

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...4.5V 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;  $0.05^\circ$  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

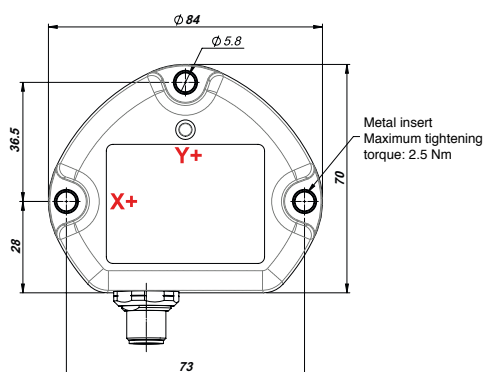
M12 connector output (IP67); cable output (IP X9K)

### Housing body

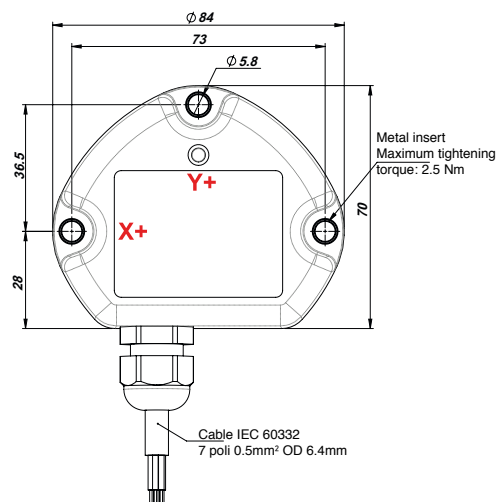
PBT

## MECHANICAL DIMENSIONS

### M12 VERSION

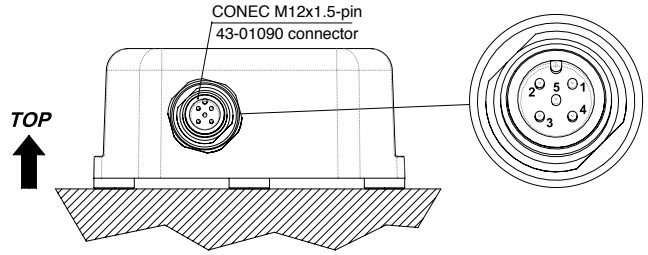
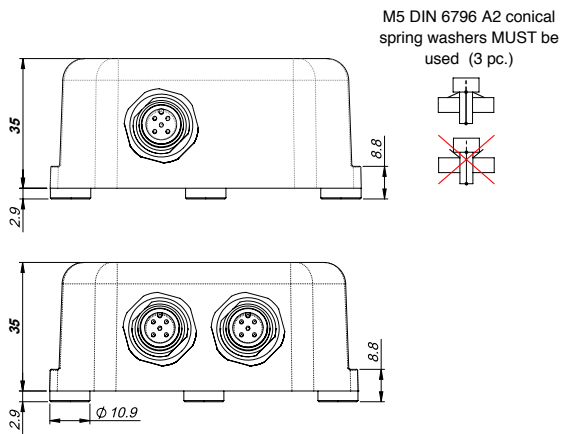


### CABLE VERSION



# 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

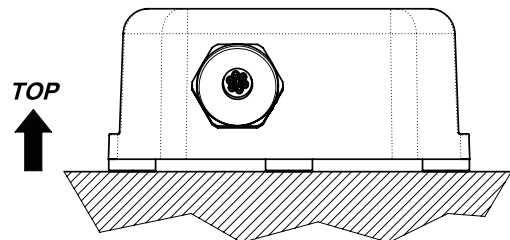
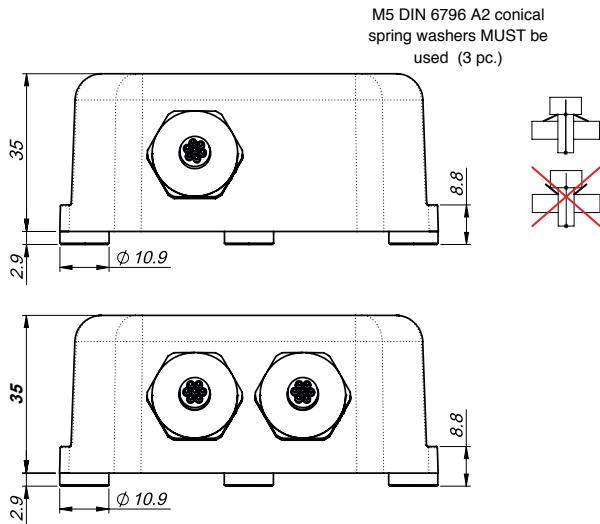
## DUAL AXIS



