



Linear position transducer with GEFran's innovative ONDA magnetostrictive technology for long life.

The absence of electrical contact on the cursor eliminates wearing and guarantees almost unlimited life.

Gefran's patented ONDA technology achieves a compact, modular structure for simple installation.

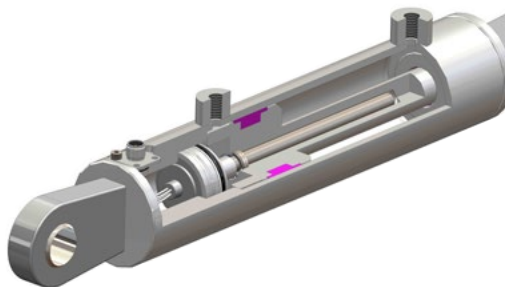
RK-5 is a magnetostrictive position transducer with flanged connection that installs completely inside oil-pressure cylinders.

Its unique design, plus a wide range of cursor configurations, ensures easy installation and total compatibility with cylinder manufacturer specifications.

Working temperature from -40 to +105°C, working pressures up to 350 bar, high resistance to vibration (25 g) and shock (100g) give the sensor the indispensable strength needed for heavy-duty use (for example: mobile hydraulics).

High performance in terms of transduction of measurement defined as linearity, hysteresis and repeatability.

The signal is analog in models with current or voltage output



### TECHNICAL DATA

#### Model

from 50 to 2500 mm

#### Measurement given

Displacement

#### Sampling time (typical)

1 ms

#### Shock test DIN IEC68T2-27

100g - 11ms - single shock

#### Vibrations DIN IEC68T2-6

25g / 10...2000Hz

#### Displacement speed

≤ 10 m/s

#### Maximum acceleration

≤ 100 m/s<sup>2</sup> displacement

#### Resolution

12 bit (min 50 μm)

#### Working pressure

350 bar

#### Nominal power supply

10...32 Vdc (E/R)  
8...32Vdc (N/O/K/I outputs)

#### Max. power ripple

1Vpp

#### Output signal

0.5...9.5Vdc (RK-5 N)  
9.5...0.5Vdc (RK-5 O)  
0.5...4.5Vdc (RK-5 K)  
4.5...0.5Vdc (RK-5 I)  
4...20mA (RK-5 E)  
20...4mA (RK-5 R)  
0,25...4,5Vdc (RK-5 L)

#### Electrical insulation

500V (\*) (D.C. Power supply/ground)

