



**QUAD RING KIT II SENSORS
INSTALLATION/SPECIFICATION/WIRING GUIDE
5 - 24 VOLT DIFFERENTIAL**

INSTALLATION

56C, 143TC

182TC, 213TC & 254TC

71D

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SENSOR SPECIFICATION

Differential

Page 6

WIRING EXAMPLES

Differential

Page 8, 9, 10 & 11

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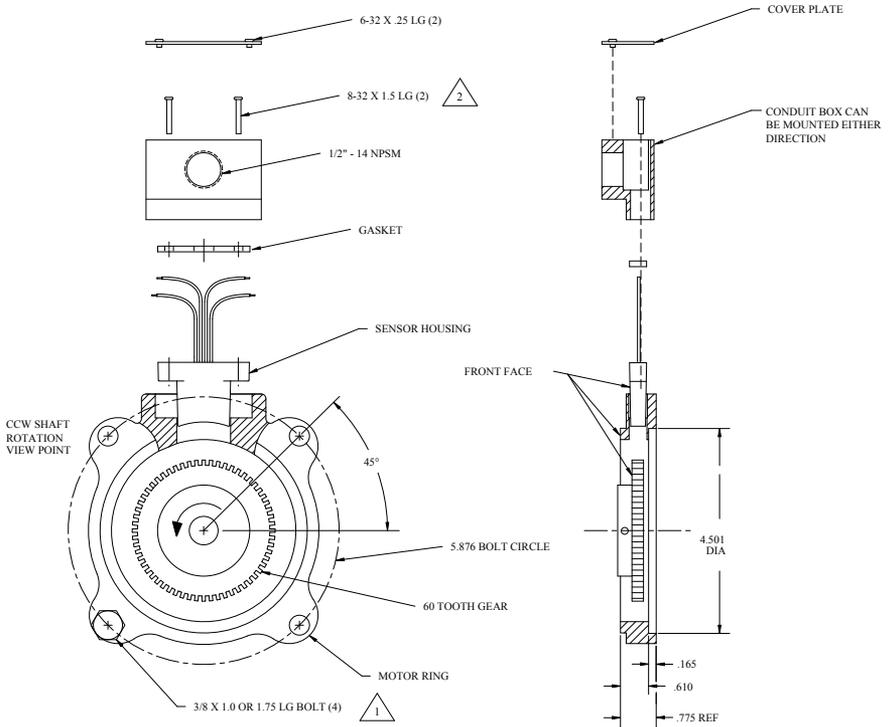
Contrex Part Number to Page Reference

