Conductive Plastic Angle Sensor

# **CP-2FC-6 Series**



· Conductive Plastic Angle Sensor

• Ф6mm Shaft

Effective Electrical Travel: 340° Independent Linearity: ±1%

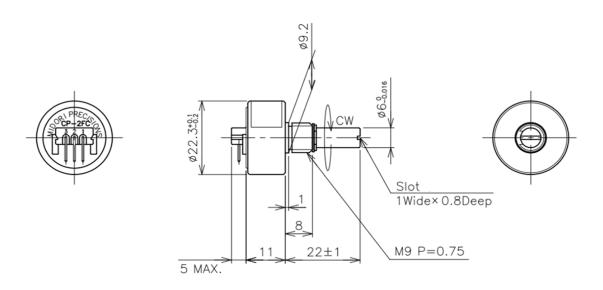
· Bushing Mount

CP-2FC-6: Teflon Coating BearingCP-2FCG-6: Teflon Coating Bearing, O-ring

#### [Material]

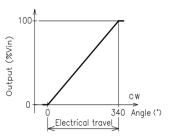
Housing : Aluminum Shaft : Stainless Steel

# ■ Dimension (mm)

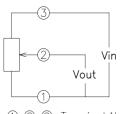


Matching Connector (Not Included): Hirose Electric Co. P/N HNC2-2.5S-3 (Housing), P/N HNC2-2.5S-D-A (PIN)

#### Output Characteristics

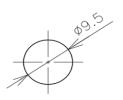


#### ■ Schematic



.①, ②, ③: Terminal No.

