

### Main characteristics

- Optimised mechanical structure
- Strokes from 50 to 4000 mm
- Fast installation by mean of steel brackets
- Sliding or floating magnetic cursor
- Synchronous Serial Interface direct to controllers
- Output data resolution available from 0.5 to 40  $\mu\text{m}$
- Data format: binary or Gray code; incremental/decremental
- Power supply 10...32 Vdc
- Resistance to vibration (DIN IEC68T2/6 15g)
- IP67 protection
- Work temperature: -30...+90°C
- Electromagnetic compatibility EMC 2014/30/EU
- Compliant to the directive RoHS 2011/65/EU

Contactless linear position transducer with HYPERWAVE magnetostrictive technology, with RS422-SSI digital output interface. The absence of electrical contact on the cursor eliminates all wear and guarantees almost unlimited life. High performance in terms of environmental IP protection and EMC immunity.

High accuracy of the measurement with reference to the non linearity, repeatability and hysteresis. High resistance to vibrations, mechanical shocks for use in a harsh industrial environment.

### 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
Vibrazioni DIN IEC68T2-6	15g / 10...2000Hz
Velocità di spostamento	$\leq 10$ m/s
Max. acceleration	$\leq 100$ m/s <sup>2</sup> displacement
Output data resolution available	0.5...40 $\mu\text{m}$
Cursor (see note)	Sliding cursor Floating separate cursor
Working temperature	-30...+90°C
Storage temperature	-40...+100°C
Coefficient of temperature	20 ppm FS / °C
Protection	IP67

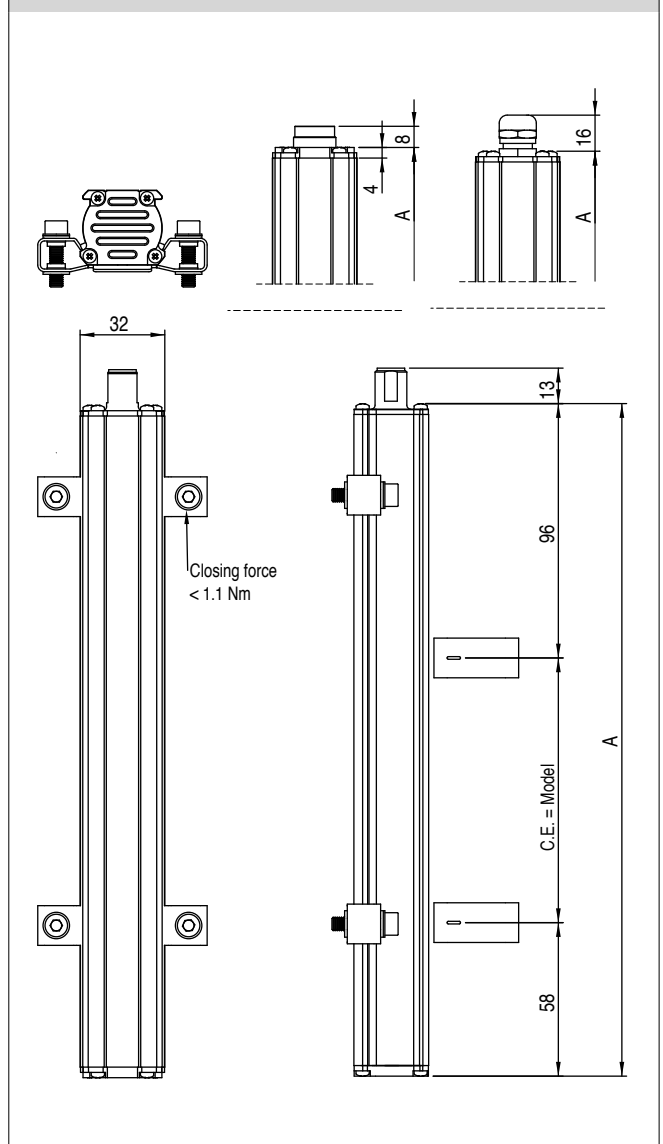
Note 1) For stroke > 2500mm use sliding or floating cursors with max. distance of 4mm

### ELECTRICAL DATA

Output signal	Synchronous Serial (SSI); Binary/Gray; Incremental/Decremental
Data length	24 - 25 bit
Nominal power supply	10...32 Vdc
Max. power ripple	1Vpp
Max. input	50mA
Output load	RS422/485 standard
Electrical isolation	500V (*) (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