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RINGS 56C & 143TC



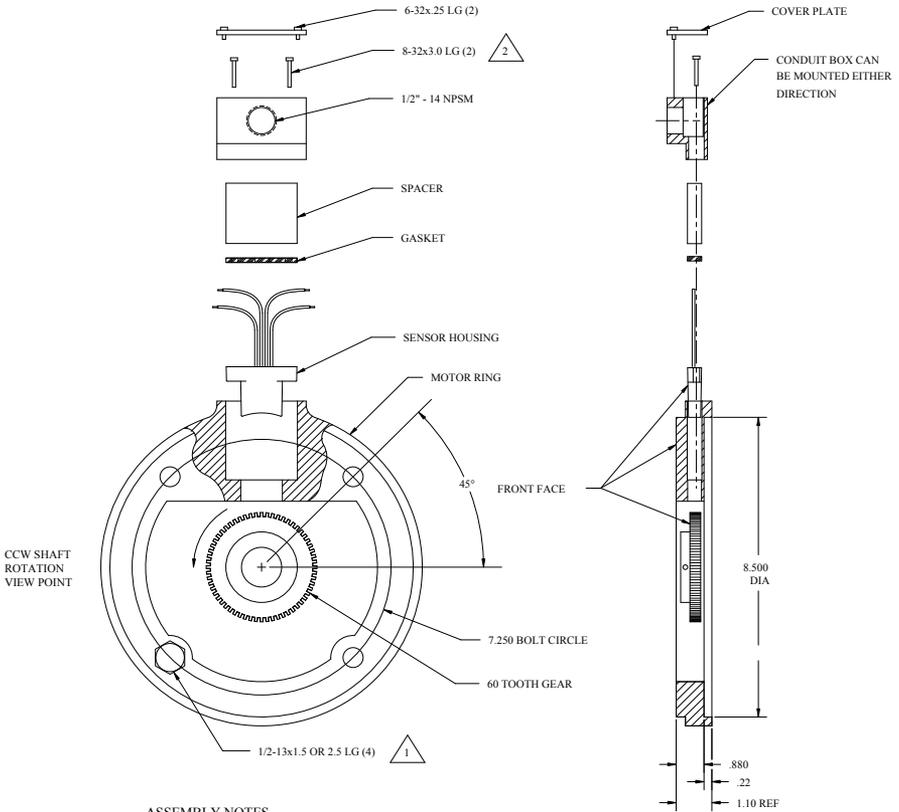
ASSEMBLY NOTES

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

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

RINGS 182TC, 213TC & 254TC



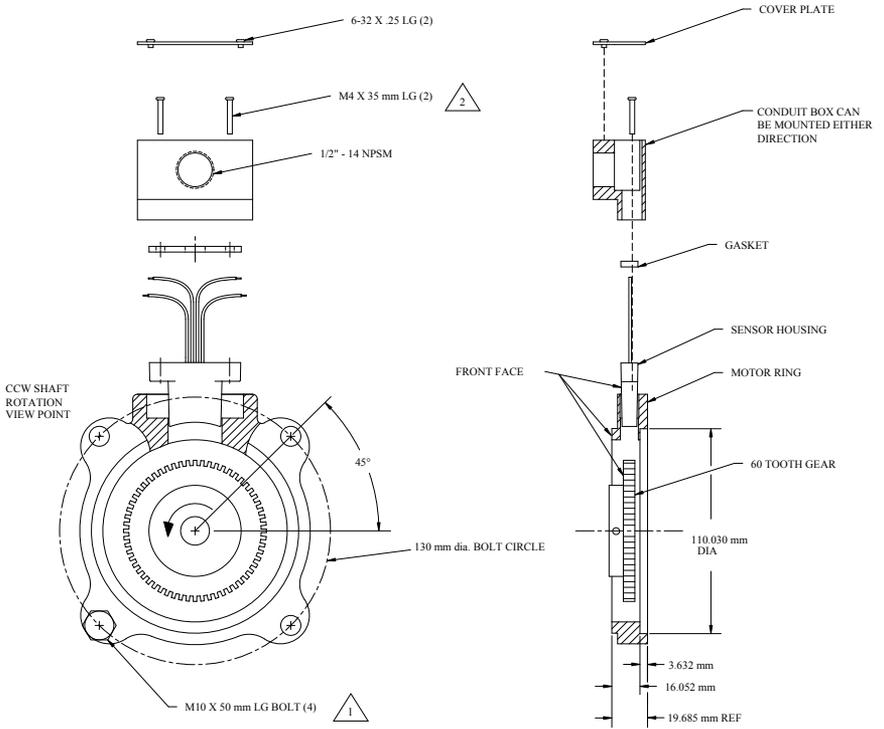
ASSEMBLY NOTES

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) #8-32x3.0 LONG 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).

APPLICATION NOTES

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

RING 71D



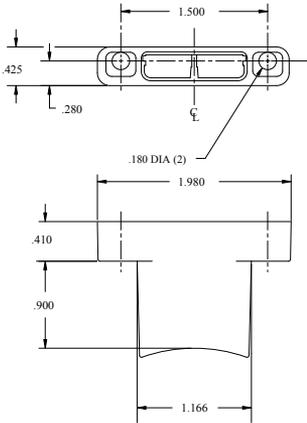
ASSEMBLY NOTES

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.

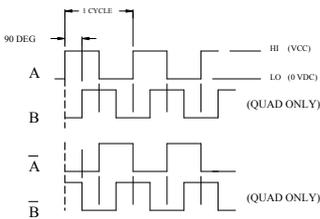
APPLICATION NOTES

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

DIFFERENTIAL

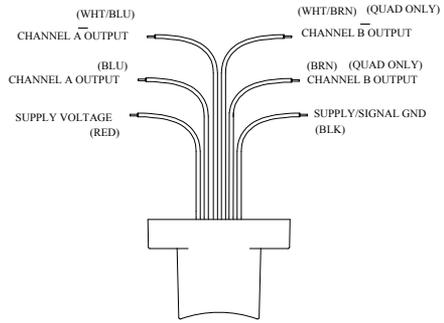


SENSOR HOUSING DIMENSIONS

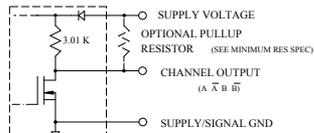


PHASE RELATIONSHIP FOR CCW SHAFT ROTATION

OUTPUT CHANNEL WAVEFORMS



ELECTRICAL CONNECTIONS



OUTPUT CHANNEL SCHEMATIC

SPECIFICATIONS

CYCLES PER REVOLUTION:

