

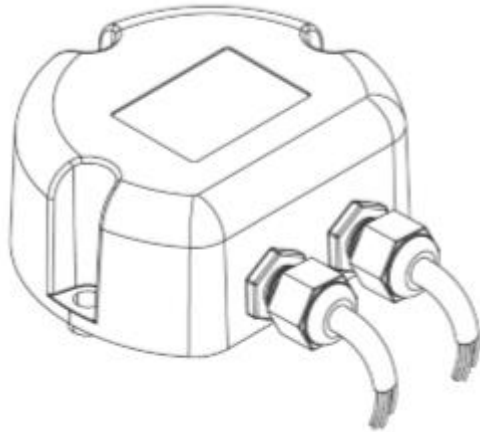
Inclination tilt sensor

2-dimensional, measuring range programmable

Single relay output with double threshold

DPS-K-OP - 2-dimensional, single relay

PRELIMINARY



DPS-K single relay

Technical data – electrical ratings

Voltage supply	9...30 VDC
Reverse polarity protection	Yes
Consumption	Typ. 30 mA (24 VDC, w/o load) (Relay on)
Interface	Single relay 3A 120VDC, 125VAC;
Function	Switching threshold
Threshold axes X	0°...5.0°
Threshold axes Y	0°...5.0°
Resolution	0.1°
Sensing method	MEMS-technology
Linearity	Typ. ±0.5 % FS
Interference immunity	DIN EN 61000-6-2
Emitted interference	DIN EN 61000-6-3
Programmable parameters	See manual

Features

- Inclination tilt sensor
- Interface Single Relay
- MEMS capacitive measuring principle
- Measuring range 2-dimensional: up to ±5°
- 2-dimensional switching threshold
- Reinforced plastic housing
- Protection class IP67
- Radial cable with cable gland
- Teach input for adjustment of zero position
- Programming cable for RS-232 data connection

Technical data – mechanical design

Size	84 x 72 x 35 mm
Protection DIN EN 60529	IP 67
Material	Housing: reinforced plastic
Operating temperature	-40...+70 °C
Relative humidity	95 % non-condensing
Resistance	DIN EN 60068-2-6 Vibration 20 g, 10-2000 Hz DIN EN 60068-2-27 Shock 50 g, 11 ms
Weight approx.	240 g
Connection	Radial cable 0.55 m with cable gland, AMP S

DPS-K-OP - 2-dimensional, single relay

Inclination tilt sensor

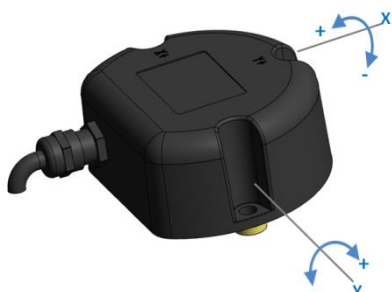
2-dimensional, measuring range programmable

Single relay output with double threshold

DPS-K-OP - 2-dimensional, single relay

PRELIMINARY

Installation position



The 2-dimensional inclination sensor must be mounted with the base plate in horizontal position, i.e. parallel to the horizontal line.

The sensor can be inclined both towards the X and Y axis at the same time.

For each axis a separate measured value is provided. Default on delivery the inclination sensor will apply the selected sensing range to both axis, for example $\pm 15^\circ$ with the zero passage being precisely in the horizontal line.

Inclination tilt sensor

Programmable

Single relay output with double threshold

PRELIMINARY

DPS-K-OP - 2-dimensional, single relay

Factory setting

Hysteresis axes X	0.1°
Hysteresis axes Y	0.1°
Alarm switch-on delay time	0.5 s
Alarm switch-off delay time	0.5 s

Teach process

The teach-in function enables rapid and easy commissioning in the field.

Setting zero:

- » Get inclinometer on position intended for zero position.
- » Set teach input for $4 < t < 7$ seconds on high level.

Teach-input signal level

High level: >2.4 V

Low level: <0.8 V

Maximum: +Vs

When not used the teach input must be connected to 0 V.

