



intelligent motion systems, inc.
Excellence in Motion™

OPTICAL ENCODER

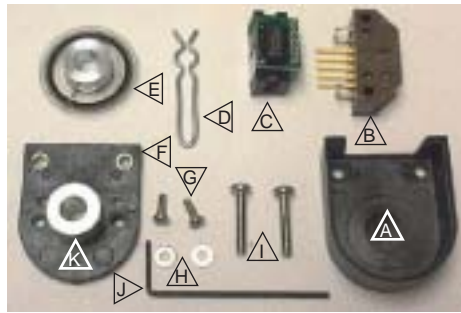
Connection, Mounting & Specifications

Operating Instructions for Single End and Differential Optical Encoders

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ENCODERS

Your encoder will be either mounted to a motor at the factory, or in the form of an encoder kit (pictured). If you purchased the encoder kit, mounting instructions are on the reverse side of this document.



Encoder Kit Contents

- A - Encoder Housing
- B - Optical Module
- C - PC5 Differential Board*
- D - Hub Spacer Tool
- E - Hub/Disk Assembly
- F - Base
- G - (2) #2-56 x 1/4 Screws and (2) M2 x 6 Screws (not shown)†
- H - (2) #2 Flat Washers
- I - (2) #4 - 40 x 5/8 Screws
- J - Hex Wrench
- K - Centering Tool
- Encoder cable (not shown)

*PC5 Board only included in kit for differential encoder.

†NOTE: To avoid damaging threaded motor screw holes, use the correct screw size when mounting the encoder base to the motor. IMS motors beginning with the Part # M- require M2 x 6 metric screws. IMS motors beginning with Part # M2- or MH2- require two #2-56 x 1/4 screws. Use of a gauge to verify correct screw size is recommended for all motors, especially non-IMS motors.

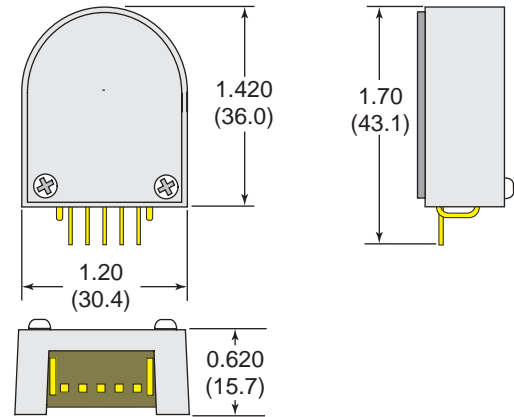
ELECTRICAL SPECIFICATIONS

Specification	Min.	Typ.	Max.	Units
Storage Temperature	-40		100	°C
Operating Temperature	-40		100	°C
Supply Voltage (V _{cc})	-0.5		7	Volts
Supply Current (1000 Line Encoders)	30	57	85	mA
Supply Current (All Other Encoders)		17	40	mA
Output Voltage	-0.5		V _{cc}	Volts
Output Current per Channel	-1.0		5	mA

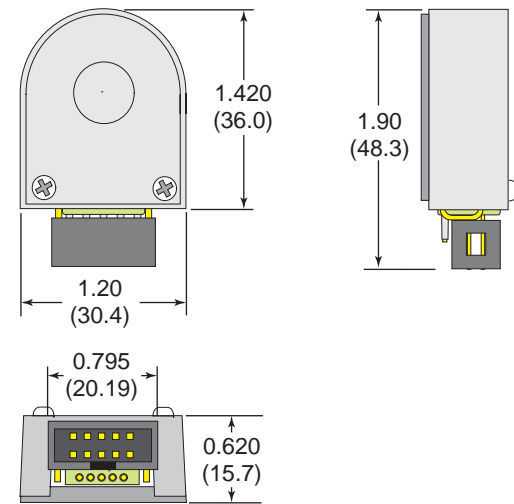
DIMENSIONAL INFORMATION

Dimensions in Inches (mm)

