

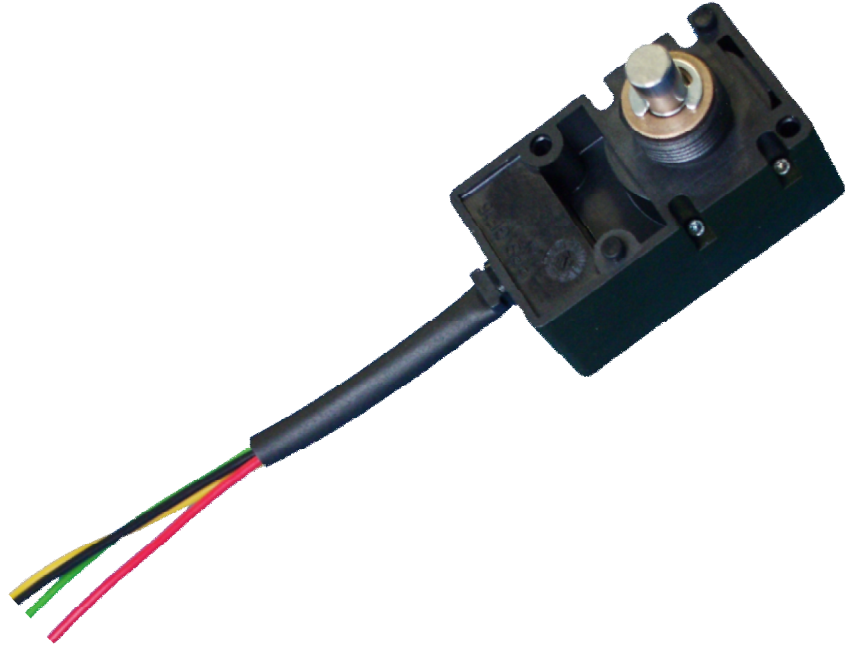
RAS - Rotational Analog Sensor



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.



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

Electrical Data

Supply Ratings	Voltage range DC current	9V ... 30V or 5.0 V \pm 5% 50 mA at 24V
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Voltage Output	Output 1	0.5V ... 4.5V at 5Vcc
	Output 2*	4.5V ... 0.5V at 5Vcc Output proportional to Vcc

Pull-down resistor	Recommendation	4.7k Ω
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Total error		< 10%
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Output current		1 mA max.
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Other electrical Characteristics	EMI	> 100 V/m
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Mechanical Data

Life	> 5 million cycles
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Operating temperature	
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- Storage	- 40°C to 85°C
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- Working	- 35°C to 70°C
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Protection Level	IP 65
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RAS deflection angle	up to 360°
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* for redundant version

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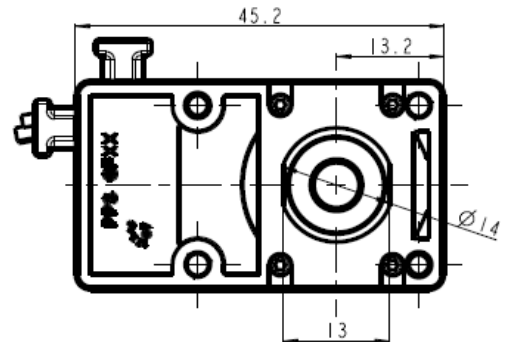
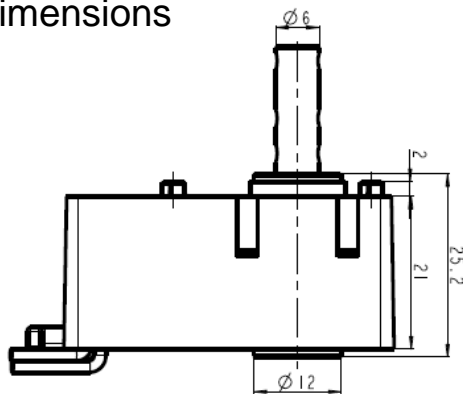
Order Code

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 mm 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 *									

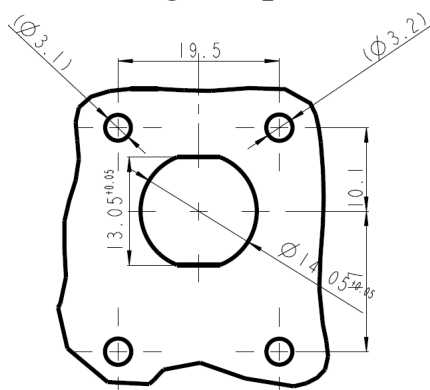
* ratiometric to 5V electrical supply

Version: Angle Sensor – Mounting (AS)

Install dimensions



Drilling template



Pin Assignment standard

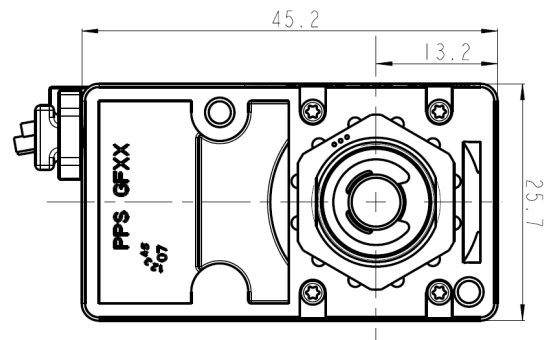
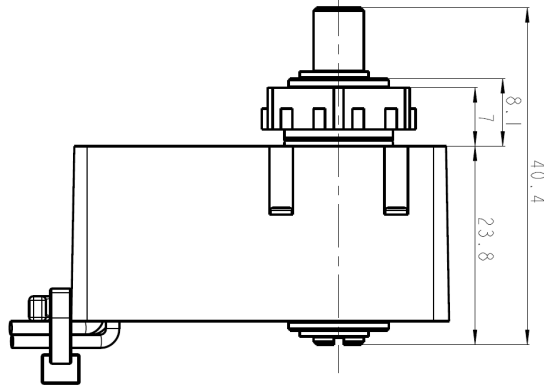
PIN	Signal	Color
1	VCC	BN
2	Out 1	WH
3	GND	GN

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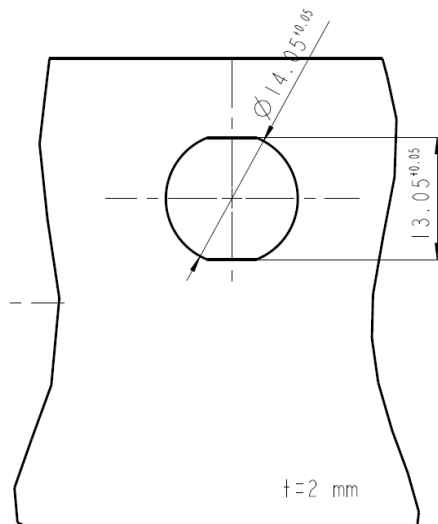


Version: Potentiometer – Mounting (P)

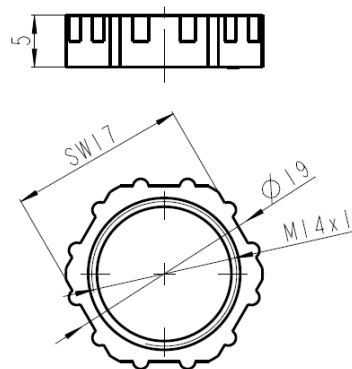
Install dimensions



Drilling template



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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