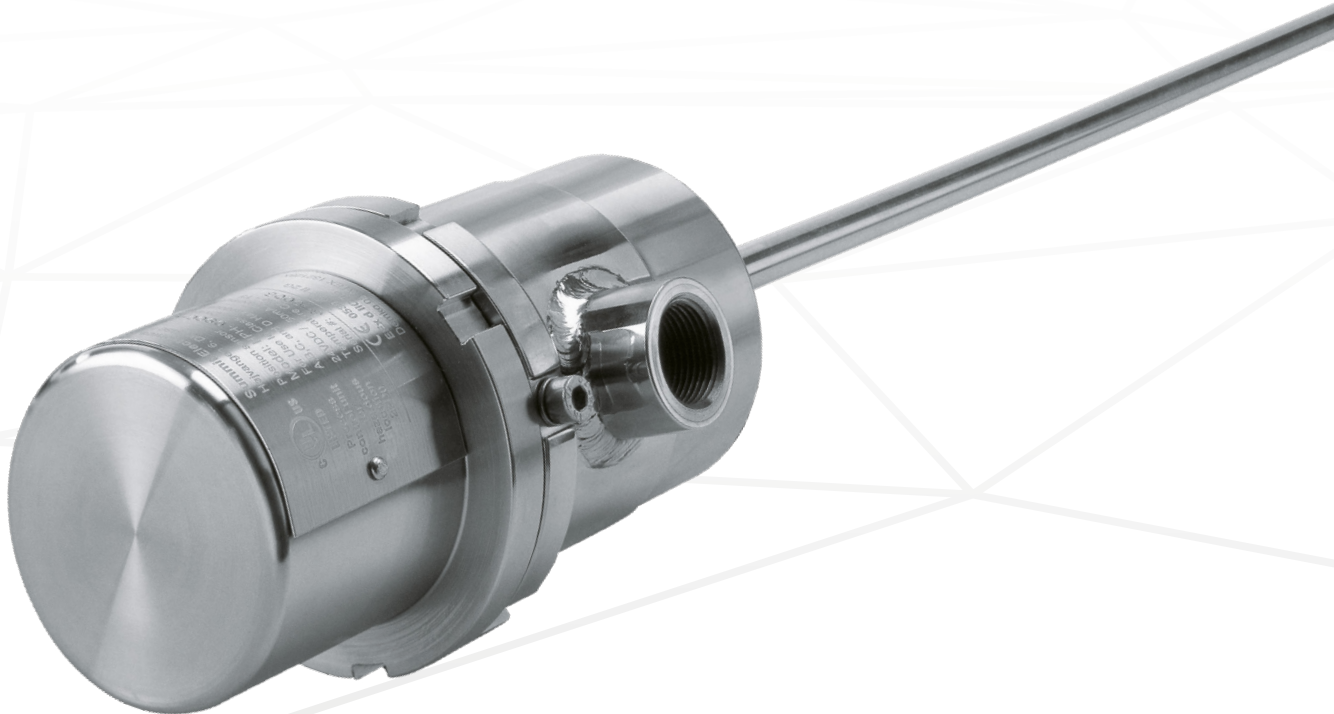


Data Sheet

HIGH PRESSURE HOUSING (HPH)

Magnetostrictive Linear Position Sensors

- Precise position measurement in harsh environments
- Reliable solution for use in hazardous areas
- Easy sensor replacement



MEASURING TECHNOLOGY

The absolute, linear position sensors provided by Temposonics rely on the company's proprietary magnetostrictive technology, which can determine position with a high level of precision and robustness. Each Temposonics position sensor consists of a ferromagnetic waveguide, a position magnet, a strain pulse converter and a supporting electronics. The magnet, connected to the object in motion in the application, generates a magnetic field at its location on the waveguide. A short current pulse is applied to the waveguide. This creates a momentary radial magnetic field and torsional strain on the waveguide. The momentary interaction of the magnetic fields releases a torsional strain pulse that propagates the length of the waveguide. When the ultrasonic wave reaches the beginning of the waveguide it is converted into an electrical signal. Since the speed of the ultrasonic wave in the waveguide is precisely known, the time required to receive the return signal can be converted into a linear position measurement with both high accuracy and repeatability.

