

28mm Diameter, Single-Turn, Cermet Panel Control Attenuators



AT28-20S

Features

- 28mm diameter, single-turn, panel control attenuators
- Cermet element
- Single unit, single shaft
- Metal M9 × P0.75 bushing
- 6mm diameter metal shaft in slot, flat or round end styles
- Standard 20mm shaft length
- High power rating
- 50Ω, 75Ω or 600Ω nominal impedance
- 6.5dB or 20dB nominal attenuation
- Panel mount only
- Right angle ear-lug terminals
- Wide operating temperature range of -55°C to +125°C

Specifications

Electrical

Nominal Impedance 50Ω, 75Ω, 600Ω

Attenuation Range at DC

Nominal Attenuation	6.5dB	20dB
Attenuation Tolerance	±0.7dB	±1.5dB
Minimum Attenuation	0.4dB max.	1.2dB max.

Power Rating 1.0 watt at +70°C, 0 watt at +125°C

Insulation Resistance 100MΩ minimum at 1,000VDC

Dielectric Strength 1,000VAC, 1 minute

Adjustment Travel 150° ± 10°

Mechanical

Mechanical Travel 160° ± 10°

Shaft Torque 50 to 450 gf·cm (0.693 to 6.238 oz·in)

Stop Strength 9 kgf·cm (124.76 oz·in) max.

Mounting Nut Torque 15 kgf·cm (207.94 oz·in) max.

Flammability of Plastic Materials Meets UL 94HB

Nominal Weight 25.6g with mounting hardware

Marking Impedance, attenuation, terminal identification, date code

Environmental

Temperature Range -55°C to +125°C

Load Life +70°C, 250 hours with rated load
ΔA ≤ 0.2dB, ΔI ≤ 2%

Moisture and Load Life +40°C, 90-95% RH
90 minutes on, 30 minutes off,
1.0 watt, 120 cycles
ΔA ≤ 0.2dB, ΔI ≤ 2%

Thermal Shock -55°C, +125°C,
30 minutes each, 5 cycles without load
ΔA ≤ 0.2dB, ΔI ≤ 2%

Shock 50G, 11ms, 6 directions, 3 times each
ΔA ≤ 0.2dB, ΔI ≤ 2%

Vibration 10-55Hz, 1.5mm amplitude,
3 directions, 2 hours each
ΔA ≤ 0.2dB, ΔI ≤ 2%

Soldering Heat Resistance 350°C, 3 seconds
ΔA ≤ 0.2dB, ΔI ≤ 2%

Rotational Life 500 cycles without load
ΔA ≤ 0.2dB, ΔI ≤ 2%

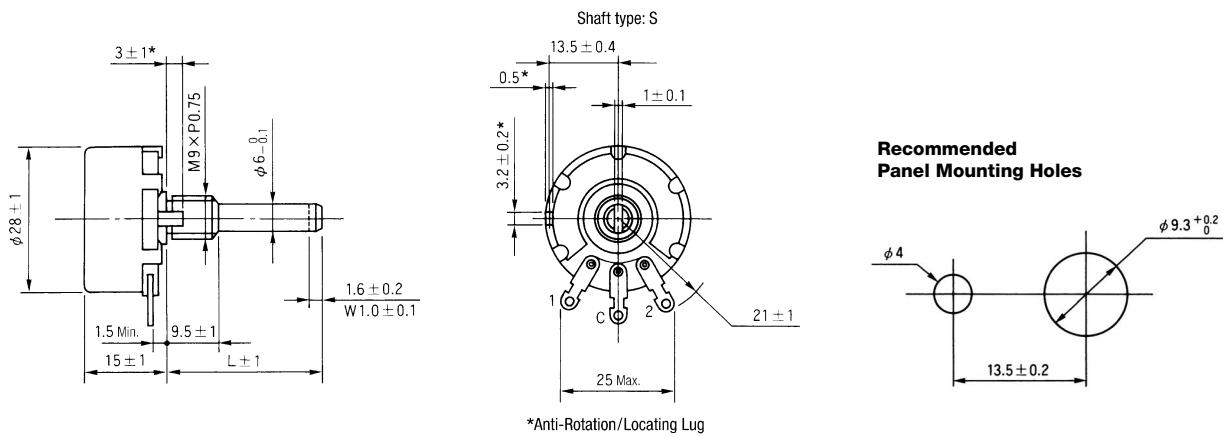
ΔA = Attenuation Change at DC; ΔI = Impedance Change Ratio

Model	Nominal Impedance	Nominal Attenuation	Frequency Range	Attenuation Flatness		Return Loss	
				dB max.	dB min.	VSWR max.	
AT28	50Ω	20dB	DC ~ 100MHz	0.3	20	1.2	
	75Ω	20dB	DC ~ 100MHz	0.3	20	1.2	
	600Ω	6.5dB	DC ~ 30MHz	0.3	20	1.2	
		20dB	DC ~ 30MHz	0.3	20	1.2	

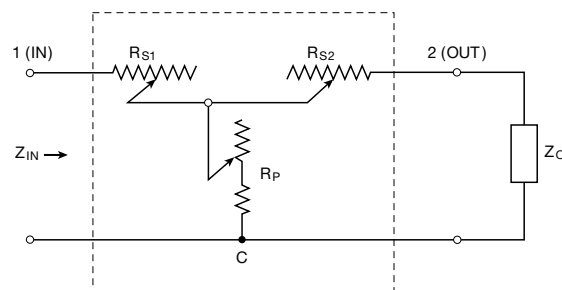
Dimensions

AT28
Panel Mount, Single Unit, Single Shaft
Right Angle Ear-Lug Terminals

Unit: mm



Electrical Schematic



Refer to Shaft End Styles Specifications and Hardware Specifications for details and availability.

AT 28 20dB 500 20 S

NOTE: FMS = From Mounting Surface

→ **Shaft End Style:** **S** = Slotted.
F = Flatted.
R = Round.

→ **Standard Shaft Length:** **20** = 20mm FMS.

→ **Nominal Impedance 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., 500 = 50Ω; 750 = 75Ω; 601 = 600Ω).

→ **Nominal Attenuation:** **6.5dB** (±0.7 Attenuation Tolerance).
20dB (±1.5 Attenuation Tolerance).

→ **Size:** **28** = 28mm Diameter.

→ **TOCOS Series Name:** **AT** = Attenuator.

Soldering Guidelines

For soldering and other information, refer to the Guidelines and Precautions.