechanical Life	400,000 cycles

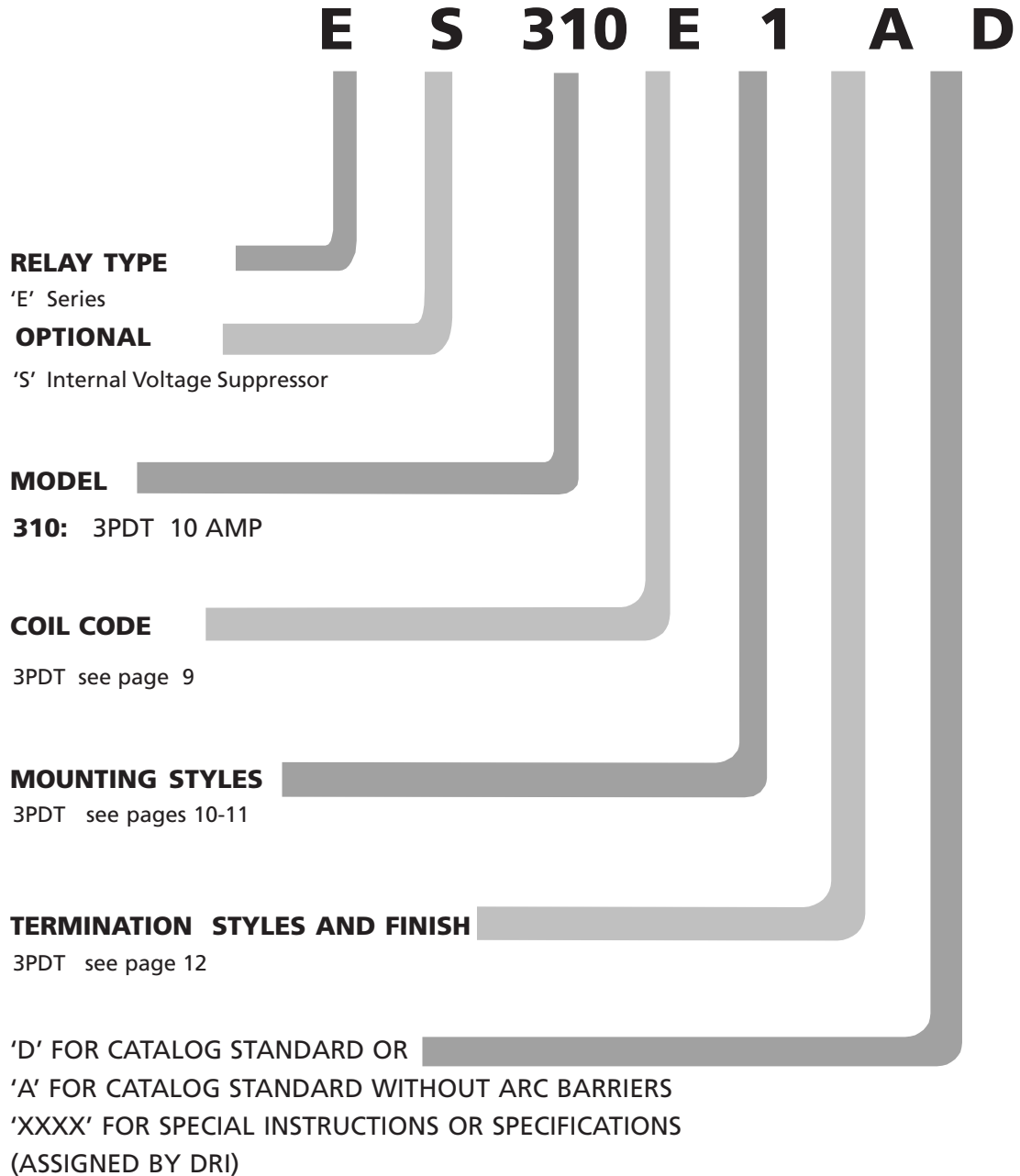
Contact rating	Type of load (High level)	Cycles x 10 ³	28 Vdc	115 Vac	115/200 Vac
				400 Hz 1 phase	400 Hz 3 phase
Resistive	50	10 amps	10 amps	10 amps	
Inductive	10	6 amps	n/a	n/a	
Inductive	20	n/a	8 amps	8 amps	
Motor	50	4 amps	4 amps	4 amps	
Lamp	50	2 amps	2 amps	n/a	
Overload current	n/a	30 amps	60 amps	60 amps	
Rupture current	n/a	40 amps	80 amps	80 amps	

Environmental characteristics

Temperature Range	-70°C to +125°C
Vibration (Sinusoidal)	30 g 10-3000 Hz
- Mounting style 3	20 g 57-3000 Hz
- Mounting Style 4 Track Mount	20 g 500-3000 Hz
- Mounting Style 4 Track Mount	10 g 55-500 Hz
- Mounting Style 4 Track Mount	0.06 in DA 10 -55 Hz
Shock, any axis	200 g 6 ms
- Mounting style 3	100 g 6 ms
Seal	Hermetic (1 x 10 ⁻⁸ atm cm ³ /s)

Electrical characteristics

Contact voltage drop (@ Rated resistive load)	
- Initial	150 mV Max.
- After guaranteed life	175 mV Max.
Dielectric strength @ sea level	Coil to Case All other points
- Initial @ 60 Hz	1000 Vrms 1250 Vrms
- After life test @ 60 Hz	750 Vrms 1000 Vrms
Insulation Resistance	
- Initial	100 Megohms min. @ 500 Vdc
- After life tests	50 Megohms min. @ 500 Vdc
Reference Military Specifications	MIL-PRF-83536

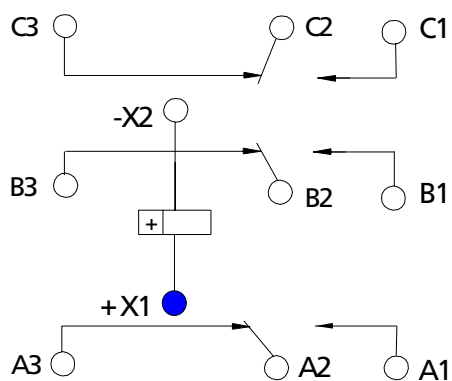


Coil Characteristics

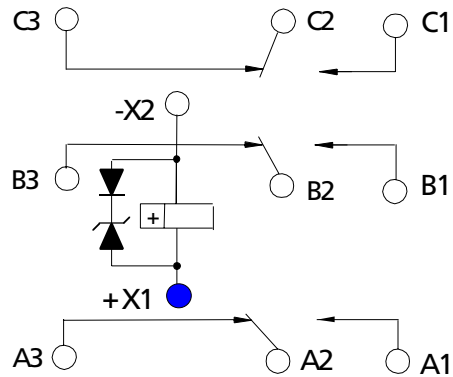
COIL CODE	DC				
	A	B	D	E	G
Nominal coil voltage	6	12	26.5	28	48
Maximum pick-up voltage at 25°C	3.3	6.6	13.5	13.5	24
Maximum pick-up voltage at 125°C	4.5	9	18	18	36
Maximum hold voltage at 125°C	2.3	4.5	7	7	14
Minimum drop-out voltage at -70°C	0.25	0.5	1.5	1.5	2.4
Coil resistance (ohms ± 10% at 25° C)	18	72	350	400	1150
Max coil transient suppression	42	42	42	42	100

OTHER VOLTAGES AVAILABLE FROM FACTORY ON REQUEST

Circuit Diagram



E310



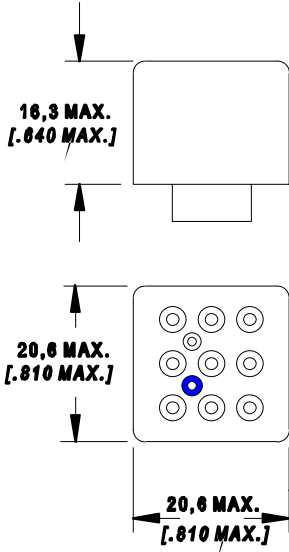
ES310

OPTIONAL INTERNAL
VOLTAGE SUPPRESSOR

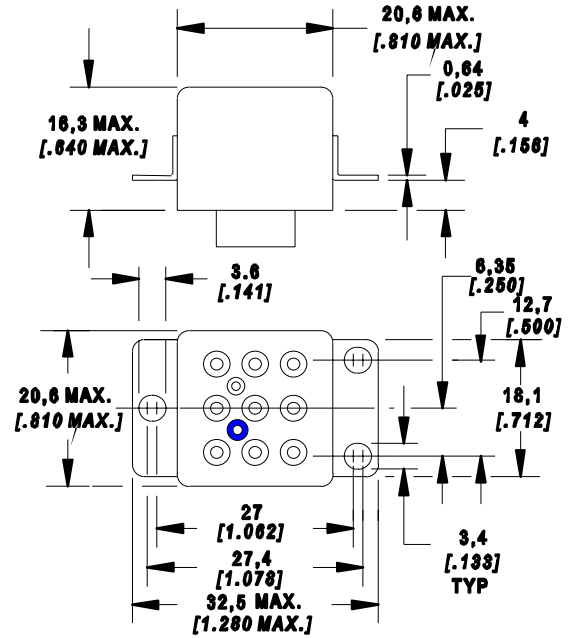
E310 Technical Characteristics

Mounting styles

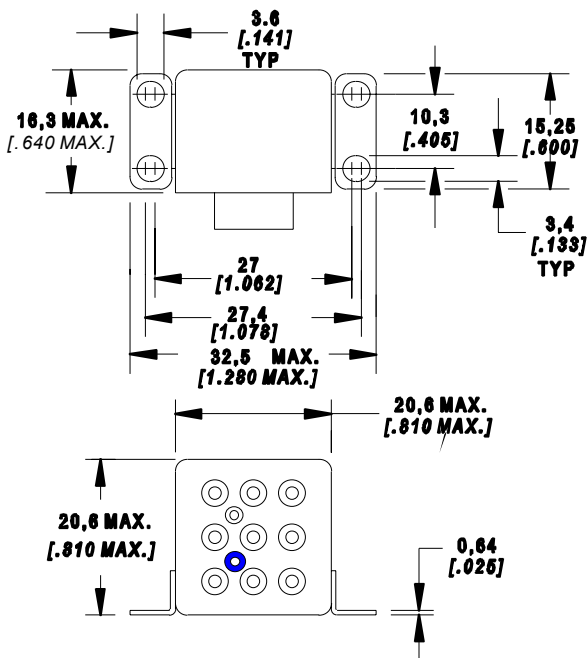
DIMENSIONS ARE IN MM (IN.)
UNLESS OTHERWISE SPECIFIED, TOLERANCE IS $\pm 0,25$ [.010]



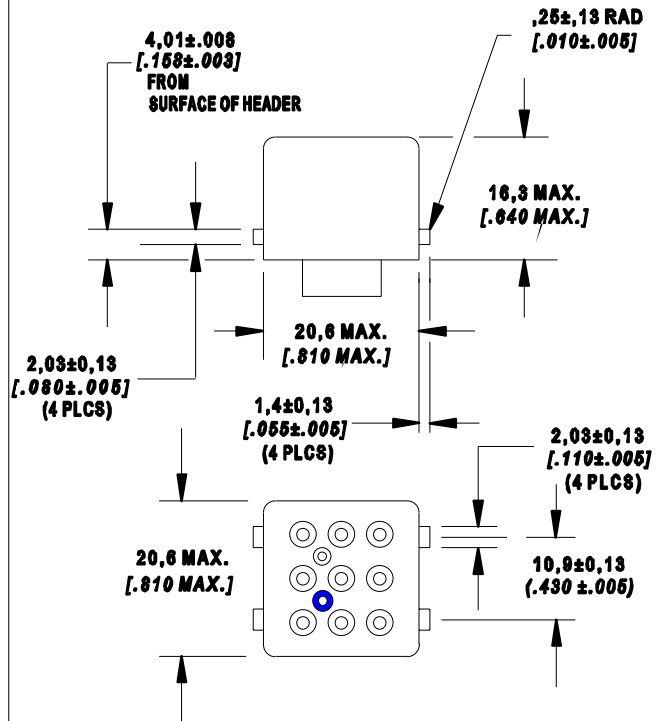
STYLE 1
NO MOUNT



STYLE 2
RAISED VERTICAL FLANGE MOUNT



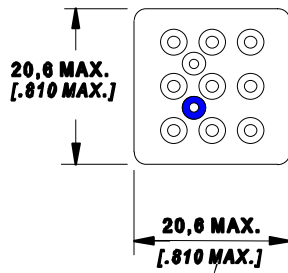
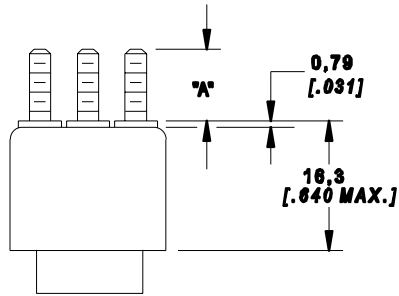
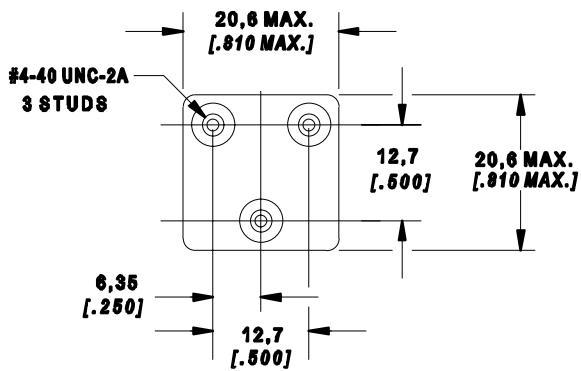
STYLE 3
HORIZONTAL FLANGE MOUNT



STYLE 4
TRACK MOUNT A

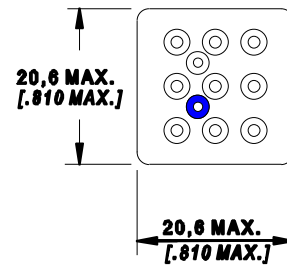
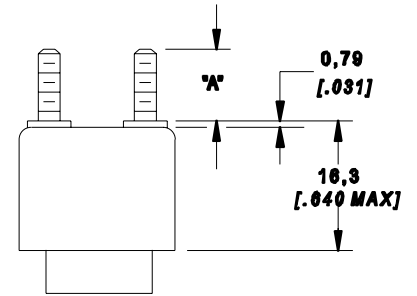
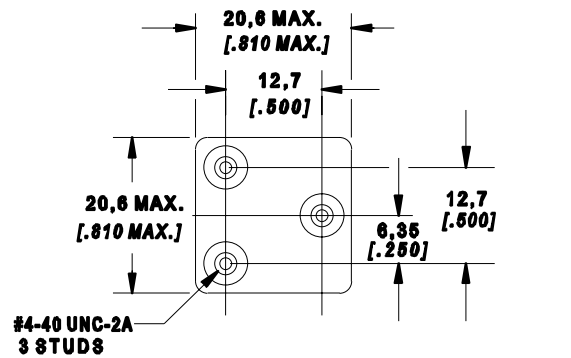
■ Mounting styles [cont'd.]

