

GENERAL Inclinometer MEMS technology.

High performance, high IP rating, resistance to shock and vibrations, and high electromagnetic compatibility make this sensor suitable for mobile hydraulic applications.

Developed to guarantee a robust, high-performance solution for applications such as agricultural vehicles, earth-moving machines, and hoisting equipment.

TECHNICAL SPECIFICATIONS

Measurement Range

$\pm 10^\circ \pm 15^\circ \pm 20^\circ \pm 30^\circ \pm 45^\circ \pm 60^\circ \pm 85^\circ$ (single Z axis for analog output - XY dual axis)
 $360^\circ (\pm 180^\circ)$ only for single Z axis

Supply voltage

+5Vdc (only for 0.5...4.5Vdc output); +10...+36VDC (see output signal for right supply voltage)

Output signal

0.5...4.5Vdc RATIOMETRIC (supply +5Vdc); 0.5...4.5Vdc; 0...10Vdc; 4...20mA; CANopen

Electrical connections

M12 connector output; cable output

Resolution

12 bit (analog output); 0.01 deg (CANopen output)

Accuracy (Factory verification @ 25 °C)

$< \pm 0.5\%$ FS

Working temperature

-40... +85°C

Temperature coefficient at 0-deg inclination

Typical $< \pm 0.006$ deg/°C

Long term repeatability

Single axis: Typical $< \pm 0.5$ deg in the range ± 180 deg
 Dual axis: Typical $< \pm 0.5$ deg in the range $\leq \pm 60$ deg, ± 2 deg otherwise

Vibrations

20g between 10 Hz ... 2000 Hz secondo IEC 60068-2-6

Shock

Pulse on 3 axes; 50g 11 ms secondo IEC 60068-2-27

Electromagnetic compatibility

2014/30/EU Electromagnetic Compatibility (EMC)

IP Protection Level

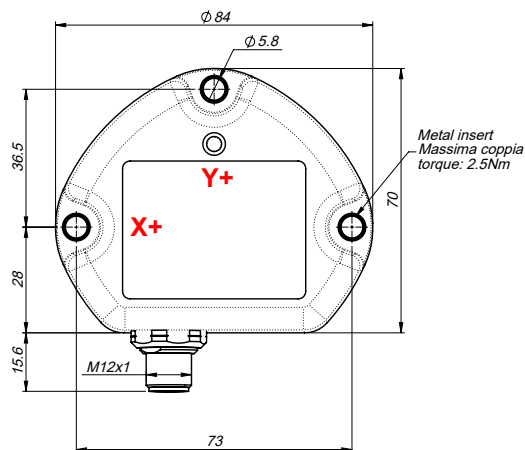
IP67 - IPX9K with female homologated connector mounted, tightening torque 0.6Nm + low strength threadlocker (GIG-M M12 connector version) IP67 - IPX9K (GIG-F cable-PUR version)

