

ENTRY LEVEL tilt sensor with MEMS technology.

Space-saving solution, high performances, easy installation.

High IP protection level, resistance to shock and vibration, and high electromagnetic compatibility make this product suitable for many mobile hydraulics applications.

Developed to ensure a robust and high-performance solution for applications such as agricultural machines, construction machines, material handling equipments.

TECHNICAL DATA

Measurement range

$\pm 10^\circ \pm 15^\circ \pm 20^\circ \pm 30^\circ \pm 45^\circ \pm 60^\circ \pm 85^\circ$ (dual axis X Y)
360° (single axis Z)

Supply voltage

+5Vdc; +10...+36Vdc

Output signal

0.5...4.5V (ratiometric with +5Vdc supply); 0...10V; 4...20mA;
CANopen Interface

Electrical connections

AMP Superseal 6P 282108-1; 6 wires output 18 AWG 1.65mm OD
(cable+connector on request)

Resolution

0.05° ($\pm 10^\circ$ to $\pm 20^\circ$); 0.02° ($\pm 30^\circ$); 0.1° ($\pm 45^\circ$); 0.1° ($\pm 60^\circ$); 0.1° ($\pm 85^\circ$); 0.1° (360°) analog output; 0.05° CANopen output

Linearity

<0.5% FS ($\pm 10^\circ$ to $\pm 60^\circ$; 360°); <0.5% FS ($\pm 85^\circ$)

Working and coefficient temperature

-40°C ... +85°C thermal drift < 0.01°/°C in the range (T=-10°C..+60°C)