DIMENSIONS ARE IN MM (IN.)
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TOP STUD MOUNT

STYLE	DIM "A"
M	9,5 (.375)
R	6,35 (.250)

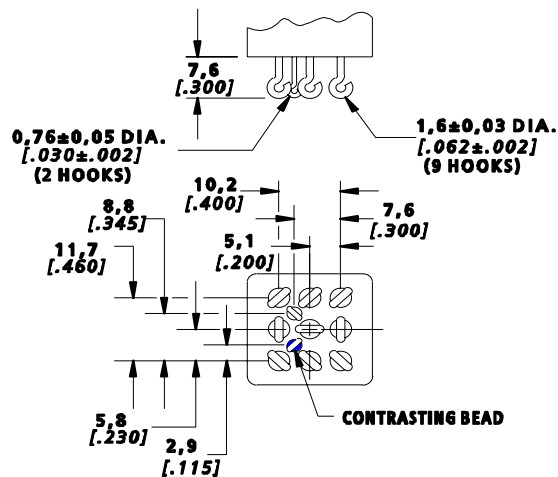
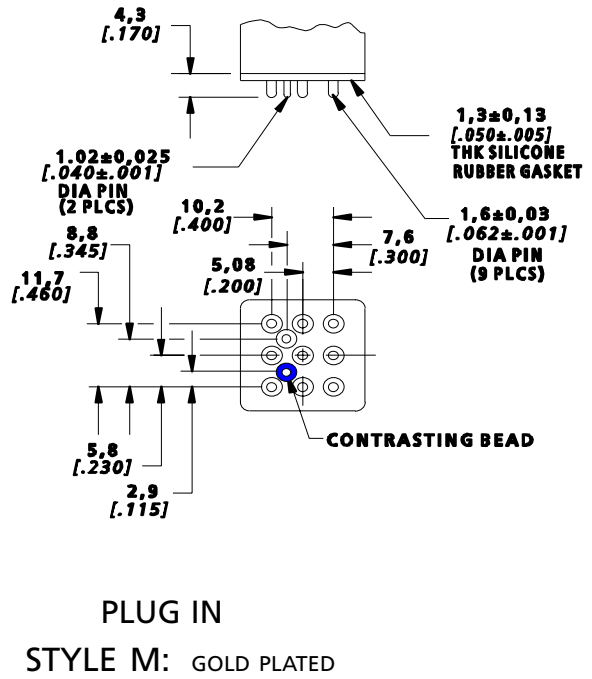
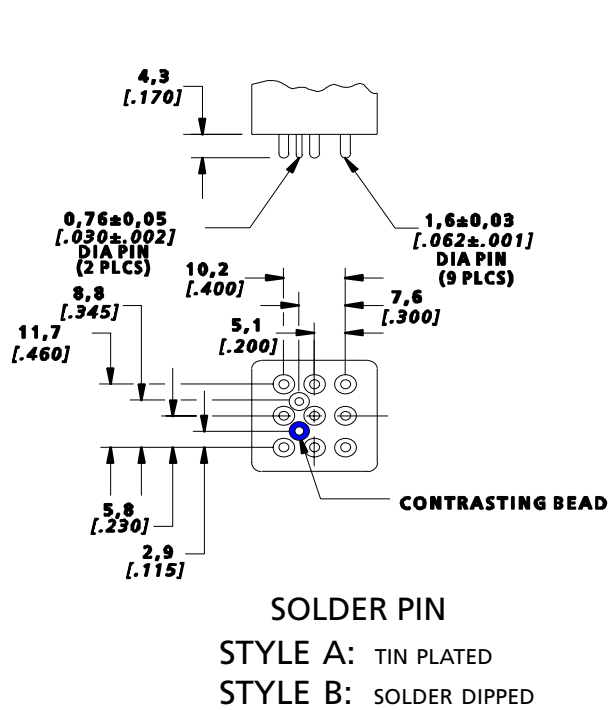


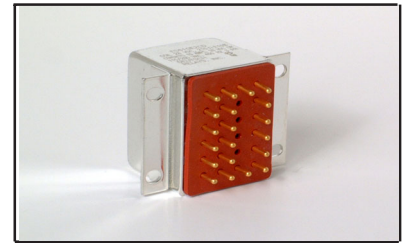
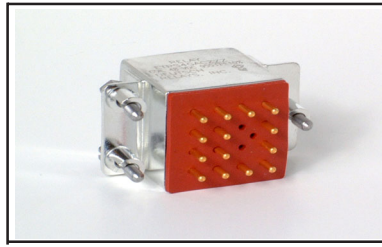
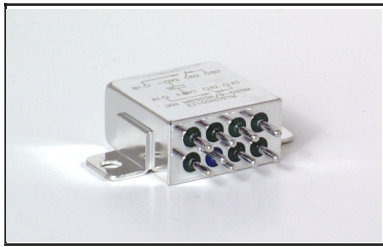
TOP STUD MOUNT

STYLE	DIM "A"
T	9,5 (.375)
U	6,35 (.250)

Termination styles

DIMENSIONS ARE IN MM (IN.)
UNLESS OTHERWISE SPECIFIED, TOLERANCE IS $\pm 0,25$ [.010]





General characteristics

	210/215	410/415	610/615
No. of poles	2 Form C (2 DPDT)	4 Form C (4PDT)	6 Form C (6PDT)
Volume	3.3 cm ³ [.52 in ³]	3.3 cm ³ [1.03 in ³]	3.3 cm ³ [1.53 in ³]
Mass	46 grams [.10 lb. Max]	77 grams [.17 lb. Max]	118 grams [.26 lb. Max]

Switching characteristics

Operate time @ 25°C with DC COIL with AC Coil	10 ms max. 20 ms max.	15 ms max. 20 ms max.	15 ms max. 20 ms max.
Release time @ 25°C with DC COIL with AC Coil	10 ms max. 50 ms max.	15 ms max. 50 ms max.	15 ms max. 50 ms max.
Bounce time	1 ms max.	1 ms max.	1 ms max.
Mechanical Life	400,000 cycles		

Contact rating	Type of load (High level)	Cycles x 10 ³	28 Vdc	115 Vac	115 Vac*	115/200 Vac	115/200 Vac*	10 AMP * = 10,000 CYCLES
				400 Hz 1 phase	50/60 Hz 1 phase	400 Hz 3 phase	50/60 Hz 3 phase	
	Resistive	100	10 amps	10 amps	2.5 amps	10 amps	2.5 amps	
	Inductive	20	8 amps	8 amps	n/a	8 amps	n/a	
	Inductive	10	n/a	n/a	2.5 amps	n/a	2.5 amps	
	Motor	100	4 amps	4 amps	2 amp	4 amps	2 amps	
	Lamp	100	2 amps	2 amps	1 amps	n/a	n/a	
	Overload current	n/a	40 amps	60 amps	n/a	60 amps	n/a	
	Rupture current	n/a	50 amps	80 amps	n/a	80 amps	n/a	

Contact rating	Type of load (High level)	Cycles x 10 ³	28 Vdc	115 Vac	115 Vac*	115/200 Vac	115/200 Vac*	15 AMP * = 10,000 CYCLES
				400 Hz 1 phase	50/60 Hz 1 phase	400 Hz 3 phase	50/60 Hz 3 phase	
	Resistive	100	15 amps	15 amps	3.75 amps	15 amps	3.75 amps	
	Inductive	20	10 amps	10 amps	n/a	10 amps	n/a	
	Inductive	10	n/a	n/a	3.75 amps	n/a	3.75 amps	
	Motor	100	6 amps	6 amps	3 amp	6 amps	3 amps	
	Lamp	100	3 amps	3 amps	1.5 amps	n/a	n/a	
	Overload current	n/a	40 amps	60 amps	n/a	60 amps	n/a	
	Rupture current	n/a	50 amps	80 amps	n/a	80 amps	n/a	

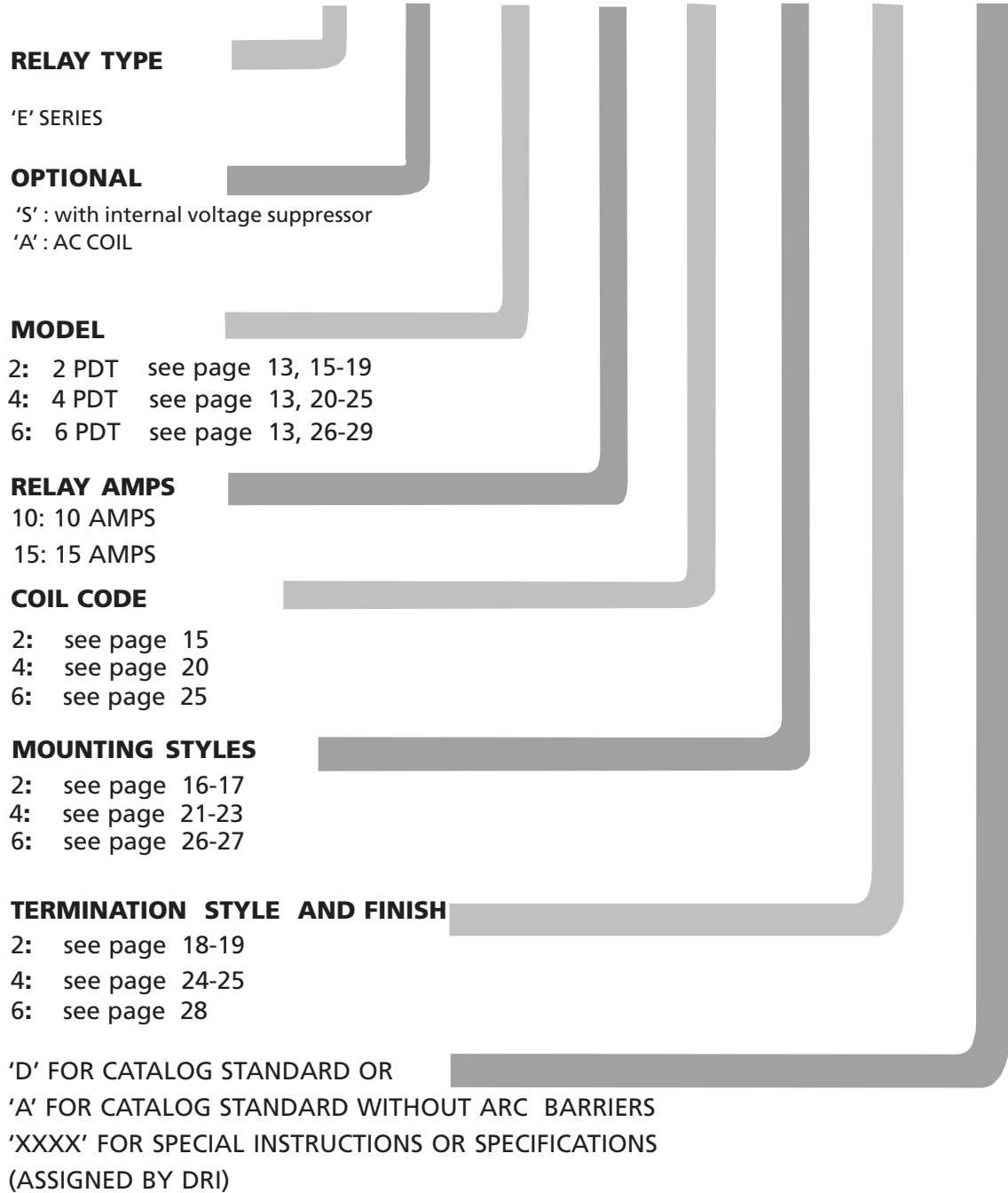
Environmental characteristics

Temperature Range	-70°C to +125°C
Vibration, any axis (Sinusoidal) E210/E410 E410 Mounting Style 3 E610	30 g 10-3000 Hz 20 g 57-3000 Hz 20 g 10-2000 Hz
Shock, any axis E410 Mounting Style 3 E610	200 g 6 ms 100 g 6 ms 50 g 6-9 ms
Seal	Hermetic (1 x 10 ⁻⁸ atm cm ³ /s)

