



Series 286

Multi-turn Hall-Effect Position Sensor

- Multi-turn: All electrical angles available up to 3600°
- Non-contact Hall Effect technology
- Compact 25mm diameter size
- Wide temperature range (-40~125°C)
- Life cycle: 10M rotations
- Dust & water resistant (IP 67)



Applications

- Control valve position feedback
- Actuator motor position feedback
- Foot pedal, twist throttle
- Steering, and lift-and-shuttle

Description

Building on decades of experience in controls, the Series 286 Multi-Turn Hall-Effect Position Sensor provides solid, reliable CTS performance, with added multi-turn capability. The 286 is designed for demanding uses in industrial, transportation, medical and other areas and is ideal for custom applications.

Ordering Information

Series	Termination	Bushing Length "A"	Shaft Length "L"	Shaft Trim	Output	Linearity	Operating Voltage	Rotation Angle	Locating Lug																							
286	C	3	B	F	A	A	A	A	1																							
<table><tr><th>Code</th><th>Spec.</th></tr><tr><td>C</td><td>250mm length Wires;24AWG</td></tr></table> <p>Other lengths, gauges, connectors available</p>		Code	Spec.	C	250mm length Wires;24AWG			<table><tr><th>Code</th><th>Spec.</th></tr><tr><td>A</td><td>Analog output, CW</td></tr><tr><td>B</td><td>Analog output, CCW</td></tr></table>		Code	Spec.	A	Analog output, CW	B	Analog output, CCW	<table><tr><th>Code</th><th>Spec.</th></tr><tr><td>A</td><td>± 0.5%</td></tr></table>		Code	Spec.	A	± 0.5%	<table><tr><th>Code</th><th>Total</th><th>Effective</th></tr><tr><td>A</td><td>3600°</td><td></td></tr><tr><td>B</td><td>1800°</td><td></td></tr></table>		Code	Total	Effective	A	3600°		B	1800°	
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*Note: 3.3V version, please contact CTS for further information.

Electrical Specifications

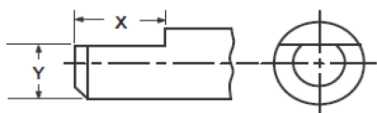
Sensor Function		Min	Typical	Max	Unit
Output	<ul style="list-style-type: none"> Single output Dual output PWM 1KHz, 10% to 90% duty cycles on 5V(Optional) 				
Independent Linearity	at room temperature	-0.5%		+0.5%	
Hysteresis				0.5%	Vsup
Output Voltage		5%		95%	Vsup
Overvoltage Limits	@5V	-18		18	VDC
Output Current		-8		+8	mA
Output Load		5	10		K ohms
Input Voltage		4.5	5	5.5	VDC
Supply Current			8	13	mA
Resolution	12 BIT at 360°				
Dielectric Strength	1 minute	750			VDC
Insulation Resistance	at 500 VDC	1000			Megohms
Electrostatic Discharge (ESD)	Contact discharges@5V	-8		+8	KV

*Note: For 3.3V and PWM version, please contact CTS for further information.

Mechanical and Environmental

Soldering	Maximum manual temperature, 350°C for 5 seconds
Bearing	10 Million cycles
RoHS	Lead-Free. Fully compliant to RoHS Directive 2011/65/EU
Total Mechanical Travel	10 turns 360°, 5 turns 1800° continuous
Push and Pull Shaft Strength	13.6 Kgf min.
Rotational Life	10 Million cycles
Panel Nut tightening Torque	25 in-lb
IP Rating	67
Marking	CTS logo, part number, date code
Packaging	Standard anti-static tray packaging
Operating Temperature Range	-40°C to +125°C
Storage Temperature Range:	-40°C to +125°C

Shaft Style and Diameter Option



Shaft Trim	Diameter	X	Y
F	.236" (6.00 mm)	.375"(9.5 mm)	.157"(4.00 mm)
L	.250" (6.35 mm)	.375"(9.5 mm)	.157"(4.00 mm)



