



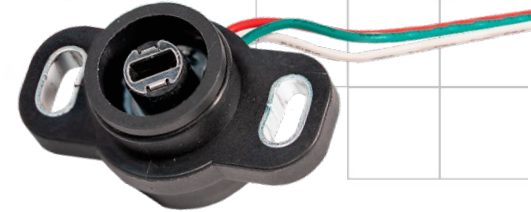
# Series 285S/N

## 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 ( $\pm 0.5\%$  and  $\pm 0.25\%$  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	A	B	4	C	1																																																																																								
	<table border="1"> <thead> <tr> <th>Code</th> <th>Spec.</th> </tr> </thead> <tbody> <tr> <td>N</td> <td>Shaftless</td> </tr> <tr> <td>S</td> <td>w/Shaft</td> </tr> </tbody> </table>	Code	Spec.	N	Shaftless	S	w/Shaft	<table border="1"> <thead> <tr> <th>Code</th> <th>Spec.</th> </tr> </thead> <tbody> <tr> <td>C</td> <td>20 mm</td> </tr> <tr> <td>D</td> <td>25 mm</td> </tr> <tr> <td>2</td> <td>3/4"</td> </tr> <tr> <td>3</td> <td>7/8"</td> </tr> <tr> <td>N</td> <td>Shaftless</td> </tr> </tbody> </table>	Code	Spec.	C	20 mm	D	25 mm	2	3/4"	3	7/8"	N	Shaftless	<table border="1"> <thead> <tr> <th>Code</th> <th>Spec.</th> </tr> </thead> <tbody> <tr> <td>F</td> <td>Flatted (6 mm dia.)</td> </tr> <tr> <td>L</td> <td>Flatted (1/4" dia.)</td> </tr> <tr> <td>R</td> <td>Round (6 mm dia.)</td> </tr> <tr> <td>P</td> <td>Round (1/4" dia.)</td> </tr> <tr> <td>N</td> <td>Shaftless</td> </tr> </tbody> </table>	Code	Spec.	F	Flatted (6 mm dia.)	L	Flatted (1/4" dia.)	R	Round (6 mm dia.)	P	Round (1/4" dia.)	N	Shaftless	<table border="1"> <thead> <tr> <th>Code</th> <th>Spec.</th> </tr> </thead> <tbody> <tr> <td>S</td> <td>Sleeve bearing</td> </tr> </tbody> </table>	Code	Spec.	S	Sleeve bearing	<table border="1"> <thead> <tr> <th>Code</th> <th>Spec.</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>Single analog output, CW</td> </tr> <tr> <td>B</td> <td>Single analog output, CCW</td> </tr> <tr> <td>C</td> <td>Dual analog output, CW</td> </tr> <tr> <td>D</td> <td>Dual analog output, CCW</td> </tr> </tbody> </table>	Code	Spec.	A	Single analog output, CW	B	Single analog output, CCW	C	Dual analog output, CW	D	Dual analog output, CCW	<table border="1"> <thead> <tr> <th>Code</th> <th>Spec.</th> </tr> </thead> <tbody> <tr> <td>A</td> <td><math>\pm 0.5\%</math></td> </tr> <tr> <td>B</td> <td><math>\pm 0.25\%</math></td> </tr> </tbody> </table>	Code	Spec.	A	$\pm 0.5\%$	B	$\pm 0.25\%$	<table border="1"> <thead> <tr> <th>Code</th> <th>Spec.</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>3.3V*</td> </tr> <tr> <td>B</td> <td>5.0V</td> </tr> </tbody> </table> <p>*Available with 360° EEA only.</p>	Code	Spec.	A	3.3V*	B	5.0V	<table border="1"> <thead> <tr> <th>Code</th> <th>Spec.</th> </tr> </thead> <tbody> <tr> <td>4</td> <td>IP50</td> </tr> <tr> <td>5</td> <td>IP54</td> </tr> <tr> <td>6</td> <td>IP67</td> </tr> </tbody> </table>	Code	Spec.	4	IP50	5	IP54	6	IP67	<table border="1"> <thead> <tr> <th>Code</th> <th>Spec.</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>250 mm wires</td> </tr> </tbody> </table>	Code	Spec.	1	250 mm wires	<table border="1"> <thead> <tr> <th>Code*</th> <th>Total</th> <th>EEA</th> <th>Stops</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>270°</td> <td>260°</td> <td>270°</td> </tr> <tr> <td>B</td> <td>320°</td> <td>310°</td> <td>320°</td> </tr> <tr> <td>C</td> <td>360°</td> <td>360°</td> <td>N/A</td> </tr> <tr> <td>D</td> <td>200°</td> <td>125°</td> <td>200°</td> </tr> </tbody> </table> <p>*Codes A, B, and C available with shaft. Codes D available with shaftless version only.</p>	Code*	Total	EEA	Stops	A	270°	260°	270°	B	320°	310°	320°	C	360°	360°	N/A	D	200°	125°	200°
Code	Spec.																																																																																																	
N	Shaftless																																																																																																	
S	w/Shaft																																																																																																	
Code	Spec.																																																																																																	
