

# 971

## Industrial Rotary Position Sensor



Spectrol Model 971 Rotary Position Sensor is suitable for demanding environments where long life and consistent linearity performance are required. Typical applications include Electrical Industrial Vehicles, Medical appliances, Automotive Systems and Controls, and Industrial & Commercial position sensing applications.

Spectrol's proven high performance conductive plastic resistive tracks and contact design achieves high accuracy. The 971 can be supplied with options for electrical track length, resistance, flying leads, integral connector and actuator drive direction.

### ELECTRICAL

**Total Resistance :**  
5KOhms @  $\pm 20^{\circ}\text{C}$   
Optional: 1KOhms to 25 KOhms

**Resistance Tolerance:**  
 $\pm 20\%$

**Linearity (Independent):**  
 $\pm 2\%$

**Electrical Travel:**  
 $106^{\circ}$   
Optional to  $130^{\circ}$  maximum

**Maximum Power Rating:**  
1 watt @  $40^{\circ}\text{C}$ ,  
derated to zero @  $135^{\circ}\text{C}$

**Output Smoothness:**  
0.3% maximum

**Insulation Resistance:**  
1000MOhms Min 500 VDC

**Temperature Coefficient of Resistance:**  
600 PPM/ $^{\circ}\text{C}$

**Index Point (e/E):**  
 $3\% \pm 2\%$  @ -Low end stop

**Maximum Voltage:**  
13.5 V d.c.

### MECHANICAL

**Rotation:**  
 $130^{\circ} \pm 2^{\circ}$  ccw  
Optional: ccw or cw up to  $140^{\circ}$   
max  $\pm 2^{\circ}$

**Stop Strenght:**  
680 mNm Min.

**End Play:**  
0.25mm Max.

**Fixing Torque:**  
2 Nm Max.

**Spring Torque:**  
Min Return - Nmm  
Max wind up - 120 Nmm

**Wire Pull Strenght:**  
10 Kg max (3 wires)

**Lead Wires:**  
Nominal diameter 1.8mm. Length optional

### MARKING

**Unit Identification:**  
Manufacturer's name and model number, resistance value and tolerance, linearity specification date code and terminal identification.

### OPTIONS

**Integral Connector:**  
AMP style Junior Timer mates with:  
Housing: 1-8275782-1 (Unsealed)  
Terminals: 927845-2  
Housing: 282191-1 (Sealed)  
Terminals: 929939-3  
Wire Seales: 828904-1

**Leads:**  
Standard: PVC..... +  $85^{\circ}\text{C}$   
High Temperature PVC... +  $130^{\circ}\text{C}$

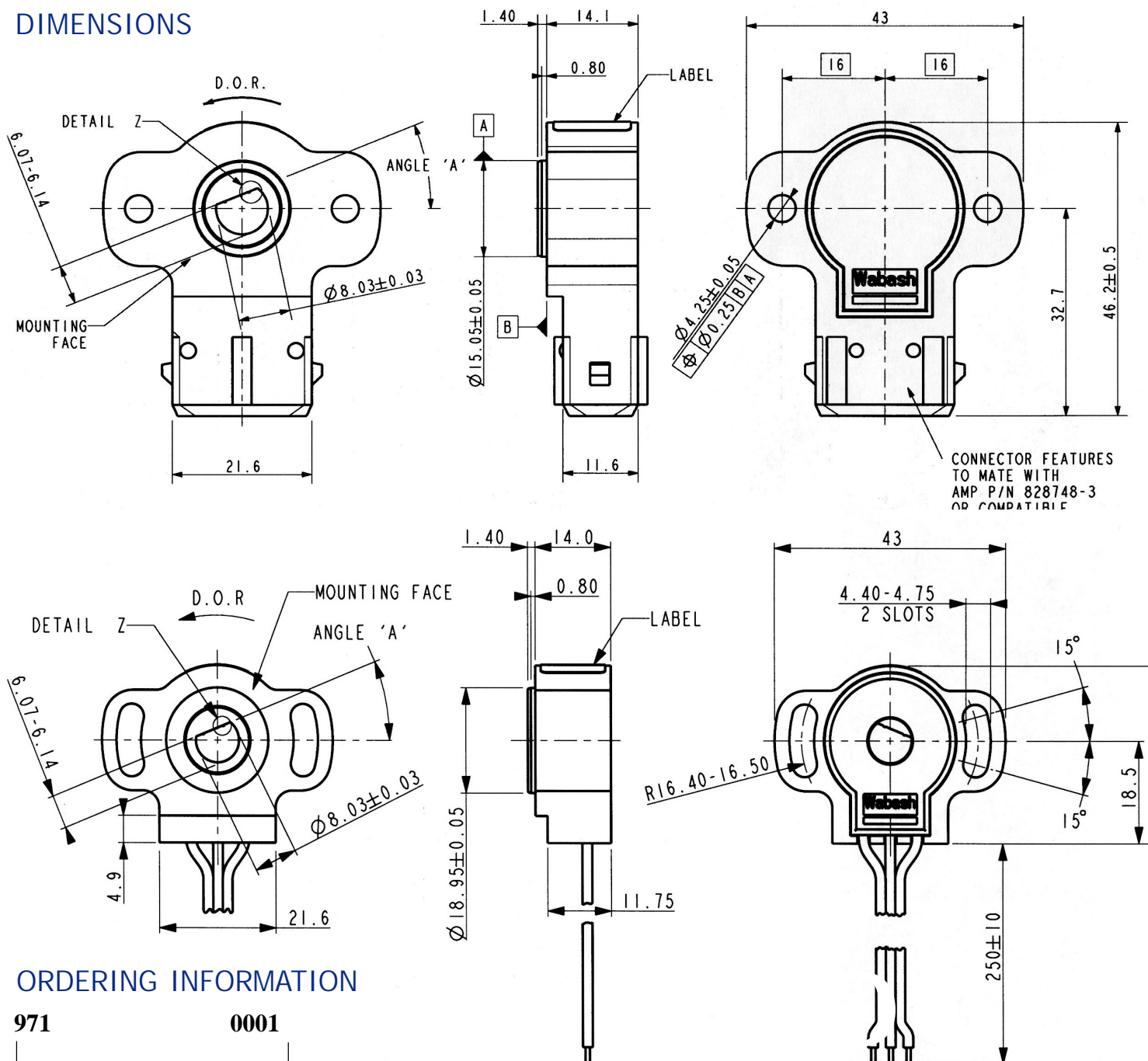
### ENVIRONMENTAL

|                    |  |
|--------------------|--|
| Vibration:         | 15g, 50-1000Hz   |
| Shock:             | 50g  |
| Rotational Life:   | 5,000,000 full cycles<br>10,800,000 dither cycles (Second rotation)  |
| Temperature Range: | - $40^{\circ}\text{C}$ to + $85^{\circ}\text{C}$ Wire version<br>- $40^{\circ}\text{C}$ to + $155^{\circ}\text{C}$ Connector version |
| Sealing:           | IP 5X (dust)   |
| Humidity:          | $40^{\circ}\text{C}$ 96% RH 504 Hours  |

### SPECIAL FEATURES

- \* High Performance, Compact Potentiometric Sensor
- \* Rugged construction suitable for closed loop feedback applications
- \* Through-hole actuation capability
- \* Integral connector or flying lead versions
- \* Actuator and mounting configuration options

### DIMENSIONS



### ORDERING INFORMATION

971

0001

Model

Version

0001 Connector  
0002 Flying leads

ISO9001/QS9000



FM 26189

