

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

ELECTRICAL CHARACTERISTICS (CONTINUED)

- Insulation Resistance

Initial: 100 MΩ Min, @ 500 Vdc  
After Life Tests (Mounting Code 09):  
100 MΩ Min, @ 500 Vdc

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<sup>-8</sup> atm cm<sup>3</sup>/s)

ELECTRICAL CHARACTERISTICS

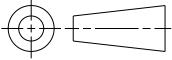
- Contact Voltage Drop (at rated resistive load)  
Initial: 150 mV Max  
After Guaranteed Life: 175 mV Max
- Dielectric Strength @ Sea Level  
Mounting Code 09      Coil to Case      All Other Points  
Initial @ 60 Hz: 1,050 V<sub>rms</sub>      1,500 V<sub>rms</sub>  
After Life Test @ 60 Hz: 1,050 V<sub>rms</sub> All      1,250 V<sub>rms</sub>  
Others  
Initial @ 60 Hz: 1,000 V<sub>rms</sub>      1,250 V<sub>rms</sub>  
After Life Test @ 60 Hz: 1,000 V<sub>rms</sub>      1,000 V<sub>rms</sub>

- After Life Tests (All Others):  
50 MΩ Min, @ 500 Vdc  
Max Leakage Current (Mounting Code 09):  
100 μA RMS  
Back EMF (Transient Voltage, ES410 Only): -42 Vdc Max

REVISIONS

| P | LTR | DESCRIPTION     | DATE      | DWN | APVD |
|---|-----|-----------------|-----------|-----|------|
|   | A   | INITIAL RELEASE | 04FEB2026 | SM  | AT   |
|   |     |                 |           |     |      |
|   |     |                 |           |     |      |
|   |     |                 |           |     |      |



|                                                                                       |  |                                           |  |                                                                                                                 |  |                                |  |               |  |
|---------------------------------------------------------------------------------------|--|-------------------------------------------|--|-----------------------------------------------------------------------------------------------------------------|--|--------------------------------|--|---------------|--|
| THIS DRAWING IS A CONTROLLED DOCUMENT.                                                |  | DWN<br>SM<br>04FEB2026                    |  | <div>TE Connectivity</div> |  |                                |  |               |  |
|                                                                                       |  | CHK<br>AT<br>04FEB2026                    |  |                                                                                                                 |  |                                |  |               |  |
|                                                                                       |  | APVD<br>SM<br>04FEB2026                   |  |                                                                                                                 |  |                                |  |               |  |
| DIMENSIONS:<br>INCH                                                                   |  | TOLERANCES UNLESS<br>OTHERWISE SPECIFIED: |  | NAME<br>E410 AND ES410                                                                                          |  |                                |  |               |  |
|  |  | 0 PLC ±                                   |  | PRODUCT SPEC                                                                                                    |  |                                |  |               |  |
|                                                                                       |  | 1 PLC ±                                   |  |                                                                                                                 |  |                                |  |               |  |
|                                                                                       |  | 2 PLC ±                                   |  |                                                                                                                 |  |                                |  |               |  |
|                                                                                       |  | 3 PLC ±                                   |  |                                                                                                                 |  |                                |  |               |  |
| 4 PLC ±                                                                               |  | ANGLES ±                                  |  | APPLICATION SPEC                                                                                                |  |                                |  |               |  |
| MATERIAL                                                                              |  | FINISH                                    |  |                                                                                                                 |  |                                |  | SIZE<br>A3    |  |
|                                                                                       |  | WEIGHT                                    |  | CAGE CODE                                                                                                       |  | DRAWING NO<br>C-E410 AND ES410 |  | RESTRICTED TO |  |
|                                                                                       |  | CUSTOMER DRAWING                          |  | SCALE<br>NONE                                                                                                   |  | SHEET<br>1 OF 5                |  | REV<br>A      |  |

