

Precision Rotative Transducers, Conductive Plastic, Servo Mounting (ROT)



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

FEATURES

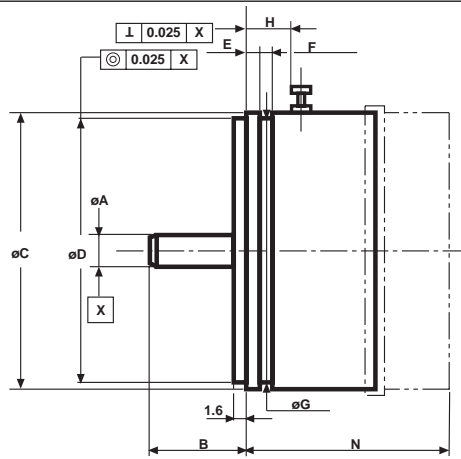
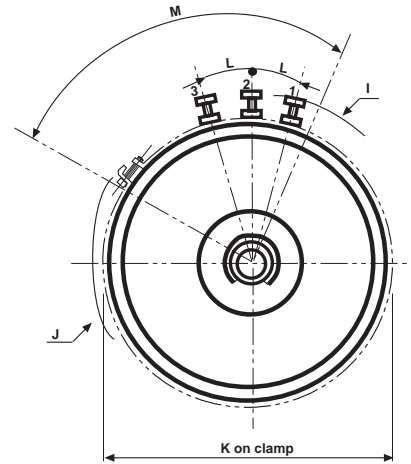
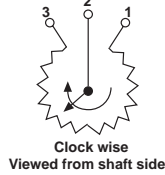
- Size 08 to 30
- Linearity $\pm 1\%$ down to $\pm 0.015\%$
- Excellent Repeatability
- Long Life
- Essentially Infinite Resolution
- Up to 6 Electrical Functions with the same Shaft
- On Request Custom Design to meet your Specifications
- Following MIL-R-39023 and NFC 93-255 requirements

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)	TEA = actual electrical angle (AEA) - 2°							
Independent linearity (over TEA) on request	A $\leq \pm 1\%$		B $\leq \pm 0.5\%$		C $\leq \pm 0.25\%$		D $\leq \pm 0.1\%$	
	NA		down to E $\leq \pm 0.05\%$		down to F $\leq \pm 0.025\%$		down to $\leq \pm 0.015\%$	
Actual electrical angle (AEA)	340° $\pm 3^\circ$				350° $\pm 2^\circ$			
Ohmic values (R _T)	1k Ω - 2k Ω - 5k Ω - 10k Ω - on request other values							
Ohmic value tolerances at 20°C	$\pm 10\%$; on request $\pm 5\%$							
Output smoothness	$\leq 0.025\%$						on request $\leq 0.01\%$	
Maximum power rating at 70°C	0.25W	0.3W	0.4W	0.5W	0.75W	1W	1.2W	1.5W
Wiper current / load resistance	recommended: a few μA - 1mA max. continuous / minimum $10^3 \times R_T$							
Tap (current or voltage) on request with angular position to be specified	U = current		{ Position: $\pm 2^\circ$ { Width: $\leq 4^\circ$		/		T = voltage Position: $\pm 2^\circ$	
Repeatability	$\leq 0.01\%$							
End voltage	$\leq 0.4\%$ for $470\Omega \leq R_T \leq 1000\Omega$ / $\leq 0.2\%$ for $1000\Omega < R_T \leq 2200\Omega$ / $\leq 0.1\%$ $R_T > 2200\Omega$							
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/shaft guiding	servo/ball bearings									
Housing	diallylphtalate; on request anodized aluminum									
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. cm ²)	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	18 ± 3	21 ± 3	62 ± 10

PERFORMANCE	
Life (million of cycles)	≥ 50
Temperature range	- 55°C, + 125°C
Climatic category	55 / 125 / 04
Maximum rotation speed (RPM)	600
Sine vibration on 3 axes	1.5mm or 20g from 10Hz to 2000Hz
Mechanical shocks on 3 axes	50g - 11ms - half sine

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 SF	78 SF	116 SF	156 SF	176 SF	134 SF	200 SF	300 SF
A - 0 - 0.013	ϕ shaft stainless steel		3.175	3.175	3.175	3.175	6.345	6.345	6.345	6.345
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		19.18	22.3	27.07	33.35	36.4	44.5	50.9	76.3
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	1.75
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		5.8	5.95	6.3	6.3	7	10.15	10.2	10.2
I max.	radius on turrets		14	15.4	17.3	20.5	23.1	26.5	29.7	43.7
J max.	radius on screw clamp		13.5	15.4	17.3	18.9	23.1	26.5	29.7	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	26.13	26	28.5	34.5
	3 cups		36	40	36	39.5	39.5	39.5	40.97	-
	4 cups		42	50	42	47	49.5	49.5	50.72	-
	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 INFORMATION

ROT	156	S	F	1	C	T	502	W...
SERIES	MODEL	MOUNTING TYPE	CONDUCTOR	NUMBER OF CUPS	LINEARITY	TAP	OHMIC VALUE	MODIFICATION
		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