C	20 mm																																																																																																	
D	25 mm																																																																																																	
2	3/4"																																																																																																	
3	7/8"																																																																																																	
N	Shaftless																																																																																																	
Code	Spec.																																																																																																	
F	Flatted (6 mm dia.)																																																																																																	
L	Flatted (1/4" dia.)																																																																																																	
R	Round (6 mm dia.)																																																																																																	
P	Round (1/4" dia.)																																																																																																	
N	Shaftless																																																																																																	
Code	Spec.																																																																																																	
S	Sleeve bearing																																																																																																	
Code	Spec.																																																																																																	
A	Single analog output, CW																																																																																																	
B	Single analog output, CCW																																																																																																	
C	Dual analog output, CW																																																																																																	
D	Dual analog output, CCW																																																																																																	
Code	Spec.																																																																																																	
A	$\pm 0.5\%$																																																																																																	
B	$\pm 0.25\%$																																																																																																	
Code	Spec.																																																																																																	
A	3.3V*																																																																																																	
B	5.0V																																																																																																	
Code	Spec.																																																																																																	
4	IP50																																																																																																	
5	IP54																																																																																																	
6	IP67																																																																																																	
Code	Spec.																																																																																																	
1	250 mm wires																																																																																																	
Code*	Total	EEA	Stops																																																																																															
A	270°	260°	270°																																																																																															
B	320°	310°	320°																																																																																															
C	360°	360°	N/A																																																																																															
D	200°	125°	200°																																																																																															



