

Honeywell Sensing and Control



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510E1A48F209PB



510 Series Encoder, Mechanical 9 pulse/rev/channel 2-bit Gray code

Actual product appearance may vary.

Features

- Cost effective, eliminates need for A/D converters
- High resolution up to 36 positions
- Stability from -40 °C to 105 °C [-40 °F to 221 °F]
- Horizontal and vertical mounting

Potential Applications

- Level control
- Cursor control
- Frequency control
- Temperature control
- Time Control
- Position sensing

Description

The 510 Series controls are manually operated, rotary, mechanical encoders that provide a two-bit gray code for relative reference applications and a four-bit gray code for absolute electrical reference applications. The "L" channel leads the "R" channel by 90 deg. electrically in the Clockwise position. It features continuous electrical travel and has a rotational life of more than 100,000 shaft revolutions with a positive detent feel.

This series is relatively small in size measuring 21,08 mm [0.83 in] - square by 8.71 mm [0.343 in] - deep. They are commonly used in limited-space panel-mounted applications where the need for costly, front-panel displays can be completely eliminated. Digital gray-code outputs eliminate the need for A/D converters.

Supporting Documentation

- ▶ [Dimensions](#)
- ▶ [Accessories: Mounting Bracket](#)
- ▶ [Output Table](#)

| Product Specifications | |
|------------------------|---|
| Encoder Type | Mechanical |
| Pulse Per Revolution | 9 cycles/rev |
| Detents | 36 |
| Pulse | 1/4 cycle per detent |
| Dome Switch | No |
| Output | 2-bit gray code, Channel L leads Channel R by 90° electrically in clockwise direction |
| Contact resistance | 5 Ohm |
| Open Resistance | 100 kOhm |
| Contact Rating | 28 Vdc max at 250 mA |
| Jitter (Bounce) | 5 ms/cycle at 15 RPM |

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| | |
|---------------------------|---|
| Electrical Travel | Continuous |
| Operating Speed | 50 RPM |
| Operating Torque | 0,0216 N m to 0,036 N m [3.0 oz in to 5.0 oz in] |
| Panel Mounting Torque | 1,13 N m [7.0 lb] max. |
| Body Size (Single Module) | 21,1 mm [0.83 in] square, ±0,127 mm [0.005 in] |
| Terminals | PC terminals straight Type B-110 (Horizontal mount) |
| Housing Type | Molded thermoplastic |
| Mechanical Travel | Continuous |
| Rotational Life | 100,000 detented cycles at rated load typical (1 cycle=720 degrees) |
| Shaft Pull Force | 4,536 kg [10 lb] |
| Shaft Side Load Force | 1,13 N m [7 lb in] max. |
| Shaft Material | Plastic |
| Shaft Diameter | 6,35 mm [0.25 in] |
| Shaft Length | 19,05 mm [0.75 in] |
| Bushing Material | Plastic |
| Bushing Diameter | 9,53 mm [0.375 in] x 32 NEF-2A |
| Bushing Length | 6,35 mm [0.25 in] |
| Operating Temperature | -40 °C to 105 °C [-40 °F to 221 °F] |
| Storage Temperature | -55 °C to 120 °C [-67 °F to 248 °F] |
| Humidity | 90% RH at 25 °C [77 °F] Insulation resistance 1 MOhm max.; Per MIL-STD 202, Method106C |
| Shock | Per MIL-STD-202; method 213, Condition G |
| Series Name | 510 |
| Availability | Global |
| UNSPSC Code | 30211929 |
| UNSPSC Commodity | 30211929 Encoders |