Vibrations

20g tra 10 Hz ... 2000 Hz EN 60068-2-6

Shock

Impulsive on 3 axes; 50g 11 ms EN 60068-2-7

Electromagnetic compatibility

According to 2004/108/CE

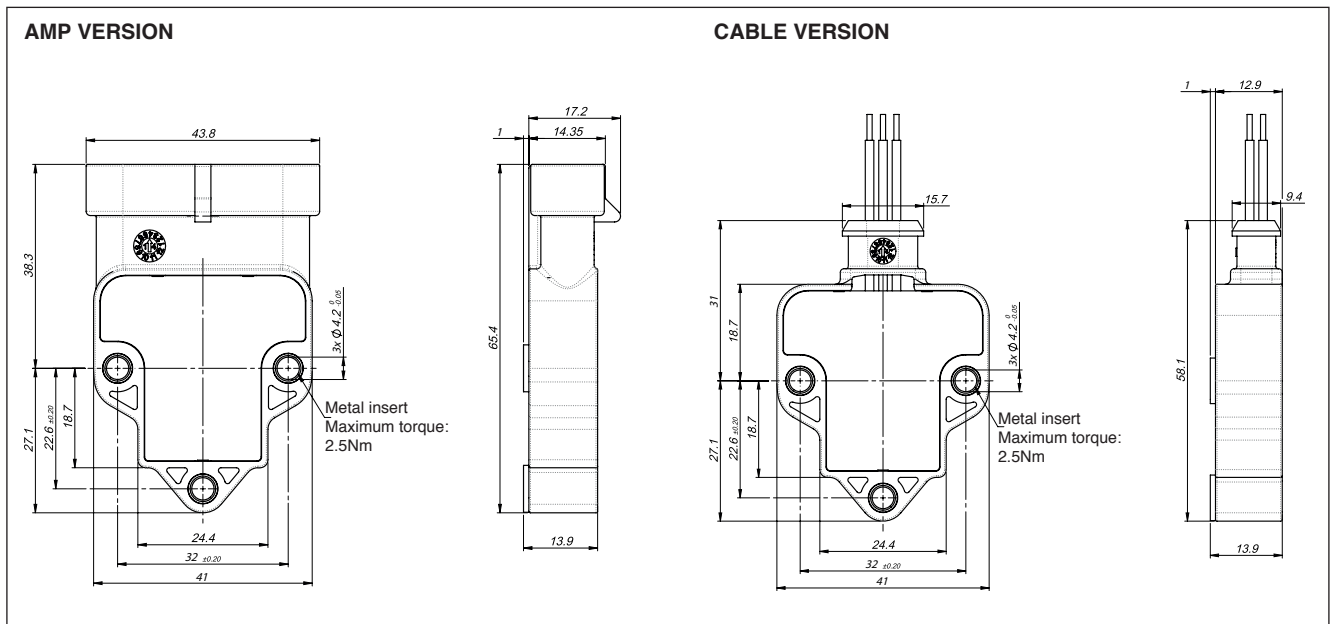
IP protection level

AMP IP67 (IPX9K mated with AMP282090-1); 6 wires output 18 AWG 1.65mm OD IP68

Housing material

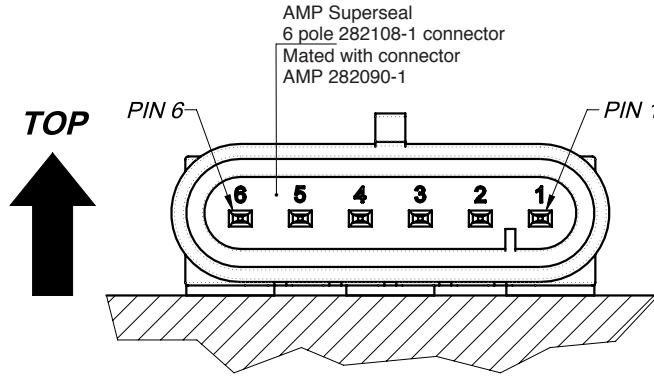
PBT

MECHANICAL DIMENSIONS



ELECTRICAL CONNECTIONS

AMP VERSION



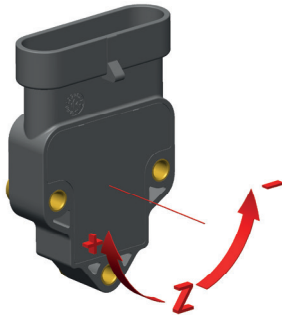
CONNECTIONS

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

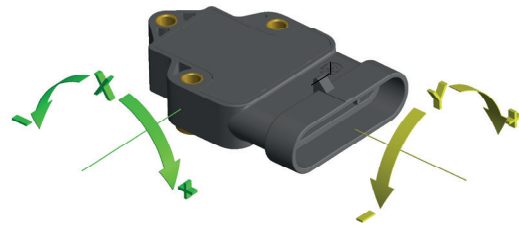
CONNECTIONS

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

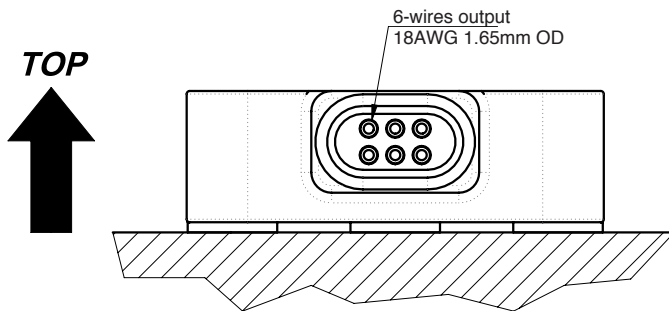
SINGLE AXIS



DUAL AXIS



CABLE VERSION



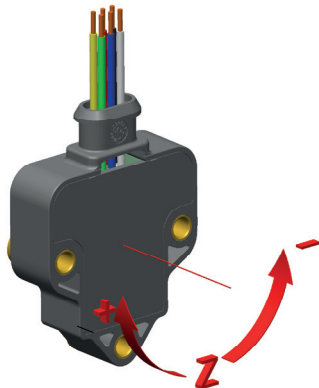
CONNECTIONS

- | | |
|-----------|----------|
| 1. BLACK | GROUND |
| 2. RED | + SUPPLY |
| 3. YELLOW | OUTPUT X |
| 4. GREEN | OUTPUT Y |
| 5. BLUE | n.c. |
| 6. WHITE | n.c. |

