INTRODUCTION:

The 4-20mA Transmitter is designed to operate over 90º, 180º, 360º (option dependent) rotation with ± 5° of over-travel at each end. The Transmitter is direct acting, reverse acting and is also suitable for split ranging (typical setting: 4-12mA or 12-20mA). Position feedback is accomplished through a precision potentiometer that is conductive resin and environmentally sealed. The Triac transmitter features a non-interactive zero and span for easy one step calibration.

INSTALLATION:

A. Attach proper actuator mounting kit to the transmitter housing using the M6x8 socket head cap screws provided.
B. Align the switch output shaft to the top of the actuator accessory output shaft and engage the two shafts together (or use coupler with non-ISO/NAMUR actuators).
C. Attach the bracket assembly to the actuator but do not tighten. Stroke the actuator to allow the transmitter and actuator to self-align.
D. Tighten the transmitter assembly on to the actuator. Note: Steps 3 and 4 can be done prior to calibration.

CALIBRATION:

A. First select the 'Action', direct or reverse. This is accomplished through the location of the potentiometer ribbon connector plug. Brown wire to 'D' for direct or brown wire to 'R' for reverse. Factory default setting is 'D'
B. Wire output (+ and -) of transmitter to a regulated current source such as Transmation™, Altek™, or Fluke™, meter.
C. Operate valve to 50% position (45°). The large spur gear is attached to the drive shaft with a setscrew. Loosen setscrew to disengage the gear. Rotate small spur gear on potentiometer until 12mA is visible on meter. Re-engage large spur gear and tighten the setscrew.
D. Rotate actuator closed and turn zero potentiometer (clockwise for higher and counter-clockwise for lower) until meter reads 4mA.
E. Rotate actuator open and turn span potentiometer (clockwise for higher and counter-clockwise for lower) until meter is at 20mA.
F. For split ranging follow steps 3, 4 and 5 setting zero and span to proper split range: 4 to 12mA or 12 to 20 mA.
G. Important Note: Disconnect test equipment supply power prior to removing test meter wiring (the transmitter has CMOS circuitry and is sensitive to voltage/current surges).
H. The transmitter is ready for field wiring. Note: If more than one current device is in the loop with the transmitter, they must be wired in series. Damage may occur if wired incorrectly.

SHIELDING:

The transmitter is a sensitive precision instrument and if not properly wired is susceptible to intrinsic noise. This could include EMF from inductive loads or RFI from wand held radios.

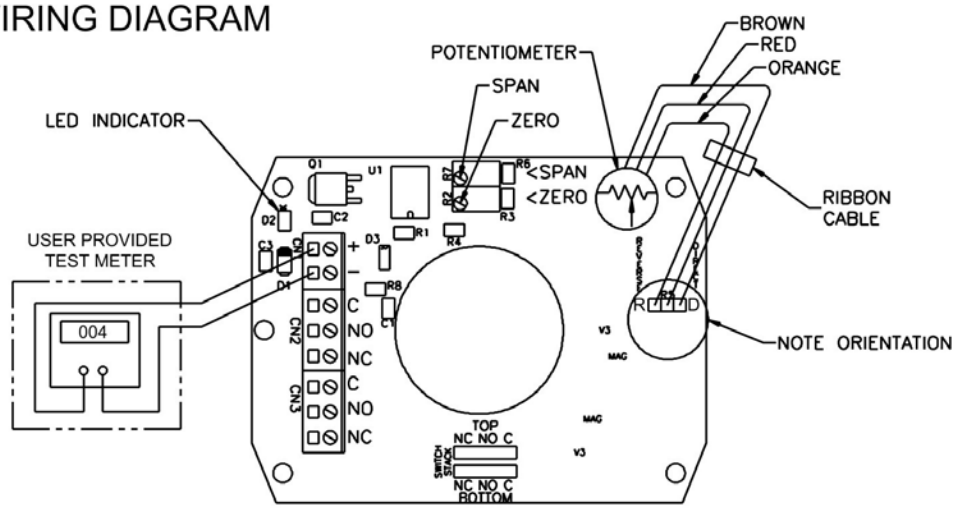
A. The size of wire is dependent on the length of run, it is recommended to use no less than 18 gauge shielded wire.
B. The shield should only be grounded at one end (preferably the source). This acts as an antenna and directs all noise to ground.

TROUBLESHOOTING:

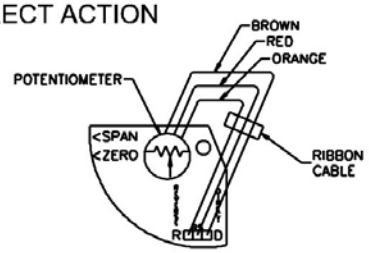
1. ***Problem:***
   Output not continuous throughout actuator/valve stroke (experience a band of max. output).
   Probable Cause/Solution:
   Potentiometer out of adjustment (see calibration steps 3 through 9).
2. ***Problem:***
   Transmitter does output 4 or 20mA at desired end of travel.
   Probable Cause/Solution:
   Zero or span trim potentiometer is out of adjustment (see calibration steps 4 and 5).
3. ***Problem:***
   Transmitter module has no current signal or provides a constant signal.
   Probable Cause/Solution:
   Circuit Board LED not lit:
   1. Loose or shorted signal connection (no loop power)
   2. Controller board not responding (replace board).
   3. Check control source

   Circuit Board LED lit:
   1. Potentiometer disengaged
   2. Defective potentiometer or controller board (replace).
   3. Check control source.

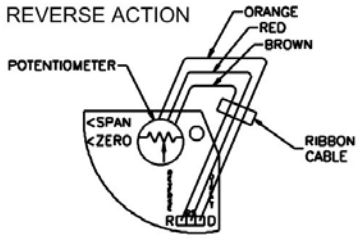
WIRING DIAGRAM



DIRECT ACTION



REVERSE ACTION



SPECIFICATIONS:

Potentiometer	10K OHM
Voltage Supply	12 – 30 VDC
Linearity	± 0.5% of full scale
Hysterisis & Deadband	± 0.25% of full scale
Action	Direct or Reverse
Zero – Span	20 Turn Trim Potentiometer (Non-interactive)
Logic/Processor	ASIC - CMOS

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