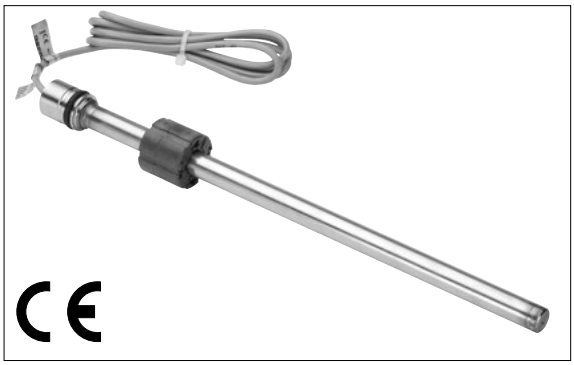
GEFRAN

# PMI-SL

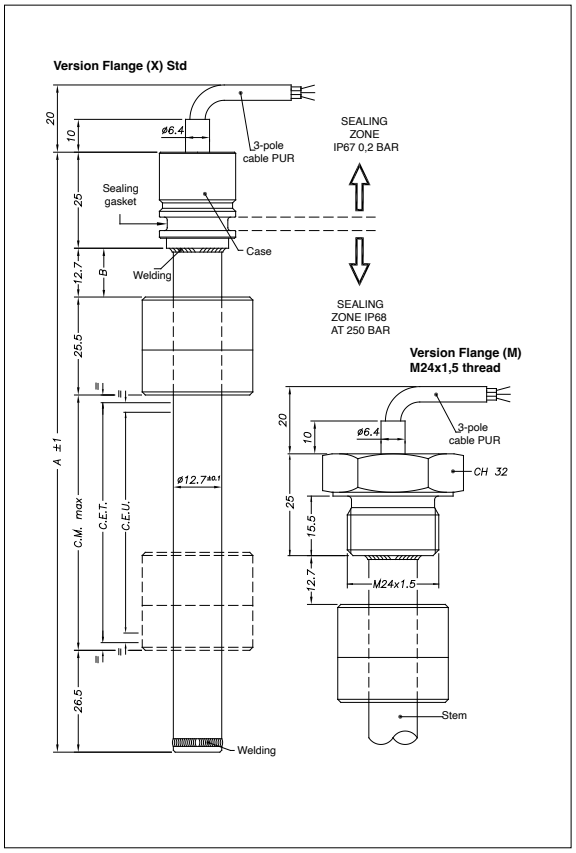
*RECTILINEAR DISPLACEMENT TRANSDUCER WITH MAGNETIC DRAG*



## *Applicative characteristics*

- *The PMI-SL transducer, an evolution of the PMI-12, is designed for all inside cylinder applications which require a smaller transducer.*
  *For this reason, the diameter has been reduced to 12.7 mm.*
- *The PMI Slim offers the same robustness as the PMI-12: AISI 316 stainless steel body, IP67 protection level, and pressure resistance up to 250 bar (400 bar peak)*
- *Available with flanged or threaded heads, to guarantee mechanical compatibility with all main cylinder types*
- *Patented solution*
- *Ideal for applications inside hydraulic cylinders, demanding simple solutions which guarantee measurement repeatability.*

## MECHANICAL DIMENSION




**Important**: all the data reported in the catalogue linearity and temperature coefficients are valid for sensor utilization as a ratiometric device with a max current across the cursor Ic ≤ 0.1 µA.

