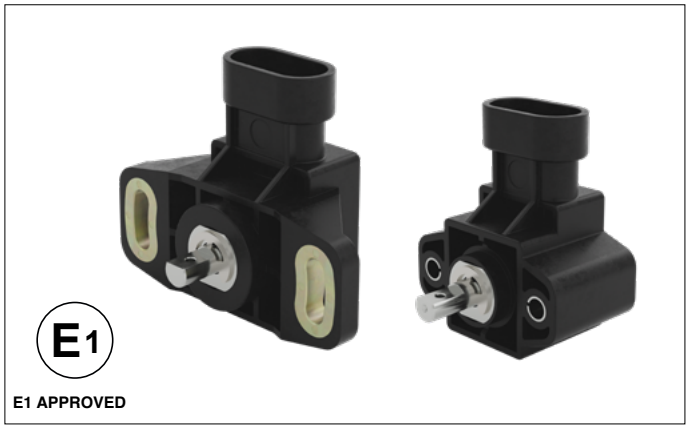
GEFRAN

GR3P

HALL-EFFECT SINGLE-TURN ROTARY SENSOR WITH SHAFT AND AMP SUPERSEAL 3P CONNECTOR



E1 APPROVED

Rotary sensor for measurement ranges up to ± 180° with ability to angle rotation in step of 5°.

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

Specifically designed to ensure a robust and high-performance solution for harsh environments, featuring a high IP protection level to resist dust and water ingress. It offers exceptional resistance to shock and vibration and is capable of operating across a wide temperature range.

The various configurations and accessory levers make the product versatile to installation on a variety of vehicle types such as agricultural machinery, construction equipment and material handling equipment.

Available in two center-to-center distances versions:

- *32 mm*
- *50 mm*

TECHINAL DATA

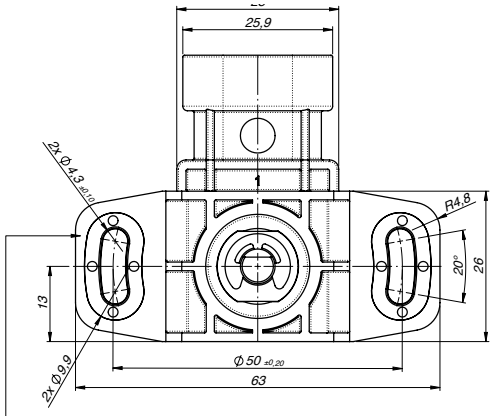
Measurement range
±15° … ±180°, in step of 5°
Supply voltage
4.5…5.5 V DC; 8…32 V DC
Output signal
0.5…4.5 V ratiometric (powered at 5 V DC); 0.5…4.5 V; 0...10 V; 4...20 mA
Load conditions
Voltage output: min 10 kΩ. Current output: max 200 Ω for supply voltage < 15 V DC; max 500 Ω for supply voltage > 15 V DC
Electrical connections
AMP 3P Superseal 2820087-1
Fixing system
Eyelets; circular holes
Resolution
12 bit
Linearity
± 0.5% FS
Working and coefficient temperature
-40... +125 °C (-40…+257 °F); ±50 ppm/°C (typ.)
Vibrations
20g - 10 Hz … 2000 Hz IEC 60068-2-6
Shock
50g 11 ms IEC 60068-2-27
Electromagnetic compatibility
2014/30/EU Electromagnetic Compatibility (EMC)
Life
35 M operations (stroke ±75°)
IP Protection level
IP67, IP69K
Materials
Housing: PPA; Bearing: bronze alloy; Shaft: stainless steel; Levers*: stainless steel, PBT