Electrical characteristics

Contact voltage drop (@ Rated resistive load)	
- Initial	150 mV Max.
- After guaranteed life	175 mV Max.
Dielectric strength @ sea level	Coil to Case All other points
- Initial @ 60 Hz	1000 Vrms 1250 Vrms
- After guaranteed life	1000 Vrms 1000 Vrms
Insulation Resistance	
- Initial	100 Megohms min. @ 500 Vdc
- After life tests	50 Megohms min. @ 500 Vdc
Reference Military Specifications	MIL-PRF-83536

E S 2 10 E 2 C D

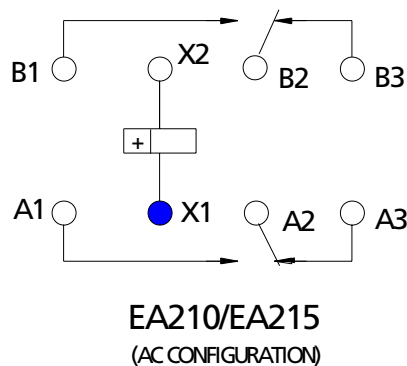
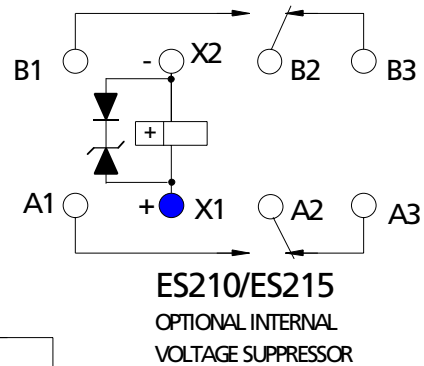
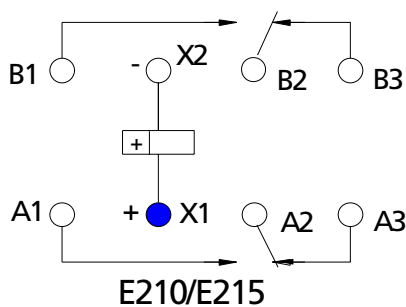


Coil characteristics

COIL CODE	DC						AC		
	A	B	D	E	G	J	K	L	N
Nominal coil voltage	6	12	26.5	28	48	110	28-400 Hz	115-400 Hz	115-50/60/400 Hz
Maximum pick-up voltage at 25°C	3.2	6.5	13.5	14	24	55	16.2	73	73
Maximum pick-up voltage at 125°C	4.5	9.0	18	18.7	36	70	22.4	90	90
Maximum hold voltage at 125°C	2.3	4.5	7.0	7.0	14	30	9.0	30	40
Minimum drop-out voltage at -70°C	0.25	0.5	1.2	1.5	2	5	1.0	5	5
Coil resistance (ohms ± 10% at 25° C)	20	80	320	320	955	5000	-	-	-
Maximum coil transient suppression	42	42	42	42	100	180	-	-	-

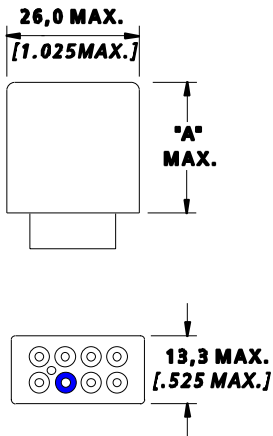
OTHER VOLTAGES AVAILABLE FROM FACTORY ON REQUEST

Circuit diagram

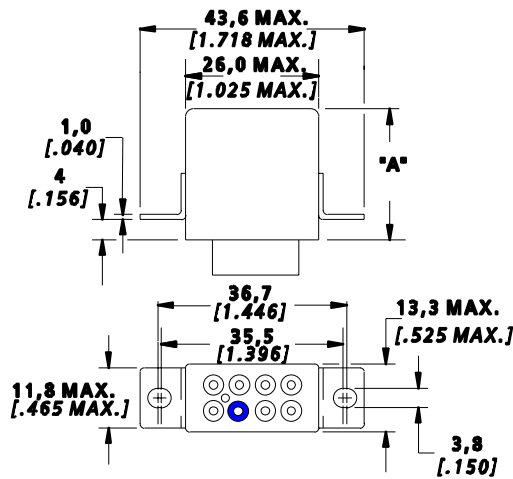


■ Mounting styles

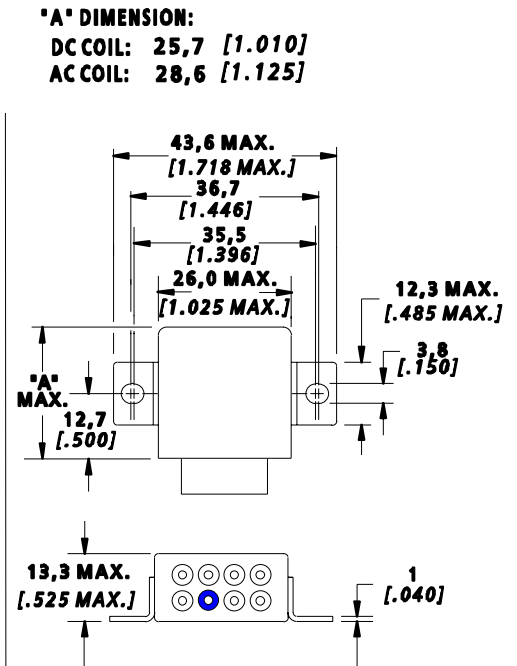
DIMENSIONS ARE IN MM (IN.)
UNLESS OTHERWISE SPECIFIED, TOLERANCE IS ±0,25 [.010]



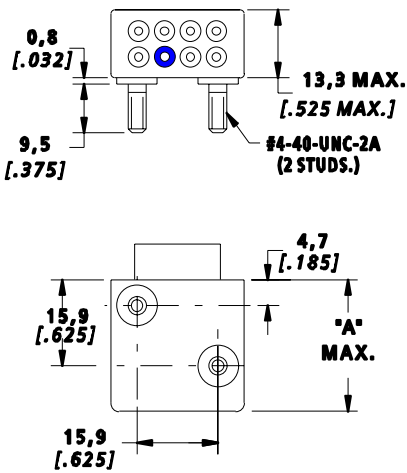
STYLE 1:
NO MOUNT



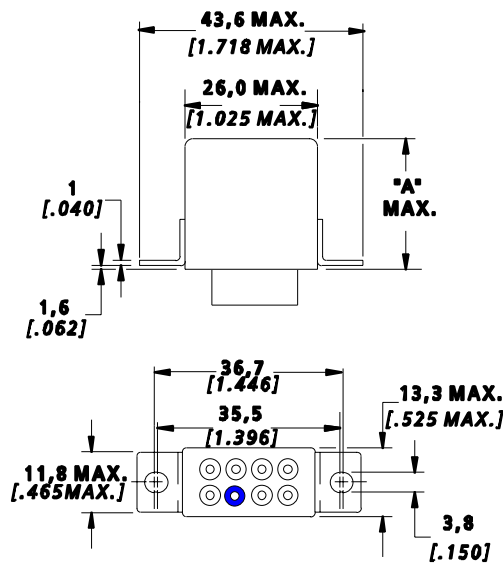
STYLE 2:
RAISED VERTICAL
FLANGE MOUNT



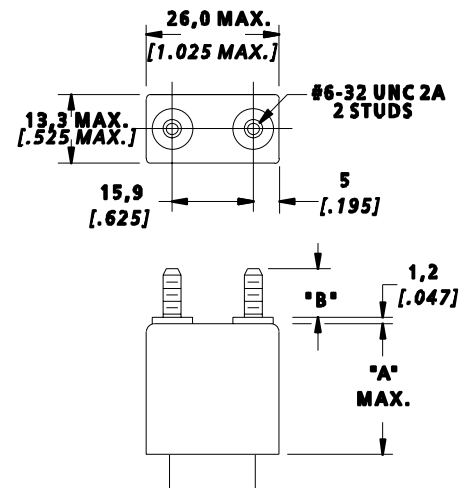
STYLE 3:
HORIZONTAL
FLANGE MOUNT



STYLE D:
SIDE STUD



STYLE N:
VERTICAL FLANGE

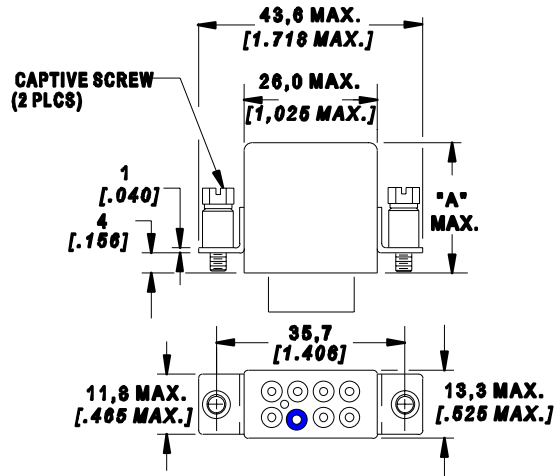


TOP STUD MOUNT

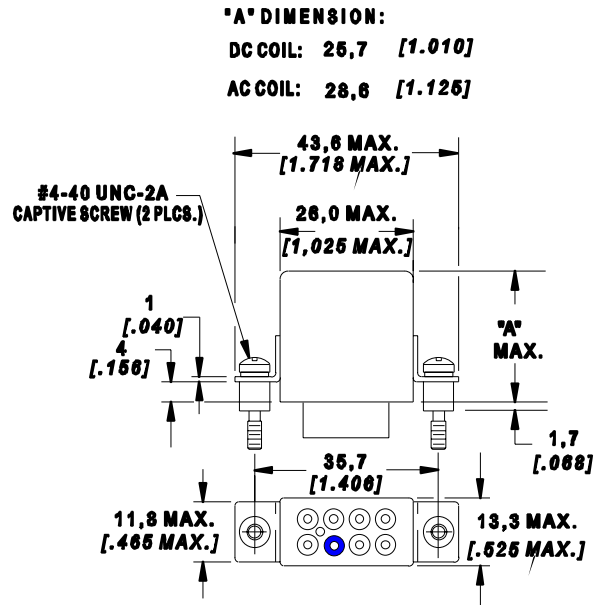
STYLE	DIM "B"
M	9,5 [.375]
R	6,35 [.250]

Mounting styles (cont.)

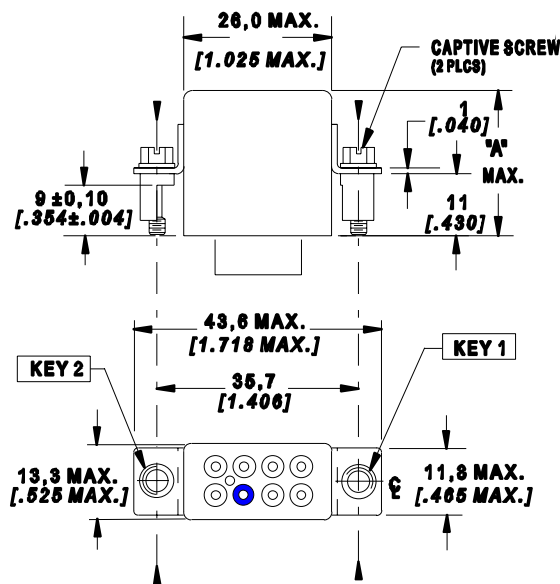
DIMENSIONS ARE IN MM (IN.)
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STYLE 8: M3 CAPTIVE SCREWS
STYLE C: #4-40 UNC CAPTIVE SCREWS
RAISED VERTICAL FLANGE MOUNT
WITH CAPTIVE HARDWARE



STYLE G:
RAISED VERTICAL FLANGE MOUNT
WITH CAPTIVE HARDWARE



KEYING SYSTEM
WITH CAPTIVE HARDWARE

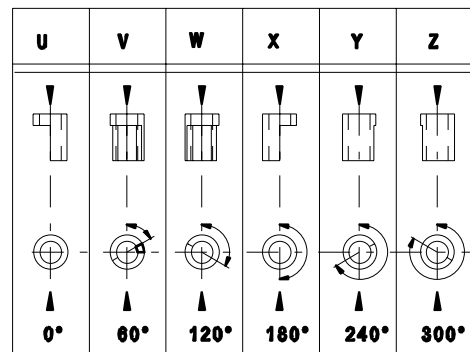
STYLE A: M3 CAPTIVE SCREWS
STYLE B: #4-40 UNC CAPTIVE SCREWS

'A' DIMENSION:

DC COIL: 25,7 [1.010]

AC COIL: 28,6 [1.125]

KEYING POSITIONS

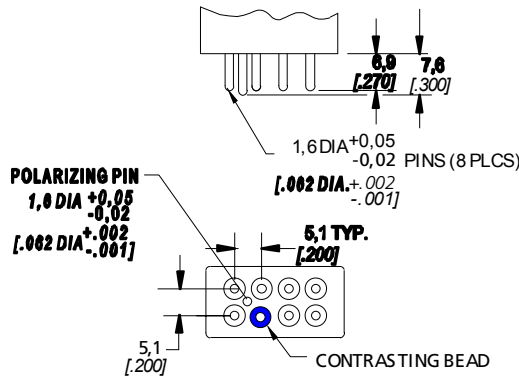


COIL	SUPPRESSED			
	KEY 1	KEY 2	KEY 1	KEY 2
6 VDC	V	V	V	X
12 VDC	X	V	X	X
26.5 VDC	X	Y	V	Z
28 VDC	X	Z	Y	Y
48 VDC	V	U	V	W
110 VDC	X	U	X	W
115 VAC	U	V		

KEYING CONFIGURATION SHOWN IN TABLE COMES STANDARD WITH SPECIFIED COIL VOLTAGE. FOR ORDERING OTHER KEYING POSITIONS USE 2 DIGIT (XX) 'SPECIAL INSTRUCTIONS' ON END OF P/N.
EX: E210AACYY