### ■ Mounting



Selectrical Specifications   Selectrical Travel   340° + 2°, -3°     Total Resistance   1K, 5K Ω     Total Resistance   1Effective Electrical Travel   1K, 5K Ω     Total Resistance   1Effective Electrical Travel   1Effective Electrical Travel   1Effective Electrical Travel   1Effective Electrical Travel   1Effective Electrical Electrica	[Model No.]	CP-2FC-6	CP-2FCG-6
Effective Electrical Travel $340^{\circ} + 2^{\circ}, -3^{\circ}$ Total Resistance $1K, 5K \Omega$ Total Resistance Tolerance $\pm 20\%$ Independent Linearity $\pm 1\%$ Rated Dissipation $0.5W/50^{\circ}C$ Output Smoothness       MAX. $0.1\%$ Insulation Resistance       MIN. $100M\Omega/DC1000V$ Dielectric Strength       AC1000V/ 1 Minute         TC of Resistance $\pm 1000 \text{ ppm/K}$ Mechanical Specifications         Total Mechanical Travel $360^{\circ} \text{ endless}$ Running Torque       MAX. $3.4 \text{ mN} \cdot \text{m}$ MAX. $20 \text{ mN} \cdot \text{m}$ Thrust Load Tolerance $1.96 \text{ N}$ Radial Load Tolerance $0.98 \text{ N}$ Mass       Approx. $20g$ Environmental Specifications         Life Cycles $10 \text{ Million Cycle}$ Category Temperature Range $-40 \sim +100 ^{\circ}C$ Storage Temperature Range $-40 \sim +100 ^{\circ}C$ Vibration $150m/S^2$ 2000Hz 3axis 2hours each		<teflon bearing="" coating=""></teflon>	<teflon bearing,="" coating="" o-ring=""></teflon>
Total Resistance  Total Resistance Tolerance  Independent Linearity  # ±1%  Rated Dissipation  Output Smoothness  MAX. 0.1%  Insulation Resistance  MIN. 100MΩ/DC1000V  Dielectric Strength  TC of Resistance  MEchanical Specifications  Total Mechanical Travel  Running Torque  MAX. 3.4 mN·m  MAX. 20 mN·m  Thrust Load Tolerance  Radial Load Tolerance  Mass  Approx. 20g   Environmental Specifications  Life Cycles  Category Temperature Range  Vibration  Vibration  Total Resistance  1 150m/S² 2000Hz 3axis 2hours each	Electrical Specifications		
Total Resistance Tolerance  Independent Linearity  Rated Dissipation  Output Smoothness  MAX. 0.1%  Insulation Resistance  MIN. 100MΩ/DC1000V  Dielectric Strength  AC1000V/ 1 Minute  TC of Resistance  MEChanical Specifications  Total Mechanical Travel  Running Torque  MAX. 3.4 mN ⋅ m  MAX. 20 mN ⋅ m  Thrust Load Tolerance  1.96 N  Radial Load Tolerance  0.98 N  Mass  Approx. 20g   Environmental Specifications  Life Cycles  Category Temperature Range  -40 ~ +100 ℃  Storage Temperature Range  -40 ~ +100 ℃  Vibration	Effective Electrical Travel	340° + 2°、−3°	
Independent Linearity  Rated Dissipation  Output Smoothness  MAX. 0.1%  Insulation Resistance  MIN. 100MΩ/DC1000V  Dielectric Strength  AC1000V/ 1 Minute  TC of Resistance  #1000 ppm/K   Mechanical Specifications  Total Mechanical Travel  MAX. 3.4 mN · m  MAX. 20 mN · m  Thrust Load Tolerance  Radial Load Tolerance  1.96 N  Radial Load Tolerance  0.98 N  Mass  Approx. 20g   Environmental Specifications  Life Cycles  10 Million Cycle  Category Temperature Range  -40 ~ +100 °C  Storage Temperature Range  Vibration  150m/S² 2000Hz 3axis 2hours each	Total Resistance	1K, 5K Ω	
Rated Dissipation       0.5W/50℃         Output Smoothness       MAX. 0.1%         Insulation Resistance       MIN. 100MΩ/DC1000V         Dielectric Strength       AC1000V/ 1 Minute         TC of Resistance       ±1000 ppm/K         Mechanical Specifications         Total Mechanical Travel       360° endless         Running Torque       MAX. 3.4 mN · m       MAX. 20 mN · m         Thrust Load Tolerance       1.96 N         Radial Load Tolerance       0.98 N         Mass       Approx. 20g         Environmental Specifications         Life Cycles       10 Million Cycle         Category Temperature Range       -40 ~ +100 ℃         Storage Temperature Range       -40 ~ +100 ℃         Vibration       150m/S² 2000Hz 3axis 2hours each	Total Resistance Tolerance	±20%	
Output Smoothness       MAX. 0.1%         Insulation Resistance       MIN. 100MΩ/DC1000V         Dielectric Strength       AC1000V/ 1 Minute         TC of Resistance       ±1000 ppm/K         Mechanical Specifications       Total Mechanical Travel         Running Torque       MAX. 3.4 mN ⋅ m       MAX. 20 mN ⋅ m         Thrust Load Tolerance       1.96 N         Radial Load Tolerance       0.98 N         Mass       Approx. 20g         Environmental Specifications         Life Cycles       10 Million Cycle         Category Temperature Range       -40 ~ +100 ℃         Storage Temperature Range       -40 ~ +100 ℃         Vibration       150m/S² 2000Hz 3axis 2hours each	Independent Linearity	±1%	
Insulation Resistance MIN. $100 \text{M}\Omega/\text{DC}1000 \text{V}$ Dielectric Strength AC1000V/ 1 Minute  TC of Resistance $\pm 1000 \text{ ppm/K}$ Mechanical Specifications  Total Mechanical Travel $360^\circ$ endless  Running Torque MAX. $3.4 \text{ mN} \cdot \text{m}$ MAX. $20 \text{ mN} \cdot \text{m}$ Thrust Load Tolerance $1.96 \text{ N}$ Radial Load Tolerance $0.98 \text{ N}$ Mass Approx. $20g$ Environmental Specifications  Life Cycles $10 \text{ Million Cycle}$ Category Temperature Range $-40 \sim +100 \text{ °C}$ Storage Temperature Range $-40 \sim +100 \text{ °C}$ Vibration $150 \text{ m/s}^2 2000 \text{Hz}$ $3 \text{ axis 2 hours each}$	Rated Dissipation	0.5W/50℃	