Qualified to MIL-PRF-83536

## CONTACT RATING (AMPS)

| Type of Load (High Level) | Cycles x 10 <sup>3</sup> | 28 Vdc | 4001115 Phase Vac | Hz | 501115 Phase/60 Hz | Vac | 115/2003400 Phase Hz | Vac | 115/200503 |
|---------------------------|--------------------------|--------|-------------------|----|--------------------|-----|----------------------|-----|------------|
| Phase/60 Hz               | Vac                      |        |                   |    |                    |     |                      |     |            |
| 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

## QPL PART NUMBERING

|               |
|---------------|
| BASIC SERIES  |
| COIL CODE     |
| MOUNTING CODE |
| TERMINAL CODE |
| FR LEVEL      |

|             |    |    |    |   |
|-------------|----|----|----|---|
| Part Number |    |    |    |   |
| E410        | 04 | 02 | BG | L |

## MILITARY PART NUMBERING

|             |   |    |   |       |
|-------------|---|----|---|-------|
| Part Number |   |    |   |       |
| M33536      | / | 15 | - | 022 L |

## SPECIFICATION DESIGNATOR

| SPECIFICATION SHEET NUMBER |       |
|----------------------------|-------|
| 15                         | E410  |
| 16                         | ES410 |

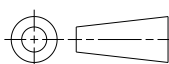
## DASH NUMBER

[See Charts](#)

FAILURE RATE LEVEL

FR level (percent per 10,000 cycles)

|           |     |
|-----------|-----|
| L         | 3.0 |
| – DC Only | 1.0 |

|                                                                                       |  |                  |           |                  |                                                                                                                  |                  |            |               |     |
|---------------------------------------------------------------------------------------|--|------------------|-----------|------------------|------------------------------------------------------------------------------------------------------------------|------------------|------------|---------------|-----|
| THIS DRAWING IS A CONTROLLED DOCUMENT.                                                |  | DWN<br>SM        | 04FEB2026 |                  | <div></div> TE Connectivity |                  |            |               |     |
| DIMENSIONS:<br>INCH                                                                   |  | CHK<br>AT        | 04FEB2026 |                  | NAME<br>E410 AND ES410                                                                                           |                  |            |               |     |
|  |  | APVD<br>SM       | 04FEB2026 |                  |                                                                                                                  |                  |            |               |     |
|                                                                                       |  | PRODUCT SPEC     |           | SIZE             |                                                                                                                  | CAGE CODE        | DRAWING NO | RESTRICTED TO |     |
|                                                                                       |  | APPLICATION SPEC |           | A3               |                                                                                                                  | C-E410 AND ES410 |            |               |     |
| MATERIAL                                                                              |  | FINISH           |           | WEIGHT           |                                                                                                                  | SCALE            |            | SHEET         | REV |
|                                                                                       |  |                  |           | CUSTOMER DRAWING |                                                                                                                  | NONE             |            | 2 OF 5        | A   |

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Qualified to MIL-PRF-83536

| REVISIONS |     |             |      |     |      |
|-----------|-----|-------------|------|-----|------|
| P         | LTR | DESCRIPTION | DATE | DWN | APVD |
|           |     | SEE SHEET 1 |      |     |      |

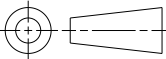
DASH NUMBERS – SPECIFICATION SHEET NUMBER 15: E410

| 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                              |