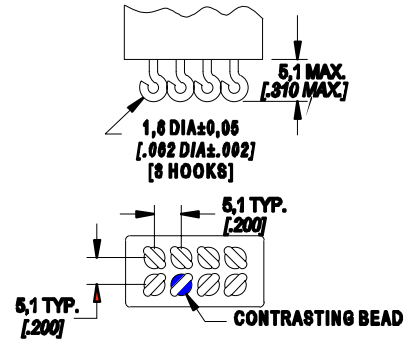
Termination Styles

DIMENSIONS ARE IN MM (IN.)
UNLESS OTHERWISE SPECIFIED, TOLERANCE IS $\pm 0,25$ [.010]



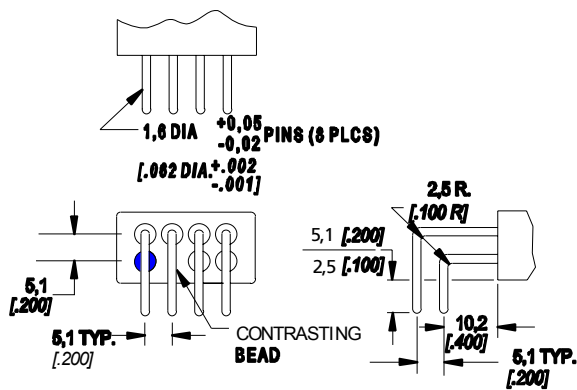
SOLDER PIN

STYLE A: TIN PLATED
STYLE B: SOLDER DIPPED



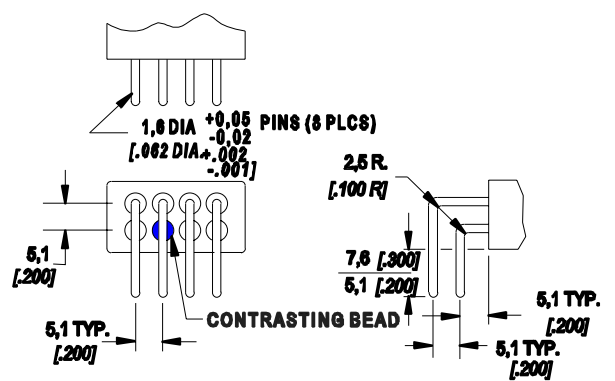
SOLDER HOOK

STYLE H: TIN PLATED
STYLE J: SOLDER DIPPED



90° SOLDER PIN

STYLE D: TIN PLATED
STYLE E: SOLDER DIPPED

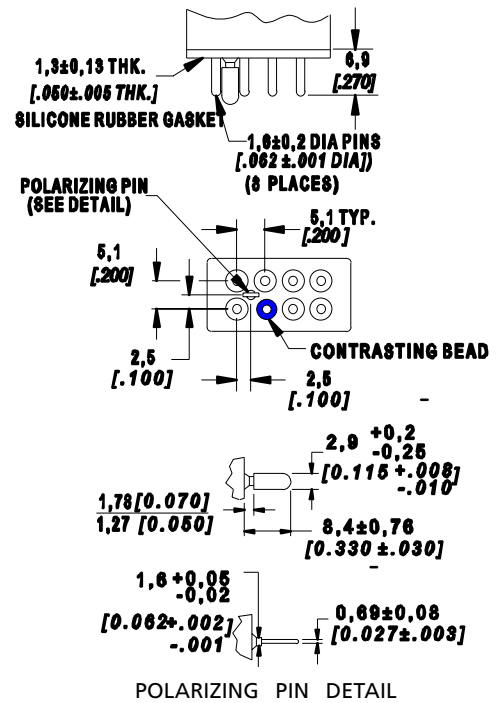
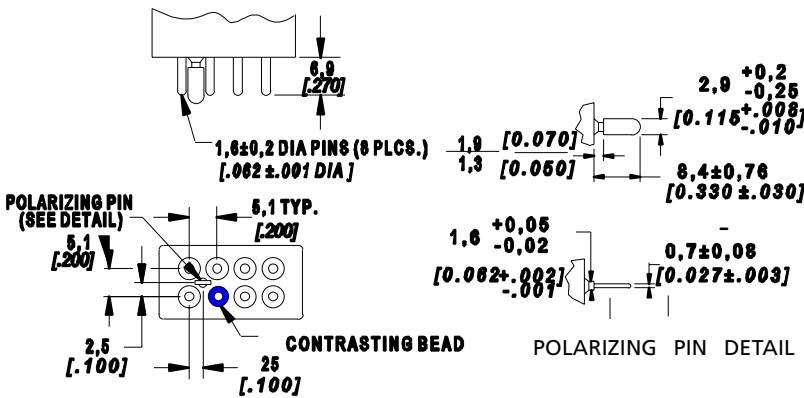
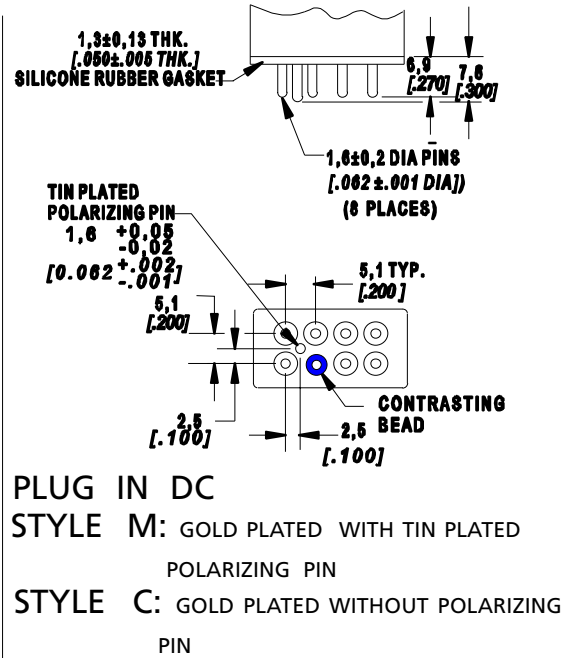
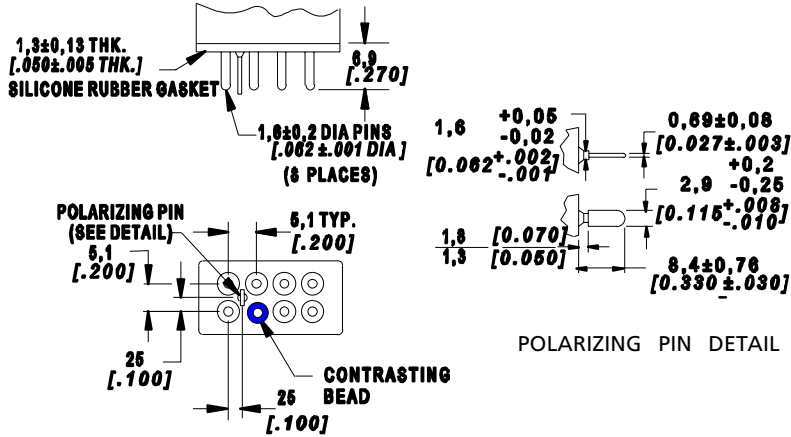


90° SOLDER PIN

STYLE Q: TIN PLATED
STYLE R: SOLDER DIPPED

Termination Styles

DIMENSIONS ARE IN MM (IN.)
UNLESS OTHERWISE SPECIFIED, TOLERANCE IS $\pm 0,25$ [.010]

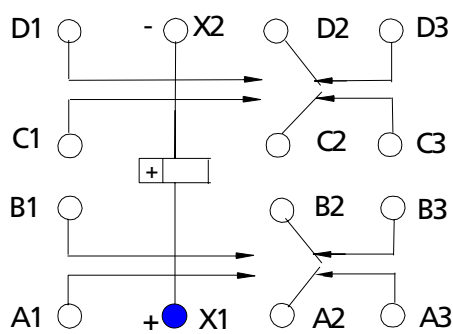


Coil Characteristics

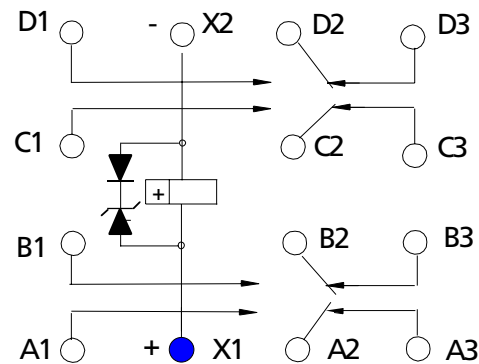
COIL CODE	DC						AC		
	A	B	D	E	G	J	K	L	N
Nominal coil voltage	6	12	26.5	28	48	110	28-400 Hz	115-400 Hz	115-50/60/400 Hz
Maximum pick-up voltage at 25°C	3.2	6.5	13.5	14	24	55	16.2	73	73
Maximum pick-up voltage at 125°C	4.5	9.0	18.7	19.5	36	70	22.4	90	90
Minimum drop-out voltage at -70° C	0.25	0.5	1.5	1.5	2	5	1.0	5	5
Maximum hold voltage at 125°C	2.3	4.5	7.0	7.0	14	30	9.0	30	40
Coil resistance (ohms ± 10% at 25° C)	18	70	290	290	955	5000	-	-	-
Maximum coil transient suppression	42	42	42	42	100	180	-	-	-

OTHER VOLTAGES AVAILABLE FROM FACTORY ON REQUEST

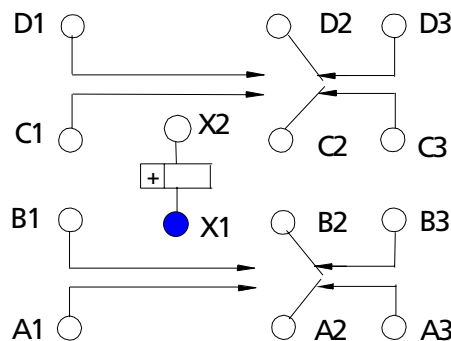
Circuit Diagram



E410/E415



ES410/ES415
OPTIONAL INTERNAL
VOLTAGE SUPPRESSOR

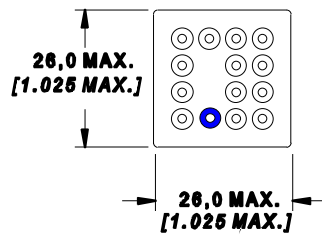
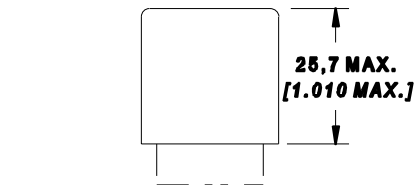


EA410/EA415
(AC CONFIGURATION)

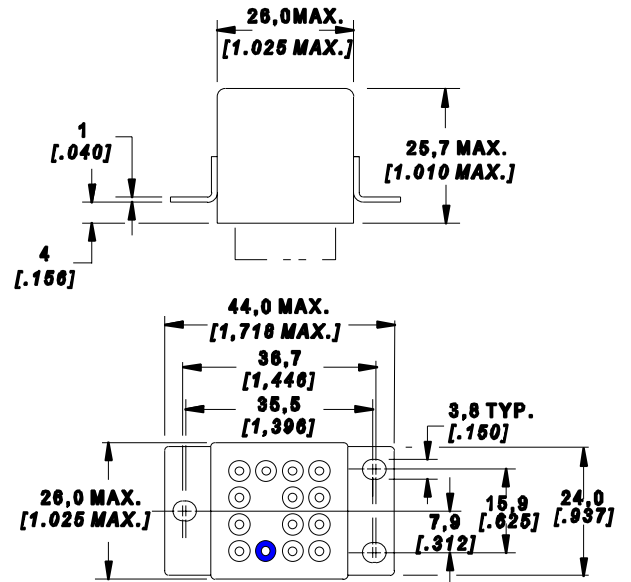
■ Mounting styles

DIMENSIONS ARE IN MM (IN.)

