

ROT

BF

Data sheet $\frac{5}{5.654}$ E
10096



precision rotative transducer

—conductive plastic, bushing mounting—

MIL-R-39023
NF C 93255

A complete range of bushing mount rotational motion transducers.

- 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

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	NA	down to D $\leq \pm 0,1\%$				down to E $\leq \pm 0,05\%$		
Actual electrical angle (AEA)	$340^\circ \pm 3^\circ$			$350^\circ \pm 2^\circ$				
Ohmic values (R_T)	1 k Ω - 2 k Ω - 5 k Ω - 10 k Ω - on request other values							
Ohmic value tolerances at 20°C	$\pm 10\%$; on request: $\pm 5\%$							
Output smoothness	$\leq 0,05\%$					$\leq 0,025\%$		
Maximum power rating at 70°C	0,75 W	1 W	1,25 W	1,5 W	2 W	2,5 W	3 W	4 W
Wiper current	recommended: a few μA - 1 mA max. (continuous)							
Tap (current or voltage)	U = current $\left\{ \begin{array}{l} \text{Position: } \pm 2^\circ \\ \text{Width: } \leq 4^\circ \end{array} \right. / \quad T = \text{Voltage} \quad \text{Position: } \pm 2^\circ$							
on request								
Load resistance on wiper (R_L)	min. $10^3 \times R_T$							
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	$\geq 1000 \text{ M}\Omega$, 500 V DC							
Dielectric strength	$\geq 750 \text{ V RMS}$, 50 Hz				$\geq 1000 \text{ V RMS}$, 50 Hz			

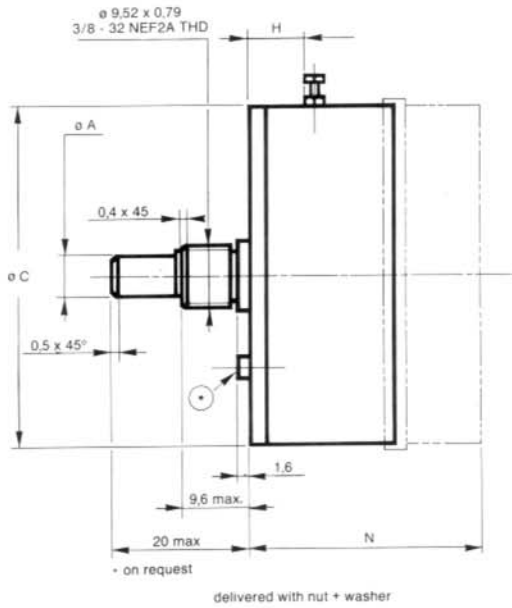
MECHANICAL SPECIFICATIONS

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 aluminium								
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 ²)	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	21 \pm 3	18 \pm 3	62 \pm 10

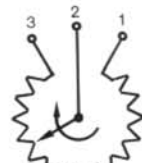
PERFORMANCES

Life (millions of cycles)	≥ 20							
Temperature range	-55°C , $+125^\circ\text{C}$							
Climatic category	55 / 125 / 04							
Rotation speed (°/s)	900							

BF

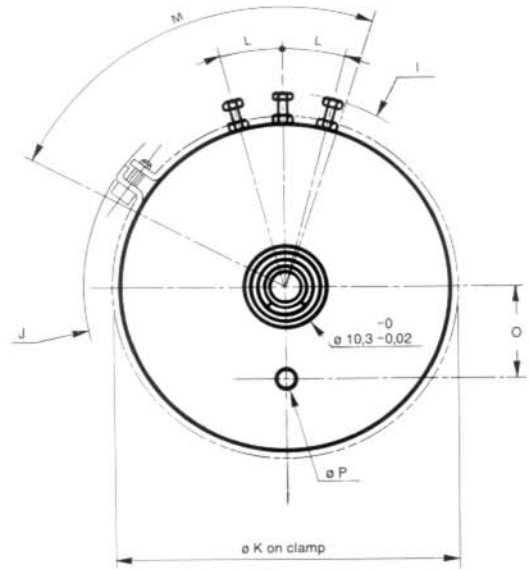


ELECTRICAL CONNECTIONS



Clockwise

Viewed from shaft side

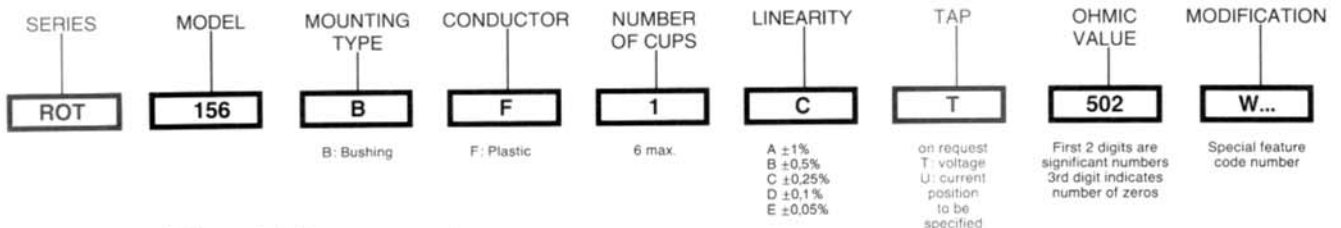


Dimensions in mm.
General tolerances ± 0.5 mm.

Table 1

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 $-0,013$	ø shaft		3,175	3,175	3,175	3,175	6,35	6,35	6,35	6,35
C max	ø body		19,1	22,3	27,05	33,2	36,6	44,4	50,8	76,2
H min	Turret location		4,7	4,7	6	6	8	8	8,6	8,6
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	ø 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	ø 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	25
	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 PROCEDURE



Special characteristics and designs on request.