

Connectors and Cable Assemblies

AI-Tek stocks a selection of connectors and cable assemblies for your convenience. For ease of selection, the connectors and assemblies are divided into groups. Group "A" is designed for 2-wire items, Group "B" for 3-wire and Group "C" for 5-wire.

Complete cable assemblies include the connector and 10' of recommended wiring for use with AI-Tek equipment. All wiring is insulated, and wrapped with braided or copper shield and jacketed in long-lasting PVC, Teflon or polyolefin insulation. Alternate cable length is 50', use -050 for final suffix.



| Group | | A-I Tek P/N | Mil. Connect. No. | Max. Temp. | Cable Wiring |
|-------|---|-----------------|------------------------------|------------|------------------------------------------|
| A | S | CN79860 -3100 | MS3106A10SL-4S | 125°C | Connector Only |
| | R | -3800 | MS3108B10SL-4S | 125°C | Connector Only |
| | S | -3000 | MS3456L10SL-4S | 175°C | Connector Only |
| | S | CA79860 -01-010 | MS3106A10SL-4S | 105°C | 2 #22 Black & White |
| | R | -17-010 | MS3108B10SL-4S | 105°C | 2 #22 Black & White |
| | S | -06-010 | MS3456L10SL-4S | 175°C | 2 #20 Black & White |
| B | S | CN79860 -2600 | MS3106A10SL-3S | 125°C | Connector Only |
| | R | -3900 | MS3108B10SL-3S | 125°C | Connector Only |
| | S | CA79860 -18-010 | MS3106A10SL-3S | 125°C | 3 #20 Red, White & Black |
| | R | -24-010 | MS3108B10SL-3S | 125°C | 3 #20 Red, White & Black |
| C | S | CN79860 -4200 | MIL-C-26482 | 125°C | Connector Only |
| | S | CA79860-30-010 | PT06W-10-6S Bayonet Style | 125°C | 5#22 Red, Orange, Black, White, Green |

Net Weight: 5 oz. max.

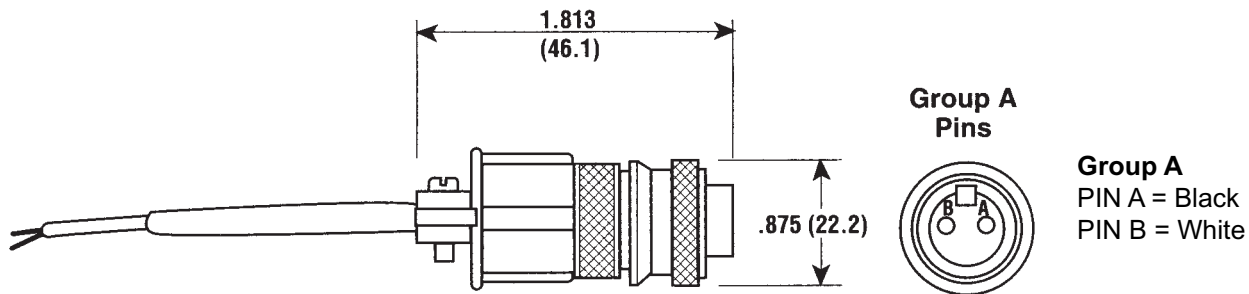
Standard cable assemblies include 10ft. of shielded cable. Special length cables may be available for 50 pcs or more.

