

Characteristics



General characteristics

| | 210/215 | 410/415 |
|--------------|---|--|
| No. of poles | 2 Form C (2 DPDT) | 4 Form C (4PDT) |
| Volume | 8.52 cm ³ [.52 in ³] | 16.4 cm ³ [1.03 in ³] |
| Mass | 40.9 grams [.09 lb. Max] | 77 grams [.17 lb. Max] |

Switching characteristics

| | | |
|---|----------------|------------|
| Operate time @ 25° C (Latch and Reset) with DC Coil | 10 ms max. | 15 ms max. |
| Bounce time | 1 ms max. | 1 ms max. |
| Mechanical Life | 400,000 cycles | |

| Contact rating | 10 AMP * =10,000 CYCLES | | | | | | |
|------------------|----------------------------|--------------------------|---------|------------------------------|---------------------------------|----------------------------------|-------------------------------------|
| | Type of load (High level) | Cycles x 10 ³ | 28 Vdc | 115 Vac 400 Hz 1 phase | 115 Vac* 50/60 Hz 1 phase | 115/200 Vac 400 Hz 3 phase | 115/200 Vac* 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 amp | 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 | 15 AMP * =10,000 CYCLES | | | | | | |
|------------------|----------------------------|--------------------------|---------|------------------------------|---------------------------------|----------------------------------|-------------------------------------|
| | Type of load (High level) | Cycles x 10 ³ | 28 Vdc | 115 Vac 400 Hz 1 phase | 115 Vac* 50/60 Hz 1 phase | 115/200 Vac 400 Hz 3 phase | 115/200 Vac* 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) | 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) | 150 mV Max. |
| - Initial | 175 mV Max. |
| - After guaranteed life | |
| 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 |

EL S 2 10 E 2 K D

RELAY TYPE

EL SERIES (LATCHING)

OPTION

S: Internal Voltage Suppressor

R: Internal Voltage Suppressor

MODEL

2: 2PDT See page 8, 10-13

4: 4PDT See page 8, 14-18

RELAY AMPS

10: 10 AMPS

15: 15 AMPS

COIL CODE

2: PDT PAGE 10

4: PDT PAGE 14

MOUNTING STYLES

2: PDT page 11 - 12

4: PDT page 15 - 17

TERMINAL STYLE AND FINISH

2: PDT page 13

4: PDT page 18

'D' FOR CATALOG STANDARD OR

'A' FOR CATALOG STANDARD WITHOUT ARC BARRIERS

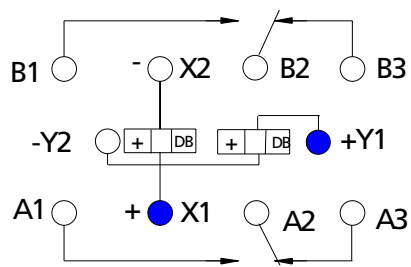
'XXXX' FOR SPECIAL INSTRUCTIONS OR SPECIFICATIONS

(ASSIGNED BY DRI)

Coil characteristics

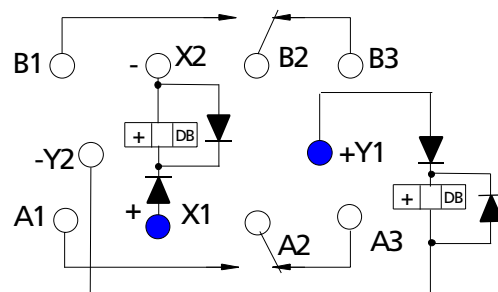
| COIL CODE | DC | | | | | | |
|--|-----|---------|---------|-------|------|------|------|
| | A | B | D | E | F | G | J |
| Nominal coil voltage | 6 | 12 | 26,5 | 28 | 28 | 48 | 110 |
| Maximum latch and reset voltage at 25°C | 3 | 6 | 13,5 | 14 | 14,5 | 24 | 55 |
| Maximum latch and reset voltage at 125°C | 4,5 | 9 | 18 | 18,7 | 18,0 | 36 | 70 |
| Coil resistance (ohms ± 10% at 25° C) | 15 | 60 | 280 | 300 | 450 | 1000 | 5000 |
| Max coil transient suppression | See | circuit | diagram | below | 100 | 180 | |

Circuit diagram



Y-COIL LAST ENERGIZED

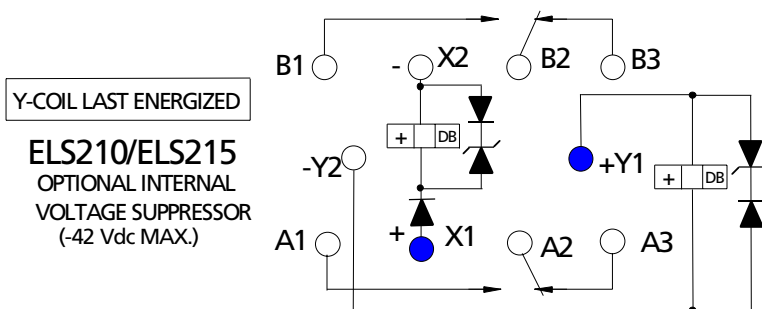
EL210/EL215



Y-COIL LAST ENERGIZED

ELR210/ELR215

OPTIONAL INTERNAL VOLTAGE SUPPRESSOR
PER M83536/13
(-5 VDC MAX.)



