

Rotary sensor for measurement ranges up to 360° with ability to program ±15° steps.

Contactless Hall technology for almost infinite sensor life due to absence of wear on the sensing element.

Various configurations make the product easy to install on vehicles.

High IP protection level, resistance to shock and vibration, and high electromagnetic compatibility make these products 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

360° rotation (different values on request programmable in steps of 15°)

#### Supply voltage

+5Vdc (only for 0.5...4.5Vdc output); +7...+36Vdc

#### Output signal

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

#### Electrical connections

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

#### Resolution and speed of rotation

12 bit (analog output); 14 bit (CANopen output); 120 rpm max.

#### Linearity

<±0.5%

#### Working and coefficient temperature

-40°C ... +85°C (higher values on request); thermal drift < 50 ppm/°C

#### Vibrations

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

#### Shock

Impulsive on 3 axes; 50g 11 ms EN 60068-2-27

#### Electromagnetic compatibility

According to 2004/108/CE

#### Life

Virtually no wear through the use of permanent magnet external

#### IP Protection level

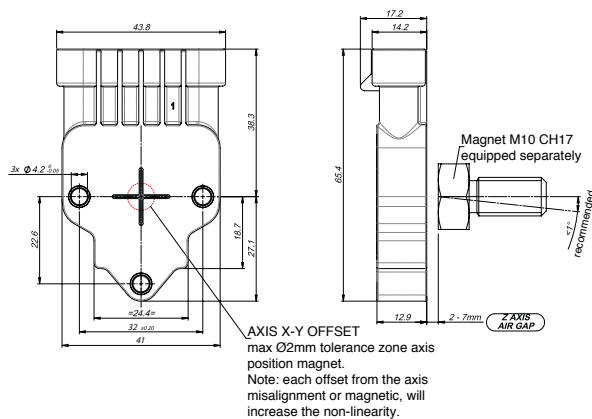
AMP IP67 (IPX9K mated with AMP282090-1); 6 wires output 18 AWG 1.65mm OD IP68

