

## Precision Rotative Transducers, Conductive Plastic, Economic Series (ECS)



Low cost industrial motion transducers, conductive plastic track.

SIZE	09			
MODEL	78 RS	78 RB	78 PS	78 PB

### FEATURES

- Size 09: ( $\frac{7}{8}$ " ) 22.2 mm
- Long life: 5 million cycles
- Bush or servo mounting types available
- Rear comolded terminals
- Cost effective solution for any industrial applications
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



**RoHS**  
COMPLIANT

### QUICK REFERENCE DATA

Sensor type	ROTATIONAL, conductive plastic
Output type	Output by turrets
Market appliance	Industrial
Dimensions	22.2 mm ( $\frac{7}{8}$ " ) dia.

### ELECTRICAL SPECIFICATIONS

MODEL	78RS / 78RB	78PS / 78PB
Theoretical electrical angle (TEA)	(AEA) - 3°	
Independent linearity (over TEA)	$A \leq \pm 1 \%$ , on request: $B \leq \pm 0.5 \%$ $C \leq \pm 0.35 \%$	$A \leq \pm 2 \%$
Actual electrical angle (AEA)	$340^\circ \pm 5^\circ$	
Ohmic values ( $R_T$ )	1 k $\Omega$ - 2 k $\Omega$ - 5 k $\Omega$ - 10 k $\Omega$ (on request other values)	1 k $\Omega$ - 2 k $\Omega$ - 5 k $\Omega$ - 10 k $\Omega$
Ohmic value tolerances at 20 °C	Standard: $\pm 20 \%$ /special: $\pm 10 \%$	$\pm 20 \%$
Output smoothness	0.1 %	
Maximum power rating at 70 °C	0.3 W	
Wiper current	Recommended: a few $\mu A$ - 1 mA max. (continuous)	
Tap (current or voltage)	1: On request	n/a
Resistance load on wiper	$\geq 1000 \times R_T$	
End voltage	$\leq 0.5 \%$ DC	
Insulation resistance	$\geq 1000 M\Omega$ , 500 V <sub>DC</sub>	
Dielectric strength	$\geq 500 V_{RMS}$ , 50 Hz	

### MECHANICAL SPECIFICATIONS

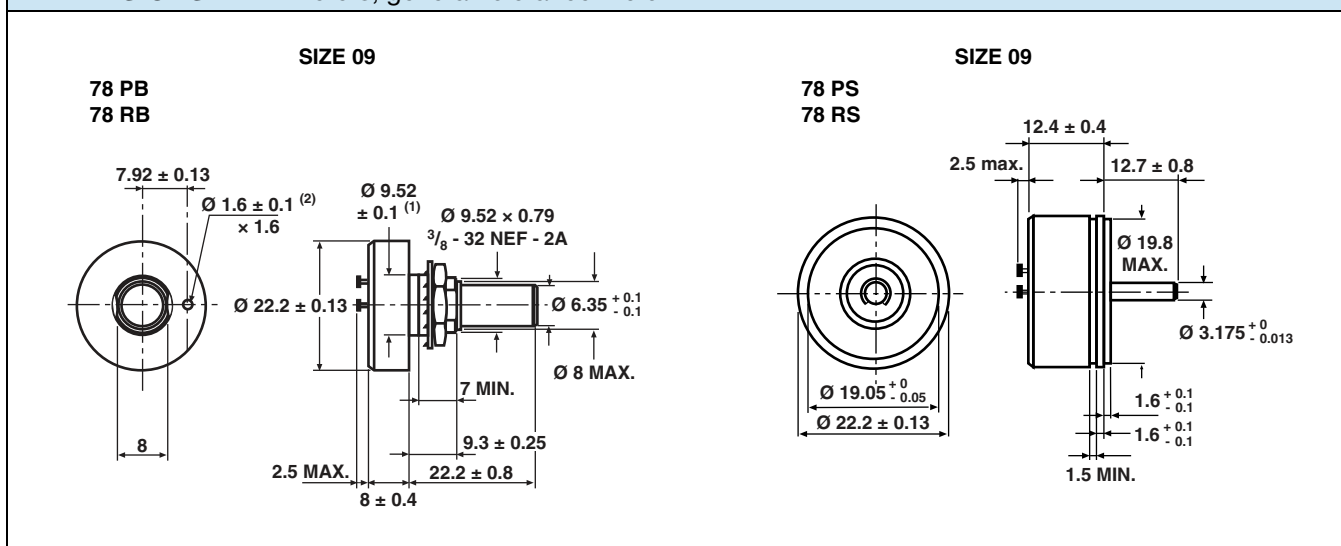
MODEL	78RS / 78RB	78PS / 78PB
Mechanical angle (MA)	360° continuous	
On request: stops	$342^\circ \pm 5^\circ$	
Mounting type	Servo	Bushing
Shaft guiding	Sleeve bearings On request: ball bearings for servo mounting type	
Shaft	Stainless steel	
Option: flat or screw driver slot on shaft	On request	n/a
Termination	Turrets	
Wiper	Precious metal multi-finger contact	
Starting torque (N.cm)	$\leq 0.5$	
Torque on stops (N.cm)	$\geq 20$	
Weight (g)	Bushing $17 \pm 3$	Servo $12 \pm 3$