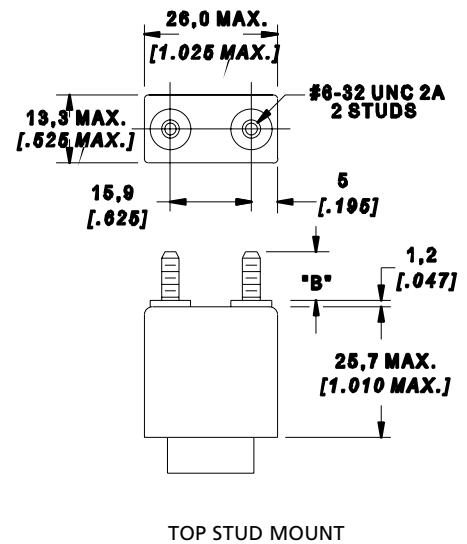
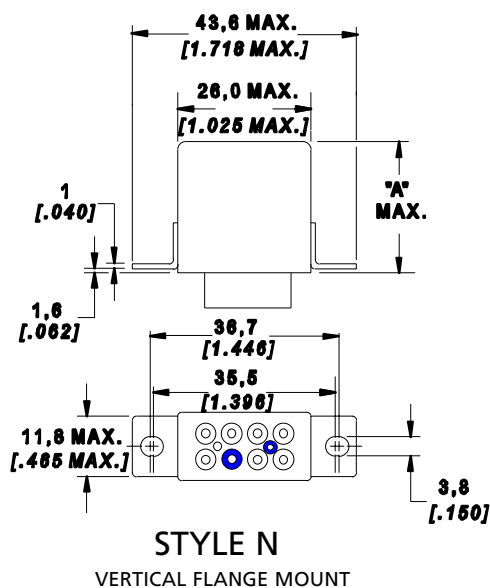
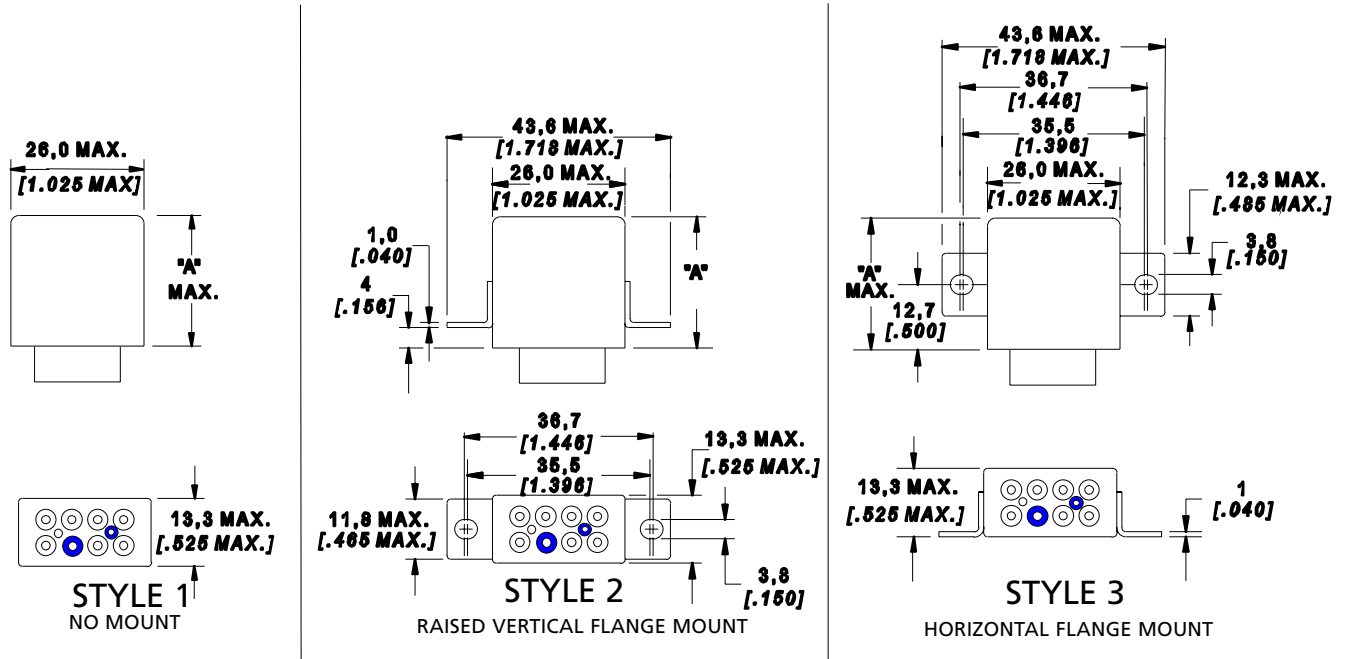
Y-COIL LAST ENERGIZED

ELS210/ELS215
OPTIONAL INTERNAL
VOLTAGE SUPPRESSOR
(-42 Vdc MAX.)