#### Protection against polarity inversion

Yes

#### Protection against overvoltage

Yes

#### Hydraulic circuit area protection

IP67/ IP69 with connector

#### Working temperature

-40°...+105°C

#### Storage temperature

-30°...+100°C

#### Coefficient of temperature

0.01% FS / °C

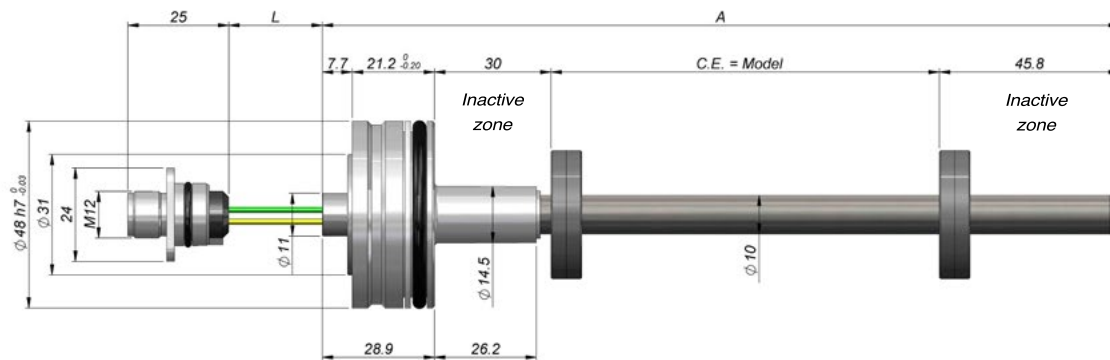
#### Humidity dew point EN60068-2-30

90% non-condensing humidity

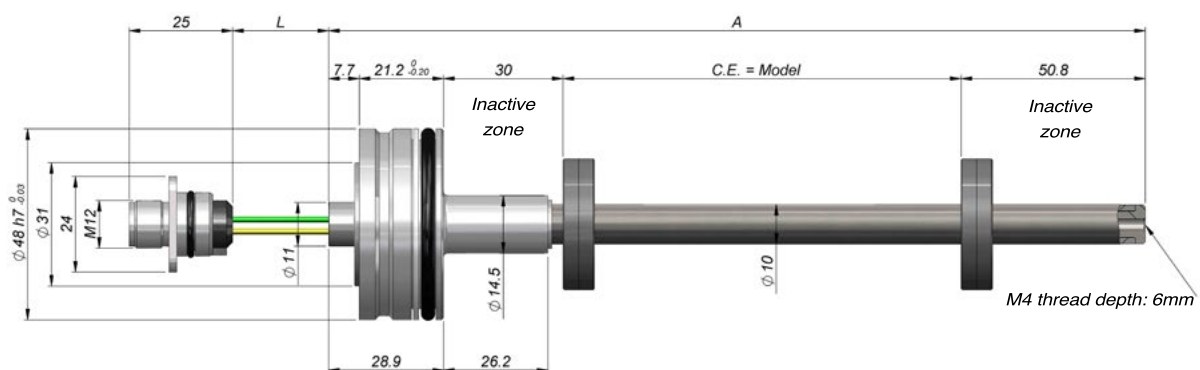
(\*) Uses 50V 2J Voltage suppressor

