

R40A SERIES ANGULAR POSITION TRANSDUCER

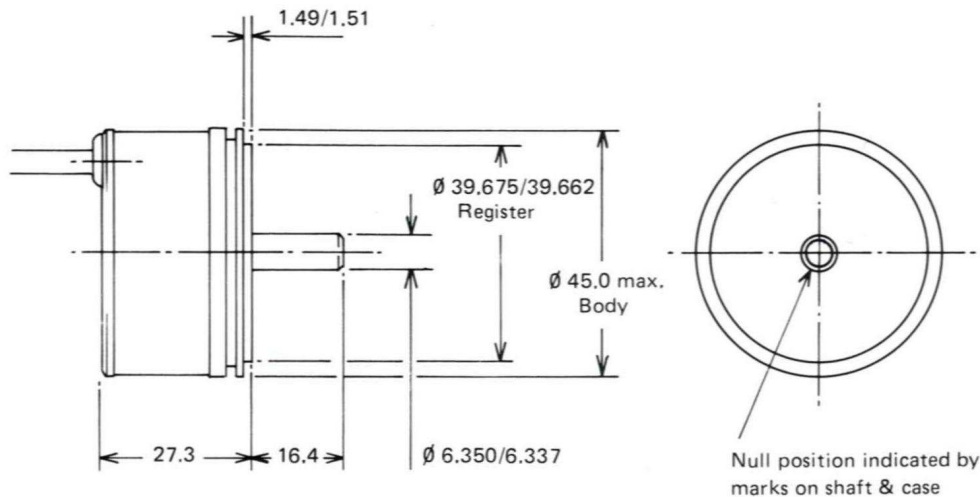


- RVDT TYPE
- ± 60 DEGREES RANGE
- SMALL AND ROBUST
- EXCELLENT LINEARITY

The Sensonics R40A Series angular position transducer uses the principle of the Rotary Variable Differential Transformer (RVDT) to convert the rotation of a shaft into a proportional electrical output signal. The RVDT primary winding is energised with AC from an external source and induces in the secondary windings an AC signal, the magnitude and phase of which are determined by the angular position of a specially shaped rotor attached to the operating shaft. Separate external signal conditioning is necessary to produce a DC signal proportional to shaft position.

The R40A is housed within a stainless steel case to the format of a size 18 synchro. The 6.35mm dia. x 15.4mm long operating shaft is internally supported by a pair of miniature, precision ball races which permit continuous rotation and minimum friction. The rear face of the unit supports the cable outlet and optional stainless steel flexible armouring to the specified length.

Although the transducer is capable of continuous rotation, a plot of angular rotation against magnitude and phase of output signal over 360° would result in one complete sine wave (and therefore two positions, separated by 180° of rotation, where the output signal is zero). To avoid ambiguity, just one of the null positions is chosen during final test and a calibration is made over the most linear range either side of this null. Both the shaft and the case are marked to show the alignment at the null point selected. Individual calibration certificates are provided.



SPECIFICATION

| | |
|-----------------------------------------------|-------------------------------------------------------|
| Input Supply | Up to 10v rms according to frequency (400Hz to 10KHz) |
| Input Current | Up to 20mA |
| Maximum measuring range | $\pm 60^\circ$ (max. non-linearity = $\pm 2\%$) |
| Linearity within $\pm 0.5\%$ over | $\pm 40^\circ$ |
| Linearity within $\pm 0.3\%$ over | $\pm 30^\circ$ |
| Sensitivity at 3KHz excitation | 0.68 mV/degree/volt applied |
| Sensitivity at 5KHz excitation | 0.69 mV/degree/volt applied |
| Primary winding resistance | 575 ohms |
| Primary winding impedance at 3KHz | 4.25 Kohms (7Kohms at 5KHz) |
| Secondary winding resistance | 530 ohms |
| Secondary winding impedance at 3KHz | 4.25 Kohms (7 Kohms at 5KHz) |
| Typical output at null position | 10mV (3KHz), 15mV (5KHz) |
| Temperature range | 0 to 90°C |
| Dimensions | |
| Diameter | 45mm |
| Depth | 27.3mm |
| Shaft Extension | 16.4mm |
| Weight | 225 grams |

ORDERING INFORMATION/OPTIONS

- R40A/IS400 Standard: 1m integral cable
- R40A/F/IS401 As R40A/IS400 but with 1m integral armoured cable.

OPTIONS

Various integral cable and armoured cable lengths.

Ordering Information

Please order unit by specific type No. or by specifying the options as listed above.

We reserve the right to alter the specification without notification