■ Mounting styles

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

"A" DIMENSION:
SUPPRESSED: 28,6 [1.125]
NON-SUPPRESSED: 25,7 [1.010]
AC: 28,6 [1.125]

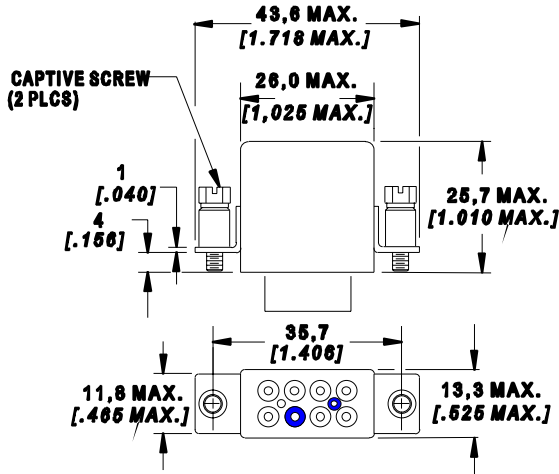


| STYLE | DIM "B" |
|-------|-------------|
| M | 9,5 [.375] |
| R | 6,35 [.250] |

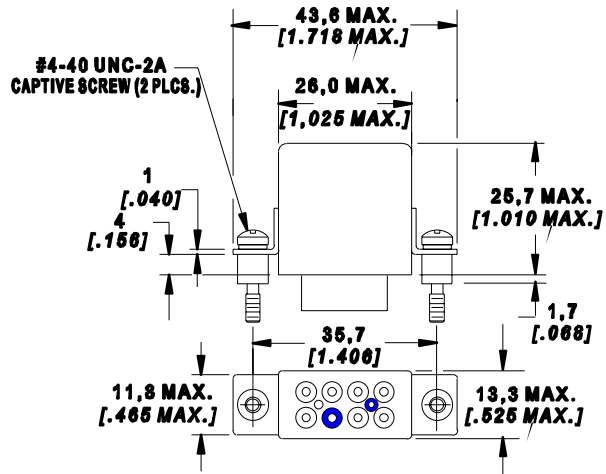
EL210 / EL215 Technical Characteristics

Mounting styles

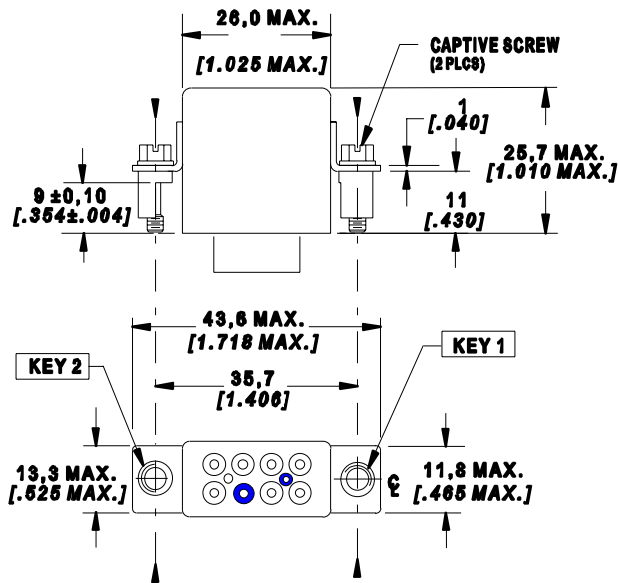
DIMENSIONS ARE IN MM (IN.)
UNLESS OTHERWISE SPECIFIED, TOLERANCE IS $\pm 0,25$ [.010]



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



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 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: EL210AACVY

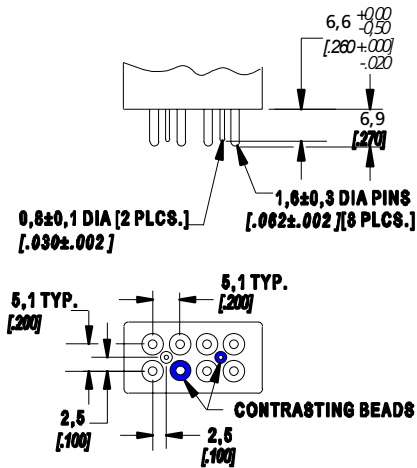
KEYING POSITIONS

| U | V | W | X | Y | Z |
|----|-----|------|------|------|------|
| | | | | | |
| | | | | | |
| 0° | 60° | 120° | 180° | 240° | 300° |