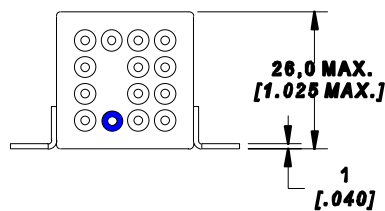
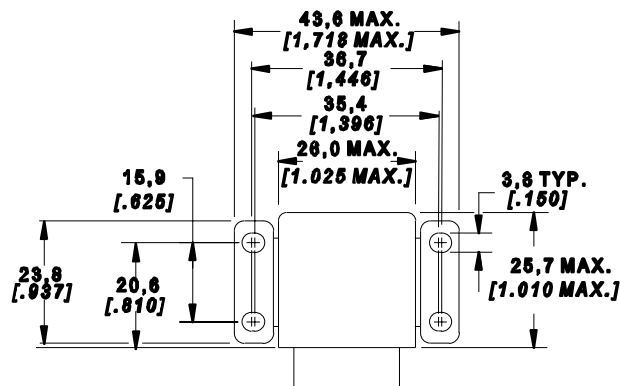
UNLESS OTHERWISE SPECIFIED, TOLERANCE IS $\pm 0,25$ [.010]



STYLE 1
NO MOUNT



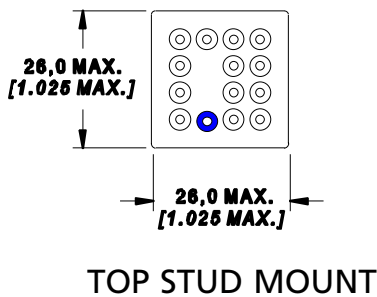
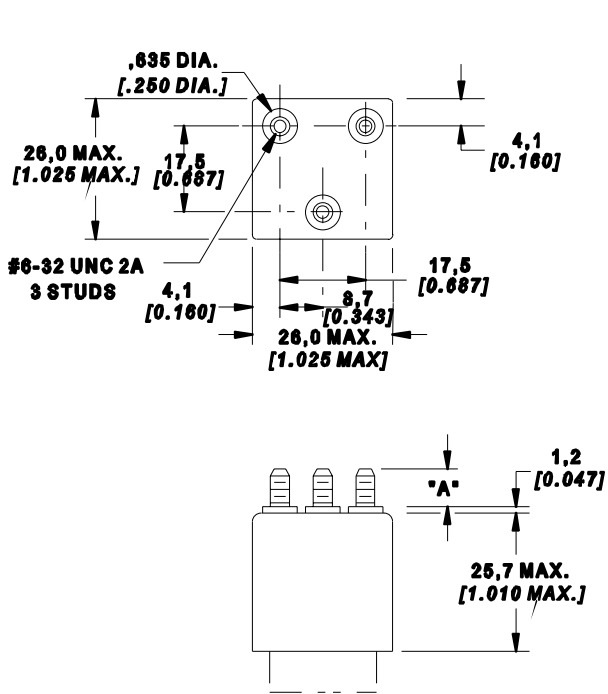
STYLE 2
RAISED VERTICAL FLANGE MOUNT



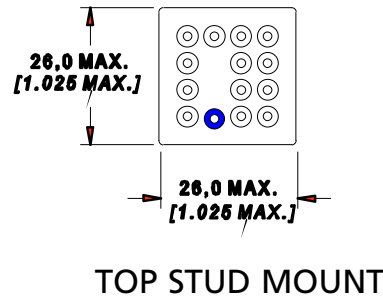
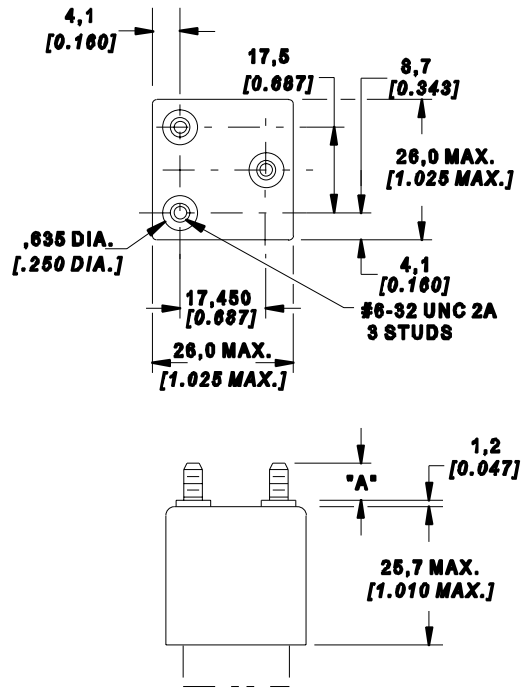
STYLE 3
HORIZONTAL FLANGE MOUNT

■ Mounting styles [cont'd.]

DIMENSIONS IN MM (IN.)
UNLESS OTHERWISE SPECIFIED, TOLERANCE IS $\pm 0,25$ [.010]



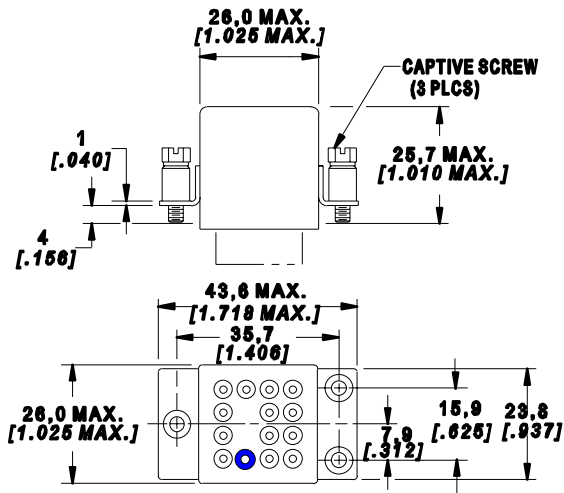
STYLE DIM "A"	
O	9,5 [.375]
R	6,35 [.250]



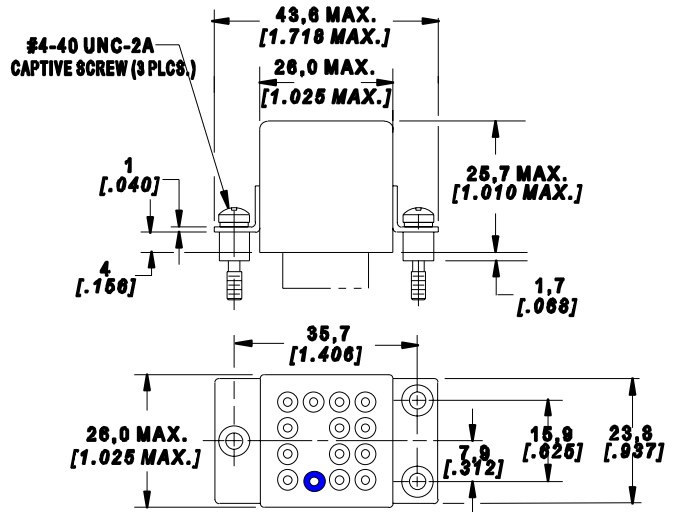
STYLE DIM "A"	
T	9,5 [.375]
U	6,35 [.250]

■ Mounting styles [cont.]

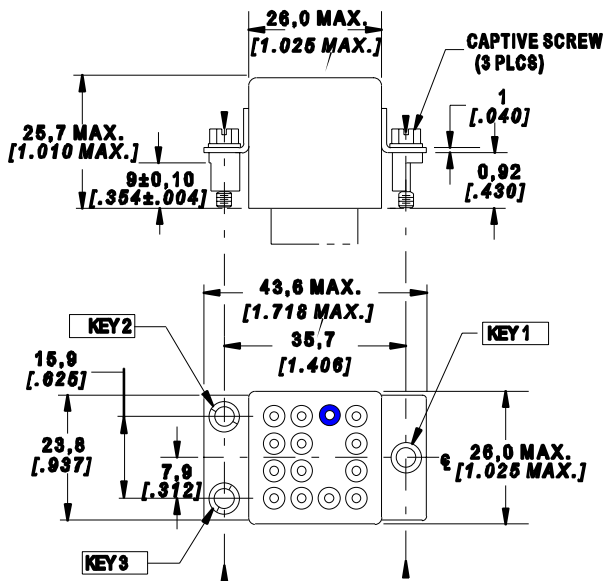
DIMENSIONS ARE IN MM (IN.)
UNLESS OTHERWISE SPECIFIED, TOLERANCE IS ±0,25 [.010]



STYLE 8: M3 CAPTIVE SCREWS
STYLE C: #4-40 UNC CAPTIVE SCREWS
RAISED VERTICAL FLANGE MOUNT
WITH CAPTIVE HARDWARE



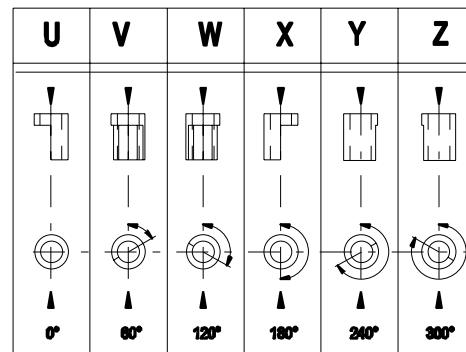
STYLE G:
RAISED VERTICAL FLANGE MOUNT
WITH CAPTIVE HARDWARE



KEYING SYSTEM
WITH CAPTIVE HARDWARE

STYLE A: M3 CAPTIVE SCREWS
STYLE B: #4-40 UNC CAPTIVE SCREWS

KEYING POSITIONS

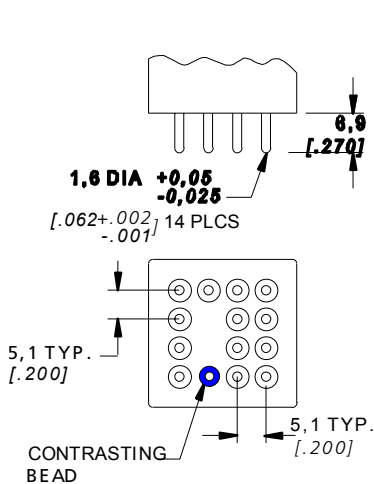


COIL	SUPPRESSED					
	KEY 1	KEY 2	KEY 3	KEY 1	KEY 2	KEY 3
6 VDC	V	Z	V	V	Z	X
12VDC	X	Z	V	X	Z	X
26.5 VDC	X	W	Z	X	W	U
28 VDC	X	W	V	X	W	X
48 VDC	V	Z	U	V	Z	W
110 VDC	X	Z	U	X	Z	W
115 VAC	U	Z	V			

KEYING CONFIGURATION SHOWN IN TABLE COMES STANDARD WITH SPECIFIED COIL VOLTAGE. FOR ORDERING OTHER KEYING POSITIONS USE 3 DIGIT (XXX) 'SPECIAL INSTRUCTIONS' ON END OF P/N.
EX: E410AACXYZ

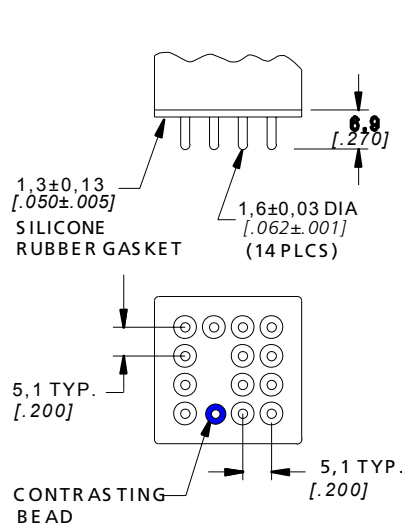
Termination styles

DIMENSIONS ARE IN MM (IN.)
UNLESS OTHERWISE SPECIFIED, TOLERANCE IS $\pm 0,25$ [.010]



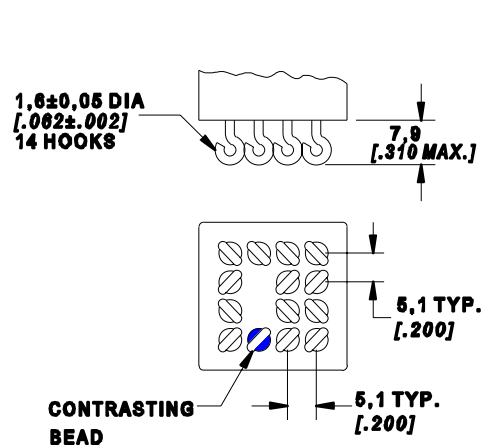
SOLDER PIN

STYLE A: TIN PLATED
STYLE B: SOLDER DIPPED



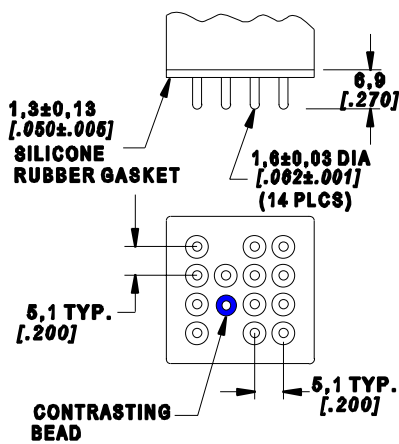
PLUG IN (DC)

STYLE C: GOLD PLATED



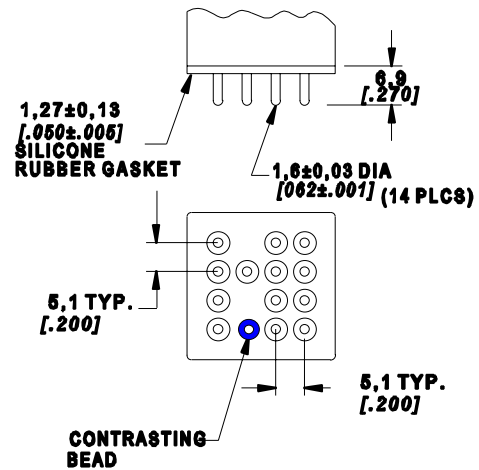
SOLDER HOOK

STYLE H: TIN PLATED
STYLE J: SOLDER DIPPED



PLUG IN (115 VAC)

STYLE K: GOLD PLATED WITH GASKET
STYLE L: TIN PLATED WITHOUT GASKET



PLUG IN (28 VAC)

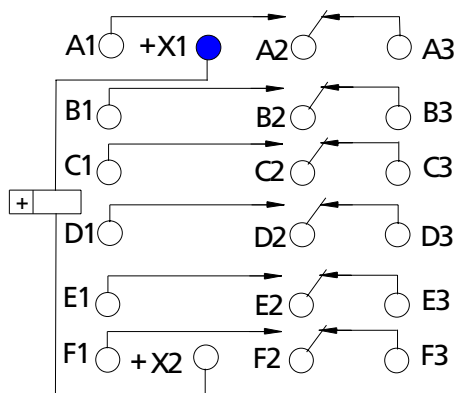
STYLE T: GOLD PLATED WITH GASKET
STYLE U: TIN PLATED WITHOUT GASKET

Coil characteristics

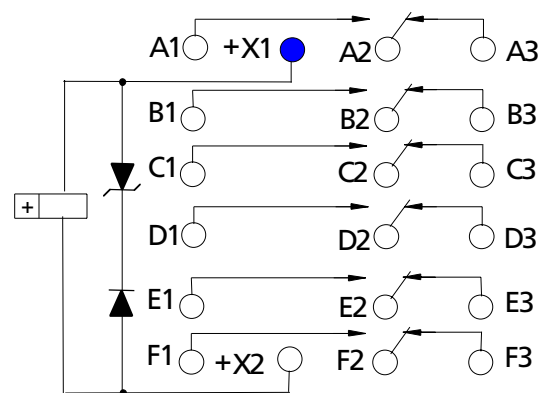
COIL CODE	DC						AC	
	A	B	D	E	G	J	L	N
Nominal coil voltage	6	12	26.5	28	48	110	115-400 Hz	115-50/60/400 Hz
Maximum pick-up voltage at 25°C	3.2	6.5	13.5	14	24	55	73	73
Maximum pick-up voltage at 125°C	4.5	9.0	18	18.7	36	70	90	90
Minimum drop-out voltage at -70° C	0.25	0.5	1.2	1.5	2	5	5	5
Maximum hold voltage at 125°C	2.3	4.5	7.0	7.0	14	30	30	40
Coil resistance (ohms ± 10% at 25° C)	10	40	210	210	620	3200	-	-
Maximum coil transient suppression	42	42	42	42	100	180	-	-