## MECHANICAL DIMENSIONS

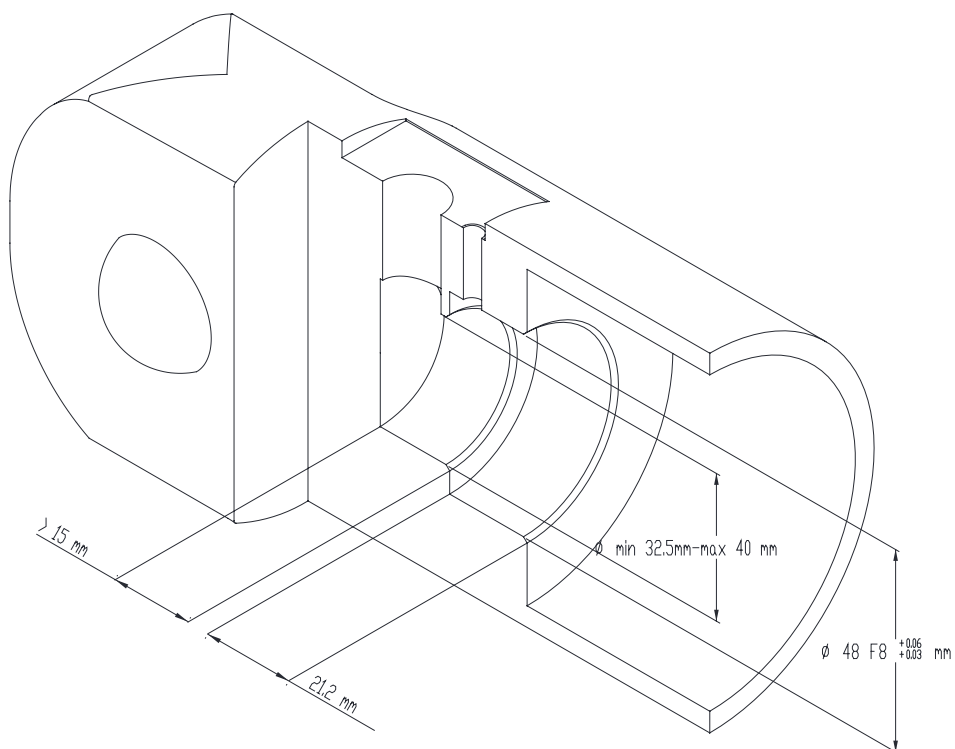
### Stroke 50 to 1000 mm



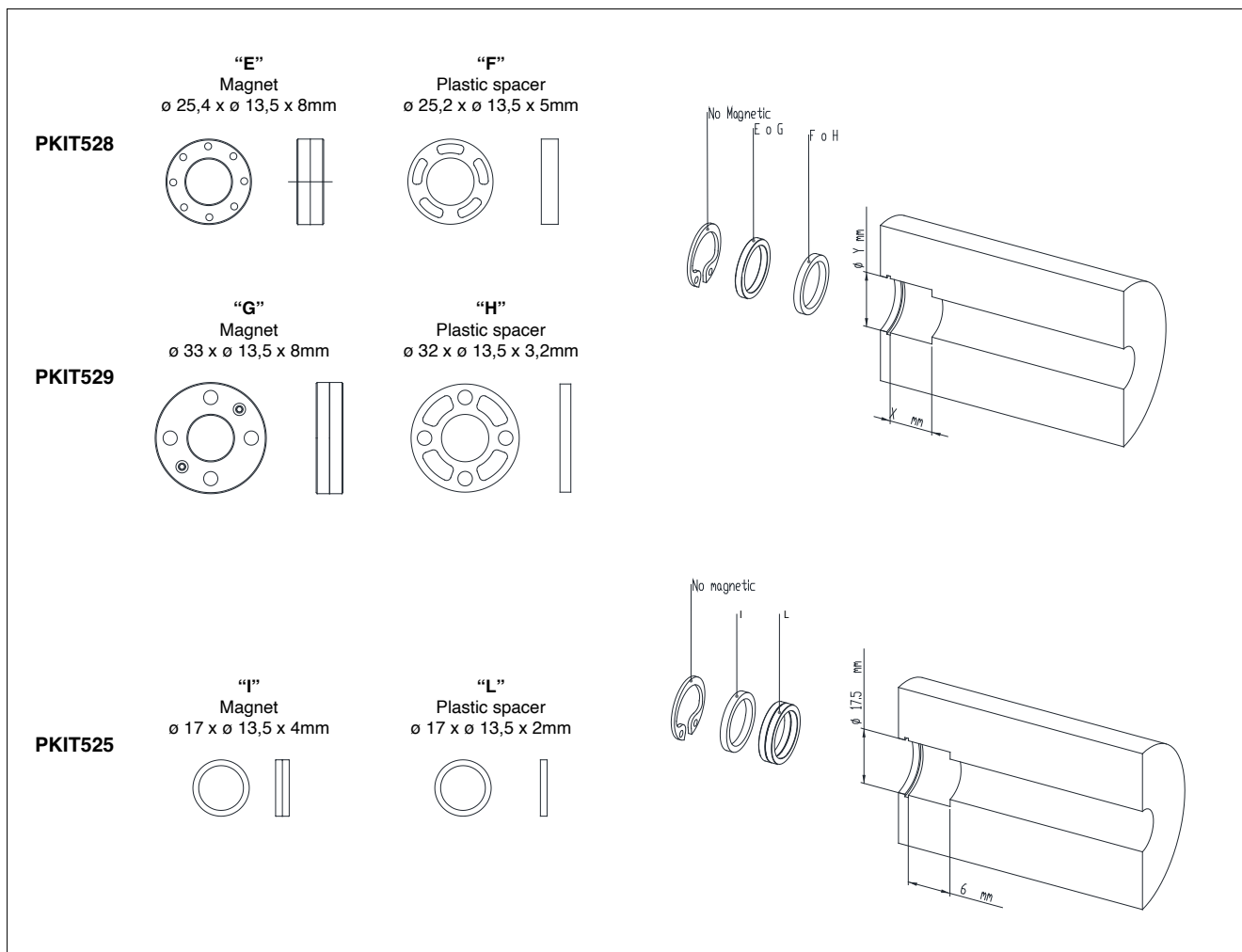
### Stroke 1250 to 2500 mm



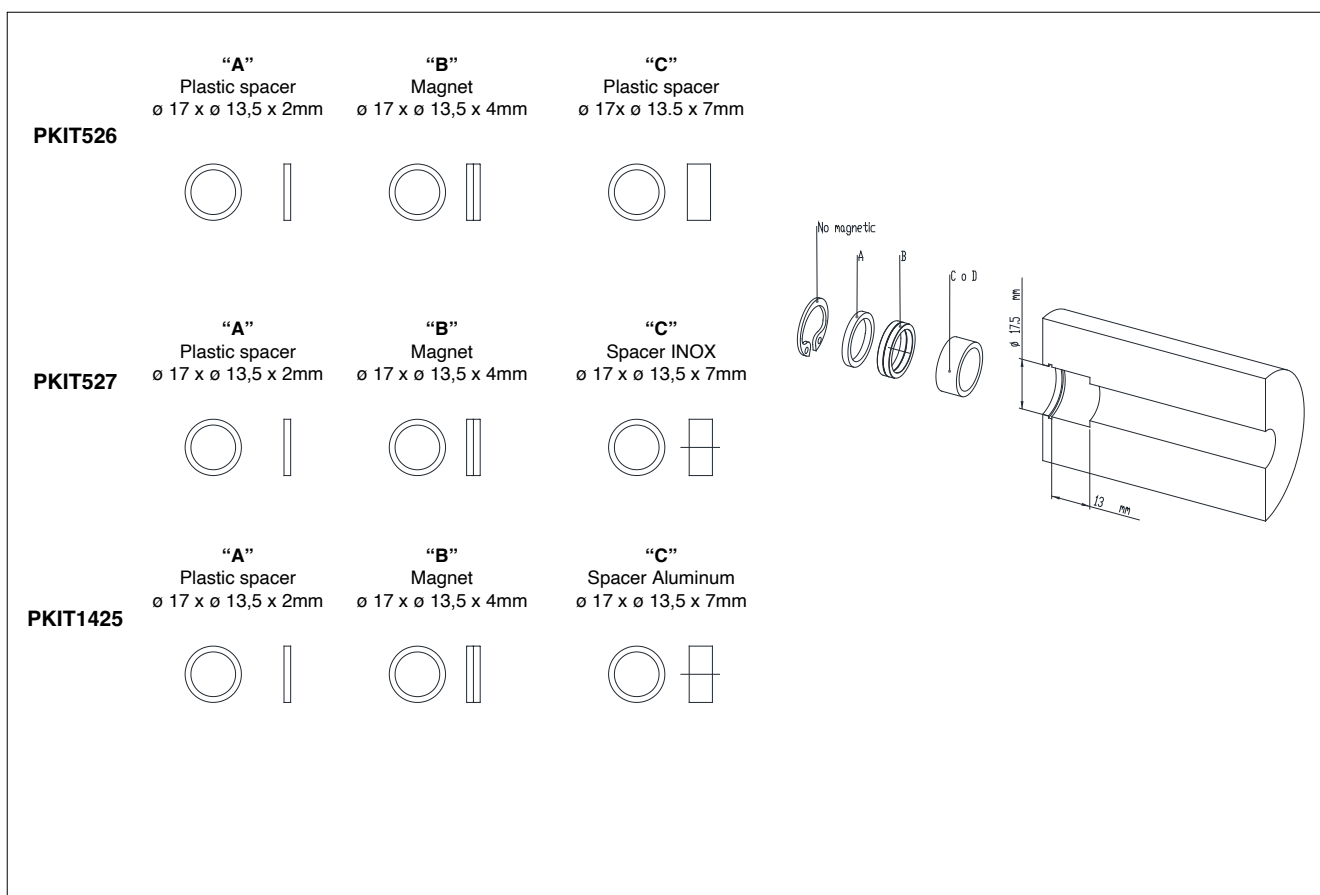
## SENSOR HOUSING (detail of head)



