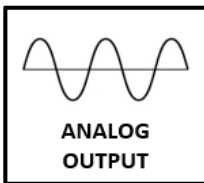


RCS 2300 Series

“Hall-effect Technology, Shaft with Lever or without Lever Actuator Type”



HALL-EFFECT
MEASUREMENT



ANALOG
OUTPUT



HIGH
ACCURACY



LONG SERVICE
LIFE



IP69K
PROTECTION

- Hall-effect measurement technology
- 12 bit resolution
- 8 different angle measurement range up to 360°
- 0.5-4.5VDC (ratiometric or non-ratiometric), 0-10VDC or 4-20mA analog output
- Inverted analog output option
- Shaft type with lever or without lever
- Industry standard AMP connector
- Resistant to electromagnetic fields
- Easy installation and use
- IP69K high protection class

RCS 2300 series angle sensors with high accuracy, compact design and durable construction; offers suitable solutions for angle measurement in industrial areas like valve control, HVAC damper control, irrigation equipment pivot control, crane and lifting systems, robotic systems, solar power, wind farms, auto parts, etc. They are suitable for working in harsh environmental conditions with their high IP69k protection class.

APPLICATIONS

- Valve control
- HVAC damper control
- Irrigation equipment pivot control
- Solar energy and photovoltaic systems
- Robotic systems
- Automatic guided systems
- Crane and lifting systems
- Wind farms

TECHNICAL FEATURES

ELECTRICAL SPECIFICATIONS

Electrical angle	50° (±25°), 60° (±30°), 70° (±35°), 90° (±45°), 120° (±60°), 180° (±90°), 270° (±135°), 360° (±180°)			
Output	0.5-4.5 VDC (ratiometric)	4.5-0.5 VDC (non-ratiometric)	0-10 VDC	4-20 mA
	4.5-0.5 VDC (ratiometric)	4.5-0.5 VDC (non-ratiometric)	10-0 VDC	20-4 mA
Supply voltage	5 VDC	9...32 VDC	15...32 VDC	9...32 VDC
Output load resistance	≥ 1KΩ	≥ 1KΩ	≥ 1KΩ	0...250 Ω
Supply current	30mA max.			
Response frequency	250 Hz			
Overvoltage protection	no	yes		
Reverse polarity protection	no	yes		
Short circuit protection	no	yes		
Resolution	12 bit			
Linearity	±%0.5			

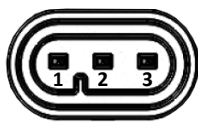
MECHANICAL SPECIFICATIONS

Mechanical angle		360°, continuous
Life		35M cycles
Material	Shaft	Stainless steel
	Sensor housing	Plastic
	Sensor bushing	Stainless steel
Mating connector		AMP superseal 282087-1
Mechanical stop		No
Mounting Screws	Sensor to mounting surface	Non-magnetic, stainless steel M5 screws and 10mm washers
	Lever to mounting surface	Non-magnetic, stainless steel M6 screws
Weight	Without lever	~48gr
	With lever	~52gr

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature	-40°C...+85°C
Protection Class	IP69K
Media compatibility	Heavy transportation fluids