*Optional accessories

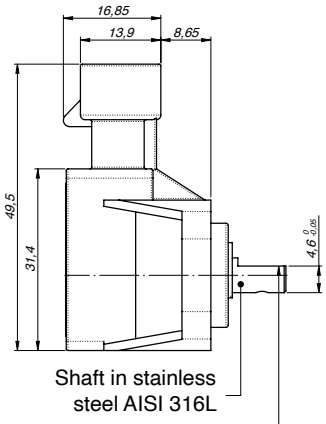
MECHANICAL DIMENSIONS

50 mm VERSION

Version with eyelets fixing Ø4.3 mm



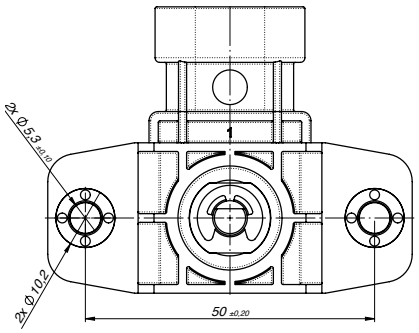
Zinc alloy insert, zinc plated
Maximum torque: 2.5 Nm
(same for circular hole fixing)



Shaft in stainless steel AISI 316L

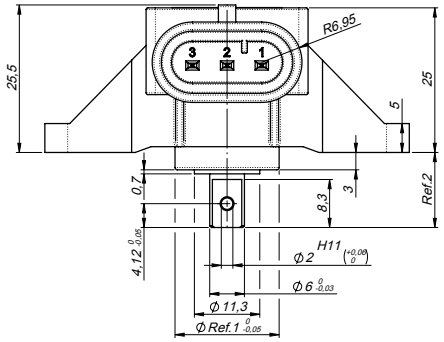
Position Zero 0° when the planar face of the shaft is parallel to the axis of the mounting holes

Version with circular holes fixing Ø5.3 mm



Fixing systems available for 50 mm version

Code	Description
H2	Circular holes Ø5.3 mm
E1	Eyelets Ø4.3 mm



Shaft lenghts available for 50 mm version

Ref.2	Description
S	13 mm

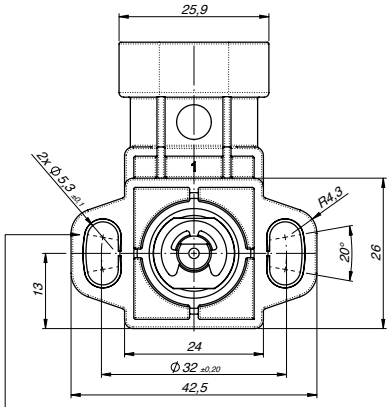
Guide rings available for 50 mm version

Ref.1	Description
M	Ø18 mm
L	Ø20 mm
H	Ø22 mm

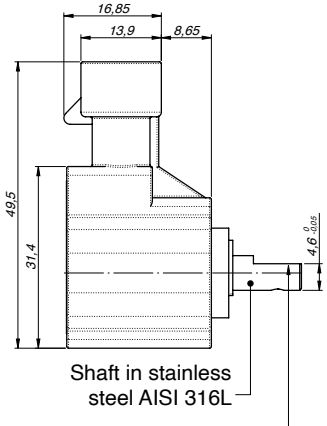
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32 mm VERSION

Version with eyelets fixing Ø5.3 mm



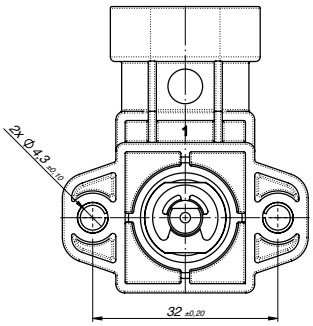
AISI 316L stainless steel insert
Maximum torque: 2.5 Nm
(same for circular hole fixing)



Shaft in stainless steel AISI 316L

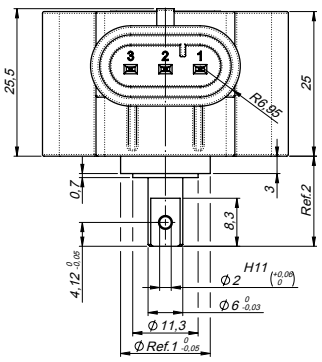
Position Zero 0° when the planar face of the shaft is parallel to the axis of the mounting holes