Shaft Trim	Diameter	X	Y
S	.236" (6.00 mm)	.031"(0.80 mm)	.031"(0.80 mm)
D	.250" (6.35 mm)	.031"(0.80 mm)	.031"(0.80 mm)

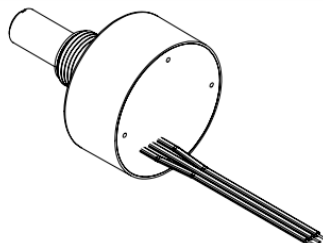
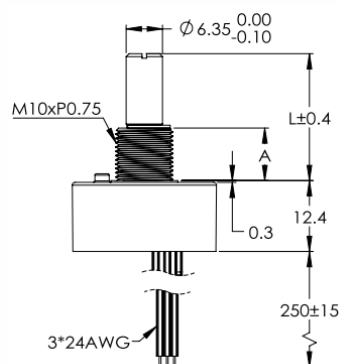
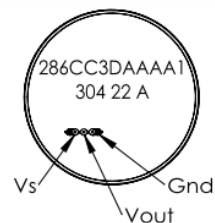
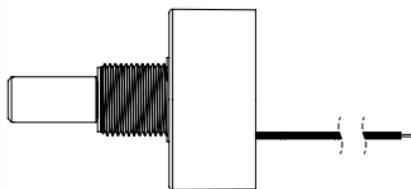
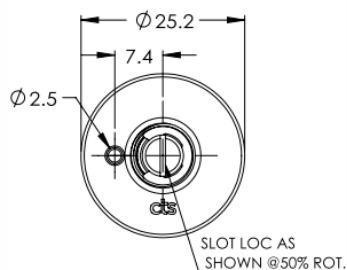


Series 286

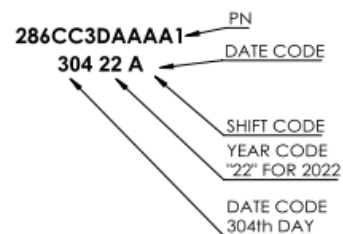
Non Contacting Position Sensor

Dimensions in millimeters

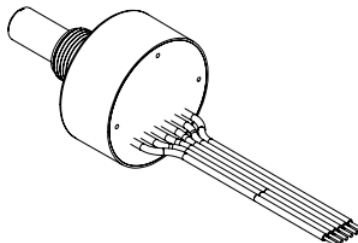
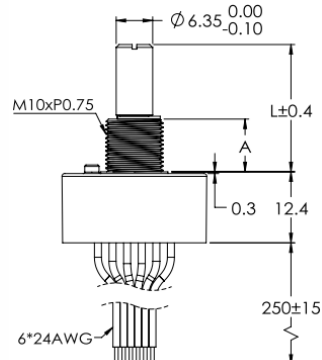
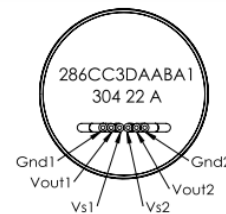
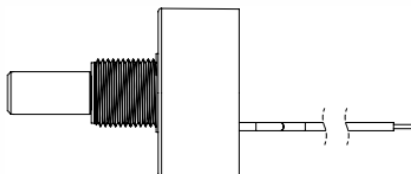
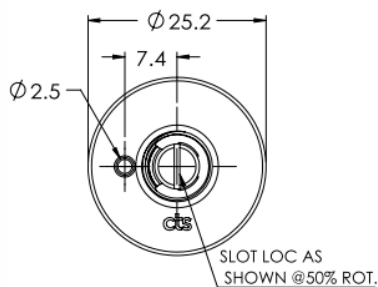
Single Output



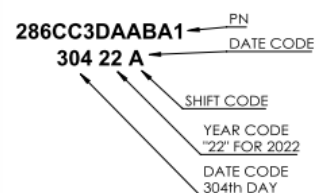
DESIGNATION	COLOR
Vs	red
Vout	white
Gnd	green



