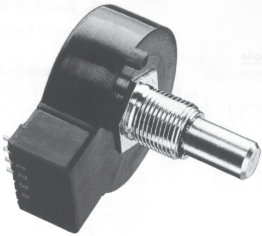


Incremental Optical Encoder Contactless Technology (128 Pulses per Turn)



FEATURES

- Long life: 10 million revolutions minimum (contactless)
- Cost effective: Elimination of A/D converters
- Stainless steel shafts and nickel-plated bushing in various lengths
- Stability: - 40 °C to + 65 °C operating temperature
- Variability: Cable and printed circuit terminations available



The Model 120E is a light-duty optical encoder that can be manually. This unique device outputs two square waves at a maximum rate of 128 pulses in quadrature with other resolutions as low as 10 pulses available. Typical applications includes Motion sensing and control, Motor control, Flow control, Low-to-high input for test and measurement, Medical instrumentation, Robotics and Computer Peripherals.

| ELECTRICAL SPECIFICATIONS | | | |
|---------------------------|--------------------------------------------------------------|---------|---------|
| PARAMETER | MINIMUM | NOMINAL | MAXIMUM |
| VCC Range (V) | 4.75 | 5 | 5.25 |
| Supply Current (mA) | - | - | 30 |
| Voh (V) | 2.4 | - | - |
| Vol (V) | - | - | 0.4 |
| Pull-up Resistor (kΩ) | - | 10 | - |
| Output | Channel A leads channel B by 90° electrically, CCW direction | | |

| MECHANICAL SPECIFICATIONS | |
|---------------------------|----------------------------------------------------------------------|
| PARAMETER | |
| Vibration | 10 to 2000 Hz, 15 G mil std., - 202 method 204 test condition C |
| Shock | 100 G at 6 ms mil std. 202, method 213 test condition C |
| Rotational Torque | Sleeve Bearing 1.5 oz. in Other torque ranges available |
| Operating Speed | 300 RPM |
| Rotational Life | 10 000 000 revolutions |
| Shaft End Play | 0.005 maximum |
| Shaft Radial Play | 0.010 at 1" |
| Shaft Axial Force | 15 lbs. push/pull |
| Terminal Strength | 2 lbs. |

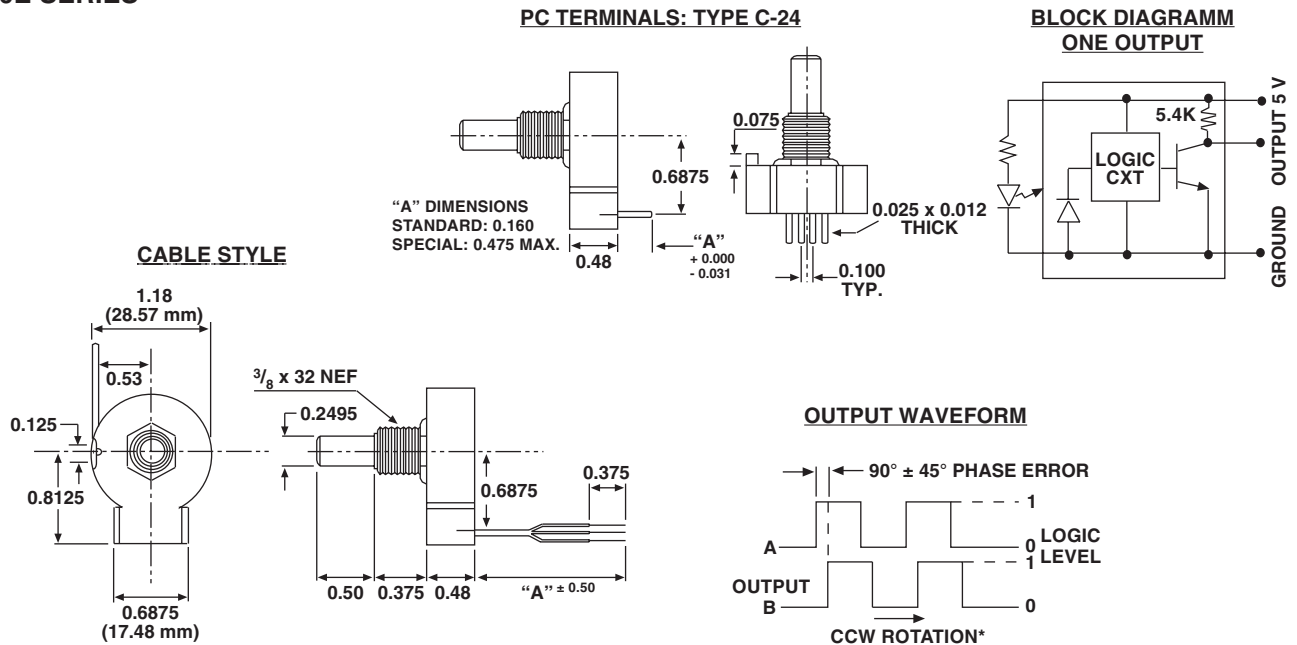
| ORDERING INFORMATION/DESCRIPTION | | | | | | |
|----------------------------------------------------------------|--------------------|---------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-------------|
| 120 | E | N | 128 | CBL | BO100 | e4 |
| MODEL | PRODUCT ID | SHAFT AND BUSHING SIZE | PULSES PER RESOLUTION | TERMINATION | PACKAGING | LEAD FINISH |
| Sleeve-bearing construction with two channel quadrature output | E = Encoder | N = 1/4" (6.35 mm) diameter by 0.875" (22.23 mm) long shaft 3/8" (9.53 mm) diameter x 32 NEF 2A by 3/8" (9.53 mm) long bushing | Number of pulses per revolution | B66 = PC terminal type B-66 horizontal mounting C24 = PC terminal type C-24, vertical mounting CBL = 7.5" (190.5 mm) long cable CN1 = Cable with connector | Box of 100 pieces | |

