

CHARACTERISTICS

- + MEMS technology
- + High protection level IP67 and wide temperature range from -40°C ... +85°C
- + Stable accuracy over whole temperature range
- + Resolution up to 0,01°
- + Single axis 0° to 360°
- + Double axes $\pm 1^\circ$ to $\pm 60^\circ$
- + Optional redundant output

ADVANTAGES

- + Instantaneous Gyro-compensated measure
- + Excellent accuracy
- + Reliability and long service life for outdoor applications
- + Very compact dimensions

SSI is available with *one* or *two measurement axes*. The inclinometer working principle is based on a micro machined silicon capacitive transducer (developed with MEMS technology).

Using **MEMS technology with the gyrocompensated variant (N or G)**, the sensor position signal is instantaneous without delay and has excellent static linearity.

SSI is suited for applications (cranes, aerial platforms, drilling machines and excavators) in harsh environments which are exposed to motion, shock and vibration, especially for mobile machines.

The **SSI SERIES** includes models:

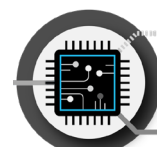
- ZZ180.232UNC
- ZZ180.233UNC



HIGH PROTECTION LEVEL



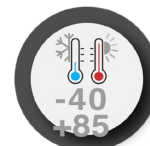
SHOCK/VIBRATION RESISTANT



REDUNDANCY OUTPUT



REVERSE POLARITY PROTECTION



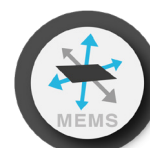
WIDE RANGE TEMPERATURE



DIRECTIVE 2011/65/EU



CANOPEN OUTPUT



MEMS SENSORS TECHNOLOGY



HORIZONTAL VERSION



VERTICAL VERSION



FUNCTIONAL SAFETY



EU CONFORMITY



**+ HEAVY LIFT
CONSTRUCTION**



**+ URBAN
MUNICIPAL**



**+ LOGISTIC
TRANSPORTS**



+ AGRICULTURE

PRODUCT CODE

SSI

A

B

C

D

E

F

G

**ORDER
CODE**

A	POWER SUPPLY RANGE
2	= 9 ... 30 V DC

C	MEASUREMENT DIRECTION
XXX	= FS Angle deg. for single axis*
XXX	= +/- Angle deg. for double axes**

* value of 360 means range 0° to 360°

** value of 010 means range +/- 10°

E	TYPE OF CONNECTION
2	= Male flange connector 1xM12, 5-pin
18	= Male/ Female flange connector 2xM12, 5-pin

G	SPECIAL VERSION
	= None
D	= Special version

B	MEASUREMENT DIRECTION
0	= Dual Axes
N	= Single axis, Gyrocompensated
G	= Dual axes, Gyrocompensated
V	= Single Axis

D	OUTPUT
6	= CANopen
28	= CANopen SIL2-Pld

F	VERSION OUTPUT
S	= Single
R	= Redundant

U-CONTROL Srl. - Via Micheli 9, 43056 San Polo di Torrile (PR)

Tel. +39 0521 273823 | **Mail:** info@u-control.eu | www.u-control.eu | **P.IVA** 02722200348

* The company reserves the right to make any kind of design or functional modification at any moment without prior notice

TECHNICAL CHARACTERISTICS

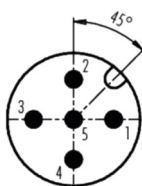
MEASURING RANGE	$\pm 1^\circ$ to $\pm 60^\circ$ for horizontal version - 0° to 360° for vertical version
ACCURACY (+25°C)	$< \pm 0,3^\circ$
RESOLUTION	$0,01^\circ$
TEMPERATURE COEFFICIENT	$0,008^\circ / ^\circ\text{C}$
PROTECTION CLASS	IP67
TEMPERATURE RANGE	$-40^\circ\text{C} \dots +85^\circ\text{C}$ [$-40^\circ\text{F} \dots +185^\circ\text{F}$]
MATERIAL HOUSING	PA6 + GF30
INITIALING TIME	$< 0,3$ s after power on
WEIGHT	approx. 1 00 g [3.53 oz]
SHOCK RESISTANCE	acc. to EN 60068-2-27 50 G, 11 ms
VIBRATION RESISTANCE	acc. to EN 60068-2-6 10 ... 500 Hz

