

## Precision Rotative Transducers, Conductive Plastic, Bushing Mounting (ROT)



A complete range of bushing mount rotational motion transducers.

### FEATURES

- Size 08 to 30
- Linearity  $\pm 1\%$  down to  $\pm 0.05\%$
- Good Repeatability
- Long Life
- Essentially Infinite Resolution
- Up to 6 Electrical Functions with the same Shaft
- On Request Custom Design to meet your Specifications
- Following MIL-R-39023 and NFC 93-255 requirements

SIZE	08	09	11	13	15	18	20	30
MODEL	34 BF	78 BF	116 BF	156 BF	176 BF	134 BF	200 BF	300 BF

ELECTRICAL SPECIFICATIONS								
Functions	linear, on request specific law							
Theoretical electrical angle (TEA)	actual electrical angle (AEA) – 2°							
Independent linearity (over TEA)	A $\leq \pm 1\%$		B $\leq \pm 0.5\%$			C $\leq \pm 0.25\%$		
on request mounting type: ball bearings	NA		down to D $\leq \pm 0.1\%$			down to E $\leq \pm 0.05\%$		
Actual electrical angle (AEA)	340° $\pm 3^\circ$		350° $\pm 2^\circ$					
Ohmic values (RT)	1k $\Omega$ - 2k $\Omega$ - 5k $\Omega$ - 10k $\Omega$ - on request other values							
Ohmic value tolerances at 20°C	$\pm 10\%$							
Output smoothness	$\leq 0.05\%$					$\leq 0.025\%$		
Maximum power rating at 70°C	0.25W	0.3W	0.4W	0.5W	0.75W	1W	1.2W	1.5W
Wiper current	recommended: a few $\mu\text{A}$ - 1mA max. (continuous)							
Tap (current or voltage)	U = current		{ Position : $\pm 2^\circ$			/ T = voltage Position : $\pm 2^\circ$		
on request with angular position to be specified			{ Width : $\leq 4^\circ$					
Load resistance on wiper (RL)	min. 10 <sup>3</sup> x RT							
Repeatability	$\leq 0.02\%$							
End voltage	$\leq 0.4\%$ for 470 $\Omega \leq R_T \leq 1000\Omega$ / $\leq 0.2\%$ for 1000 $\Omega < R_T \leq 2200\Omega$ / $\leq 0.1\%$ for $R_T > 2200\Omega$							
Insulation resistance	$\geq 1000\text{M}\Omega$ , 500Vdc							
Dielectric strength	$\geq 750\text{VRMS}$ , 50Hz				$\geq 1000\text{VRMS}$ , 50Hz			

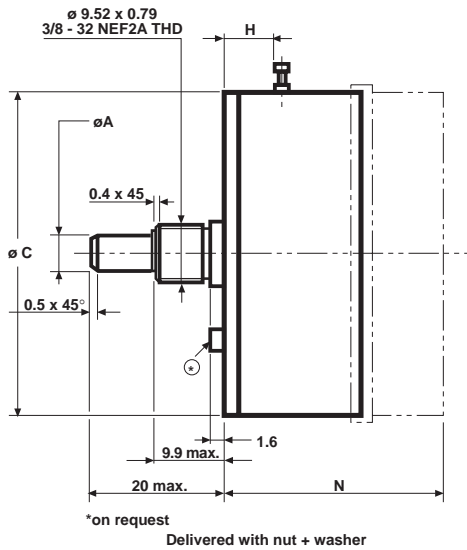
MECHANICAL SPECIFICATIONS									
Mechanical rotation	360° continuous; stops on request								
Mounting type	bushing								
Shaft guiding	sleeve bearings; on request ball bearings								
Shaft	stainless steel								
Housing	plastic moulding; on request anodized aluminum								
Termination	turrets; on request flexible leads, cables...								
Wiper	precious metal multi-finger contact								
Starting torque (N.cm)	$\leq 0.5$ 1 cup; $\leq 0.3$ for each additional cup								
Moment of inertia (g. cm <sup>2</sup> )	0.3	0.4	0.6	0.8	2.2	2.8	3.5	10	
Weight (g)	1 cup	11 $\pm$ 2	20 $\pm$ 2	21 $\pm$ 2	30 $\pm$ 2	33 $\pm$ 2	45 $\pm$ 3	54 $\pm$ 3	120 $\pm$ 10
	each additional cup	5 $\pm$ 2	6 $\pm$ 2	7 $\pm$ 2	14 $\pm$ 2	16 $\pm$ 2	18 $\pm$ 3	21 $\pm$ 3	62 $\pm$ 10