## INSTALLATION AND CURSOR KIT (to be ordered separately)



## INSTALLATION AND CURSOR KIT FOR 13mm HOUSINGS (to be ordered separately)



ELECTRICAL / MECHANICAL DATA

| Model                    |      | 50                                    | 100 | 130 | 150 | 200 | 225 | 300 | 400 | 450 | 500 | 600 | 700 | 800 | 900 | 1000 | 1250                           | 1500 | 1750 | 2000 | 2250 | 2500 |
|--------------------------|------|---------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|--------------------------------|------|------|------|------|------|
| Electrical Stroke (E.S.) | mm   | Model                                 |     |     |     |     |     |     |     |     |     |     |     |     |     |      |                                |      |      |      |      |      |
| Independent linearity    |      | < ±0.04% F.S. (±0.10 mm minimum)      |     |     |     |     |     |     |     |     |     |     |     |     |     |      |                                |      |      |      |      |      |
| Max. length (A)          | mm   | Model +104,7 (excluding cable)        |     |     |     |     |     |     |     |     |     |     |     |     |     |      | Model +109,7 (excluding cable) |      |      |      |      |      |
| Repeatability            | mm   | < 0.01                                |     |     |     |     |     |     |     |     |     |     |     |     |     |      |                                |      |      |      |      |      |
| Hysteresis               |      | < ±0.005% F.S.                        |     |     |     |     |     |     |     |     |     |     |     |     |     |      |                                |      |      |      |      |      |
| Sampling time            | msec | 1 for stroke up to 600 / 2 up to 2500 |     |     |     |     |     |     |     |     |     |     |     |     |     |      |                                |      |      |      |      |      |

CONNECTION TO FLYING LEADS (OPTION F)



**L.**  
Standard length 1000 mm



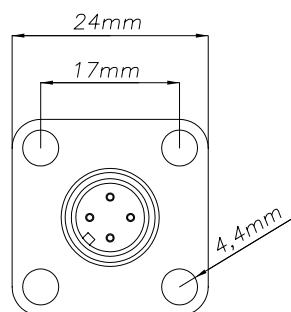
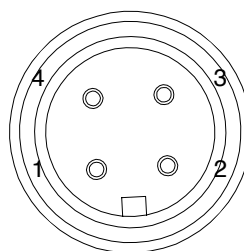
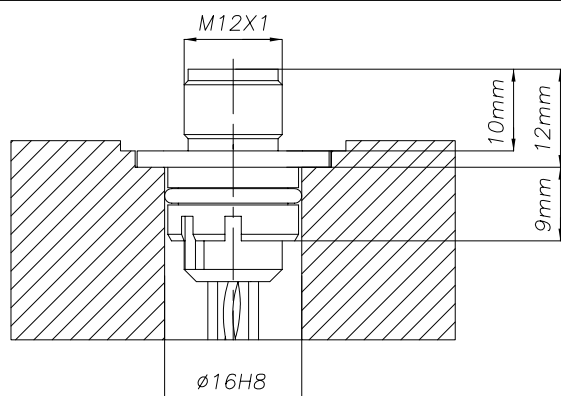
| Color code | Version "F"   |
|------------|---------------|
|            | Function      |
| Yellow     | Power supply  |
| Brown      | n.c.          |
| White      | 0 Vdc         |
| Green      | mA/Vdc output |

CABLE LENGTH (OPTION A/B)



| Code | Length |
|------|--------|
| 060  | 60 mm  |
| 150  | 150 mm |
| 240  | 240 mm |

## ELECTRICAL CONNECTIONS AND CONNECTOR ASSEMBLY (options A and B)



| PIN | VERSION "A"   | VERSION "B"   |
|-----|---------------|---------------|
|     | FUNCTION      | FUNCTION      |
| 1   | Power supply  | Power supply  |
| 2   | n.c.          | mA/Vdc output |
| 3   | 0 Vdc         | 0 Vdc         |
| 4   | mA/Vdc output | n.c.          |

## CE CONFORMITY ACCORDING TO DIRECTIVE 2014/30/EU

| STANDARD                  | TITLE                                                                                                                                        |
|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| ISO 13766                 | Earthmoving Machinery                                                                                                                        |
| ISO 11452-5               | Road vehicles - Components test methods for electrical disturbances from narrowband radiated electromagnetic energy. part 5: stipline 200V/m |
| EN61326_1;<br>EN61326_2_3 | Electrical equipment for measurement, control and laboratory use                                                                             |

