



gm

**SENSORES E
INSTRUMENTACION
GUEMISA S.L.**

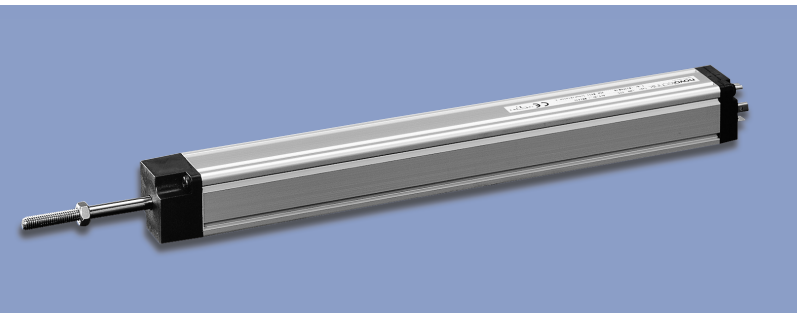
NIF: B-87969416

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Position Transducers potentiometric up to 900 mm, IP55

Series LWH



Special features

- long life up to 100 Mio. movements, depending on application
- outstanding linearity up to $\pm 0.04\%$
- high resolution 0.01 mm
- very high operating speed
- connection via plug and socket to DIN 43 650 (hydraulic connector)
- protection class IP 55

Position transducers with resistive and collector track made from conductive plastic for direct, accurate measurement of travel in display- or feedback applications.

High resolution (0.01 mm) combined with a stroke length of up to 900 mm permits the accurate measurement of linear displacement.

Rack and pinions or similar devices are not required because the design of the transducers is such that they may be built directly into the mechanical system.

Tighter tolerances on the extruded body combined with a special surface treatment permit high operating speeds and reduced wear. A pivoting front bearing overcomes „stick-slip“ type of operation even where some angular or out of parallel errors are present.

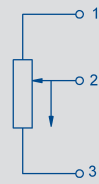
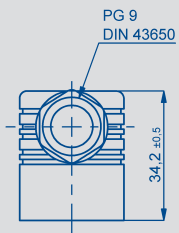
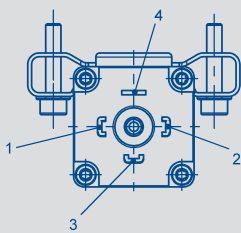
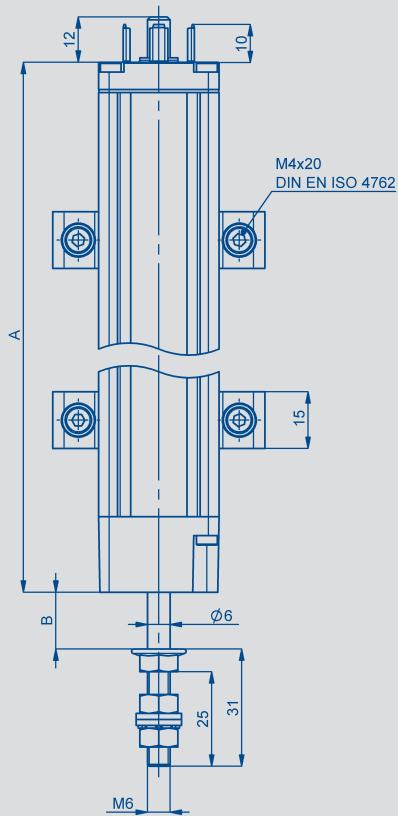
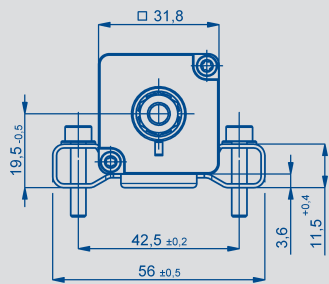
The technique for fixing and making connections to the resistance track ensures the highest degree of reliability even under harsh working conditions.

By mounting overhead on difficult-to-reach machines it is possible to pre-mount the clamps to the mounting surface and then simply “snap-on” the transducer.

The transducer has mounting grooves on all four housing surfaces. Thus the transducer can always be mounted with the resistance element directed upwards (recognizable by the position of the middle mounting groove directly across from the resistance element), independent of the mounting surface.

Erosion particles from inside the transducer will therefore not remain on the resistance element, improving the life-span of the sensor.

| Description | |
|------------------------|---|
| Housing | aluminium, anodized |
| Fixings | adjustable clamps, snap in on all sides |
| Actuator | stainless steel (1.4305), rotatable, external thread M6 |
| Bearings | pendular fixed slide bearing |
| Resistance element | conductive plastic |
| Wiper assembly | precious metal multi-finger wiper, elastomer-damped |
| Electrical connections | 4-pin plug socket to DIN 43650 |



