QUALITY, INNOVATION AND RELIABLE

- 22mm diameter
- Ceramic base element
- 1,000,000 cycles life
- ±3% precision linearity
- 2 watts power rating
- IP65 Water resistant
- Low TCR



FRS22 – 22mm Precision Rotary Sensor Specification

Electrical

Standard Resistance Range 1kΩ, 2KΩ, 5KΩ, 10kΩ

Resistance Tolerance . . . . . 10% standard

End Resistance . . . . . 10Ω max.

Resistance Taper . . . . . linear

Linearity . . . . . ±3.0%

Noise (C.R.V.) . . . . . .200 mV

Temperature Coefficient . . . . . 400ppm/℃

Power Rating . . . . . .2 watt at 40℃, 0 watt at 85℃

Maximum Input Voltage . . . . . 50VDC Max.

Insulation Resistance . . . . . 100MΩ minimum at 1,000VDC

Dielectric Strength . . . . . 1,000VAC, 1 minute

Mechanical

Mechanical Angle . . . . . 300°, 312°, 360°

Shaft Torque . . . . . .80 gf•cm Max.

Stop Strength . . . . . .9 kgf•cm Min.

Shaft Strength (push) . . . . . .12.75 kgf Min.

Shaft Strength (tensile) . . . . . .12.75 kgf Min.

Mounting Nut Torque . . . . . .15 kgf•cm Min.

IP Rating IP65

Soldering Condition

Manual Soldering . . . . . 350 °C ± 10 °C for 3.5 ± 0.5 sec.

Environmental

Working Temperature . . . . . -40℃ to 105℃

Storage Temperature . . . . . -50℃ to 125℃

Durability Test

Temperature Characteristics Test . . . . . 125℃, 5 hours

ΔT/R ≤±10%

Temperature Cycle Test . . . . . -40℃, 125℃,30 minutes each, 5 cycles

ΔT/R ≤±10%

Load Life Test. . . . . 40℃, 0.25 watt, 1,000 hours

ΔT/R ≤±10%

Moisture and Load Life Test . . 40℃, 90-95%RH,0.25 watt, 500 hours

ΔT/R≤±10%

Vibration Test . . . . . 10-55Hz, 1.5mm amplitude, 3 directions

ΔT/R ≤±5%

Soldering Heat Resistance Test . . . . . 350℃±5℃, 3 seconds

ΔT/R≤±2%

Rotational Life Test. . . . . 1,000,000 cycles without load

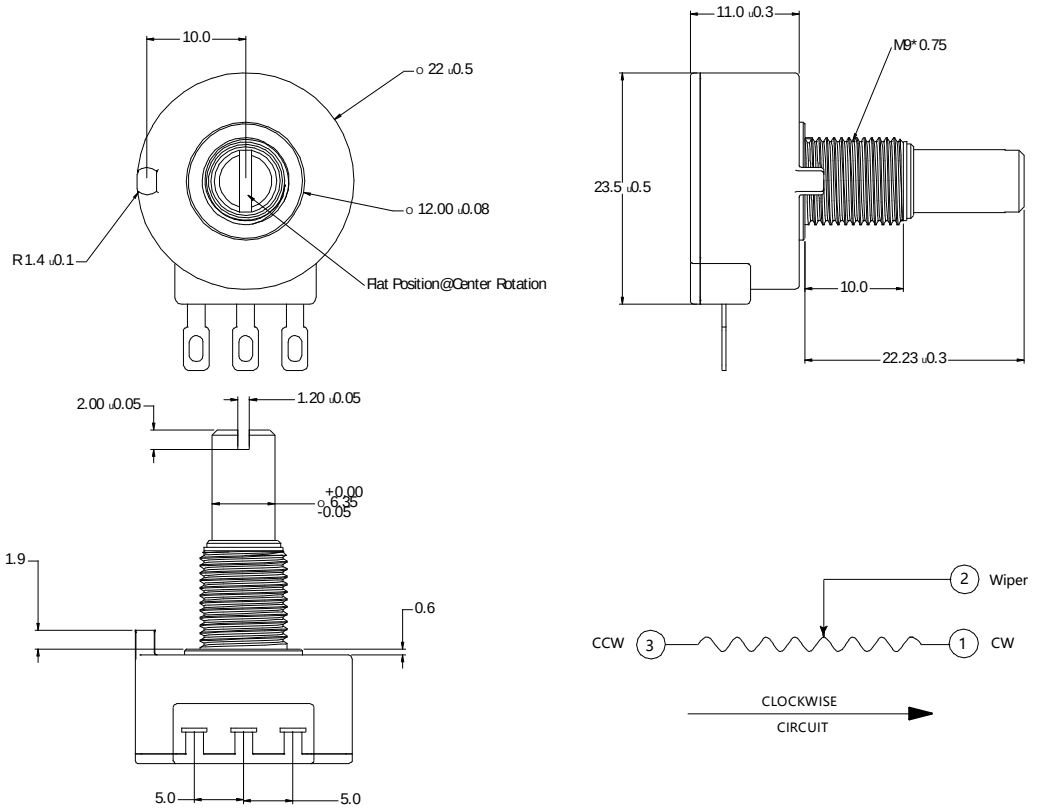
Special: 3,000,000 cycles

ΔT/R≤±5%

ΔT/R = Total Resistance Change

FRS22 Series — Product Dimension

Unit: mm



FRS22 Series — Part Numbering System

FRS22	Q	FA	1K	B	A

Series Code

Life Code
S = 1,000,000 cycles
Q = 3,000,000 cycles

Assembly Code

Resistance Code(Ω)

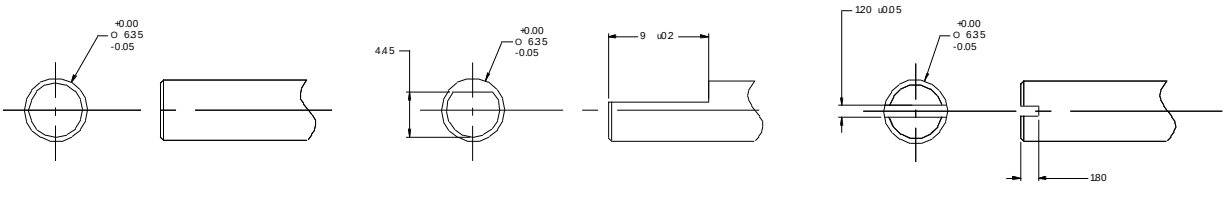
Resistance Tolerance Code
A = ±10%
B = ±20%

Angle Code

	Mech.	Effe.
A =	312°	312°
B =	312°	300°
C =	312°	280°
D =	312°	45°
E =	360°	340°
F =	360°	312°
G=	360°	280°
H =	300°	280°

Assembly Code

Assembly Code	SA	FA	RA
Bushing Length	10mm	10mm	10mm
Shaft Type	Slot	Flat	Round
FMS	22.23mm	22.23mm	22.23mm



Round　　Flatted　　Slot