



SERVO INSTRUMENT CORPORATION

MANUFACTURERS OF PRECISION CONDUCTIVE PLASTIC & WIREWOUND POTENTIOMETERS
www.servoinstrument.com



- ISO 9000 & AS 9100 registered
- Precision potentiometers, elements, wipers, and rotary switches
- Conductive plastic & wire-wound
- Designed to MIL-PRF-39023 & MIL-PRF-12934 specifications
- Manufacturer of the former Gamewell, Amphenol, and Fairchild line of precision potentiometers
- 50+ million cycles, 80 ppm/°C temperature coefficient, and linearity down to $\pm 0.01\%$ absolute available with conductive plastic

- Our products are suited for:
- Missile and Space Applications
 - Flight Systems
 - Robotics Applications
 - Medical Applications
 - Angle/Position Transducers
 - Industrial Control Systems
 - Calibration Controls
 - Automation Equipment

CONDUCTIVE-PLASTIC AND WIRE-WOUND POTENTIOMETERS

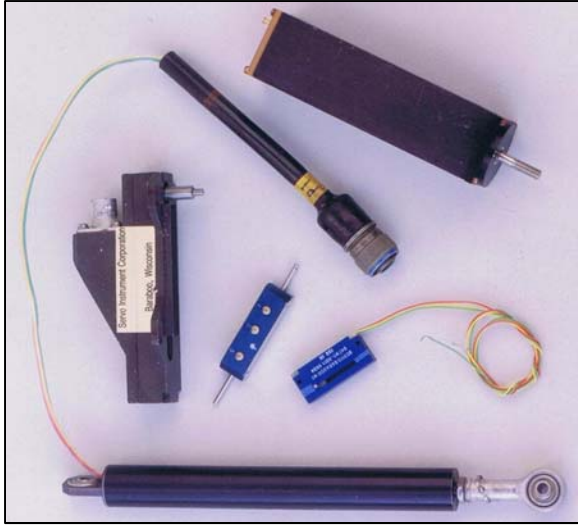
Higher standards of performance at competitive prices are being demanded of today's precision potentiometers. Enter into an engineering partnership with Servo Instrument Corporation and choose from one of the industry's broadest lines of custom-engineered and crafted potentiometers. With Servo you specify exactly what you want and we custom-engineer to your specifications. Servo precision potentiometers pay off in the long run. They're tough. They're dependable. And they are remarkably precise.

Our potentiometers are available in rotary or linear, conductive-plastic or wire-wound, linear or non-linear functions, single or multiple gang, servo or bushing mounted configurations. They can be fitted with accessories such as shaft-actuated switches, mechanical stops, gears, and more. Our standard potentiometers feature anodized aluminum housings with stainless steel shafts. We are continually upgrading and improving our equipment and processes in order to supply our

customers with better, more consistent products with shorter lead times. Our automated test equipment allows 100% inspection of parts prior to shipping to the customer.

Servo's conductive-plastic potentiometers offer virtually infinite resolution, extreme long life (50+ million cycles), excellent output smoothness, nearly unlimited accuracy, temperature coefficient of 80 ppm/°C or better, and negligible phase shift. These precision units exceed the most demanding specifications of industry and the military. Servo's conductive-plastic potentiometers meet MIL-PRF-39023 specifications.

Servo's wire-wound potentiometers are typically wound on insulated copper mandrels with Class F insulation allowing operation up to 150° C. Our elements are wound with standard or precious metal alloys ranging from 29 to 800 ohms per circular mil foot. Our wire-wound potentiometers meet MIL-PRF-12934 specifications.



Translatory (linear) Potentiometers



Conductive-Plastic and Wire-Wound elements

TRANSLATORY (LINEAR) POTENTIOMETERS

Servo's line of translatory (linear) potentiometers are designed for military, aerospace, and industrial applications where highly accurate measurement of linear-motion is required. Servo can accommodate stroke lengths up to sixteen inches in both conductive-plastic and wire-wound elements. The

stainless steel shaft can be rotated 360° without affecting the mechanical or electrical operation and requires minimal force for full stroke. Our linear pots are designed to meet applicable portions of MIL-PRF-39023 and MIL-PRF-12934. Standard housings are anodized aluminum; nickel-plated brass is also available.