## 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

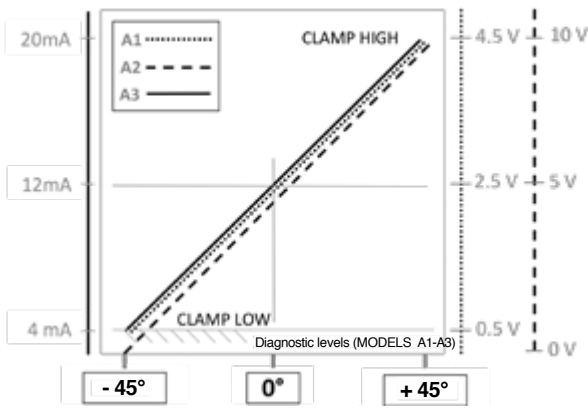


②

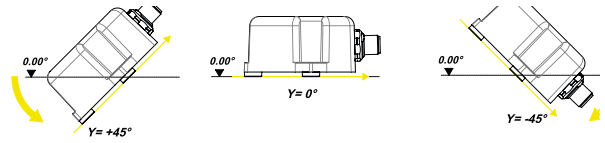
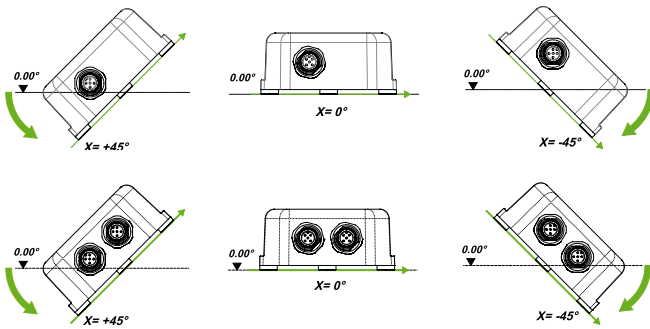
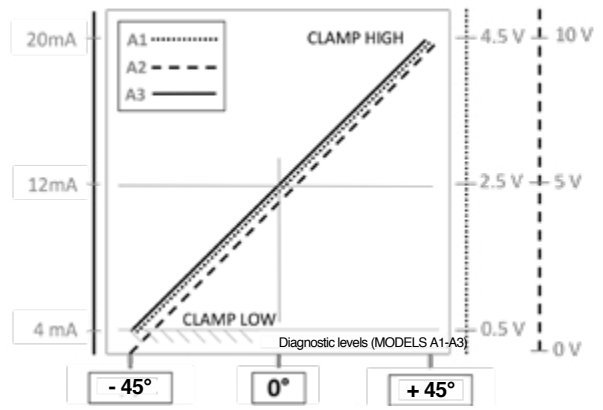


# OPERATING SPECIFICATIONS: OUTPUT SIGNAL GRAPHS

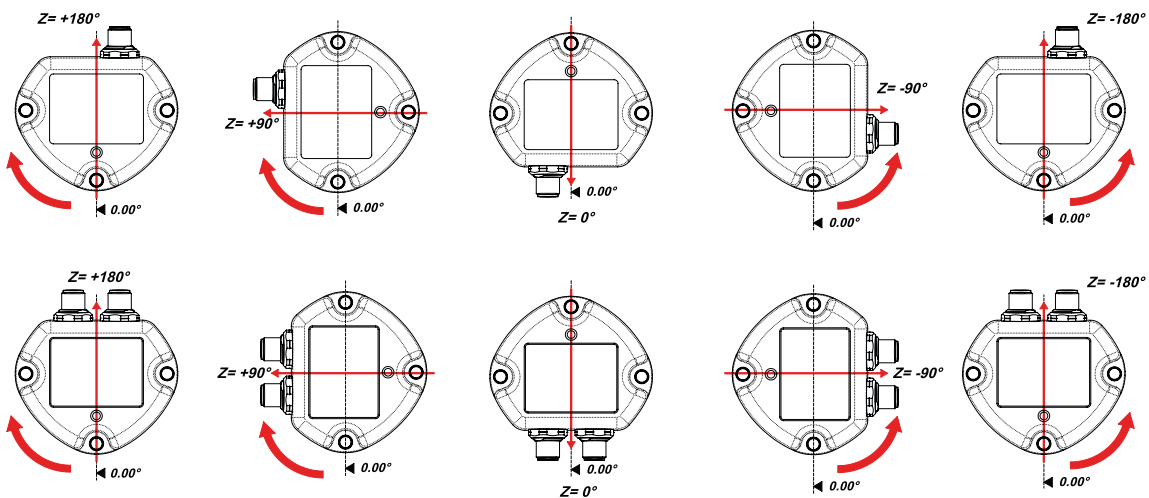
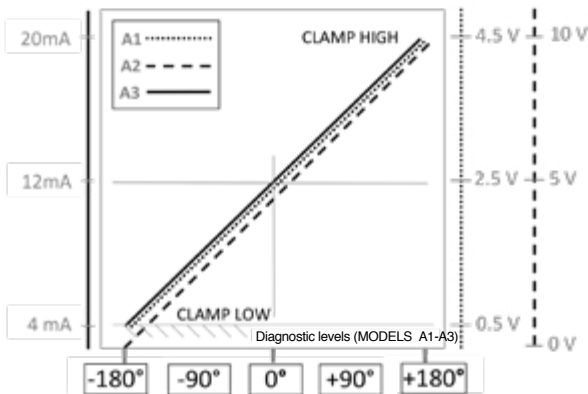
DUAL AXIS INCLINOMETER (XY) – X AXIS