## CURSOR KIT (to be ordered separately)

Depending on the size of the intended housing in the cylinder (diameter and housing depth) and the material of the piston, the most suitable kits to order are indicated in the following table.

| CODE     | Ø HOUSING | HOUSING DEPTH | PISTON MATERIAL        | MAGNET | PLASTIC SPACER | AMAGNETIC SPACER |
|----------|-----------|---------------|------------------------|--------|----------------|------------------|
| PKIT528  | Ø 25,4 mm | 13 mm         | magnetic/<br>amagnetic |        |                |                  |
| PKIT529  | Ø 33 mm   | 13 mm         | magnetic/<br>amagnetic |        |                |                  |
| PKIT525  | Ø 17 mm   | 6 mm          | magnetic/<br>amagnetic |        |                |                  |
| PKIT526  | Ø 17 mm   | 13 mm         | amagnetic              |        |                | <br>Plastic      |
| PKIT527  | Ø 17 mm   | 13 mm         | magnetic               |        |                | <br>INOX         |
| PKIT1425 | Ø 17 mm   | 13 mm         | amagnetic              |        |                | <br>Alluminum    |

ORDER CODE

Position transducer **R** **K** **5** **A**       **0** **0** **0** **0** **X**    **X** **0** **0** **X** **0** **X** **X**

| OUTPUT CONFIGURATION                                |          |
|-----------------------------------------------------|----------|
| Pin1 Power<br>Pin2 N.C.<br>Pin3 0Vdc<br>Pin4 Output | <b>A</b> |
| Pin1 Power<br>Pin2 Output<br>Pin3 0Vdc<br>Pin4 N.C. | <b>B</b> |
| Free contacts                                       | <b>F</b> |

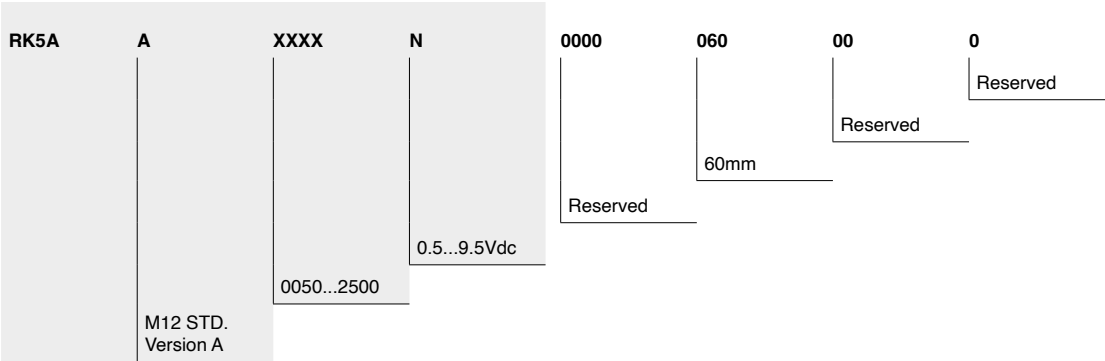
| CABLE LENGTH<br>(for connections A and B only) |          |
|------------------------------------------------|----------|
| <b>060</b>                                     | 60 mm    |
| <b>150</b>                                     | 150 mm   |
| <b>240</b>                                     | 240 mm   |
| <b>000</b>                                     | F output |

Model (0050-2500)

| OUTPUT CONFIGURATION |                |          |
|----------------------|----------------|----------|
| Analog               | 0.5...9.5 VDC  | <b>N</b> |
| Analog               | 9.5...0.5 VDC  | <b>O</b> |
| Analog               | 0.5...4.5 VDC  | <b>K</b> |
| Analog               | 4.5...0.5 VDC  | <b>I</b> |
| Analog               | 0.25...4.5 VDC | <b>L</b> |
| Analog               | 4...20 mA      | <b>E</b> |
| Analog               | 20...4 mA      | <b>R</b> |

Mechanical and/or electrical characteristics differing from those in the standard models can be ordered on request.