SERVO PART NUMBERING SYSTEM

<u>BASIC SIZE</u>	SERVO W/W	SERVO C/P	BUSHING W/W	BUSHING C/P	LINEAR W/W	LINEAR C/P
1 / 2 "	08W	08C	08WB	08CB	08TW	08TC
3 / 4 "	12W	12C	12WB	12CB	12TW	12TC
7 / 8 "	14W	14C	14WB	14CB	14TW	14TC
1 – 1 / 16 "	17W	17C	17WB	17CB	17TW	17TC
1 – 5 / 16 "	21W	21C	21WB	21CB	-	-
1 – 7 / 16 "	23W	23C	23WB	23CB	-	-
1 – 5 / 8 "	26W	26C	26WB	26CB	-	-
1 – 3 / 4 "	28W	28C	28WB	28CB	-	-
2 "	32W	32C	32WB	32CB	-	-
3 "	48W	48C	48WB	48CB	-	-
4 "	64W	64C	64WB	64CB	-	-
EA	WIPER ASSEMBLY SERIES					
EC	CONDUCTIVE PLASTIC ELEMENT SERIES					
EW	WIRE-WOUND ELEMENT SERIES					



Conductive plastic and wire wound elements and wipers

CONDUCTIVE-PLASTIC AND WIRE-WOUND ELEMENTS AND WIPERS

Does your design require an open element? Servo's EC series conductive-plastic and EW series wire-wound line of elements are custom designed to your needs and specifications.

Our EA series line of wiper assemblies is custom-designed to work with our elements and

manufactured to meet your needs. The open style elements are designed to meet applicable parts of MIL-PRF-12934 and MIL-PRF-39023. Servo currently holds a Parts Manufacturer Authorization (PMA) from the FAA to manufacture a line of over 40 open wire-wound elements.

ROTARY SWITCHES

Our line of rotary switches is designed to meet the widest variety of requirements while resisting the effects of shock, vibration, temperature, and acceleration. Switch angles have a standard tolerance of $\pm 0.5^\circ$, phasing to $\pm 0.25\%$, and have a starting torque less than 1 oz-in with sleeve bearing construction.

The same anodized aluminum case, stainless steel shafts and precious metal contacts used in our

potentiometers are used in our switches for smooth, trouble-free operation for years of reliable service.

Servo's rotary switches provide an almost endless range of possibilities. Multi-section switch assemblies can be supplied with similar or different configurations in each section. Combine a switch section with a precision potentiometer to save space, time and money.



Conductive plastic pot with shaft actuated switch



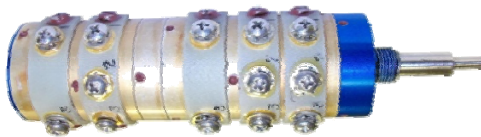
Linear pot with lead wire terminations



Two gang rotary pot with lead wire terminations



1/2" conductive plastic pot with turret terminals



CP pot with dual shafts, switches, detents & stops



CP pot with gear



SERVO INSTRUMENT CORPORATION

240 Lynn Street, PO Box 43

Baraboo, WI 53913

PH: 608-356-6623

FAX: 608-356-8189

sales@servoinstrument.com

www.servoinstrument.com



Miniature gyro pick-off element
with scale to show actual size



QUOTATION REQUEST

Company: _____

Name: _____ E-mail: _____

Phone: _____ Fax: _____

*Quantities: _____ Delivery: _____

SIZE: 08 12 14 17 21 23 26 28 32 48 64

OTHER: _____

TYPE: "C" "CB" "W" "WB" "TC" "TW"