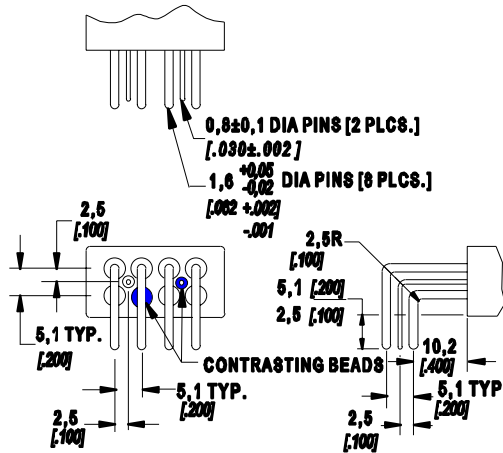
| COIL | KEY 1 | KEY 2 | SUPPRESSED | |
|----------|-------|-------|------------|-------|
| | | | KEY 1 | KEY 2 |
| 6 VDC | V | V | V | X |
| 12 VDC | X | V | X | X |
| 26.5 VDC | Y | Z | U | Z |
| 28 VDC | V | Z | X | Z |
| 48 VDC | V | U | V | W |
| 110 VDC | X | U | X | W |

Termination styles

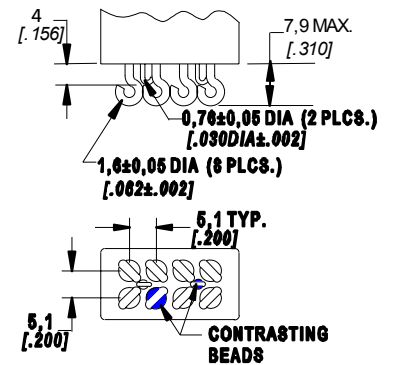
DIMENSIONS ARE IN MM (IN.)
UNLESS OTHERWISE SPECIFIED, TOLERANCE IS $\pm 0,25$ [.010]