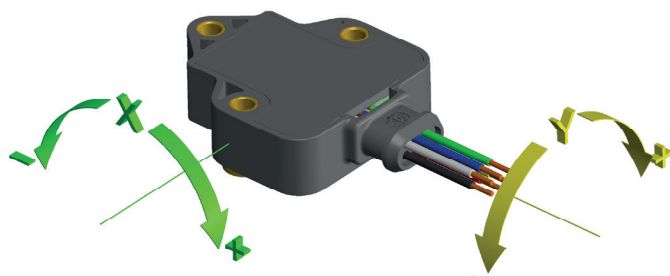
CONNECTIONS

- | | |
|-----------|----------|
| 1. BLACK | GROUND |
| 2. RED | + SUPPLY |
| 3. YELLOW | n.c. |
| 4. GREEN | n.c. |
| 5. BLUE | CAN L |
| 6. WHITE | CAN H |

SINGLE AXIS



DUAL AXIS



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

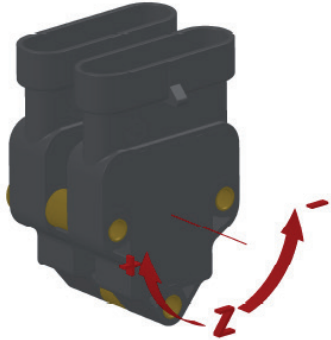
FULL REDUNDANT VERSION

Gefran GIB tilt sensor is designed to be double mounted with specific spacers (BUS027) in order to have a full redundant space-saving version.

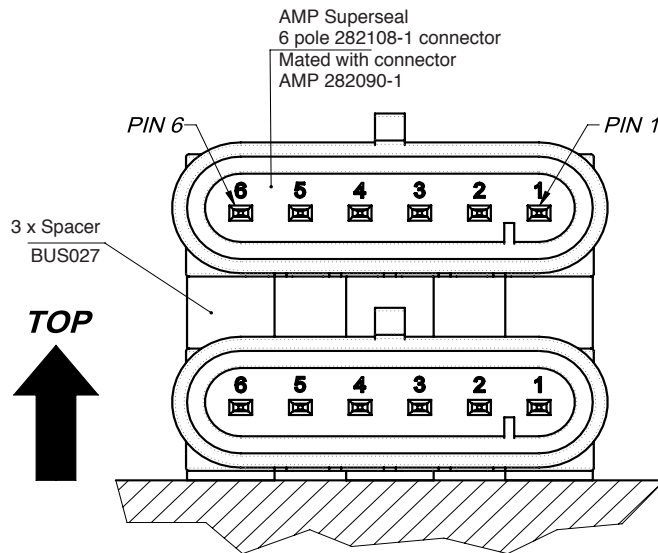
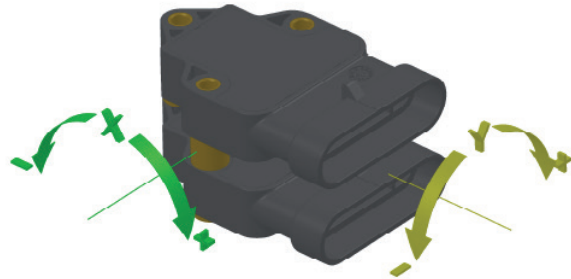
Please pay attention how to install the two GIB sensors: please position them both always face up or both face down.

