

POSITILT®
PTAM20S
MEMS Analog Inclinometer, 1 Axis ±60°

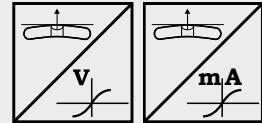


PRELIMINARY



Analog inclinometer with 1 axis in MEMS technology

- Measurement range ±60°
- Contact-free, wear free, high resolution
- High shock resistance
- Protection class IP60
- Analog output sine



Specifications	Output	U2S	Voltage 0.5 ... 10 V (sin(θ))
		U6S	
	I1S		Current 4 ... 20 mA, 3 wire (sin(θ))
Excitation voltage	U2S		18 ... 36 V DC
	U6S		5 V DC ±5 %
	I1S		18 ... 36 V DC
Power consumption typical, without load			3 mA
Measurement range			±15, ±30, ±45, ±60°
Resolution			0.05 °
Deviation from the sine characteristic			1% f.s.
Settling time			1 s / 90 %
Protection class			IP60
Connection			Wire 3 x 0.5 mm ²
Stability (temperature)			±100 x 10 ⁻⁶ / °C f.s.
Environmental			
Temperature			0 ... +60 °C

Order code PTAM20S



- Model**
- Number of axes**
1
- Measurement range [in °]**
15 ... 60 = ±15, ±30, ±45, ±60
- Output**
 U2S = 0.5 ... 10 V, sine output
 U6S = 0.5 ... 4.5 V, ratiometric sine output
 I1S = 4 ... 20 mA, sine output
- Characteristic**
 CW = Increasing signal for CW inclination
- Output delay 0 ... 90 %**
 T1.0 = 1 s
- Connection**
 A300 = Wire, length 300 mm, stripped at free end

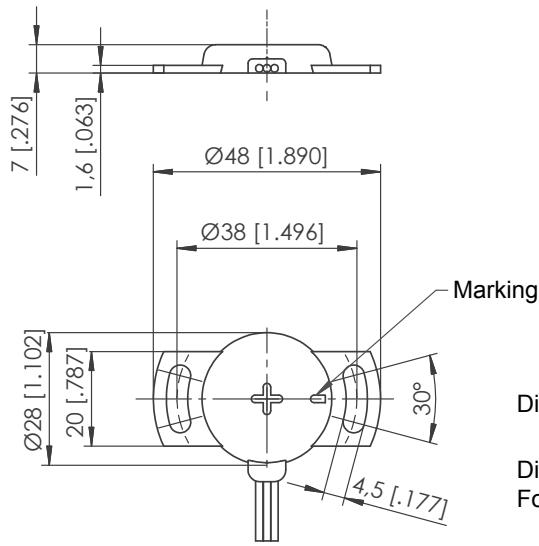
Order example: PTAM20S - 1 - 45 - U2S - CW - T1.0 - A300

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MEMS Analog Inclinometer, 1 Axis ±60°



PRELIMINARY

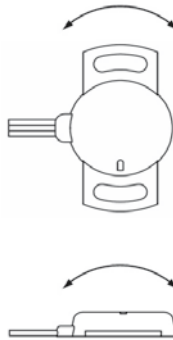
Outline drawing
PTAM20S



Dimensions in mm [inch]

Dimensions informative only.
For guaranteed dimensions consult factory.

Position of the
inclination axis



POSITILT®
PTAM20S
MEMS Analog Inclinometer, 2 Axes ±60°

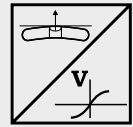


PRELIMINARY



Analog inclinometer with 2 axes in MEMS technology

- Measurement range ±60°
- Contact-free, wear free, high resolution
- High shock resistance
- Protection class IP60
- Analog output sine
- Supply voltage 5 V



Specifications	Output	U6S	Voltage 0.5 ... 4.5 V ratiometric (sin(θ))
	Excitation voltage		5 V DC ±5%
	Power consumption typical, without load		3 mA
	Measurement range		2 x ±15, ±30, ±45, ±60°
	Resolution		0.05°
	Linearity		1 % f.s.
	Settling time		1 s / 90 %
	Protection class		IP60
	Connection		Wire 4 x 0.5 mm ²
	Stability (temperature)		±100 x 10 ⁻⁶ / °C f.s.
Environmental			
Temperature		0 ... +60 °C	

