



Main characteristics

- Absolute measurement of position and speed
- Strokes from 50 to 4000 mm
- Wide range of connectors for the electrical connection
- Rod, nipple, exagonal flange AISI 316
- Work temperature: -30°...+90°C
- Resistance to vibration (DIN IEC68T2/6 12g)
- Nominal power supply 24Vdc ± 20%
- Protezione ambientale IP67
- Synchronous Serial Interface direct to controllers
- Output data resolution available from 1 to 40µm
- Data format: binary or Gray code; incremental/decremental

Contactless magnetostrictive linear position transducer with RS422-SSI digital output interface.

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

The IK4 line's new mechanical structure offers improved features for in-cylinder use, including a series of new multi-connector models, free rotation of the connector head, and replacement of internal electronics without removal of the transducer.

TECHNICAL DATA

Model	from 50 to 4000 mm
Measurement taken	displacement
Position read sampling time (typical)	1 ms
Shock test DIN IEC68T2-27	100g - 11ms - single shock
Vibrations DIN IEC68T2-6	12g / 10...2000Hz
Displacement speed	≤ 10 m/s
Max. acceleration	≤ 100 m/s ² displacement
Output data resolution available	1,2,5,10,20,40 µm
Cursor (see note)	Floating magnet
Working temperature	-30...+90°C
Storage temperature	-40...+100°C
Coefficient of temperature	20ppm F.S./°C
Protection	IP67
Operative pressure	350 bar (pic max. 500 bar)

Note: For multi-cursor versions, the cursors have to work under the same distance and temperature conditions

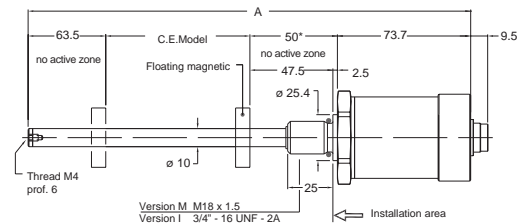
ELECTRICAL DATA

	Synchronous Serial (SSI); Binary/Gray; Incremental/Decremental
Output signal	Binary/Gray; Incremental/Decremental
Data length	24 - 25 bit
Nominal power supply	24 Vdc ± 20%
Max. power ripple	1 Vpp
Max. input	50 mA
Output load	RS422/485 standard
Electrical isolation	500 V (*) (D.C. supply / earth)
Protection against polarity inversion	Yes
Protection against overvoltage	Yes
Self-resetting internal fuse	Yes

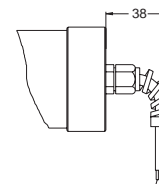
(*) it includes a 50V 2J voltage suppressor

MECHANICAL DIMENSIONS

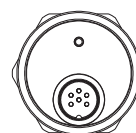
Version IK4S-B



Version IK4S-F/R



Version
IK4-S-B



Version
IK4-S-F/R



ELECTRICAL / MECHANICAL DATA

Model		50	75	100	130	150	175	200	225	250	300	350	360	400	450	500	550	600	650	700	750	800	850	900	950	1000	1100	1200	1250	1300	1400	1500					
																								1750	2000	2250	2500	2750	3000	3250	3500	3750	4000				
Electrical stroke (E.S.)	mm	Model																																			
Independent linearity		$< \pm 0,02\%$ F.S. (minimum $\pm 0,060\text{mm}$) Internal linearisation factor (option): x4 (however minimum $\pm 0,015\text{mm}$)																																			
Max. dimensions (A)	mm	Model + 187,20																																			
Repeatability	mm	$< 0,01$																																			
Hysteresis		$< \pm 0,005\%$ F.S.																																			
Sampling time	ms	1 (for stroke from 1000) 2 (for stroke from 1100 to 2000) 4 (for stroke >2000)																																			