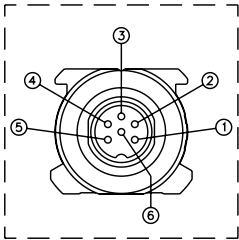
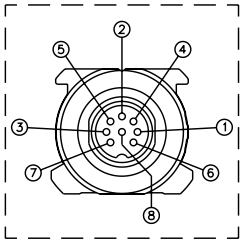
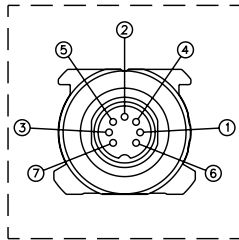
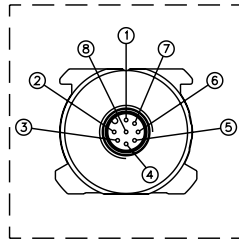
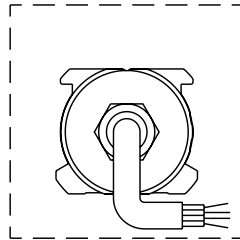
### MECHANICAL DIMENSIONS



## ELECTRICAL / MECHANICAL DATA

Model		50	75	100	130	150	175	200	225	300	250	350	360	400	450	500	550	600	650	700	750	800	850	900	950	1000	1100	1200	1250	1300	1400	1500					
																									1750	2000	2500	2750	3000	3250	3500	3750	4000				
Electrical stroke (E.S.)	mm	<b>Model</b>																																			
Independent linearity	± %F.S.	Typical : $\leq \pm 0,01$ %FS (min $\pm 0,060$ mm) with sliding cursor Typical : $\leq \pm 0.02\%$ FS with floating cursor (value depending on the distance between the cursor and the sensor body)																																			
Max. dimensions (A)	mm	<b>Model + 154 mm</b>																																			
Repeatability	mm	$< 0,01$ (limited by the resolution of the output value)																																			
Hysteresis		$< \pm 0,005\%$ FS (min 0,010 mm)																																			
Sampling time	ms	<b>1</b> (for stroke from 1000) <b>2</b> (for stroke from 1100 to 2000) <b>4</b> (for stroke $>2000$ )																																			

## ELECTRICAL CONNECTIONS

OUTPUT WPA-S-B	OUTPUT WPA-S-C	OUTPUT WPA-S-D	OUTPUT WPA-S-H	OUTPUT WPA-S-F/R
				

Function	WPA-S-B	WPA-S-C	WPA-S-D	WPA-S-H	WPA-S-F	WPA-S-R	CAV00X
	<i>6-pin M16</i>	<i>8-pin M16</i>	<i>7-pin M16</i>	<i>8-pin M12</i>	<i>Cable output</i>	<i>PUR cable output</i>	<i>Optional 8-pin cable</i>
Data -	1	5	1	5	Orange	Pink	Green
Data +	2	2	2	2	Orange / White	Blue	Gray
Clock +	3	1	3	3	Green / White	Gray	Pink
Clock -	4	3	4	1	Green	Yellow	Yellow
Power supply +	5	7	5	7	Blue / White	Green	Brown
Power supply GND	6	6	6	6	Blue	Brown	Blue
n.c.	-	8	7	8	-	-	White
n.c.	-	4	-	4	-	-	Red

The transducer case must be grounded with the cable sheathing on the control system side only.

## ORDER CODE

Position transducer

W P A S

SSI digital output S

### Connector

DIN45322 6-pin connector output B

Available on request

DIN45326 8-pin connector output C

DIN45329 7-pin connector output D

M12 8-pin connector output H

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

0 0 0 0 X X X X X 0 X X

### 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
0.0005 mm	6

### Scale orientation

Ascending (standard)	1
Descending	2
Ascending (over sampling refresh output 4 KHz)	4

