200 Series *Hollow Shaft Encoder*

Description:

MODEL 220C - SINGLE CHANNEL

The Model 220C Optical Encoder is designed to mount directly on a motor shaft. As the shaft rotates, a square wave output pulse is generated that varies at a rate proportional to shaft speed.

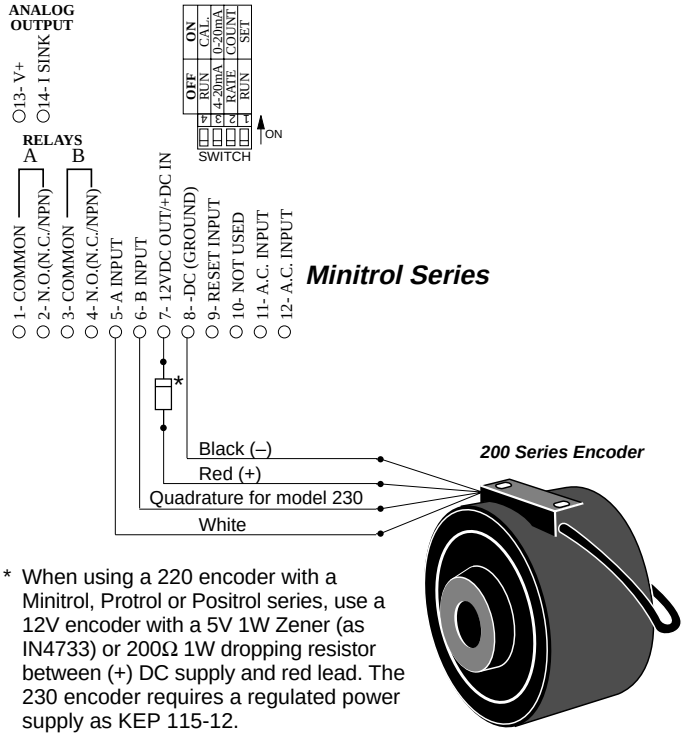
The Model 220C is ideal for motor speed control or tachometer feed back applications.

MODEL 230 - BI-DIRECTIONAL

The Model 230 Optical Encoder is designed to mount directly on a shaft for bi-directional applications. The encoder produces two symmetrical 50% duty cycle square wave output signals in quadrature relationship to each other. The signals lead or lag each other by 90 degrees depending upon the direction of rotation.