Housing body

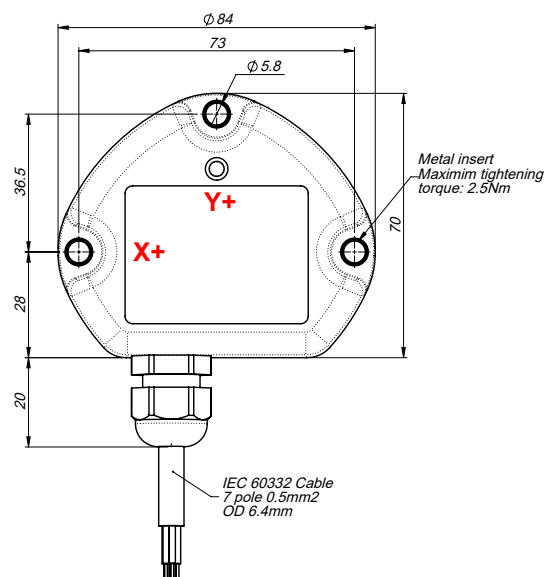
PBT

MECHANICAL DIMENSIONS

M12 VERSION , SINGLE CIRCUIT

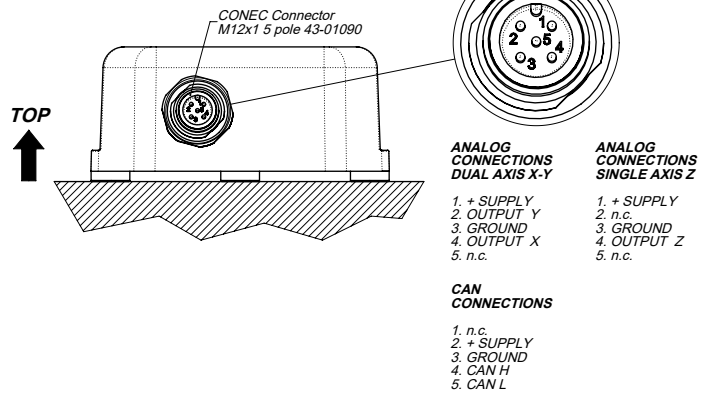
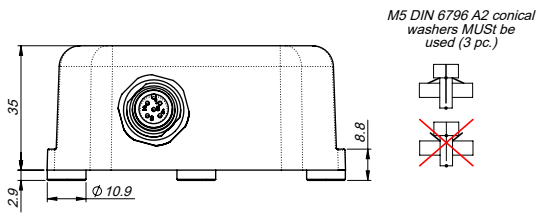


CABLE VERSION , SINGLE CIRCUIT



ELECTRICAL CONNECTIONS

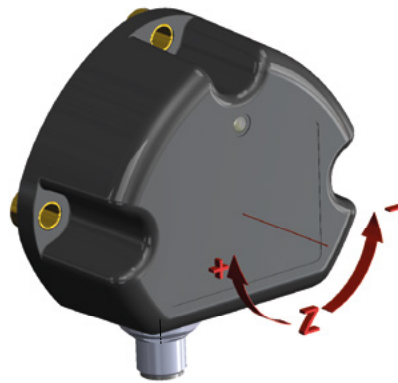
M12 VERSION , SINGLE CIRCUIT



DUAL AXIS , SINGLE CIRCUIT

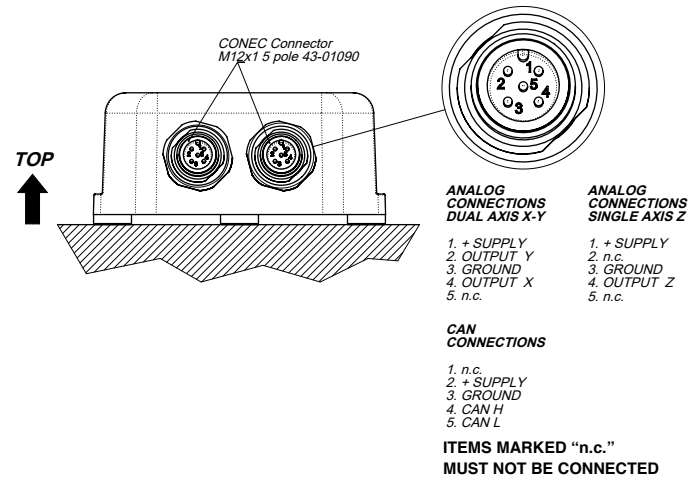
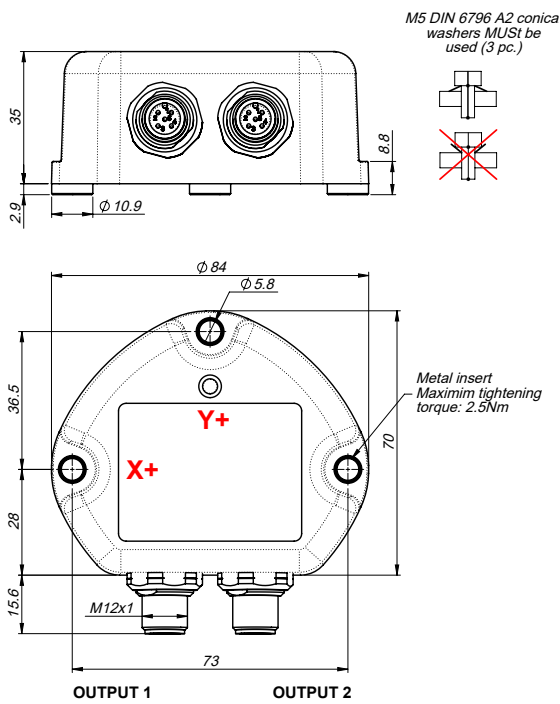


