

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

$\pm 10^\circ \pm 15^\circ \pm 20^\circ \pm 30^\circ \pm 45^\circ \pm 60^\circ \pm 85^\circ$ (dual XY axis)
 $360^\circ (\pm 180^\circ)$ (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...4.5V RATIOMETRIC (supply +5Vdc); 0.5...4.5V; 0...10V; 4...20mA; CANopen

Electrical connections

M12 connector output; cable output

Resolution

$0.05^\circ (\pm 10^\circ \text{ to } \pm 20^\circ)$; $0.05^\circ (\pm 30^\circ)$; $0.1^\circ (\pm 45^\circ)$; $0.1^\circ (\pm 60^\circ)$; $0.1^\circ (\pm 85^\circ)$; $0.1^\circ (\pm 180^\circ)$ analog output; 0.05° CANopen output

Linearity

$< \pm 0.5\%$ FS

Working temperature and Coefficient of temperature

$-40^\circ\text{C} \dots +85^\circ\text{C}$ thermal drift $< 0.01^\circ/\text{C}$ in the range ($T = -10^\circ\text{C} \dots +60^\circ\text{C}$)

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

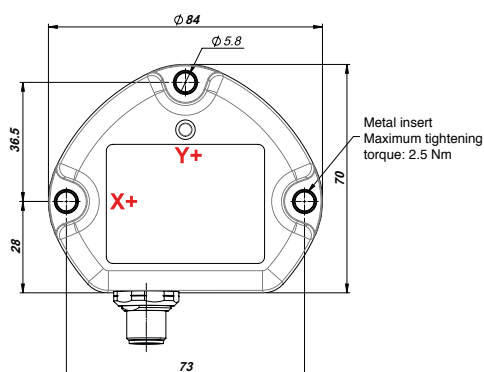
M12 connector output (IP67); cable output (IP X9K)

Housing body

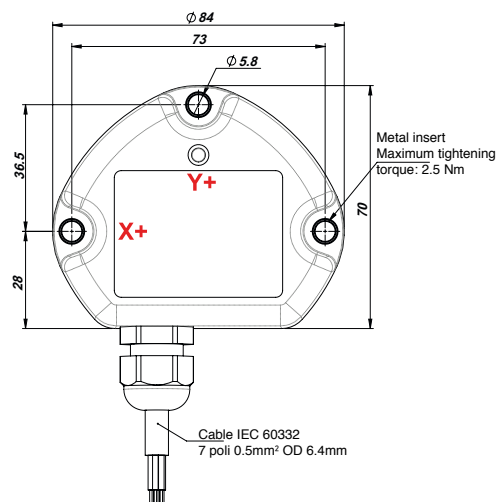
PBT

MECHANICAL DIMENSIONS

M12 VERSION

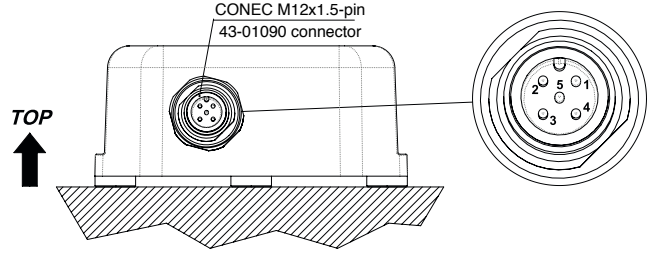
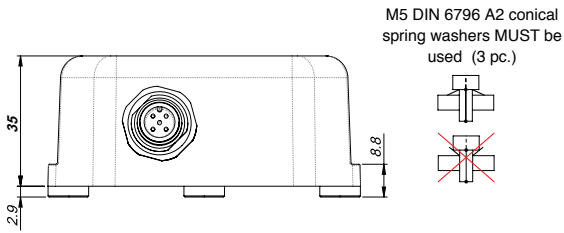


CABLE VERSION



ELECTRICAL CONNECTIONS

M12 VERSION



CONNECTIONS

1. + SUPPLY
2. OUTPUT Y
3. GROUND
4. OUTPUT X
5. n.c.