S = Straight Connector

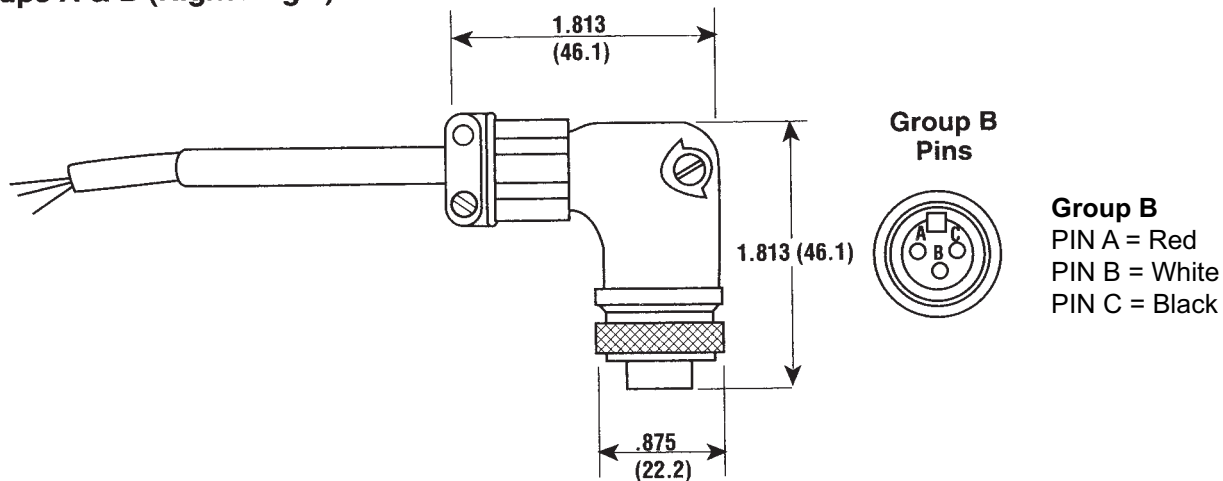
R = Right Angle Connector

It is the customer's responsibility to determine whether the product is proper for customer's use and application.

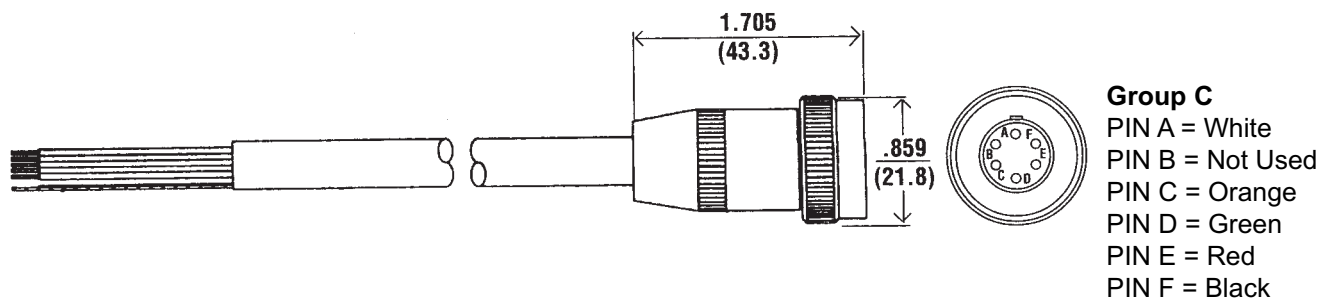
Groups A & B (Straight)



Groups A & B (Right Angle)



Group C



Split Gears

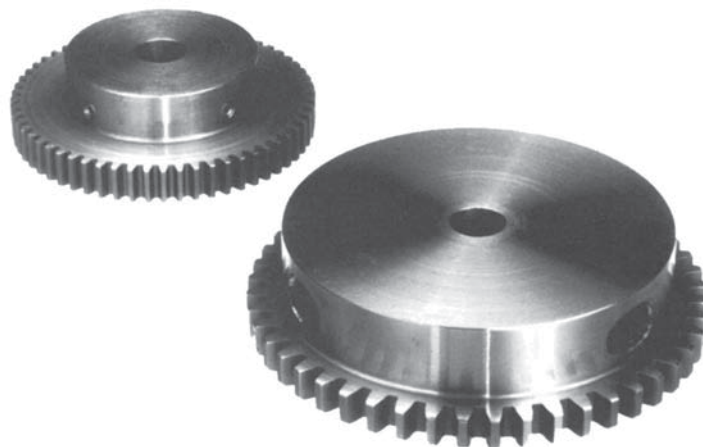
When using an AI-Tek speed sensor in RPM measurement, split gears provide a convenient and simple means of installation where shaft disassembly is not feasible. The two halves of the gear are fastened with clamping screws, thus assuring close fit. All split gears are 12 diametral pitch, 14.5° pressure angle.