### Outputs

Outputs B, C, H 00

### F 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

Ex.: WPA-S-B-0400-B-3 0000-X-X-1-1-X-00-X-0-XX

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

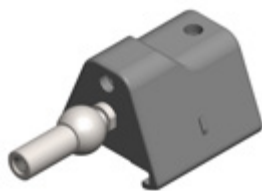
## CURSORS ON REQUEST

PCUR202



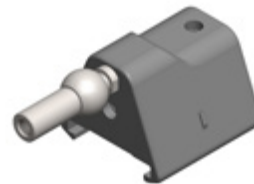
Floating Cursor

PCUR210



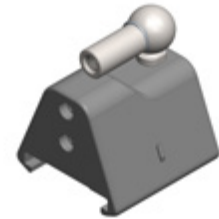
Sliding cursor, axial joint low

PCUR211

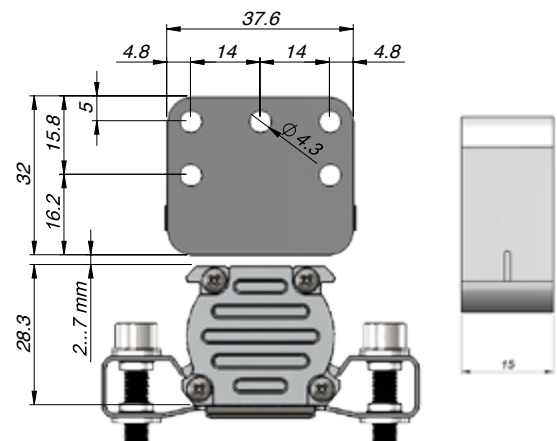
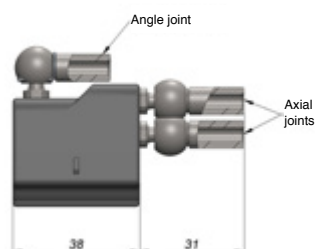
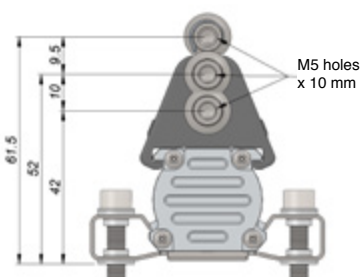


Sliding cursor, axial joint high

PCUR212



Sliding cursor, axial joint angle



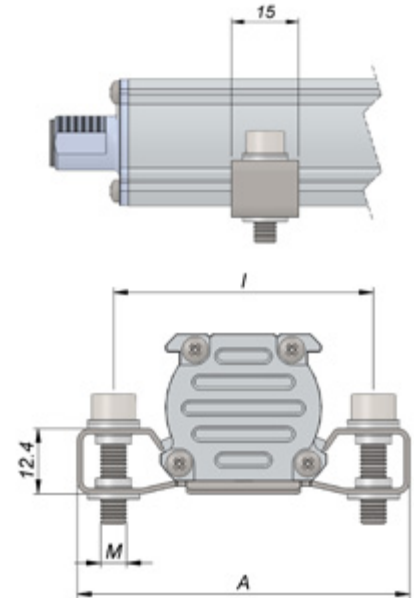
## BRACKETS ON REQUEST



**P K I T** □ □ □

Brackets (2 brackets for every kit)	
Steel bracket, center distance 42.5mm	<b>090</b>
Steel bracket, center distance 50mm	<b>091</b>

Brackets code	Center distance (i)	Screw (V)	Dimensions (A)
PKIT090	42.5	<b>M4</b>	<b>56</b>
PKIT091	50	<b>M5</b>	<b>63.5</b>