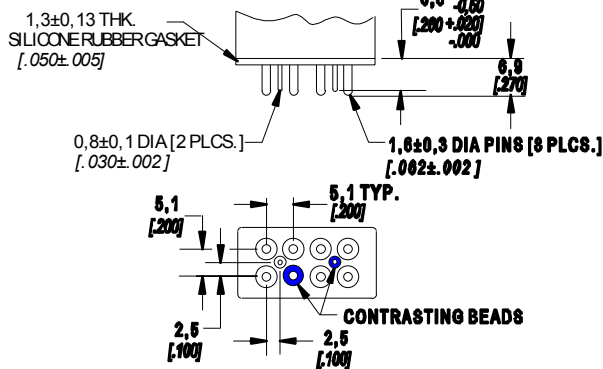
SOLDER PIN
STYLE A: TIN PLATED
STYLE B: SOLDER DIPPED



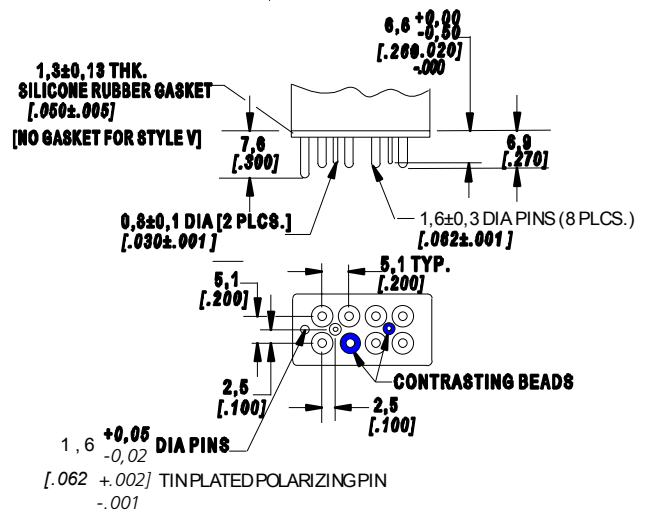
90° SOLDER PIN
STYLE D: TIN PLATED
STYLE E: SOLDER DIPPED



SOLDER HOOK
STYLE H: TIN PLATED
STYLE J: SOLDER DIPPED



PLUG IN
STYLE K: GOLD PLATED



PLUG IN
STYLE M: GOLD PLATED

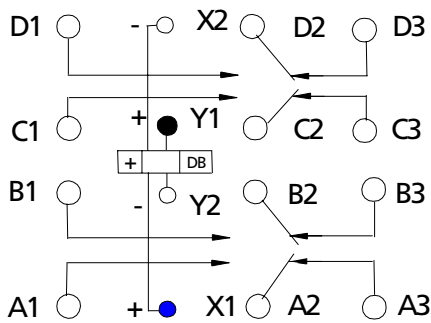
SOLDER PIN
STYLE V: TIN PLATED

Coil characteristics

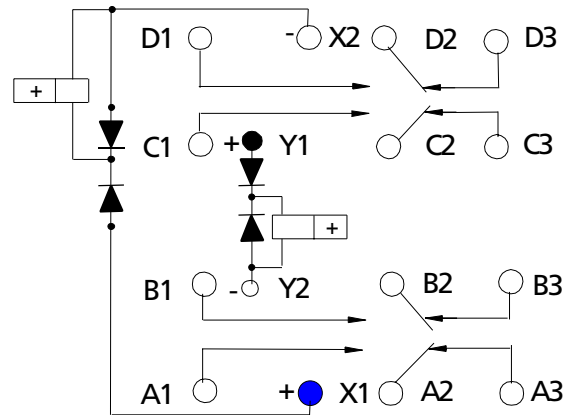
| COIL CODE | DC | | | | | | |
|--|---------------------------|-----|------|------|------|------|------|
| | A | B | D | E | F | G | J |
| Nominal coil voltage | 6 | 12 | 26,5 | 28 | 28 | 48 | 110 |
| Maximum latch and reset voltage at 25°C | 3,5 | 6,5 | 13,5 | 14,5 | 14,5 | 24 | 55 |
| Maximum latch and reset voltage at 125°C | 4,5 | 9 | 18 | 18,7 | 18,0 | 36 | 70 |
| Coil resistance (ohms ± 10% at 25° C) | 15 | 60 | 280 | 300 | 450 | 1000 | 5000 |
| Max coil transient suppression | See circuit diagram below | | | | | 100 | 180 |

