

E410 AND ES410 MILITARY SPECIFIED

Qualified to MIL-PRF-83536

FEATURES

- Balanced force design provides the benefit of consistently high contact pressure, reduced bounce, and less arching leading to extended contact life
- Welded hermetically sealed, non-corrosive enclosure
- Wide choice of mounting and terminal styles

APPLICATIONS

- Rail
- Aerospace
- Ground vehicle
- Built to MIL-PRF-83536 for severe condition applications

GENERAL CHARACTERISTICS

- Number of Poles: 4 Form C (4PDT)
- Dimensions: 1.025" x 1.025" x 1.010"
(26.0 x 26.0 x 25.7) mm
- Weight
Mounting Code 09: 0.20 lbs (90.6 g)
All Others: 0.17 lbs (77 g)

SWITCHING CHARACTERISTICS

- Operate Time @ +25°C
All Others: 15 ms. Max
- Release Time @ +25°C
Mounting Code 09: 20 ms. Max
All Others: 15 ms. Max
- Bounce Time: 1 ms. Max
- Mechanical Life: Up to 400,000 Cycles



ENVIRONMENTAL CHARACTERISTICS

- Temperature Range: -70°C to +125°C
- Vibration (Sinusoidal)
Mounting Code 03: 20 g 57-3,000 Hz
All Others: 30 g 10-3,000 Hz
- Shock (any axis)
Mounting Code 03: 100 g, 6 ms.
All Others: 200 g, 6 ms.
- Seal: Hermetic (1x10⁻⁸ atm cm³/s)

ELECTRICAL CHARACTERISTICS

- Contact Voltage Drop (at rated resistive load)
Initial: 150 mV Max
After Guaranteed Life: 175 mV Max
- Dielectric Strength @ Sea Level

Mounting Code 09	Coil to Case	All Other Points
Initial @ 60 Hz:	1,050 V _{rms}	1,500 V _{rms}
After Life Test @ 60 Hz:	1,050 V _{rms}	1,250 V _{rms}
All Others		
Initial @ 60 Hz:	1,000 V _{rms}	1,250 V _{rms}
After Life Test @ 60 Hz:	1,000 V _{rms}	1,000 V _{rms}

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ELECTRICAL CHARACTERISTICS (CONTINUED)

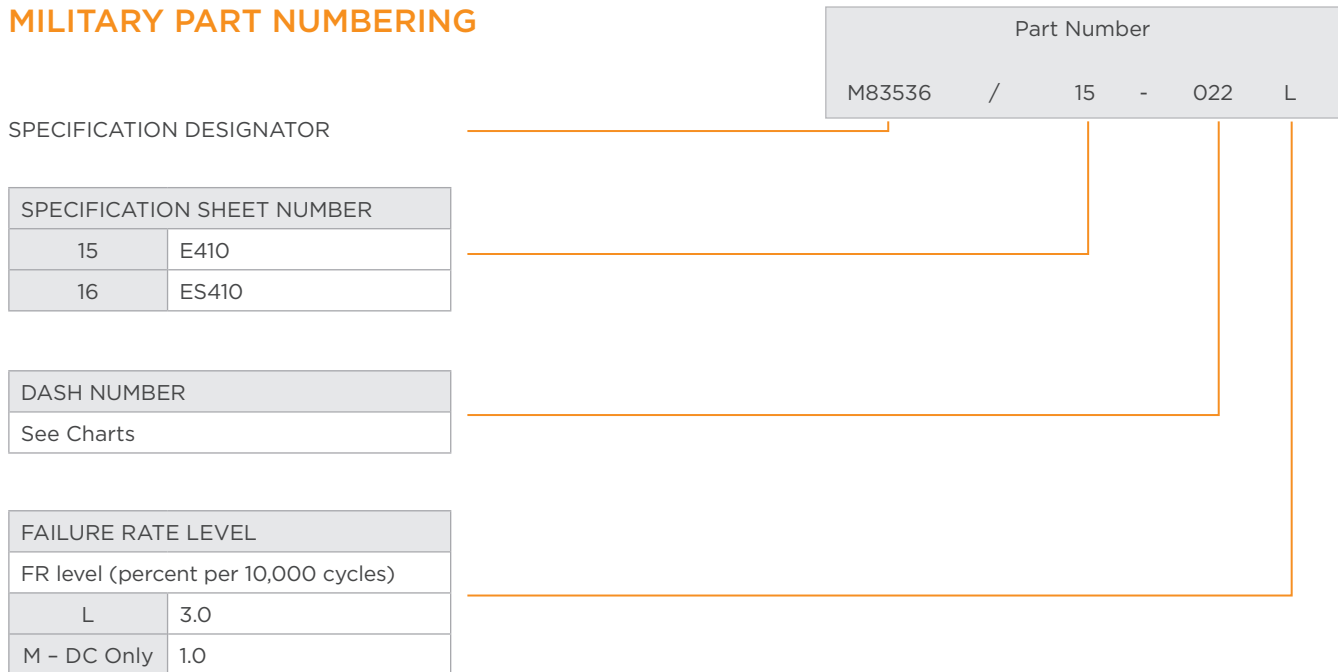
- Insulation Resistance
 - Initial: 100 MΩ Min, @ 500 Vdc
 - After Life Tests (Mounting Code O9): 100 MΩ Min, @ 500 Vdc
- After Life Tests (All Others): 50 MΩ Min, @ 500 Vdc
- Max Leakage Current (Mounting Code O9): 100 μA RMS
- Back EMF (Transient Voltage, ES410 Only): -42 Vdc Max