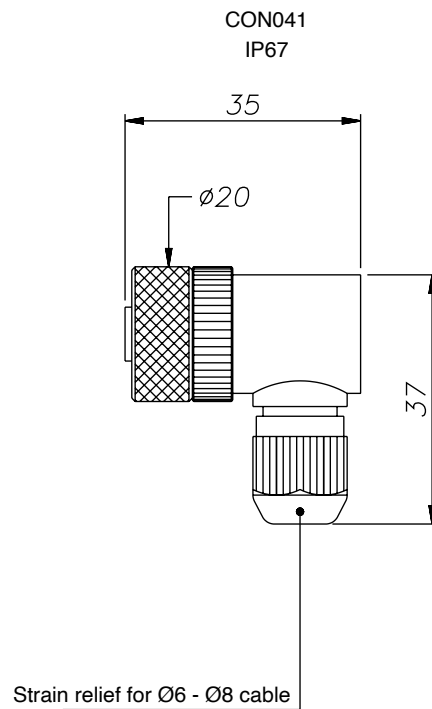
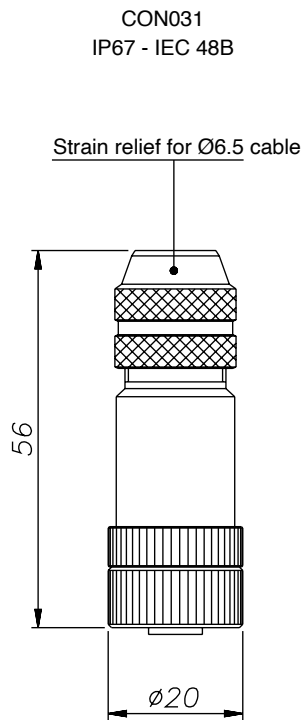
Example of description



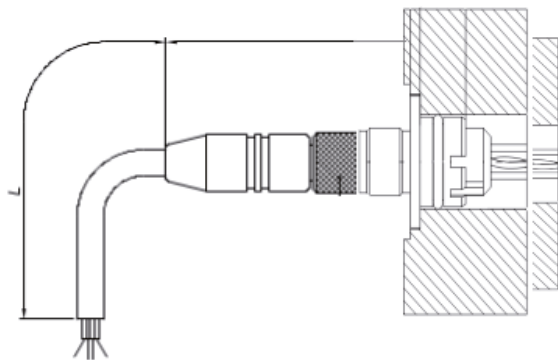
## OPTIONAL CONNECTORS

**CON031** for 5-pin output

**CON041** for 90° 5-pin output



## OPTIONAL CABLES (to be ordered separately)



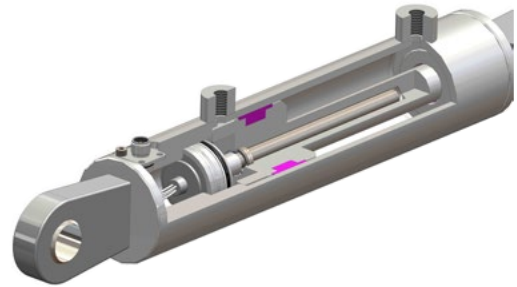
### PREWIRED CABLE WITH STRAIGHT CONNECTOR

The cable braiding is connected to the connector

| Length "L" |    | CODE           |               |
|------------|----|----------------|---------------|
|            |    | Straight cable | 90° cable     |
| 2          | mt | <b>CAV011</b>  | <b>CAV021</b> |
| 5          | mt | <b>CAV012</b>  | <b>CAV022</b> |
| 10         | mt | <b>CAV013</b>  | <b>CAV023</b> |
| 15         | mt | <b>CAV015</b>  | <b>CAV024</b> |

## SENSOR MOUNTING

|                                                                                   |                                                                                                    |
|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
|  | Lubricate O-ring                                                                                   |
|  | Push (carefully) the sensor into the seat by mechanical/hydraulic/pneumatic/<br>electric actuators |
|  | Don't use hammer to insert the sensor inside the cylinder                                          |
|  | Don't perform welding work when the sensor is installed                                            |



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