60 CYCLES EACH CHANNEL

SENSING SPEED RANGE:

ZERO SPEED TO 10,000 RPM (SHAFT SPEED)

GAP ADJUSTMENT:

NONE REQUIRED

OPERATING TEMPERATURE:

-40° to 125° C

SUPPLY VOLTAGE (VCC):

5 TO 24 VDC ± 5%

SUPPLY CURRENT:

I_{typ} 20 mA/I_{max} 35 mA @ 5 V
 I_{typ} 25 mA/I_{max} 45 mA @ 12 V
 I_{typ} 30 mA/I_{max} 50 mA @ 15 V
 I_{typ} 35 mA/I_{max} 60 mA @ 24 V

SWITCHING FREQUENCY LIMIT:

100 kHz

OUTPUT DRIVE CAPABILITY:

250 mA PER CHANNEL CONTINUOUS
 I_{out} 1.6 mA @ 5 V
 I_{out} 4 mA @ 12 V
 I_{out} 5 mA @ 15 V
 I_{out} 8 mA @ 24 V

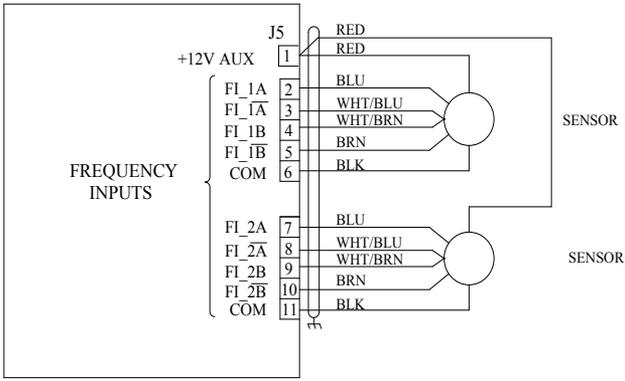
MINIMUM RESISTANCE FOR EXTERNAL PULL UP RESISTOR:

20 Ohms @ 5 V
 50 Ohms @ 12 V
 60 Ohms @ 15 V
 100 Ohms @ 24 V

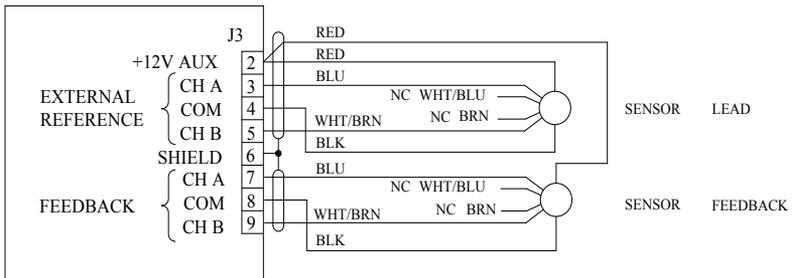
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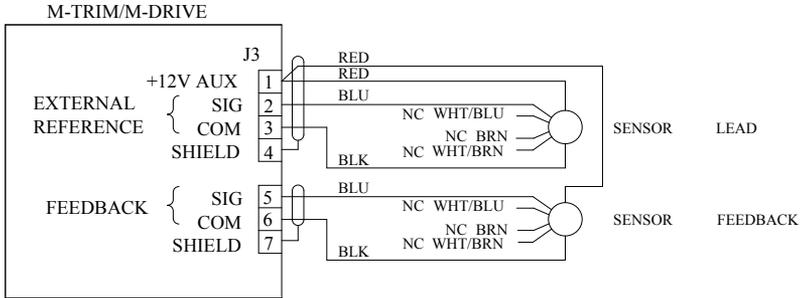
DIFFERENTIAL