#### Housing material

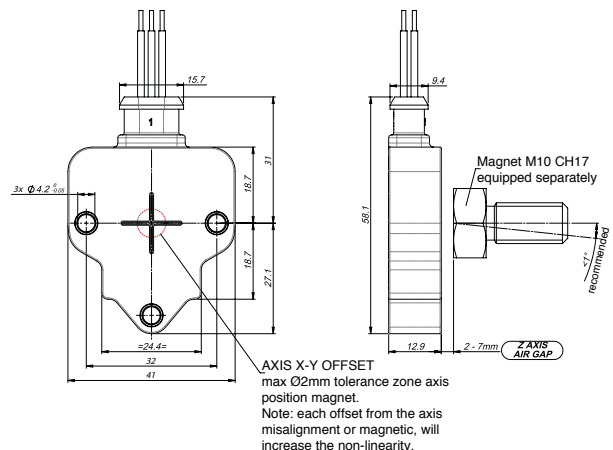
PBT

### MECHANICAL DIMENSIONS

#### AMP VERSION

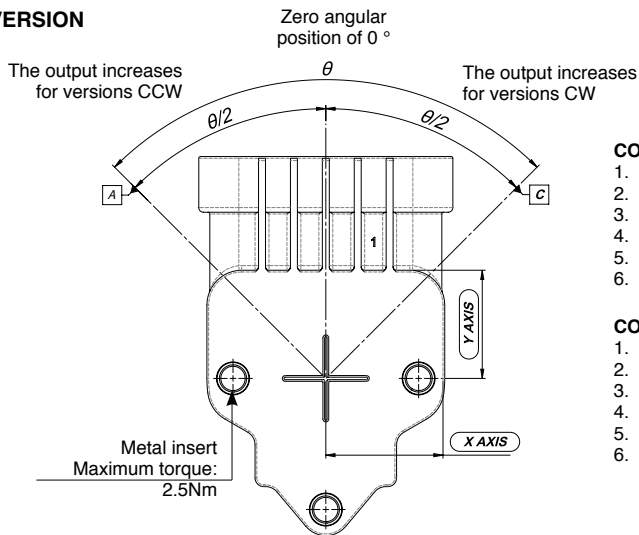


#### CABLE VERSION



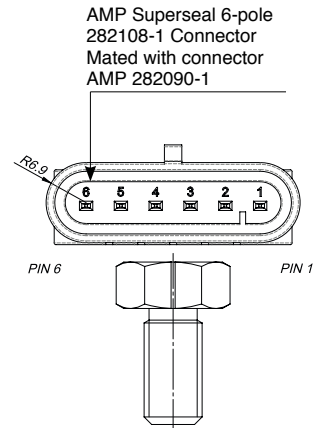
# ELECTRICAL CONNECTIONS

## AMP VERSION



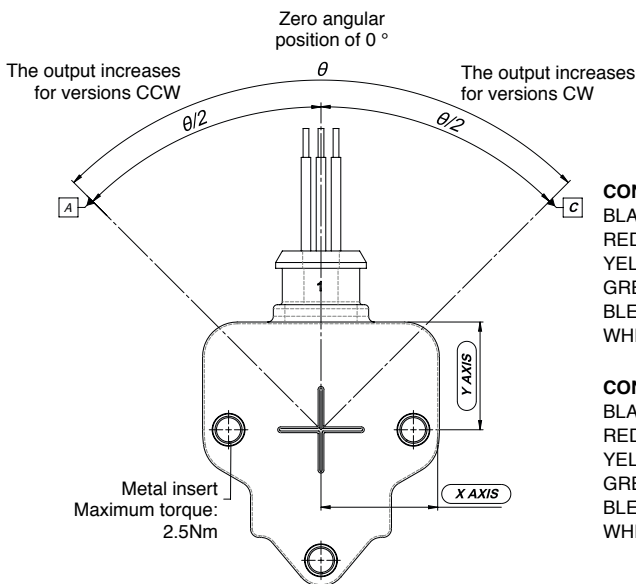
- CONNECTIONS**
1. GROUND 1
  2. + SUPPLY 1
  3. OUTPUT 1
  4. GROUND 2
  5. + SUPPLY 2
  6. OUTPUT 2

- CONNECTIONS - CAN**
1. 0V (GND)
  2. + Vs (+9...+36Vdc)
  3. NC
  4. NC
  5. CAN-L
  6. CAN-H



Ref.	CW Output	CCW Output
A	Output: 0.5Vdc	Output: 4.5Vdc
B	Zero angular position of 0°	Zero angular position of 0°
C	Output: 4.5Vdc	Output: 0.5Vdc

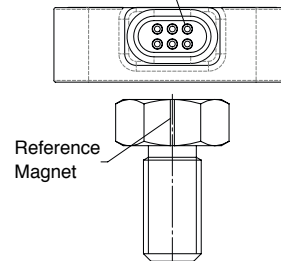
## CABLE VERSION



- CONNECTIONS**
- |        |            |
|--------|------------|
| BLACK  | GROUND 1   |
| RED    | + SUPPLY 1 |
| YELLOW | OUTPUT 1   |
| GREEN  | GROUND 2   |
| BLEU   | + SUPPLY 2 |
| WHITE  | OUTPUT 2   |

- CONNECTIONS - CAN**
- |        |            |
|--------|------------|
| BLACK  | GROUND 1   |
| RED    | + SUPPLY 1 |
| YELLOW | NC         |
| GREEN  | NC         |
| BLEU   | CAN-L      |
| WHITE  | CAN-H      |

6 wires output  
18AWG 1,65mm OD



Ref.	CW Output	CCW Output
A	Output: 0.5Vdc	Output: 4.5Vdc
B	Zero angular position of 0°	Zero angular position of 0°
C	Output: 4.5Vdc	Output: 0.5Vdc

## MAGNET OPTIONS (ACCESORIES)

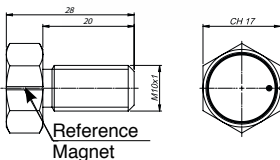
### PKIT384

#### MAGNET M10 CH17

AIR GAP 2-7mm AXIS OFFSET Ø4mm



Configurator:  
OPTION "A"



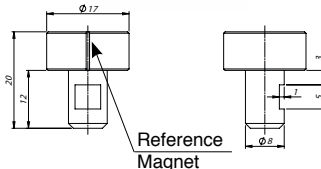
### PKIT389

#### PLUG TYPE MAGNET

AIR GAP 2-7mm AXIS OFFSET Ø4mm



Configurator:  
OPTION "B"