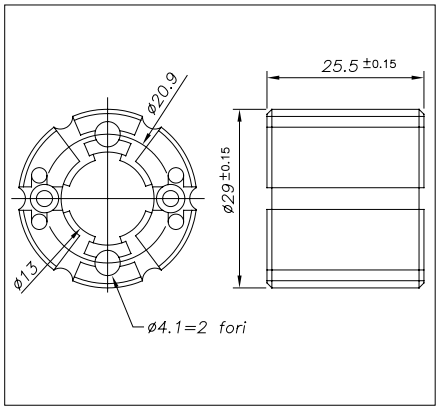
## TECHNICAL DATA

| |
|---|
| **Useful electrical stroke (C.E.U.)** |
| from 50 to 1000 mm<br>(for intermediate strokes see table “Electrical / Mechanical Data”) |
| **Independent linearity (within C.E.U.)** |
| ± 0,35% |
| **Resolution** |
| Infinie |
| **Repeatability** |
| ≤ 0.08 mm |
| **Hysteresis** |
| < 250µm |
| **Life** |
| > 25x10⁶ m strokes, or > 100x10⁶ maneuvers, whichever is less |
| **Electrical connection** |
| 1 mt 3-pole shielded cable |
| **Displacement speed** |
| standard ≤ 5 m/s |
| **Max. acceleration** |
| ≤ 10m/s² max displacement |
| **Cursor dragging force** |
| ≤ 0.5 N |
| **Vibrations** |
| 5...2000Hz, Amax =0,75 mm amax. = 20 g |
| **Shock** |
| 50 g, 11ms. |
| **Displacement sensitivity** (no hysteresis) |
| from 0.05 to 0.1 mm |
| **Tracking error** |
| see table |
| **Tolerance on resistance** |
| ± 20% |
| **Recommended cursor current** |
| < 0,1 µA |
| **Maximum cursor current in case of bad performances** |
| 10mA |
| **Maximum applicable voltage** |
| see table |
| **Electrical isolation** |
| >100MΩ at 500V=, 1bar, 2s |
| **Dielectric strenght** |
| < 100µA at 500V~, 50Hz, 2s, 1bar |
| **Dissipation at 40°C (0W at 120°C)** |
| see table |
| **Actual Temperature coefficient of the output voltage** |
| ≤ 5 ppm/°C typical |
| **Working temperature** |
| -30...+100°C |
| **Storage temperature** |
| -50...+120°C |
| **Material for transducer case** |
| AISI 304 |

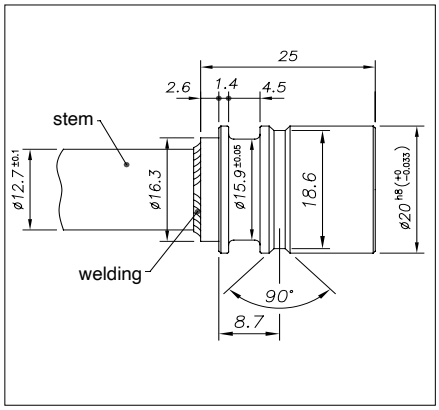
## MECHANICAL / ELECTRICAL DATA

| MODEL | | 50 | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 750 | 800 | 850 | 900 | 950 | 1000 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Useful electrical stroke (C.E.U.) + 1/-0 | mm | Model | | | | | | | | | | | | | | | | | |
| Theoretical electrical stroke (C.E.T.) ± 1 | mm | C.E.U. + 1 | | | | | | | | | | | | | | | | | |
| Independent linearity (within C.E.U.) | ± % | 0.35 | | | | | | | | | | | | | | | | | |
| Dissipation at 40°C (0W at 120°C) | W | 1 | 2 | 3 | | | | | | | | | | | | | | | |
| Max applicable voltage | V | 40 | 60 | | | | | | | | | | | | | | | | |
| Resistance (C.E.T.) | kΩ | 5 | | | | | | 10 | | | | | | 20 | | | | | |
| Mechanical stroke (C.M.) | mm | C.E.U. + 5 | | | | | | | | | | | | | | | | | |
| Case Lenght "A" ±1 | mm | C.E.U. + 94.7 | | | | | | | | | | | | | | | | | |

