



# Series 285 Flange Mount Rotary Position Sensor

September 2019





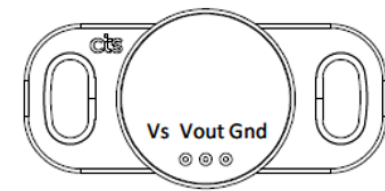
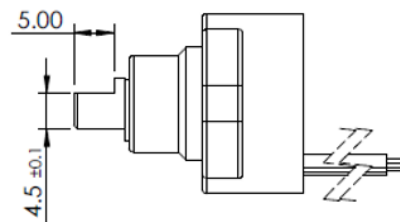
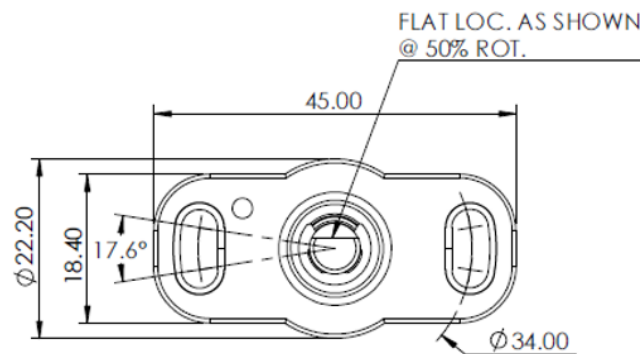
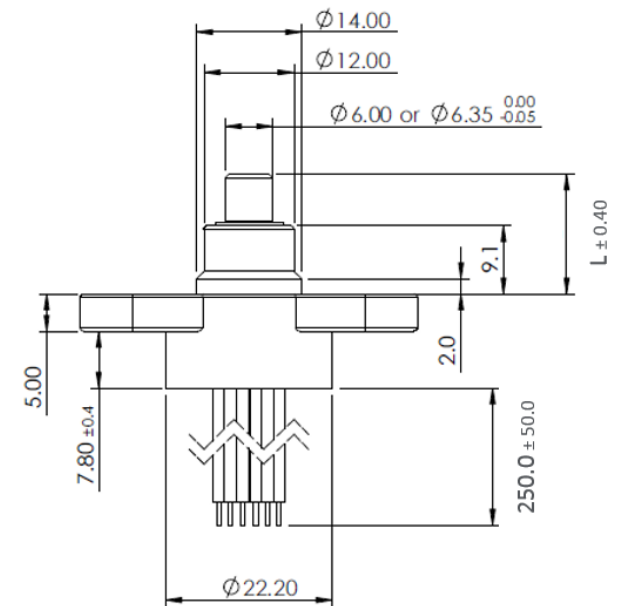
# Agenda

- Product Overview
- Hall-Effect Technology Overview
- Product Assembly Exploded View
- Features & Benefits
- Product Custom/Value Added Capabilities
- Value Proposition
- Target Applications
- Sales Collateral



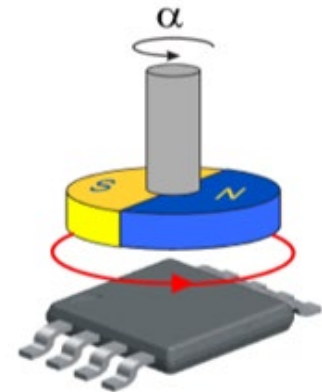
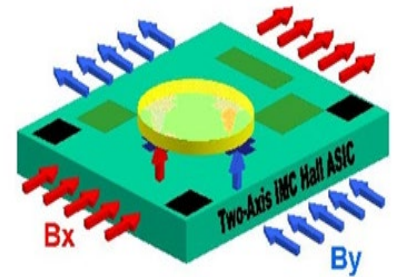
# Series 285 Flange Mount Rotary Sensor Overview

- Compact 45mm x 22mm size
- Non-contacting Hall Effect technology
- Extended rotational life: 10M cycles
- Precise Linearity:  $\pm 0.5\%$  (optional  $\pm 0.25\%$ )
- Hysteresis: 0.2%
- Wide operating temperature range:  $-40^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$
- Seal: IP50 (optional IP54 & IP67)