Solid Gear

AI-Tek also offers a 20 diametral pitch, 14.5° pressure angle, solid steel gear. This gear can be rebored to fit shaft diameters up to 1.375". It is secured to the shaft with 2 set screws.

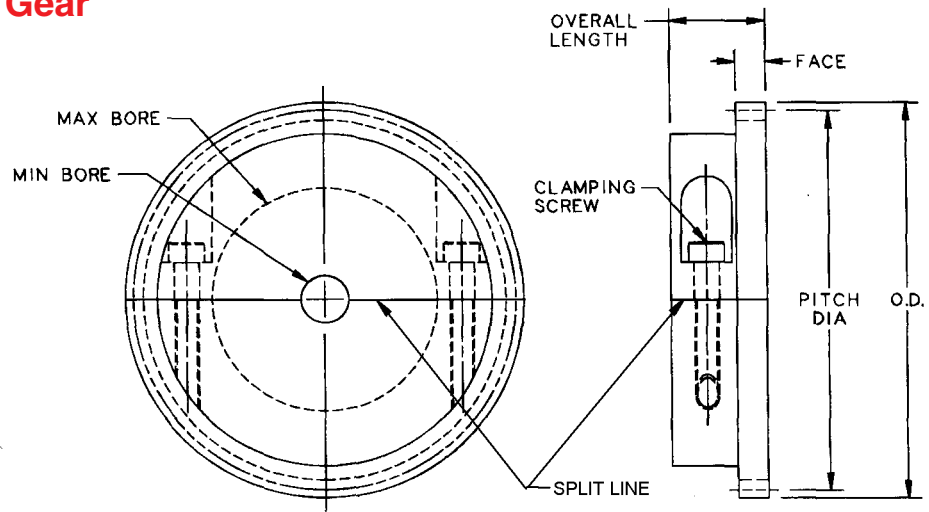
Note: Gears are supplied with minimum bores as shown. Alternate bores within the minimum and maximum limits are available at additional cost.

Caution: Gears may shatter if not installed to specifications or if operated above maximum RPM.