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

|                                                                                       |  |                  |           |                        |                                                                                                                 |               |                              |         |               |
|---------------------------------------------------------------------------------------|--|------------------|-----------|------------------------|-----------------------------------------------------------------------------------------------------------------|---------------|------------------------------|---------|---------------|
| THIS DRAWING IS A CONTROLLED DOCUMENT.                                                |  | DWN<br>SM        | 04FEB2026 |                        | <div>TE Connectivity</div> |               |                              |         |               |
| DIMENSIONS:<br>INCH                                                                   |  | CHK<br>AT        | 04FEB2026 |                        |                                                                                                                 |               |                              |         |               |
|                                                                                       |  | APVD<br>SM       | 04FEB2026 |                        |                                                                                                                 |               |                              |         |               |
|  |  | PRODUCT SPEC     |           | NAME<br>E410 AND ES410 |                                                                                                                 |               |                              |         |               |
|                                                                                       |  | APPLICATION SPEC |           |                        |                                                                                                                 |               |                              |         |               |
|                                                                                       |  | WEIGHT           |           |                        |                                                                                                                 |               |                              |         |               |
| MATERIAL                                                                              |  | FINISH           |           | SIZE<br>A3             |                                                                                                                 | CAGE CODE     | DRAWING NO<br>E410 AND ES410 |         | RESTRICTED TO |
| CUSTOMER DRAWING                                                                      |  |                  |           |                        |                                                                                                                 | SCALE<br>NONE | SHEET<br>3                   | OF<br>5 | REV<br>A      |



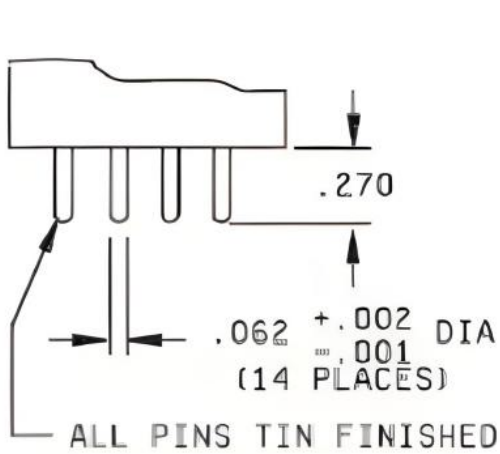
## REVISIONS

SEE SHEET 1

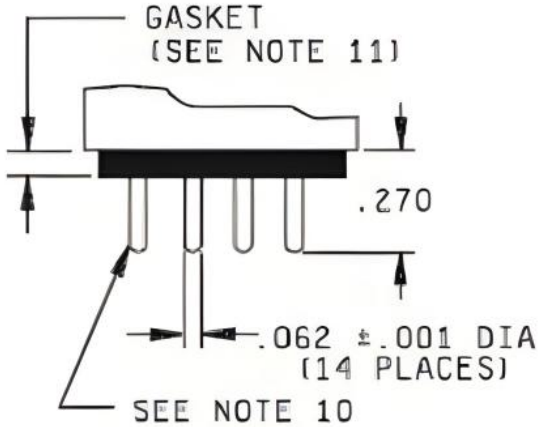


| P | LTR | DESCRIPTION | DATE | DWN | APVD |
|---|-----|-------------|------|-----|------|
|   |     | SEE SHEET 1 |      |     |      |