## Electrical Specifications

### Sensor Function

Parameter	Condition & Remarks	Min	Typical	Max	Unit
Output	Analog				
Independent Linearity		-0.5		+0.5	%
Hysteresis	V <sub>sup</sub>			0.2	%
Output Voltage	V <sub>sup</sub>	5%		95	%
Output Overvoltage Limits		-6		+18	VDC
Output Current		-8	+1	+8	mA
Output Load		5	10		kΩ
Input Voltage		-10	5	+10	VDC
Supply Voltage Absolute Limits		-18		+18	VDC
Supply Current			10	15	mA
Resolution	12 BIT at 360°				
Dielectric Strength	1 minute			750	VDC
Insulation Resistance	500 VDC	1000			MegΩ
Electrostatic Discharge (ESD)	HBM	-4		+4	kV

## Mechanical and Environmental

Parameter	Condition & Remarks	Min	Typical	Max	Unit
Operating Temperature Range		-40		+125	°C
Storage Temperature Range		-40		+140	°C
Rotational Life		10,000,000			cycles
Rotational Torque			72		gf-cm
Static Stop Strength		40			in-oz
Total Mechanical Travel					
Without Stops	360° continuous				
With End Stops	320°, 270°, 200°				
Operating Speed	120 RPM max.				
Vibration	30 Gs, 50 to 500 Hz				
Panel Nut Tightening Torque	25 in-lb maximum				
IP Rating	50, 54 or 67				
Push and Pull Shaft Strength	13.6 kgf for 10 seconds				
Soldering Condition	Maximum manual temperature, 350°C for 5 seconds				
Marking	CTS logo, part number, date code				
Packaging	Standard anti-static bulk packaging				
Weight	21 gm				

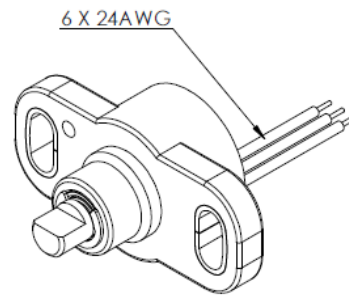
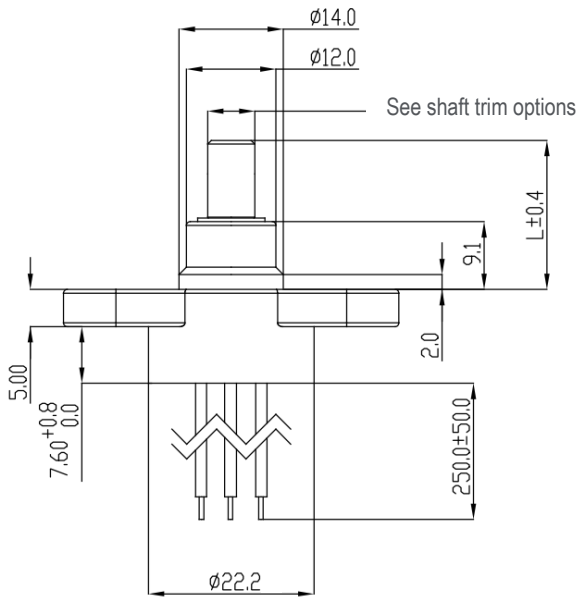
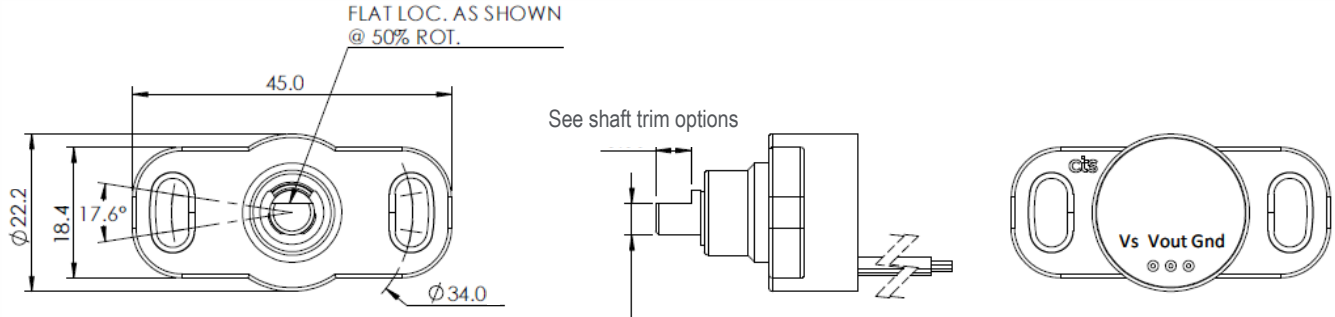
All testing is performed at room ambient conditions except as noted. Users should verify device actual performance in their specific applications

This product is compliant to RoHS3 Directive 2011/65/EU & 2015/863 Amendments of Annex II on 31 March 2015.

Custom and value-added options available on request. Please contact your sales representative for additional information.

