

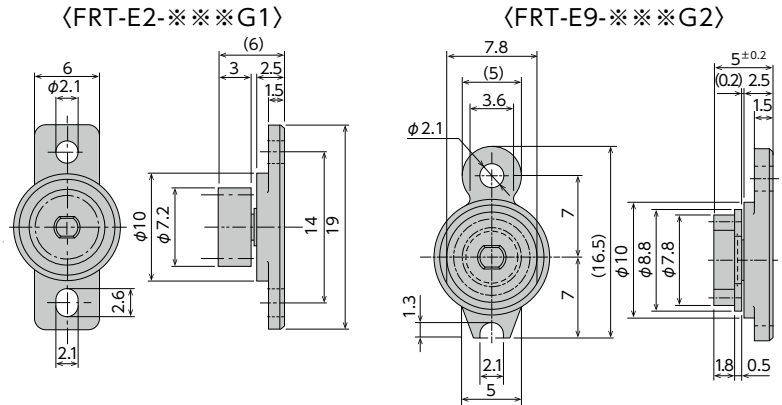
Rotary Damper

Fixed Type Bi-Directional Uni-Directional
Adjustable type Self-adjusting

FRT-E2/E9 Series

RoHS Compliant

● Products specification might be changed without notice.



Specifications

Model	Rated torque
FRT-E2-100G1	$(1 \pm 0.5) \times 10^{-3} \text{N}\cdot\text{m}$
FRT-E9-100G2	$10 \pm 5 \text{ gf}\cdot\text{cm}$
FRT-E2-200G1	$(2 \pm 0.7) \times 10^{-3} \text{N}\cdot\text{m}$
FRT-E9-200G2	$20 \pm 7 \text{ gf}\cdot\text{cm}$
FRT-E2-300G1	$(3 \pm 0.8) \times 10^{-3} \text{N}\cdot\text{m}$
FRT-E9-300G2	$30 \pm 8 \text{ gf}\cdot\text{cm}$
FRT-E2-400G1	$(4 \pm 1) \times 10^{-3} \text{N}\cdot\text{m}$
FRT-E9-400G2	$40 \pm 10 \text{ gf}\cdot\text{cm}$

- * Max. rotation speed 50rpm
- * Max. cycle rate 10cycle/min
- * Operating temperature 0 ~ 50°C
- * Weight
FRT-E2 : with gear : 0.41g
FRT-E9 : with gear : 0.38g
- * Body and cap material Polycarbonate (PC)
- * Rotating shaft material Polyacetal (POM)
- * Gear material Polyacetal (POM)
- * Oil type Silicone oil

Note 1) Rated torque measured at a rotation speed of 20rpm at 23°C
Note 2) Gear model number has G1 and G2 at the end

Note 3) Torque can be customized by changing the oil viscosity (see Customizable Torque Chart on page 178)
Note 4) Model E9 is a customized product with a one-sided mounting

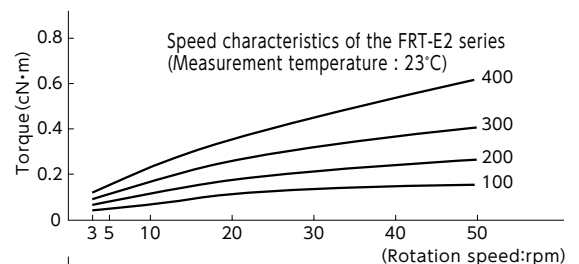
Gear Specifications

Model	G1 (for E2)	G2 (for E9)
Type	Standard spur gear	Standard spur gear
Tooth profile	Involute	
Module	0.6	
Pressure angle	20°	
Number of teeth	10	11
Pitch circle diameter	φ6	φ6.6

Damper Characteristics

1. Speed characteristics

A rotary damper's torque varies according to the rotation speed. In general, as shown in the graph to the right, the torque increases as the rotation speed increases, and the torque decreases as the rotation speed decreases. In addition, please note that the starting torque slightly differs from the rated torque.



2. Temperature characteristics

A rotary damper's torque varies according to the ambient temperature. In addition, as shown in the graph to the right, the torque decreases as the ambient temperature increases, and the torque increases as the ambient temperature decreases. This is because the viscosity of the silicone oil inside the damper varies according to the temperature. When the temperature returns to normal, the torque will return to normal as well.