Example of AMP FULL REDUNDANT VERSION

SINGLE AXIS



DUAL AXIS



CONNECTIONS

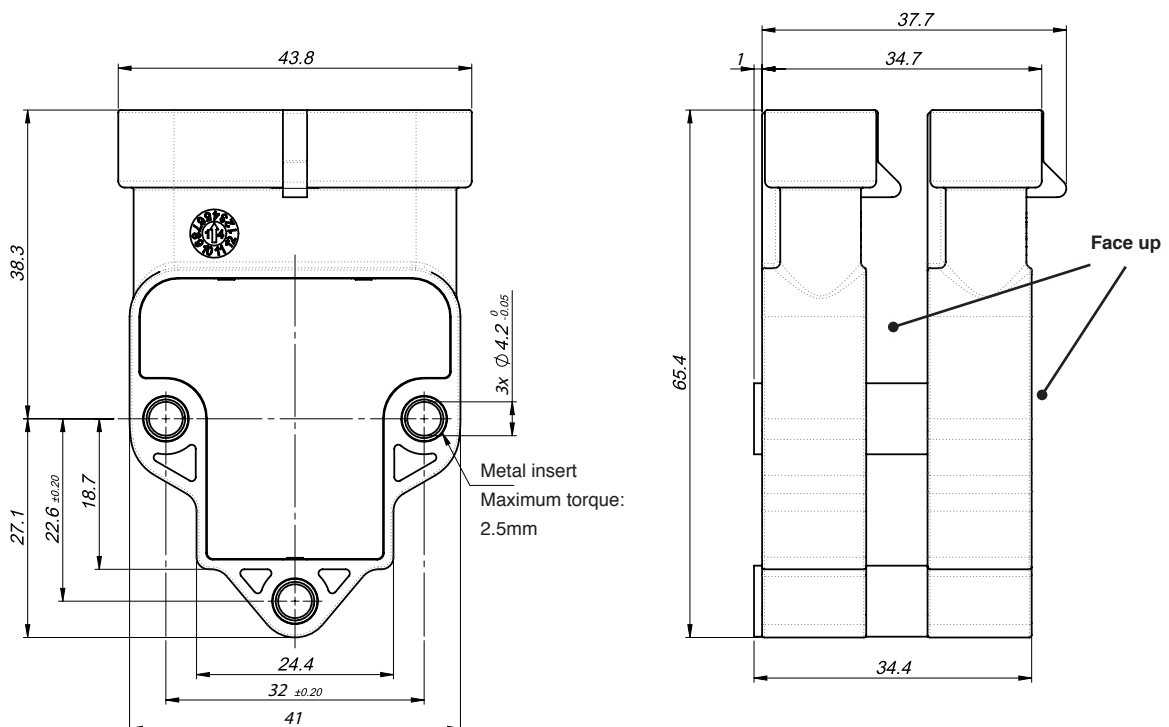
1. GROUND
2. + SUPPLY
3. OUTPUT X
4. OUTPUT Y
5. n.c.
6. n.c.

CONNECTIONS

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

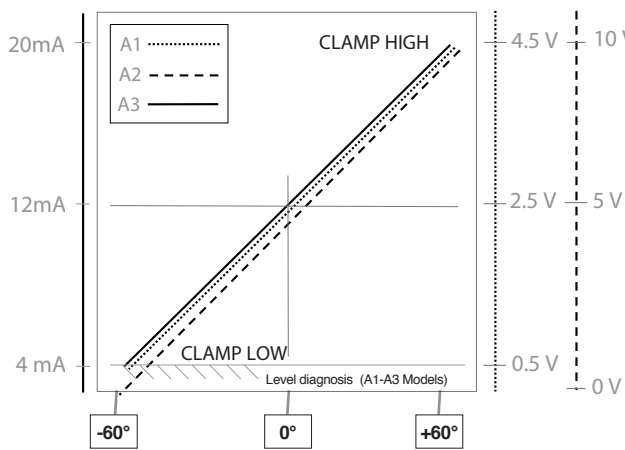
ITEMS MARKED "n.c." SHOULD NOT BE CONNECTED

MECHANICAL DIMENSIONS

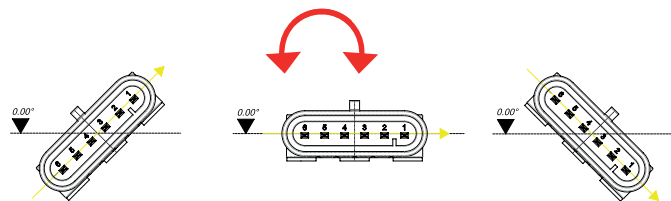
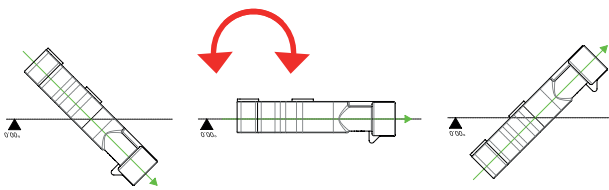
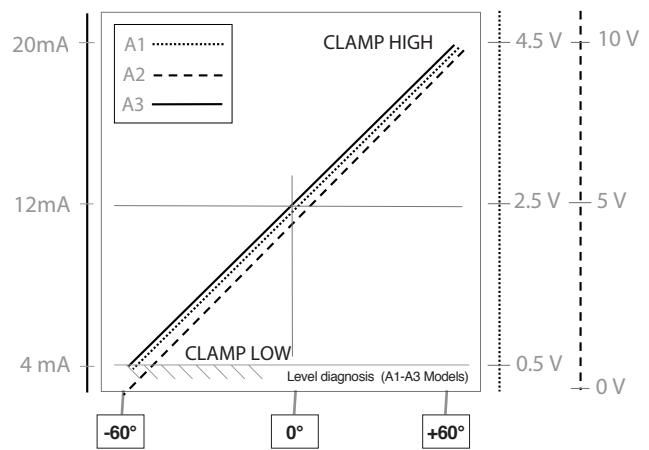


