

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 μm
- 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.

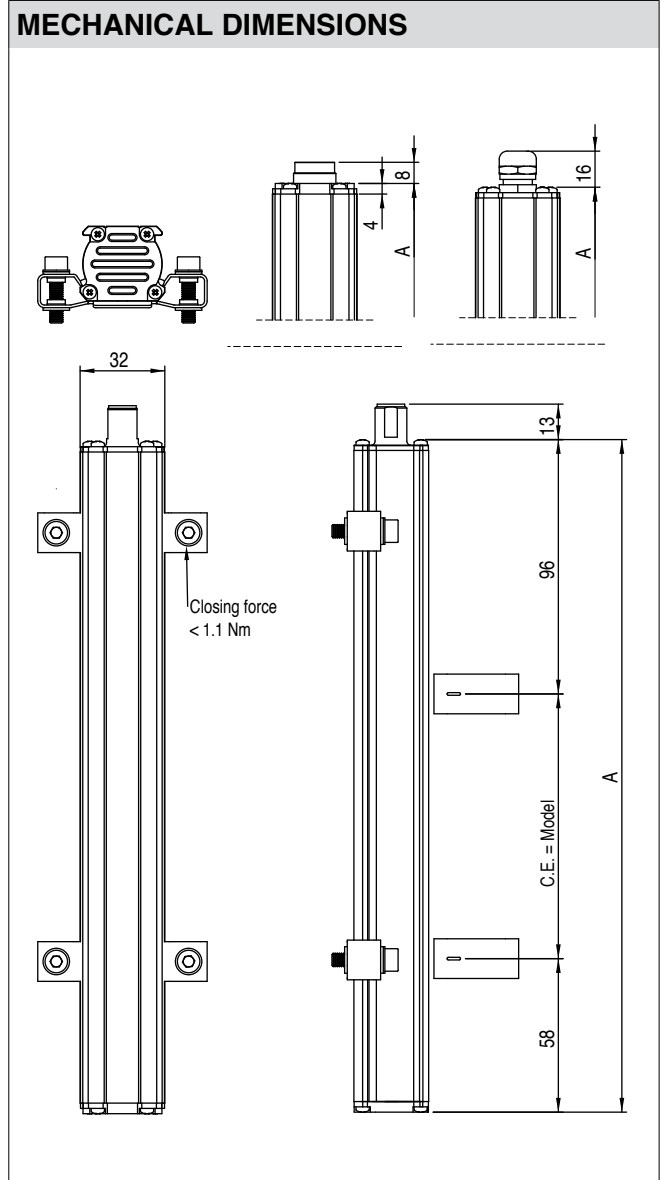
High accuracy of the measurement with reference to the non linearity, repeatability and hysteresis. High resistance to vibrations, mechanical shocks for use in a harsh industrial environment.

| 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 | ≤ 10 m/s |
| Max. acceleration | ≤ 100 m/s ² displacement |
| Output data resolution available | 0.5...40 μm |
| 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 |

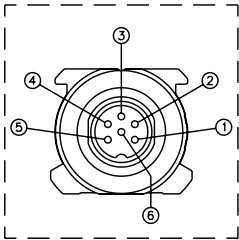
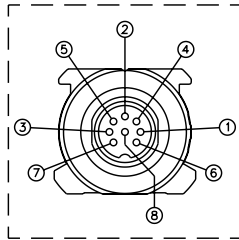
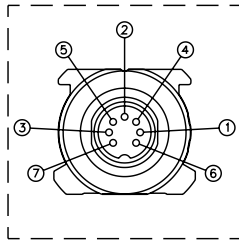
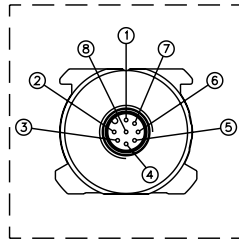
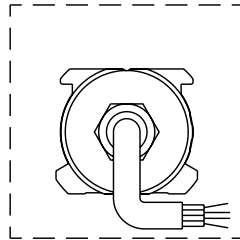
(*) it includes a 50V 2J voltage suppressor



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 | Model | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 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 | Model + 154 mm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Repeatability | mm | $< 0,01$ (limited by the resolution of the output value) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Hysteresis | | $< \pm 0,005\%$ FS (min 0,010 mm) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sampling time | ms | 1 (for stroke from 1000) 2 (for stroke from 1100 to 2000) 4 (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/PCUR230



Floating Cursor

PCUR210



Sliding cursor, axial joint low

PCUR211

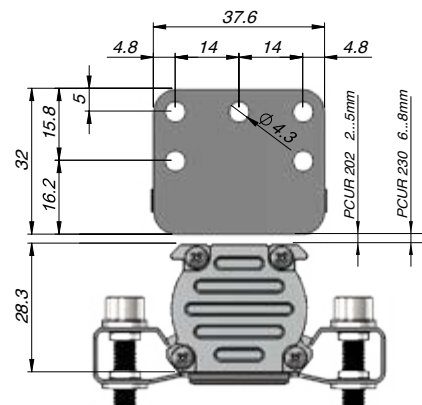
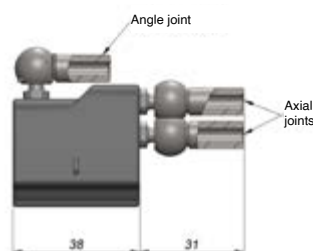
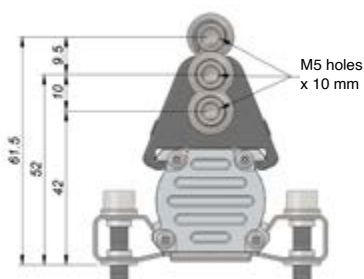