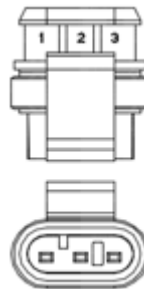
Terminal assignment

Cable

Core color	Signals	Description
White	+Vs	Supply voltage
Brown	Teach	Teach-input
Yellow	GND	Ground
Grey	Relay NO	Normally open contact
Green	Relay NC	Normally closed contact
Blue	Relay COM	Common contact

Connector AMP Superseal

Connector	Signals	Description
Pin 1	GND RS232	Ground
Pin 2	Tx RS232	Serial port receiver
Pin 3	Rx RS232	Serial port transmitter



Inclination tilt sensor

2-dimensional, measuring range programmable
Single relay output with double threshold

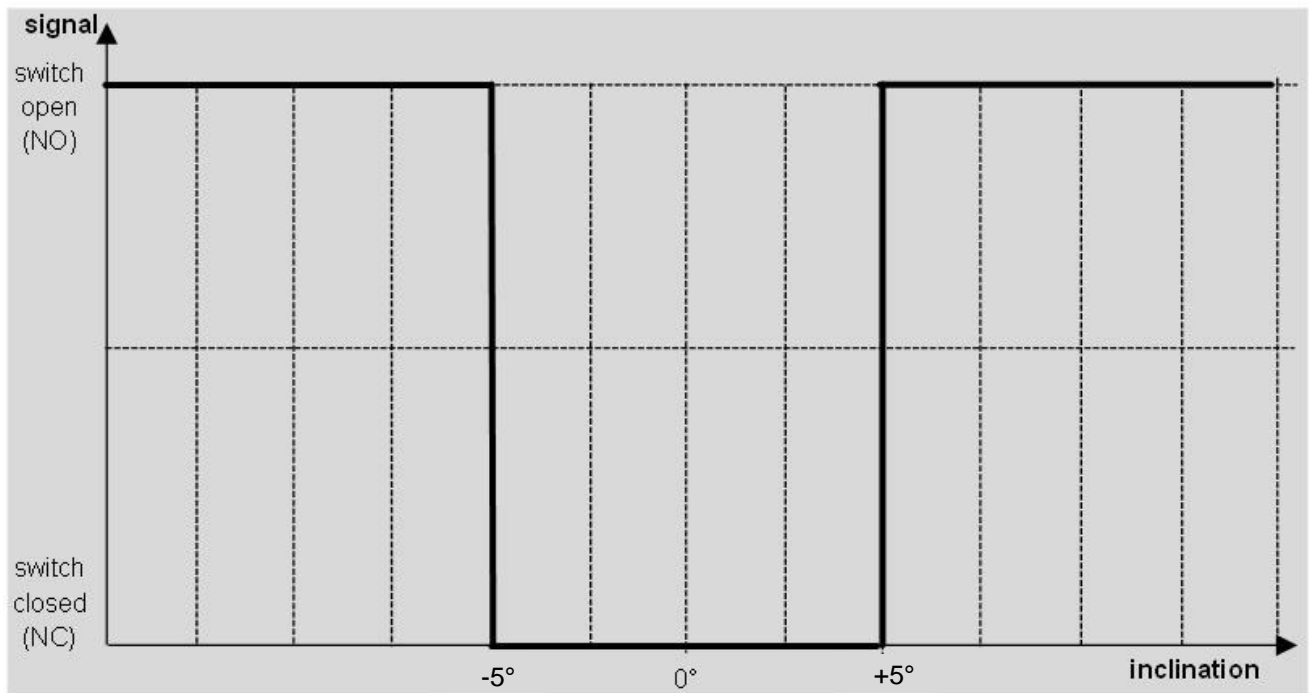
DPS-K-OP - 2-dimensional, single relay

PRELIMINARY

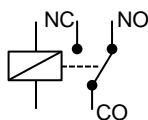
Output signals

Relay output

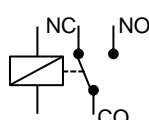
Measuring range -5...+5°



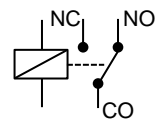
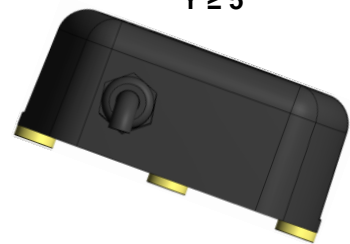
$X \geq -5^\circ$
OR
 $Y \geq -5^\circ$



$-5^\circ < X < 5^\circ$
AND
 $-5^\circ < Y < 5^\circ$



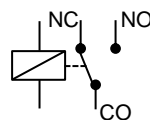
$X \geq 5^\circ$
OR
 $Y \geq 5^\circ$



Powerless state

In powerless state (without supply) applies:

- Contact CO / NO is open
- Contact CO / NC is closed



Inclination tilt sensor

Programmable

Single relay output with double threshold

PRELIMINARY

DPS-K-OP - 2-dimensional, single relay

Dimensions