**PERFORMANCE**

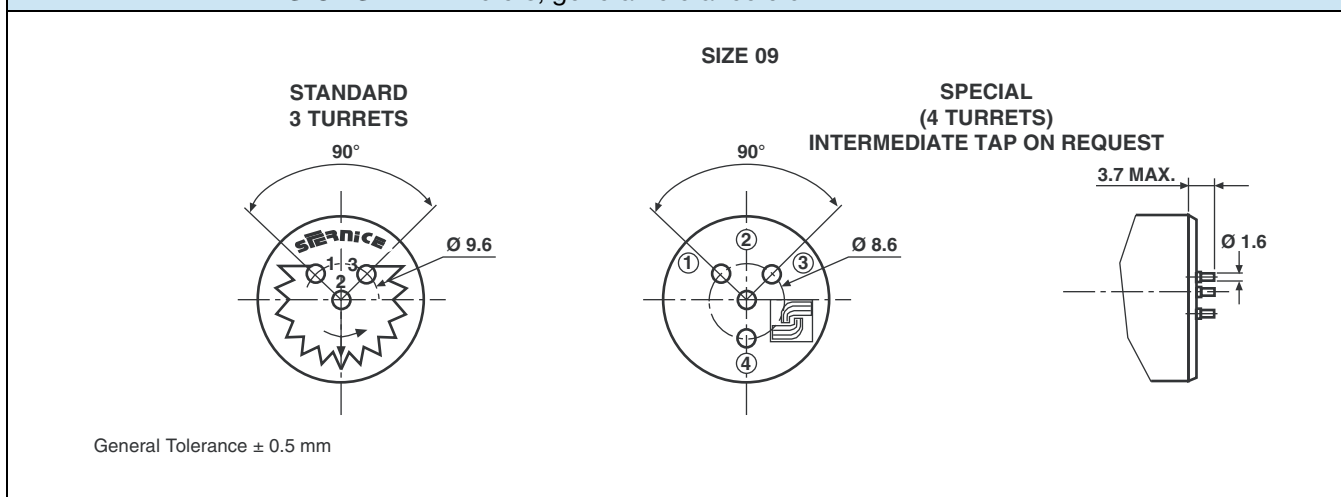
Life (10 <sup>6</sup> cycles)	5
Storage temperature range	-55 °C to +125 °C
Operating temperature range	-30 °C to +85 °C
Speed rotation (RPM)	150
Sine vibration on 3 axes	15 g from 10 Hz to 2000 Hz
Mechanical shocks on 3 axes	50 g - 11 ms - half sine

**Note**

- Nothing stated herein shall be construed as a guarantee of quality or durability

**DIMENSIONS** in millimeters, general tolerance  $\pm 0.5$  mm

**Notes**

- (1) On request: Ø 10.3 mm or 12.3 mm  
 (2) On request: Without antirotation pin

**REAR VIEW DIMENSIONS** in millimeters, general tolerance 0.5 mm




**ORDERING INFORMATION / DESCRIPTION**

ECS	78	P	S	M	A	T	103	e4
SERIES	MODEL	TYPE	FIXATION	MECHANICAL STOPS	LINEARITY	TAP	OHMIC VALUE	LEAD FINISH
		P R	S: servo B: bushing	On request M	A: $\pm 1\%$ or $\pm 2\%$ B: $\pm 0.5\%$ C: $\pm 0.35\%$	On request T: voltage U: current position to be specified	102: 1 k $\Omega$ 202: 2 k $\Omega$ 502: 5 k $\Omega$ 103: 10 k $\Omega$	

**SAP PART NUMBERING GUIDELINES**

ECS	78RB	B	102
SERIES	MODEL	LINEARITY	OHMIC VALUE



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