| SAP PART NUMBERING GUIDELINES | | | |
|-------------------------------|-----------------------|------------------------|-----------|
| 120EN | 128 | CBL | B30 |
| MODEL | PULSES PER REVOLUTION | TERMINAL CONFIGURATION | PACKAGING |



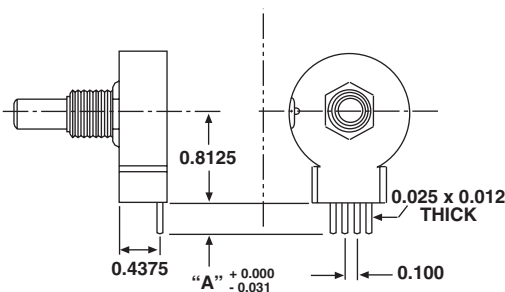
DIMENSIONS in inches (millimeters)

120E SERIES



*Channel A leads channel B by 90° electrically in CCW direction

PC TERMINALS: TYPE B-66



| TERM # | FUNCTION |
|--------|---------------------------------------|
| 1 | 5 V _{DC} ± 5 % at 30 ma max. |
| 2 | "A" out |
| 3 | Ground |
| 4 | "B" out |

| "A" DIMENSIONS | |
|----------------|------------|
| Standard | 0.160 |
| Special | 0.400 max. |

Dimension Tolerances, Unless Otherwise Specified

FRACTIONS = ± 1/64 (0.40 mm) DECIMALS = ± 0.005 GRDS = ± 0.010 (0.25 mm)

Notes:

- (1) "A" cable length standard 7.50 ± 0.50. Other lengths available, specified by customer.
- (2) "A" and "B" outputs are TTL compatible on all models.

| COLOR | FUNCTION |
|--------|--------------------------------------|
| Red | 5V _{DC} ± 5 % at 30 ma max. |
| Green | Ground |
| Yellow | "A" out |
| Orange | "B" out |

| ENVIRONMENTAL SPECIFICATIONS | | | |
|------------------------------|-------------------------|---------|----------|
| PARAMETER | MINIMUM | NOMINAL | MAXIMUM |
| Operating Temperature (°C) | - 40 °C | - | + 65 °C |
| Storage Temperature (°C) | - 55 °C | - | + 110 °C |
| Humidity | 85 % RH at 40 °C, 240 h | - | - |

| TERMINAL | |
|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| Terminal | B66: PC Terminals, horizontal mounting C24: PC Terminals, vertical mounting CBL: 7.5 including cable CN1: 7.5 including cable with connector |



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All product specifications and data are subject to change without notice.

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