OTHER VOLTAGES AVAILABLE FROM FACTORY ON REQUEST

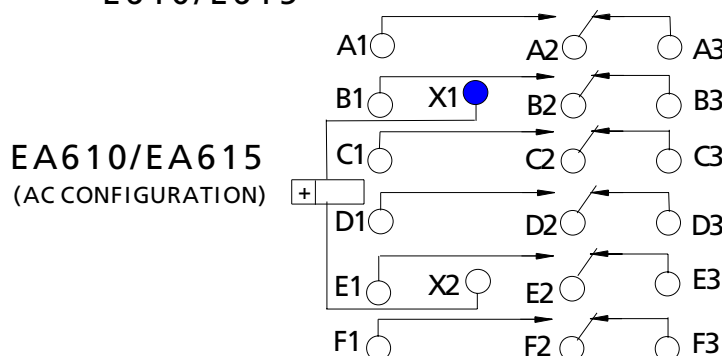
Circuit diagram



E610/E615



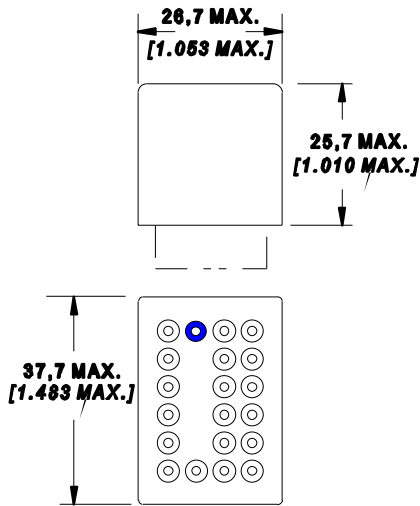
ES610/ES615
OPTIONAL INTERNAL
VOLTAGE SUPPRESSOR



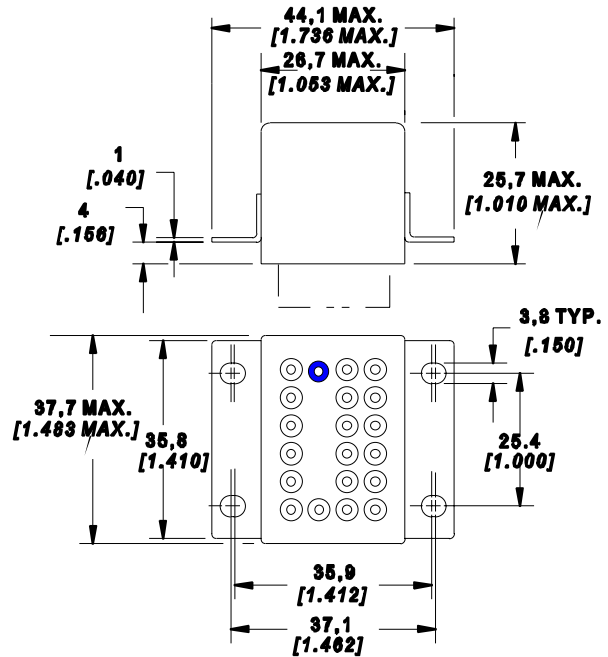
EA610/EA615
(AC CONFIGURATION)

Mounting Styles

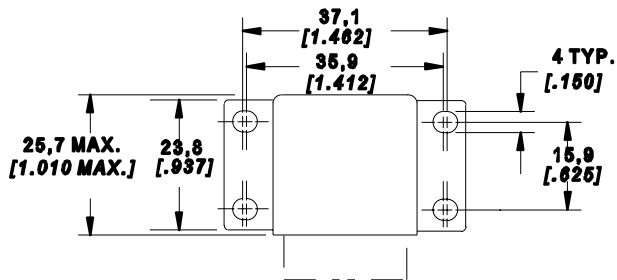
DIMENSIONS ARE IN MM (IN.)
UNLESS OTHERWISE SPECIFIED, TOLERANCE IS $\pm 0,25$ [.010]



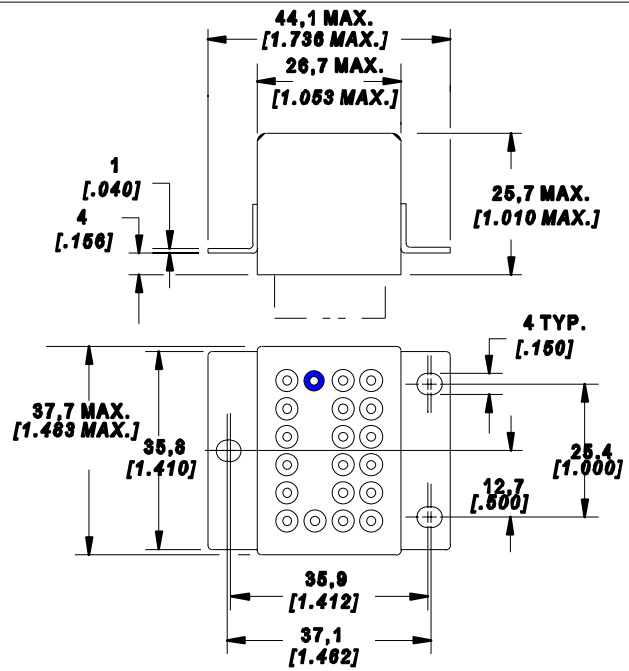
STYLE 1
NO MOUNT



STYLE 2
RAISED VERTICAL FLANGE MOUNT



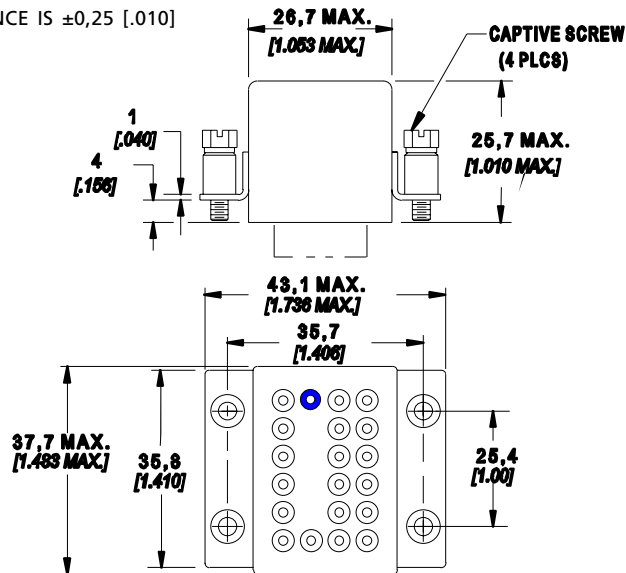
STYLE 3
HORIZONTAL FLANGE MOUNT



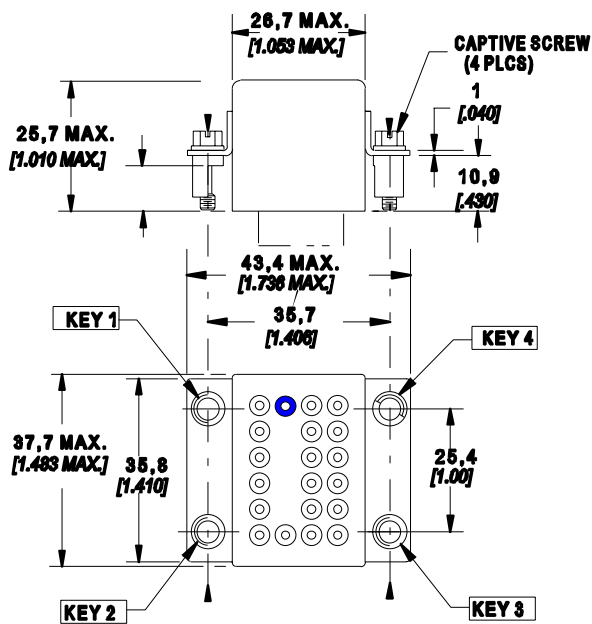
STYLE H
RAISED VERTICAL FLANGE MOUNT
(3 MOUNTING HOLES)

■ Mounting styles

DIMENSIONS ARE IN MM (IN.)
UNLESS OTHERWISE SPECIFIED, TOLERANCE IS $\pm 0,25$ [.010]



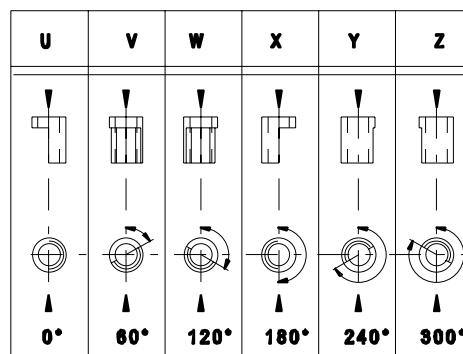
STYLE 8: M3 CAPTIVE SCREWS
STYLE C: #4-40 UNC CAPTIVE SCREWS
RAISED VERTICAL FLANGE MOUNT
WITH CAPTIVE HARDWARE



KEYING SYSTEM
WITH CAPTIVE HARDWARE

STYLE N: M3 CAPTIVE SCREWS
STYLE P: #4-40 UNC CAPTIVE SCREWS

KEYING POSITIONS

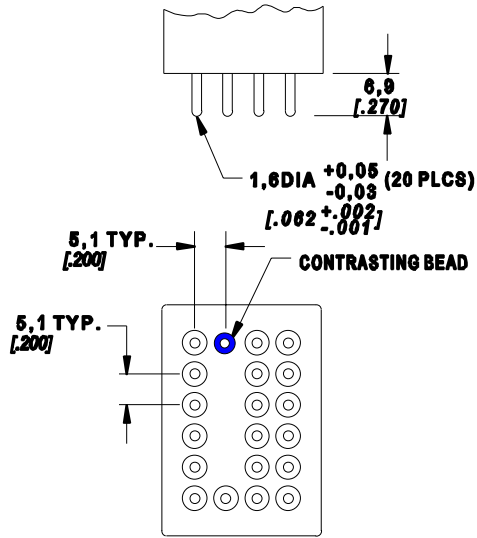


COIL	KEY 1	KEY 2	KEY 3	KEY 4	SUPPRESSED			
					KEY 1	KEY 2	KEY 3	KEY 4
6 VDC	V	Z	V	U	V	Z	X	U
12 VDC	X	Z	V	U	V	Z	X	U
26.5 VDC	U	X	V	Z	Y	X	W	Z
28 VDC	V	X	V	Z	Y	X	V	Z
48 VDC	V	Z	U	U	V	Z	W	U
110 VDC	X	Z	U	U	X	Z	W	U
115 VAC	U	Z	V	U				

KEYING CONFIGURATION SHOWN IN TABLE COMES STANDARD WITH SPECIFIED COIL VOLTAGE. FOR ORDERING OTHER KEYING POSITIONS USE 4 DIGIT (XXXX) "SPECIAL INSTRUCTIONS" ON END OF P/N.
EX: E610BACWVZX

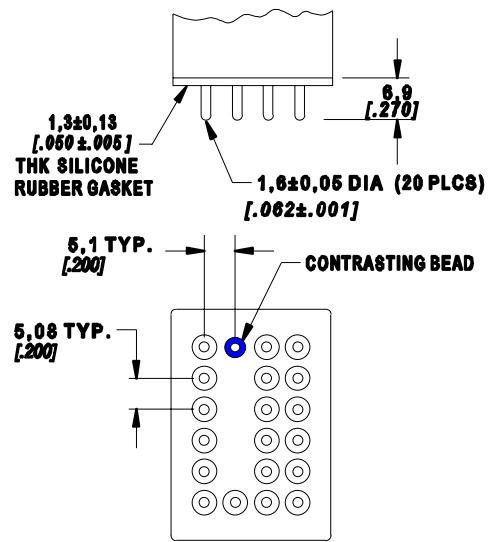
Termination Styles

DIMENSIONS ARE IN MM (IN.)
UNLESS OTHERWISE SPECIFIED, TOLERANCE IS $\pm 0,25$ [.010]



