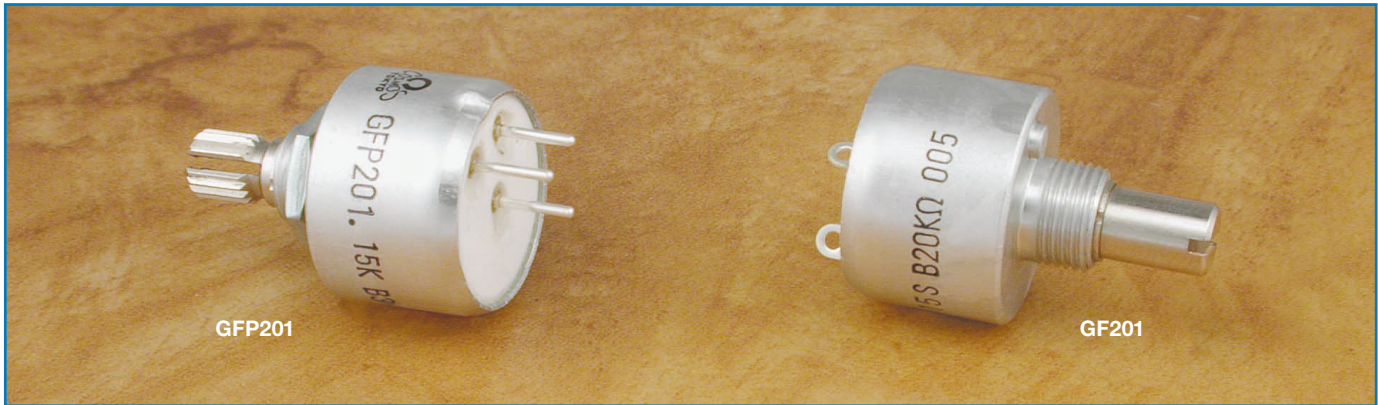


## 20mm Diameter, Single-Turn, Cermet Industrial Panel Controls



### Features

- 20mm diameter, single-turn industrial panel controls
- Cermet film element
- Single unit, single shaft
- Excellent environmental characteristics
- Wide temperature range of  $-10^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$
- Metal shaft and bushing
- Linear taper
- Shaft lock available
- Panel or PCB vertical mount
- Rear exit lug or pin terminals
- 6mm diameter shafts in slot, flat or round end styles
- Standard 15mm or 20mm shaft length

### Specifications

#### Electrical

Standard Resistance Range	100 $\Omega$ to 1M $\Omega$
Resistance Tolerance	$\pm 10\%$ standard
End Resistance	3 $\Omega$ max.
Resistance Taper	B = linear
Peak Noise (C.R.V.)	3% or 5 $\Omega$ , whichever is greater
Power Rating	1 watt at $+70^{\circ}\text{C}$ , 0 watt at $+120^{\circ}\text{C}$
Maximum Input Voltage	350VDC or power rating, whichever is smaller
Temperature Coefficient	$\pm 100$ ppm/ $^{\circ}\text{C}$ , 200 $\Omega$ to 500k $\Omega$ $\pm 250$ ppm/ $^{\circ}\text{C}$ , other values
Dielectric Strength	1,000VAC, 1 minute