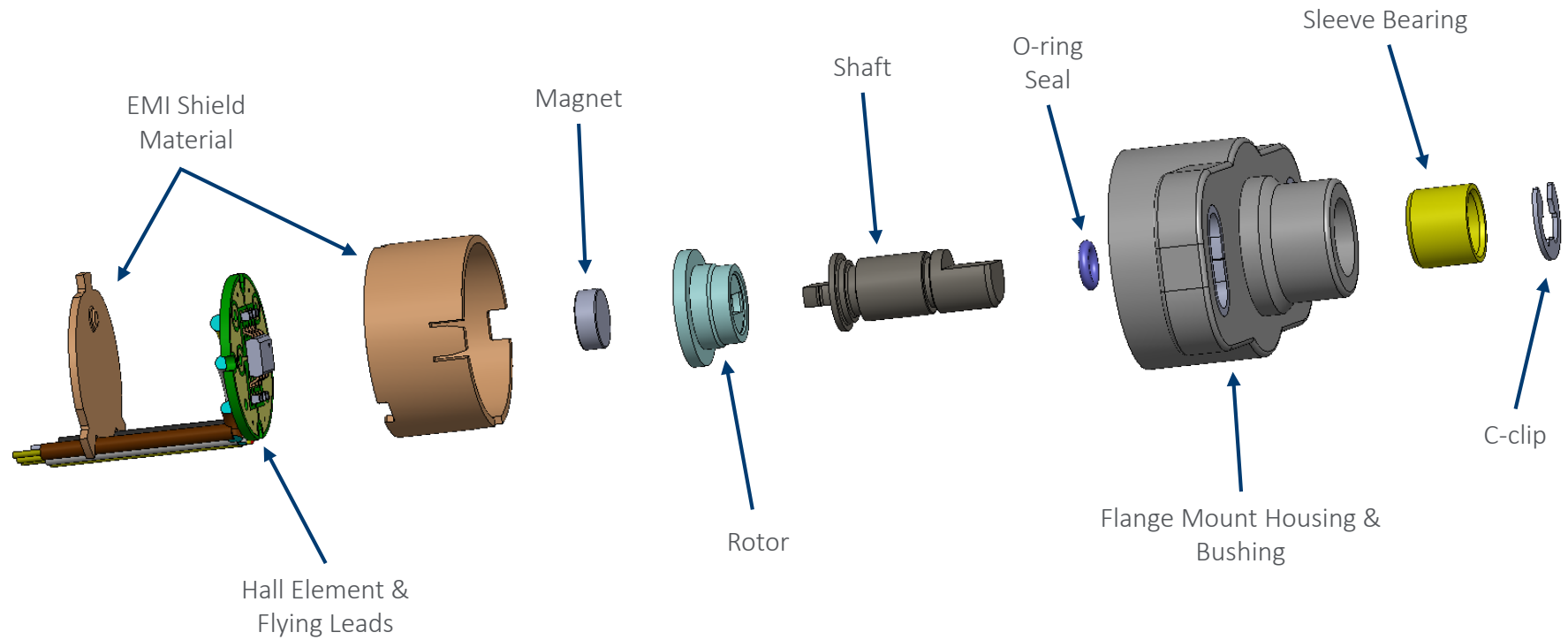


# Hall Effect Technology

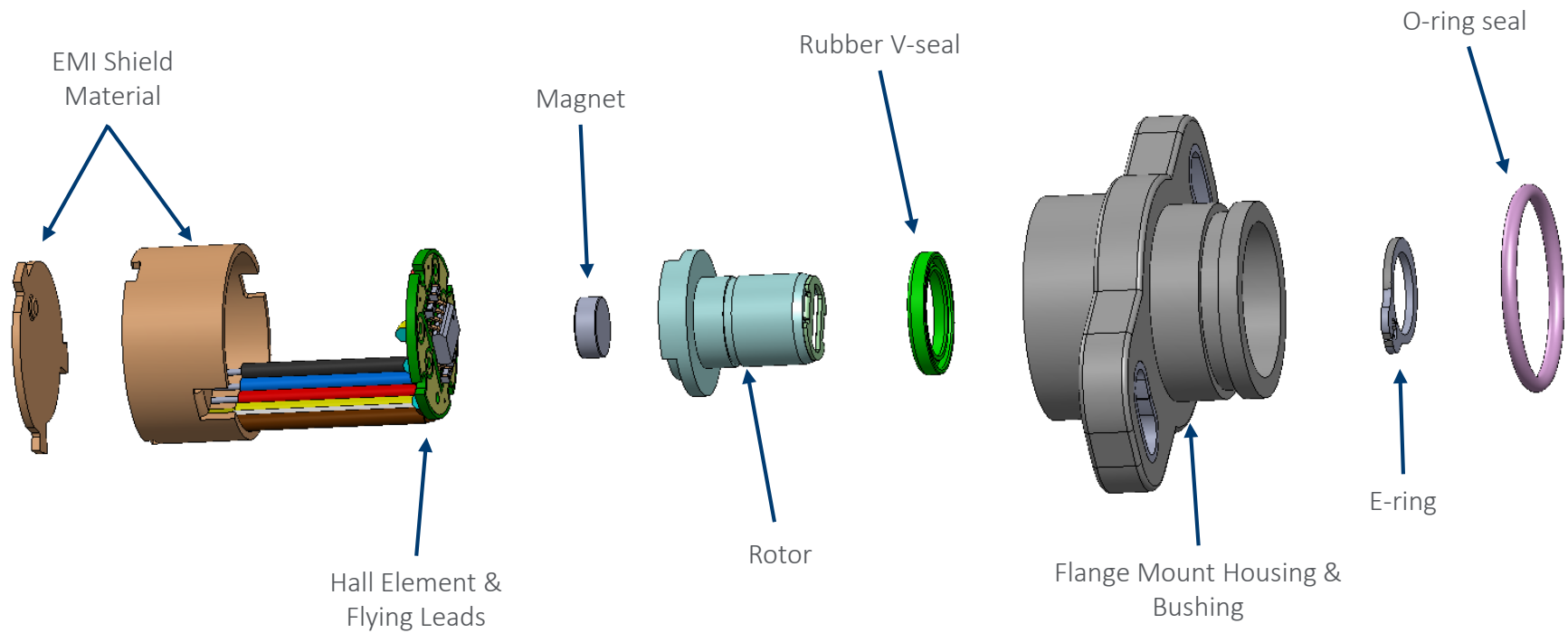
- Discovered by Edwin Hall in 1879
- Magnet rotates in close proximity to the Hall element
- The rotation of the magnet causes a potential difference in the Hall element
- The potential difference (voltage) is produced through which electric current flows
- There are no mechanical contacting parts
- Output is consistent throughout the life of the product



