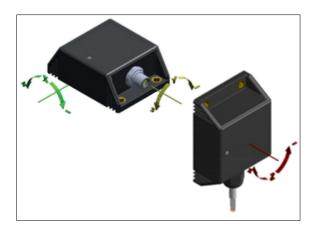
# **GEFRAN**

# **GIT**

# TOP SINGLE/DUAL AXIS INCLINOMETER (XY/360°)



# TOP Inclinometer MEMS technology.

Top performance, high IP rating, resistance to shock and vibrations, and high electromagnetic compatibility make this sensor suitable for mobile hydraulics 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° (±180°) 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

Analog output: 0.01° (from ±10° to ±20°); 0.02°(±30°); 0.03°(±45°); 0 .04°(±60°); 0.05°(±85°); 0.1° (±180°). CANopen output: 0.01°

# Linearity

 $< \pm 0.15\%$  FS (from  $\pm 15^{\circ}$  to  $\pm 60^{\circ}$ ;  $\pm 180^{\circ}$ );  $< \pm 0.3\%$  FS ( $\pm 85^{\circ}$ )

## Working temperature and Coefficient of temperature

-40°C ... +85°C thermal drift < 0.005°/°C in range (T=-10°C..+60°C) otherwise < 0.008°/°C

#### **Vibrations**

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

#### Shock

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

## **Electromagnetic compatibility**

2014/30/EU Electromagnetic Compatibility (EMC)

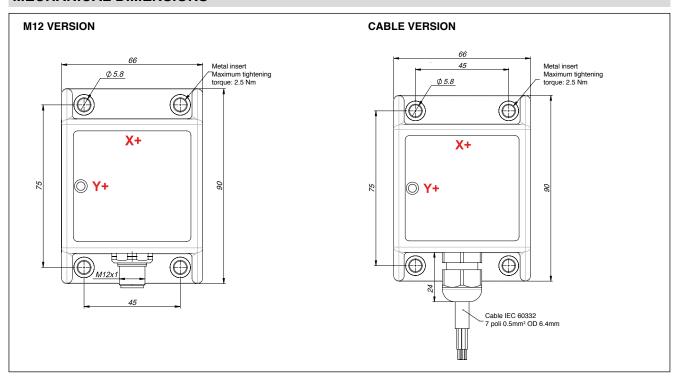
# **IP Protection Level**

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

# **Housing body**

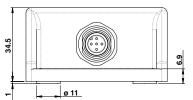
PBT

# **MECHANICAL DIMENSIONS**



# **ELECTRICAL CONNECTIONS**

# M12 VERSION



M5 DIN 6796 A2 conical spring washers MUST be used (4 pc.)



CONEC M12x1.5-pin

43-01090 connector

CONNECTIONS

1. + SUPPLY
2. OUTPUT Y
3. GROUND
4. OUTPUT X
4. CAN
4. OUTPUT X
5. CAN
5. CAN
CONNECTIONS
1. AC
2. OUTPUT Y
3. GROUND
4. OUTPUT X
5. CAN
5. CAN
5. CAN
6. CONNECTIONS
1. AC
2. OUTPUT X
5. CAN
6. CONNECTIONS
1. AC
2. OUTPUT X
5. CAN
6. CONNECTIONS
1. AC
2. OUTPUT X
6. CAN
6. CONNECTIONS
1. AC
6. CONNECTIONS
6. CAN
6. CONNECTIONS
6. CONNECTIO

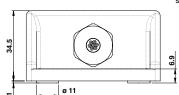
# **DUAL AXIS**



# SINGLE AXIS

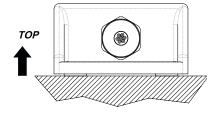


# **CABLE VERSION**



M5 DIN 6796 A2 conical spring washers MUST be used (4 pc.)





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 GIT-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** ② **ZERO** indicated on the product label ②.

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





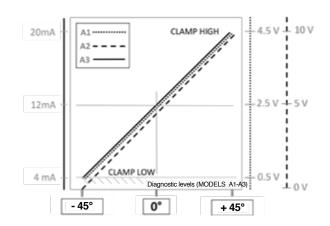


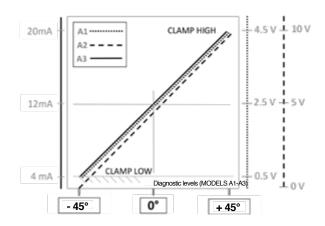


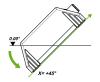
# **OPERATING SPECIFICATIONS: OUTPUT SIGNAL GRAPHS**

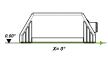
# **DUAL AXIS INCLINOMETER (XY) - X AXIS**

# **DUAL AXIS INCLINOMETER (XY) - Y AXIS**

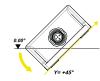


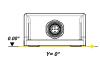


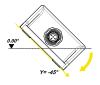




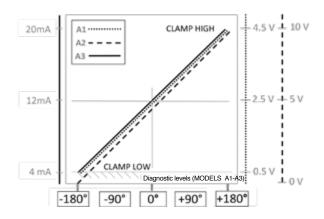


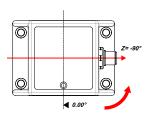


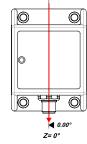


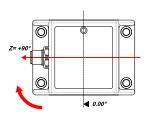


# SINGLE AXIS INCLINOMETER $(\pm 180^{\circ})$ – Z AXIS









### **LOAD CONDITIONS**

- +0.5 Vdc...+4.5 Vdc output with power +10...36 Vdc and +0..10 Vdc output with power +11...36 Vdc: apply a load resistance > 100 Kohm
- +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	
ector output M	
able output <b>F</b>	
able length)	

AXIS TYPE		
	Dual axis (XY axis)	0
	Single axis 360° (Z axis)	٧

Γ	CIRCUIT TYPE	
Γ	Single	S
Г	Redundant	R

OUTPUT 1 MEASURING RANG (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>OUTPUT 2 MEASURING RANGE</b>
(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

SUPPLY VOLTAGE	
+5Vdc	
(only for A1 output)	_
+10+36VDC	н
(see output signal for right supply voltage)	"

OUTPUT TYP	
+0.54.5Vdc	
vailable with supply L = ratiometric output and with supply H = 0.54.5V output)	1
0+10VDC (powered at +1136VDC) A	2
20mA output (powered at +1036VDC) A	١3
open output (powered at +1036VDC) C	;1

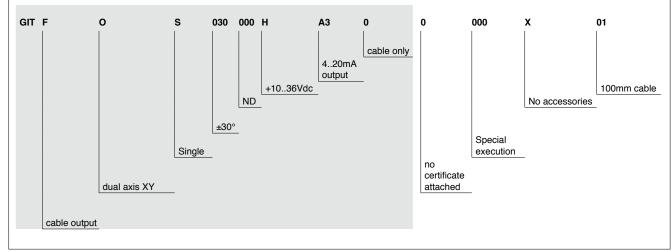
Cable without connector	CABL	
	Cable without connector (always "0" in case of GIT-M version)	0

# CERTIFICATES 0 No certificate enclosed L Linearity curve enclosed

ACCI	ESSORIES
X	No accessory
Y	Magnetic pen (PKIT312)

CABLI	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: GITFOS030000HA30 0000X01**



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



GEFRAN spa via Sebina, 74 25050 PROVAGLIO D'ISEO (BS) - ITALIA tel. 0309888.1 - fax. 0309839063 Internet: http://www.gefran.com