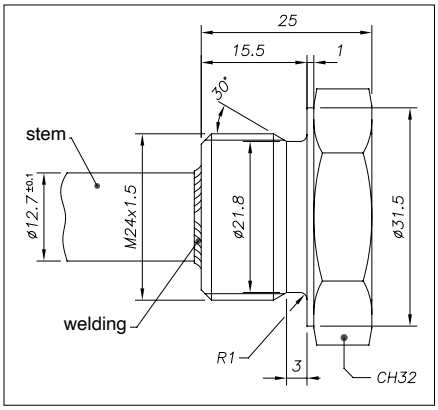
## PCUR010 CURSOR



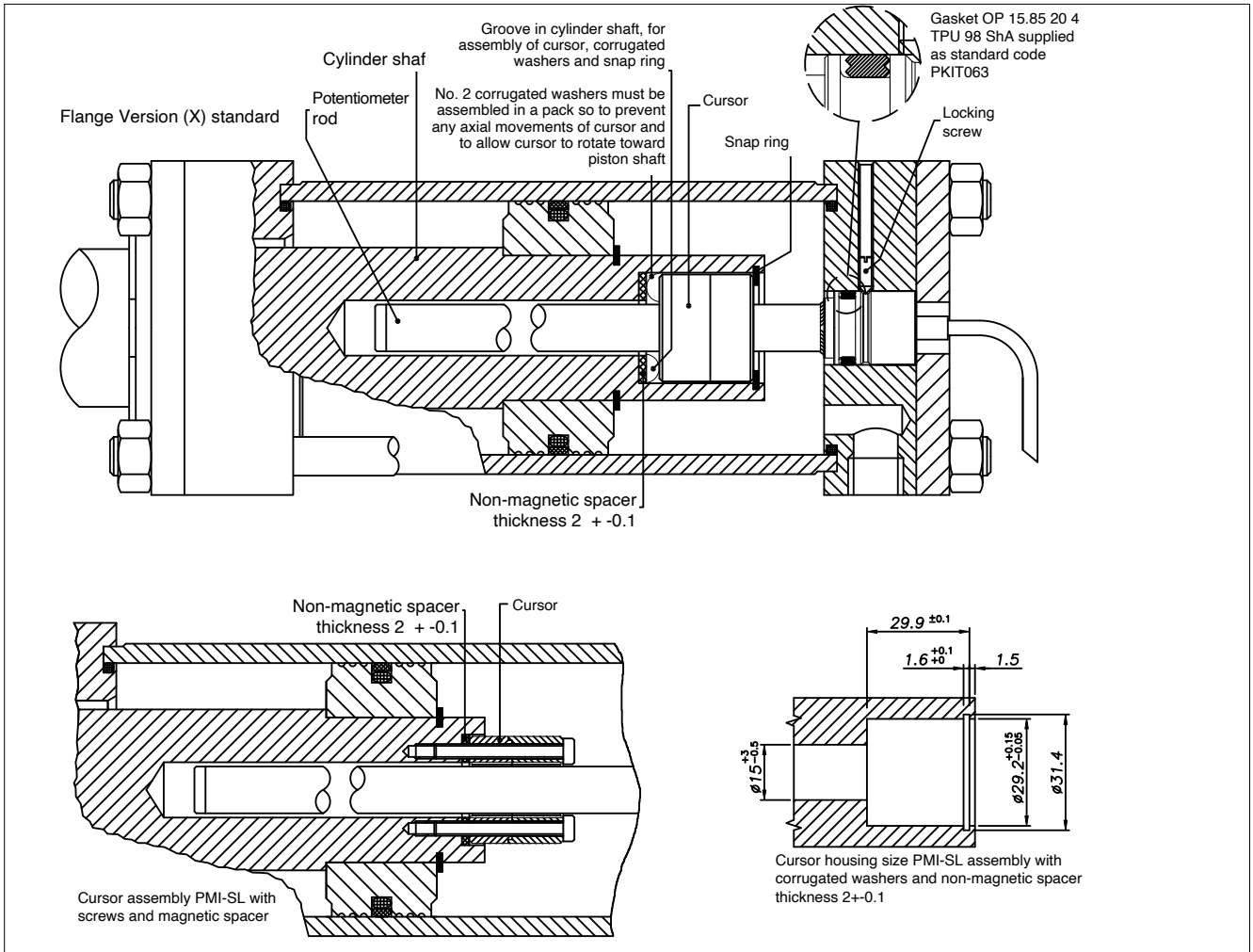

## STANDARD FLANGE (X)




## THREADED FLANGE (M)



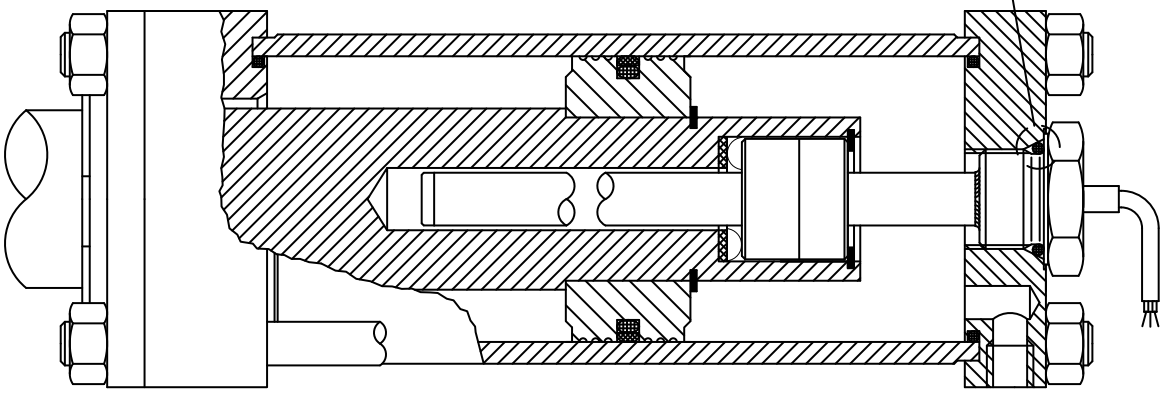

## INSTALLATION INSIDE THE CYLINDER

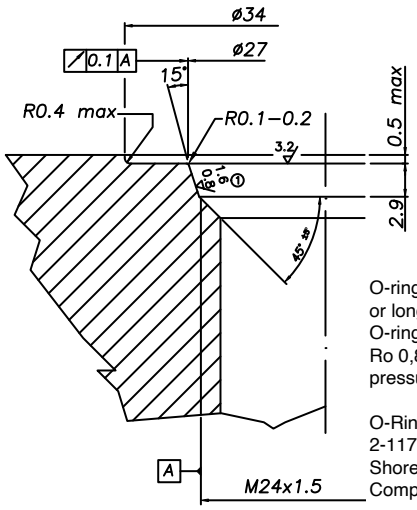


## INSTALLATION INSIDE THE CYLINDER

O-Ring recommended
PARKER 2-117 20,29x2,62
Material NBR 90 Shore-A
Compound PARKER N552-90

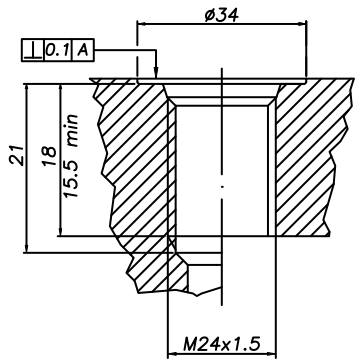
Flange Version (M) thread M24x1,5



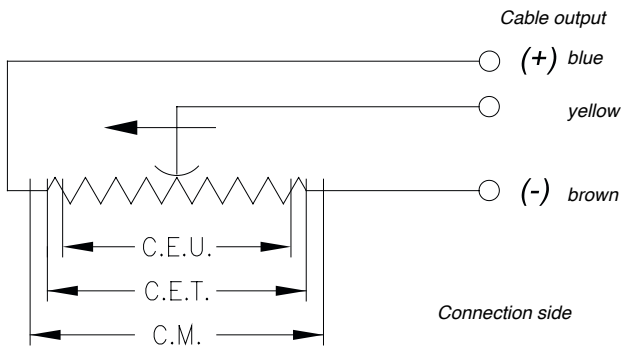



O-ring surface must be free of spiral or longitudinal scratches Ro 1,6µm for O-rings with NOT PULSING pressure Ro 0,8µm for O-rings with PULSING pressure

O-Ring recommended PARKER 2-117 20,29x2,62 Material NBR 90 Shore-A Compound PARKER N552-90



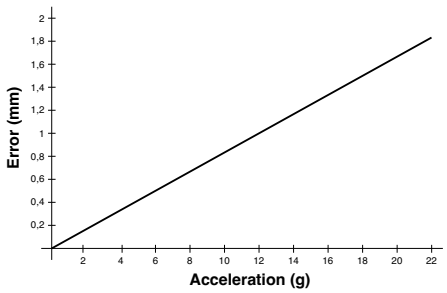

## ELECTRICAL CONNECTIONS




**INSTALLATION INSTRUCTIONS**

- Make the specified electrical connections (DO NOT use the transducer as a variable resistance)
- When calibrating the transducer, be careful to set the stroke so that the output does not drop below 1% or rise above 99% of the voltage level.