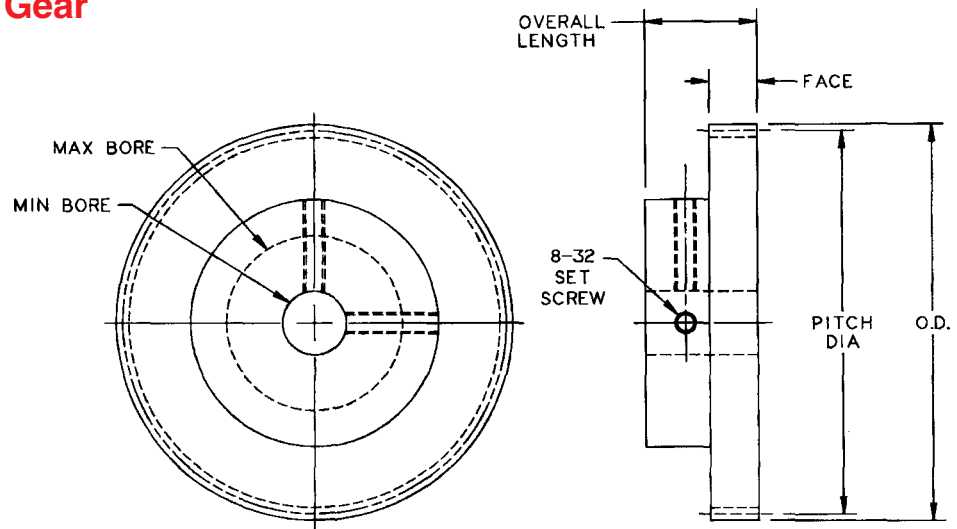


| Dimensions of Steel Split Gears | | | | | | | | | |
|---------------------------------|-----------------|-------------|--------------|-----------------|---------------------|---------------------|---------------------|-------------------|----------|
| Part No. | Pitch Dia., In. | O.D. Inches | No. of Teeth | Tooth Face, In. | Overall Length, In. | Std. Bore Dia., In. | Max. Bore Dia., In. | Approx. Wt., Lbs. | Max. RPM |
| G79870-202-1800 | 4.000 | 4.166 | 48 | .312 | 1.000 | 0.500 | 2.125 | 3.0 | 8400 |
| G79870-202-1901 | 5.000 | 5.166 | 60 | .312 | 1.000 | 1.000 | 3.125 | 5.0 | 5900 |
| G79870-202-2001 | 6.000 | 6.166 | 72 | .312 | 1.000 | 1.000 | 4.000 | 7.0 | 5900 |
| G79870-202-2101 | 8.000 | 8.166 | 96 | .312 | 1.125 | 1.000 | 5.750 | 15.0 | 4500 |
| G79870-202-2201 | 10.000 | 10.166 | 120 | .312 | 1.250 | 1.000 | 7.500 | 26.0 | 3000 |
| G79870-202-4233 | 15.000 | 15.166 | 180 | .375 | 1.375 | 7.500 | 12.000 | 48.0 | 2400 |
| Dimensions of Solid Steel Gear | | | | | | | | | |
| G79870-202-0967 | 3.000 | 3.100 | 60 | .375 | 0.875 | 0.375 | 1.375 | 1.2 | 6000 |

Steel Split Gear



Solid Steel Gear





Tachometer Transducers

AI-Tek tachometer transducers are self-generating units when used with speed sensors. They are designed primarily to provide an easy means of attaching a pulse generating assembly to rotating shafts. Sensor gap-ping, shaft run-out and mounting problems are eliminated. This makes the unit especially useful for shafts with high run-out. The ordering map on the following page provides information for selecting a unit for your particular application. Please note that sensors and cable assemblies must be ordered separately.

Taper-Lock® Type

The assembly consists of a Taper-Lock bushing which enables quick attachment to rotating shafts. The transducer employs a rotor with small perforations along its periphery; a permanently lubricated sealed bearing; an outer ring and a reference rod which, when clamped in position, prevents the outer ring assembly from moving. The outer ring can accommodate up to three speed sensors for use in monitoring directions of rotation and speed.

Sleeve Type

The **AI-Tek** sleeve-type transducer assembly is identical to the Taper-Lock type except that it provides a sleeve bushing with two set screws for installation purposes, allowing larger shaft sizes.

Mechanical Specifications

Lubrication: Bearings are permanently lubricated; do not use pressure washes or solvents.

Finish: Reference rod and outer ring are anodized aluminum.

Reference Rod: 1/4" diameter, 6" long

Bearing Limits: 4000 RPM max. speed

Weight: 54 oz. (1.53 kg) max.

Sensor Mounting: 5/8-18 UNF-2A threaded hole std.

Electrical Specifications

Output Frequency: 30 pulses/rev. (1 Hz = 2RPM),
Standard; 60 pulses/rev. (1 Hz = 1RPM),
Optional.