Order code PTAM20S

PTAM20S - [] - [] - [] - CW - T1.0 - A300

- Model**
- Number of axes**
2
- Measurement range [in °]**
15 ... 60 = ±15, ±30, ±45, ±60
- Output**
U6S = 0.5 ... 4.5 V, ratiometric sine output
- Characteristic**
CW = Increasing signal for CW inclination
- Output delay 0 ... 90 %**
T1.0 = 1 s
- Connection**
A300 = Wire, length 300 mm, stripped at free end

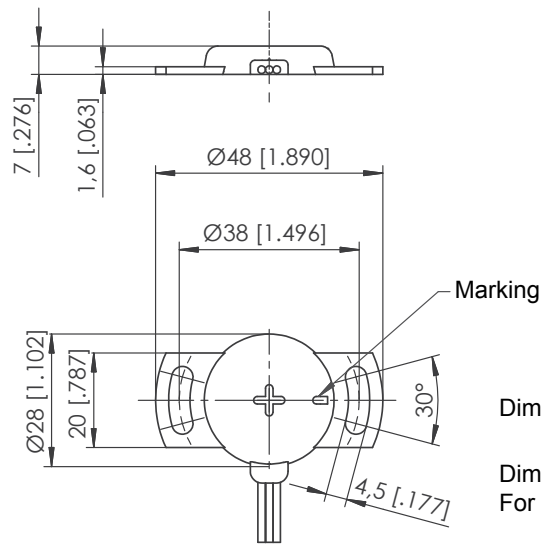
Order example: PTAM20S - 2 - 30 - U6S - CW - T1.0 - A300

POSITILT®
PTAM20S
MEMS Analog Inclinometer, 2 Axes ±60°



PRELIMINARY

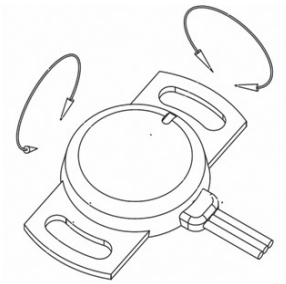
Outline drawing
PTAM20



Dimensions in mm [inch]

Dimensions informative only.
For guaranteed dimensions consult factory.

Position of the
inclination axes



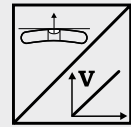
POSITILT®
PTAM20L
MEMS Analog Inclinometer, 1 Axis ±180°

PRELIMINARY



Analog inclinometer with 1 axis in MEMS technology

- Measurement range ±180°
- Contact-free, wear free, high resolution
- High shock resistance
- Protection class IP60
- Analog output linear
- Supply voltage 5 V



Specifications	Output	U6L	Voltage 0.5 ... 4.5 V (linearized)
	Excitation voltage		5 V DC ±5%
	Power consumption typical, without load		20 mA
	Measurement range		±15 ... ±180°
	Resolution		0.05°
	Linearity		±0.5°
	Settling time		0.1 ... 10 s / 90 %, configurable
	Protection class		IP60
	Connection		Wire 3 x 0.5 mm ²
	Stability (temperature)		±100 x 10 ⁻⁶ / °C f.s.
Environmental			
	Temperature		0 ... +60 °C

Order code PTAM20L

PTAM20L - 1 - [] - U6L - [] - [] - A300

Model

Number of axes

1

Measurement range [in °]

15 ... 180 = ±15 ... ±180 in 15° increments

Output

U6L = 0.5 ... 4.5 V, linear output

Characteristic

CW = Increasing signal for CW inclination

CCW = Increasing signal for CCW inclination

Output delay 0 ... 90 %

Tx.x = 0.1 s ... 10 s

Connection

A300 = Wire, length 300 mm, stripped at free end

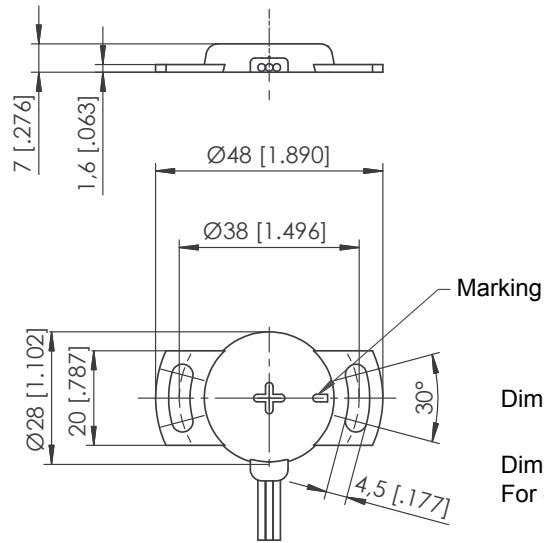
Order example: PTAM20L - 1 - 90 - U6L - CCW - T1.0 - A300