SINGLE AXIS , SINGLE CIRCUIT

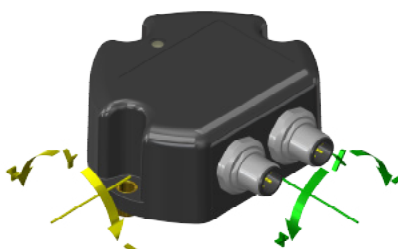


ITEMS MARKED "n.c."
MUST NOT BE CONNECTED

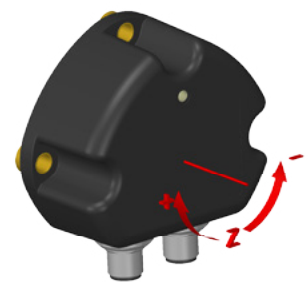
M12 VERSION , REDUNDANT CIRCUIT



DUAL AXIS REDUNDANT CIRCUIT

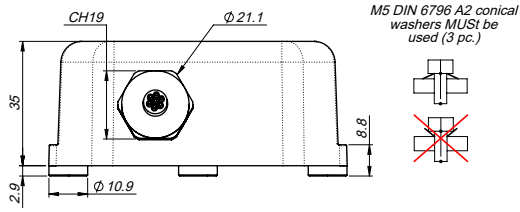


SINGLE AXIS REDUNDANT CIRCUIT

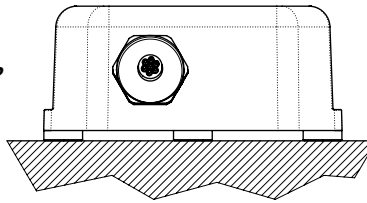


ELECTRICAL CONNECTIONS

CABLE VERSION , SINGLE CIRCUIT



TOP



ANALOG CONNECTIONS DUAL AXIS X-Y

1. WHITE + SUPPLY
2. YELLOW GROUND
3. GREY OUTPUT X
4. BLUE OUTPUT Y
5. PINK n.c.
6. GREEN n.c.
7. BROWN n.c.

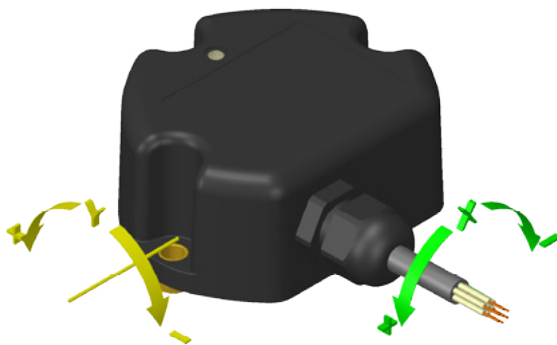
ANALOG CONNECTIONS SINGLE AXIS Z

1. WHITE + SUPPLY
2. YELLOW GROUND
3. GREY OUTPUT Z
4. BLUE n.c.
5. PINK n.c.
6. GREEN n.c.
7. BROWN n.c.

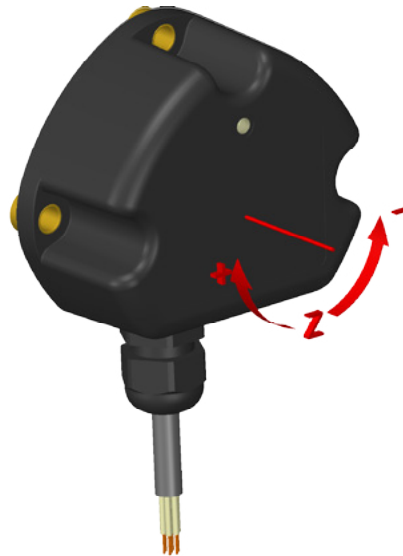
CAN CONNECTIONS

1. WHITE + SUPPLY
2. YELLOW GROUND
3. GREY CAN H
4. BLUE CAN L
5. PINK n.c.
6. GREEN n.c.
7. BROWN n.c.

DUAL AXIS, SINGLE CIRCUIT

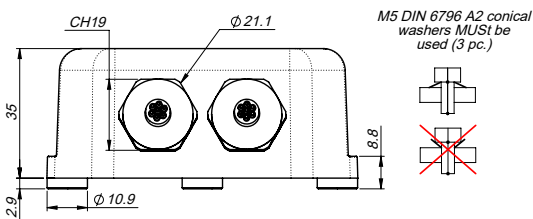


SINGLE AXIS, SINGLE CIRCUIT

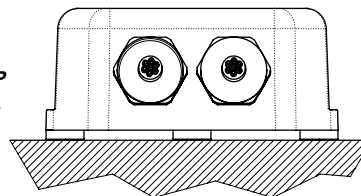


ITEMS MARKED "n.c." MUST NOT BE CONNECTED

CABLE VERSION , REDUNDANT CIRCUIT



TOP



ANALOG CONNECTIONS DUAL AXIS X-Y