### Mechanical Specifications

Series 285S Flange Mount, Single Output, with Shaft



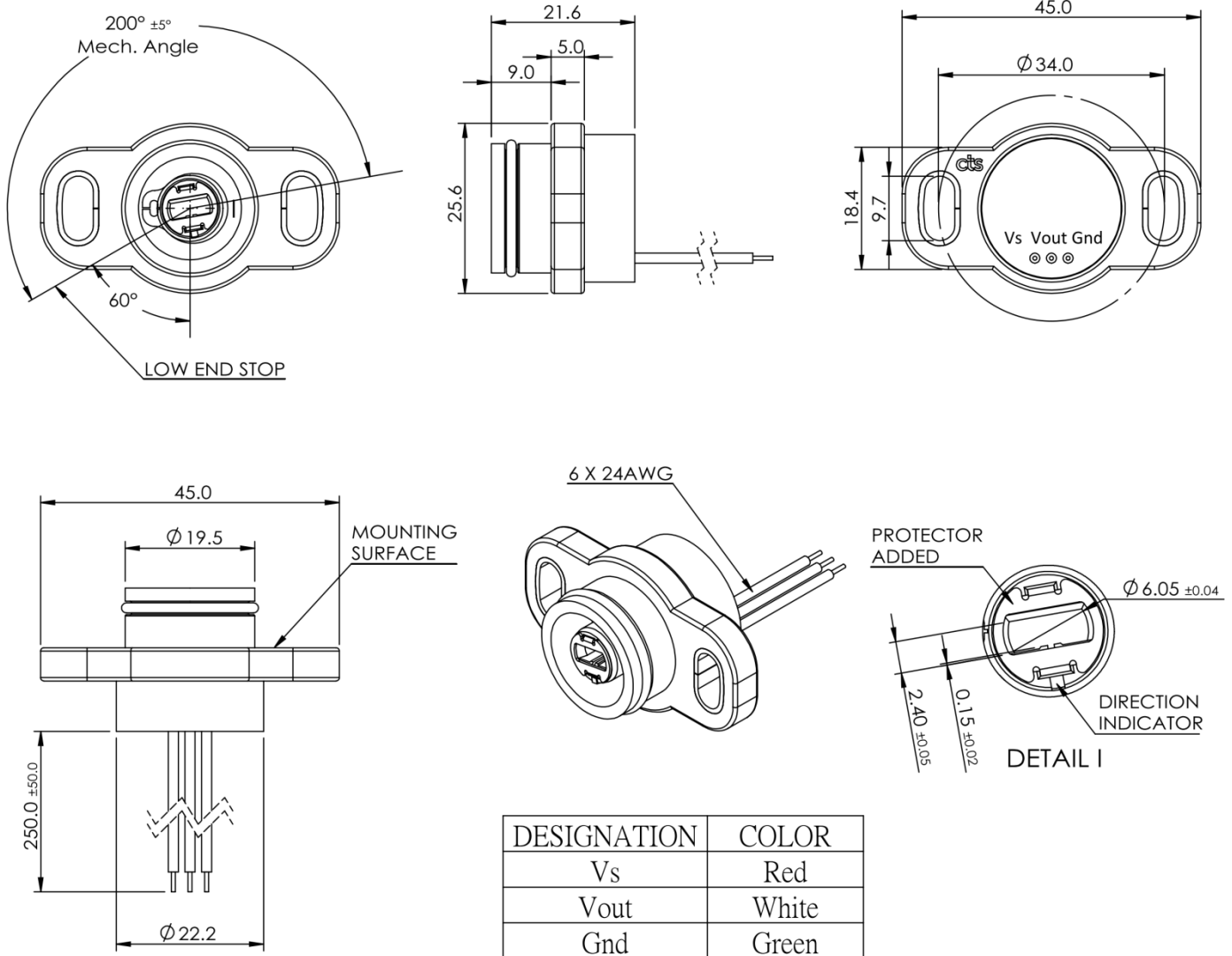
DESIGNATION	COLOR
Vs	Red
Vout	White
Gnd	Green

