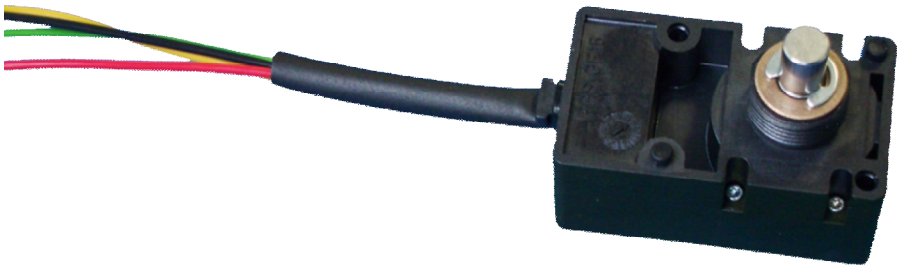
Rotational Analog Sensor – RAS



DTCs Rotational Analog Sensor (RAS) provides the functionality of classical potentiometers but with the advantage of contactless sensing, thereby increasing product life expectation and reliability.

The unique sensing design has been developed to provide the reliability required in demanding environmental conditions such as armrest controls and dashboards, in heavy duty and harsh industrial and off-road applications.

In addition the RAS can be reverse mounted and used as an angle sensor.

Electrical Data		
Supply Ratings	Voltage range DC current	9V … 30V or 5.0 V ± 5% 50 mA at 24V
Voltage Output	Output 1 Output 2*	0.5V … 4.5V at 5Vcc 4.5V … 0.5V at 5Vcc Output proportional to Vcc
Total error		< 10%
Output current		1 mA max.
Other electrical Characteristics	EMI	> 100 V/m
Mechanical Data		
Life		> 5 million cycles
Operating temperature - Storage - Working		 - 40°C to 85°C - 35°C to 70°C
Protection Level		IP 65
RAS deflection angle		up to 360°

** for redundant version*

Main Features

- Contactless sensing – Hall effect
- Life greater than 5 million cycles
- Definable working angle
- Precise tactile feel (optional)
- Dual mountable:
  - contactless potentiometer
  - angle sensor
- One channel - optional second channel for redundancy
- Integrated temperature compensation
- Short circuit protection

Custom modifications

- Angle of operation
- Force of rotation
- Length of axis
- Rotational feel (smooth or ridged)
- Redundancy

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Rotational Analog Sensor

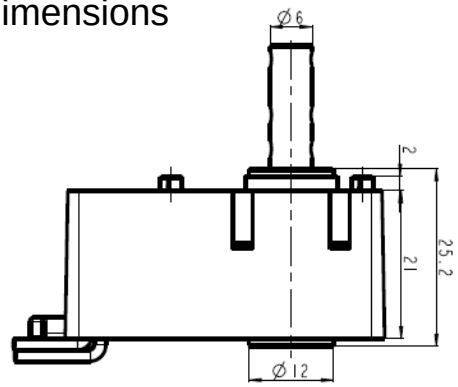
Order Code

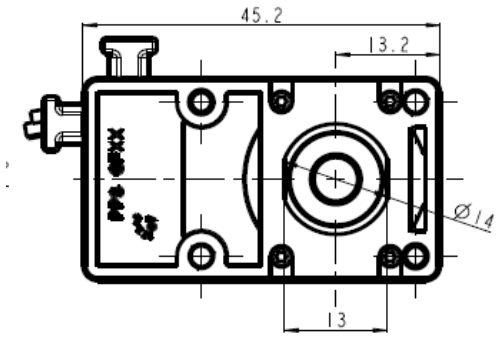
Ordering code		1	2	3	4	5	6	7	8	9	10
	Example	RAS	P	160	xN	40.4	S	1	V	2	00
1 Type	RAS = rotational analog sensor										
2 Version	P = potentiometer AS = angle sensor										
3 Deflection Angle	160 = standard 160° x = customised x°										
4 Operation Force	xN = force of rotation depends on actuator										
5 Length of Axis	40.4 = standard 40.4 mmm length of axis Ax = customised length of axis x mm										
6 Rotational Feel	S = smooth R = ridged										
7 Electrical supply	0 = voltage 9 ... 16 V 1 = 5 V ± 5%										
8 Output	V = voltage										
9 Sensors	1 = 1 sensor 2 = 2 sensors (for redundancy)										
10 Output Voltage Code	00 = output 1 / 0.5V ... 4.5V; 1mA * output 2 / 4.5V ... 0.5V; 1mA * 02 = output 1 / 0.5V ... 4.5V; 1mA * 03 = output 1 / 4.5V ... 0.5V; 1mA *										