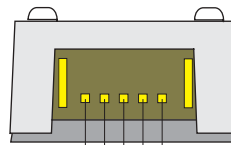
Single End Encoder



Differential Encoder



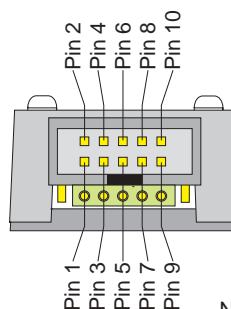
SINGLE END ENCODER CONNECTIONS



- Pin 1: Ground
- Pin 2: Index
- Pin 3: Channel A
- Pin 4: +5VDC Input
- Pin 5: Channel B

NOTE 1: 1000 line encoders DO NOT have an Index mark. Pin 2 will be N/C (No Connection) on these encoders.

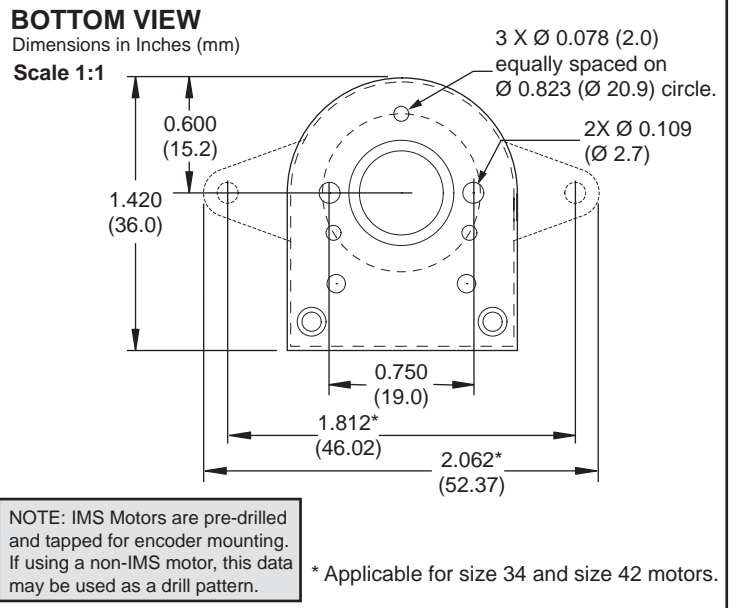
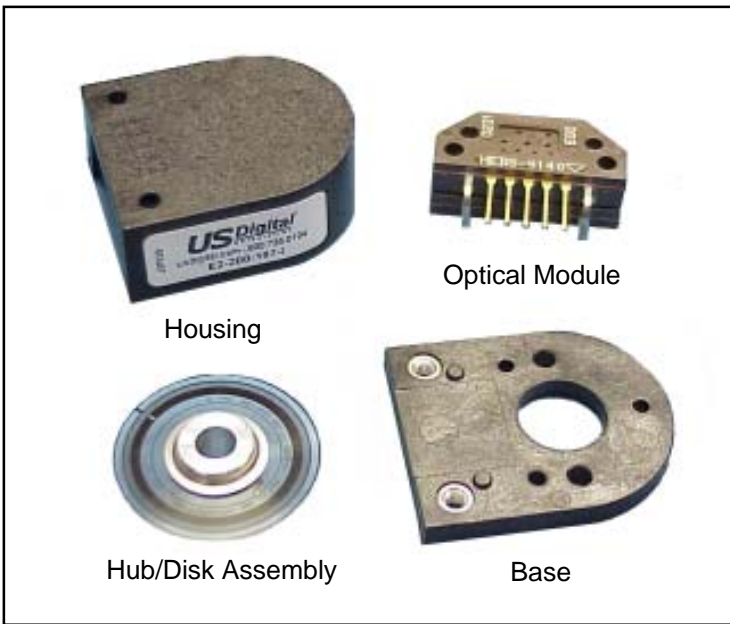
DIFFERENTIAL ENCODER CONNECTIONS



- Pin 1: No Connect
- Pin 2: +5VDC Input
- Pin 3: Ground
- Pin 4: No Connect
- Pin 5: Channel A -
- Pin 6: Channel A +
- Pin 7: Channel B -
- Pin 8: Channel B +
- Pin 9: Index -
- Pin 10: Index +

NOTE 2: 1000 line encoders DO NOT have an Index mark. Pins 9 & 10 will be N/C (No Connection) on these encoders.

