Model ELV-16 Rotation / Position Sensor (Digital Potentiometer)

Model List	Power Supply Voltage	Electrical Effective Angle
ELV-1605HI	5V DC	±15°
ELV-1605HD		±60°
ELV-1612HI	12V DC	±15°
ELV-1612HD		±60°

Application

- Game controllers
- Joysticks
- Pedal stroke detection for industrial sewing machines
- Handle potentiometers for pachinko machines

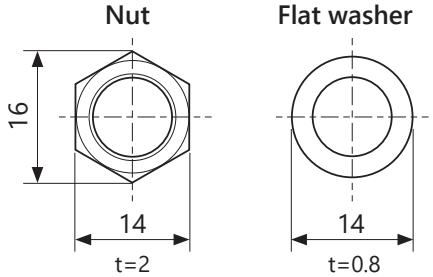
Features

- Non-contact design using a Hall element and magnet eliminates contact failure and provides long service life.
- Built-in temperature compensation circuit provides excellent temperature characteristics.
- The compact ELV-16 series enables space-saving mounting.
- Analog linear voltage output.

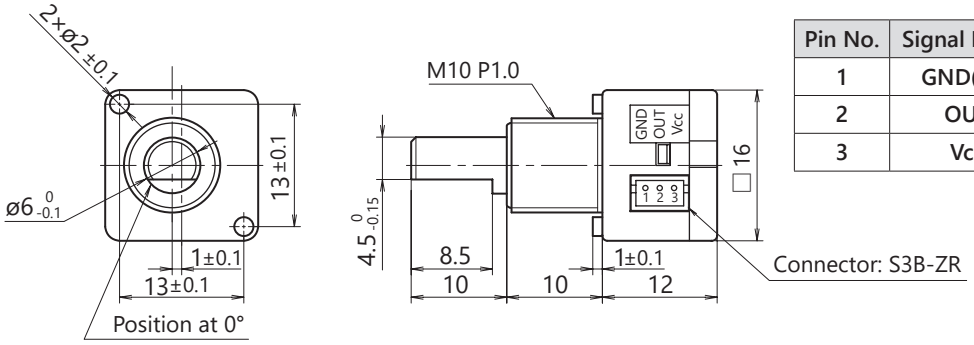
Ratings / Performance

Model	ELV-1605HI	ELV-1605HD	ELV-1612HI	ELV-1612HD
Electrical Effective Angle	± 15 °	± 60 °	± 15 °	± 60 °
Power Supply Voltage	5 V DC ± 5 %		12 V DC ± 5 %	
Current Consumption	15 mA or less		10 mA or less	
Output Voltage	1.0 to 4.0 V DC ±5% FS (at 5 V DC)		1.0 to 9.0 V DC ±5% FS (at 12 V DC)	
Linearity	within ±2% FS	within ±3% FS	within ±2% FS	within ±3% FS
Load Resistance	10 kΩ or more		20 kΩ or more	
Service Life	10 million rotations or more (normal temperature, no load, within the electrical effective angle range, continuous operation at 20 cycles/min or less)			
Mechanical Rotation Angle	360° (endless)			
Rotational Torque	0.5 N·cm (0.05 kgf·cm) or less			
Shaft Strength (Push)	9.8 N (1 kgf) or more			
Shaft Strength (Pull)	9.8 N (1 kgf) or more			
Temperature Range	0 to 50°C (Storage: -10 to 60°C), no condensation or icing			
Humidity Range	35 to 90% RH (Storage: 35 to 90% RH), no condensation			
Dielectric Strength	500 V AC for 1 minute (between all live parts and the mounting section)			
Insulation Resistance	100 MΩ or more at 500 V DC megger (between all live parts and the mounting section)			
Vibration Resistance	10 to 55 Hz, 1.5 mm double amplitude in X, Y, and Z directions for 2 hours each (with power off)			
Shock Resistance	500 m/s² (approx. 50 G) in X, Y, and Z directions, 3 times each (with power off)			
Protection	IP50			
Case Material	Case and cover: PBT resin; shaft: PPS resin			
Connector	Connector : S3B-ZR-SM2-TF (3-pin) [Connection] Housing: ZHR-3; Contact: SZH-002T-P0.5 (J.S.T. Mfg. Co., Ltd.)			
Weight	Approx. 5 g			
Accessories	nut and flat washer, 1 each			
Options (Sold Separately)	Connector harness SZH-3-300			

