

+GF+ SIGNET 2211/2212 Ultrasonic Point Level Sensors

3-2211.099 (B-11/01)



Features

- No moving parts
- Dual crystal system
- Microprocessor based integral electronics
- Digital filtering with On/Off delay to prevent chatter due to splashing
- Suitable for use in aerated liquids
- ± 1mm accuracy
- 316LSS or Tefzel® Sensor Body
- 1 Amp relay or 2-wire loop power output
- 3/4 in. NPT or DIN Connector assembly
- Suitable for vertical or horizontal installation
- CE Compliant

Description

+GF+ SIGNET 2211/2212 Ultrasonic Point Level Sensors resist fouling and corrosion to provide extremely reliable point level (level switch) detection. Because they have no moving parts, and are available in Tefzel® or 316LSS, these ultrasonic devices stand-up to the most demanding applications in which other sensor types fail due to mechanical wear, coating, suspended solids build-up or chemical attack. A precise activation point allows ± 1mm accuracy, and an On/Off delay for the relay or 2-wire loop

output helps to prevent inadvertent switching due to splashing. The dual 3/4 in. NPT mounting threads accommodate many creative installation configurations, easily arranged using common 3/4 in. pipe and fittings, for multi-level control in tanks. Additionally, a DIN connector option on the stainless steel sensors is offered to simplify periodic removal from bulkhead-mount configurations to facilitate cleaning in very harsh applications.

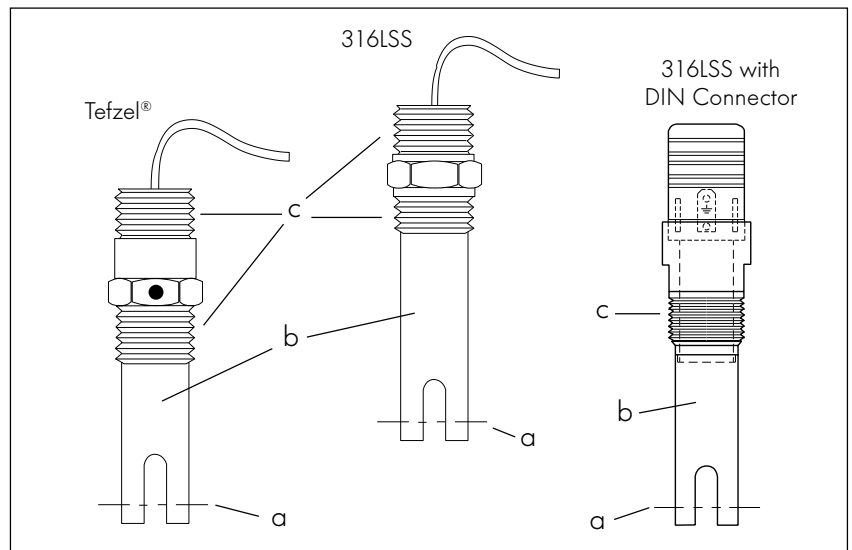
Application

- Pump Protection
- Storage Tanks
- Inventory Management
- Semiconductor
- Boiler Water Cutoff
- Sewage Systems
- Waste Sumps
- Chemical Transfer/Storage
- Leak Detection

Technical Features

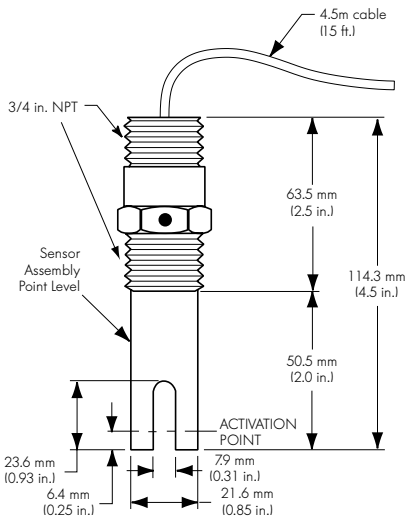
- a) Activation Point (sensor contains redundant ultrasonic transducers for unparalleled reliability)
- b) Microprocessor-based integral electronics for ± 1mm accuracy and Relay or 2-wire loop output with On/Off delay to prevent chatter
- c) Dual 3/4 in. NPT connections for installation versatility.

