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SCA114T and SCA124T Series

Stand Alone Inclinometer

Current Output

FEATURES

- $\pm 30^\circ$ or $\pm 90^\circ$ for inclination measurement
- 4...20mA current loop output
- 10...36V supply voltage
- High repeatability/stability 0,03°
- >20 000g shock resistant sensing element
- IP67 housing
- Standard M12 sensor connector
- Reverse polarity protected

BENEFITS

- Excellent long term stability
- Outstanding shock durability
- Harsh environment robustness

APPLICATIONS

- Platform tilt measurement
- Equipment and instrument condition monitoring
- Inclination based position measurement
- Rotational orientation measurement (dual axis)

For customised product please contact VTI Technologies

ELECTRICAL CHARACTERISTICS

Parameter	Condition	Min.	Typ	Max.	Units
Supply voltage	Non stabilized	10		36	V
Output	Current output	4		20	mA
Output ¹	Voltage output	1		5	V
Output ²	Voltage output	0		10	V

PERFORMANCE CHARACTERISTICS

Parameter	Condition	SCA114T-D02FA	SCA114T-D04FA	SCA124T-D02FA	SCA124T-D04FA	Units
Measuring range (FS)		± 30	± 90	± 30	± 90	°
Measuring direction	(see "Directions")	X	X	X-Y	X-Y	
Repeatability ³	@ 0° position	<0.03	<0.03	<0.03	<0.03	°
Resolution / Noise	DC ... 10 Hz	0.003	0.003	0.003	0.003	°
Offset ^{4,5}	0° position	12	12	12	12	mA
Offset accuracy ⁵	Deviation @ 0°	0.08	0.25	0.08	0.25	°
Sensitivity ³		± 8	± 8	± 8	± 8	mA/FS
Cross-axis sensitivity ⁶		4	4	4	4	%
Frequency response	LP (-3 dB point) ⁷	1	1	1	1	Hz
Operating temperature		-40 ... +85	-40 ... +85	-40 ... +85	-40 ... +85	°C
Long term stability	500 h @ 23°C	0.03	0.03	0.03	0.03	°
Housing	Closed connector	IP67	IP67	IP67	IP67	

Note 1. Output current measured over 250Ω load resistor.

Note 2. Output current measured over 500Ω load resistor.

Note 3. Output function trigonometrical (sine curve); $\varphi = \arcsin(I_{out})$

Note 4. Offset specified as Output @ 0°.

Note 5. Mounting accuracy depending. Position should be calibrated. See measuring positions.

Note 6. The cross-axis sensitivity determines how much acceleration or inclination, perpendicular to the measuring axis, couples to the output. The total cross-axis sensitivity is the geometric sum of the sensitivities of the two axes which are perpendicular to the measuring axis.

Note 7. The output has true DC (0Hz) response.

MEASURING DIRECTIONS

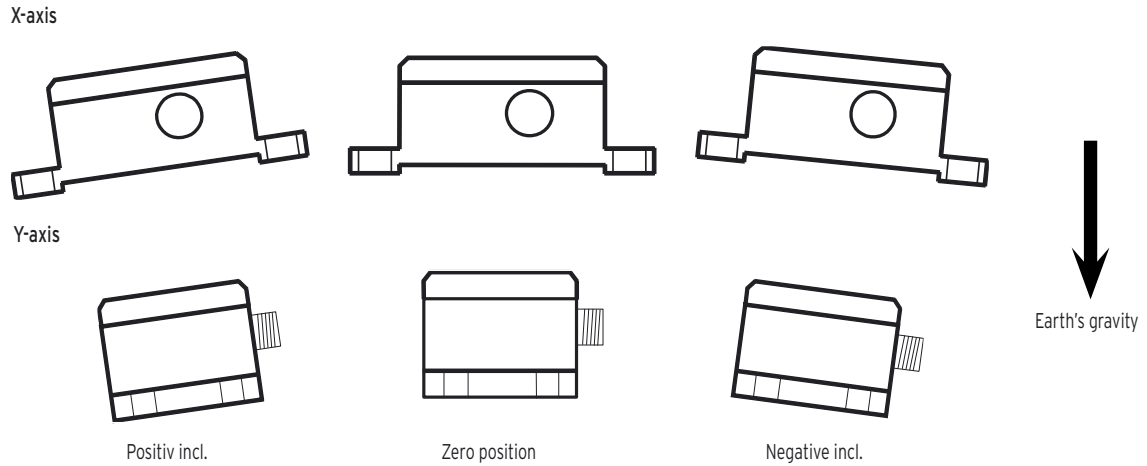


Figure 1. Positionst

Notes:

- It is important that the part is parallel to the mounting plane, and that the output equals the zero value when sensor is in zero position.
- Please note the picture above which provides information on how the output of the accelerometer behaves in different circumstances when assembled. Please also note that you can rotate the part around the measuring plane for optimum mounting location.

ELECTRICAL CONNECTION

Pin#	Function
1	X-axis 4...20mA
2	X-axis 4...20mA
3	Y-axis 4...20mA
4	Y-axis 4...20mA
5	Shield (GND)

MECHANICAL SPECIFICATION

Total weight: approx. 200 grams
 Protection class: IP67
 Housing: Anodized aluminium

Mounting

The sensor module is to be mounted with 3 screws, dimension M6.
 Mounting torque 10 ± 2 Nm.

SENSOR DIMENSIONS

Dimensions in mm.

