



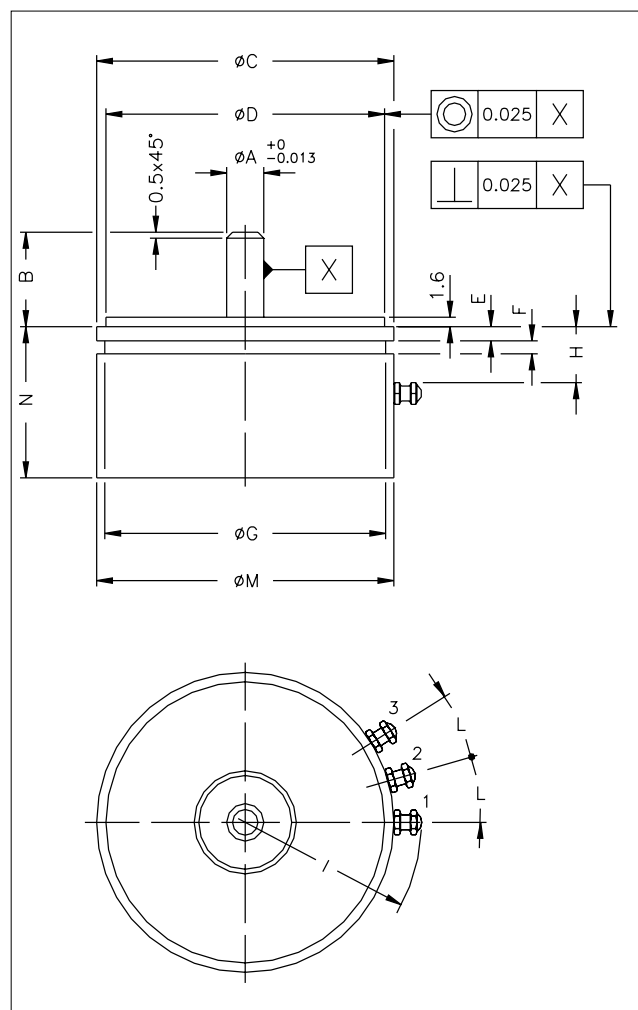
### Main features

- Models 09, 11, 20
- Servo mounting
- Independent linearity up to  $\pm 0,05\%$  (standard  $\pm 0,5\%$ )
- Repetibility  $0,01\%$  C.E.U.
- Rotation speed  $\leq 600$  r.p.m. (within C.E.U.)
- Life duration:  $>100 \times 10^6$  operations at 10 r.p.s.
- Infinite resolution
- Electrical terminals: turrets
- Grade of protection IP40
- Suitable for use in explosive environments with presence of gas (groups IIA, IIB, IIC) and combustible powders. Standards for simple device: ATEX CEI EN 50020 2003 - paragraph 5.4 a

### TECHNICAL DATA

|                                                      |                                                                  |
|------------------------------------------------------|------------------------------------------------------------------|
| Model                                                | 09 - 11 - 20                                                     |
| Vibrations                                           | 5...2000Hz, $A_{max} = 0,75$ mm<br>$a_{max} = 20$ g              |
| Shock                                                | 50 g, 11ms.                                                      |
| Hysteresis (backlash)                                | $\leq 15''$ of arc                                               |
| Electrical terminals                                 | Gold plated turrets                                              |
| Torque                                               | $\leq 0,20$ Ncm                                                  |
| Rotation speed                                       | $\leq 600$ giri/min. (within C.E.U.)                             |
| Life duration (within C.E.U.)                        | $>100 \times 10^6$ operations                                    |
| Tolerance on resistance total                        | $\pm 20\%$ other values by request                               |
| Recommended cursor current                           | $< 0,1$ mA                                                       |
| Maximum cursor current                               | 10mA                                                             |
| Electrical isolation                                 | $>100M\Omega$ a 500V~, 1bar, 2s                                  |
| Dielectric strength                                  | $< 100$ mA a 500V~, 50Hz, 2s, 1bar                               |
| Dissipation at 40°C (0W at 120°C)                    | see table                                                        |
| Actual Temperature Coefficient of the output voltage | $< 1,5$ ppm/°C                                                   |
| Working temperature                                  | -55...+100°C                                                     |
| Storage temperature                                  | -55...+125°C                                                     |
| Case material                                        | Diallylphthalate                                                 |
| Shaft material                                       | AISI 316                                                         |
| Bearings                                             | High precision with double (ZZ) sealed screen in stainless steel |
| Flange                                               | Anodised aluminium                                               |

### MECHANICAL DIMENSIONS

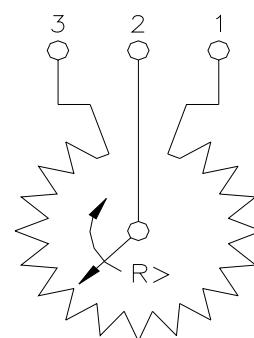


**Important:** all the data reported in the catalogue linearity, lifetime, temperature coefficient are valid for a sensor utilization as a ratiometric device with a max current across the cursor  $I_c \leq 0.1 \mu A$ .