Redundant (Dual) Output



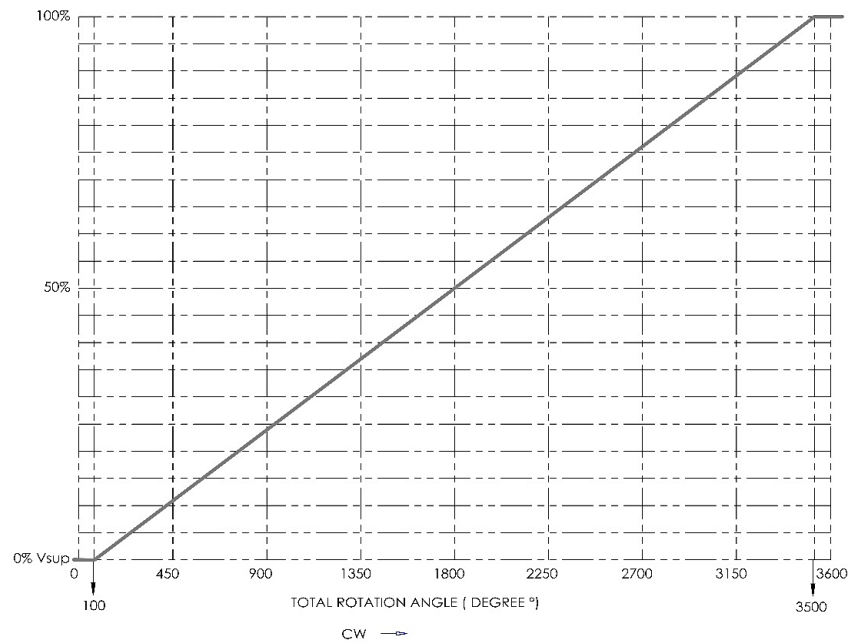
DESIGNATION	COLOR
Vs1	red
Vout1	blue
Gnd1	black
Vs2	yellow
Vout2	white
Gnd2	brown



Vout Analog

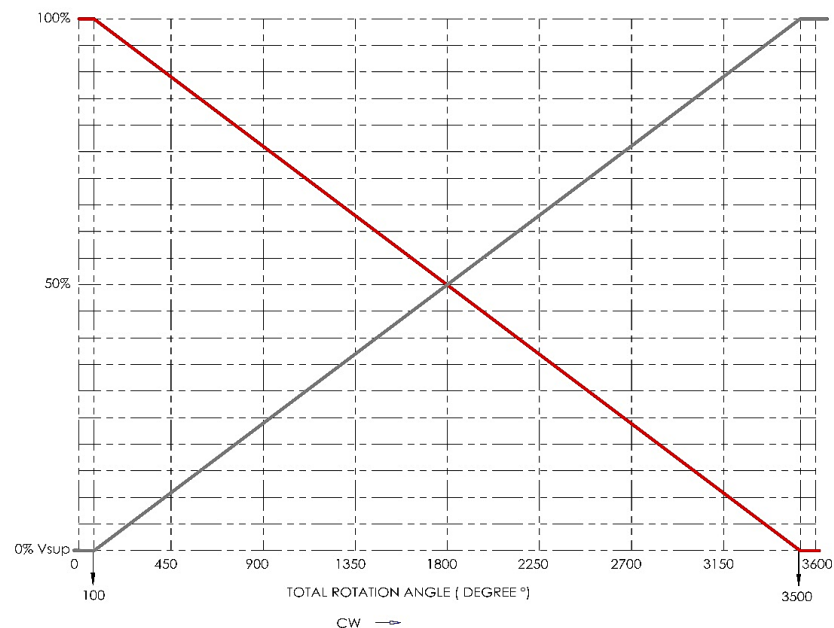
Single Output

OUTPUT
VOLTAGE [Vdc]



Redundant Output: with inverted slope

OUTPUT
VOLTAGE [Vdc]



Mouser Electronics

Authorized Distributor

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CTS:

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