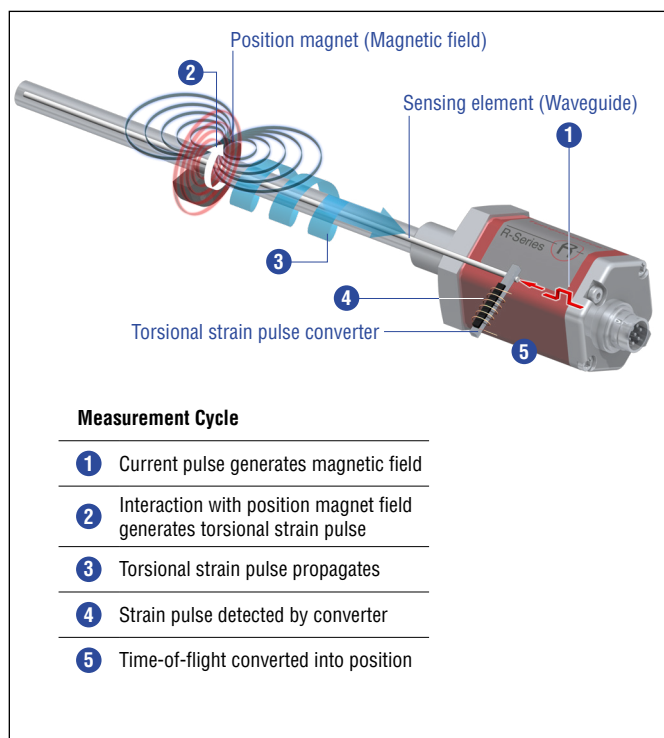


Fig. 1: Time-based magnetostrictive position sensing principle

HIGH PRESSURE HOUSING (HPH)

This High Pressure Housing (HPH) is ATEX-IECEX as well as UL and cUL approved for use in hazardous areas with Temposonics® position sensors. The ATEX-IECEX, UL and cUL approvals cover flammable gases, vapors, liquids and dust.

This housing is made to fit Temposonics® R- and G-Series sensors and could be used with cable or connector versions.

Several design combinations are available to fit the application:

- M18 or ¾" UNF mounting flange
- M20 or ½" NPT cable gland thread
- Long or short housing, top or side mounted, as well as double side cable mounting



Fig. 2: Typical application: e.g. petrochemical industry

HPH ROTATION ADAPTER

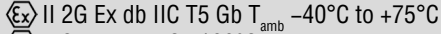
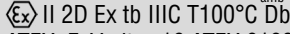

This adapter allows you to adjust the position of the side opening when the HPH housing is mounted in a cylinder. The adaptor is pressure tested to 600 bar (8400 psi) peak.

- RTA-M18 with M30x1.5 mounting thread for standard M18 housing thread.
- RTA-¾" UNF with 1 1/16" UNF mounting thread for 1 ¾" UNF housing thread.
- 253 961 with 1 ¼" UNF mounting thread for ¾" UNF housing thread.



Fig. 3: HPH rotation adapter

TECHNICAL DATA

| Explosion protection | |
|---|---|
| ATEX, IECEx |   ATEX: ExVeritas 16 ATEX 0192X IECEx: IECEx EXV 16.0014X In accordance with EN 60079-0, EN 60079-1, 60079-26 and EN 60079-31 Only with ATEX approved cable glands (Ex d) |
| Classification | |
|  | Class 1, Division 1, Groups A, B, C, and D hazardous areas, temperature class T5 Certified to fire, electrical shock and explosion hazards according to UL no. 2PD0. In accordance with UL 1203 standard. Only with UL approved cable glands |
| Operating conditions | |
| Operating temperature ¹ | -40...+75 °C (-40...+167 °F) |
| Humidity | 90 % relative humidity, no condensation |
| Ingress protection | IP68 (only with IP68 approved cable gland) |
| Operating pressure | 350 bar static (5076 psi static) |
| Magnet movement velocity | Any |
| Design/Material | |
| Sensor rod | Stainless steel 1.4404 (AISI 316L) |
| Cable gland threads | M20×1.5 or ½" NPT |
| Stroke length | 25...7500 mm |
| Mechanical mounting | |
| Mounting flange | M18×1.5 or ¾" - 16UNF - 3A |
| Mounting instructions | Please consult the technical drawings and the operation manual (document no.: 551751) |
| Approved sensors | |
| Temposonics position sensors (with stroke lengths 25...7500 mm) | G-Series Analog+Digital R-Series Profibus R-Series CANBUS R-Series DeviceNet R-Series V Analog R-Series V SSI |

¹/T_{amb}⁺ is limited to max T_{amb}⁺ of used sensor -10 °C (-14 °F)

