

# Model 58 1¼" (31,750 mm) RECTANGULAR 22-TURN CERMET TRIMMING POTENTIOMETER

Effective date: August 1980

The Helitrim® Model 58 trimming potentiometer delivers the highest power rating and temperature level offered among the 22-turn cermet trimmers. The cermet element provides an essentially infinite resolution which means excellent adjustment smoothness and stability. This completely sealed unit can stand the stress of extremes in environmental conditions. Make the Model 58 part of your next design and take advantage of the superior quality of Beckman trimmers.

Helitrim® Model 58 trimming potentiometers provide:

- One watt power rating at 85°C.
- 150°C maximum operating temperature.
- Voltage adjustability within 0.01%.
- Essentially infinite resolution.
- 22 Adjustment turns.
- ±100 ppm/°C maximum unit tempco.

## SPECIFICATIONS

### General

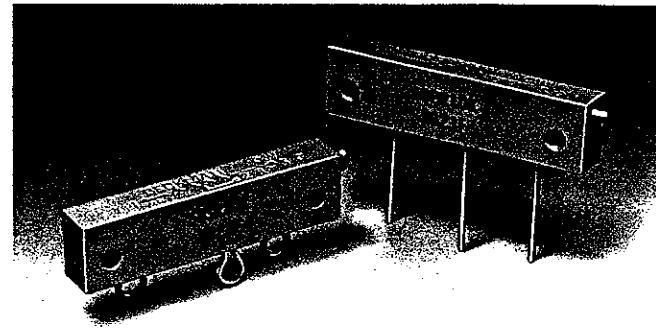
Ambient temperature range, °C ..... -65 to 150  
 Resistance element ..... cermet  
 Adjustment turns, nominal ..... 22  
 Sealing ..... meets immersion test of MIL-R-22097  
 Tempco ..... ±100 ppm/°C\*  
 \*Guaranteed maximum over the ambient temperature range of -65° to 150°C (100Ω to 2 megΩ)

### Electrical

Range of std. resistance values, ohms ..... 10 to 2M  
 Standard resistance tolerance ..... 50Ω thru 2MΩ, ±10%  
    other values, ±20%  
 Input voltage, maximum ..... 300V DC/RMS but not to exceed power rating.  
 Slider current, maximum ..... 100 mA or within power rating,  
    whichever is less.  
 Power rating, watts ..... 1.0 at 85°C, derating to 0 at 150°C  
 End resistance, maximum ..... .2Ω  
 Actual electrical travel, turns ..... 22 ±5  
 Dielectric strength ..... 900V RMS  
 Insulation resistance ..... 1,000MΩ  
 Resolution ..... essentially infinite  
 Contact resistance variation ..... 3Ω or 3% of R<sub>t</sub>, whichever is greater.

### Mechanical

Stops ..... clutch action, both ends  
 Starting torque, maximum ..... 5 oz-in. (0,035 N·m)  
 Weight, nominal ..... .09 oz. (2.5 gm)  
 Terminal strength ..... 2 lb. (0.91 kgm) pull & bend  
 Mounting screw torque, maximum ..... 2 lb-in. (0.23 N·m)



### Standard Resistance Values, Ohms

10	100	1K	10K	100K	1M
20	200	2K	20K	200K	2M
—	—	—	25K	250K	—
50	500	5K	50K	500K	—

### Environmental

(Model 58 trimming potentiometers meet or exceed the following environmental requirements of MIL-R-22097.)