PERFORMANCE	
Life (million of cycles)	$\geq 20$
Temperature range	- 55°C, + 125°C
Climatic category	55 / 125 / 04
Rotation speed (RPM)	150

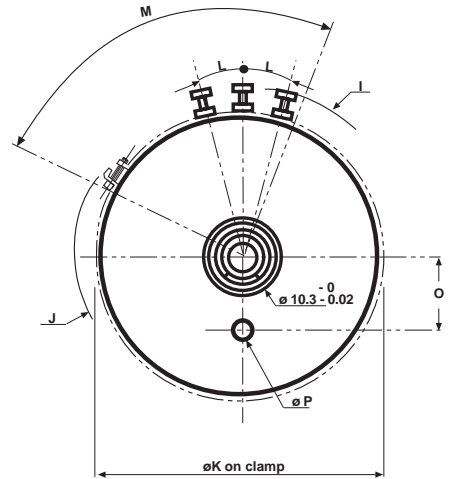
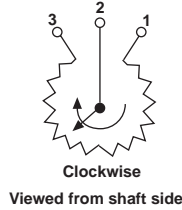
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Vishay Sfernice

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



### ELECTRICAL CONNECTIONS



DIMENSIONS	DESIGNATION	SIZE	POTENTIOMETER REFERENCE							
			08	09	11	13	15	18	20	30
			MODEL	34 BF	78 BF	116 BF	156 BF	176 BF	134 BF	200 BF
A - 0 - 0.013	$\varnothing$ shaft		3.175	3.175	3.175	3.175	6.345	6.345	6.345	6.345
C max.	$\varnothing$ body		19.18	22.3	27.07	33.35	36.6	44.5	50.9	76.4
H min.	turret location		4.2	4.7	5.35	5.35	8	8	7.45	5.55
I max.	radius on turrets		14	15.4	17.3	20.8	23.1	26.6	29.7	43.7
J max.	radius on screw clamp		13.5	15.4	17.3	18.9	23.1	26.5	29.3	42.6
K	$\varnothing$ on clamp		19.6	23.8	27.7	33.6	37.4	44.5	50.8	77.5
O	locating pin (on request)		7.2	8	8.8	9	14.4	16.8	13.48	-
P max.	$\varnothing$ pin (on request)		1.6	1.6	3.25	3.25	3.25	3.25	-	-
L $\pm 2^\circ$	angle between turrets		30°	30°	25°	20°	20°	25°	15°	15°
M max.	total angle		100°	100°	100°	100°	80°	80°	80°	80°
N max.	1 cup		14.5	19	19	19	21	21	21	20.5
	2 cups		21.5	25	21.5	24	24.5	24.5	26	23.5
	3 cups		34.5	38	34.5	38	37.5	37.5	38	-
	4 cups		40.5	48	40.5	45.5	48	48	48	-
	5 cups		53	61	53	59	60.5	61	62	-
	6 cups		59	72	59	67	72	72	72	-

### ORDERING INFORMATION

ROT	156	B	F	1	C	T	502	W...
SERIES	MODEL	MOUNTING TYPE	CONDUCTOR	NUMBER OF CUPS	LINEARITY	TAP	OHMIC VALUE	MODIFICATION
		B: Bushing	F: Plastic	6 max.	A: $\pm 1\%$ B: $\pm 0.5\%$ C: $\pm 0.25\%$ D: $\pm 0.1\%$ E: $\pm 0.05\%$	on request T: voltage U: current position to be specified	First 2 digits are significant numbers 3rd digit indicates number of zeros	Special feature code number

Special characteristics and designs on request.