## OPTIONAL CONNECTORS

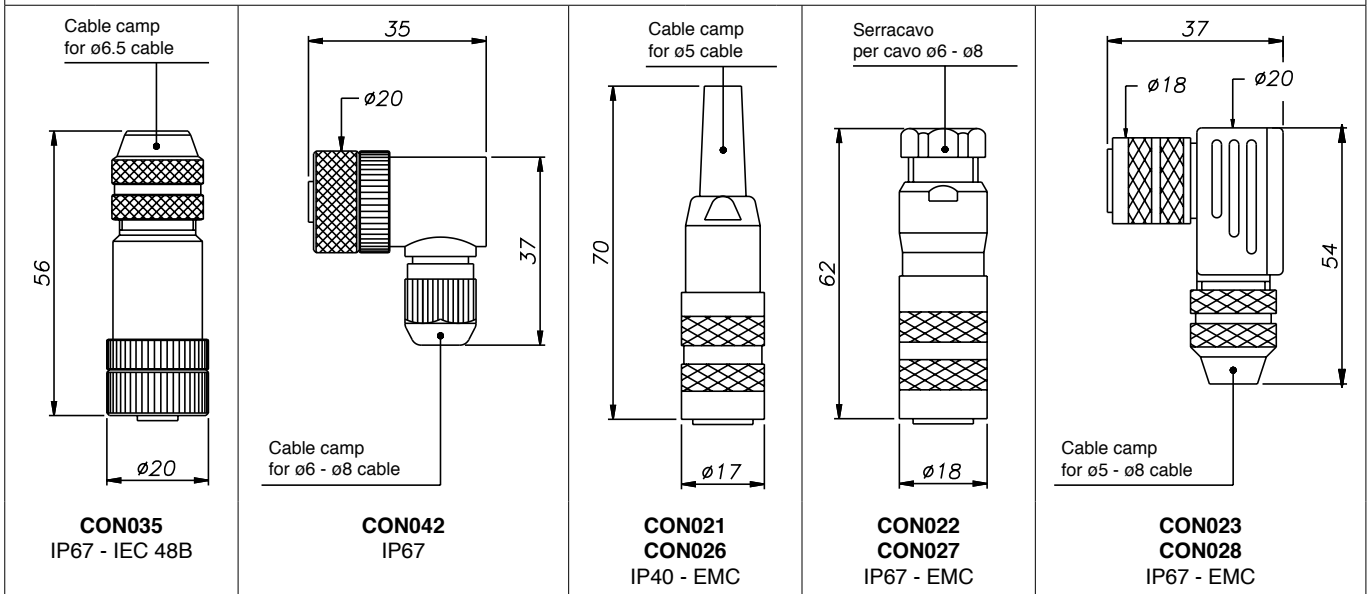
For output H, M12 connector thread

Codes: **CON035** for 8-pin output (WPA-S-H)  
**CON042** for 8-pin output (WPA-S-H)

For outputs B-C-D, M16 connector thread

Codes: **CON021** for 6-pin output (WPA-S-B)  
**CON022** for 6-pin output (WPA-S-B)  
**CON023** for 6-pin output (WPA-S-B)  
**CON026** for 7/8-pin output (WPA-S-C/D)  
**CON027** for 7/8-pin output (WPA-S-C/D)  
**CON028** for 7/8-pin output (WPA-S-C/D)

Connector extraction length 10 mm

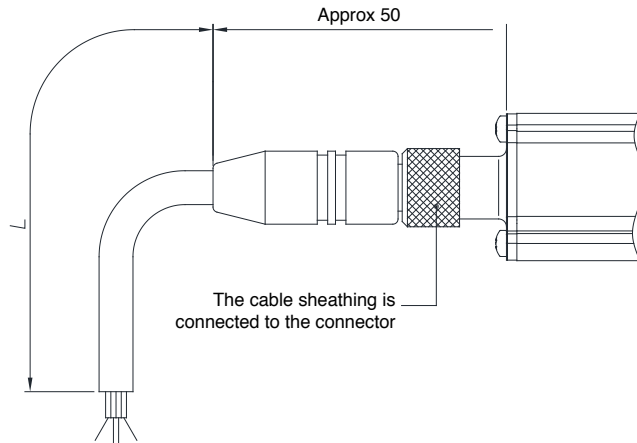


Note: 1. The IP rating specified in this document normally applies with the suitable female connector plugged-in and properly wired..

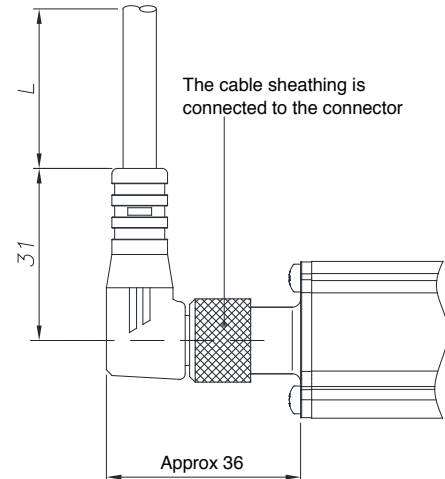
## OPTIONAL CABLES OUTPUT H

8-pin cable code		WPA-S-H	
Length "L"		CODE	
		Straight cable	90° cable
2	mt	<b>CAV002</b>	<b>CAV005</b>
5	mt	<b>CAV003</b>	<b>CAV006</b>
10	mt	<b>CAV004</b>	<b>CAV007</b>
15	mt	<b>CAV009</b>	<b>CAV008</b>

### PREWIRED CABLE WITH STRAIGHT CONNECTOR



### PREWIRED CABLE WITH 90° CONNECTOR



Electrical installation requirements and Conformity certificate are available on our web site: [www.gefran.com](http://www.gefran.com)

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