Note: Allowable suspended solids: 2% max. (typical)

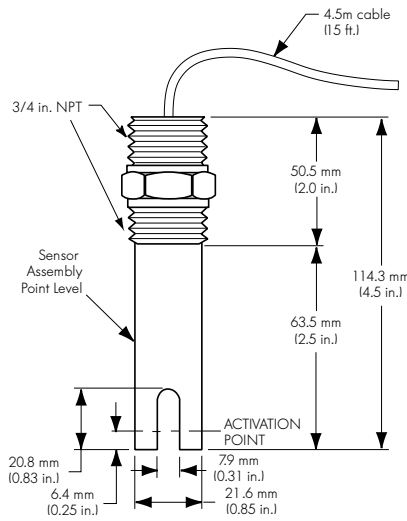


Dimensions

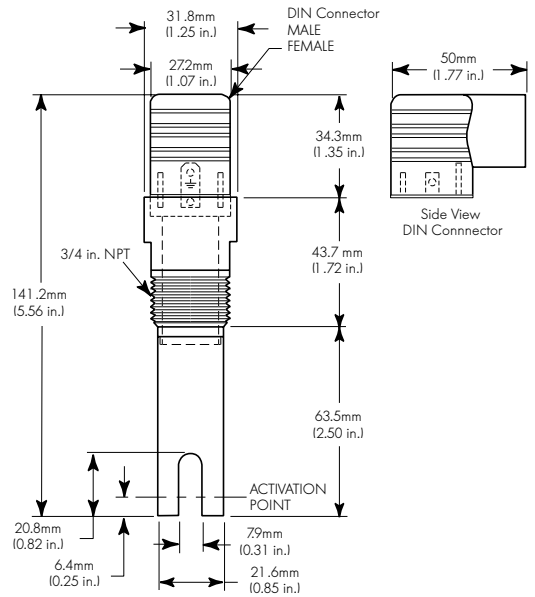
Tefzel® with 3/4 in. NPT



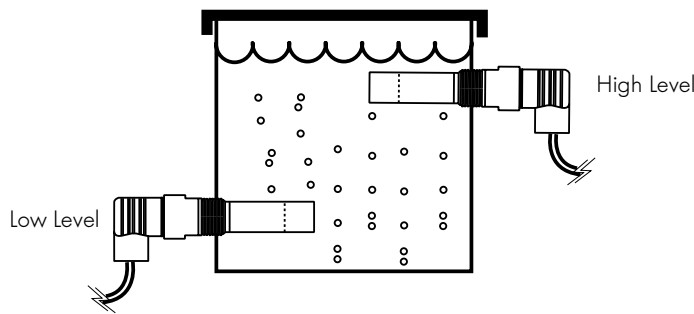
316LSS with 3/4 in. NPT



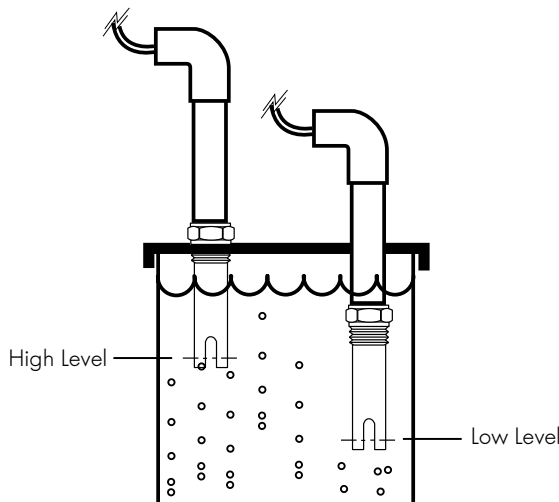
316LSS with DIN Connector



Installation



OR

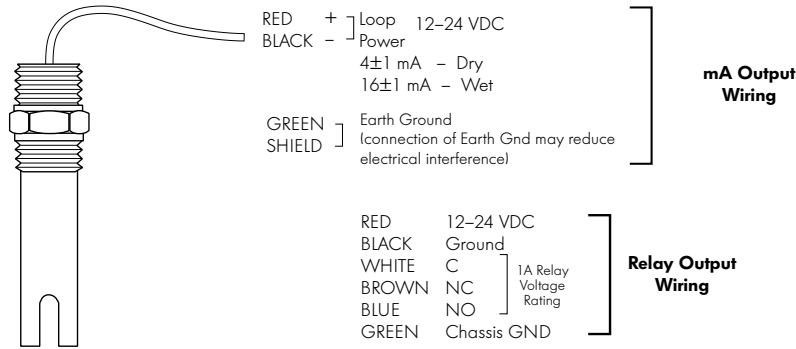


- Drill a suitable hole in the vessel or pipe wall and tap for 3/4 in. NPT. If wall is not suitable for threading, use a plastic bulkhead fitting, weld or braze a bushing to accept the sensor.
- Screw the sensor in the threaded section and make sure that there is a good seal. Use a pipe compound or sealing tape to reduce friction/binding. **DO NOT OVER TIGHTEN.**
- When mounting horizontally, notch should be vertically aligned.
Note: The Tefzel® sensor has a round dot on one flat edge of the hex nut which can be used as an alignment guide.
