# Precision Potentiometer

#### Features:

- Lead-free
- RoHS 2 compliant
- 7/8" diameter
- 10 turn wirewound





#### **Applications:**

- Pedal position
- Joystick controls
- Valve control

- Wind vane
- Panel control
- Test and measurement
- Medical equipment
- Angular position

# **Model Styles Available**

7281	1/8" shaft, 1/4" bushing
7283	1/8" shaft, servo
7284	6 mm shaft, 3/8" bushing
7286	1/4" shaft, 3/8" bushing
7288 (for heavy side load applications)	1/4" shaft, 3/8" bushing

## Electrical

Resistance range	100 to 100K ohms
Standard resistance tolerance	±5%
Minimum practical resistance tolerance	±1%
Independent linearity	±0.25%
Minimum practical independent linearity	±0.15% (<300 ohms), ±0.075% (≥300 ohms)
Power rating	2.0 Watts at 70°C, derating to 0 at 125°C
Dielectric strength	1,000 V rms
Insulation resistance	1,000 Megohms minimum
Noise	100 ohms maximum
Actual electrical travel	3600° +10° -0° (>100 ohms), 3600° +10° -5° (≤100 ohms)
End voltage	Maximum 0.25% of input voltage
Tap tolerance	±3°

General Note

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## Precision

Potentiometer



### Mechanical

Total mechanical travel	3600° +15° -0°	
Number of gangs	2 maximum	
Weight (single gang)	0.75 oz. nominal	
Backlash		1° maximum
	7281, 7284, 7286, 7288	7283
Static stop strength	Maximum 48 ozin.	36 ozin.
Panel nut tightening torque	Maximum 25 lbin. n/a	
Shaft end play	Maximum 0.010" 0.005"	
Shaft runout	Maximum T.I.R. 0.003" 0.002"	
Pilot diameter runout	r runout Maximum T.I.R. 0.004" 0.4	
Lateral runout	Maximum T.I.R. 0.005" 0.004"	
Shaft radial play	Maximum 0.003" 0.002"	
Start/run torque (per gang, ES option adds 0.5 ozin.)	Maximum 0.8 ozin. 0.6 ozin.	

### Environmental

Operating temperature range	-40°C to +125°C dynamic, -55°C to +125°C static
Temperature cycling	5 cycles, -55°C to +125°C, maximum 5% $\Delta R$
Shock	6 ms saw-tooth, 100 G's, 0.1 ms maximum discontinuity
Vibration	15 G's, 10 to 2,000 Hz, maximum 5% $\Delta R$ , 0.1 ms maximum discontinuity
Moisture resistance	Five 24 hour cycles, maximum 3% ΔR
High temperature exposure	1,000 hours at 125°C, maximum 5% ΔR
Rotational load life (1 lb side load for 7288)	1M shaft revolutions + 900 hours at 2.0 Watts & 70°C, maximum 5% $\Delta R$
Ingress protection rating (IP Code)	IP50, IP66 available as option (feature code ES)

### **Ordering Information**



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Issue C 04/2019 Page 2

### Precision

**Potentiometer** 



#### **Feature Codes**

7281, 7283 plain shaft; 7284, 7286, 7288 slotted shaft	No code	
Center tap	CT	
Linearity tape	LT	
Flatted shaft	FS	
Slotted shaft (standard on single cup 7284, 7286 & 7288 without RS feature)	SS	
Rear shaft extension (7281, 7286, 7288 single cup only)	RS	
Shaft lock (7286 & 7288 only)	SL	
High torque 2-6 ozin. (7286 & 7288 only)	HT	
Additional gang	2G	
Gold plated solder lug terminals (see optional terminal configuration)	FT	
Seal (IP66) 7284, 7286, or 7288 only	ES	

When multiple feature codes are used the P/N shall be in the same sequence as listed in this table (top to bottom).

#### **Standard Resistance Values**

Total Resistance (Ohms)	Theoretical Resolution (% nominal)	Tempco of Wire (ppm/°C)
100	0.059	±20
200	0.037	±20
500	0.030	±20
1K	0.024	±20
2К	0.020	±20
5K	0.018	±20
10K	0.017	±20
20К	0.016	±20
50K	0.010	±20
100K	0.008	±20

# **Circuit Diagram**



### **Feature Codes**

#### 7281: RBJ, 2601, 2641

#### 7286, 7288: RB, 2126, 2606, 2606S, 2607, 2607S, 2626, 2627, 2646, 2646S, 2647, 2647S

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# **Outline Drawing**





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