TOLERANCE UNLESS OTHERWISE SPECIFIED

.X (1 PLACE) : ± 0.3  
.XX (2 PLACE) : ± 0.13  
ANGLE : ± 3°

### Mechanical Specifications

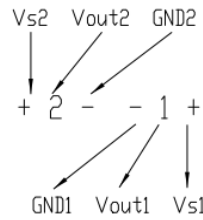
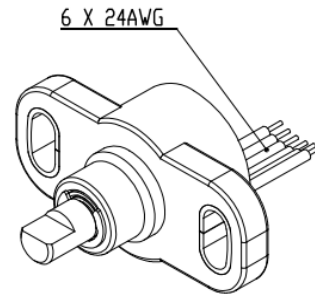
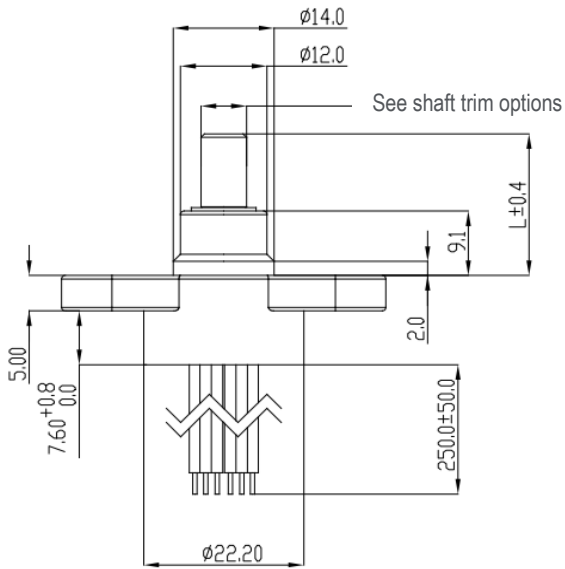
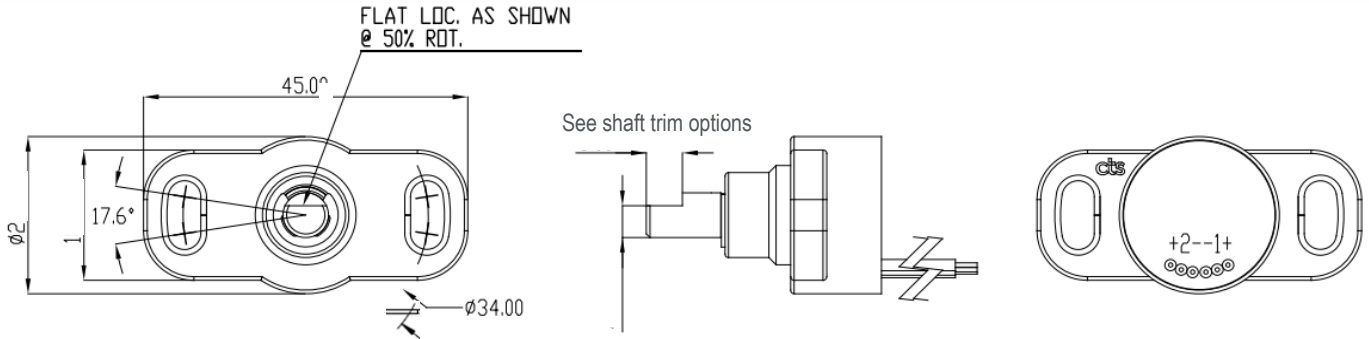
Series 285N Flange Mount, Single Output, Shaftless