OTHER VOLTAGES AVAILABLE FROM FACTORY ON REQUEST

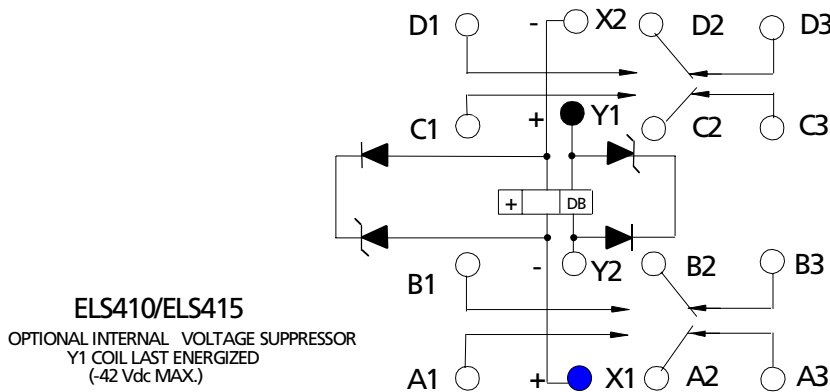
Circuit diagram



EL410/EL415
OBSERVE COIL POLARITY
Y1 COIL LAST ENERGIZED



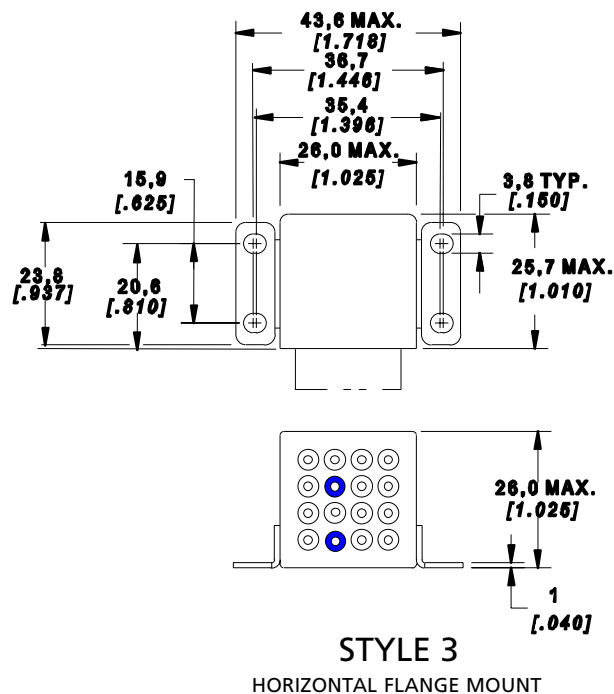
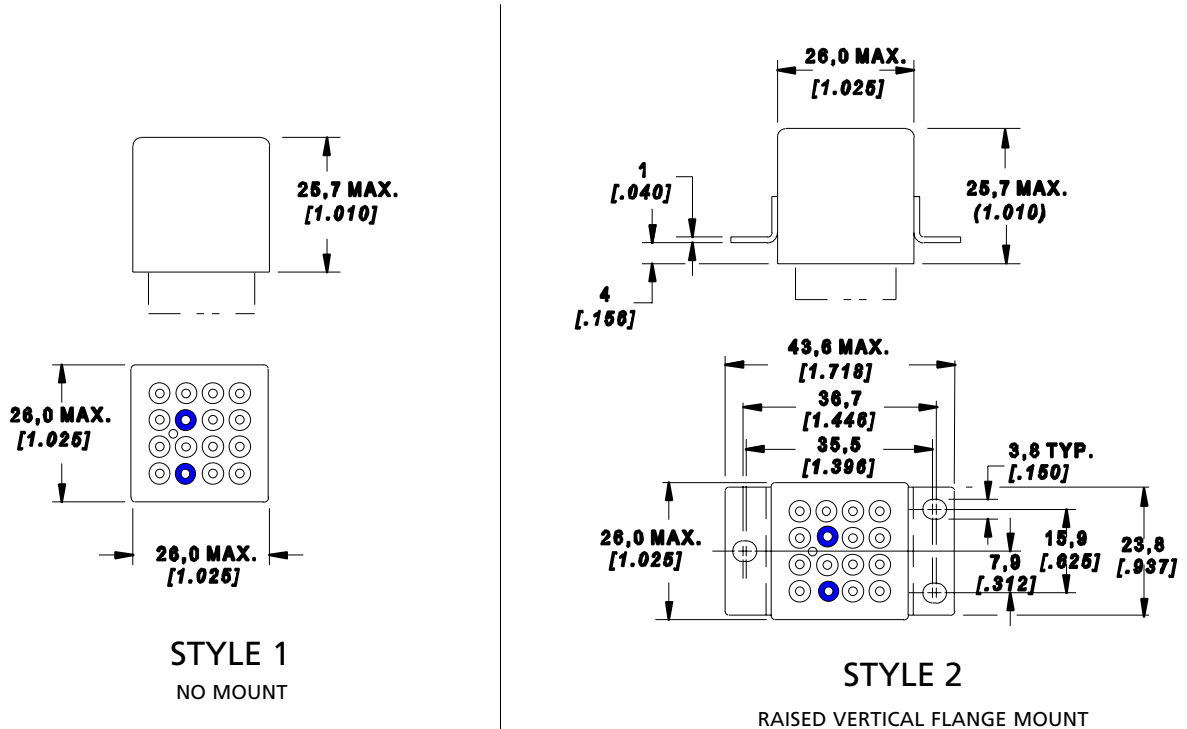
ELR410/ERL415
OPTIONAL INTERNAL
VOLTAGE SUPPRESSOR
Y1 COIL LAST ENERGIZED
PER M83536/19
(-5 Vdc MAX.)



ELS410/ELS415
OPTIONAL INTERNAL VOLTAGE SUPPRESSOR
Y1 COIL LAST ENERGIZED
(-42 Vdc MAX.)

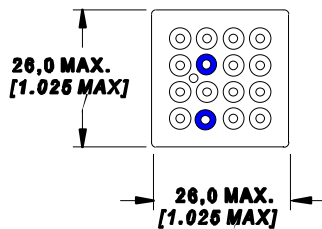
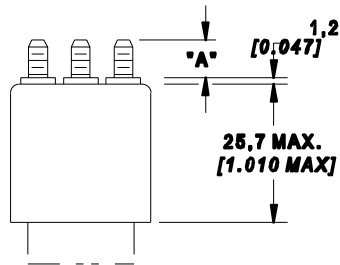
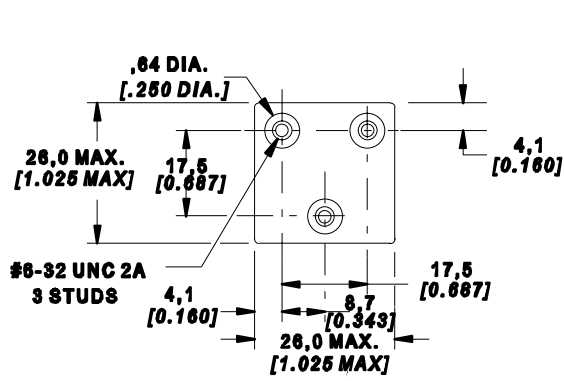
Mounting styles

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

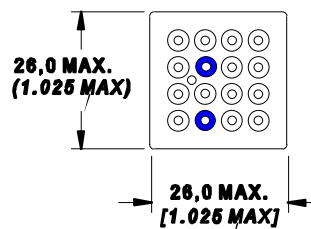
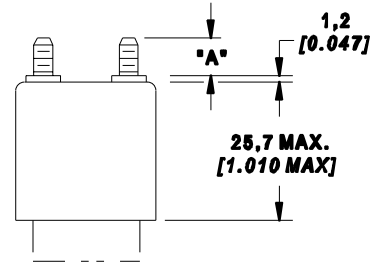
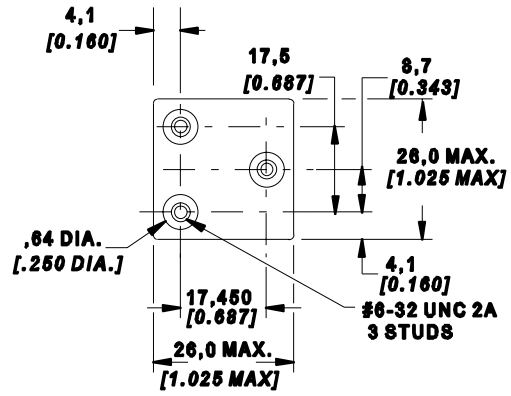