#### Mechanical

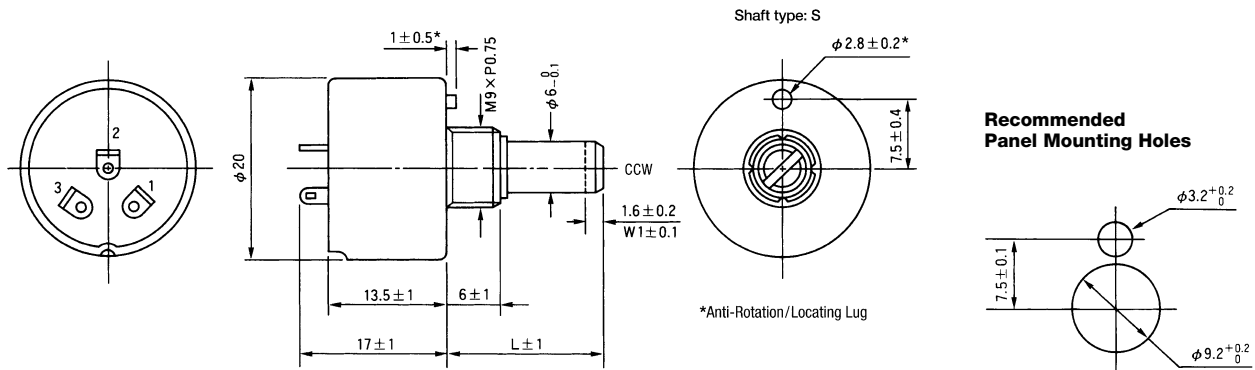
Mechanical Travel	$260^{\circ} \pm 10^{\circ}$
Shaft Torque	50 to 300 gf $\cdot$ cm (0.693 to 4.159 oz $\cdot$ in)
Stop Strength	6 kgf $\cdot$ cm (83.18 oz $\cdot$ in) max.
Solderability	$235^{\circ}\text{C}$ , 5 seconds
Marking	Model type, taper, resistance, shaft type, terminal identification, date code

#### Environmental

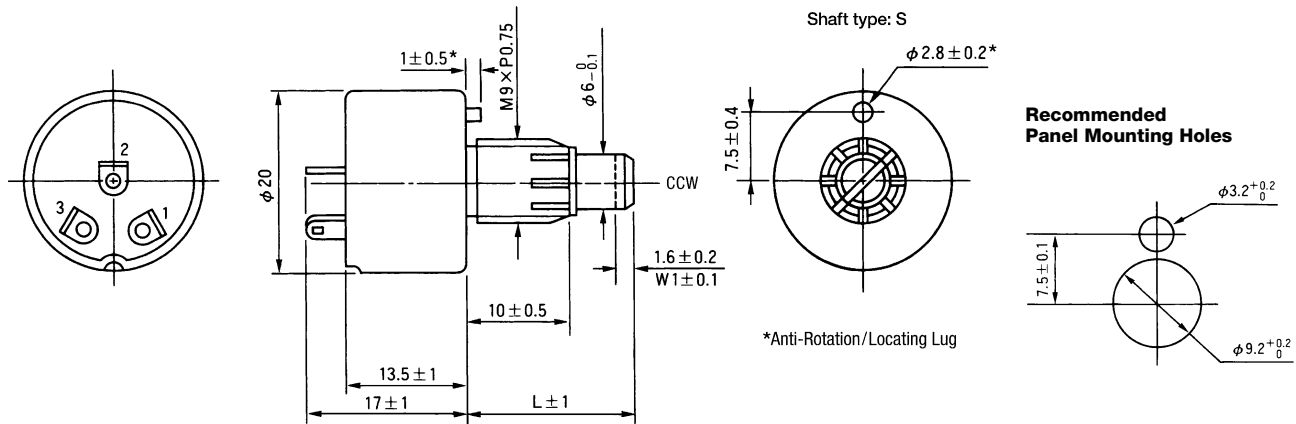
Temperature Range	$-10^{\circ}\text{C}$ to $+125^{\circ}\text{C}$
Load Life	$+70^{\circ}\text{C}$ , 1,000 hours with rated load $\Delta T/R \leq \pm 5\%$
Thermal Shock	$-10^{\circ}\text{C} \sim +120^{\circ}\text{C}$ , 5 cycles without load $\Delta T/R \leq \pm 5\%$
Soldering Heat Resistance	$350^{\circ}\text{C}$ , 3 seconds $\Delta T/R \leq \pm 2\%$
Rotational Life	15,000 cycles (500 cycles for shaft lock models only) without load $\Delta T/R \leq \pm 5\%$

