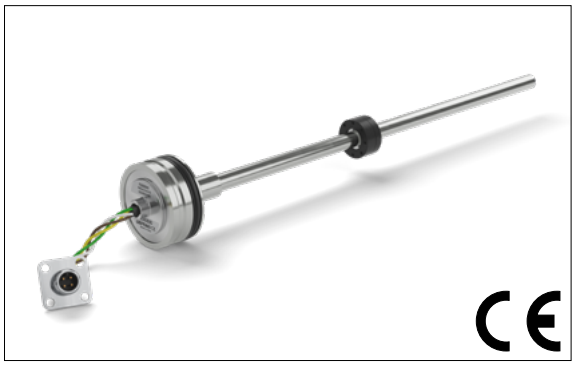
GEFRAN

RK-5

CONTACTLESS MAGNETOSTRICTIVE LINEAR POSITION TRANSDUCER WITH FLANGED CONNECTION (ANALOG OUTPUT)



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.

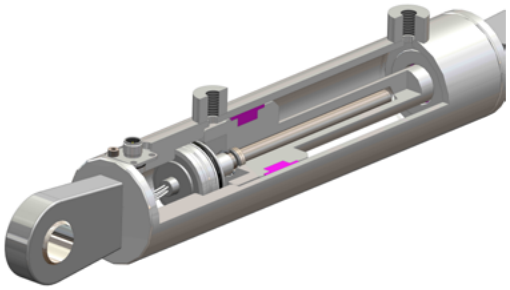
RK-5 is a magnetostrictive position transdu-cer with flanged connection that installs completely inside oil-pressure cylinders.

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

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, hystersis and repeatability.

The signal is analog in models with current or voltage output



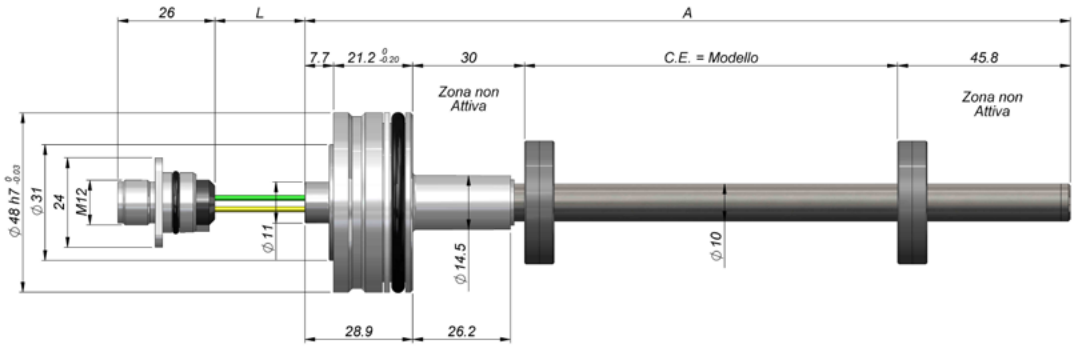
TECHNICAL DATA

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/s² 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	
Typical 0.01% FS / °C	
Humidity dew point EN60068-2-30	
90% non-condensing humidity	