Accessories

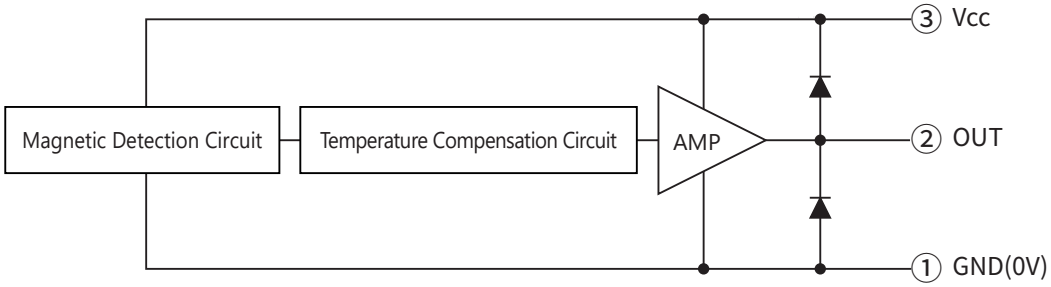


Outline Dimensions

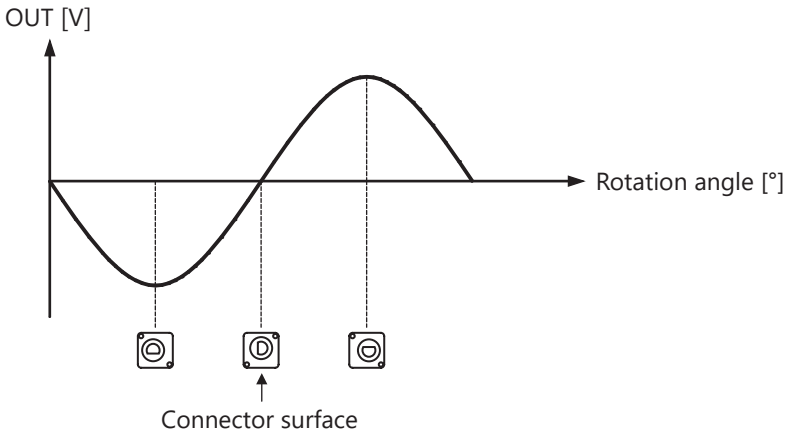


Pin No.	Signal Name
1	GND(0V)
2	OUT
3	Vcc

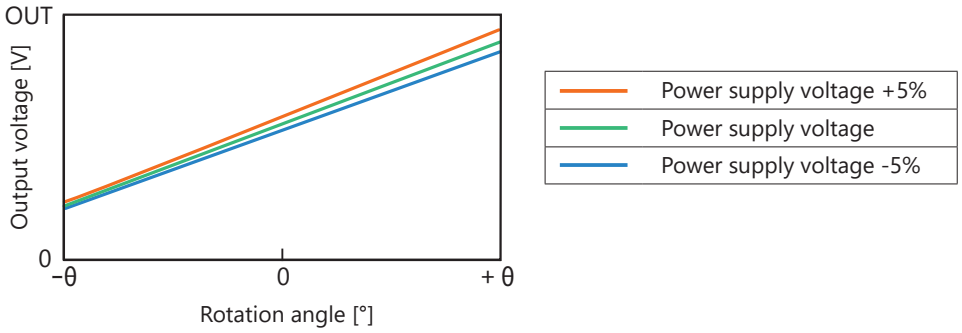
Output Circuit



Output Characteristics (Typical Example)



Voltage Characteristics (Ratiometric to Power Supply) (Typical Example)



Precautions During Use

For other precautions, please refer to the Precautions During Use for Rotation / Position Sensors (Digital Potentiometers).

*For other detailed specifications, please refer to the specifications.