CONTACT RATING (AMPS)

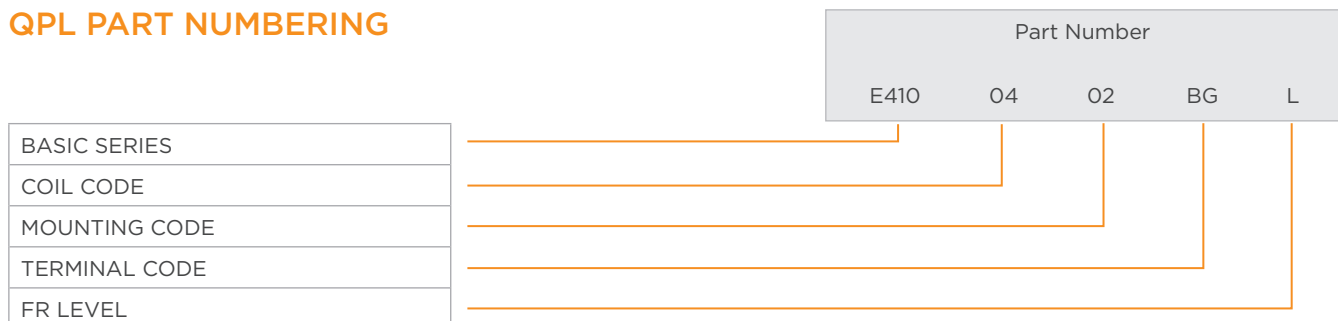
Type of Load (High Level)	Cycles x 10 ³	28 Vdc	115 Vac 400 Hz 1 Phase	115 Vac 50/60 Hz 1 Phase	115/200 Vac 400 Hz 3 Phase	115/200 Vac 50/60 Hz 3 Phase
Resistive	100	10	10	2.5	10	2.5
Inductive	20	8	8	N/A	8	N/A
Inductive	10	N/A	N/A	2.5	N/A	2.5
Motor	100	4	4	2	4	2
Lamp	100	2	2	1	N/A	N/A

Note: 115 Vac 50/60 Hz life reduced to 10,000 cycles for all load types

MILITARY PART NUMBERING



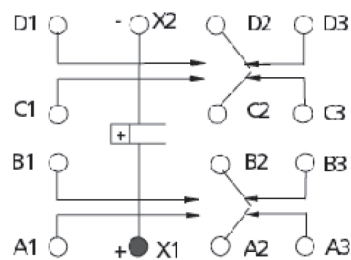
QPL PART NUMBERING



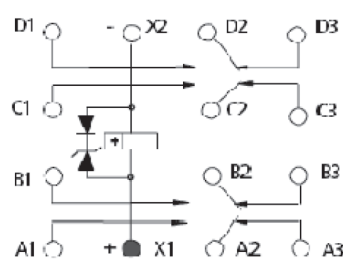
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CIRCUIT DIAGRAM