ELECTRICAL CONNECTIONS

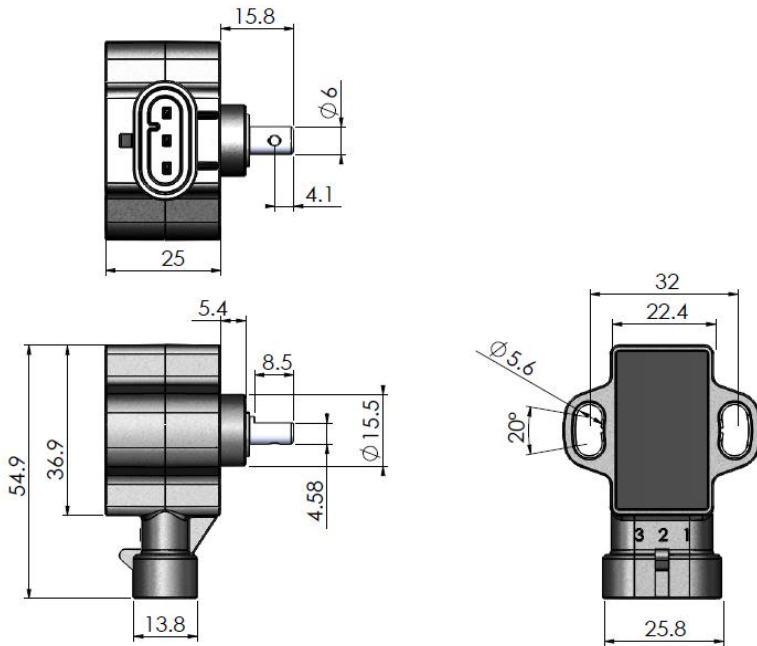
S160 European / Pin Configuration	
	
SIGNAL	PIN NO
GND	1
+V	2
Output Signal	3

S161 North American / Pin Configuration	
	
SIGNAL	PIN NO
+V	1
GND	2
Output Signal	3

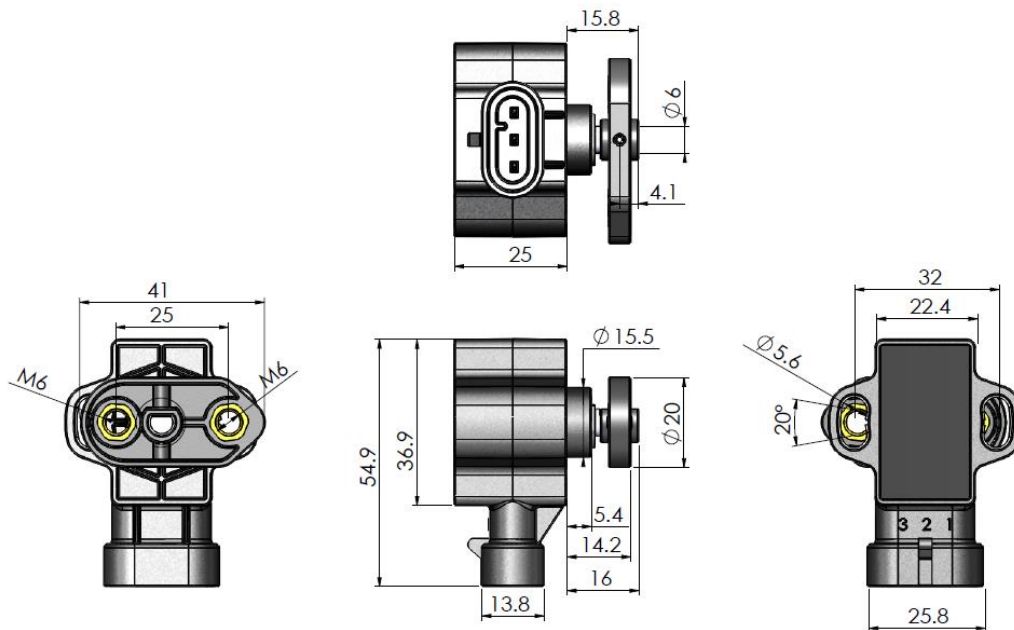
MECHANICAL DIMENSIONS AND OUTPUT DIAGRAM

MECHANICAL DIMENSIONS (mm)

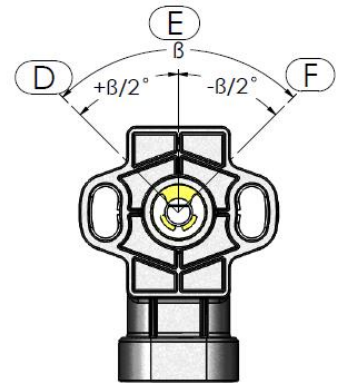
➤ Sensor Without Lever



➤ Sensor With Lever



OUTPUT DIAGRAM



Standard Output

D	Left output : 0.5VDC, 0VDC, 4mA
E	Zero reference
F	Right output : 4.5VDC, 10VDC, 20mA

Inverted Output

D	Left output: 4.5VDC, 10VDC, 20mA
E	Zero reference
F	Right output: 0.5VDC, 0VDC, 4mA