"EA" "EC" "EW" "SW" OTHER

MOUNTING: Servo Bushing 3 Hole Clamp

Other: _____

TERMINATION: Turret terminals Pin terminals Lead wires

Other: _____

RESISTANCE: _____ \pm _____ ELEC. ANGLE: _____ \pm _____

LINEARITY/CONFORMITY: \pm _____ Independent Absolute

TAPS: _____ STOP ANGLE: _____

NOISE (WW): _____ OUTPUT SMOOTHNESS (CP): _____

HIPOT: _____ INS. RESIST.: _____ SHAFT: 1/8" 1/4" Other

SHAFT EXTENSION: Front _____ Rear _____

TORQUE: Starting _____ Running _____

STOP ANGLE: None Other: _____

PHASING: _____

SHAFT END PLAY: _____ TIR SHAFT RADIAL PLAY: _____ TIR

SHAFT RUNOUT: _____ TIR LATERAL RUNOUT: _____ TIR

REGULATORY REQUIREMENTS: _____

LIST ANY ADDITIONAL SPECIAL REQUIREMENTS OR INFORMATION: _____

Please include all applicable drawings, specifications, and sketches.

*Multi-year contracts available

Ph: 608-356-6623

Fax: 608-356-8189

Email: sales@servoinstrument.com

CONDUCTIVE PLASTIC

MODEL	A	B	C	D ^{+0.000} _{-0.003}	E	F	G	H	J	K	L	STD LIN*
08C	1/2	.4375 ^{+0.000} _{-0.005}	.437	.1248	1/2	.062	.062	.062	.450	.350	0.190	1.0
14C	7/8	.7500 ^{+0.000} _{-0.005}	.750	.1248	1/2	.062	.062	.062	.450	.350	0.190	0.5
17C	1-1/16	.9688 ^{+0.000} _{-0.005}	.968	.1248	3/4	.062	.062	.062	.450	.350	0.190	0.5
21C	1-5/16	1.1875 ^{+0.000} _{-0.005}	1.187	.2498	3/4	.073	.062	.062	.450	.350	0.190	0.5
23C	1-7/16	1.3125 ^{+0.000} _{-0.005}	1.313	.2498	3/4	.073	.093	.062	.450	.350	0.190	0.4
26C	1-5/8	1.5000 ^{+0.000} _{-0.005}	1.495	.2498	3/4	.073	.093	.062	.450	.350	0.190	0.35
28C	1-3/4	1.562 ^{+0.000} _{-0.01}	1.562	.2498	3/4	.073	.093	.062	.450	.350	0.190	0.35
32C	2	1.875 ^{+0.000} _{-0.01}	1.875	.2498	3/4	.073	.093	.062	.450	.350	0.190	0.3
48C	3	2.875 ^{+0.000} _{-0.01}	2.875	.2498	3/4	.073	.093	.062	.450	.350	0.190	0.25

*STD. LINEARITY IS INDEPENDENT AND SHOWN AS ±%. CUSTOM LINEARITY REQUIREMENTS ARE AVAILABLE

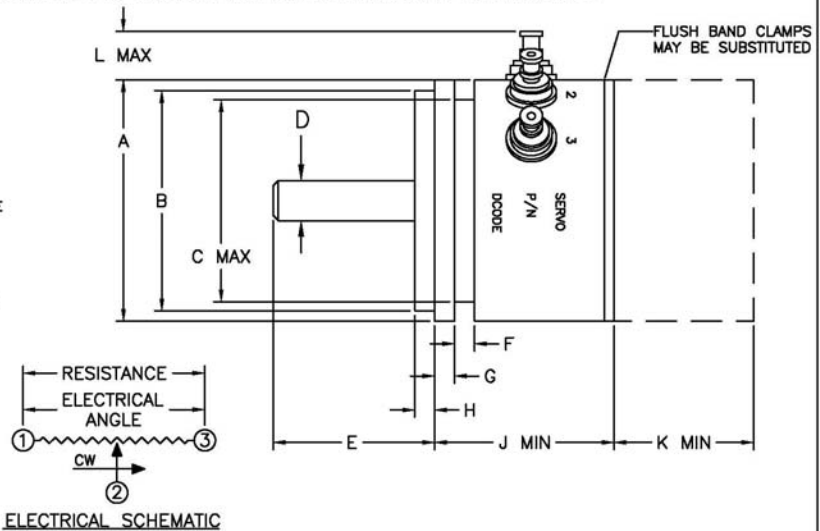
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FEATURES