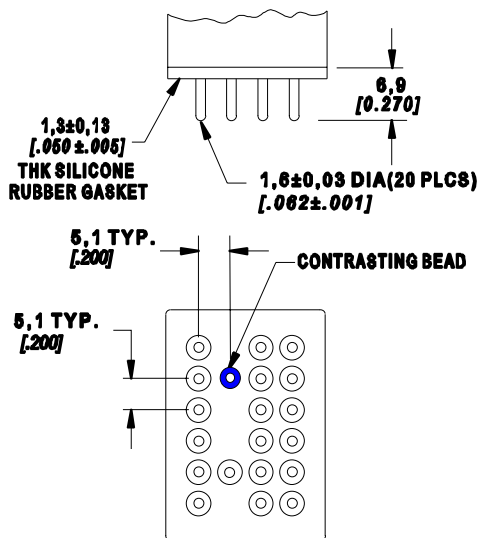
SOLDER PIN

STYLE A: TIN PLATED
STYLE B: SOLDER DIPPED



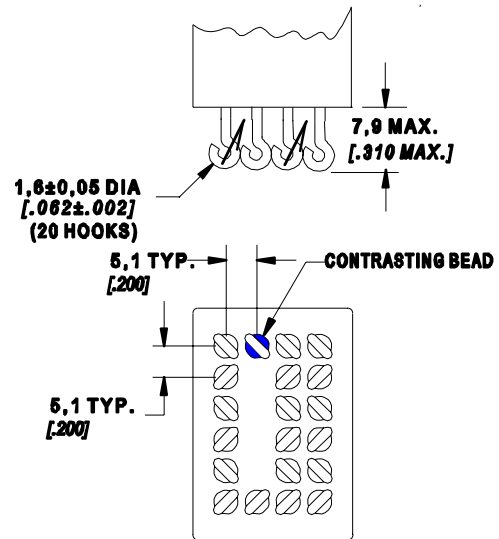
PLUG IN (DC)

STYLE C: GOLD PLATED



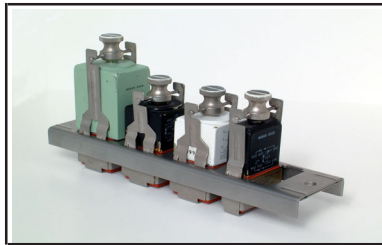
PLUG IN (AC)

STYLE K: GOLD PLATED WITH GASKET
STYLE L: TIN PLATED WITHOUT GASKET



SOLDER HOOK

STYLE H: TIN PLATED
STYLE J: SOLDER DIPPED



General characteristics

	210/215	410/415
No. of poles	2 Form C (2 PDT)	4 Form C (4PDT)
Mass	54.5 grams [<i>.120 lb. Max</i>]	90.6 grams [<i>.20 lb. Max</i>]

Switching characteristics

Operate time @ 25°C with DC Coil	10 ms max.	15 ms max.
AC Coil	20 ms max.	15 ms max.
Release time @ 25°C with DC Coil	20 ms max.	20 ms max.
AC Coil	50 ms max.	50 ms max.
Bounce time	1 ms max.	1 ms max.
Mechanical Life	400,000 cycles	

Contact rating	Type of load (High level)	Cycles x 10 ³	28 Vdc	115 Vac	115 Vac*	115/200 Vac	115/200 Vac*	*10 AMP = 10,000 CYCLES
				400 Hz 1 phase	50/60 Hz 1 phase	400 Hz 3 phase	50/60 Hz 3 phase	
	Resistive	100	10 amps	10 amps	2.5 amps	10 amps	2.5 amps	
	Inductive	20	8 amps	8 amps	n/a	8 amps	n/a	
	Inductive	10	n/a	n/a	2.5 amps	n/a	2.5 amps	
	Motor	100	4 amps	4 amps	2 amp	4 amps	2 amps	
	Lamp	100	2 amps	2 amps	1 amps	n/a	n/a	
	Overload current	n/a	40 amps	60 amps	n/a	60 amps	n/a	
	Rupture current	n/a	50 amps	80 amps	n/a	80 amps	n/a	

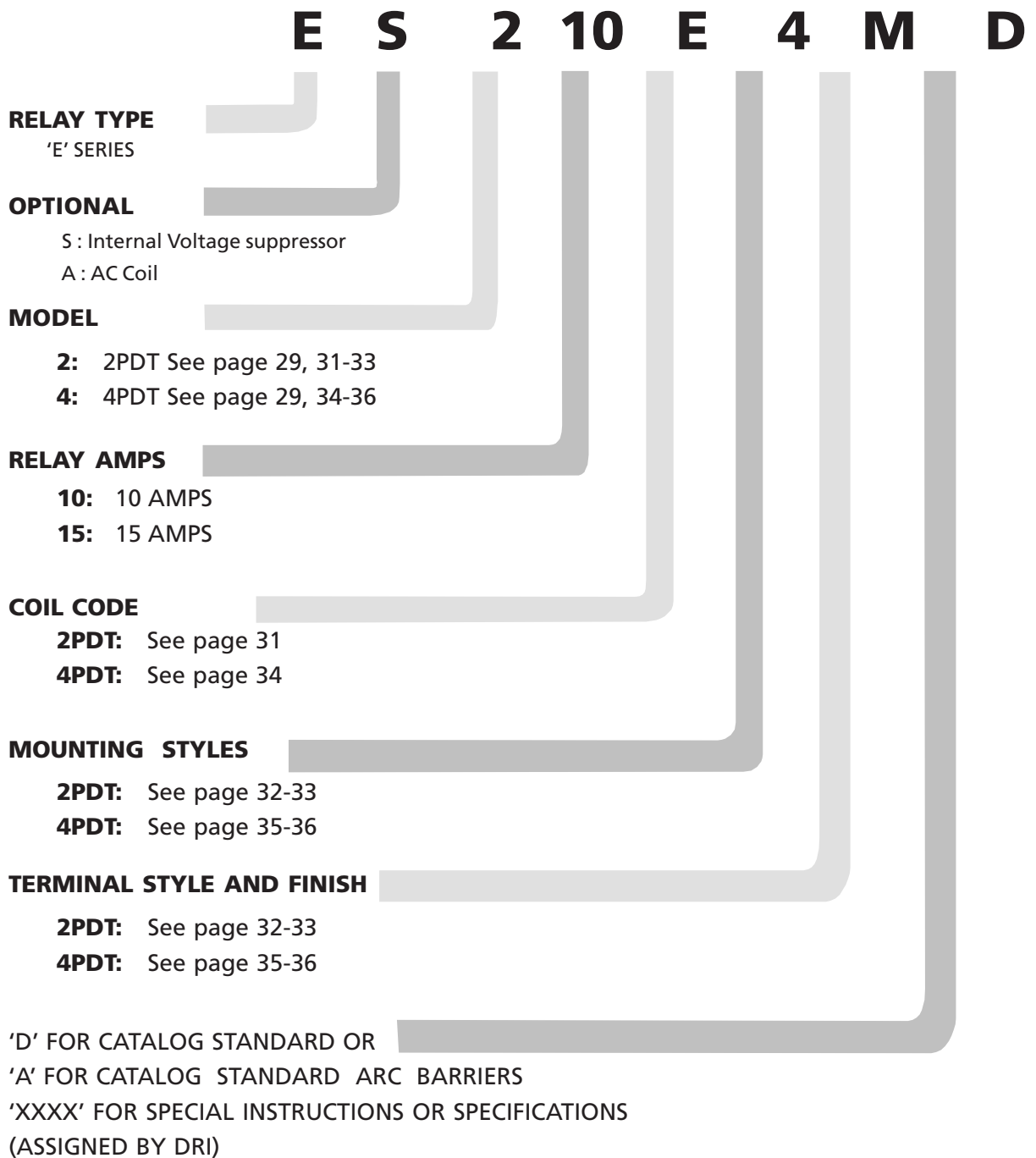
Contact rating	Type of load (High level)	Cycles x 10 ³	28 Vdc	115 Vac	115 Vac*	115/200 Vac	115/200 Vac*	*15 AMP = 10,000 CYCLES
				400 Hz 1 phase	50/60 Hz 1 phase	400 Hz 3 phase	50/60 Hz 3 phase	
	Resistive	100	15 amps	15 amps	3.75 amps	15 amps	3.75 amps	
	Inductive	20	10 amps	10 amps	n/a	10 amps	n/a	
	Inductive	10	n/a	n/a	3.75 amps	n/a	3.75 amps	
	Motor	100	6 amps	6 amps	3 amp	6 amps	3 amps	
	Lamp	100	3 amps	3 amps	1.5 amps	n/a	n/a	
	Overload current	n/a	40 amps	60 amps	n/a	60 amps	n/a	
	Rupture current	n/a	50 amps	80 amps	n/a	80 amps	n/a	

Environmental characteristics

Temperature Range	-70°C to +125°C
Vibration (Sinusoidal)	30 g 10-3000 Hz
Shock, any axis	200 g 6 ms
Seal	Hermetic (1 x 10 ⁻⁸ atm cm ³ /s)

Electrical characteristics

Contact voltage drop (@ Rated resistive load)	
- Initial	150 mV Max.
- After guaranteed life	175 mV Max.
Dielectric strength @ sea level	Coil to Case All other points
- Initial @ 60 Hz	1050 Vrms 1500 Vrms
- After guaranteed life	1050 Vrms 1250 Vrms
Insulation Resistance	
- Initial	100 Megohms min. @ 500 Vdc
- After life tests	100 Megohms min. @ 500 Vdc
- Max. leakage current	100 Microamperes RMS.
Reference Military Specification	MIL-PRF-83536

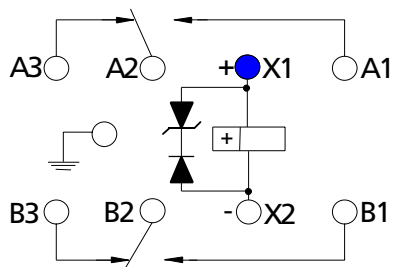


Coil characteristics

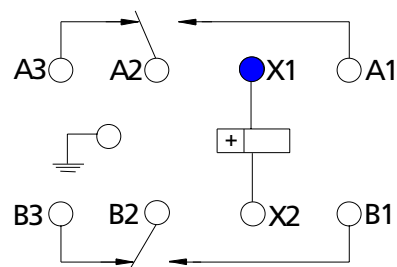
COIL CODE	DC						AC	
	A	B	D	E	G	J	L	N
Nominal coil voltage	6	12	26,5	28	48	110	115-400 Hz	115-50/60/400 Hz
Maximum pick-up voltage at 25°C	3	6	13,5	14	24	55	75	75
Maximum pick-up voltage at 125°C	3,9	7,7	18	18,7	31	70	95	95
Minimum drop-out voltage at -70° C	2	5	1,2	1,5	2	5	5	5
Coil resistance (ohms ± 10% at 25°C)	20	80	320	320	955	5000	-	-
Maximum coil transient suppression (where applicable) VDC	42	42	42	42	100	180	-	-

OTHER VOLTAGES AVAILABLE FROM FACTORY ON REQUEST

Circuit diagram



ES210
INTERNAL VOLTAGE SUPPRESSOR
NOTE: MOUNTING STYLE 6 WITHOUT GND PIN

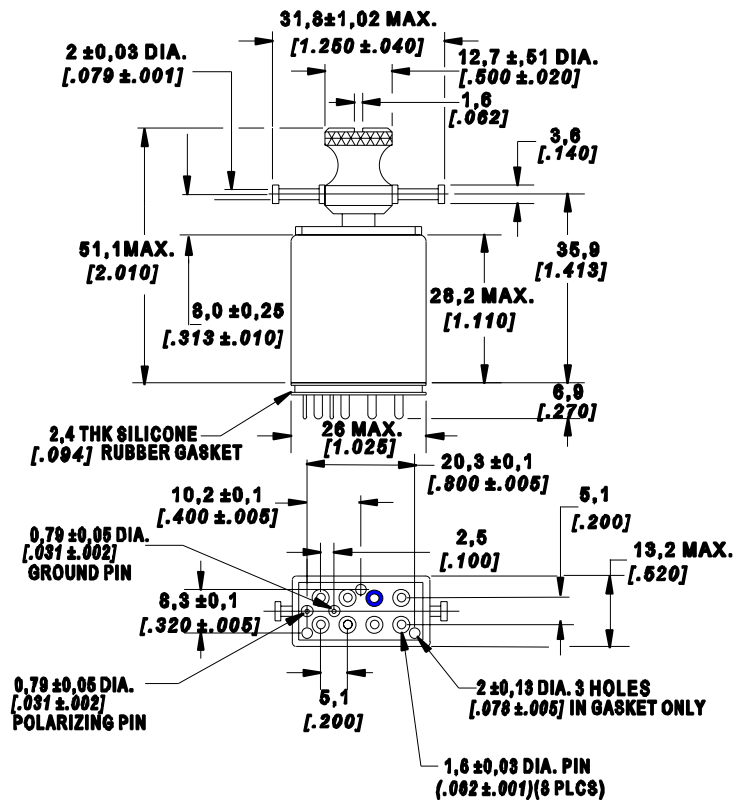


EA210 (AC)
(AC CONFIGURATION)
NOTE: MOUNTING STYLE 6 WITHOUT GND PIN

Mounting & Terminal Styles

DIMENSIONS IN MM (IN.)
UNLESS OTHERWISE SPECIFIED, TOLERANCE IS ± 0.25 (.010)

THESE TRACK MOUNT RELAYS TO BE USED WITH BRACKET ASSY AND TRACKS MEETING THE REQUIREMENTS OF MIL-PRF-12883. SEE MIL-PRF-12883/50 FOR SOCKET INFORMATION AND MIL-PRF-12883/49 FOR TRACK INFORMATION



E/EA/ES210

MOUNTING STYLE: 4

TERMINAL STYLE: M

[GOLD PLATED HEADER & TERMINALS]

Mounting & Terminal Styles

DIMENSIONS ARE IN MM (IN.)
UNLESS OTHERWISE SPECIFIED, TOLERANCE IS $\pm 0,25$ [.010]