ELECTRICAL CHARACTERISTICS

POWER SUPPLY	9 ... 30 V DC
REVERSE POLARITY PROTECTION	YES
ELECTROMAGNETIC COMPATIBILITY	acc. to EN 61326-1, EN 61326-3-1
CE COMPLIANT	acc. to EMC guideline 2014/30/EU RoHS directive 2011/65/EU

ELECTRICAL CONNECTIONS - M12x5 PINS

1	CAN-GND
2	+Vin
3	GND
4	CAN-H
5	CAN-L



Pinout

OPERATING PRINCIPLE

+ MEMS

(acronym for Micro Electro Mechanical Systems) technology enables both electronic circuits and opto-mechanical devices to incorporate on the same silicon substrate, using manufacturing technologies similar to those used for the implementation of integrated circuits.

DIRECTION AXES

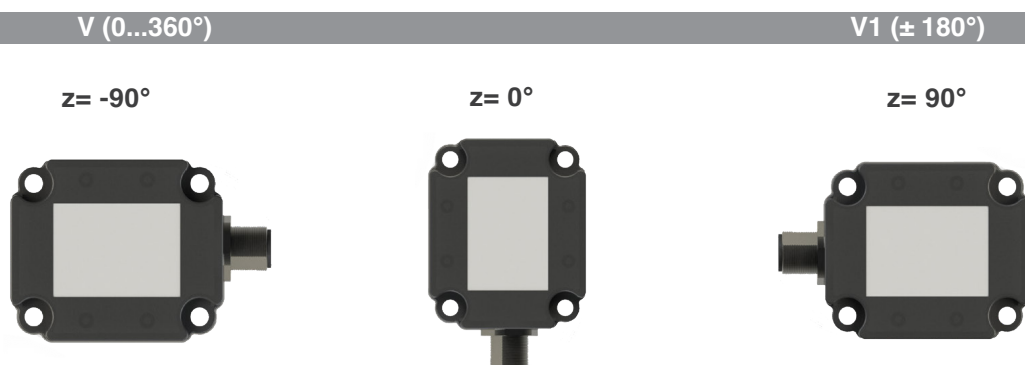
+ DUAL AXES

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.