- The dual 3/4 in. NPT mounting threads accommodate many creative installation configurations, easily arranged using common 3/4 in. pipe and fittings, for multi-level control in tanks.
- Route the power and control wiring to the output device.

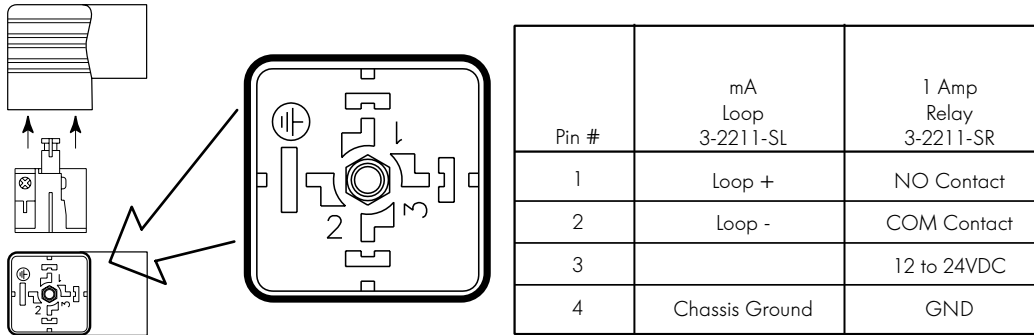
Note: See instruction manual for more detailed installation recommendations.

Wiring

3-2212-XX Standard 3/4 in. NPT (316LSS and Tefzel®)



3-2211-XX DIN Connector



Note:

- Cable lengths are extendable up to 304m (1,000 ft.)
- For -XL versions, route sensor cable separate from AC power lines

Technical Data

General

Temp. Range: -29° to 71°C (-20° to 160°F)

Pressure Range:

- 316LSS (3/4 in. NPT): Up to 150 psi (10.3 bars) over temp. range
- Tefzel® (3/4 in. NPT): Up to 30 psi (2.1 bars) over temp. range

Accuracy: ±1mm in water

Repeatability: ±0.5mm in water

Delay: 0.5 second ON (non-adjustable)
2.0 seconds OFF (non-adjustable)

Relay: SPDT type (except DIN connector SPST normally open)