Dielectric Strength  TC of Resistance  #1000 ppm/K   Mechanical Specifications  Total Mechanical Travel  Running Torque  MAX. 3.4 mN ⋅ m  MAX. 20 mN ⋅ m  Thrust Load Tolerance  Radial Load Tolerance  0.98 N  Mass  Approx. 20g   Environmental Specifications  Life Cycles  Category Temperature Range  Storage Temperature Range  Vibration  AC1000V/ 1 Minute  #1000 ppm/K  MAX. 360° endless  MAX. 20 mN ⋅ m  Thrust Load Tolerance  1.96 N  Approx. 20g   Environmental Specifications  Life Cycles  10 Million Cycle  -40 ~ +100 ℃  Storage Temperature Range  -40 ~ +100 ℃  Vibration  150m/S² 2000Hz 3axis 2hours each	Output Smoothness	MAX. 0.1%	
TC of Resistance         # 1000 ppm/K         Mechanical Specifications         Total Mechanical Travel         Running Torque       MAX. 3.4 mN · m       MAX. 20 mN · m         Thrust Load Tolerance       1.96 N         Radial Load Tolerance       0.98 N         Mass       Approx. 20g         Environmental Specifications         Life Cycles       10 Million Cycle         Category Temperature Range       -40 ~ +100 °C         Storage Temperature Range       -40 ~ +100 °C         Vibration       150m/S² 2000Hz 3axis 2hours each	Insulation Resistance	MIN. 100MΩ/DC1000V	
Mechanical Specifications         Total Mechanical Travel       360° endless         Running Torque       MAX. 3.4 mN · m       MAX. 20 mN · m         Thrust Load Tolerance       1.96 N         Radial Load Tolerance       0.98 N         Mass       Approx. 20g         Environmental Specifications         Life Cycles       10 Million Cycle         Category Temperature Range       -40 ~ +100 °C         Storage Temperature Range       -40 ~ +100 °C         Vibration       150m/S² 2000Hz 3axis 2hours each	Dielectric Strength	AC1000V/ 1 Minute	
Total Mechanical Travel  Running Torque  MAX. 3.4 mN · m  MAX. 20 mN · m  Thrust Load Tolerance  1.96 N  Radial Load Tolerance  0.98 N  Mass  Approx. 20g  Environmental Specifications  Life Cycles  Category Temperature Range  -40 ~ +100 ℃  Storage Temperature Range  Vibration  150m/S² 2000Hz 3axis 2hours each	TC of Resistance	±1000 ppm/K	
Total Mechanical Travel  Running Torque  MAX. 3.4 mN · m  MAX. 20 mN · m  Thrust Load Tolerance  1.96 N  Radial Load Tolerance  0.98 N  Mass  Approx. 20g  Environmental Specifications  Life Cycles  Category Temperature Range  -40 ~ +100 ℃  Storage Temperature Range  Vibration  150m/S² 2000Hz 3axis 2hours each			
Running Torque MAX. $3.4 \text{ mN} \cdot \text{m}$ MAX. $20 \text{ mN} \cdot \text{m}$ Thrust Load Tolerance $1.96 \text{ N}$ Radial Load Tolerance $0.98 \text{ N}$ Mass Approx. $20g$ Environmental Specifications  Life Cycles $10 \text{ Million Cycle}$ Category Temperature Range $-40 \sim +100 \text{ C}$ Storage Temperature Range $-40 \sim +100 \text{ C}$ Vibration $150 \text{ m/S}^2 2000 \text{Hz} 3 \text{ axis } 2 \text{ hours each}$	Mechanical Specifications		
Thrust Load Tolerance 1.96 N  Radial Load Tolerance 0.98 N  Mass Approx. 20g  Environmental Specifications  Life Cycles 10 Million Cycle  Category Temperature Range $-40 \sim +100  ^{\circ} \text{C}$ Storage Temperature Range $-40 \sim +100  ^{\circ} \text{C}$ Vibration 150m/S $^2$ 2000Hz 3axis 2hours each	Total Mechanical Travel	360° endless	
Radial Load Tolerance 0.98 N  Mass Approx. 20g  Environmental Specifications  Life Cycles 10 Million Cycle  Category Temperature Range $-40 \sim +100  ^{\circ}\text{C}$ Storage Temperature Range $-40 \sim +100  ^{\circ}\text{C}$ Vibration 150m/S $^2$ 2000Hz 3axis 2hours each	Running Torque	MAX. 3.4 mN⋅m	MAX. 20 mN·m
Mass Approx. 20g  Environmental Specifications  Life Cycles 10 Million Cycle  Category Temperature Range $-40 \sim +100  ^{\circ} \text{C}$ Storage Temperature Range $-40 \sim +100  ^{\circ} \text{C}$ Vibration 150m/S $^2$ 2000Hz 3axis 2hours each	Thrust Load Tolerance	1.96 N	
Environmental Specifications  Life Cycles  10 Million Cycle  Category Temperature Range $-40 \sim +100  ^{\circ} ^{\circ} ^{\circ}$ Storage Temperature Range $-40 \sim +100  ^{\circ} ^{\circ} ^{\circ} ^{\circ}$ Vibration  150m/S <sup>2</sup> 2000Hz 3axis 2hours each	Radial Load Tolerance	0.98 N	
Life Cycles 10 Million Cycle  Category Temperature Range $-40 \sim +100 ^{\circ}\text{C}$ Storage Temperature Range $-40 \sim +100 ^{\circ}\text{C}$ Vibration 150m/S <sup>2</sup> 2000Hz 3axis 2hours each	Mass	Approx. 20g	
Life Cycles 10 Million Cycle  Category Temperature Range $-40 \sim +100 ^{\circ}\text{C}$ Storage Temperature Range $-40 \sim +100 ^{\circ}\text{C}$ Vibration 150m/S <sup>2</sup> 2000Hz 3axis 2hours each			
Category Temperature Range $-40 \sim +100 ^{\circ}\!$	<b>Environmental Specifications</b>		
Storage Temperature Range $-40 \sim +100 \ ^{\circ} \text{C}$ Vibration $150 \text{m/S}^2 \ 2000 \text{Hz} \ 3 \text{axis 2hours each}$		·	
Vibration 150m/S² 2000Hz 3axis 2hours each	Category Temperature Range		
·	Storage Temperature Range		
Shock 500m/S <sup>2</sup> 11ms 6directions 3times	Vibration	·	
	Shock	500m/S <sup>2</sup> 11ms 6directions 3times	

## ■ Accessories

M9 nut

Inner tooth lock washer 1 piece each

## ■ Handling Instruction

- $\ \, \boldsymbol{\cdot} \text{To avoid burnout of resistive element, do not supply more than 1mA current to terminal 2.}$
- ·Miswiring might cause burnout of resistive element.
- •To reduce sliding noise, add load resistance should be more than 100times and less than 1000times of total resistance.
- •Slight continuous vibration such as dither might cause short lifetime of the sensor.