TECHNICAL DRAWING

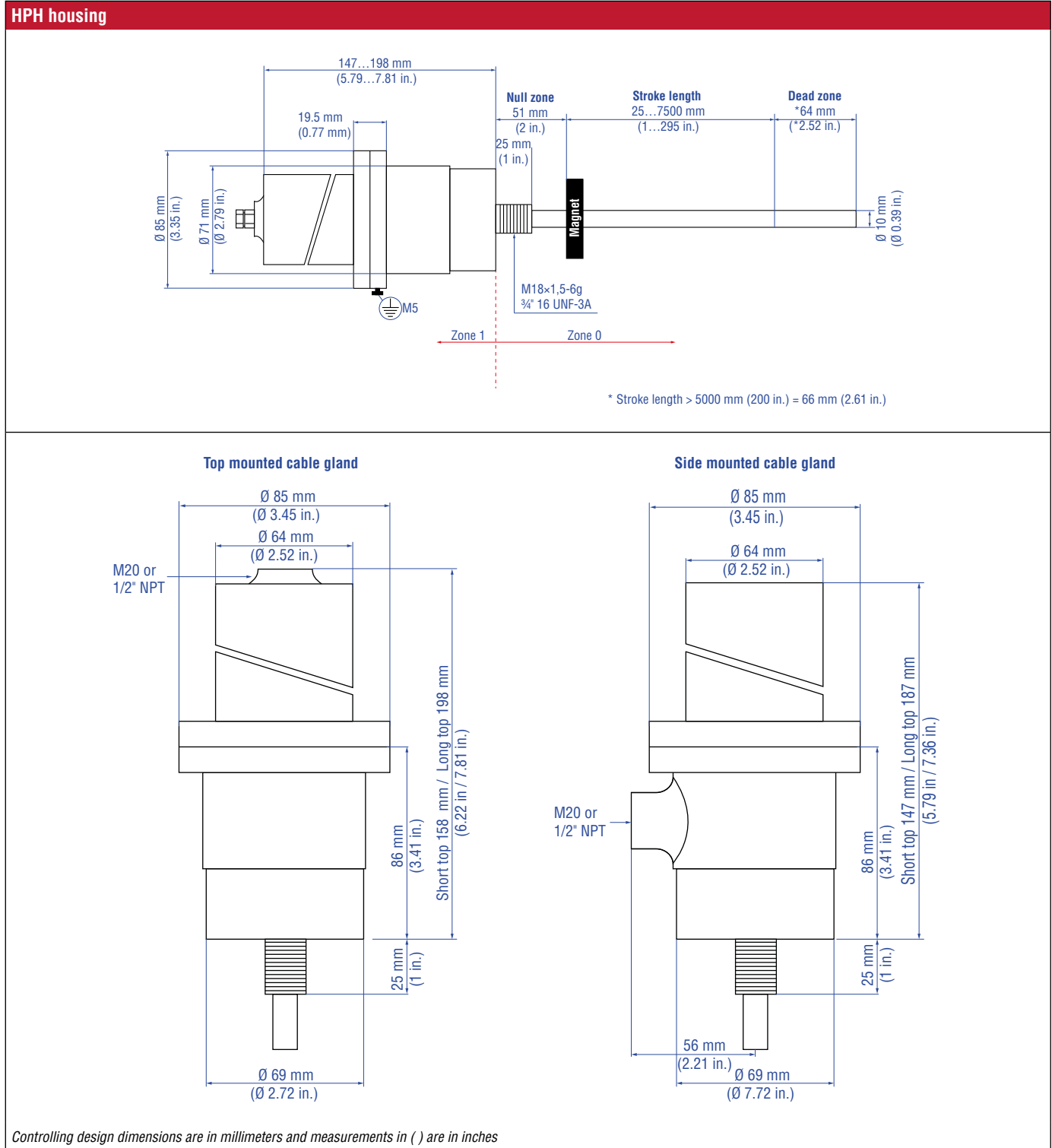

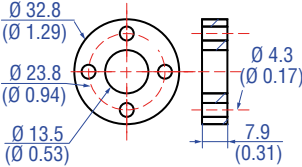
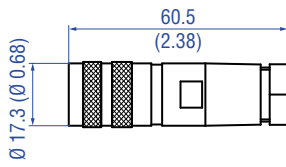
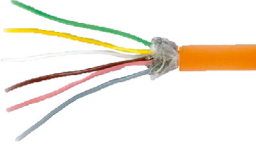