Relay contact rating: 1A, 42V AC/DC

Input Power: 12 to 24VDC

Outputs:

- Two wire loop power: 4.0 ±1.0mA dry
16.0 ±1.0mA wet
- Loop impedance: 250Ω @ 12 VDC
900Ω @ 24VDC
- Relay output: 1A SPDT

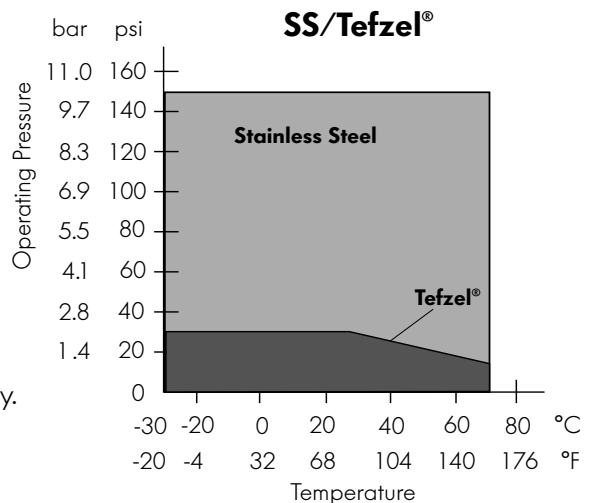
Protection: Transient, reverse polarity

Material: 316LSS, Tefzel®

Weight: • Tefzel®: 0.14 Kg/0.3 lbs)
• 316LSS: 0.23 Kg/0.5 lbs)

Cable Length: 4.5m/15 ft. Longer lengths: consult factory.

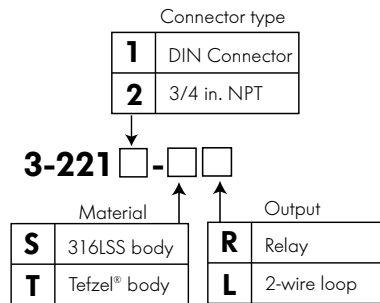
Mounting: 3/4 in. NPT standard



Standards and Approvals

- CE

Ordering Tree



Ordering Information

Mfr. Part No.	Code	Description
3-2211-SR	159 000 727	Ultrasonic Point Level Sensor - 316LSS Relay with DIN connector
3-2211-SL	159 000 728	Ultrasonic Point Level Sensor - 316LSS 2-wire loop with DIN connector
3-2212-SR	159 000 729	Ultrasonic Point Level Sensor - 316LSS Relay standard 3/4 in. NPT
3-2212-SL	159 000 730	Ultrasonic Point Level Sensor - 316LSS 2-wire loop standard 3/4 in. NPT
3-2212-TR	159 000 731	Ultrasonic Point Level Sensor - Tefzel® Relay standard 3/4 in. NPT
3-2212-TL	159 000 732	Ultrasonic Point Level Sensor - Tefzel® 2-wire loop standard 3/4 in. NPT

Accessories

Mfr. Part No.	Code	Description
5523-0624	159 000 636	Cable, 24AWG, 6 cond. w/ shield (specify length in feet)
3-8050-1	159 000 753	Universal mount junction box
3-8052-1	159 000 755	3/4 in. NPT mount junction box
3-9000.392	159 000 368	Liquid Tight Connector Kit, NPT, 3 connectors
3-9000.392-1	159 000 839	Liquid Tight Connector Kit, NPT, 1 connector
3-9000.392-2	159 000 841	Liquid Tight Connector Kit, PG13.5, 1 connector

Engineering Specifications

- The sensor shall utilize ultrasonic technology and have no moving parts.
- The sensor shall include a 1 Amp Relay or 2-wire loop power output, with On/Off delay.
- The sensor shall be constructed of either 316LSS or Tefzel®.
- The sensor shall be equipped with 3/4 in. NPT threads to suit both tank-wall and submersion installations.
- The sensor shall also be available with a DIN connector.
- The operating range shall be up to 150 psi (10.3 bars) for 316LSS and up to 30 psi (2.1 bars) for Tefzel®.
- The temperature range shall be -29° to 71°C (-20° to 160°F).
- The sensor shall be CE compliant.
- The sensor shall be +GF+ SIGNET 3-2211-SR; 3-2211-SL; 3-2212-SR; 3-2212-SL; 3-2212-TR; 3-2212-TL.