# Series 285 Flange Mount Product Exploded View

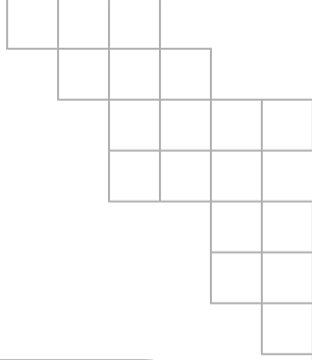


# Series 285 Product Flange Mount Shaftless Exploded View





# Series 285 Product Features & Benefits



## Features

Non-contacting Hall Effect technology

10M cycles of rotational life

Precision linearity & hysteresis

Wide operating temperature range

Seal options

5.0 VDC and 3.3 VDC options

Standard internal shielding

## Benefits

Elimination of wearing electrical contacting parts

Extended field deployment

Allows for precise position sensing

Suitable for use in cold or hot environments

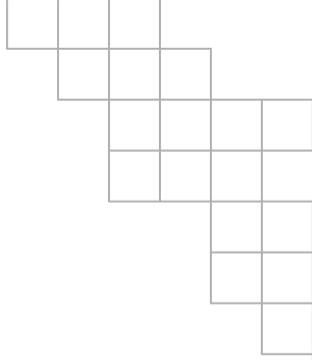
Suitable for use in dusty or wet environments

Power supply flexibility

Protection against EMI



## Series 285 Flange Mount Product Capabilities



### Custom and Value-Added Capabilities

- Electrical & mechanical angle customization
- Output communication protocol (i.e. PWM, SSI, SPI, CANbus, etc.)
- Cable/connector customization
- Custom packaging



# Series 285 Flange Mount Product Value Proposition



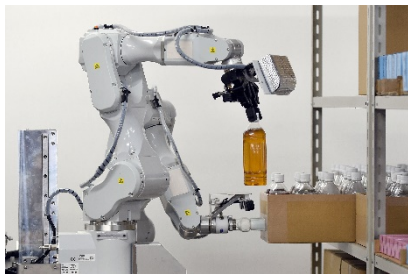
*The Series 285 Rotary Position Sensor provides a flexible, programmable, Hall-effect non-contacting design with standard internal electromagnetic interference (EMI) shielding offered at a competitive price.*

- The flexible design allows for the basic assembly to be repackaged for various mounting styles and configurations to fit the application
- The product design allows for different outputs and communication protocols to fit the customer's design
- Standard EMI shielding allows the product to be used in areas where magnetic fields are present
- The dual output option is available for applications that require dual function or redundant output for enhanced safety.

# Series 285 Flange Mount Product Target Market Segments

## Industrial

- Valve controllers and actuators
- Pneumatic control valves
- Food & beverage processing
- Automated assembly & packaging
- Robotics



## Transportation and Marine

- Scooter/cycles
- Train seat positioning
- Door opening sensors
- Boat throttle controls
- Ship propulsion



## Off-Road Vehicles

- Throttle position sensors
- Throttle for EFI
- Riding lawn mowers
- Mining machinery
- Agriculture equipment



# Series 285 Flange Mount Product Collateral

## Series 285 New Product Brief

Flange mount non-contacting Hall-effect rotary position sensors are designed for the most demanding applications in the industrial, medical, and transportation markets. With over 20 years of experience in non-contacting solutions for automotive applications, CTS is now bringing this technology to industrial grade rotary position sensors with the release of the Series 285 Flange Mount Non-Contacting Rotary Position Sensor. Quality, performance and reliability are core aspects of this series of rotary position sensors.