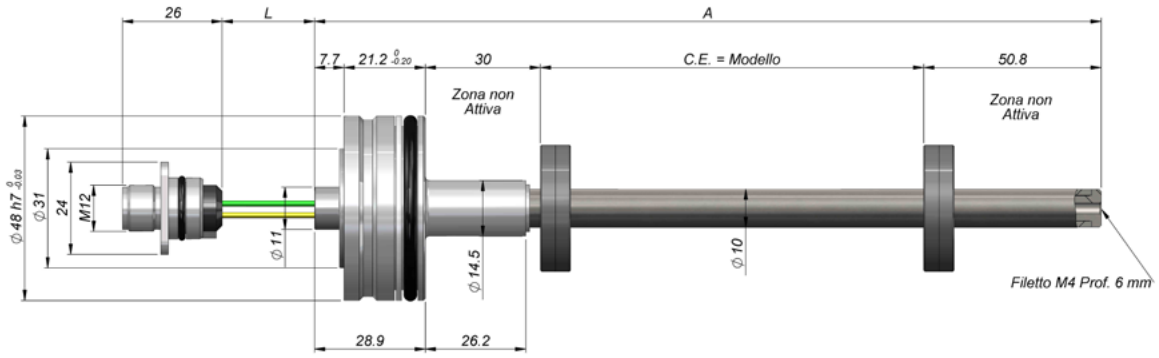
(*) Uses 50V 2J Voltage suppressor

MECHANICAL DIMENSIONS

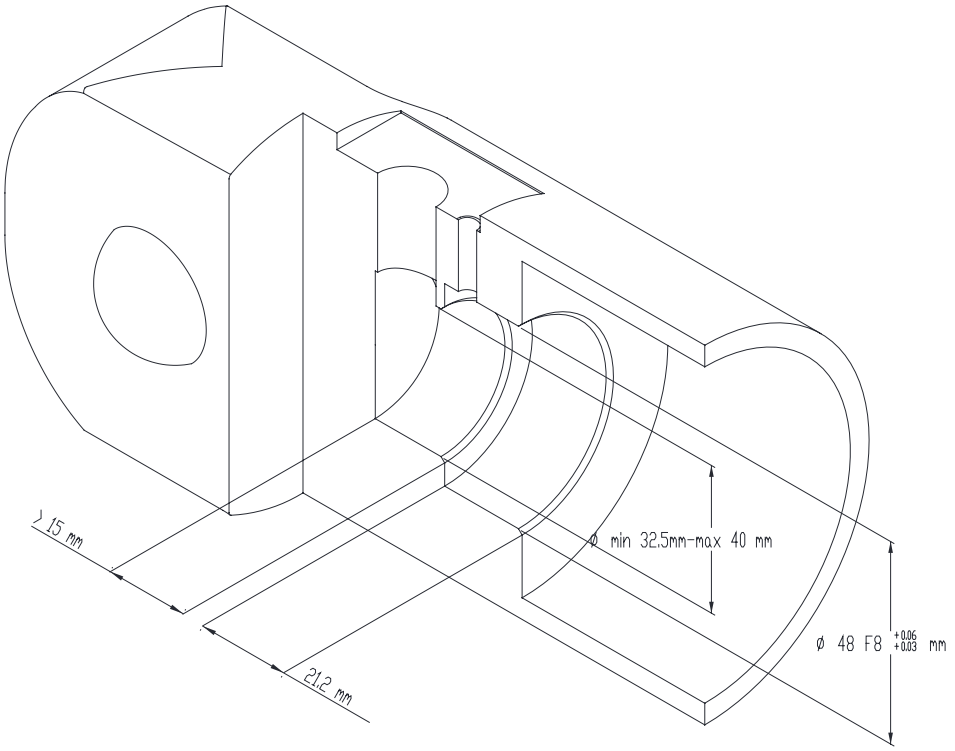
Stroke 50 to 1000 mm



Stroke 1250 to 2500 mm



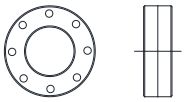
SENSOR HOUSING (detail of head)



INSTALLATION AND CURSOR KIT (to be ordered separately)

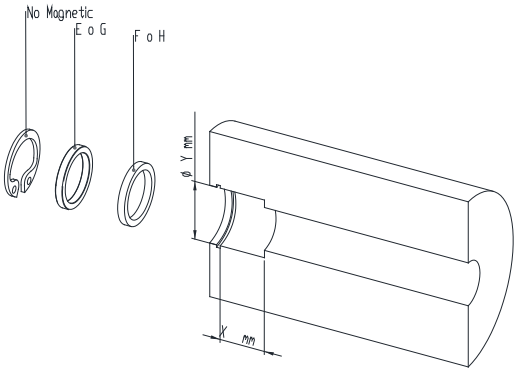
PKIT528

"E"
Magnet
ø 25,4 x ø 13,5 x 8mm



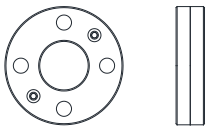
"F"
Plastic spacer
ø 25,2 x ø 13,5 x 5mm