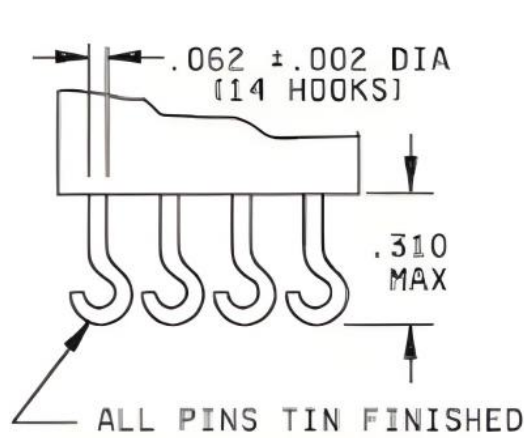
TERMINAL STYLES



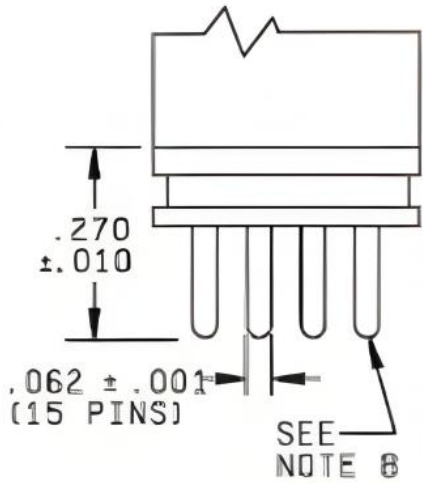
Terminal ET: Tin Plated



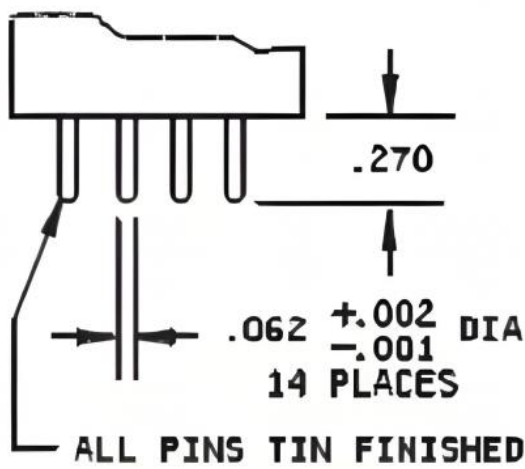
Terminal BG: Gold Plated



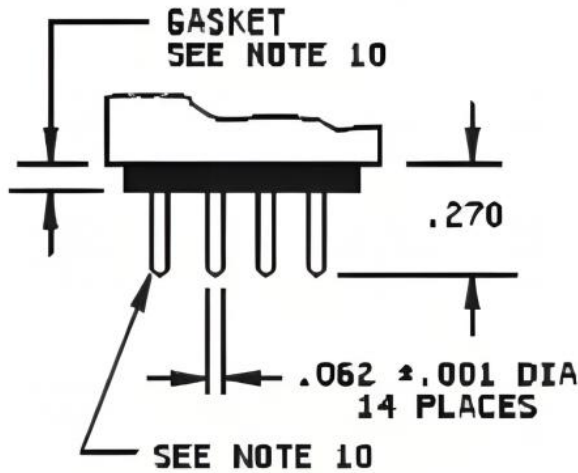
Terminal AT: Tin Plated



Terminal GG: Gold Plated

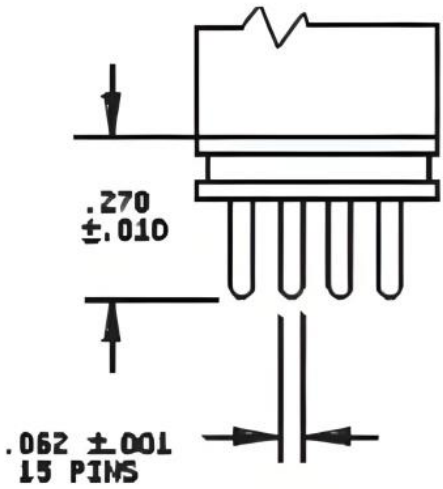
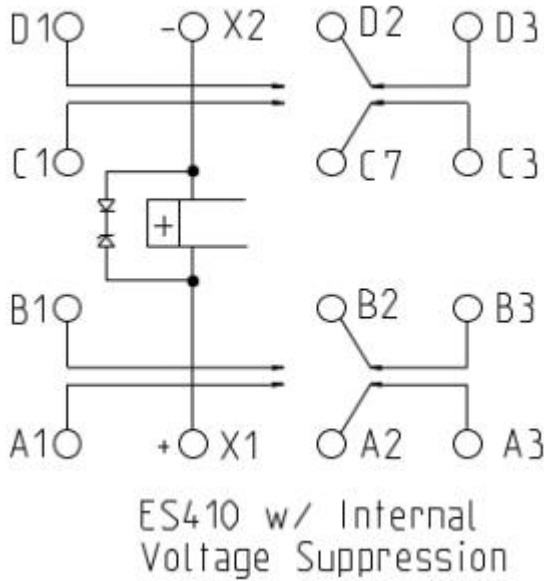
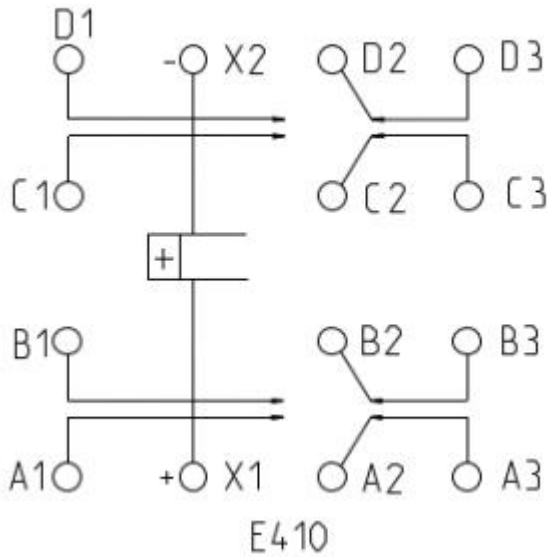


