## PART NUMBER INDEX

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### INSTALLATION

- 56C, 143TC  
- 182TC, 213TC & 254TC  
- 71D

### SENSOR SPECIFICATION

- Open Collector With Pullups  Page 6
- Open Collector Without Pullups Page 7

### WIRING EXAMPLES

- Open Collector With Pullups  Page 8, 9, 10 & 11
- Open Collector Without Pullups  Page 12, 13, 14 & 15

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**ASSEMBLY NOTES**

1. Metal motor ring should be mounted flush and tightly fastened to motor face with bolts provided.
2. Sensor housing should be fully inserted and tightly seated into mounted motor ring (if mounting holes of sensor housing and motor ring don't align properly, rotate sensor housing 180° and reinstall; place gasket on top sensor housing with wires of sensor thru center slot of gasket; conduit box to be secured with (2) 8-32 x 1-1/2 LG screws.
3. 60 tooth gear to be mounted on motor shaft with the front face of the 60 tooth gear aligned with the front face of the sensor housing. Secure 60 tooth gear location with set screws provided. See Figure 5. Front hub of 60 tooth gear will protrude approximately .020 beyond front face of the motor ring when properly installed.

**APPLICATION NOTES**

Long mounting bolts to be used in multiple ring applications.

In applications where conduit box is not required, shorter screws are necessary to properly secure sensor housing into the motor ring.

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**ASSEMBLY NOTES**

1. Metal motor ring should be mounted flush and tightly fastened to motor face with bolts provided.
2. Place gasket on top of sensor housing with wires of sensor thru center slot of gasket. Sensor housing should be fully inserted and tightly seated into mounted motor ring (if mounting holes of sensor housing don't align properly, rotate sensor housing 180° and reinstall). Insert spacer with holes in alignment with sensor mounting holes, routing wires thru center slot. Conduit box to be secured with (2) 8-32 x 3.0 LG screws.
3. 40 tooth gear to be mounted on motor shaft with the front face of the 40 tooth gear aligned with the front face of the sensor housing. Secure 40 tooth gear location with set screws provided. See Figure 5.

**APPLICATION NOTES**

Long mounting bolts to be used in multiple ring applications.

In applications where conduit box is not required, shorter screws are necessary to properly secure sensor housing into the motor ring.
ASSEMBLY NOTES

1. METAL MOTOR RING SHOULD BE MOUNTED FLUSH AND TIGHTLY FASTENED TO MOTOR FACE WITH BOLTS PROVIDED.
2. SENSOR HOUSING SHOULD BE FULLY INSERTED AND TIGHTLY SEATED INTO MOUNTED MOTOR RING (IF MOUNTING HOLES OF SENSOR HOUSING AND MOTOR RING DON'T ALIGN PROPERLY ROTATE SENSOR HOUSING 180° AND REINSTALL.) PLACE GASKET ON TOP SENSOR HOUSING WITH WIRES OF SENSOR THRU CENTER SLOT OF GASKET. CONDUIT BOX TO BE SECURED WITH (2) M4 X 35 mm LG SCREWS.
3. 60 TOOTH GEAR TO BE MOUNTED ON MOTOR SHAFT WITH THE FRONT FACE OF THE 60 TOOTH GEAR ALIGNED WITH THE FRONT FACE OF THE SENSOR HOUSING. SECURE 60 TOOTH GEAR LOCATION WITH SET SCREWS PROVIDED, SEE FIGURE 5. FRONT HUB OF 60 TOOTH GEAR WILL PROTRUDE APPROXIMATELY .020 (~.5 mm) BEYOND FRONT FACE OF THE MOTOR RING WHEN PROPERLY INSTALLED.

APPLICATION NOTES

- LONGER MOUNTING BOLTS MAY BE NEEDED IN MULTIPLE RING APPLICATIONS.
- IN APPLICATIONS WHERE CONDUIT BOX IS NOT REQUIRED, SHORTER SCREWS ARE NECESSARY TO PROPERLY SECURE SENSOR HOUSING INTO THE MOTOR RING.

SPECIFICATIONS

- CYCLES PER REVOLUTION: 120 CYCLES EACH CHANNEL
- SENSING SPEED RANGE: ZERO SPEED TO 10,000 RPM (SHAFT SPEED)
- GAP ADJUSTMENT: NONE REQUIRED
- OPERATING TEMPERATURE: 0° - 140° C
- SUPPLY VOLTAGE: ±5 V
- SUPPLY CURRENT: 250 mA PER CHANNEL CONTINUOUS
- SWITCHING FREQUENCY LIMIT: 100 kHz
- OUTPUT DRIVE CAPABILITY: 250 mA PER CHANNEL CONTINUOUS
- MINIMUM RESISTANCE FOR EXTERNAL PULL UP RESISTOR: 20 Ohms @ +5 V
- OUTPUT CHANNEL SCHEMATIC
- OPEN COLLECTOR WITH PULLUP

Schematic Diagrams including electrical connections and output channel schematics are also provided.
OPEN-COLLECTOR WITHOUT PULLUPS

SENSOR HOUSING DIMENSIONS

OPEN COLLECTOR WITH PULLUPS

OUTPUT CHANNEL SCHEMATIC

Specifications

- Cycles per Revolution: 120 cycles each channel
- Sensing Speed Range: Zero speed to 10,000 RPM (shaft speed)
- Gap Adjustment: None required
- Operating Temperature: 0°C to 100°C
- Supply Voltage (Vcc): +5 V to +24 VDC ± 5%
- Supply Current:
  - Typ: 20 mA/Imax: 25 mA at +5 V
  - Typ: 35 mA/Imax: 45 mA at +12 V
  - Typ: 30 mA/Imax: 50 mA at +15 V
- Switching Frequency Limit: 100 kHz
- Output Drive Capability: 250 mA per channel continuous
- Minimum Resistance for Open-Collector without Pullups:
  - 20 ohms a @ 5 V
  - 50 ohms a @ ±15 V
  - 100 ohms a @ ±24 V
- Output Transistor VCE: 30V maximum

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NOTE: THE +12V AUXILIARY POWER SUPPLY PROVIDED FROM THE CONTROL MAY BE USED TO POWER THE SENSORS. IF AN EXTERNAL POWER SUPPLY IS USED, IT MUST BE CONNECTED BETWEEN THE RED (VDC) AND BLACK (COM) WIRES OF THE SENSOR. EVEN WHEN AN EXTERNAL POWER SOURCE IS USED TO POWER THE SENSOR, THE BLACK WIRE MUST BE CONNECTED TO THE COMMON (COM) OF THE CONTROL. SHIELDED CABLE IS RECOMMENDED. CONNECT SHIELD TO EARTH GROUND AT ONE END ONLY.
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NOTE: THE +5V AUXILIARY POWER SUPPLY PROVIDED FROM THE CONTROL MAY BE USED TO POWER THE SENSORS. IF THE AUX POWER SUPPLY OR AN EXTERNAL POWER SUPPLY IS USED, IT MUST BE CONNECTED BETWEEN THE RED (VDC) AND BLACK (COM) WIRES OF THE SENSOR. WHEN EITHER POWER SOURCE IS USED TO POWER THE SENSOR, THE BLACK WIRE MUST BE CONNECTED TO THE COMMON (COM) OF THE CONTROL. SHIELDED CABLE IS RECOMMENDED. CONNECT SHIELD TO EARTH GROUND AT ONE END ONLY.
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