TOLERANCE UNLESS OTHERWISE SPECIFIED  
 .X (1 PLACE) : ± 0.3  
 .XX (2 PLACE) : ± 0.13  
 ANGLE : ± 3°

### Mechanical Specification

Series 285S Flange Mount, Dual Output, with Shaft



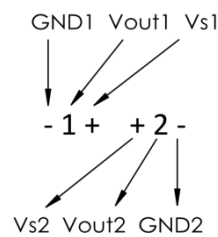
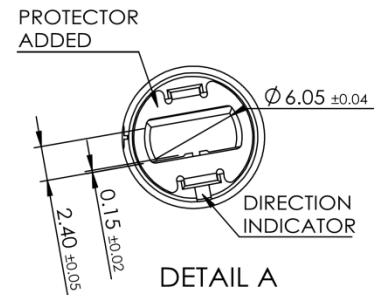
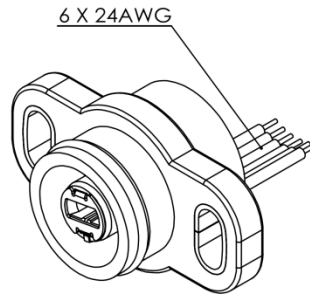
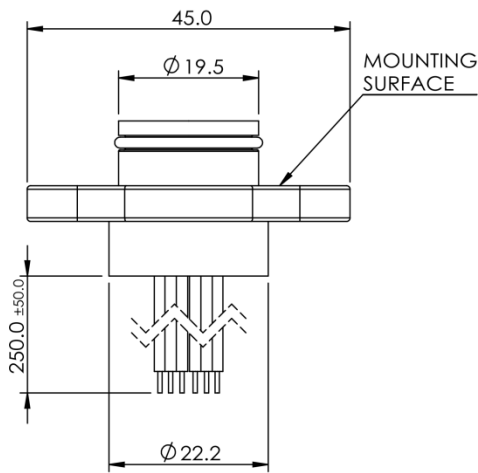
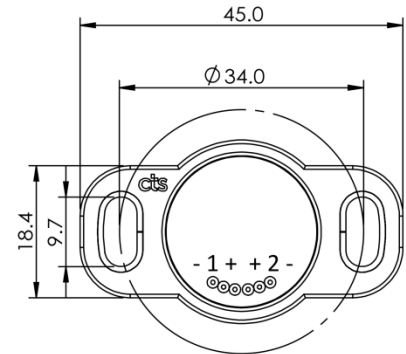
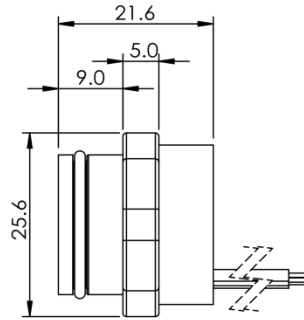
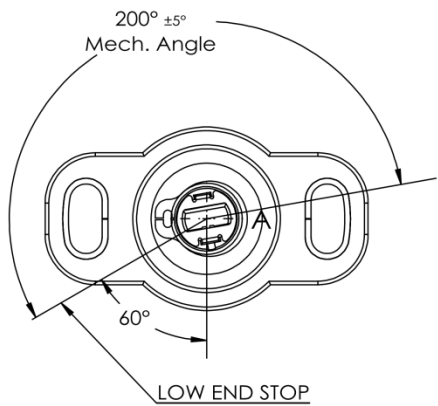
DESIGNATION	COLOR
Vs1	Red
Vout1	Blue
Gnd1	Black
Vs2	Yellow
Vout2	White
Gnd2	Brown