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4. BLUE OUTPUT Y
5. PINK n.c.
6. GREEN n.c.
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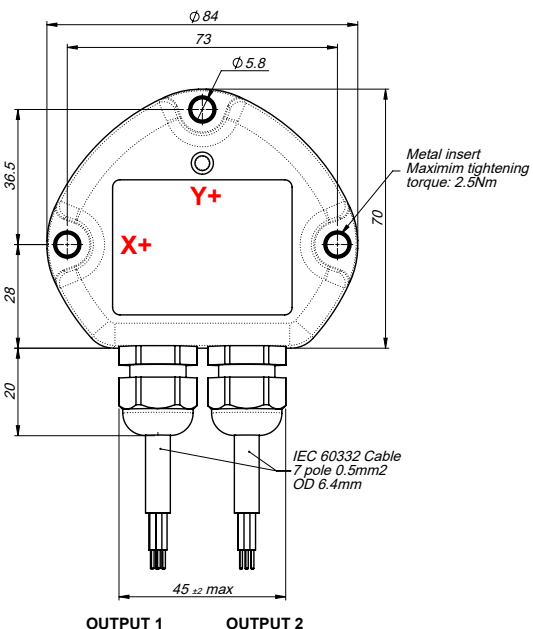
ANALOG CONNECTIONS SINGLE AXIS Z

1. WHITE + SUPPLY
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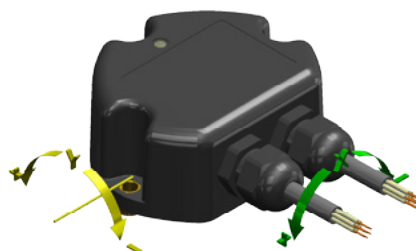
CAN CONNECTIONS

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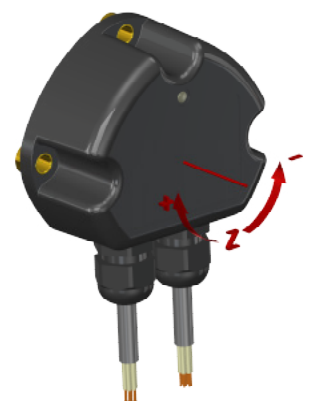
ITEMS MARKED "n.c." MUST NOT BE CONNECTED



DUAL AXIS REDUNDANT CIRCUIT



SINGLE AXIS REDUNDANT CIRCUIT



AUTOZERO FUNCTION (additional function)

available for analog single circuit versions in **GIG-XY** configuration (dual axis)




To activate the **Autozero** function make sure that:

- sensor is powered
- fixing surface is free of dust or grease
- sensor is fixed on the horizontal plane with suitable screws



ATTENTION!

The Autozero function can be defined **within a maximum range of +/- 4.5°** from the original zero position (factory set).

Hold the **magnetic pen** ① (accessory to order-PKIT312) to the **ZERO POINT**  indicated on the product label ②.

Hold the position for **at least 3-5 seconds** so that the operation is successful.