E410



ES410 w/ Internal Voltage Suppression

DASH NUMBERS - SPECIFICATION SHEET NUMBER 15: E410

Dash Number	Coil Code	Mount	Terminals	Coil Voltage	Max Pickup Voltage @ +25°C	Max Pickup Voltage @ +125°C	Max Hold Voltage @ +125°C	Min Dropout Voltage @ -70°C	Coil Resistance (Ω, Min @ +25°C)
009	02	01	ET	12	6.5	9	4.5	0.5	63
010	02	01	AT	12	6.5	9	4.5	0.5	63
011	02	01	BG	12	6.5	9	4.5	0.5	63
012	02	02	ET	12	6.5	9	4.5	0.5	63
013	02	02	AT	12	6.5	9	4.5	0.5	63
014	02	02	BG	12	6.5	9	4.5	0.5	63
015	02	03	ET	12	6.5	9	4.5	0.5	63
016	02	03	AT	12	6.5	9	4.5	0.5	63
017	04	01	ET	28	14	19.5	7	1.5	260
018	04	01	AT	28	14	19.5	7	1.5	260
019	04	01	BG	28	14	19.5	7	1.5	260
020	04	02	ET	28	14	19.5	7	1.5	260
021	04	02	AT	28	14	19.5	7	1.5	260
022	04	02	BG	28	14	19.5	7	1.5	260
023	04	03	ET	28	14	19.5	7	1.5	260
024	04	03	AT	28	14	19.5	7	1.5	260

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DASH NUMBERS – SPECIFICATION SHEET NUMBER 16: ES410

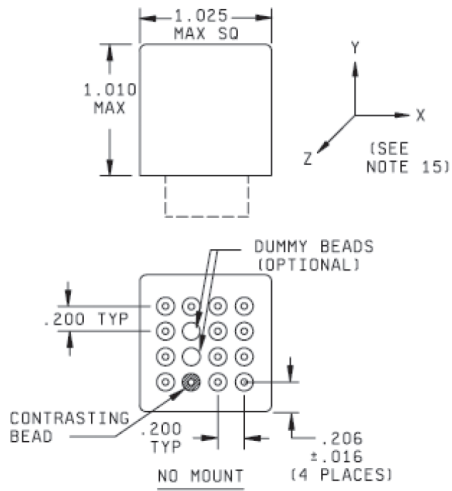
Dash Number	Coil Code	Mount	Terminals	Coil Voltage	Max Pickup Voltage @ +25°C	Max Pickup Voltage @ +125°C	Max Hold Voltage @ +125°C	Min Dropout Voltage @ -70°C	Coil Resistance (Ω, Min @ +25°C)
009	02	01	ET	12	6.5	9	4.5	0.5	63
010	02	01	AT	12	6.5	9	4.5	0.5	63
011	02	01	BG	12	6.5	9	4.5	0.5	63
012	02	02	ET	12	6.5	9	4.5	0.5	63
013	02	02	AT	12	6.5	9	4.5	0.5	63
014	02	02	BG	12	6.5	9	4.5	0.5	63
015	02	03	ET	12	6.5	9	4.5	0.5	63
016	02	03	AT	12	6.5	9	4.5	0.5	63
017	04	01	ET	28	14	19.5	7	1.5	260
018	04	01	AT	28	14	19.5	7	1.5	260
019	04	01	BG	28	14	19.5	7	1.5	260
020	04	02	ET	28	14	19.5	7	1.5	260
021	04	02	AT	28	14	19.5	7	1.5	260
022	04	02	BG	28	14	19.5	7	1.5	260
023	04	03	ET	28	14	19.5	7	1.5	260
024	04	03	AT	28	14	19.5	7	1.5	260
025	00	09	GG	28	14	18.7	7	1.5	260
034*	28	02	BG	28	14	19.5	7	1.5	260

*This relay is supplied without internal Arc Barriers and is not rated for AC loads

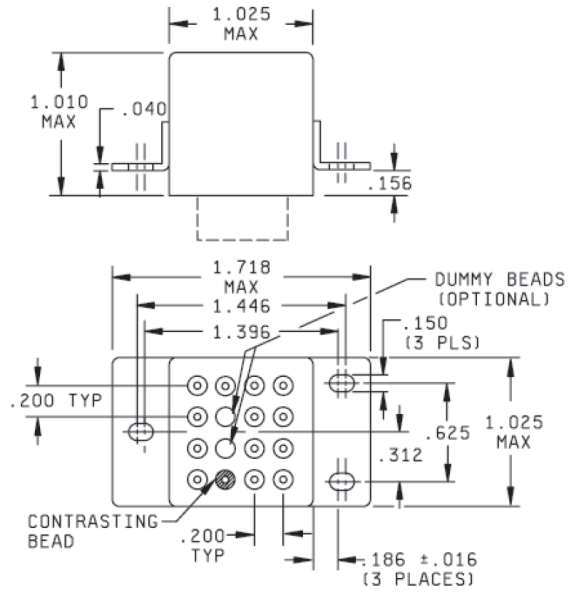
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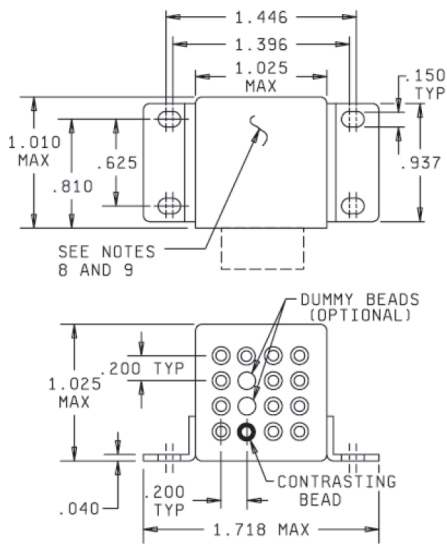
MOUNTING STYLES