$\Delta T/R$  = Total Resistance Change

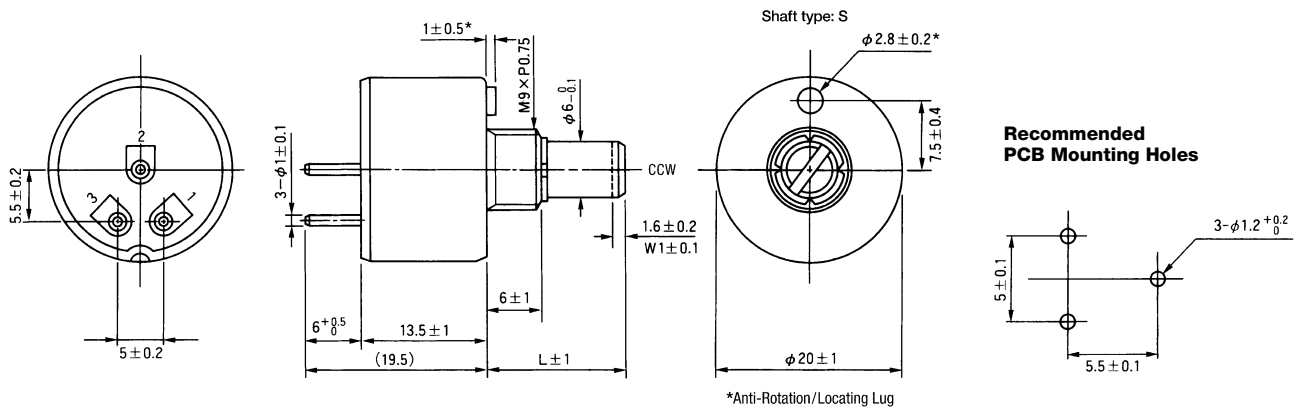
**GF201**  
**Panel Mount, Single Unit, Single Shaft**  
**Rear Exit Vertical Lug Terminals, 3-Lug Triangular Pattern**



**GF201L**  
**Panel Mount, Single Unit, Single Shaft with Shaft Lock**  
**Rear Exit Vertical Lug Terminals, 3-Lug Triangular Pattern**



**GFP201**  
**PCB Mount, Single Unit, Single Shaft**  
**Rear Exit Vertical Mount Pin Terminals, 3-Pin Triangular Pattern**



**GF P 201 L 15 S B 103 K**

NOTE: FMS = From Mounting Surface

- ➔ **Resistance Tolerance: K** = ±10% (standard).
- ➔ **Resistance Code:** Expressed in ohms. A three digit code where the first two digits are significant figures, and the third digit indicates the number of zeros that follow these figures (i.e., 100 = 10Ω; 101 = 100Ω; 102 = 1,000Ω; 103 = 10,000Ω; 105 = 1,000,000Ω). See table for standard resistance values.
- ➔ **Resistance Taper: B** = Linear.
- ➔ **Shaft End Style: S** = Slotted.  
**F** = Flatted.  
**R** = Round.
- ➔ **Standard Shaft Length: 15** = 15mm FMS.  
**20** = 20mm FMS.  
 Up to 50mm shaft length available (special order).
- ➔ **Shaft Lock: L** = With Shaft Lock.  
**Blank** = Without Shaft Lock.
- ➔ **Size: 201** = 20mm Diameter.
- ➔ **Style: Blank** = Panel Mount, Single Unit, Single Shaft, Rear Exit Vertical Lug Terminals, 3-Lug Triangular Pattern.  
**P** = PCB Mount, Single Unit, Single Shaft, Rear Exit Vertical Mount Pin Terminals, 3-Pin Triangular Pattern.
- ➔ **TOCOS Series Name: GF** = Cermet Film Element.

Standard Resistance Values and Part Numbering Codes

Standard Nominal Total Resistance Values and Part Numbering Codes

Resistance (Ω)	Code	Resistance (Ω)	Code	Resistance (Ω)	Code	Resistance (Ω)	Code	Resistance (Ω)	Code
100	101	1,000	102	10,000	103	100,000	104	1,000,000	105
200	201	2,000	202	20,000	203	200,000	204		
500	501	5,000	502	50,000	503	500,000	504		

Refer to Shaft End Styles Specifications and Hardware Specifications for details and availability.  
 For additional information, refer to Guidelines and Precautions for Using Panel Controls.