TOLERANCE UNLESS OTHERWISE SPECIFIED

.X (1 PLACE) : ± 0.3  
.XX (2 PLACE) : ± 0.13  
ANGLE : ± 3°

### Mechanical Specification

Series 285N Flange Mount, Dual Output, Shaftless

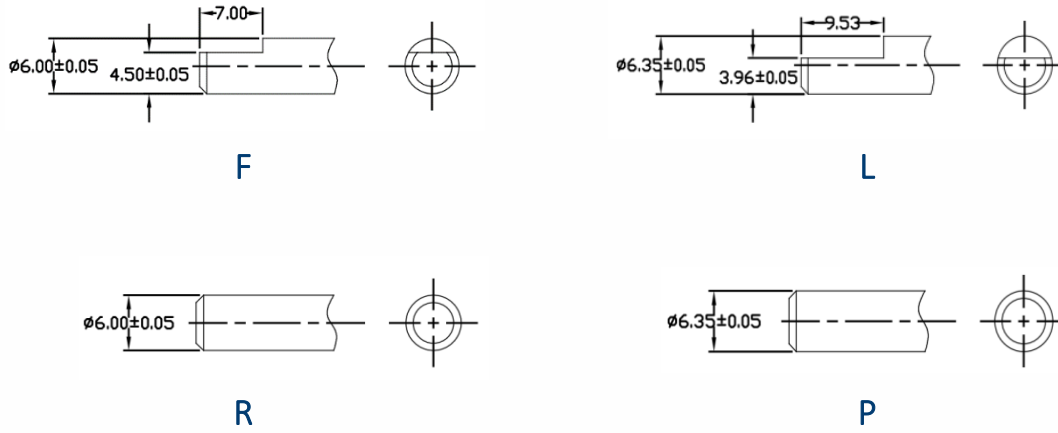


DESIGNATION	COLOR
Vs1	Red
Vout1	Blue
Gnd1	Black
Vs2	Yellow
Vout2	White
Gnd2	Brown

TOLERANCE UNLESS OTHERWISE SPECIFIED

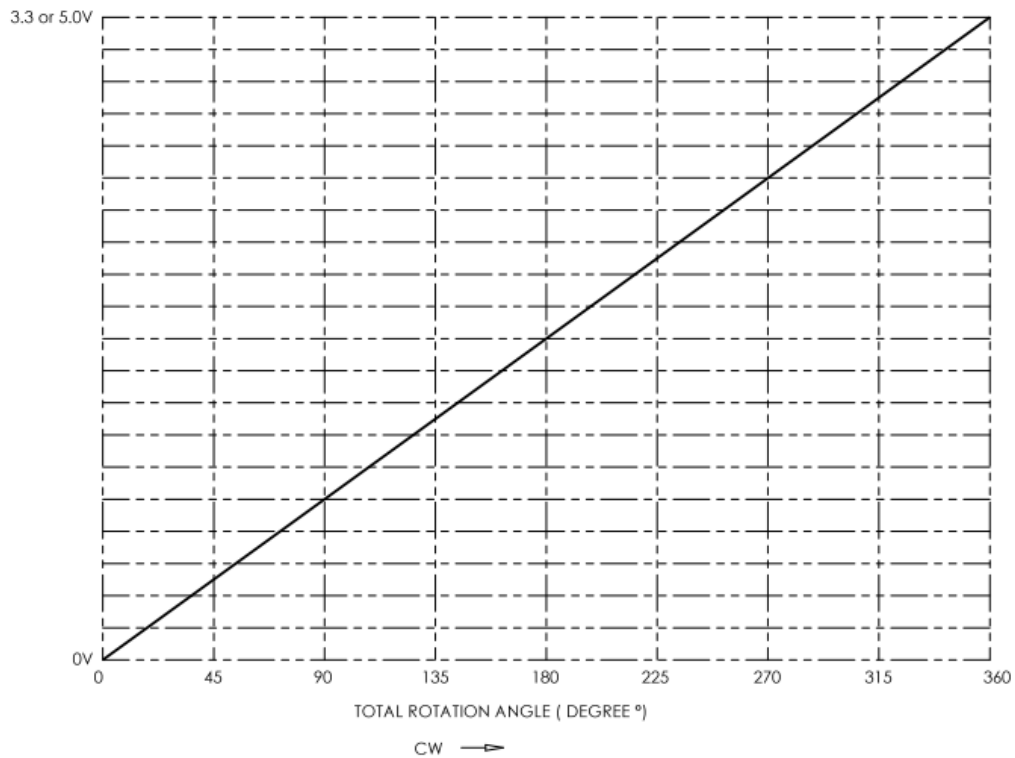
.X (1 PLACE) : ± 0.3  
.XX (2 PLACE) : ± 0.13  
ANGLE : ± 3°