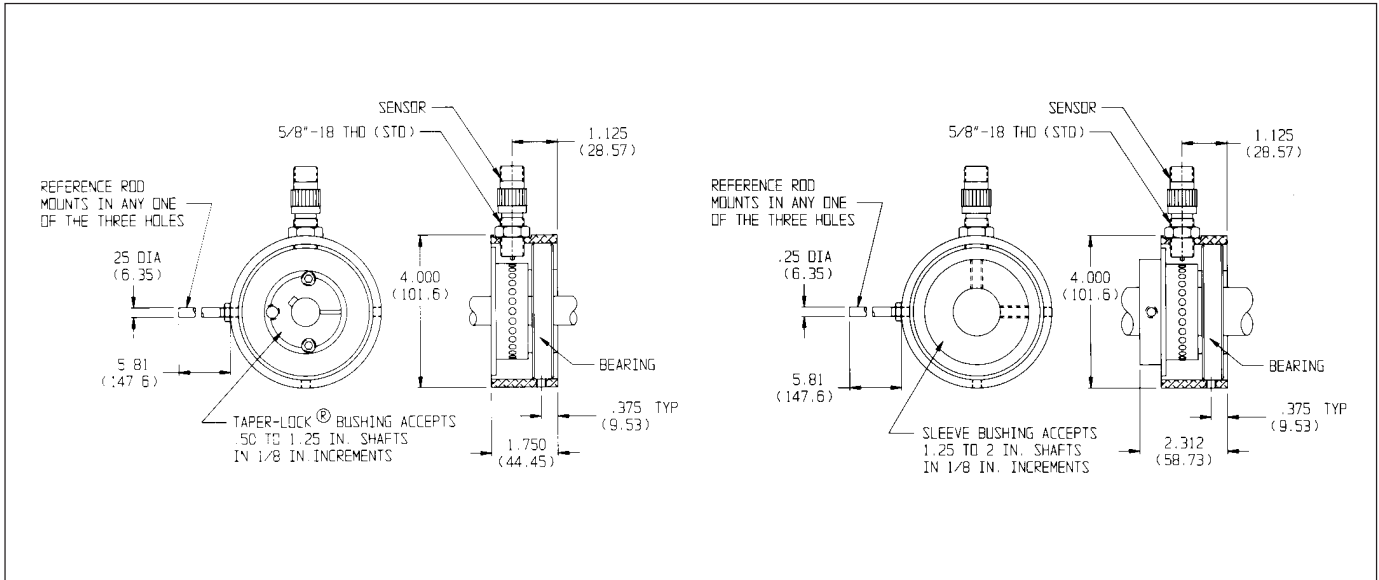
Output Voltage: Depends on magnetic sensor used.
One turn of sensor controls 0.056 inches of air gap based on 5/8-18 UNF-2A thread. Normal gap setting range from 0.005 to 0.020 inches.

Ambient Temperature: -30°C to +50°C

NOTE: *Not for use in abrasive atmospheres.*

It is the customer's responsibility to determine whether the product is proper for customer's use and application.

Ease of Installation



Ordering Map

T79850-103-

Basic Model

1. Tachometer Transducer to accommodate one sensor, 30 pulses/rev. (standard)
2. Tachometer Transducer to accommodate two sensors, 30 pulses/rev.
4. Tachometer Transducer to accommodate one sensor, 60 pulses/rev.
5. Tachometer Transducer to accommodate two sensors, 60 pulses/rev.

Bearing/Bushing Type

2. Taper-Lock bushing & sealed bearing

or

4. Sleeve bushing & sealed bearing

Bore Size

- 11 - Bore Diameter 1/2"
- 12 - Bore Diameter 5/8"
- 13 - Bore Diameter 3/4"
- 14 - Bore Diameter 7/8"
- 15 - Bore Diameter 1"
- 16 - Bore Diameter 1 1/8"
- 17 - Bore Diameter 1 1/4"

or

- 18 - Bore Diameter 1 3/8"
- 19 - Bore Diameter 1 1/2"
- 20 - Bore Diameter 1 5/8"
- 21 - Bore Diameter 1 3/4"
- 22 - Bore Diameter 1 7/8"
- 23 - Bore Diameter 2"

Notes:

Standard mounting thread is 5/8-18 UNF-2A.

Ordering Procedure

Example: Speed indicating system for a variable speed motor, 0 - 1750 RPM, 1" shaft diameter, panel-mount display within 10 ft., min. motor speed is 175 RPM.

1. Select Model No. **T79850 - 103 - 1215**

30 PPR, std. basic model
Taper-lock, sealed bearing 1" bore dia.

2. Select a speed sensor such as P/N 70085-1010-001
3. Select a cable assembly, P/N CA79860-01-00, to complement (2).
4. Select tachometer to meet application needs.

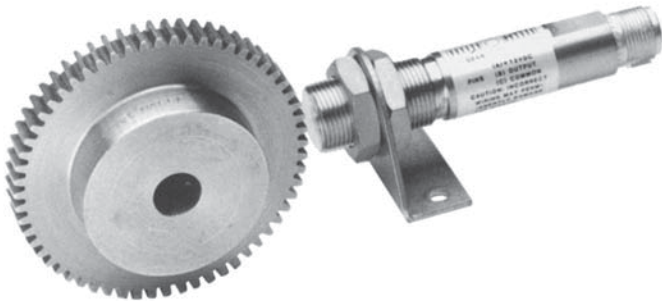
Dimensions in inches and (mm).