CX-1010



M-TRACK/M-ROTARY/M-CUT/M-SHUTTLE/M-TRAVERSE



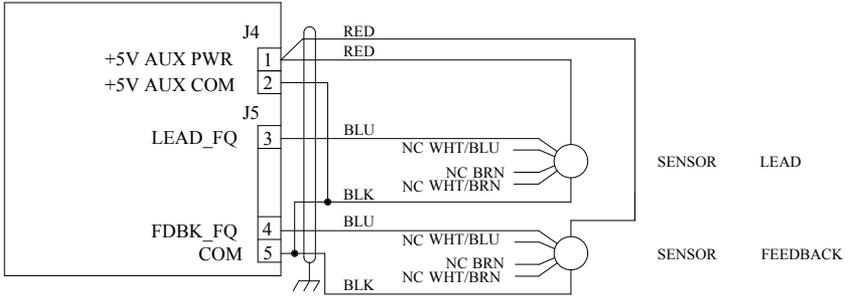


NOTE:

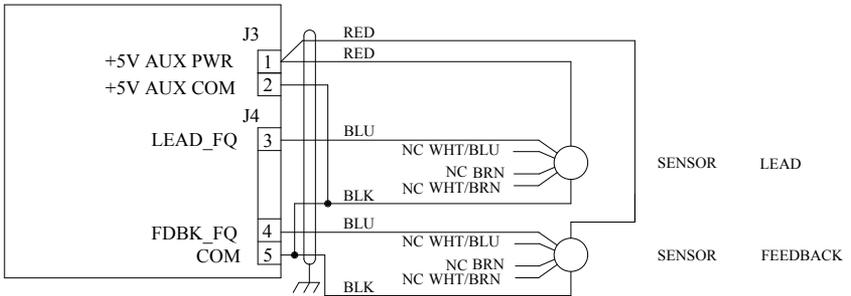
THE +5V/+12V AUXILIARY POWER SUPPLY PROVIDED FROM THE CONTROL, SHOULD BE USED TO POWER THE DIFFERENTIAL QUAD SENSOR. SHIELDED CABLE IS RECOMMENDED. CONNECT SHIELDS TO EARTH GROUND ONLY AT ONE END OF CABLE.

DIFFERENTIAL

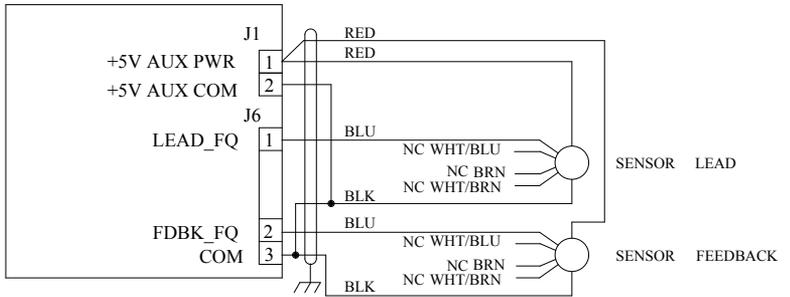
ML-TRIM



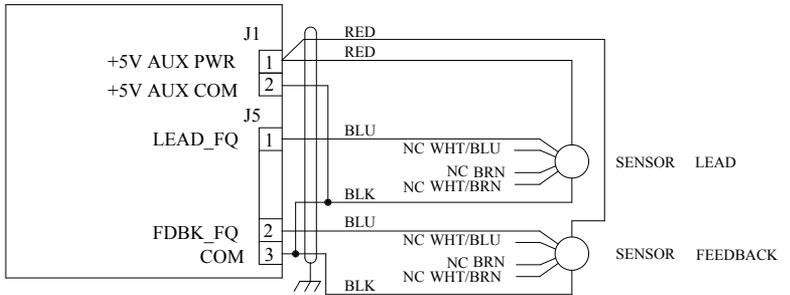
ML-DRIVE



MLP-TRIM



MLP-DRIVE



NOTE:

THE +5V/+12V AUXILIARY POWER SUPPLY PROVIDED FROM THE CONTROL, SHOULD BE USED TO POWER THE DIFFERENTIAL QUAD SENSOR. SHIELDED CABLE IS RECOMMENDED. CONNECT SHIELDS TO EARTH GROUND ONLY AT ONE END OF CABLE.

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