### Shaft Trim Options

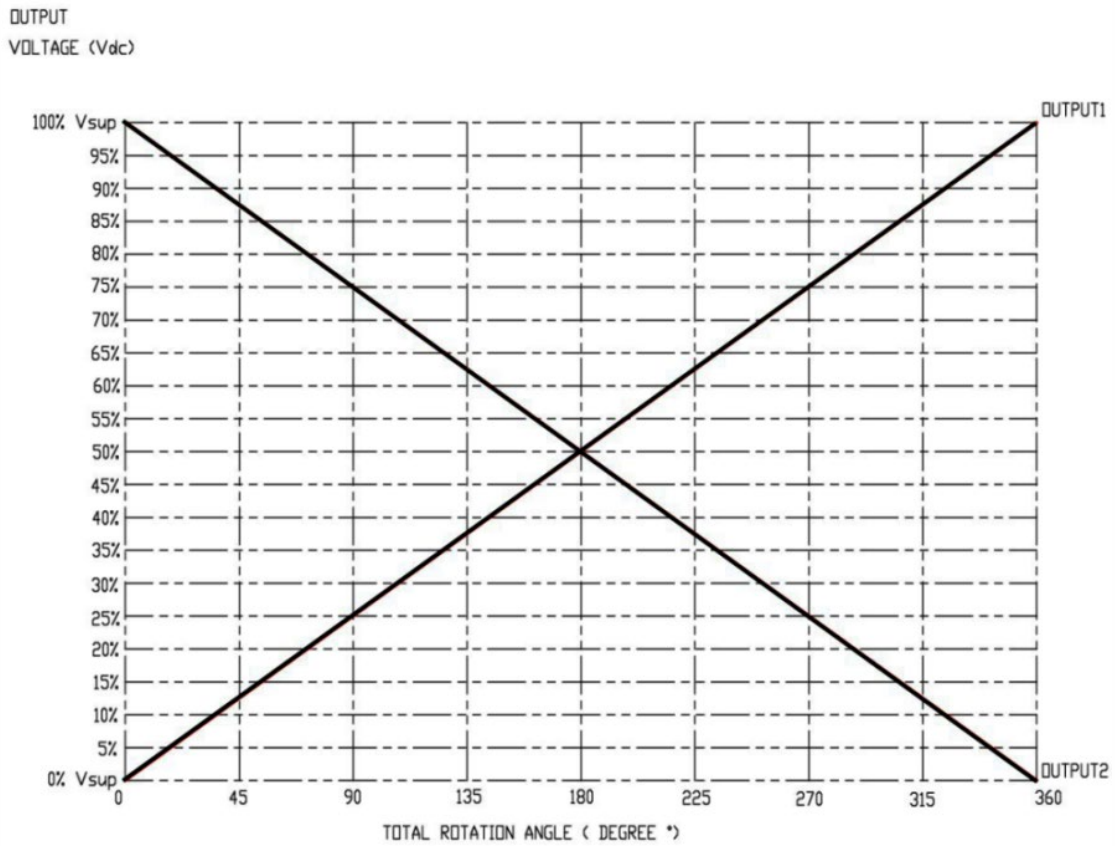


### Electrical Specification

Series 285 Flange Mount w/Shaft Single Output Graph



Series 285 Flange Mount Shaftless Dual Output Graph





# Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[CTS:](#)

[285SCFSCAB5A1](#) [285SCFSCAB5C1](#) [285SCFSAAB5A1](#) [285SCFSAAB5C1](#)