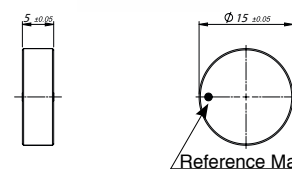
### PKIT418

#### KIT MAGNET Ø15

AIR GAP 2-7mm AXIS OFFSET Ø4mm

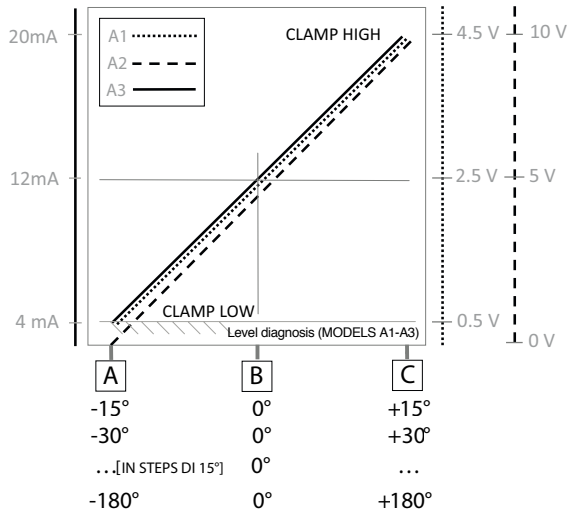


Configurator:  
OPTION "C"

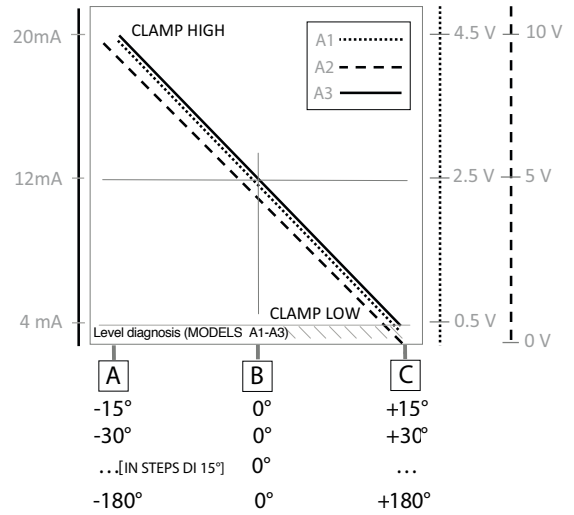


# FUNCTIONS: SENSOR OUTPUT GRAPH

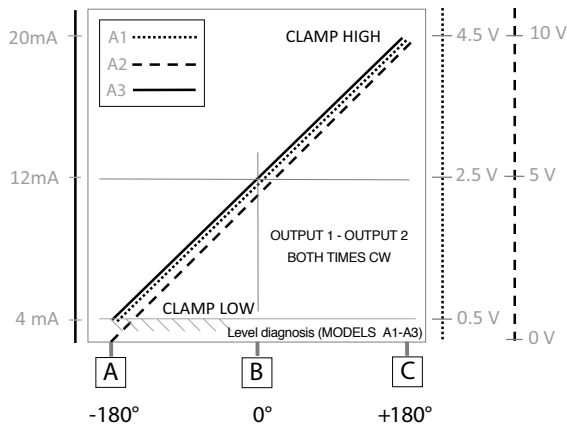
**CLOCKWISE CW SINGLE  
DIRECTION OF ROTATION 1**