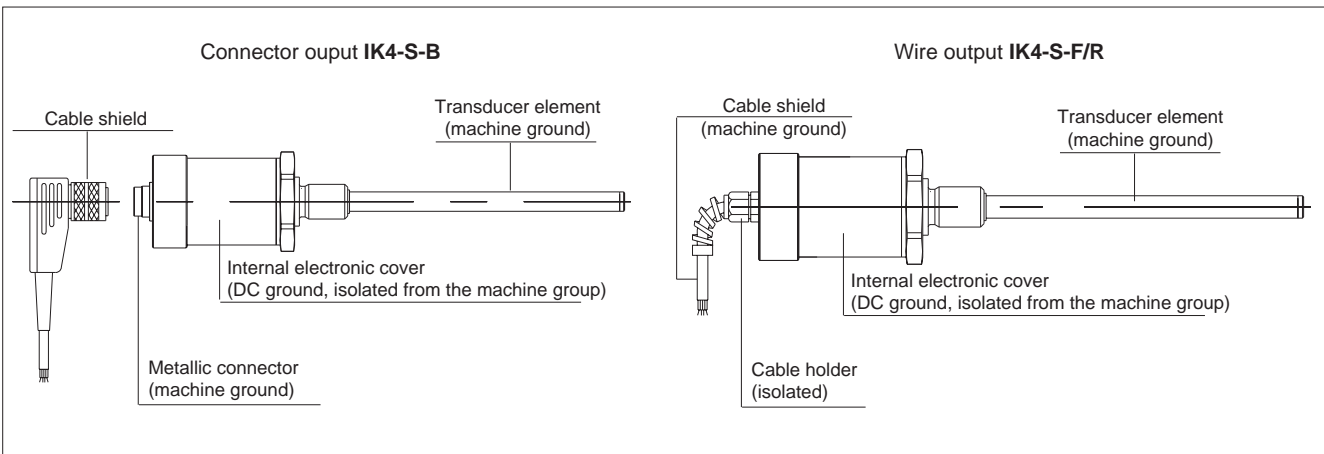
ELECTRICAL CONNECTIONS

Output IK4-S-B

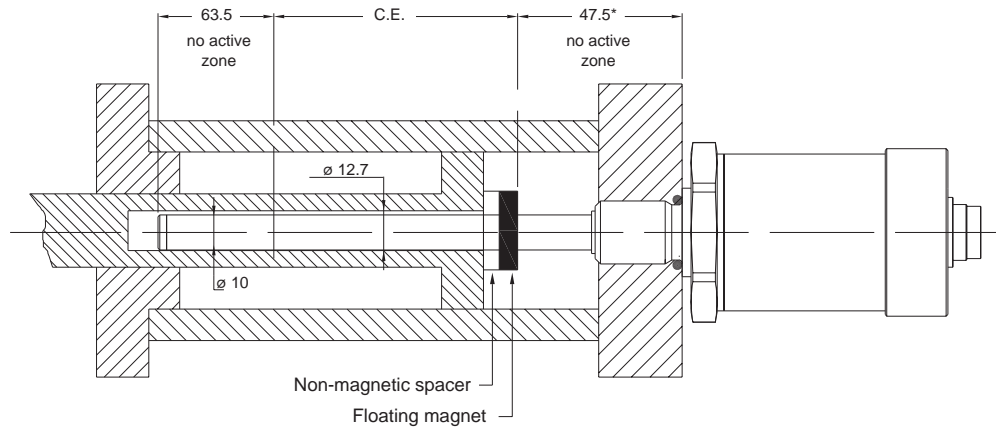
Output IK4-S-F/R

Function	IK4S B	IK4S F	IK4S R
	<i>6-pin M16</i>	<i>Cable output</i>	<i>PUR cable output</i>
Data -	1	Orange	Pink
Data +	2	Orange / White	Blue
Clock +	3	Green / White	Gray
Clock -	4	Green	Yellow
Power supply +	5	Blue / White	Green
Power supply GND	6	Blue	Brown
n.c.	-	-	-
n.c.	-	-	-

GROUNDING IK4



MOUNTING INSIDE A CYLINDER



ORDER CODE

Position transducer

I K 4 S B

0 0 0 0 X X X 0 X X

SSI digital output S

Connector

DIN45322 6-pin connector output B

Available on request

Cable output PVC 6-pin (1 meter) F

Cable output PUR high flexibility 7-pin 7x0,14 R

Model

Output

Binary data code output B

Gray data code output G

Data length

Data length 24 bit 3

Data length 25 bit 4

Data length 21+1 bit (FM357) 5

Data resolution

0.002 mm 0

0.005 mm (standard) 1

0.010 mm 2

0.020 mm 3

0.040 mm 4

0.001 mm 5

Scale orientation

Ascending (standard) 1

Descending 2

Ascending (over sampling refresh output 4 KHz) 4

Ascending Internal linearisation 6

Ascending Internal linearisation (over sampling refresh output 4 KHz) 8

Thread

M18x1,5 (standard) M

3/4" 16UNF I

Outputs

Output B 00

F-R outputs cables length

1 meter (standard) 00

2 meters 02

3 meters 03

4 meters 04

5 meters 05

10 meters 10

15 meters 15

Mechanical and/or electrical characteristics differing from those in the standard version may be arranged on request

