

# RVDT DISPLACEMENT TRANSDUCERS

The Penny+Giles rugged, high integrity RVDT displacement transducer is designed for operation in harsh automotive and motorsport environments. The design elements employed have evolved from the technology and experience gained over 40 successful years in the aerospace/military sensor market, where performance and reliability under extreme operating conditions are paramount

## **High accuracy system performance**

This ac operated RVDT displacement transducer has been designed primarily for use in the 'difference over sum' (ratiometric) configuration to provide high system accuracy performance where the output is virtually unaffected by temperature and supply changes. Using high integrity coil and rotor designs, combined with a titanium housing, this RVDT can be supplied with a choice of shaft and mounting flanges to suit high performance, high temperature engine control applications.



## **Features**

- No contact between the sensing elements
  - Precision low torque bearings
  - Infinite resolution
  - Temperature range -40° to +180°C
- High integrity coils, screen and connection assemblies
  - Corrosion resistant stainless steel drive shaft
  - Rugged mechanical design with titanium housing

## **Benefits**

- Virtually infinite life and fast dynamic response
- Long trouble free life
- All displacement will be sensed
- Maximum reliability in hostile environments
- Maximum reliability in hostile environments
- Accurate drive location in hostile environments
- Maximum reliability in high shock and vibration environments

# RVDT AC OPERATED

## PERFORMANCE

Electrical angle	°	±60 (120 total)
Mechanical angle	°	360 continuous
Input voltage	Vrms	3
Input frequency	KHz	2
Insulation resistance		Greater than 50MΩ at 250Vdc
Resolution		Virtually infinite
Operational temperature	°C	-40 to +180
Operating mode		Ratiometric
Electrical output R proportional to position		$R = \frac{V_a - V_b}{V_a + V_b}$
Electrical output R at ±60°		±0.504
Non-linearity (0 to ±50°)	±%	1
(±50° to ±60°)	±%	2
Input impedance		Greater than 150Ω at 2kHz
Load resistance (per coil)		Greater than 100kΩ
Phasing		With black, white and yellow leads common, the output on blue and green leads shall be in anti-phase with the red input for all shaft positions Please consult the factory for details
Temperature error	ppm/°C	85
Weight (maximum)	g	

## OPTIONS

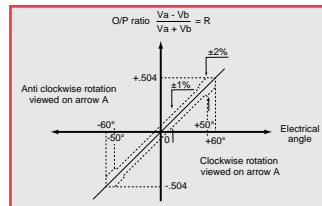
Mounting Custom mounting configurations can be specified

## ORDERING CODE

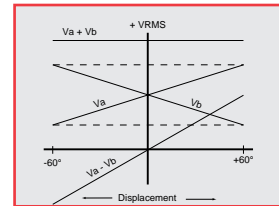
RVDT D45600

## OUTPUT SCHEMATICS

### Output Vs angle



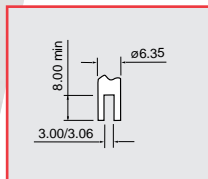
### Individual output voltage schematic



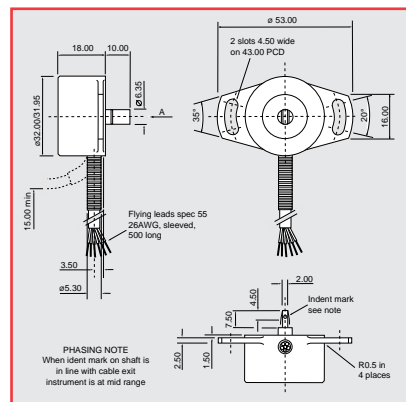
## DIMENSIONS

Note: drawings not to scale

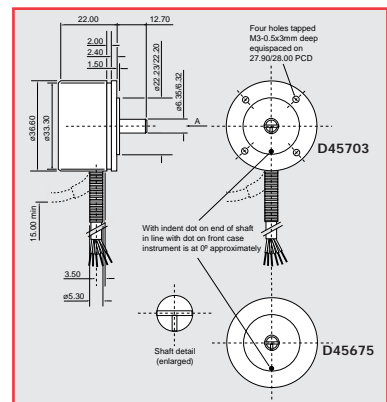
### Suggested driving slot for shaft



### RVDT D45600

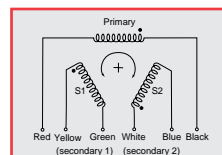


### Alternative mounting styles



## ELECTRICAL CONNECTIONS

6 flying leads 26 AWG, sleeved 500mm long





Penny+Giles - one of the world's major suppliers of measurement and control sensors



throttle pedal position

gear select position indication



hydraulic reservoir level

front and rear suspension movement



throttle actuator position

steering angle position



gearbox actuator position

clutch pedal position



clutch actuator position

brake balance measurement

brake pad/disc wear indication

# Penny+Giles

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## Penny & Giles

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