Version with circular holes fixing Ø4.3 mm



Fixing systems available for 32 mm version

Code	Description
H1	Circular holes Ø4.3 mm
E2	Eyelets Ø5.3 mm



Shaft lenghts available for 32 mm version

Ref.2	Description
S*	13 mm
L**	15.6 mm

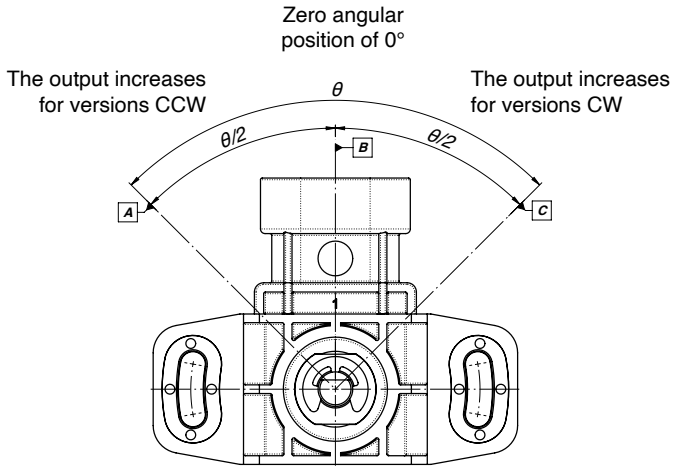
*only with Ø18 mm guide ring;
**only with Ø15.5 mm guide ring.