For more information on these products, please contact your local sales company:

A	Georg Fischer Rohrleitungssysteme GmbH, Sandgasse 16, A-3130 Herzogenburg, Tel. 02782/56 43-0, Fax 02782/51 56
AUS	George Fischer IPS Pty Ltd., 186-190 Kingsgrove Road, Kingsgrove, NSW 2208, Tel. 02 9554 3977, Fax 02 9502 2561
B/L	Georg Fischer N.V./S.A., Digue du Canal 109-111 – Vaardijk 109-111, B-1070 Bruxelles/Brussel, Tél. 02/556 40 20, Fax 02/524 34 26
BAR	George Fischer Ltda Av. dos Nações Unidas, 21689 CEP 04795-100 - S.Paulo - SP Tel.: 155111 247 1311 Fax: 155111 247 6009
CH	Georg Fischer Rohrleitungssysteme (Schweiz) AG, Amsler-Laffon-Strasse 1, Postfach, CH-8201 Schaffhausen, Tel. 052/631 3026, Fax 052/631 2897
D	Georg Fischer GmbH, Daimlerstraße 6, Postfach 1154, D-73093 Albershausen, Tel. 07161/302-0, Telex 7278 67, Fax 07161/302259
DK	Georg Fischer A/S, Klintehøj Vænge 17, DK-3460 Birkerød, Tel. 42/81 1975, Fax 42/81 1622
E	Georg Fischer S.A., Sistemas de tuberías para la industria, Calle Isla de la Palma, 32 – Nave 1, E-28700 San Sebastián de los Reyes (Madrid), Tel. 91/663 80 00, Fax 91/663 81 76
F	George Fischer S.A., 105-113, rue Charles Michels, B.P.174, F-93208 Saint-Denis Cedex 1, Tél. 1/4922 1341, Fax 1/4922 1300
GB	George Fischer Sales Limited, Paradise Way, Coventry, CV2 2ST, Tel. 01203/53 55 35, Telex 330032, Fax 01203/53 04 50-51
I	Giorgio Fischer S.p.A., Via Sondrio 1, I-20063 Cernusco S/N (MI), Agente generale di vendita Tufira S.r.l., Tel. 02/92 18 61, Fax 02/92 14 07 85
J	Georg Fischer Ltd., 2-47, Shikitsuhigashi, 1-chome, Naniwa-ku, Osaka 556, Tel. 6/648 2838, Telex 52677 85, Fax 6/648 2565
N	Georg Fischer A.S., Bygdøy Allé 23, Postboks 3223 Elisenberg, N-0208 Oslo 2, Tel. 22/444 110, Fax 22/43 40 19
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NL	Georg Fischer N.V., Lange Veenteweg 19, Postbus 35, NL-8160 AA Epe, Tel. 0578678222, Fax 0578621768
S/SF	Georg Fischer AB, Box 113, S-12523 Alvsjö-Stockholm, Tel. 08/7274700, Fax 08/7492370
SGP	George Fischer Pte. Ltd., 15 Kaki Bukit Road 2, KB Warehouse Complex, SGP-417 845 Singapore/Singapore, Tel. 747 06 11, Fax 747 05 77
USA*	George Fischer Inc., 2882 Dow Ave., Tustin, CA 92780-7285, Tel. 714/731-8800, Toll Free 800/854-4090, Fax 714/731-4688, e-mail: info@us.piping.georgefischer.com, Internet: http://www.us.piping.georgefischer.com

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