Fig. 4: HPH housing

FREQUENTLY ORDERED ACCESSORIES – Additional options available in our [Accessories Guide](#)  [551444](#)

| Position magnet | Connector | Cable | |
|--|--|--|--|
|  |  |  | |
| <p>Ring magnet OD33 Part no. 201 542-2</p> | <p>M16 female connector (6 pin), straight Part no. 370 423</p> | <p>PUR cable Part no. 530 052</p> | |
| <p>Material: PA ferrite GF20 Weight: Approx. 14 g Surface pressure: Max. 40 N/mm² Fastening torque for M4 screws: 1 Nm Operating temperature: -40...+105 °C (-40...+221 °F)</p> | <p>Material: Zinc nickel plated Termination: Solder Cable Ø: 6...8 mm (0.24...0.31 in.) Operating temperature: -40...+100 °C (-40...+212 °F) Ingress protection: IP65/IP67 (correctly fitted) Fastening torque: 0.6 Nm</p> | <p>Material: PUR jacket; orange Features: Twisted pair, shielded, highly flexible, halogen free, suitable for drag chains, mostly oil & flame resistant Cable Ø: 6.4 mm (0.25 in.) Cross section: 3 × 2 × 0.25 mm² Bending radius: 5 × D (fixed installation) Operating temperature: -30...+80 °C (-22...+176 °F)</p> | |
| Spanner tool | Cable glands | | |
| <p>Spanner tool Part no. DIN 1018A AMF 80-90 mm</p> | <p>M20×1.5 Part no. CG-816679</p> <p>Type no. ADE1F-4 Material: Stainless steel Cable-Ø: 4...8.5 mm (0.16...0.33 in.)</p> | <p>M20×1.5 Part no. CG-816609</p> <p>Type no. ADE1F-6 Material: Stainless steel Cable-Ø: 8.5...16 mm (0.16...0.63 in.)</p> | <p>½" NPT ATEX/CSA US, 180 °C (356 °F) Part no. 403 042</p> <p>Type no. A3LF/16 1/2 NPT Material: Nickel plated brass Cable-Ø: 4...8.4 mm (0.16...0.33 in.)</p> |
| HPH rotation adapters | | | |
| <p>For M18, M30×1.5 Part no. RTA-M18</p> | <p>For 3/4" UNF; 1 1/16" Part no. RTA-3/4" UNF-2</p> | <p>For 3/4" UNF; 1 ¼" Part no. 253 961</p> | |

ORDER CODE

| | | | | | | | | | | | | | | | | | | |
|----------|---|---|----------|---|---|---|----------|---|----|----|----|----------|----------|----|----|----|----|----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |
| H | P | H | | | | | | | | | | | | | | | | |
| a | | | b | | | | c | | | | | d | e | | | | | |

optional

a Housing model

| | | |
|---|---|---|
| H | P | H |
|---|---|---|

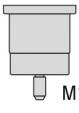
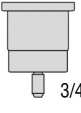
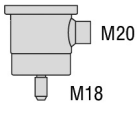
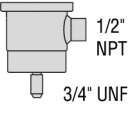
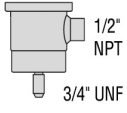
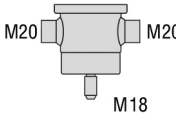


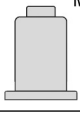

High Pressure Housing (HPH)

b Design combination

| | | | |
|---|---|---|---|
| X | X | X | X |
|---|---|---|---|

Choose a design combination from the chart below

Design combination chart

| Bottom \ Top |  |  |  |  |  |  |
|---|---|---|---|--|---|---|
| Approval | ATEX / IECEx | ATEX / IECEx | ATEX / IECEx | ATEX / IECEx | UL / cUL | ATEX / IECEx |
|  | 0100 | 0600 | | | | |
|  | | | 0900 | 1000 ATEX | 1000 UL/cUL | 1300 |
|  | 0300 | 0800 | | | | |
|  | | | | | | 2100* |

* upon request

c Stroke length

| | | | |
|---|---|---|---|
| X | X | X | X |
|---|---|---|---|

25...7500 mm

d Version

| |
|---|
| A |
| N |

Approved
Non-approved

e Type of approval for version 1000 (optional)

| | | | | | |
|---|---|---|---|---|---|
| A | T | E | X | | |
| U | L | / | c | U | L |

ATEX
UL/cUL

Example:

Approved short housing with M18 mounting threads and one side mounted cable gland with M20 threads and a stroke length of 650 mm:

HPH-0900-0650-A

DELIVERY



High Pressure Housing (HPH)

Accessories order separately. To order the basis sensors RH-B-... and GH-B-... please contact our application team
Tel. +49 2351-9587-0.

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