Terminal JT: Tin Plated

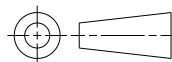


Terminal CG: Gold Plated

CIRCUIT DIAGRAM



Terminal HG: Gold Plated

|                                                                                       |  |                                           |  |                                                                                                                             |                  |  |                               |                 |  |
|---------------------------------------------------------------------------------------|--|-------------------------------------------|--|-----------------------------------------------------------------------------------------------------------------------------|------------------|--|-------------------------------|-----------------|--|
| THIS DRAWING IS A CONTROLLED DOCUMENT.                                                |  | DWN<br>SM<br>04FEB2026                    |  | <div></div> <div>TE Connectivity</div> |                  |  |                               |                 |  |
|                                                                                       |  | CHK<br>AT<br>04FEB2026                    |  |                                                                                                                             |                  |  |                               |                 |  |
| DIMENSIONS:<br>INCH                                                                   |  | TOLERANCES UNLESS<br>OTHERWISE SPECIFIED: |  | NAME<br>E410 AND ES410                                                                                                      |                  |  |                               |                 |  |
|  |  | 0 PLC ±                                   |  | SIZE<br>A3                                                                                                                  |                  |  |                               |                 |  |
|                                                                                       |  | 1 PLC ±                                   |  |                                                                                                                             |                  |  | CAGE CODE<br>C-E410 AND ES410 |                 |  |
|                                                                                       |  | 2 PLC ±                                   |  |                                                                                                                             |                  |  |                               |                 |  |
| 3 PLC ±                                                                               |  | RESTRICTED TO                             |  |                                                                                                                             |                  |  |                               |                 |  |
| 4 PLC ±                                                                               |  |                                           |  |                                                                                                                             | APPLICATION SPEC |  |                               |                 |  |
| ANGLES ±                                                                              |  |                                           |  |                                                                                                                             |                  |  |                               | WEIGHT          |  |
|                                                                                       |  | CUSTOMER DRAWING                          |  |                                                                                                                             |                  |  |                               |                 |  |
| MATERIAL                                                                              |  |                                           |  |                                                                                                                             | SCALE<br>NONE    |  |                               |                 |  |
|                                                                                       |  |                                           |  |                                                                                                                             |                  |  |                               | SHEET<br>5 OF 5 |  |
|                                                                                       |  | REV<br>A                                  |  |                                                                                                                             |                  |  |                               |                 |  |
|                                                                                       |  |                                           |  |                                                                                                                             |                  |  |                               |                 |  |
|                                                                                       |  |                                           |  |                                                                                                                             |                  |  |                               |                 |  |
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|                                                                                       |  |                                           |  |                                                                                                                             |                  |  |                               |                 |  |
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