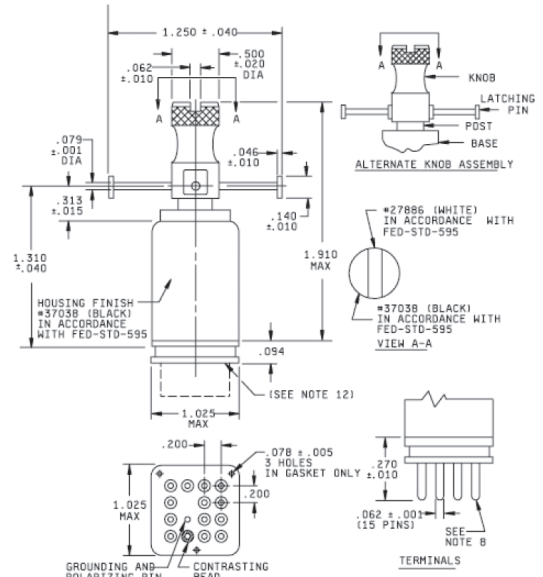
Mount 01



Mount 02

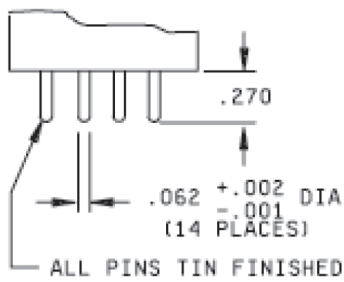


Mount 03

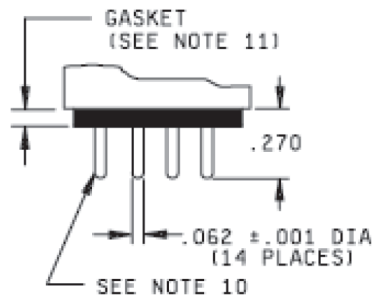


Mount 09

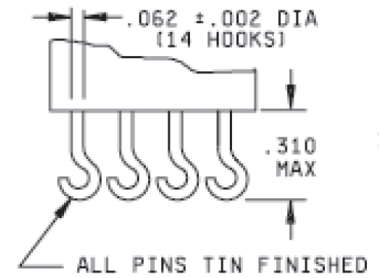
TERMINAL STYLES



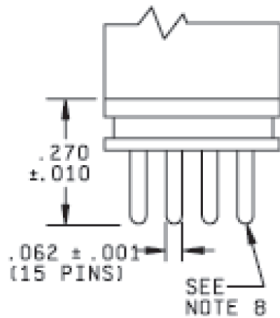
Terminal ET: Tin Plated



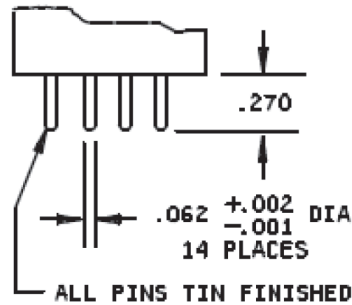
Terminal BG: Gold Plated



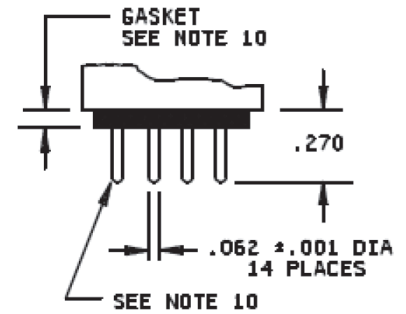
Terminal AT: Tin Plated



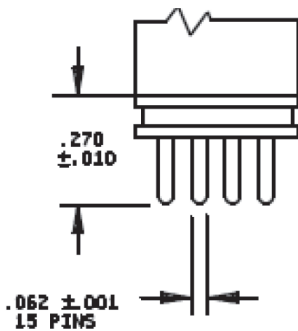
Terminal GG: Gold Plated



Terminal JT: Tin Plated



Terminal CG: Gold Plated



Terminal HG: Gold Plated

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