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 (with supply < 15Vdc to 10Vdc): maximum allowed load resistance is 200 ohm

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

## ORDERING CODE

ELECTRICAL CONNECTIONS	
M12 connector output	<b>M</b>
Cable output (specify cable length)	<b>F</b>

AXIS TYPE	
Dual axis (XY axis)	<b>O</b>
Single axis 360° (Z axis)	<b>V</b>

CIRCUIT TYPE	
Single	<b>S</b>
Redundant	<b>R</b>

OUTPUT 1 MEASURING RANGE (output for single circuit)	
measuring range (indicate) ±10° ±15° ±20° ±30° ±45° ±60° ±85° (single Z axis for analog output-XY dual axis); 360° (±180°) only for single Z axis	<b>XXX</b>

OUTPUT 2 MEASURING RANGE (only for redundant version)	
measuring range (indicate) ±10° ±15° ±20° ±30° ±45° ±60° ±85° (single Z axis for analog output-XY dual axis); 360° (±180°) only for single Z axis	<b>XXX</b>

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

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

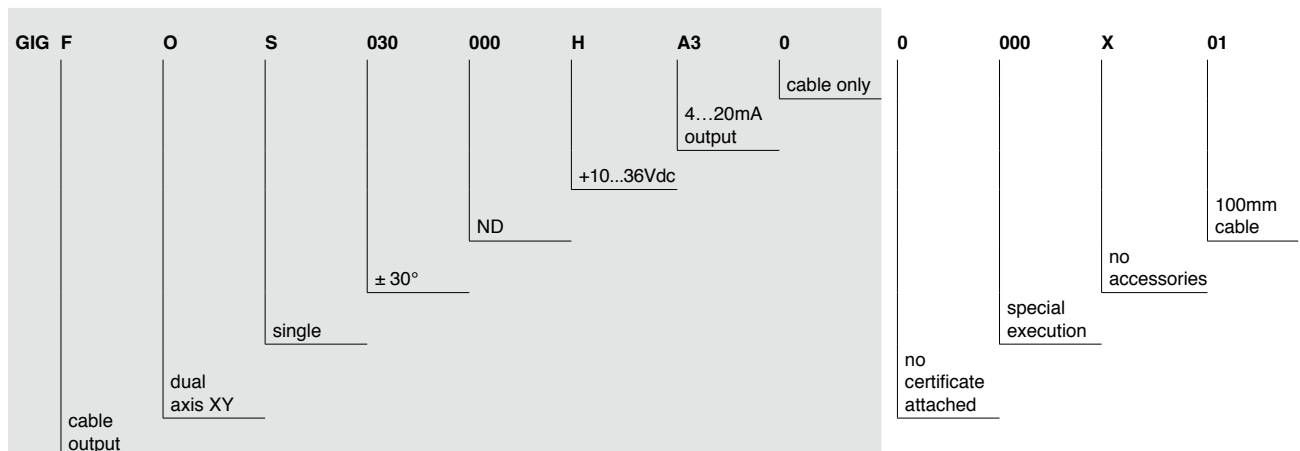
CABLE	
Cable without connector (always "0" in case of GIG-M version)	<b>0</b>

CERTIFICATES	
<b>0</b>	No certificate enclosed
<b>L</b>	Linearity curve enclosed

ACCESSORIES	
<b>X</b>	No accessory
<b>Y</b>	Magnetic pen (PKIT312)

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

### EXAMPLE OF DESCRIPTION: GIGFOS03000HA30 000X01



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

**GEFRAN**

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