## Encoders

510 Series, Mechanical


The 510 Series controls are manually operated, rotary, mechanical encoders that provide a two-bit gray code for relative reference applications and a fourbit gray code for absolute electrical reference applications. The "L" channel leads the "R" channel by $90^{\circ}$ electrically in the CW 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 small-sized, $21,08 \mathrm{~mm}^{2}$ by $8,71 \mathrm{~mm}$ deep ( $0.83 \mathrm{in}^{2} \times 0.343 \mathrm{in}$ ) long and 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.

| Bushing: | $9,52 \mathrm{~mm}(0.375 \mathrm{in}) \emptyset \times 6,35 \mathrm{~mm}(0.25 \mathrm{in}) \mathrm{L}$ |
| :--- | ---: |
| Shaft: | Flatted, $6,35 \mathrm{~mm}(0.25 \mathrm{in}) \emptyset \times 19,05 \mathrm{~mm}(0.75 \mathrm{in}) \mathrm{L}$ |
| Body: | $21,08 \mathrm{~mm}(0.830 \mathrm{in}) \mathrm{square}$ |
| Operating temperature: | $-40^{\circ} \mathrm{C}$ to $105^{\circ} \mathrm{C}\left(-40^{\circ} \mathrm{F}\right.$ to $\left.221^{\circ} \mathrm{F}\right)$ |
| Rotational cycles: | 100,000 |




Control Dimensions, Single Control


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## OPTIONS

Vertical Mount, PC Terminals/bent back

| GREY CODE OPTIONS | REFERENCE |
| :--- | :--- |
| 2 bit/4 cycles | 510 E 1 A 48 F 204 PC |
| $2 \mathrm{bit} / 6$ cycles | 510 E 1 A 48 F 206 PC |
| $2 \mathrm{bit} / 9$ cycles | 510 E 1 A 48 F 209 PC |
| $4 \mathrm{bit} / 16$ cycles | 510 E 1 A 48 F 416 PC |

## Horizontal Mount, PC Terminals/straight

| GREY CODE OPTIONS | REFERENCE |
| :--- | :--- |
| 2 bit/4 cycles | 510 E 1 A 48 F 204 PB |
| 2 bit/ 6 cycles | 510 E 1 A 48 F 206 PB |
| 2 bit $/ 9$ cycles | 510 E 1 A 48 F 209 PB |
| 4 bit/16 cycles | 510 E 1 A 48 F 416 PB |

## Brackets

| MOUNTING DIRECTION | REFERENCE |
| :--- | :--- |
| Vertical | 510 VBKT |
| Horizontal | 510 HBKT |

## 600 Series, Optical



The 600 Series controls are manually operated, rotary, optical encoders that output two square waves in quadrature at a rate of 128 pulse per channel per revolution as a standard with other resolutions down to 60 pulses available. The outputs are TTL compatible. PC terminals or cable leads are available.

| Pulses per revolution: | 128 |
| :--- | ---: |
| Supply voltage: | 5.0 V |
| Body: | $34,93 \mathrm{~mm}(1.375 \mathrm{in}) \emptyset$ |
| Shaft: | $6.35 \mathrm{~mm}[0.25 \mathrm{in}]$ dia by $22.23 \mathrm{~mm}[0.875]$ long |
| Bushing: | $9,52 \mathrm{~mm}[0.375 \mathrm{in}]$ dia by $9,52 \mathrm{~mm}[0.375 \mathrm{in}]$ long |
| Operating temperature: | $-40^{\circ} \mathrm{C}$ to $65^{\circ} \mathrm{C}\left(-40^{\circ} \mathrm{F}\right.$ to $\left.149{ }^{\circ} \mathrm{F}\right)$ |
| Revolutions: | 10 million |



## OPTIONS

Series 600

| TERMINATION | REFERENCE |
| :--- | :--- |
| $177,8 \mathrm{~mm}(7.0 \mathrm{in})$ long cable | $600 \mathrm{EN}-128-\mathrm{CBL}$ |
| PC terminals exiting side | $600 \mathrm{EN}-128-\mathrm{B66}$ |
| PC terminals exiting rear | $600 \mathrm{EN}-128-\mathrm{C} 24$ |
| $177,8 \mathrm{~mm}(7.0 \mathrm{in})$ long cable with connector | $600 E N-128-C N 1$ |