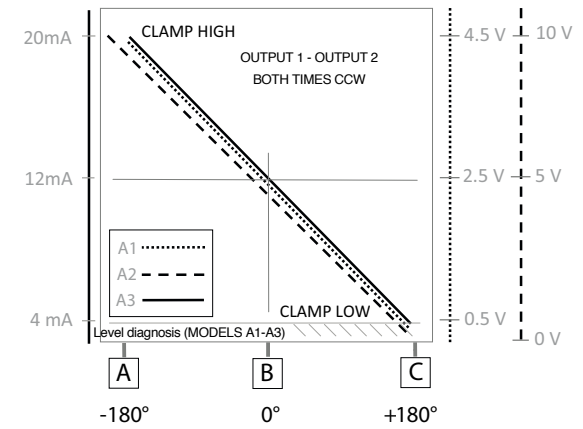
**COUNTERCLOCKWISE CCW SINGLE  
DIRECTION OF ROTATION 2**



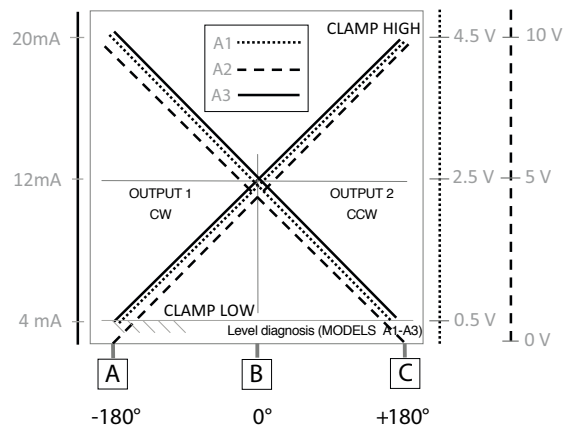
**REDUNDANT DIRECTION OF ROTATION 1**



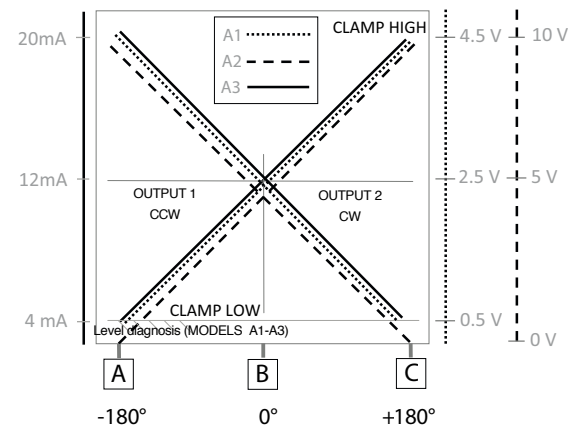
**REDUNDANT DIRECTION OF ROTATION 2**



**REDUNDANT DIRECTION OF ROTATION 3**



**REDUNDANT DIRECTION OF ROTATION 4**



**LOAD CONDITIONS**

+0.5Vdc...+4.5 Vdc output with power +7...+36Vdc and +0..10Vdc output with power >15 +Vdc: it is recommended a load resistance > 100 KΩ:

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

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

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

## ORDERING CODE

ELECTRICAL CONNECTIONS	
AMP Superseal 6P connector output	<b>A</b>
cable output (specify cable length)	<b>F</b>

CIRCUIT TYPE	
Single	<b>S</b>
Redundant (only for analog outputs)	<b>R</b>

ANGLE/CHANNEL 1 (output for single channel)	
angular measuring range (indicate) (programmable $\pm 15^\circ$ )	<b>XXX</b>

ANGLE/CHANNEL 2	
angular measuring range (indicate) (programmable $\pm 15^\circ$ )	<b>XXX</b>

SUPPLY VOLTAGE	
+5Vdc	<b>L</b>
+7...+36Vdc	<b>H</b>

OUTPUT TYPE	
+0.5...+4.5Vdc output (ratiometric if powered at +5Vdc)	<b>A1</b>
0...+10Vdc output (supply >15 Vdc)	<b>A2</b>
4...20mA output (powered at +7...36Vdc)	<b>A3</b>
CANopen output (powered at +7...36Vdc)	<b>C1</b>

ROTATION DIRECTION	
Clockwise CW/ both clockwise CW	<b>1</b>
Counterclockwise CCW/ both counterclockwise CCW	<b>2</b>
CH1-CW, CH2-CCW (redundant only)	<b>3</b>
CH1-CCW, CH2-CW (redundant only)	<b>4</b>

CABLE	
Single cable without connector	<b>0</b>

CERTIFICATE	
<b>0</b>	No certificate attached
<b>L</b>	Linearity curve to be attached

ACCESSORIES	
<b>X</b>	No accessories
<b>A</b>	shaft kit + magnet D15 M10 hexagonal (PKIT384)
<b>B</b>	shaft kit to insert + magnet D15 (PKIT389)
<b>C</b>	kit magnet $\varnothing 15$ (PKIT418)
<b>D</b>	cable protection AMP 880810-1 (PAS001)

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

### Example of description

<b>GRN</b>	<b>F</b>	<b>S</b>	<b>045</b>	<b>XXX</b>	<b>L</b>	<b>A2</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>000</b>	<b>C</b>	<b>10</b>
	Cable output	Single circuit	Measuring range $\pm 45^\circ$		Supply voltage + 7...36Vdc	0..10V output	Counter-clockwise CCW	Only cable	no certificate attached	Special execution	$\varnothing 15$ magnet kit	1m cable

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

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**GEFRAN**

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