### Series 285S/N Flange Mount Non-Contacting Position Sensor

- Compact 45 mm x 22 mm size
- Hall-effect technology
- Extended rotational life (10 Million cycles)
- Wide temperature range (-40°C to +125°C)
- Precision linearity (± 0.5% and ± 0.25% options)
- Dust & water protection (IP50, 54 and 67 options)
- Single and dual output

#### Applications

- Actuator motor position feedback
- Medical treatment chair and patient platform position feedback
- Flow valve position feedback
- Foot pedal and twist throttle controls
- Steering and lift & shuttle controls

#### Ordering Information

Series	Shaft Type	Shaft Length	Shaft Trim	Bearing Style	Output Type	Linearity	Operating Voltage	IP Rating	Rotation Angle	Termination	
285	S	C	F	S	A	Δ	B	4	C	1	
Code	Spec.	Code	Spec.	Code	Spec.	Code	Spec.	Code	Spec.	Code	
N	Shaftless	S	20 mm	S	Sleeve bearing	A	± 0.5%	4	IP50	1	250 mm wires
S	w/Shaft	S	3/4"	S	Sleeve bearing	B	± 0.25%	5	IP54		
								6	IP67		
Code	Spec.	Code	Spec.	Code	Spec.	Code	Spec.	Code	Spec.	Code	
C	20 mm	A	Single analog output, CW								
D	25 mm	B	Single analog output, CCW								
2	3/4"	C	Dual analog output, CW								
3	7/8"	D	Dual analog output, CCW								
N	Shaftless										

2015-07-31 Rev. XI

### Application Note 285 Flange Mount Rotary Position Sensor

designed for applications that require high precision and long life deployment. Applications include automation, process automation, robotics, medical, and heavy off-road equipment. Require rotary sensors with high rotational life, extended temperature range, ingress protection, and reliable performance in extreme environments may require the added performance of a traditional contacting solution. CTS Series 285 flange mount rotary position sensor provides a solution in a sealed package that meets

electro-mechanical devices used to measure the position of an object. Rotary sensors measure the rotation angles by means of voltage or other types of outputs. These measuring devices can be used in non-contacting technologies. CTS Series 285 flange mount rotary position sensor provides a solution in a sealed package that meets

is a reliable and high-quality solution where contacting technology falls short. In 1879, Hall-effect refers to the potential difference on opposite sides of a bar-conducting material (Hall element). This potential difference (voltage) is induced applied perpendicular to the Hall element through which electric current flows. This concept.

uses an analog output similar to contacting potentiometers without the aid of a wiper. There are no internal contacting parts subject to mechanical wear or failure, making it ideal in harsh environments where extreme levels of shock, vibration, temperature extremes, and other options are available on request. Ask your local Representative for details.

CTS Sensors and Controls offers an expanding product portfolio of potentiometers, encoders, and rotary position sensors to meet the most demanding applications. Custom solutions and value added options such as cable/connectors, harnesses, custom mechanical and electrical enclosures, custom shaft and bearing lengths, and other options are available on request. Ask your local Representative for details.

Updated website landing page

[https://www.ctscorp.com/sense\\_product\\_line/rotary-position-sensors/](https://www.ctscorp.com/sense_product_line/rotary-position-sensors/)

Updated Product Brochure

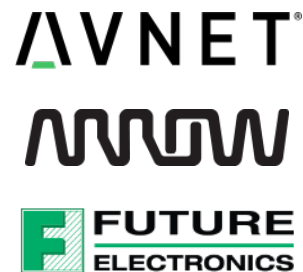
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# Series 285 Flange Mount Product Availability

## e-Catalog Distributors



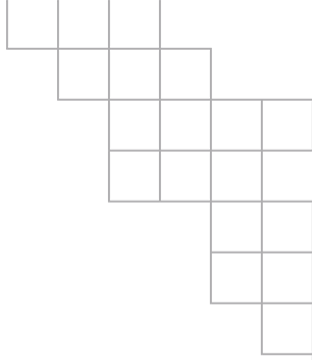
## Global Distributors



## Regional Distributors



- Inventory is readily available at e-Catalog distributors worldwide
- A comprehensive network of established global supply chain distributors are ready to assist
- World-class local language customer support is available to help with designs and production



# Thank you