OUTPUT SIGNAL CHARACTERISTICS

Angle	Output	Standard Output	Inverted Output																																																
50° (±25°) 60° (±30°) 70° (±35°) 90° (±45°) 120° (±60°) 180° (±90°) 270° (±135°)	0.5-4.5V	Output (Vdc) → Angle (°) <table><tr><td>D</td><td>E</td><td>F</td></tr><tr><td>-25</td><td>0</td><td>+25</td></tr><tr><td>-30</td><td>0</td><td>+30</td></tr><tr><td>-35</td><td>0</td><td>+35</td></tr><tr><td>-45</td><td>0</td><td>+45</td></tr><tr><td>-60</td><td>0</td><td>+60</td></tr><tr><td>-90</td><td>0</td><td>+90</td></tr><tr><td>-135</td><td>0</td><td>+135</td></tr></table>	D	E	F	-25	0	+25	-30	0	+30	-35	0	+35	-45	0	+45	-60	0	+60	-90	0	+90	-135	0	+135	Output (Vdc) → Angle (°) <table><tr><td>D</td><td>E</td><td>F</td></tr><tr><td>-25</td><td>0</td><td>+25</td></tr><tr><td>-30</td><td>0</td><td>+30</td></tr><tr><td>-35</td><td>0</td><td>+35</td></tr><tr><td>-45</td><td>0</td><td>+45</td></tr><tr><td>-60</td><td>0</td><td>+60</td></tr><tr><td>-90</td><td>0</td><td>+90</td></tr><tr><td>-135</td><td>0</td><td>+135</td></tr></table>	D	E	F	-25	0	+25	-30	0	+30	-35	0	+35	-45	0	+45	-60	0	+60	-90	0	+90	-135	0	+135
D		E	F																																																
-25	0	+25																																																	
-30	0	+30																																																	
-35	0	+35																																																	
-45	0	+45																																																	
-60	0	+60																																																	
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-135	0	+135																																																	
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360° (±180°)	Output (Vdc) → Angle (°) <table><tr><td>D</td><td>E</td><td>F</td></tr><tr><td>-180</td><td>0</td><td>+180</td></tr></table>	D	E	F	-180	0	+180	Output (Vdc) → Angle (°) <table><tr><td>D</td><td>E</td><td>F</td></tr><tr><td>-180</td><td>0</td><td>+180</td></tr></table>	D	E	F	-180	0	+180																																					
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50° (±25°) 60° (±30°) 70° (±35°) 90° (±45°) 120° (±60°) 180° (±90°) 270° (±135°)	0-10V	Output (Vdc) → Angle (°) <table><tr><td>D</td><td>E</td><td>F</td></tr><tr><td>-25</td><td>0</td><td>+25</td></tr><tr><td>-30</td><td>0</td><td>+30</td></tr><tr><td>-35</td><td>0</td><td>+35</td></tr><tr><td>-45</td><td>0</td><td>+45</td></tr><tr><td>-60</td><td>0</td><td>+60</td></tr><tr><td>-90</td><td>0</td><td>+90</td></tr><tr><td>-135</td><td>0</td><td>+135</td></tr></table>	D	E	F	-25	0	+25	-30	0	+30	-35	0	+35	-45	0	+45	-60	0	+60	-90	0	+90	-135	0	+135	Output (Vdc) → Angle (°) <table><tr><td>D</td><td>E</td><td>F</td></tr><tr><td>-25</td><td>0</td><td>+25</td></tr><tr><td>-30</td><td>0</td><td>+30</td></tr><tr><td>-35</td><td>0</td><td>+35</td></tr><tr><td>-45</td><td>0</td><td>+45</td></tr><tr><td>-60</td><td>0</td><td>+60</td></tr><tr><td>-90</td><td>0</td><td>+90</td></tr><tr><td>-135</td><td>0</td><td>+135</td></tr></table>	D	E	F	-25	0	+25	-30	0	+30	-35	0	+35	-45	0	+45	-60	0	+60	-90	0	+90	-135	0	+135
D		E	F																																																
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360° (±180°)	Output (Vdc) → Angle (°) <table><tr><td>D</td><td>E</td><td>F</td></tr><tr><td>-180</td><td>0</td><td>+180</td></tr></table>	D	E	F	-180	0	+180	Output (Vdc) → Angle (°) <table><tr><td>D</td><td>E</td><td>F</td></tr><tr><td>-180</td><td>0</td><td>+180</td></tr></table>	D	E	F	-180	0	+180																																					
D	E	F																																																	
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Angle	Output	Standard Output	Inverted Output
50° (±25°) 60° (±30°) 70° (±35°) 90° (±45°) 120° (±60°) 180° (±90°) 270° (±135°)	4-20mA	Output (mA) Angle (°) D E F -25 0 +25 -30 0 +30 -35 0 +35 -45 0 +45 -60 0 +60 -90 0 +90 -135 0 +135	Output (mA) Angle (°) D E F -25 0 +25 -30 0 +30 -35 0 +35 -45 0 +45 -60 0 +60 -90 0 +90 -135 0 +135
360° (±180°)		Output (mA) Angle (°) -180 0 +180	Output (mA) Angle (°) -180 0 +180

ORDER CODE

Model	Supply Voltage ⁽¹⁾	Pin Configuration
RCS 2300 - XXX - XX - XXX - XX - X	TTL : For 0.5-4.5V ratiometric output: 5VDC PP : For 4-20mA output: 9...32VDC For 0-10V output: 15...32VDC For 0.5-4.5V output: 9...32VDC	S160 : European P1: GND P2: +V P3: Output S161 : North American P1: +V P2: GND P3: Output
Angle Range 050 : 50° (±25°) 060 : 60° (±30°) 070 : 60° (±35°) 090 : 90° (±45°) 120 : 120° (±60°) 180 : 180° (±90°) 270 : 270° (±135°) 360 : 360° (±180°)	Output Signal A : 4mA (left) - 20mA (right) V : 0V (left) - 10V (right) V3 : 0.5V (left) - 4.5V (right) V8 : 0.5V (left) - 4.5V (right) ratiometric NA : 20mA (left) - 4mA (right) NV : 10V (left) - 0 V(right) NV3 : 4.5V (left) - 0.5V (right) NV8 : 4.5V (left) - 0.5V (right) ratiometric	Actuator Type S : Shaft without lever K : Shaft with lever

(1) Supply Voltage should be selected as;

PP when the output signals are 4-20mA (A) / 20-4mA (NA), 0-10V (V) / 10-0V (NV) or 0.5-4.5V (V3) / 4.5-0.5V (NV3),
 TTL when the output signals are 0.5-4.5V ratiometric (V8) / 4.5-0.5V ratiometric (NV8).