Guide rings available for 32 mm version

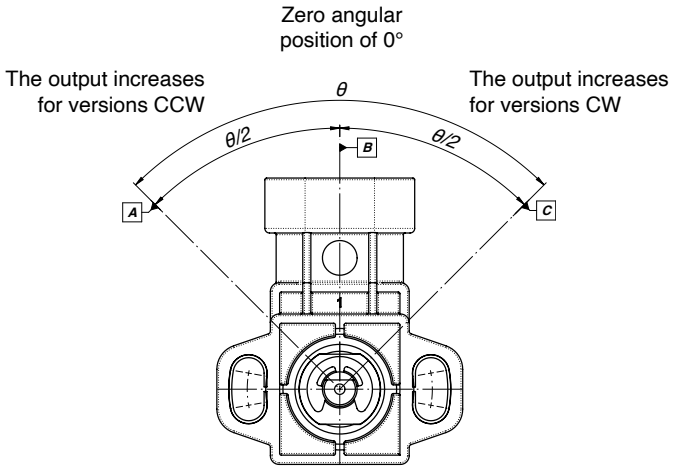
Ref.1	Description
S	Ø15.5 mm
M	Ø18 mm

ROTATION DIRECTION

50 mm VERSION

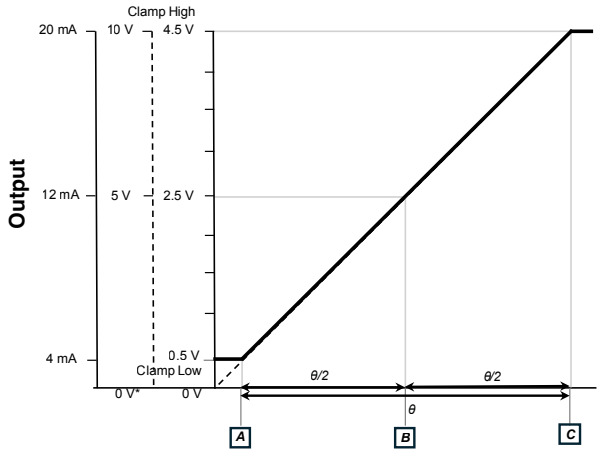


32 mm VERSION

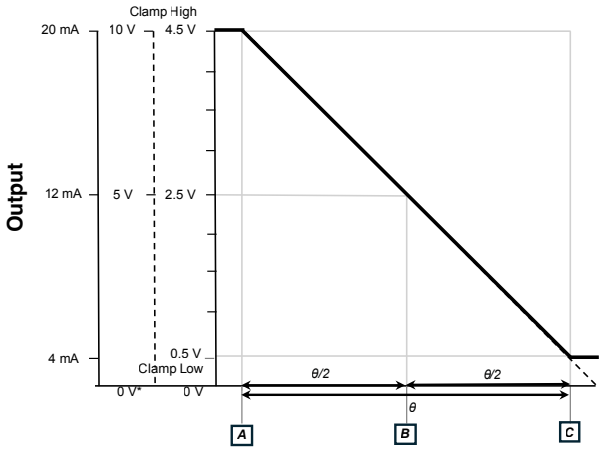


θ = Measurement range

Reference	Description	Output CW				Output CCW			
	Output signal	ratiometric	0.5…4.5 V	0…10 V	4…20 mA	ratiometric	0.5…4.5 V	0…10 V	4…20 mA
A	Measurement range lower limit	0.5 V	0.5 V	0 V	4 mA	4.5 V	4.5 V	10 V	20 mA
B	Zero angular position of 0°	2.5 V	2.5 V	5 V	12 mA	2.5 V	2.5 V	5 V	12 mA
C	Measurement range upper limit	4.5 V	4.5 V	10 V	20 mA	0.5 V	0.5 V	0 V	4 mA



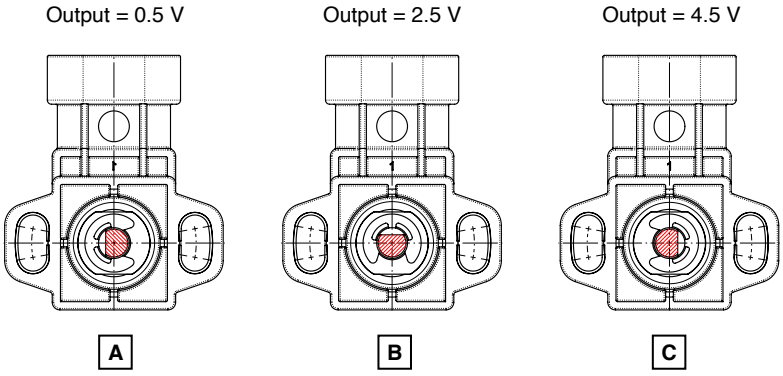
Reference angle

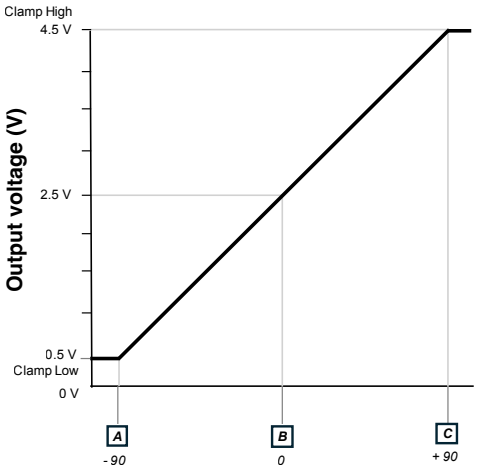


Reference angle

* For 0…10 V output signal, approacing the A position for CW (C position for CCW) the sensor output will saturate at 25 mV (typ.).

Es: GR3PASE2MS090A11SX0
GR3P AMP – single – 32 mm – rotation ±90° (θ = 180°) – output 0.5…4.5 V – CW