* ratiometric to 5V electrial supply

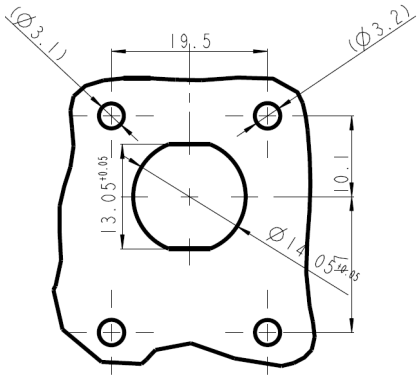
Version: Angle Sensor – Mounting (AS)

Install dimensions





Drilling template



Pin Assignment

standard

PIN	Signal	Color
1	VCC	BN
2	Out 1	WH
3	GND	GN

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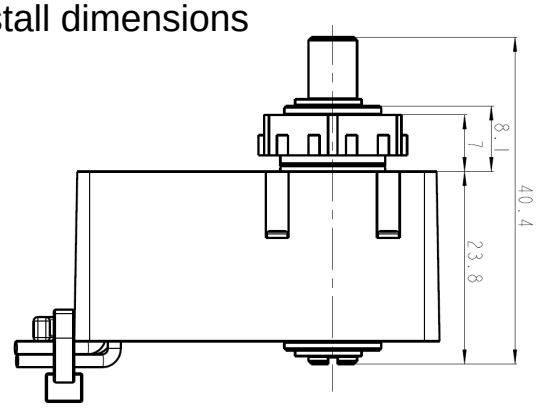
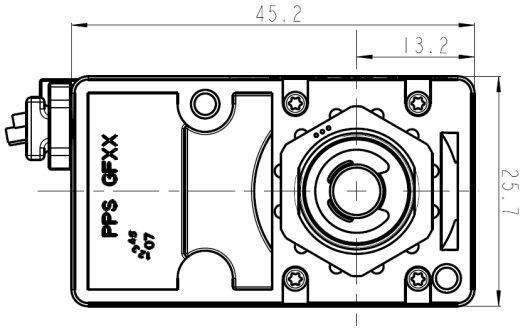
Rotational Analog Sensor

Version: Potentiometer – Mounting (P)

Install dimensions





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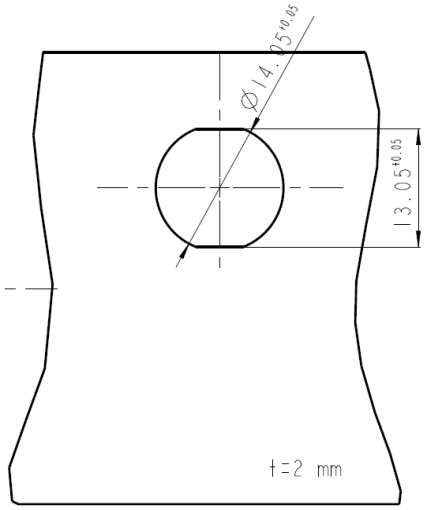
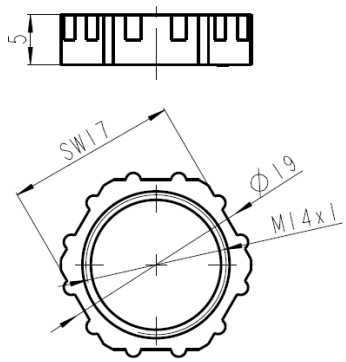


Screw nut



Pin Assignment

redundant

PIN	Signal	Color
1	VCC	RD
2	Out 1	GN
3	Out 2	YE
4	GND	BK

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Rotational Analog Sensor

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France
2 Boulevard Michael Faraday
Arlington Square, Batiment B
Serris - F77716 Marne La Vallee Cedex 4
France
phone: + 33 160 24 51 51
fax: + 33 3 84 69 08 97
Mail: sales.dtc.europe@coactive-tech.com

Germany
Holzhauser Strasse 26-32
D-13509 Berlin
Germany
phone: + 49 30 43 999 0
fax: + 49 30 43 999 203
Mail: sales.dtc.europe@coactive-tech.com

Hong Kong
Office:1007-8
10/F, Harcourt House
39 Gloucester Road
Wanchai, Hong Kong
phone: + 852 3713 5288
fax: + 852 2751 9926
Mail: sales.dtc.asia@coactive-tech.com

USA
5288 Valley Industrial Blvd. S
Shakopee, MN 55379
USA
phone: + 1 952 403 7400
fax: + 1 952 233 9707
Mail: sales.dtc.americas@coactive-tech.com