FUNCTIONS: SENSOR OUTPUT GRAPH

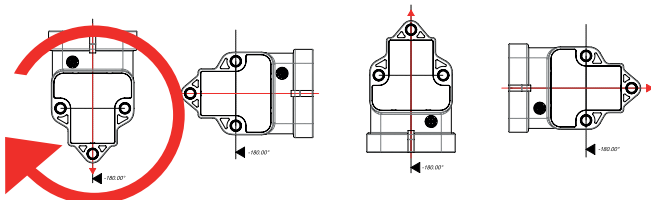
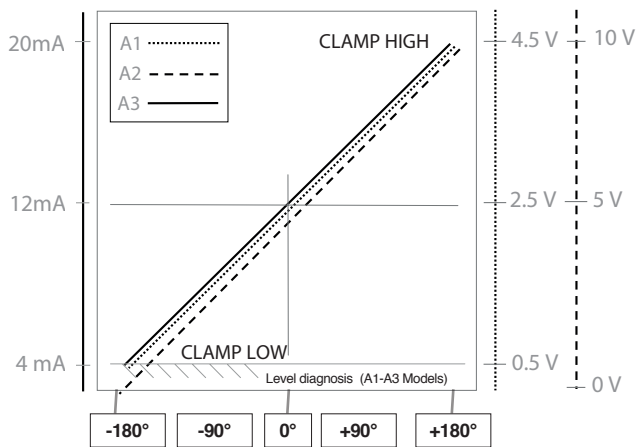
DUAL AXIS TILT SENSOR (XY) - X AXIS



DUAL AXIS TILT SENSOR (XY) - Y AXIS



SINGLE AXIS TILT SENSOR (360°) - Z AXIS



LOAD CONDITIONS

+0.5Vdc...+4.5 Vdc output and 0...10 Vdc with power +7...+36 Vdc: it is recommended a load resistance > 100 K Ω

+0.5Vdc...+4.5 Vdc output with power +5 Vdc: it is recommended a load resistance > 10 K Ω

+4...20 mA output with power < +15 Vdc: the maximum load resistance is admissible 200 Ω

+4...20 mA output with power >15 +Vdc: the maximum load resistance is admissible 500 Ω

ORDERING CODE

GIB - SINGLE/DUAL AXIS ENTRY LEVEL TILT SENSOR (XY/360°)

ELECTRICAL CONNECTIONS	
AMP Superseal 6P connector output	A
Cable output (specify cable length)	F

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

MEASURING RANGE	
measuring range (indicate) (single axis 360° - dual $\pm 10^\circ \pm 15^\circ \pm 20^\circ \pm 30^\circ$ $\pm 45^\circ \pm 60^\circ \pm 85^\circ$)	XXX

SUPPLY VOLTAGE	
+5Vdc (ONLY for 0.5..4.5 Vdc output)	L
+10...+36Vdc (see output type for the right value)	H

OUTPUT TYPE	
+0.5...+4.5Vdc output (ratiometric if powered at +5Vdc)	A1
0...+10Vdc output (powered at +15...+36Vdc)	A2*
4...20mA output (powered at +10...+36Vdc)	A3*
CANopen output (powered at +10...+36Vdc)	C1
* Options A2 and A3 available in due course	

CABLE	
Single cable without connector	0

CERTIFICATE	
0	No certificate attached
L	Linearity curve to be attached

ACCESSORIES	
X	No accessories
A	3x spacers for redundant version (BUS027)
B	Cable protection (PAS001)

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

Example of description

GIB	F	V	360	H	A3	0	0	000	X	02
	cable output	single axis	single axis 360°	+10..36Vdc	4..20mA output	only cable	no certified attached	special executions	no accessories	cable 200 mm

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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