POSITILT®
PTAM20L
MEMS Analog Inclinometer, 1 Axis ±180°



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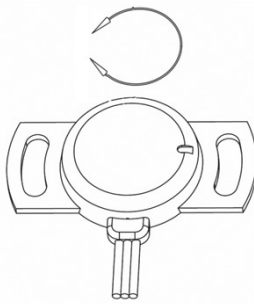
Outline drawing
PTAM20

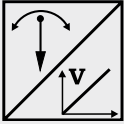
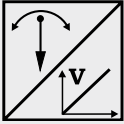
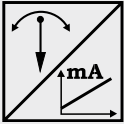
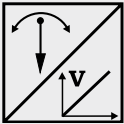


Dimensions in mm [inch]

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Position of the
inclination axis



<p>U2L / U2S Voltage Output 0.5 ... 10 V</p> 	Excitation voltage	18 ... 36 V DC
	Excitation current	40 mA max.
	Output voltage	0.5 ... 10 V DC
	Output current	2 mA max.
	Measuring rate	1 kHz standard
	Stability (temperature)	$\pm 50 \times 10^{-6} / ^\circ\text{C}$ f.s. (typ.) for $\pm 45^\circ \dots \pm 180^\circ$ $\pm 100 \times 10^{-6} / ^\circ\text{C}$ f.s. (typ.) for $< 45^\circ$
	Operating temperature	-40 ... +85 °C
	Protection	Reverse polarity, short circuit
	EMC	According to EN 61326-1:2006-10
	<p>U6L / U6S Voltage Output 0.5 ... 4.5 V abs. (U6L) 10 ... 90 % ratiometric</p> 	Excitation voltage
Excitation current		40 mA max.
Output voltage		0.5 ... 4.5 V DC
Output current		2 mA max.
Measuring rate		1 kHz standard
Stability (temperature)		$\pm 50 \times 10^{-6} / ^\circ\text{C}$ f.s. (typ.) for $\pm 45^\circ \dots \pm 180^\circ$ $\pm 100 \times 10^{-6} / ^\circ\text{C}$ f.s. (typ.) for $< 45^\circ$
Operating temperature		-40 ... +85 °C (+105/125° as option)
Protection		Reverse polarity, short circuit
EMC		According to EN 61326-1:2006-10
<p>I1L / I1S Current Output 4 ... 20 mA, 3 wire</p> 		Excitation voltage
	Excitation current	60 mA max.
	Load resistor	500 Ω max.
	Output current	4 ... 20 mA
	Measuring rate	1 kHz standard
	Stability (temperature)	$\pm 50 \times 10^{-6} / ^\circ\text{C}$ f.s. (typ.) for $\pm 45^\circ \dots \pm 180^\circ$ $\pm 100 \times 10^{-6} / ^\circ\text{C}$ f.s. (typ.) for $< 45^\circ$
	Operating temperature	-40 ... +85 °C
	Protection	Reverse polarity, short circuit
	EMC	According to EN 61326-1:2006-10
	<p>U8L Voltage Output 0.5 ... 4.5 V</p> 	Excitation voltage
Excitation current		40 mA max.
Output voltage		0.5 ... 4.5 V DC
Output current		2 mA max.
Measuring rate		1 kHz standard
Stability (temperature)		$\pm 50 \times 10^{-6} / ^\circ\text{C}$ f.s. (typ.) for $\pm 45^\circ \dots \pm 180^\circ$ $\pm 100 \times 10^{-6} / ^\circ\text{C}$ f.s. (typ.) for $< 90^\circ$
Operating temperature		-40 ... +85 °C
Protection		Reverse polarity, short circuit
EMC		According to EN 61326-1:2006-10