Sensor Mounting Brackets

Several types of brackets are available to facilitate the mounting of Al-Tek speed sensors. Threaded brackets for 3/8-24, 5/8-18 and 3/4-20 threads are generally used with passive sensors with one locknut. Active, zero- velocity sensors and passive, chisel-point sensors that require specific alignment should be used with unthreaded brackets and two locknuts.

Bracket material is non-magnetic, 303 stainless steel; locknuts are also non-magnetic stainless steel or plated brass.

Sensors and brackets should be attached to a frame free of excessive vibration to prevent spurious indications when the gear is stopped or turning at very slow speeds. Refer to sensor specifications for proper air gap and alignment with gear (target) rotation.



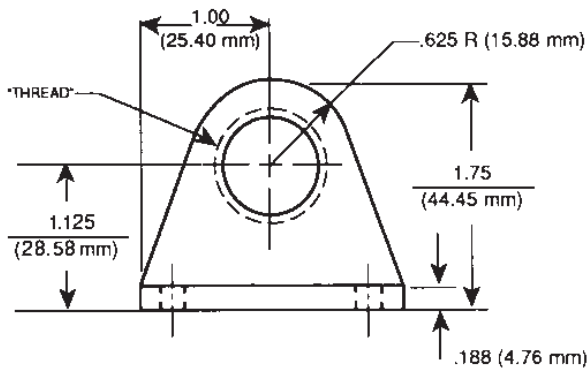
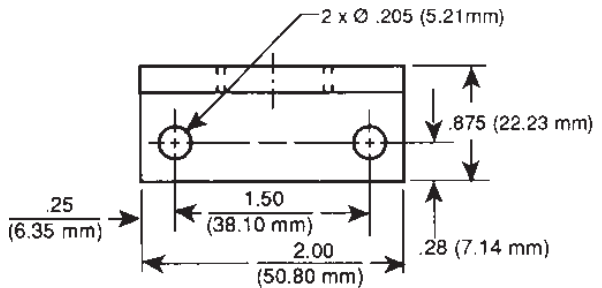
Caution: Too small an air gap, especially with excessive run-out, may cause the gear to strike the sensor and make it inoperative.

| Threaded Brackets | | |
|-------------------|------------------|-------------------|
| Thread Size | Bracket Part No. | One Turn Advances |
| 3/8-24 UNF-2B | 646-310-0006 | .042" |
| 5/8-18 UNF-2B | 646-310-0007 | .056" |
| 3/4-20 UNEF-2B | 646-310-0008 | .050" |

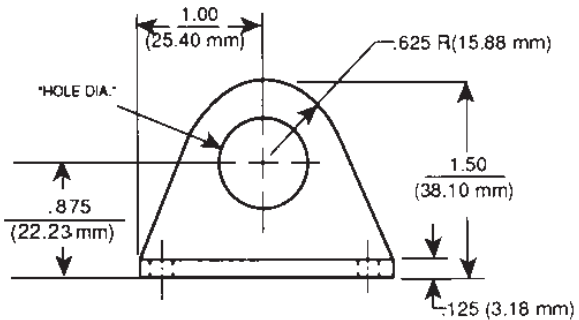
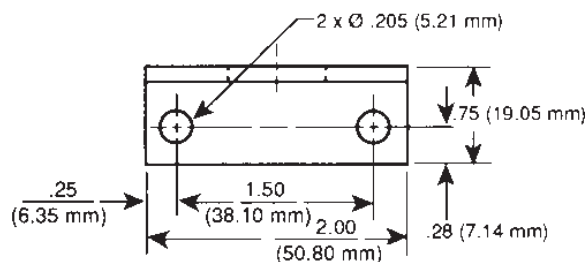
Net Weight: 4 oz. max.

| Unthreaded Brackets | | |
|-----------------------|---------------|------------------|
| Thread Size Of Sensor | Hole Diameter | Bracket Part No. |
| 3/8-24 UNF-2A | .390" | 646-140-0009 |
| 5/8-18 UNF-2A | .640" | 646-140-0010 |
| 3/4-20 UNEF-2A | .765" | 646-140-0015 |

Net Weight: 2 oz. max.



Threaded Bracket



Unthreaded Bracket

Dimensions in inches and (mm).