■ Mounting styles

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



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

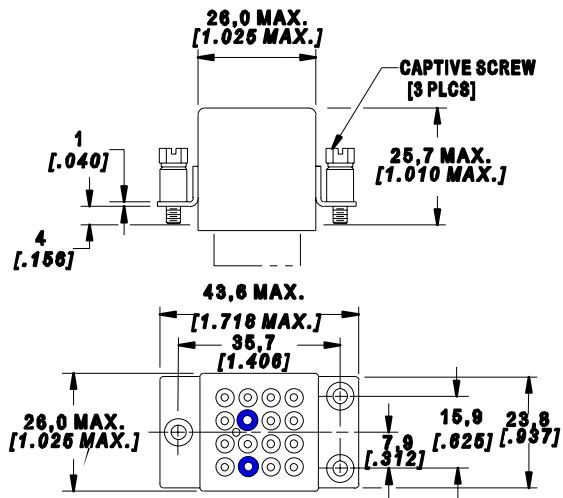


| STYLE | DIM "A" |
|-------|-------------|
| T | 9,5 [.375] |
| U | 6,35 [.250] |

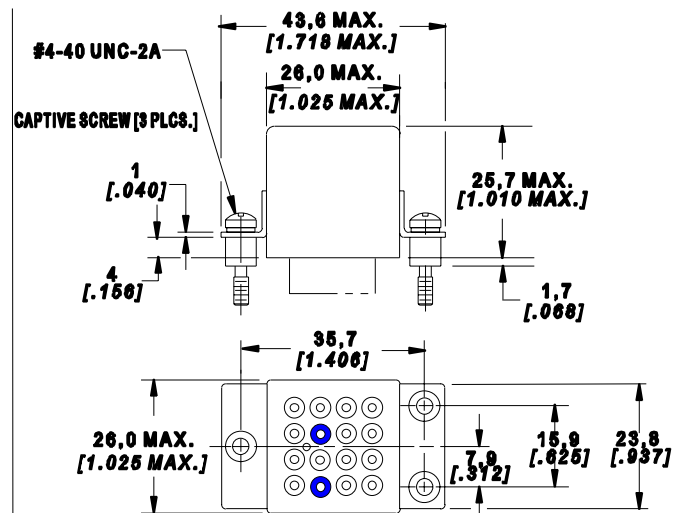
EL410 / EL415 Technical Characteristics

Mounting styles

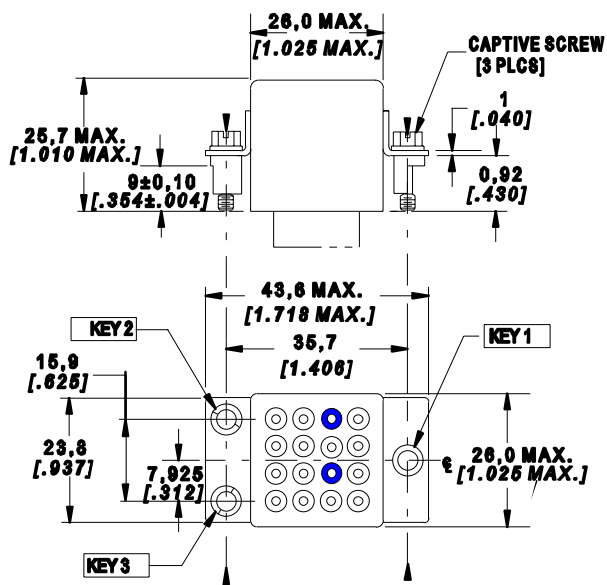
DIMENSIONS ARE IN MM (IN.)
UNLESS OTHERWISE SPECIFIED, TOLERANCE IS $\pm 0,25$ (.010)