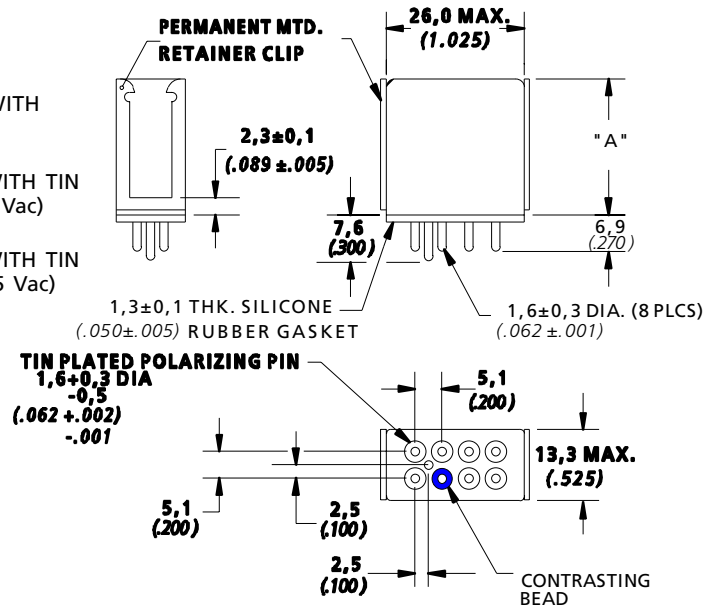
E/EA/ES 210 / 215

MOUNTING STYLE: 6

TERMINAL STYLE: M: GOLD PLATED TERMINALS WITH TIN PLATED POLARIZING PIN

F: GOLD PLATED TERMINALS WITH TIN PLATED POLARIZING PIN (28 Vac)

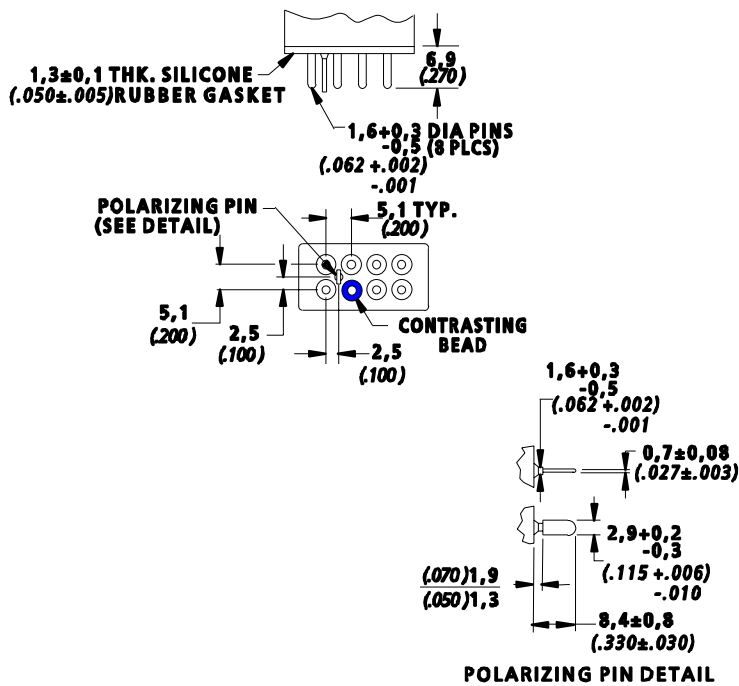
G: GOLD PLATED TERMINALS WITH TIN PLATED POLARIZING PIN (115 Vac)



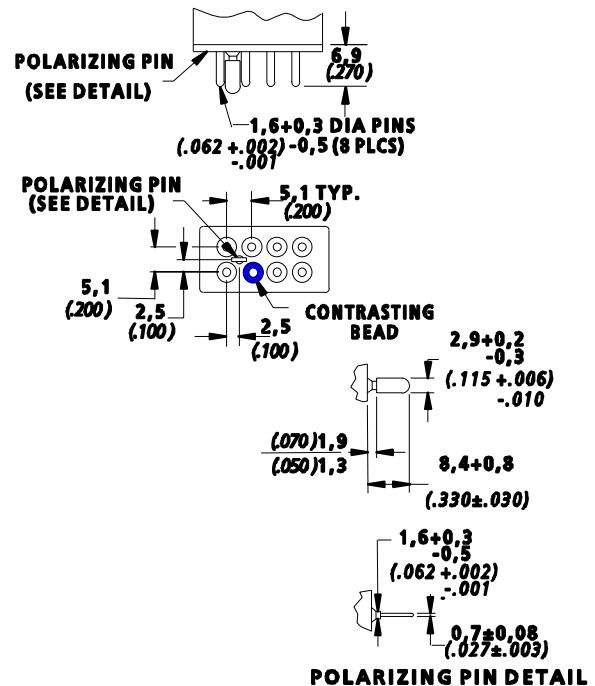
"A" Dimension:

DC Coil (Terminal Style "M"): 25.7 (1.010)

AC Coil (Terminal Styles "F" and "G"): 28.6 (1.125)



STYLE F: PLUG IN (28 Vac)



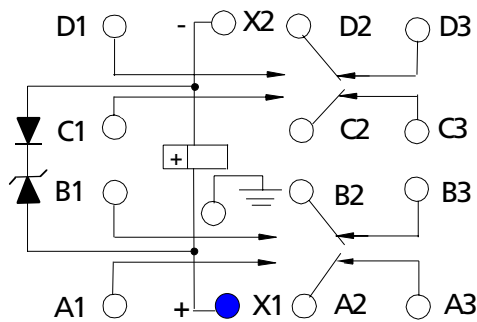
STYLE G: PLUG IN (115 Vac)

Coil Characteristics

COIL CODE	DC						AC	
	A	B	D	E	G	J	L	N
Nominal coil voltage	6	12	26,5	28	48	110	115-400 Hz	115-50/60/400 Hz
Maximum pick-up voltage at 25°C	3	6	13,5	14	24	55	75	75
Maximum pick-up voltage at 125°C	3,9	7,7	18	18,7	31	70	95	95
Minimum drop-out voltage at -70° C	2	5	1,2	1,5	2	5	5	5
Coil resistance (ohms ± 10% at 25° C)	18	70	290	290	955	5000	-	-
Maximum coil transient suppression (where applicable) VDC	-42	-42	-42	-42	-100	-180	-	-

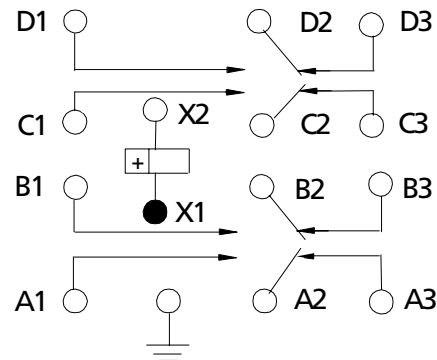
OTHER VOLTAGES AVAILABLE FROM FACTORY ON REQUEST

Circuit Diagram



ES410

INTERNAL VOLTAGE SUPPRESSOR
NOTE: MOUNTING STYLE 6 HAS NO GND PIN

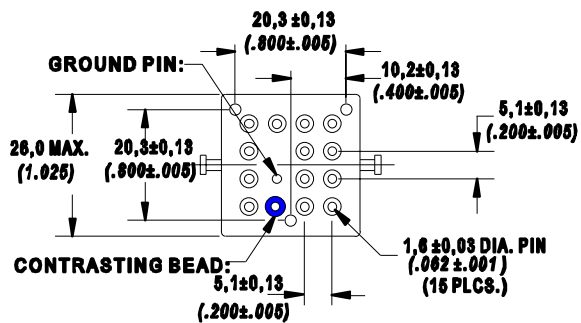
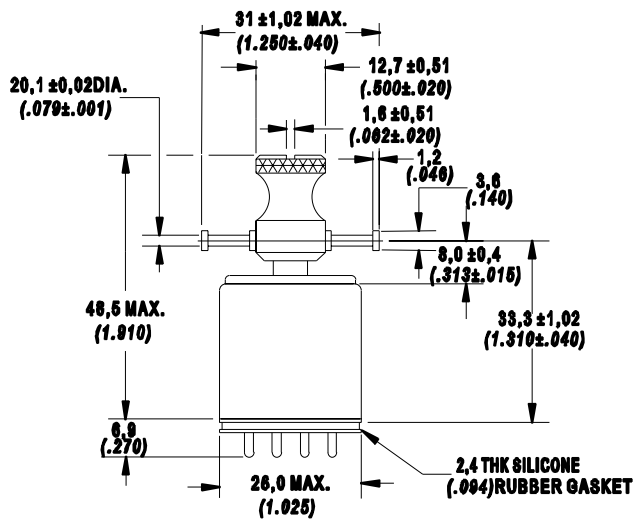


EA410 (AC)

NOTE: MOUNTING STYLE 6 HAS NO GND PIN

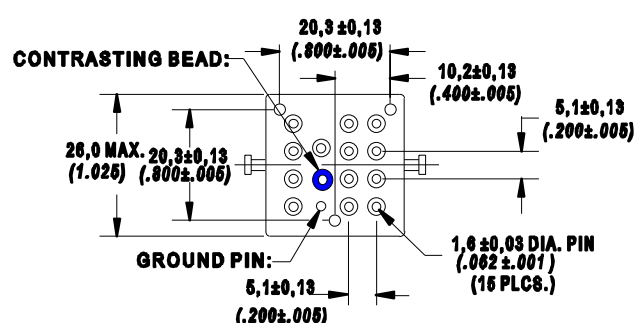
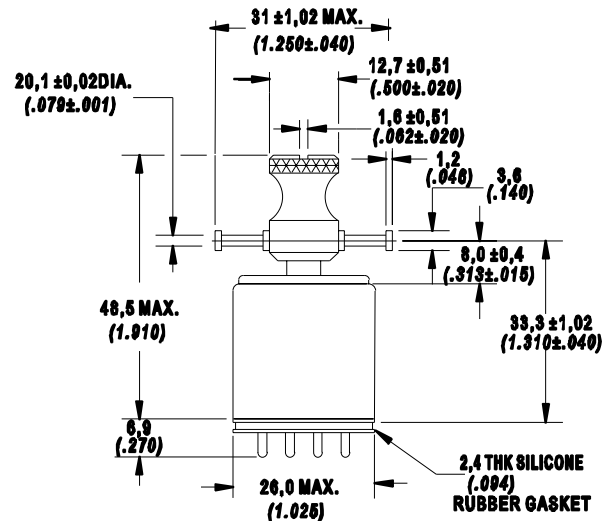
■ Mounting & Terminal Styles

DIMENSIONS ARE IN MM (IN.)
UNLESS OTHERWISE SPECIFIED, TOLERANCE IS ± 0.25 [.010]



ES410
MOUNTING STYLE: 4

TERMINAL STYLE: M
[GOLD PLATED HEADER & TERMINALS (DC)]

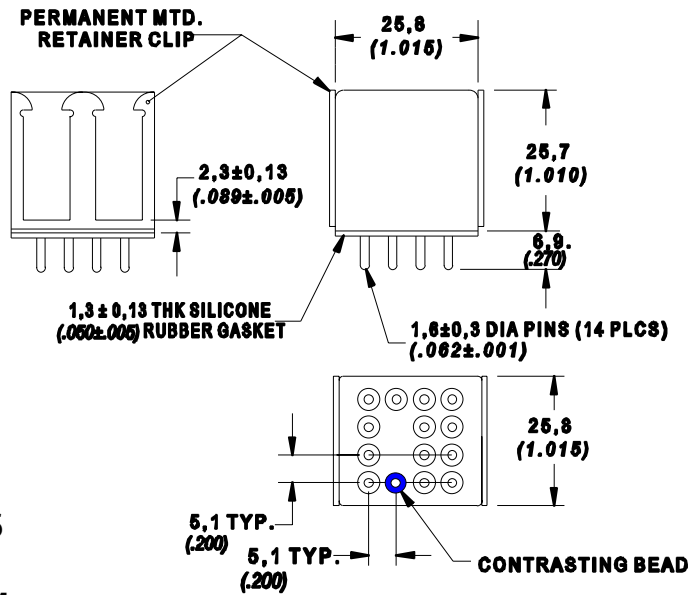


EA410
MOUNTING STYLE: 4

TERMINAL STYLE: K
[GOLD PLATED HEADER & TERMINALS (AC)]

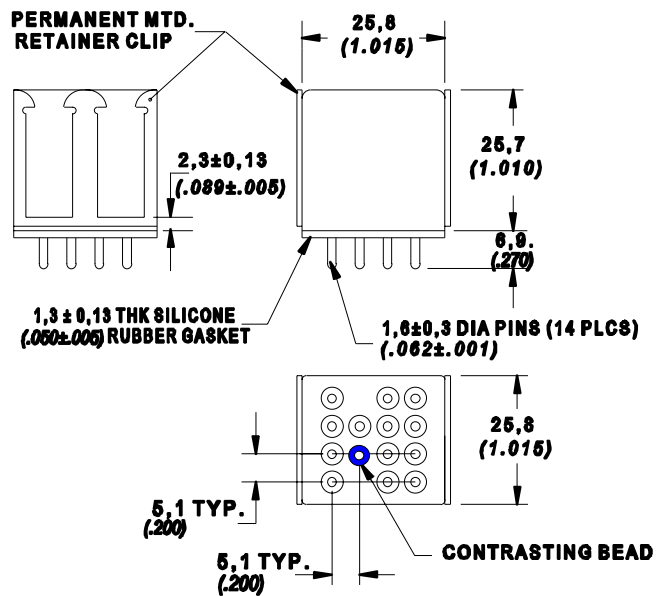
Mounting styles

DIMENSIONS ARE IN MM (IN.)
UNLESS OTHERWISE SPECIFIED, TOLERANCE IS ± 0.25 (.010)



ES410
MOUNTING STYLE: 6

TERMINAL STYLE: M
[GOLD PLATED (DC)]



EA410
MOUNTING STYLE: 6

TERMINAL STYLE: K
[GOLD PLATED (AC)]

