R36AS

AC Operated RVDT for Harsh Environments

SPECIFICATIONS

- **AC operation**
- **±60 degree angular sensing range**
- **Non-contact electrical design**
- **Wide operating temperature range**
- **Size 15 servo mount**
- **Stainless steel housing**
- **MS style hermetic connector**

The **R36AS RVDT** (Rotary Variable Differential Transformer) is an angular position sensor that incorporates a proprietary non-contact design which dramatically improves long term reliability when compared to other traditional rotary devices such as synchros, resolvers and potentiometers. This unique design eliminates assemblies that degrade over time such as slip rings, rotor windings, contact brushes and wipers, without sacrificing accuracy.

High reliability and performance are achieved through the use of a specially shaped rotor and wound stator coil that together simulate the operation of a Linear Variable Differential Transformer (LVDT). Rotational movement of the rotor shaft results in a linear change in the amplitude of the output signal, directly proportional to the shaft angle change, while the phase of this signal indicates the direction of displacement from the null point. Non-contact electromagnetic coupling of the rotor provide infinite resolution.

AC operation eliminates the need for integrated signal conditioning components, thereby offering the user a very wide operating temperature range of -55°C to +150°C. Factory calibrated to operate over a ±30 degree range, the R36AS offers a non-linearity of less than ±0.5% of full range. Extended range operation up to a maximum of ±60 degrees is possible with increased non-linearity.

Packaged in Size 15 servo mount stainless steel housing, an MS style hermetic connector, and a shaft seal, the R36AS is the perfect choice for angular position sensing in harsh environments.

FEATURES

- High accuracy
- Infinite resolution
- Long term reliability
- Wide -55° to +150°C operating temp range
- Rugged stainless steel housing
- Shielded ABEC 3 precision bearings

APPLICATIONS

- Valve position
- Machine tool equipment
- Rotary actuator feedback
- Dancer arm position
- Process control

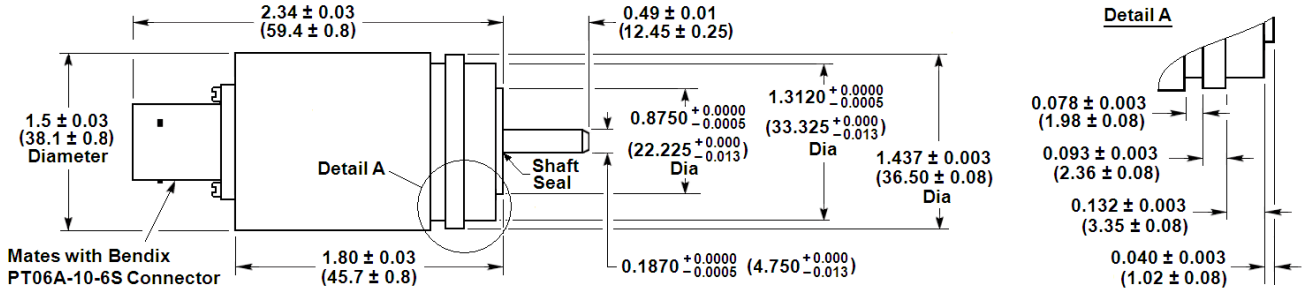
PERFORMANCE SPECIFICATIONS

ELECTRICAL SPECIFICATIONS						
Parameter	**@2.5kHz Input Frequency** *(recommended)*			**@10kHz Input Frequency**		
Angular range, degrees	±30º	±45º	±60º	±30º	±45º	±60º
Non-linearity, % of FR	±0.5%	±1%	±3%	±0.5%	±1%	±3%
Output at range ends *(*)*	66mV/V	99mV/V	132mV/V	51 mV/V	76 mV/V	102 mV/V
Sensitivity	2.2 mV/V/degree			1.7 mV/V/degree		
Temp coefficient of sensitivity	0.02%/ºF [0.036%/ºC] +20 to +160ºF [-7 to +71ºC]			Not specified		
Input / Output impedances	750Ω / 2000 Ω			2500Ω / 5400Ω		
Phase shift	+4º			-17º		
Input voltage and frequency	3 VRMS @ 2.5 to 10 kHz (2.5kHz recommended)					
Null voltage	0.5% of FRO, maximum					

ENVIRONMENTAL AND MECHANICAL SPECIFICATIONS	
Operating temperature	-67°F to +300°F [-55°C to 150°C]
Mechanical angular range	360 degrees (no stops)
Bearings	Shielded ABEC 3 precision
Shaft diameter	3/16 inch [4.75 mm]
Housing material	AISI 304 stainless steel
Mounting	Size 15 servo mount per BU-ORD
Moment of inertia	1.62 x 10^{-6} inch.lb-force.second^2 [1.866 x 10^{-6} Kg-force.cm.second^2]
Maximum torque, unbalance	0.012 inch.ounce-force [0.87 gram-force.cm]
Maximum torque, friction	0.75 inch.ounce-force [54 gram-force.cm]
Shaft load capability	25 lb [11Kg] Axial or Radial
Electrical connection	6-pin MS type connector (MIL-C-5015)
Weight	9 oz [255 Grams]
IP 60529 rating	IP65

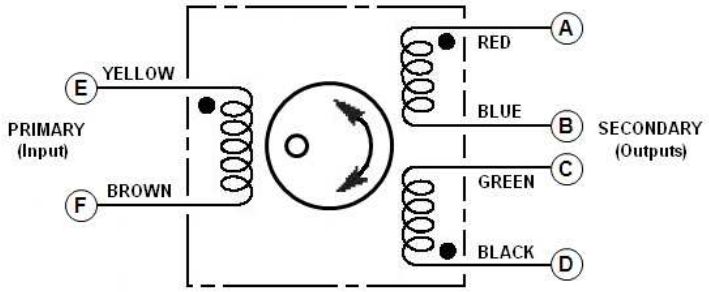
Notes:
All values are nominal unless otherwise noted
Dimensions are in inch [mm] unless otherwise noted
(*): Unit for output at range ends is millivolt per volt of excitation (input voltage)
FR (Full Range) is the angular range, end to end; 2xAº for ±Aº angular range
FRO (Full Range Output): Algebraic difference in outputs measured at the ends of the range

DIMENSIONS



Dimensions are in inch (mm)

WIRING INFORMATION



A through F: Connector pin assignments; Connect B to C for differential output

ORDERING INFORMATION

Description	Model	Part Number
RVDT ±30º, 2.5kHz calibration (standard)	R36AS	02560927-000
RVDT ±45º, 2.5kHz calibration	R36AS	02560927-045
ACCESSORIES		
Multipurpose coupling kit	R-FLEX	66530072-000
Mating connector kit	PT06A-10-6S(SR)	62101011-000
Interconnect cable for LVM-110/LiM 4-20/CTS 420 Conditioners *(1)*	R36AS to Stripped/Tinned	04290417-000
Interconnect cable for ATA-2001 Signal Conditioner *(1)*	R36AS to DB-9P	04290457-000
Interconnect cable for MP2000 Series Set-Point Controller *(1)*	R36AS to 05BL5M	04290560-000
Interconnect cable for LDM/PML-1000 Signal Conditioners, **200°C** *(1)*	R36AS to Stripped/Tinned	04290595-000

(1) All cables are shielded, 10 foot long, and rated 80°C [176°F] operating unless otherwise noted. Consult factory for other lengths.

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