► Included in the supply

- Series IK position transducer

- OR 15.4x2.1 thread M18x1.5

- OR 16.36x2.21 thread 3/4" - 16 UNF

code: **GUA064**

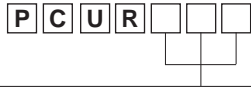
code: **GUA065**

► Magnetic cursors must be ordered separately

Ex.: IK4-S-B-0400-B-3 000011XXX00M0XX

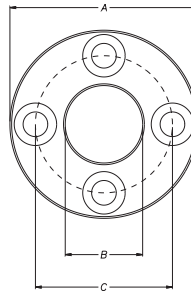
Transducer model IK4, SSI output, connector B, model 400mm, thread M18x1,5, binary data code output, data length 24 bit, system resolution 0.005mm, scale orientation ascending.

FLOATING CURSOR

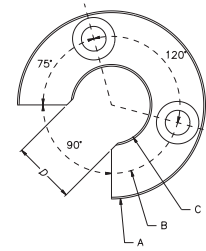


Cursors	
Cursor Diameter 32.8	022
Cursor Diameter 32.8 with 90° slit	023
Cursor Diameter 25.4	024
Floating cursor for liquids with hole diameter 12	026
Floating cursor for liquids with hole diameter 15	027

PCUR022



PCUR023



The **PCUR022** is supplied with: The **PCUR023** is supplied with:

N° 8 Brass nuts M4
N° 8 Brass washers D4
N° 4 Brass screws M4x25

N° 4 Brass nuts M4
N° 4 Brass washers D4
N° 2 Brass screws M4x25

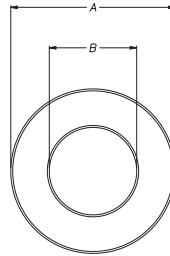
Dimensions	A	B	C	Thickness
PCUR022	32.8	13.5	23.9	7.9
PCUR023				
PCUR024	25.4	13.5	-	

Model		PCUR026	PCUR027
Length A	mm	52.4	
Diameter B (hole)	mm	12	15
Diameter C	mm	42	
Material		AISI 316	

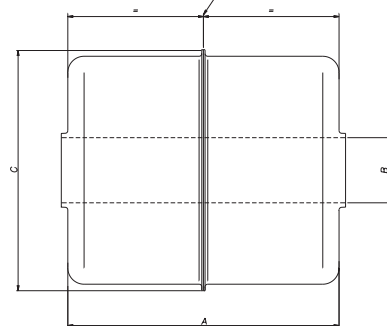
Note:

PCUR026 and **PCUR027** is supplied with kit **PKIT036** for Floating cursor for liquids.

PCUR024



HEIGHT DETECTION POSITION

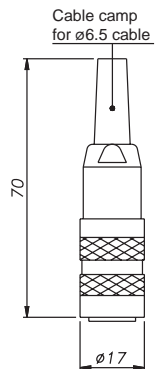


OPTIONAL CONNECTORS

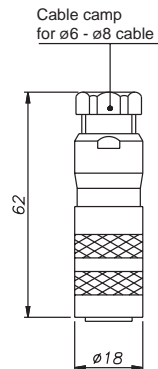
For **IK4-S-B** M16 thread connector

Codes: **CON021** 6-pin
CON022 6-pin
CON023 6-pin

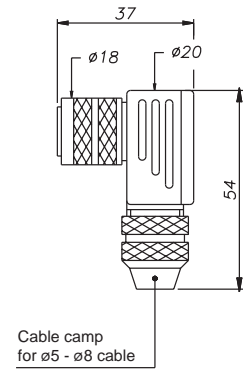
Connector extraction length: 10mm



CON021
IP40 - EMC



CON022
IP67 - EMC



CON023
IP67 - EMC

Sensors are manufactured in compliance with:
- EMC 2004/108/CE compatibility directive
- RoHS 2002/95/CE directive

Electrical installation requirements and Conformity certificate are available on our web site: www.gefran.com

GEFRAN spa reserves the right to make aesthetic or functional changes at any time and without notice