Environment (Para. No.)	Severity
Thermal shock (4.6.8)	-65° to 125°C
Moisture resistance (4.6.10)	10 days at 80-98% RH
Shock (4.6.11)	100 g's
Vibration (4.6.12)	20 g's; 10 to 2,000 Hz
Salt spray (4.6.13)	.96 hrs.
Effects of soldering (4.6.14)	.3 sec. at 350°C
Life, at 0.75 watt (4.6.15)	1,000 hrs. at 85°C
Low temp. operation (4.6.16)	-55°C
High temp. exposure (4.6.17)	.250 hrs. at 150°C
Rotational life (4.6.18)	.200 cycles
Solderability (4.6.20)	.5 sec. at 230°C
Immersion (4.6.21)	.85°C water
Dielectric strength (4.6.5.2)	.70,000 ft. (21.336m); 350V

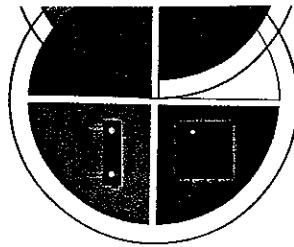
### To Order

Example: 58PR10K

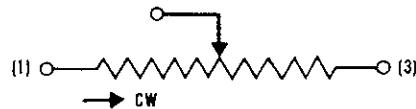
Model \_\_\_\_\_ Resistance Value

Specifications subject to change without notice.

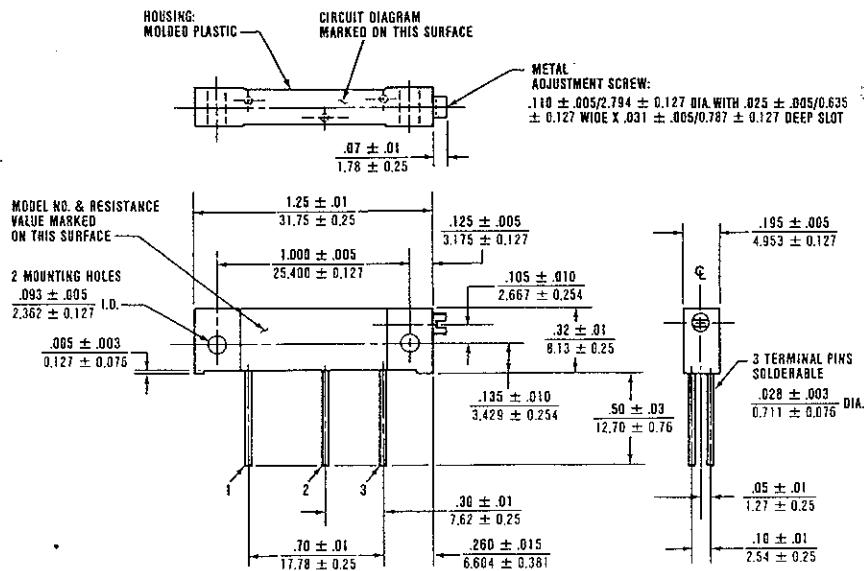
## OUTLINE DRAWINGS



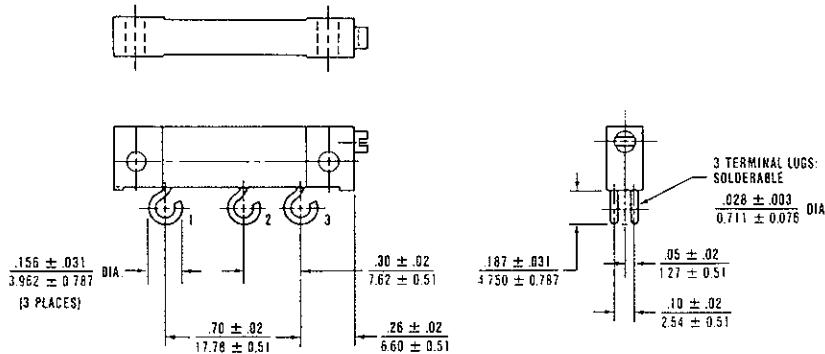
## CIRCUIT DIAGRAM



## Model 58P



## Model 58S



MODEL 58P DIMENSIONS APPLICABLE TO ALL MODELS EXCEPT AS NOTED.

DIMENSIONS INCH (mm)	THIRD ANGLE PROJECTION
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Tolerances unless otherwise specified  
 $\pm .005$  inch and  $\pm 0.127$  mm  
angular  $\pm 2^\circ$

Metric equivalents, based upon 1 inch  
= 25.4 mm are rounded to the same  
number of decimal places as in the  
original English units and are provided  
for general information only.