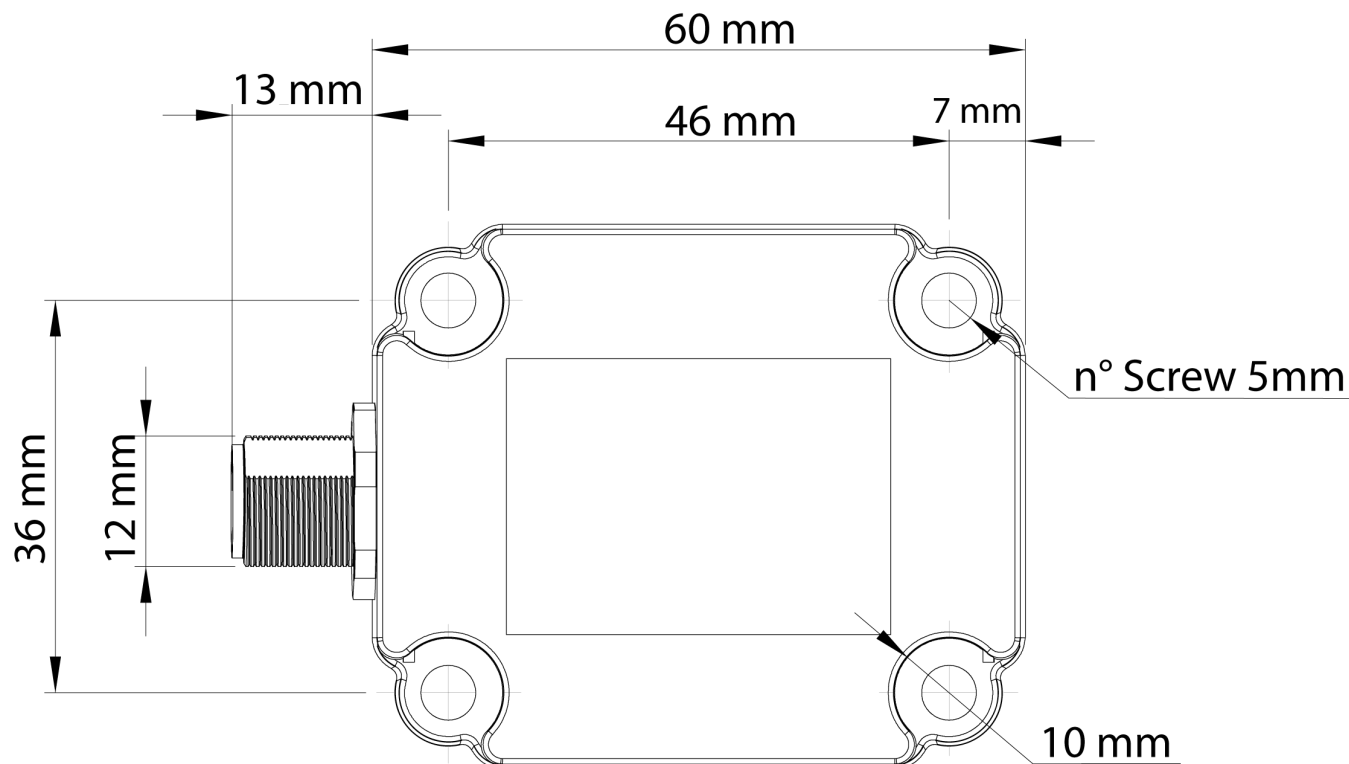
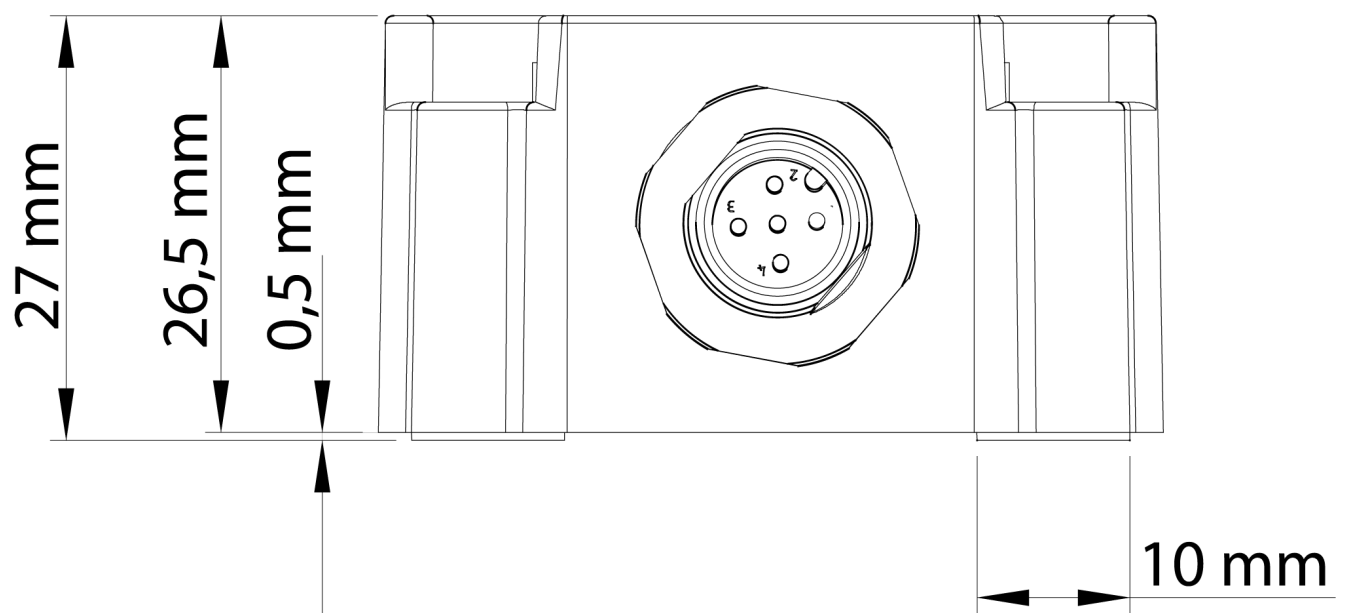


+ SINGLE AXES

The 1-dimensional inclination sensor must be installed with its Z-axis in line with the force of gravity, as illustrated below. The 1-dimensional sensor default position is 0° as shown in the following illustration.



DIMENSIONS



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