- To ensure that the PCUR010 external magnetic cursor fastens to the sensor's internal cursor, insert the external magnetic cursor and position it at least at fastening height "B" (12.7 mm) from the electrical output

## TRACKING ERROR



## ORDER CODE

**Displacement transducers** | P | M | I | S | L | | | | | | |

| 3-pole PUR cable output 3x0.25, 1 mt | F |
|---|---|

**Model**

| Standard flange | X |
|---|---|
| Threaded flange M24x1.5 | M |

| 0 | 0 | 0 | 0 | X | 0 | 0 | 0 | X | X | | | X | X | X |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

| No certificate attached | 0 |
|---|---|
| Linearity curve to be attached | L |

| Version F cable length | |
|---|---|
| 1 mt cable (standard) | 00 |
| 2 mt cable | 02 |
| 3 mt cable | 03 |
| 4 mt cable | 04 |
| 5 mt cable | 05 |
| 10 mt cable | 10 |
| 15 mt cable | 15 |

Ex.: **PMI-SL-F-0400-X 0000X000XX00XXX**
PMI SL displacement transducer, cable output, useful electrical stroke (C.E.U.)
400mm, standard flange, no certificate attached, cable length 1 mt.

## ACCESSORIES (standard)

| | |
|---|---|
| Standard magnetic cursor | **PCUR010** |

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

**GEFRAN spa**
via Sebina, 74
25050 PROVAGLIO D'ISEO (BS) - ITALIA
ph. 0309888.1 - fax. 0309839063
Internet: http://www.gefran.com