- DESIGNED TO MEET APPLICABLE PARTS OF MIL-R-39023
- TYPICAL PART MARKING INCLUDES: TERMINAL LABELING, "SERVO", PART NO., AND DATE CODE
- BALL BEARING CONSTRUCTION FOR EXTREME LONG LIFE 50+ MILLION CYCLES
- ANODIZED ALUMINUM CASE, S.S. SHAFT
- VIRTUALLY INFINITE RESOLUTION
- EXCELLENT OUTPUT SMOOTHNESS
- ALMOST UNLIMITED ACCURACY
- TEMPERATURE COEFFICIENT OF 80 PPM/°C OR BETTER

AVAILABLE OPTIONS:

- CUSTOMIZED DESIGNS AVAILABLE
- MULTIPLE GANGS
- MECHANICAL STOPS
- ANTI-ROTATION PINS
- CUSTOM MOUNTING
- SHAFT-ACTUATED AND/OR INTERNAL SWITCHES
- REAR TERMINALS (08C & 14C SIZES ONLY)
 - PIN OR TURRET STYLE TERMINALS
 - ADD 3/16" TO "J" FOR O'ALL DIM.
- LEADWIRE TERMINATIONS
- NON-LINEAR FUNCTIONS (CUSTOM, SINE/COSINE)
- CENTER TAPS
- CUSTOM LINEARITY



WIREWOUND

MODEL	A	B	C	D ^{+0.000} _{-0.003}	E	F	G	H	J	K	L	STD LIN*
08W	1/2	.4375 ^{+0.000} _{-0.005}	.437	.1248	1/2	.062	.062	.062	.600	.550	0.190	1.0
12W	3/4	.6250 ^{+0.000} _{-0.005}	.625	.1248	1/2	.062	.062	.062	.600	.550	0.190	1.0
14W	7/8	.7500 ^{+0.000} _{-0.005}	.750	.1248	1/2	.062	.062	.062	.600	.550	0.190	0.5
17W	1-1/16	.9688 ^{+0.000} _{-0.005}	.968	.1248	1/2	.062	.062	.062	.600	.550	0.190	0.5
18W	1-7/8	.9688 ^{+0.000} _{-0.005}	.968	.1248	1/2	.062	.062	.062	.600	.550	0.190	0.5
21W	1-5/16	1.1875 ^{+0.000} _{-0.005}	1.187	.1248	1/2	.062	.062	.062	.600	.550	0.190	0.3
23W	1-7/16	1.3125 ^{+0.000} _{-0.005}	1.312	.2498	1/2	.073	.093	.062	.600	.550	0.190	0.25
26W	1-5/8	1.5000 ^{+0.000} _{-0.005}	1.500	.2498	1/2	.073	.093	.062	.600	.550	0.190	0.25
28W	1-3/4	1.5620 ^{+0.000} _{-0.01}	1.562	.2498	1/2	.073	.093	.062	.600	.550	0.190	0.25
32W	2	1.8750 ^{+0.000} _{-0.01}	1.875	.2498	3/4	.073	.093	.062	.600	.550	0.190	0.15
48W	3	2.8750 ^{+0.000} _{-0.01}	2.875	.2498	3/4	.073	.093	.062	.600	.550	0.190	0.1

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FEATURES

- DESIGNED TO MEET APPLICABLE PARTS OF MIL-R-12934
- TYPICAL PART MARKING INCLUDES: TERMINAL LABELING, "SERVO", PART NO., AND DATE CODE
- HIGH RESOLUTION
- ANODIZED ALUMINUM CASE, S.S. SHAFT
- BALL BEARING CONSTRUCTION FOR LONG LIFE
- TEMPERATURE COEFFICIENT DOWN TO 20 PPM/°C

AVAILABLE OPTIONS:

- CUSTOMIZED DESIGNS AVAILABLE
- MULTIPLE GANGS
- MECHANICAL STOPS
- ANTI-ROTATION PINS
- CUSTOM MOUNTING
- SHAFT-ACTUATED AND/OR INTERNAL SWITCHES
- REAR TERMINALS (08W & 14W SIZES ONLY)
 - PIN OR TURRET STYLE TERMINALS
 - ADD 3/16" TO "J" FOR O'ALL DIM.
- LEADWIRE TERMINATIONS
- CENTER TAPS
- CUSTOM LINEARITY