CAN CONNECTIONS

1. n.c.
2. + SUPPLY
3. GROUND
4. CAN H
5. CAN L

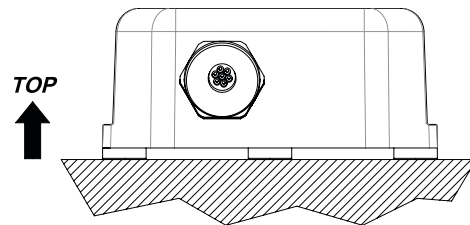
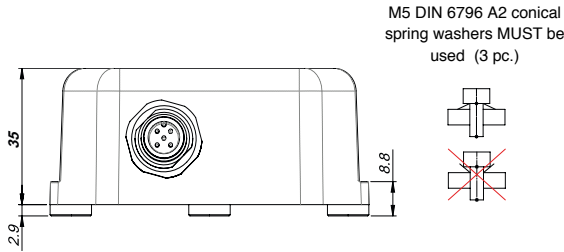
DUAL AXIS



SINGLE AXIS



CABLE VERSION



CONNECTIONS

- | | |
|-----------|----------|
| 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. |

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 AXIS



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

AUTOZERO FUNCTION (additional function)

available for analog 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



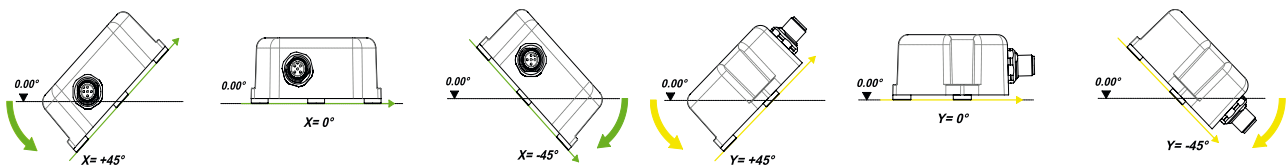
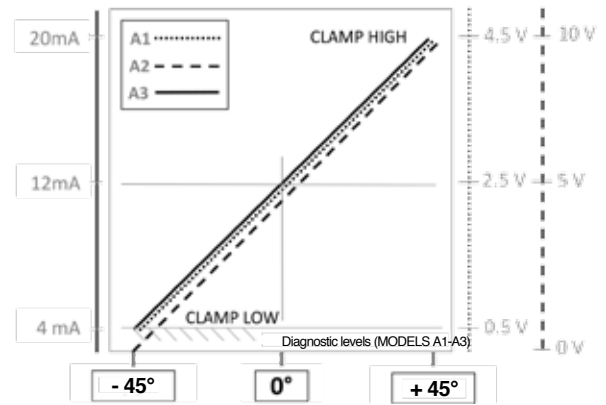
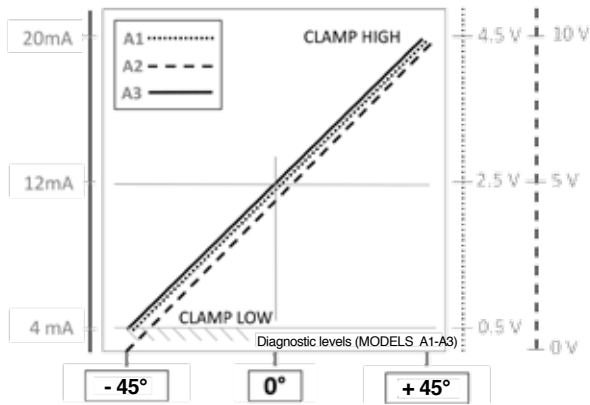
②



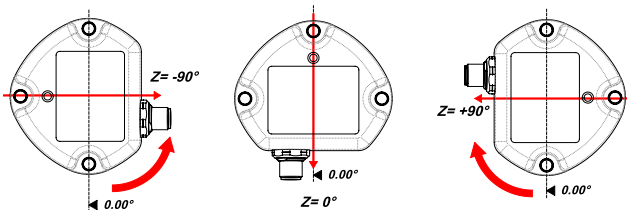
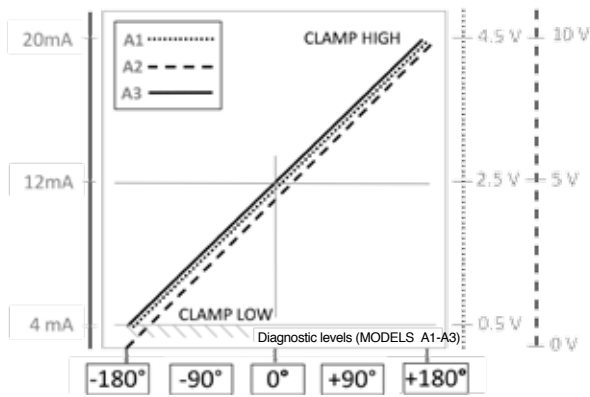
OPERATING SPECIFICATIONS: OUTPUT SIGNAL GRAPHS

