

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



Low cost industrial motion transducers, conductive plastic track.

<b>SIZE</b>	09			
<b>MODEL</b>	78 RS	78 RB	78 PS	78 PB

### FEATURES

- Size 09: ( $7/8$ " ) 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 ( $7/8$ " ) dia.

### ELECTRICAL SPECIFICATIONS

Theoretical electrical angle (TEA)	(AEA) - 3°	
Independent linearity (over TEA)	A ≤ ± 1 %, on request: B ≤ ± 0.5 % C ≤ ± 0.35 %	A ≤ ± 2 %
Actual electrical angle (AEA)	340° ± 5°	
Ohmic values (R <sub>T</sub> )	1 kΩ - 2 kΩ - 5 kΩ - 10 kΩ (on request other values)	1 kΩ - 2 kΩ - 5 kΩ - 10 kΩ
Ohmic value tolerances at 20 °C	Standard: ± 20 %/special: ± 10 %	± 20 %
Output smoothness	0.1 %	
Maximum power rating at 70 °C	0.3 W	
Wiper current	Recommended: a few μA - 1 mA max. (continuous)	
Tap (current or voltage)	1: On request	NA
Resistance load on wiper	≥ 1000 x R <sub>T</sub>	
End voltage	≤ 0.5 % DC	
Insulation resistance	≥ 1000 MΩ, 500 V <sub>DC</sub>	
Dielectric strength	≥ 500 V <sub>RMS</sub> , 50 Hz	

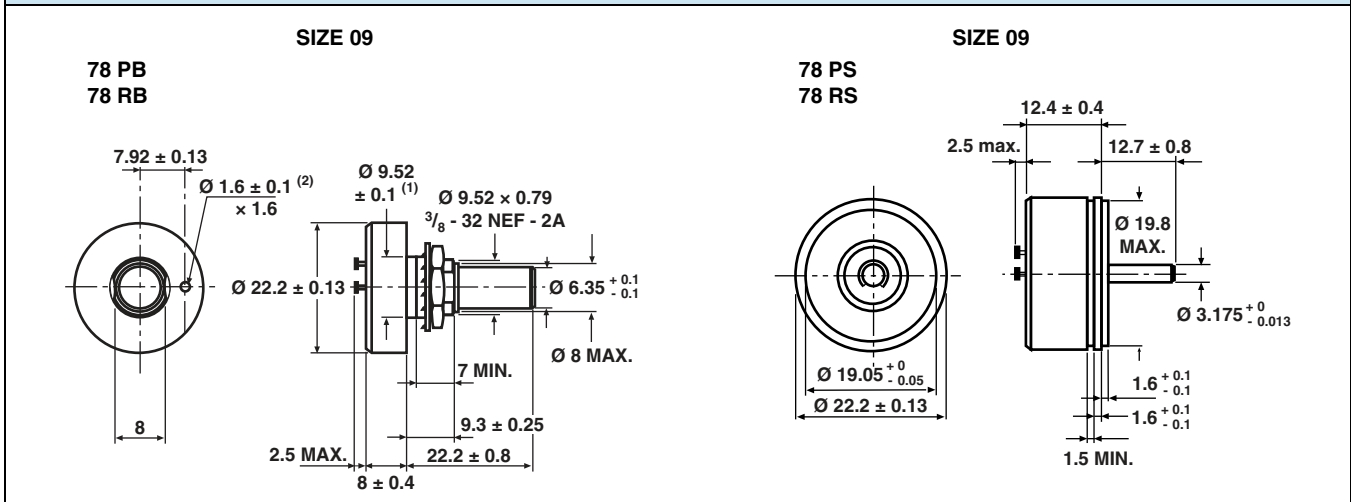
### MECHANICAL SPECIFICATIONS

Mechanical angle (MA)	360° continuous		
On request: stops	342° ± 5°		
Mounting type	Servo	Bushing	Servo Bushing
Shaft guiding	Sleeve bearings		
Shaft	Stainless steel		
Option: flat or screw driver slot on shaft	On request	NA	
Termination	Turrets		
Wiper	Precious metal multi-finger contact		
Starting torque (N.cm)	≤ 0.5		
Torque on stops (N.cm)	≥ 20		
Weight (g)	Bushing 17 g ± 3 g		Servo 12 g ± 3 g

### PERFORMANCE

Life (10 <sup>6</sup> cycles)	5
Temperature range	- 55 °C to + 125 °C
Climatic category	55/125/04
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

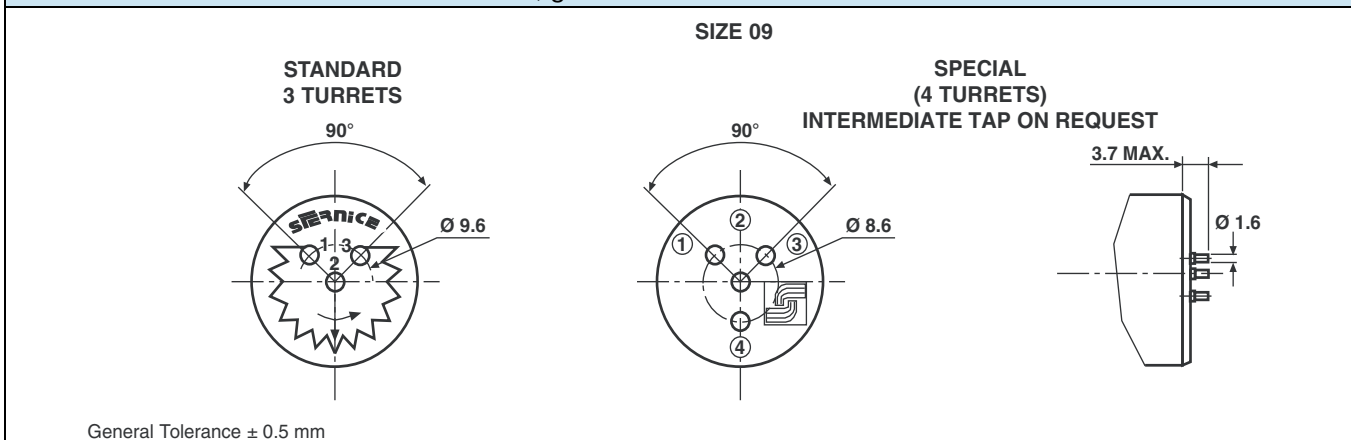
## DIMENSIONS in millimeters, general tolerance $\pm 0.5$ mm



### Notes

- (1) On request:  $\varnothing 10.3$  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	S: Servo	On request	A: $\pm 1\%$ or $\pm 2\%$	On request	102: 1 k $\Omega$	
		R	B: Bushing	M	B: $\pm 0.5\%$	T: Voltage	202: 2 k $\Omega$	
					C: $\pm 0.35\%$	U: Current	502: 5 k $\Omega$	
						position to be specified	103: 10 k $\Omega$	

## SAP PART NUMBERING GUIDELINES

ECS	78RB	B	102
SERIES	MODEL	LINEARITY	OHMIC VALUE



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