

ROT

SF

Data sheet $\frac{5}{5.653} E$
10096



precision rotative transducer

— conductive plastic, servo mounting —

MIL-R-39023
NF C 93255

A complete range of servo mounting rotational transducers for applications requiring long life accuracy and speed.

- SIZE 08 to 30
- LINEARITY $\pm 1\%$ down to $\pm 0,015\%$
- EXCELLENT 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 SF	78 SF	116 SF	156 SF	176 SF	134 SF	200 SF	300 SF

ELECTRICAL SPECIFICATIONS

Functions	linear; on request specific law							
Theoretical electrical angle (TEA)	actual electrical angle (AEA) -2°							
Independent linearity (over TEA)	A ≤ ±1% B ≤ ±0,5% C ≤ ±0,25% D ≤ ±0,1%							
on request	NA	down to E ≤ ±0,05%			down to F ≤ ±0,025%		down to ≤±0,015%	
Actual electrical angle (AEA)	340° ±3°		350° ±2°					
Ohmic values (R _T)	1 kΩ - 2 kΩ - 5 kΩ - 10 kΩ - on request other values							
Ohmic value tolerances at 20°C	±10%; on request ±5%							
Output smoothness	≤0,025%						on request≤0,01%	
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 / load resistance	recommended: a few μA - 1 mA max. continuous/minimum 10 ³ x R _T							
Tap (current or voltage)	U = current { Position: ± 2° Width: ≤ 4° / T = Voltage Position: ± 2°							
on request								
Repeatability	≤0,01%							
End voltage	≤0,4% for 470 Ω ≤ R _T ≤1000 Ω / ≤0,2% for 1000 Ω < R _T ≤2200 Ω / ≤0,1% R _T >2200 Ω							
Insulation resistance	≥1000 MΩ, 500 Vdc							
Dielectric strength	≥750 V RMS, 50 Hz			≥1000 V RMS, 50 Hz				

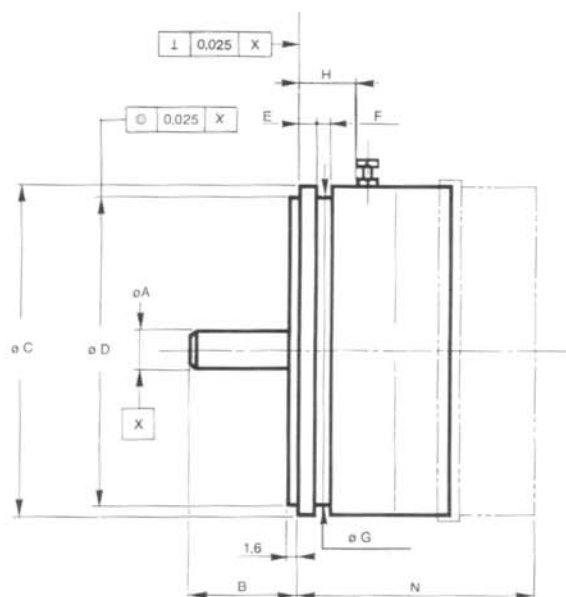
MECHANICAL SPECIFICATIONS

Mechanical rotation	360° continuous; stops on request								
Mounting / shaft guiding	servo/ball bearings								
Housing	diallylphtalate; on request anodized aluminium								
Termination	turrets; on request flexible leads, cables...								
Wiper	precious metal multi-finger contact								
Starting torque (N.cm)	1 cup	0,2				0,25			
	each additional cup	0,15							
Moment of inertia (g. cm²)		0,3	0,4	0,6	0,8	2,2	2,8	3,5	10
Weight (g)	1 cup	11 ± 2	16 ± 2	20 ± 2	29 ± 2	49 ± 2	67 ± 3	79 ± 3	120 ± 10
	each additional cup	5 ± 2	6 ± 2	7 ± 2	10 ± 2	16 ± 2	21 ± 3	16 ± 3	62 ± 10