①

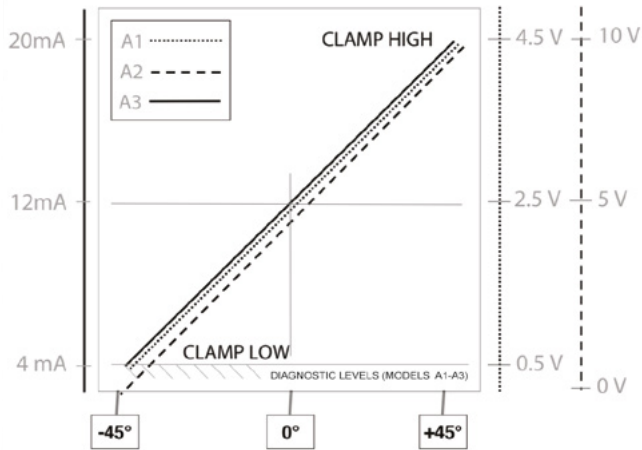


②

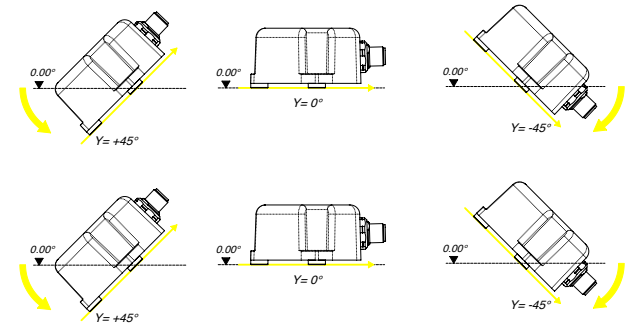
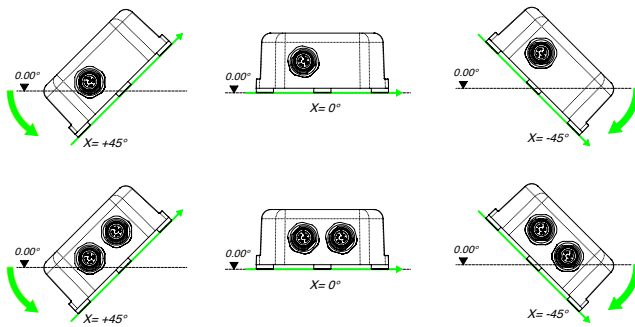
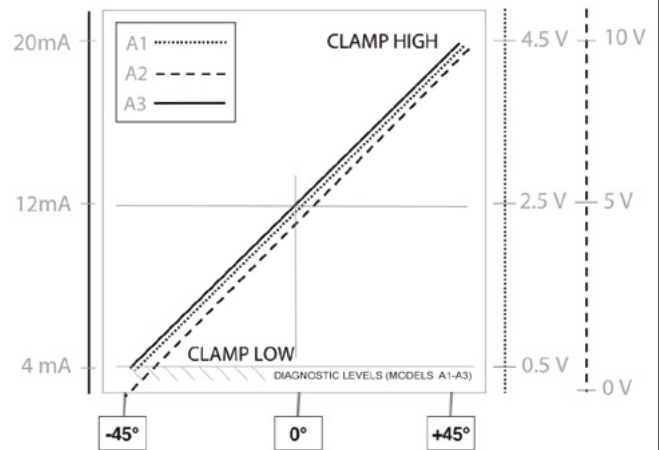


OPERATING SPECIFICATIONS: OUTPUT SIGNAL GRAPHS

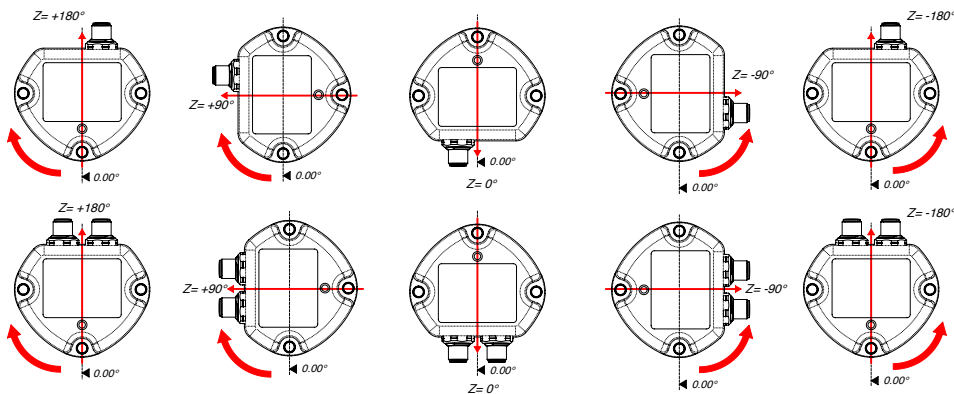
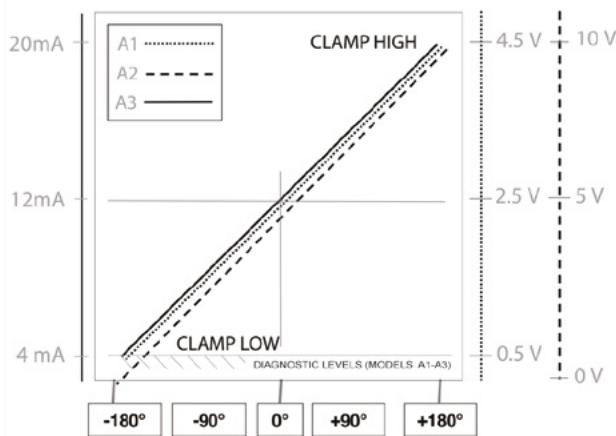
DUAL AXIS INCLINOMETER (XY) – X AXIS



DUAL AXIS INCLINOMETER (XY) – Y AXIS



SINGLE AXIS INCLINOMETER ($\pm 180^\circ$) – Z AXIS



LOAD CONDITIONS

+0.5Vdc...+4.5 Vdc output with supply +10...36Vdc and +0..10Vdc output with supply +11..36Vdc: apply a load resistance > 100kohm

+0.5Vdc...+4.5Vdc output (with supply +5Vdc): apply a load resistance > 100kohm

4..20mA output (with supply < 15 Vdc to 10 Vdc): maximum allowed load resistance is 200 ohm

4..20mA output (with supply > 15 Vdc to 36 Vdc): maximum allowed load resistance is 500 ohm