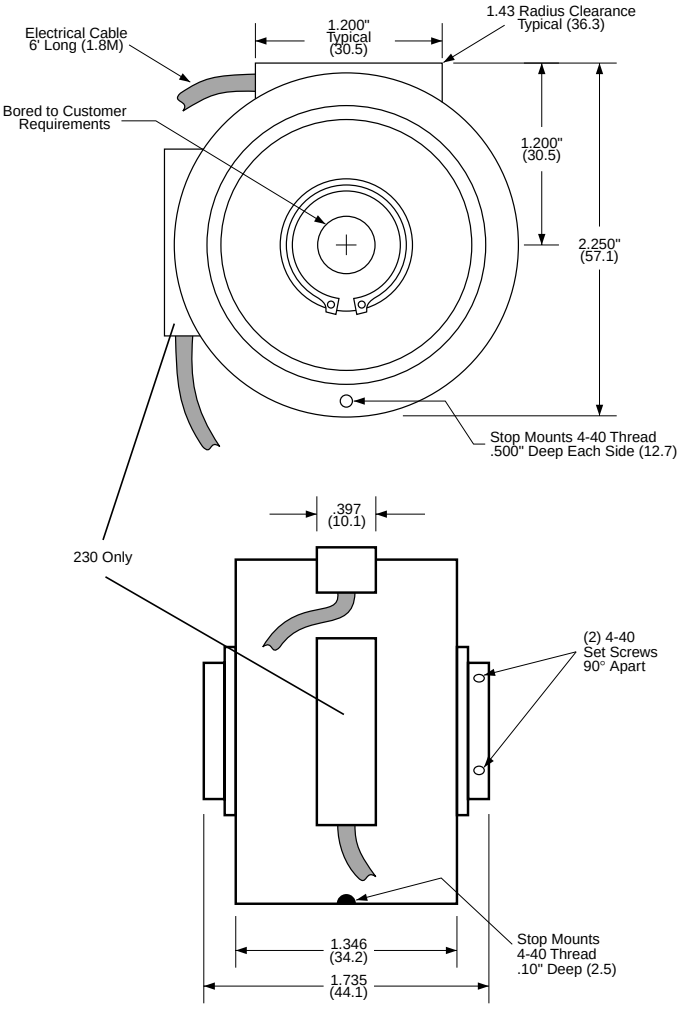
Specifications	Model 220C	Model 230
ELECTRICAL INPUT		
Voltage	5 to 16 VDC (specify)	5 to 16 VDC (specify)
Current	25 Milliamperes	50 Milliamperes
Regulation	±10%	±10%
ELECTRICAL OUTPUT		
Wave shape	Square Wave	Square Wave
Rise Time	Less than 1 microsecond	Less than 1 microsecond
Current	Sink 20 milliamperes	Sink 20 milliamperes/output
Pulse rate	0 to 6000 Hz	0 to 6000 Hz
Pulses per shaft revolution	1 to 600 (specify)	1 to 100 (specify)
MECHANICAL		
Hollow shaft speed	6000 RPM maximum	4000 RPM maximum
Hollow shaft rotation	Either direction	Either direction
Bearings	Sealed ball bearings	Sealed ball bearings
Bore size	.250"(6.35mm) to .875"(22.22mm) dia. (spec)	.250"(6.35mm) to .875"(22.22mm) dia. (spec)
Bore tolerance	+.003"(.076mm)-.000"(.000mm)	+.003"(.076mm)-.000"(.000mm)
Running torque	10 oz. inches (40.5gm-cm)	10 oz. inches (40.5gm-cm)
Operating life	100,000 hrs.	100,000 hrs.
Housing	Alum. black anodized finish	Alum. black anodized finish
Cable	3 conductor shielded, 6 ft. long w/ built-in strain relief	Two 3 conductor shielded, 6 ft. long w/ built-in strain relief
Weight	8 oz. (227 grams)	8 oz. (227 grams)
ENVIRONMENTAL		
Temperature	-13°F (-25°C) to +167°F (+75°C)	+32°F (0°C) to +167°F (+75°C)

Typical Application:

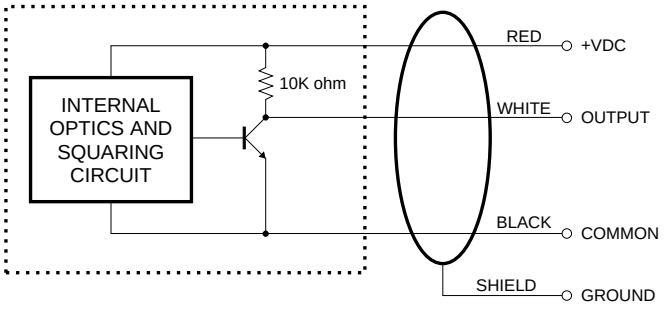


* When using a 220 encoder with a Minitrol, Protrol or Positrol series, use a 12V encoder with a 5V 1W Zener (as IN4733) or 200Ω 1W dropping resistor between (+) DC supply and red lead. The 230 encoder requires a regulated power supply as KEP 115-12.

Mounting:



Circuit Diagram Per Channel:



A flexible housing stop must be provided to prevent improper bearing wear and overheating. Please do not mount outer housing rigidly.

How To Order:

Ex: 230 12VDC 50PPR F .500

Series
- 220C single channel
- 230 Quadrature (2 channels)

Input voltage (specify)
- 5VDC standard voltages
- 12VDC standard voltages
- Others available between 5 and 15 VDC

Pulses Per Rev. (specify)
Ranges: 220C = 1 to 600 PPR
230 = 1 to 100 PPR

Housing Type
- F = Standard round for hollow shaft

Shaft Bore Size (specify)
- Bore diameter in 1/1000 of inch
- Ranges: .250" to .750"

ENCODERS