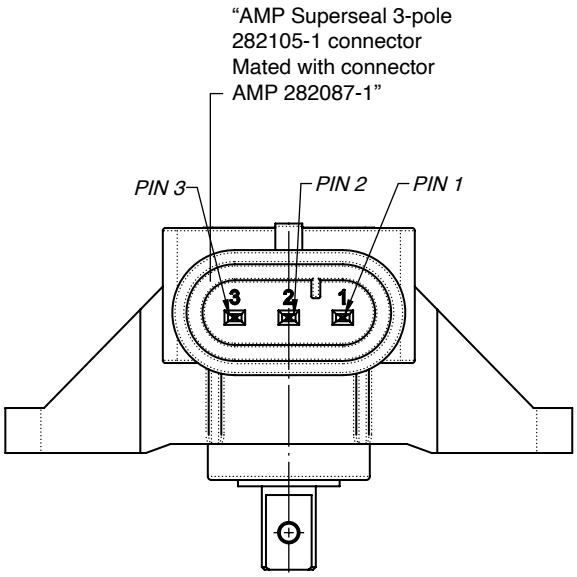


Actuator position

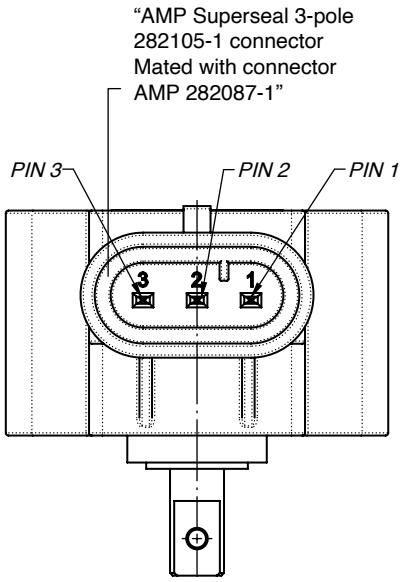
The operating principle remains the same regardless of the fixing system.

ELECTRICAL CONNECTIONS

50 mm VERSION



32 mm VERSION



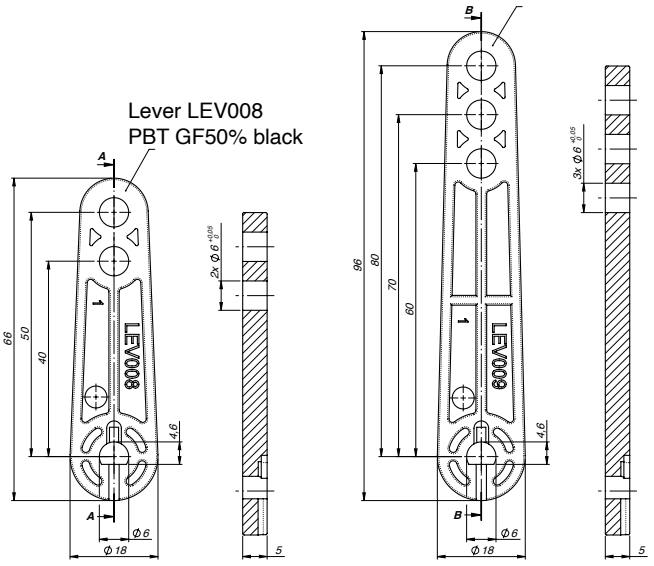
ANALOG CONNECTIONS			
Pinout S		Pinout R	
PIN 1	GROUND	PIN 1	+ SUPPLY
PIN 2	+ SUPPLY	PIN 2	GROUND
PIN 3	OUTPUT	PIN 3	OUTPUT

ACCESSORIES

LEVER KITS

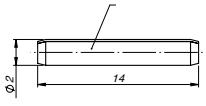
Lever LEV009
PBT GF50% black

Lever LEV008
PBT GF50% black



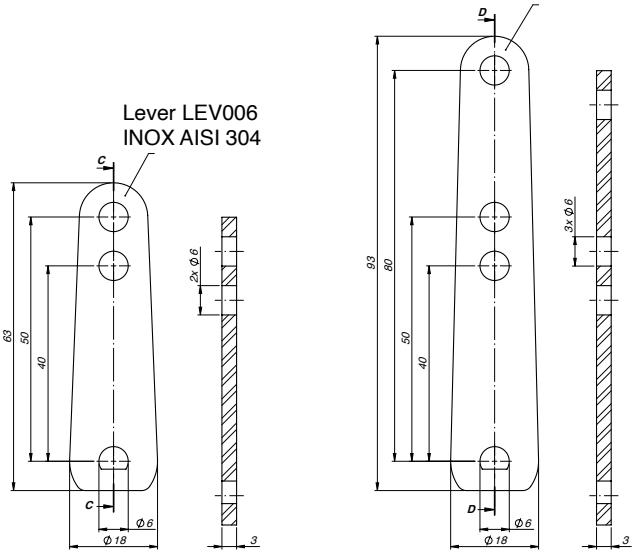
Fastening pin

Dowel pin MIM775 ISO 8750
INOX AISI 302



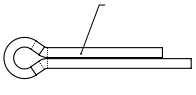
Lever LEV007
INOX AISI 304

Lever LEV006
INOX AISI 304



Fastening pin

Cotter pin MIM070 ISO 1234
INOX AISI 316



Levers can be ordered mounted or unmounted.