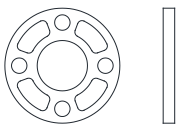


PKIT529

"G"
Magnet
ø 33 x ø 13,5 x 8mm



"H"
Plastic spacer
ø 32 x ø 13,5 x 3,2mm



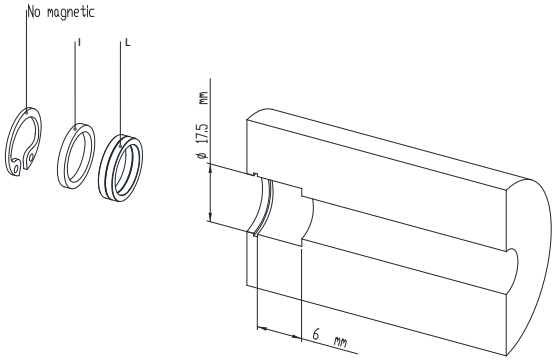
PKIT525

"I"
Magnet
ø 17 x ø 13,5 x 4mm



"L"
Plastic spacer
ø 17 x ø 13,5 x 2mm





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

PKIT526

"A"
Plastic spacer
ø 17 x ø 13,5 x 2mm

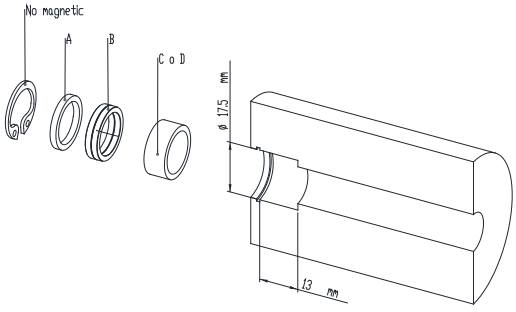


"B"
Magnet
ø 17 x ø 13,5 x 4mm



"C"
Plastic spacer
ø 17x ø 13.5 x 7mm





PKIT527

"A"
Plastic spacer
ø 17 x ø 13,5 x 2mm



"B"
Magnet
ø 17 x ø 13,5 x 4mm



"C"
Spacer INOX
ø 17 x ø 13,5 x 7mm



PKIT1425

"A"
Plastic spacer
ø 17 x ø 13,5 x 2mm



"B"
Magnet
ø 17 x ø 13,5 x 4mm



"C"
Spacer Aluminum
ø 17 x ø 13,5 x 7mm



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	% FS	Typical ≤ 0.04% FS (±0.10 mm minimum)																				
Max. length (A)	mm	Model +104,7 (excluding cable)															Model +109,7 (excluding cable)					
Repeatability	mm	Typical ≤ 0,01 (limited by the resolution of the output value)																				
Hysteresis		Typical ≤ ±0,005% FS (min 0,025 mm)																				
Sampling time	msec	1 for stroke up to 600 / 2 up to 2500																				

CONNECTION TO FLYING LEADS (OPTION F)



L.
Standard length 1000 mm



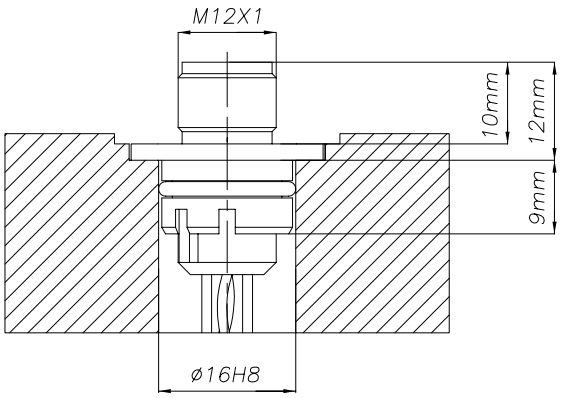
Color code	Version "F"
	Function
Yellow	Power supply
Brown	n.c.
White	0 Vdc
Green	mA/Vdc output

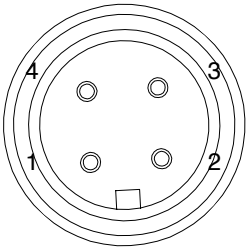
CABLE LENGTH (OPTION A/B)

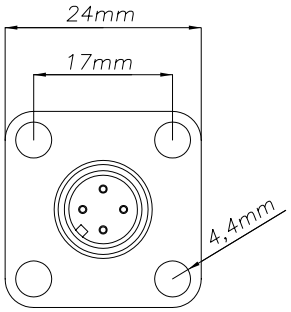


Code	Length
060	60 mm
150	150 mm
240	240 mm

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; 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/ amagnetic			
PKIT529	Ø 33 mm	13 mm	magnetic/ amagnetic			
PKIT525	Ø 17 mm	6 mm	magnetic/ amagnetic			
PKIT526	Ø 17 mm	13 mm	amagnetic			 Plastic
PKIT527	Ø 17 mm	13 mm	magnetic			 INOX
PKIT1425	Ø 17 mm	13 mm	amagnetic			 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 Pin2 N.C. Pin3 0Vdc Pin4 Output	**A**
Pin1 Power Pin2 Output Pin3 0Vdc Pin4 N.C.	**B**
Free contacts	**F**