## MECHANICAL / ELECTRICAL DATA

| MODEL                                  |    | PS09     | PS11                                                               | PS20     |
|----------------------------------------|----|----------|--------------------------------------------------------------------|----------|
| Theoretical electrical stroke (C.E.T.) | °  | 340 ± 4° | 345 ± 4°                                                           | 350 ± 4° |
| Useful electrical stroke (C.E.U.)      | °  |          | C.E.T. -2°                                                         |          |
| Resistance ± 20% (C.E.T.)              | kΩ |          | 1 - 4.7 - 10                                                       |          |
| Independent linearity (within C.E.U.)  | ±% |          | A = ± 1%<br>B = ± 0,5%<br>C = ± 0,25%<br>D = ± 0,1%<br>E = ± 0,05% |          |
| Dissipation at 40°C (0W at 120°C)      | W  | 1        | 1,25                                                               | 3        |
| Mechanical rotation                    | °  |          | 360° continuous                                                    |          |
| Weight                                 | g  | 16       | 20                                                                 | 90       |

## ELECTRICAL CONNECTIONS

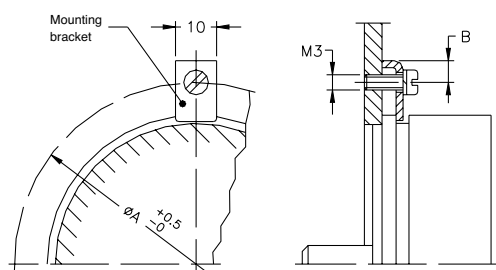


Clockwise viewed from shaft side

## DIMENSIONS

| DIMENSIONS (mm) | DESCRIPTION                     | SIZE/MODEL 09 / PS09 | SIZE/MODEL 11 / PS11 | SIZE/MODEL 20 / PS20 |
|-----------------|---------------------------------|----------------------|----------------------|----------------------|
| ø A + 0/0.013   | ø Stainless steel shaft         | 3.175                | 3.175                | 6.35                 |
| B max.          | Shaft length                    | 16                   | 16                   | 16                   |
| ø C max.        | External ø of flange            | 22.25                | 27.05                | 50.8                 |
| ø D             | ø flange<br>Tolerance on flange | 19.05<br>+0 -0.013   | 24.608<br>+0 -0.013  | 47.625<br>+0 -0.025  |
| E               | Shoulder                        | 1.6                  | 1.6                  | 2.4                  |
| F min.          | Width of groove                 | 1.5                  | 1.5                  | 2.2                  |
| ø G max.        | Diameter of groove              | 20                   | 25                   | 48                   |
| H min.          | Locating turrets                | 6                    | 6                    | 10                   |
| I max.          | Radius on turrets               | 16                   | 18                   | 30                   |
| L ± 2°          | Angle between turrets           | 30°                  | 25°                  | 15°                  |
| M max.          | External ø of case              | 22.2                 | 27                   | 50.8                 |
| N max.          | Length for Nr. of elements = 1  | 21                   | 21                   | 24                   |

## MOUNTING DIAGRAM



| MODEL        | PS09 | PS11 | PS20 |
|--------------|------|------|------|
| ø A + 0,5/-0 | 29   | 34   | 62   |
| B            | 4,3  | 4,3  | 3,5  |

## INCLUDED ACCESSORIES

|                                                         | Code           |
|---------------------------------------------------------|----------------|
| Fixing kit for PS:<br>3 brackets, M3x8TC screws, grower |                |
| Rotative transducers PS09 - PS11                        | <b>PKIT012</b> |
| Rotative transducers PS20                               | <b>PKIT013</b> |

## ORDER OCODE

Rotative transducer PS

Model

Linearity (std. B)

|             |
|-------------|
| A = ± 1%    |
| B = ± 0,5%  |
| C = ± 0,25% |
| D = ± 0,1%  |
| E = ± 0,05% |

TAPS  
(std. 0)

0

Resistance  
value  
(std. 103)

|       |     |
|-------|-----|
| 1kΩ   | 102 |
| 4,7kΩ | 472 |
| 10kΩ  | 103 |

If requested, it is possible to supply models with non-standard mechanical and/or electrical features

Example: **PS20 - B - 0 - 103**

Rotative transducer model PS20, 1 resistive element, linearity ± 0,5%, no voltage or current intermediate pick-offs, 10kΩ resistance.

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

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