

Temposonics®

Magnetostrictive, Absolute, Non-contact
Linear-Position Sensors



NEMA Type 4X Housing
R-Series (RH) and G-Series (GH) Sensors

Document Part Number
551071 Revision C

Data Sheet



Model RH/GH Rod-style position sensor with a NEMA Type 4X Housing

FEATURES

- Sealed, NEMA Type 4X Stainless-steel Housing
- Supports Sensor, Including; Current, Voltage, SSI and CANbus Outputs

BENEFITS

- Available for R-Series and G-Series Rod-style Sensors:
 - Rugged industrial Sensors
 - Linear, Absolute Measurement
 - Non-Contacting Sensing Technology

APPLICATIONS

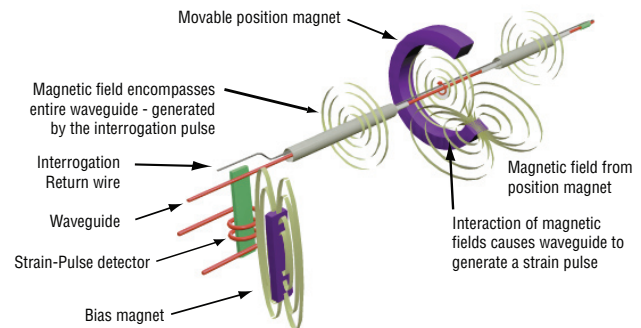
- Ideal For Hydraulic and Pneumatic Cylinders in Wash down Environments
- Continuous Operation In Harsh Industrial Conditions
- Additional Protection for Exposed Outdoor Environments

TYPICAL INDUSTRIES

- Fluid Power
- Material Handling and Packaging
- Valve and Gate Positioning

Refer to specific sensor product specifications for sensor ordering codes.

Time-based Magnetostrictive position sensing principle



Benefits of Magnetostriction

Temposonics linear-position sensors use the time-based magnetostrictive position sensing principle developed by MTS. Within the sensing element, a sonic-strain pulse is induced in a specially designed magnetostrictive waveguide by the momentary interaction of two magnetic fields. One field comes from a moveable permanent magnet that passes along the outside of the sensor. The other field comes from an “interrogation” current pulse applied along the waveguide. The resulting strain pulse travels at sonic speed along the waveguide and is detected at the head of the sensing element.

The position of the magnet is determined with high precision and speed by accurately measuring the elapsed time between the application of the interrogation pulse and the arrival of the resulting strain pulse with a high-speed counter. The elapsed time measurement is directly proportional to the position of the permanent magnet and is an absolute value. Therefore, the sensor's output signal corresponds to absolute position, instead of incremental, and never requires recalibration or re-homing after a power loss. Absolute, non-contact sensing eliminates wear, and guarantees the best durability and output repeatability.

All specifications are subject to change. Contact MTS for specifications and engineering drawings that are critical to your application. Drawings contained in this document are for reference only. Go to <http://www.mtssensors.com> for the latest support documentation and related media.

Product overview

Our sealed NEMA Type 4X stainless-steel housing is an accessory designed specifically for Temposonics R-Series and G-Series 'rod-style' sensor models, making them ideal for use in hydraulic or pneumatic cylinders used in wash down environments.

By combining our modular design philosophy with this unique housing, customers can utilize the same proven non-contact, trouble-free performance recognized throughout the world. By themselves, R-Series model RH and G-Series model GH sensors are sealed to an ingress rating of IP 67. (IP 68 for integral cable models).

Using the NEMA Type 4X housing provides the additional sealing protection of a NEMA Type 4X that adds protection against hose-directed water, (similar to an IP 66 rating). This stainless-steel housing also protects against corrosion and will remain undamaged by external formation of ice.

The Temposonics position sensor with a NEMA Type 4X housing offer advantages that enable the customer to choose the specific sensor output configurations required for their application.