Sliding cursor, axial joint high

PCUR212



Sliding cursor, axial joint angle



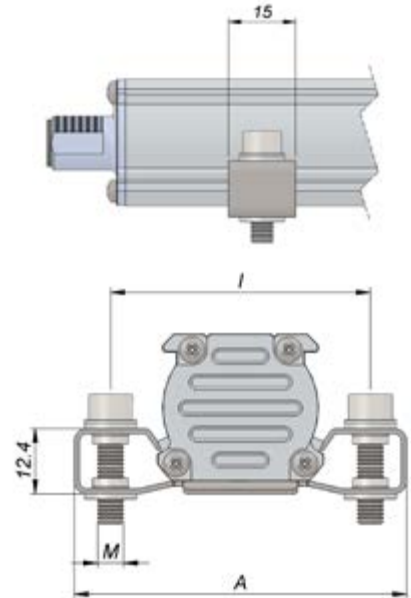
BRACKETS ON REQUEST



P K I T □ □ □

| Brackets (2 brackets for every kit) | |
|---------------------------------------|------------|
| Steel bracket, center distance 42.5mm | 090 |
| Steel bracket, center distance 50mm | 091 |

| Brackets code | Center distance (i) | Screw (V) | Dimensions (A) |
|---------------|---------------------|-----------|----------------|
| PKIT090 | 42.5 | M4 | 56 |
| PKIT091 | 50 | M5 | 63.5 |



OPTIONAL CONNECTORS

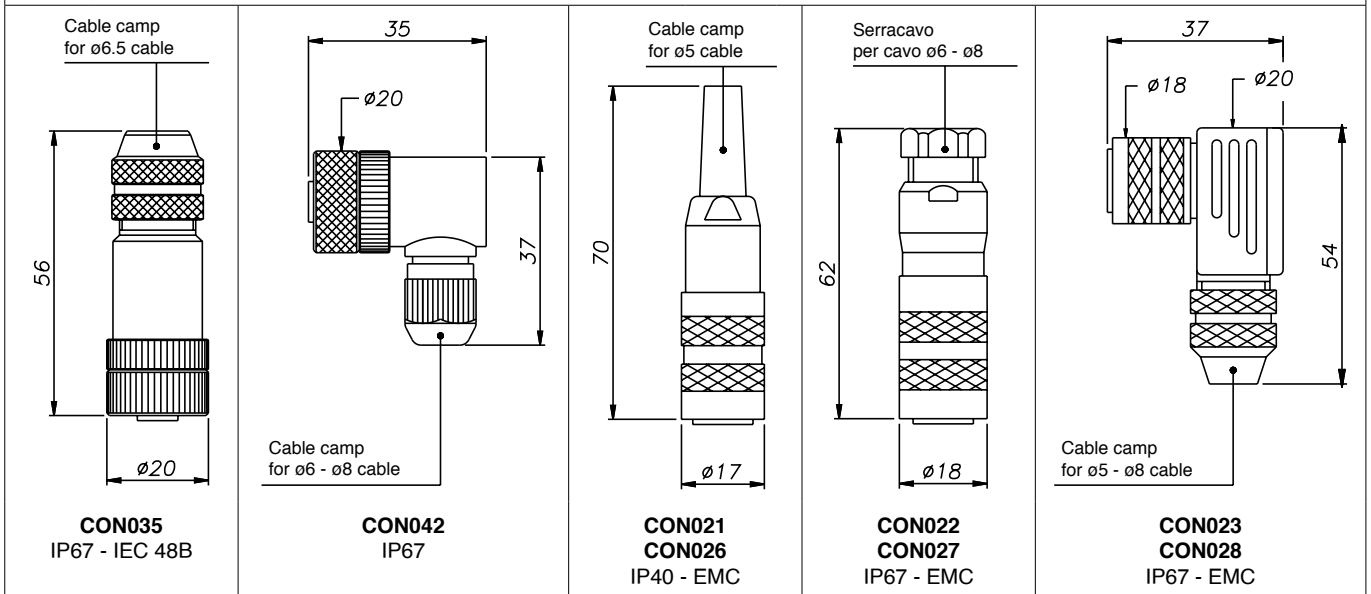
For output H, M12 connector thread

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

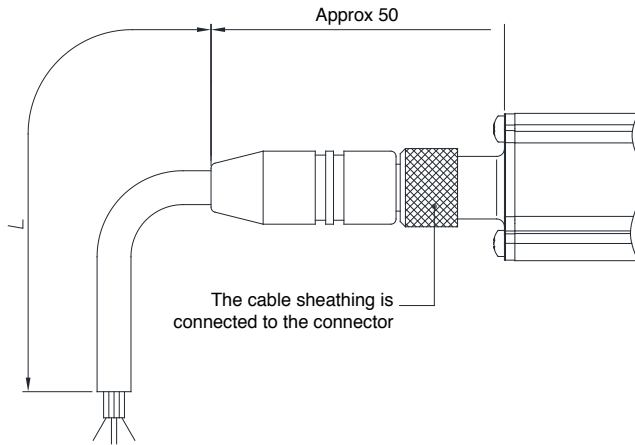


Note: 1. The IP rating specified in this document normally applies with the suitable female connector plugged-in and properly wired..

OPTIONAL CABLES OUTPUT H

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

PREWIRED CABLE WITH STRAIGHT CONNECTOR



PREWIRED CABLE WITH 90° CONNECTOR