ORDERING CODE

GR3P	A	S	-	-	-	-	-	-	-	-	-	0	-	000	-	00
												ND		special execution code		ND

ELECTRICAL CONNECTIONS	
AMP Superseal 3P connector output	**A**

CIRCUIT TYPE	
Single	**S**

CENTRE-TO-CENTRE DISTANCE	
32 mm	**3**
50 mm	**5**

FIXING	
Circular holes Ø4.3 mm	**H1**
Circular holes Ø5.3 mm	**H2**
Eyelets Ø4.3 mm	**E1**
Eyelets Ø5.3 mm	**E2**

Note: 50 mm version available with H2 and E1;
32 mm version available with H1 and E2.

GUIDE RING	
15,5 mm	**S**
18 mm	**M**
20 mm	**L**
22 mm	**H**

Note: 50 mm version available with M, L and H guide rings;
32 mm version available with S and M guide rings.

SHAFT LENGTH	
13 mm	**S**
15,6 mm	**L**

Note: 50 mm version available with S; 32 mm version available with S (only with M guide ring) and L (only with S guide ring).

MEASUREMENT RANGE	
±15°	**015**
... in step of 5° (specify XXX°)	**XXX**
±180°	**180**

OUTPUT TYPE	
0.5...4.5 V ratiometric output (powered at 5 V DC)	**A0**
0.5...4.5 V output (powered at 8...32 V DC)	**A1**
0...10 V output (powered at 8...32 V DC)	**A2**
4...20 mA output (powered at 8...32 V DC)	**A3**

ROTATION DIRECTION	
Clockwise CW	**1**
Counterclockwise CCW	**2**

PINOUT	
1. GROUND, 2. + SUPPLY, 3. OUTPUT	**S**
1.+SUPPLY, 2. GROUND, 3. OUTPUT	**R**

ACTUATOR	
Shaft	**X**
Shaft with lever LEV006 50 mm INOX AISI 304 (cotter pin mounted)	**A**
Shaft with lever LEV008 50 mm PBT GF50% black (dowel pin mounted)	**B**
Shaft with lever LEV007 80 mm INOX AISI 304 (cotter pin mounted)	**C**
Shaft with lever LEV009 PBT 80 mm GF50% black (dowel pin mounted)	**D**

ACCESSORIES	
X	No accessories to be included in the package
A	50 mm INOX Lever Kit: LEV006 + cotter pin ISO 8752 Ø2x14 INOX AISI 316 (PKIT917)
B	50 mm PBT Lever Kit: LEV008 50 + dowel pin ISO 8752 Ø2x14 INOX AISI 302 (PKIT937)
C	80 mm INOX Lever Kit: LEV007 + cotter pin ISO 1234 Ø2x10 INOX AISI 316 (PKIT936)
D	80 mm PBT Lever Kit: LEV009 + dowel pin ISO 8752 Ø2x14 INOX AISI 302 (PKIT947)

CERTIFICATES	
0	No certificate attached
L	Linearity curve to be attached

EXAMPLE OF DESCRIPTION:

GR3P	A	S	5	E1	H	S	180	A0	1	S	X	0	0	000	D	00

GR3P – AMP 3 pin – single – 50 mm – eyelets Ø4.3 mm – guide ring Ø22 mm – shaft 13 mm – rotation ±180° – output 0.5…4.5 V – clockwise CW – pinout 1. GROUND, 2. + SUPPLY, 3. OUTPUT – shaft – no certificate attached – no special execution – 80 mm PBT Lever Kit

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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