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



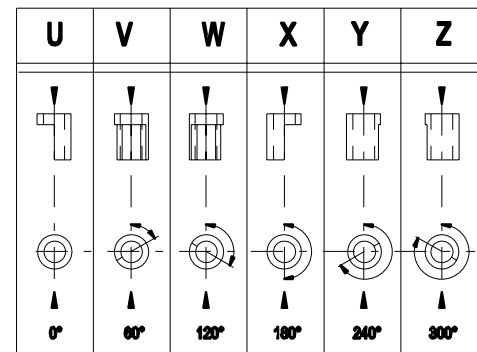
STYLE G
RAISED VERTICAL FLANGE MOUNT
WITH CAPTIVE HARDWARE



KEYING SYSTEM WITH CAPTIVE HARDWARE

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

KEYING POSITIONS

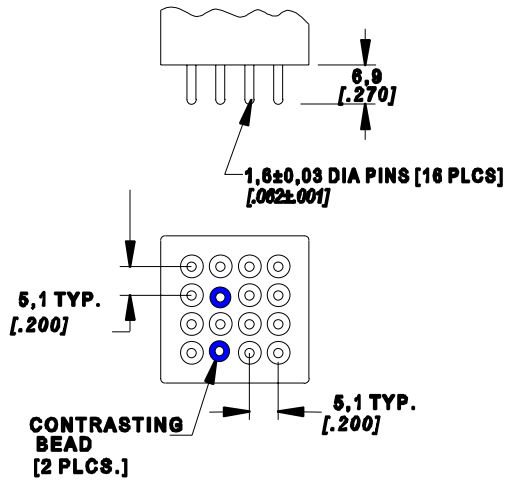


| COIL | SUPPRESSED | | | | | |
|----------|------------|-------|-------|-------|-------|-------|
| | KEY 1 | KEY 2 | KEY 3 | KEY 1 | KEY 2 | KEY 3 |
| 6 VDC | V | Z | V | V | Z | X |
| 12 VDC | X | Z | V | X | Z | X |
| 26.5 VDC | Z | X | U | Z | X | W |
| 28 VDC | Z | X | V | Z | X | Y |
| 48 VDC | V | Z | U | V | Z | W |
| 110 VDC | X | Z | U | X | Z | W |

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: EL410AACXYZ

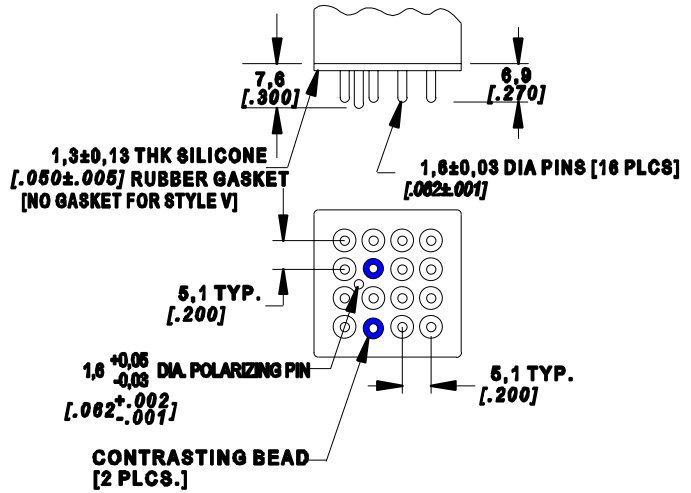
■ Termination styles

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



SOLDER PIN

STYLE A: TIN PLATED
STYLE B: SOLDER DIPPED

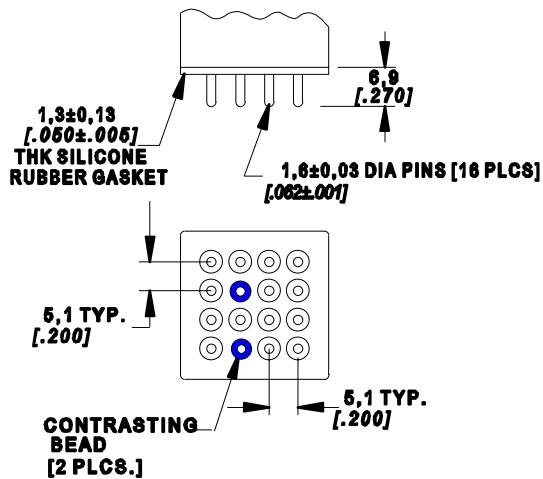


SOLDER PIN

STYLE V: TIN PLATED WITH TIN PLATED POLARIZING PIN

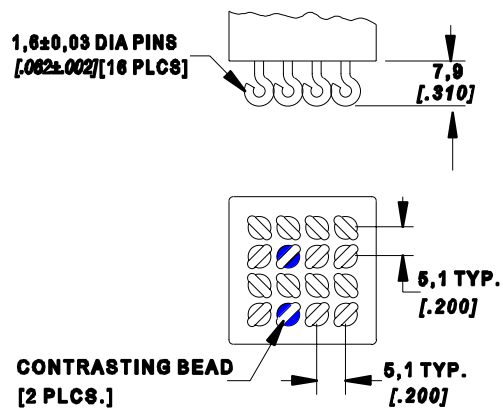
PLUG IN

STYLE M: GOLD PLATED WITH TIN PLATED POLARIZING PIN



PLUG IN

STYLE C: GOLD PLATED



SOLDER HOOK

STYLE H: TIN PLATED
STYLE J: SOLDER DIPPED