CABLE LENGTH (for connections A and B only)	
060	60 mm
150	150 mm
240	240 mm
000	F output

Model (0050-2500)

OUTPUT CONFIGURATION		
Analog	0.5...9.5 VDC	**N**
Analog	9.5...0.5 VDC	**O**
Analog	0.5...4.5 VDC	**K**
Analog	4.5...0.5 VDC	**I**
Analog	0.25...4.5 VDC	**L**
Analog	4...20 mA	**E**
Analog	20...4 mA	**R**

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

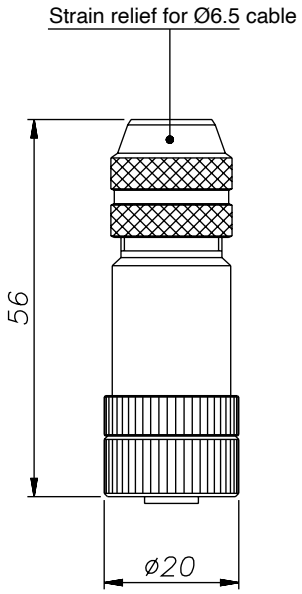
Example of description

RK5A	A	XXXX	N	0000	060	00	0
	M12 STD. Version A	0050...2500	0.5...9.5Vdc	Reserved	60mm	Reserved	Reserved

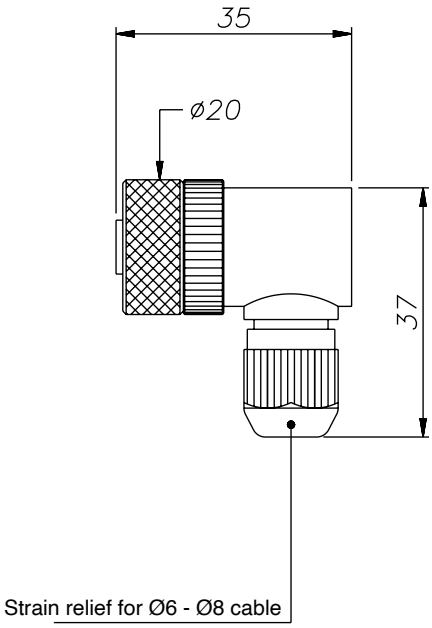
OPTIONAL CONNECTORS

CON031 for 5-pin output
CON041 for 90° 5-pin output

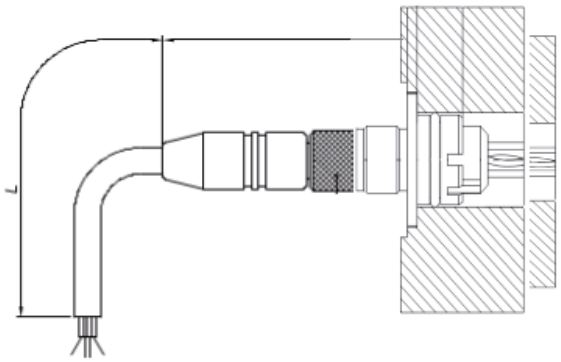
CON031
IP67 - IEC 48B



CON041
IP67



OPTIONAL CABLES (to be ordered separately)



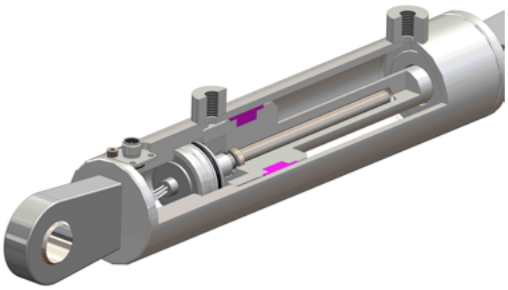
PREWIRED CABLE WITH STRAIGHT CONNECTOR

The cable braiding is connected to the connector

Length "L"		CODE	
		Straight cable	90° cable
2	mt	**CAV011**	**CAV021**
5	mt	**CAV012**	**CAV022**
10	mt	**CAV013**	**CAV023**
15	mt	**CAV015**	**CAV024**

SENSOR MOUNTING

	Lubricate O-ring
	Push (carefully) the sensor into the seat by mechanical/hydraulic/pneumatic/ 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.

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