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 power +10...36VDC and +0..10VDC output with power +11..36VDC: apply a load resistance > 100Kohm

+0.5VDC...+4.5VDC output (powered at +5VDC): apply a load resistance > 10Kohm

4..20mA output (powered at < + 15..36VDC): maximum allowed load resistance is 200 ohm

4..20mA output (powered at > + 15..36VDC): maximum allowed load resistance is 500 ohm

ORDERING CODE

ELECTRICAL CONNECTIONS	
M12 connector output	M
Cable output (specify cable length)	F

AXIS TYPE	
Dual axis (XY axis)	O
Single axis 360° (Z axis)	V

CIRCUIT TYPE	
Single	S
Redundant	R

OUTPUT 1 MEASURING RANGE (output for single circuit)	
measuring range (indicate) (single axis always 360° dual axis $\pm 10^\circ \pm 15^\circ \pm 20^\circ \pm 30^\circ \pm 45^\circ \pm 60^\circ \pm 85^\circ$)	XXX

OUTPUT 2 MEASURING RANGE (only for redundant version)	
measurement range (specify) (single axis always 360° dual axis $\pm 10^\circ \pm 15^\circ \pm 20^\circ \pm 30^\circ \pm 45^\circ \pm 60^\circ \pm 85^\circ$)	XXX

SUPPLY VOLTAGE	
+5Vdc (only for A1 output)	L
+10...+36Vdc (see output signal for right supply voltage)	H

OUTPUT TYPE	
+0.5...+4.5Vdc (available with supply L = ratiometric output and with supply H = 0.5...4.5V output)	A1
0...+10Vdc (powered at +11...36Vdc)	A2
4...20mA output (powered at +10...36Vdc)	A3
CANopen output (powered at +10...36Vdc)	C1

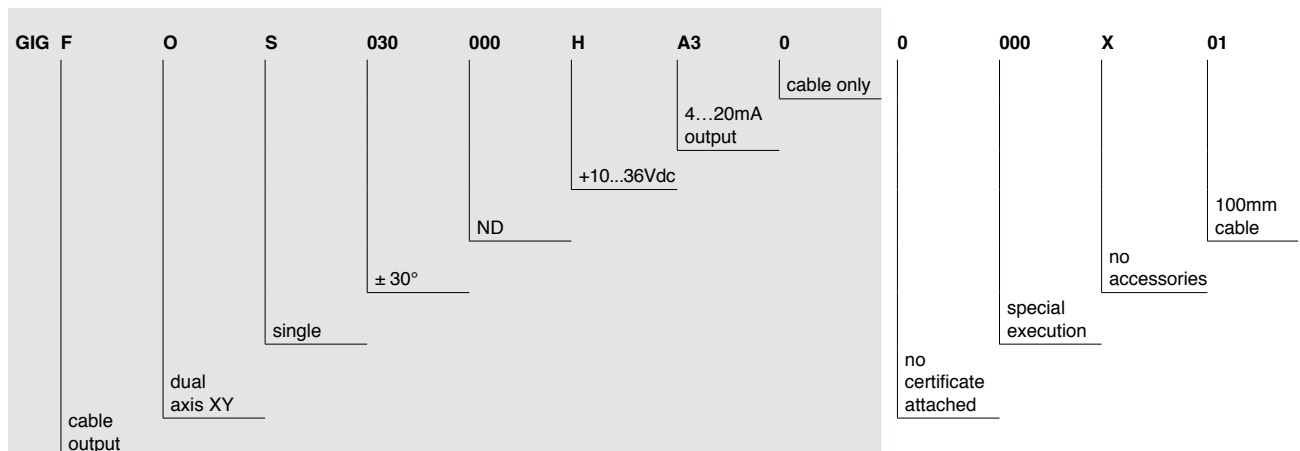
CABLE	
Cable without connector (always "0" in case of GIG-M version)	0

CERTIFICATES	
0	No certificate enclosed
L	Linearity curve enclosed

ACCESSORIES	
X	No accessory
Y	Magnetic pen (PKIT312)

CABLE LENGTH	
01	100 mm cable
02	200 mm cable
05	500 mm cable
10	1m cable
20	2m cable
.....	other lengths on request

EXAMPLE OF DESCRIPTION: GIGFOS030000HA30 000X01



GEFRAN spa reserves the right to make any kind of design or functional modification at any moment without prior notice.

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