NOTE 3: Cable Included.

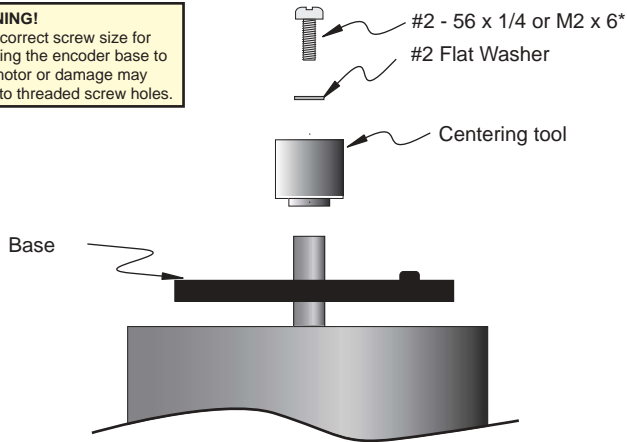


STEP #1: MOUNTING THE BASE

Secure the base to the motor using two 56 x 1/4 or M2 x 6 screws* and washers. If the centering tool is used, slip it over the shaft and into the center hole of the base. For best results apply a drop of Loctite 242 to the screw threads. **TORQUE to 30 oz-in!** Remove centering tool.

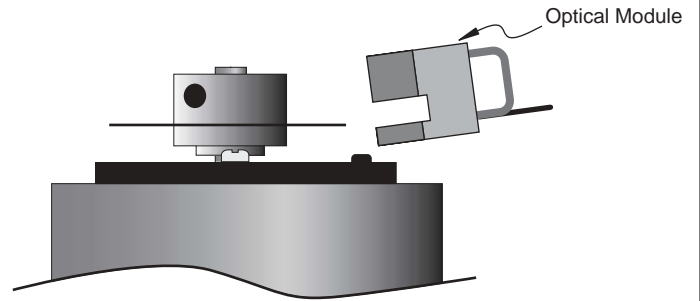
***WARNING!**

Verify correct screw size for mounting the encoder base to your motor or damage may result to threaded screw holes.



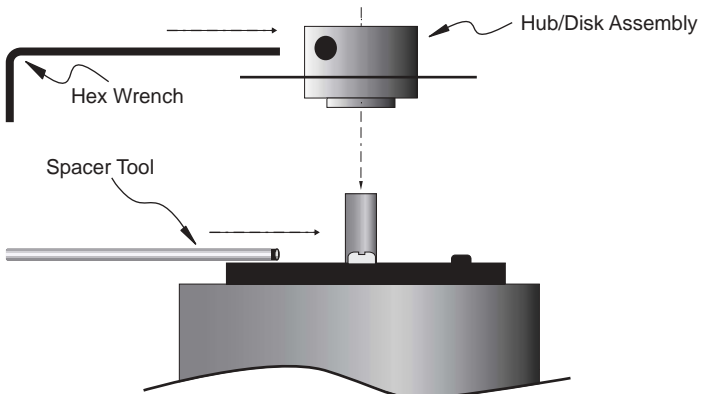
STEP #3: OPTICAL MODULE INSTALLATION

Slip the optical module into position until the two alignment pins slip into the holes on the optical module.



STEP #2: SPACER AND HUB/DISK INSTALLATION

Snap the spacer tool over shaft and ensure the tool is flush against the base. Slip the hub/disk assembly over the shaft and slide it down until it bottoms against the spacer tool. Tighten the set screw with the hex wrench to 40 oz-in. Loctite 242 may be used on set screw threads. Remove spacer tool.



STEP #4: COVER INSTALLATION

Place the encoder housing (cover) over the assembly and secure it using the two #4 - 40 x 5/8 screws included in the kit. A drop of Loctite 241 may be applied to the screw threads. **TORQUE to 50 oz-in.**