Schematic

| Type designations | LWH 0075 | LWH 0100 | LWH 0130 | LWH 0150 | LWH 0175 | LWH 0200 | LWH 0225 | LWH 0250 | LWH 0275 | LWH 0300 | LWH 0325 | LWH 0360 | LWH 0375 | LWH 0400 | LWH 0450 | LWH 0500 | LWH 0550 | LWH 0600 | LWH 0750 | LWH 0900 | | |
|--|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|---|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|---------------------|-----------------------|
| Electrical Data | | | | | | | | | | | | | | | | | | | | | | |
| Defined electrical range | 75 | 100 | 130 | 150 | 175 | 200 | 225 | 250 | 275 | 300 | 325 | 360 | 375 | 400 | 450 | 500 | 550 | 600 | 750 | 900 | mm | |
| Electrical stroke | 77 | 102 | 132 | 152 | 178 | 203 | 228 | 254 | 279 | 304 | 330 | 366 | 381 | 406 | 457 | 508 | 559 | 610 | 762 | 914 | mm | |
| Nominal resistance | 3 | 3 | 3 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 10 | 10 | kΩ | |
| Resistance tolerance | | | | | | | | | | | | | | | | | | | | | ±% | |
| Independent linearity | 0,1 | 0,1 | 0,09 | 0,08 | 0,07 | 0,07 | 0,07 | 0,07 | 0,07 | 0,06 | 0,05 | 0,05 | 0,05 | 0,05 | 0,05 | 0,05 | 0,05 | 0,05 | 0,04 | 0,04 | ±% | |
| Repeatability | | | | | | | | | | | | | | | | | | | | | mm | |
| Recommended operating wiper current | | | | | | | | | | | | | | | | | | | | | μA | |
| Max. wiper current in case of malfunction | | | | | | | | | | | | | | | | | | | | | mA | |
| Max. permissible applied voltage | | | | | | | | | | | | | | | | | | | | | V | |
| Effective temperature coefficient of the output-to-applied voltage ratio | | | | | | | | | | | | | | | | | | | | | ppm/K | |
| Insulation resistance (500 VDC) | | | | | | | | | | | | | | | | | | | | | MΩ | |
| Dielectric strength (500 VAC, 50 Hz) | | | | | | | | | | | | | | | | | | | | | μA | |
| Mechanical Data | | | | | | | | | | | | | | | | | | | | | | |
| Body length (dimension A) | 146 | 171 | 201 | 222 | 248 | 273 | 298 | 324 | 349 | 375 | 400 | 436 | 451 | 476 | 527 | 578 | 629 | 680 | 832 | 984 | ±2 mm | |
| Mechanical stroke (dimension B) | 85 | 110 | 140 | 161 | 186 | 212 | 237 | 262 | 288 | 313 | 339 | 374 | 390 | 415 | 466 | 516 | 567 | 618 | 770 | 923 | ±2 mm | |
| Total weight | 220 | 250 | 290 | 320 | 350 | 380 | 410 | 440 | 470 | 500 | 530 | 570 | 590 | 620 | 680 | 740 | 805 | 870 | 1050 | 1230 | g | |
| Weight of actuator and wiper | 50 | 55 | 60 | 65 | 72 | 78 | 85 | 90 | 95 | 100 | 105 | 115 | 120 | 125 | 135 | 145 | 160 | 170 | 210 | 245 | g | |
| Operating force horizontal | | | | | | | | | | | | | | | | | | | | | N | |
| vertical | | | | | | | | | | | | | | | | | | | | | N | |
| Environmental Data | | | | | | | | | | | | | | | | | | | | | | |
| Temperature range | | | | | | | | | | | -30... +100 | | | | | | | | | | | °C |
| Vibration | | | | | | | | | | | 5... 2000 A _{max} = 0.75 a _{max} = 20 | | | | | | | | | | | Hz mm g |
| Shock | | | | | | | | | | | 50 11 | | | | | | | | | | | g ms |
| Life | | | | | | | | | | | >100 x 10 ⁶ | | | | | | | | | | | movements |
| Operating speed | | | | | | | | | | | 10 | | | | | | | | | | | m/s max. |
| Operational acceleration | | | | | | | | | | | 200 (20 g) | | | | | | | | | | | m/s ² max. |
| Protection class | | | | | | | | | | | | | | | | | | | | | IP55 (DIN EN 60529) | |

| Order designations | |
|--------------------|--------|
| Type | P/N |
| LWH-0050* | 024302 |
| LWH-0075 | 024303 |
| LWH-0100 | 024304 |
| LWH-0110* | 024360 |
| LWH-0130 | 024305 |
| LWH-0150 | 024306 |
| LWH-0175 | 027307 |
| LWH-0200 | 024308 |
| LWH-0225 | 024309 |
| LWH-0250 | 024310 |
| LWH-0275 | 024311 |
| LWH-0300 | 024312 |
| LWH-0325 | 024313 |
| LWH-0360 | 024314 |
| LWH-0375 | 024315 |
| LWH-0400 | 024316 |
| LWH-0425* | 024317 |
| LWH-0450 | 024318 |
| LWH-0500 | 024320 |
| LWH-0550 | 024322 |
| LWH-0600 | 024324 |
| LWH-0650* | 024326 |
| LWH-0750 | 024330 |
| LWH-0800* | 024332 |
| LWH-0900 | 024336 |

*) Technical datas on request
Other lengths on request

Included in delivery

1 plug connector GDM 3009,
(Ø 4,5 mm - 7 mm),
1 sealing gasket GDM 3-16,
2 fixing clamps with 4 screws

Optional accessories

Pivot head Z-60 with internal
thread M6x12, P/N 058100.
Process-controlled indicators
MAP... with display.



Signal conditioner MUW...
(integrated in plug connector)
with supply voltage 24 V and
standard output signals.

Important

All values specified in this data
sheet for linearity, lifetime and
temperature coefficient are
only valid for a sensor used as
a voltage divider with virtually
no load applied to the wiper
($I_e \leq 1 \mu A$).