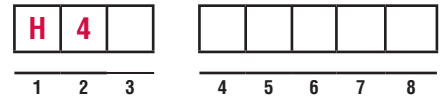
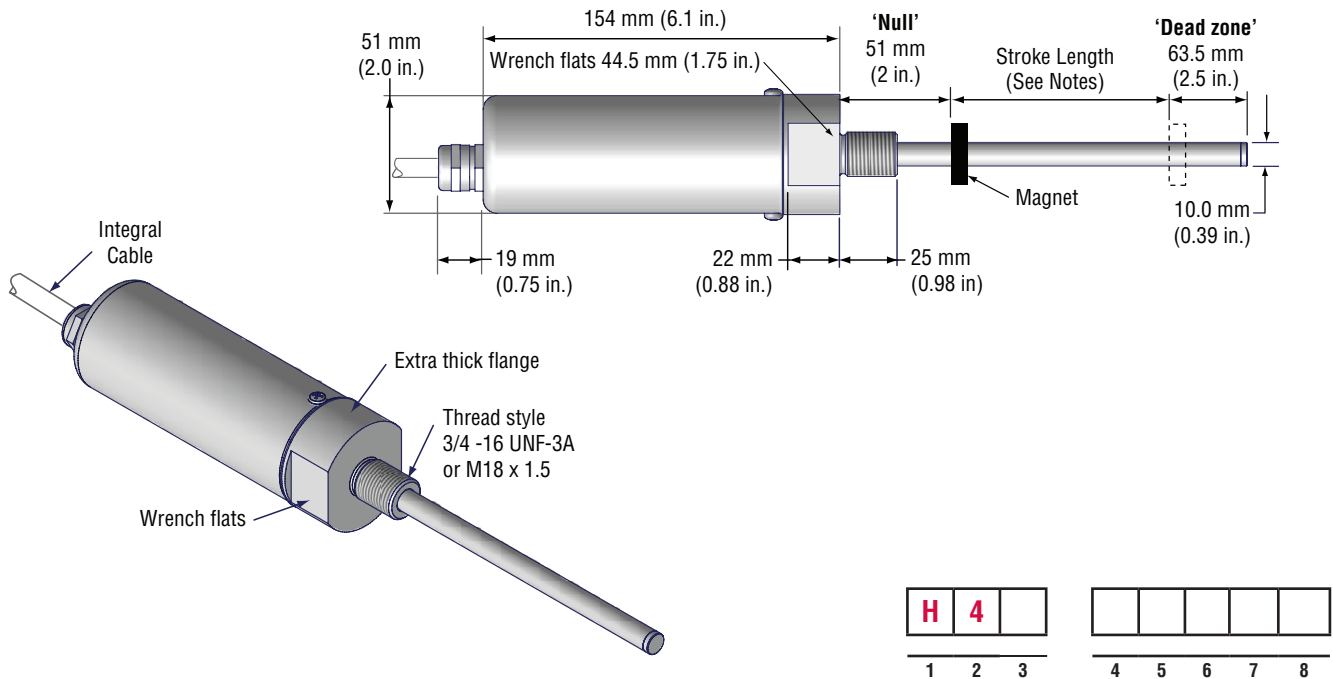
Serial communication and a simple PC-based user interface enable remote programmability and full diagnostics without the need to compromise the housing's protection rating. These features can be used to simplify machine design, sensor setup and field troubleshooting.

Product specifications

Parameters	Specifications
Rod-Style sensor models ‡:	Analog, Start/Stop, PWM, SSI and CANbus G-Series, Model GH Outputs: Voltage, current, Start/Stop or PWM R-Series, Model RH Outputs: Voltage, current, SSI and CANbus ‡ Consult individual sensor data sheets for more product specifications and sensor ordering information at www.mtssensors.com
Measuring range:	Rod style: 25 mm (1 in.) to 7620 mm (300 in.)
WIRING	
Connection type:	Integral cable, black polyurethane jacket, with pigtail termination
ROD-STYLE SENSOR AND HOUSING	
Housing:	303/304 Stainless Steel
Sealing:	Housing: NEMA Type 4X Sensor cartridge (installed): IP 68 (integral cable models)
Sensor rod:	304 Stainless Steel
Operating pressure:	350 bar, 690 bar peak (5000 psi, 10,000 psi peak)
Mounting:	Any orientation. Threaded flange M18 x 1.5 or 3/4-16 UNF-3A
Typical mounting torque:	45 N-m (33 ft. - lbs.)
Magnet types:	Ring magnet or magnet float

NEMA Type 4X housing with Rod-Style sensor dimension references

- Notes:**
- To compensate for the housing flange thickness, The sensor cartridge used inside requires an additional 30 mm (1.2 in.) to be added to the stroke length.
 - Refer to the appropriate data sheet for product specific information.



Ordering information

HOUSING
(For use with Temposonics sensor models GH and RH only) _____ =

H	4
---	---

 1-2

HOUSING STYLE (3) _____ =

--

 3

S = US customary threads, flat- faced flange

M = Metric threads, flat-faced flange

STROKE LENGTH (4-8) _____ =

--	--	--	--	--

 4-8

_____ **M** = Millimeters (Encode in 5 mm increments)

_____ **U** = Inches and tenths (Encode in 0.1 in. increments)

To order the NEMA Type 4X housing accessory and associated sensor cartridge (GHB or RHB), refer to the order codes in the specific product data sheet to fill in the following order blanks.

Product Data Sheet References:

R-Series Analog 550992

R-Series SSI 550989

R-Series CANbus 550991

G-Series Analog / Digital 550959

SENSOR CARTRIDGE (Refer to Note 1 above for required additional stroke length and the product specific sensor model specification)

RHB _____ F _____ ...

GHB _____ F _____ ...



Document Part Number: 551071, Revision C 01-10

MTS and Temposonics are registered trademarks of MTS Systems Corporation.
All other trademarks are the property of their respective owners.
All Temposonics sensors are covered by US patent number 5,545,984. Additional patents are pending.
Printed in USA. Copyright © 2010 MTS Systems Corporation. All Rights Reserved in all media.



**MTS Systems Corporation
Sensors Division**

3001 Sheldon Drive
Cary, North Carolina
27513, USA
Tel.: +1-800-633-7609
Fax: +1-919-677-2343
+1-800-498-4442
e-mail: sensorsinfo@mts.com
<http://www.mtssensors.com>

**MTS Sensor Technologie
GmbH & Co. KG**

Auf dem Schüffel 9
D - 58513 Lüdenscheid, Germany
Tel.: +49-2351-9587-0
Fax: +49-2351-56491
e-mail: info@mtssensor.de
<http://www.mtssensor.de>

**MTS Sensors Technology
Corporation**

737 Aihara-cho, Machida-shi
Tokyo 194-0211, Japan
Tel.: +81-42-775-3838
Fax: +81-42-775-5516
e-mail: info@mtssensor.co.jp
<http://www.mtssensor.co.jp>