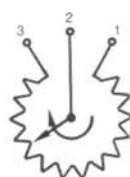
PERFORMANCES

Life (millions of cycles)	$\geq 100.10^6$ at 3600 °/s	
Temperature range	-55°C , $+125^\circ\text{C}$	
Climatic category	55 / 125 / 04	
Maximum rotation speed (°/s)	25000	
Sine vibration on 3 axes	1,5 mm or 20 g from 10 Hz to 2000 Hz	
Mechanical shocks on 3 axes	50 g - 11 ms - half sine	

SF

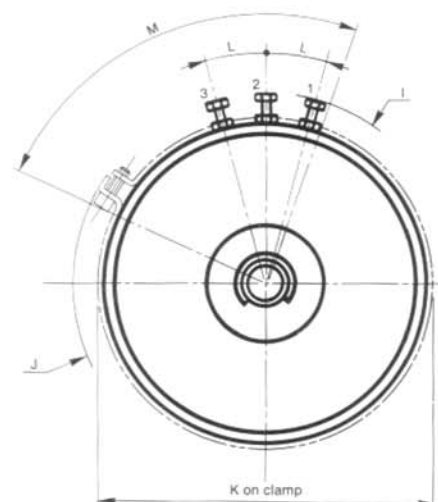


ELECTRICAL CONNECTIONS



Clock wise

Viewed from shaft side



Dimensions in mm.
General tolerance ± 0.5 mm.

DIMENSIONS

Table 1

Dimensions	Designation	Size Model	POTENTIOMETER REFERENCE							
			08 34 SF	09 78 SF	11 116 SF	13 156 SF	15 176 SF	18 134 SF	20 200 SF	30 300 SF
A -0 A $-0,013$	ϕ shaft stainless steel		3,175	3,175	3,175	3,175	6,35	6,35	6,35	6,35
B max	shaft length		13	16,6	16,6	16,6	16,6	16,6	16,6	16,6
C max	ϕ body plastic molded		19,1	22,3	27,05	33,35	36,6	44,4	50,8	76,2
D	ϕ flange		15,875	19,05	24,608	30,160	33,337	39,674	47,625	73,025
	tolerance on flange		$+0 -13\mu\text{m}$						$+0 -25\mu\text{m}$	
E	shoulder		1,6	1,6	1,6	1,6	1,6	1,6	2,4	2,4
F min	width of groove		1,5	1,5	1,5	1,5	2,2	1,8	2,2	1,95
ϕ G max	diameter of groove		17,57	19,8	24,8	30,9	33,3	41,4	47,6	73,1
H min	turret location		6,3	6,3	6,3	6,3	7	10,2	10,2	10,2
I max	radius on turrets		14	15,4	17,3	20,5	23,1	26,5	29,3	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 max	ϕ on clamp		19,6	23,8	27,7	33,6	37,4	44,5	50,8	77,5
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		16	20,5	20,5	20,5	23,5	23,5	23,5	23
	2 cups		23	27	23	25,5	26	26	28,5	34,5
	3 cups		36	40	36	39,5	39,5	39,5	41	-
	4 cups		42	50	42	47	49,5	49,5	50,5	-
	5 cups		54,5	63	54	60,5	62,5	62,5	64,5	-
	6 cups		60,5	74	60,5	68,5	73,5	73,5	74,5	-

ORDERING PROCEDURE

SERIES	MODEL	MOUNTING TYPE	CONDUCTOR	NUMBER OF CUPS	LINEARITY	TAP	OHMIC VALUE	MODIFICATION
ROT	156	S	F	1	C	T	502	W...
		S : Servo	F : Plastic	6 max	Code A $\pm 1\%$ B $\pm 0.5\%$ C $\pm 0.25\%$ D $\pm 0.1\%$ E $\pm 0.05\%$ F $\pm 0.025\%$	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 designs on request.