

## 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

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

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

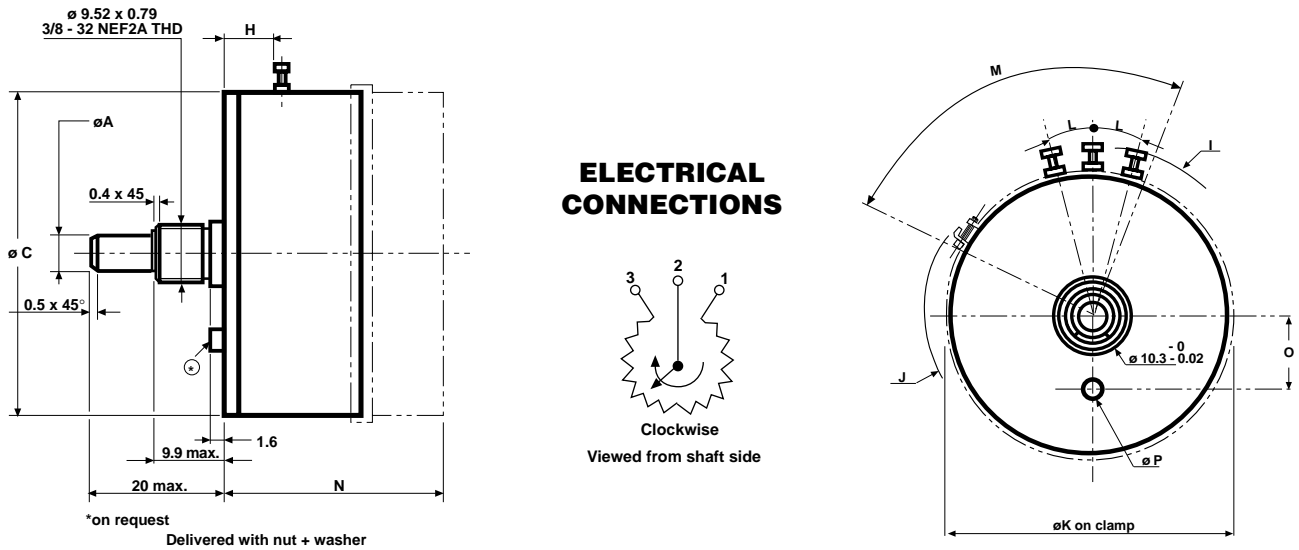
MECHANICAL SPECIFICATIONS								
<b>Mechanical rotation</b>	360° continuous; stops on request							
<b>Mounting type</b>	bushing							
<b>Shaft guiding</b>	sleeve bearings; on request ball bearings							
<b>Shaft</b>	stainless steel							
<b>Housing</b>	plastic moulding; on request anodized aluminum							
<b>Termination</b>	turrets; on request flexible leads, cables...							
<b>Wiper</b>	precious metal multi-finger contact							
<b>Starting torque (N.cm)</b>	$\leq 0.5$ 1 cup; $\leq 0.3$ for each additional cup							
<b>Moment of inertia (g. cm<sup>2</sup>)</b>	0.3	0.4	0.6	0.8	2.2	2.8	3.5	10
<b>Weight (g)</b>	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	
<b>Life (million of cycles)</b>	$\geq 20$
<b>Temperature range</b>	- 55°C, + 125°C
<b>Climatic category</b>	55 / 125 / 04
<b>Rotation speed (RPM)</b>	150

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Vishay Sfernice

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



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.