

# +GF+ SIGNET 3719 pH/ORP Wet-Tap

3-3719.099 (A - 6/02)



\*3719-2X shown with Twist-Lock Electrodes

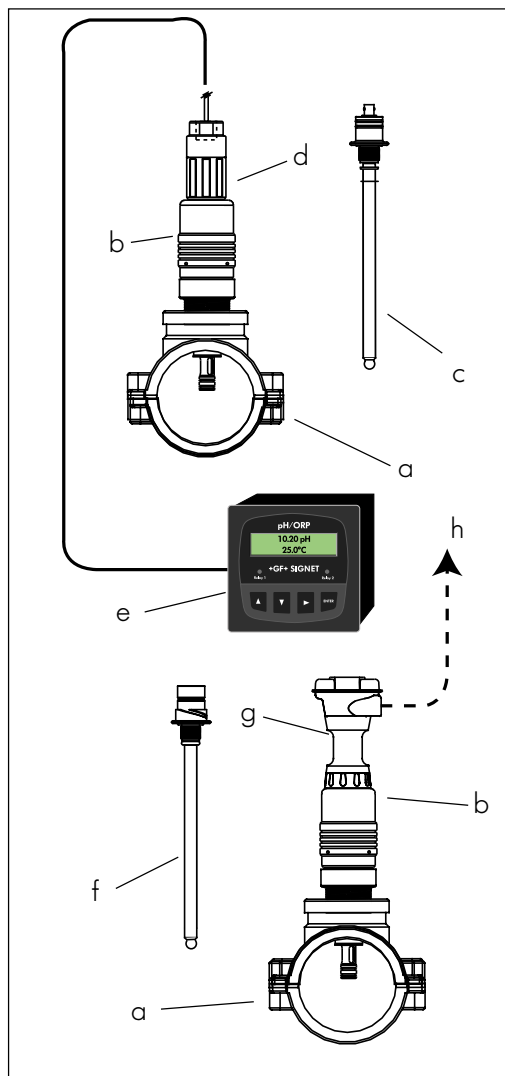
## Description

The +GF+ SIGNET 3719 pH/ORP Wet-Tap allows installation and removal of pH or ORP electrodes without the need for process shutdown during routine electrode maintenance and calibration. Process isolation is achieved with a double O-ring seal on a unique and compact retraction assembly; no separate valve is required. A cam-activated automatic locking mechanism, SafeLoc™, and the short stroke design help to assure operator safety.

## System Overview

- a) Low-profile Clamp-on Saddle Fitting (sizes 2.5 to 12 in.)
- b) 3719 Wet-Tap Assembly
- c) 2716-WT or 2717-WT Twist-Lock pH or ORP Electrode
- d) 2720 Twist-Lock Pre-amplifier
- e) +GF+ SIGNET pH/ORP Instrument
- f) 2756-WT or 2757-WT DryLoc™ pH or ORP Electrode
- g) 2750 DryLoc™ pH/ORP Sensor with Junction Box
- h) Output signal options - see 2750 Data Sheet for details

Note: To purchase a complete system, customer must choose [a & b], and select either [c, d & e] OR [f & g].



## Features

- Removes electrodes from pressurized systems for routine service or replacement
- Automatic process isolation upon electrode retraction - no separate valve required
- Space saving 45mm (1.75 in.) short-stroke design
- Sealed pneumatic dampening for smooth and safe operation
- SafeLoc™: Cam-activated automatic locking mechanism (patent pending)
- Compatible with Twist-Lock and DryLoc™ Electrodes for use with 2720 Pre-amplifier or 2750 pH/ORP Sensor
- Large reference volume for long electrode life
- Protects electrode sensing surface from breakage
- pH electrode includes integrated temperature sensor
- Suitable for mounting in any orientation
- Low profile Clamp-on Saddle Fittings for convenient installation in ASTM pipe sizes 2.5 to 12 in.

## Applications

- Aquatic Animal Life Support Systems
- Recreational Water Monitoring
- Scrubber Control
- Water & Wastewater Treatment
- Effluent Monitoring
- Neutralization Systems
- Surface Finishing
- Heavy Metal Removal
- Sanitization Systems
- Toxics Destruction

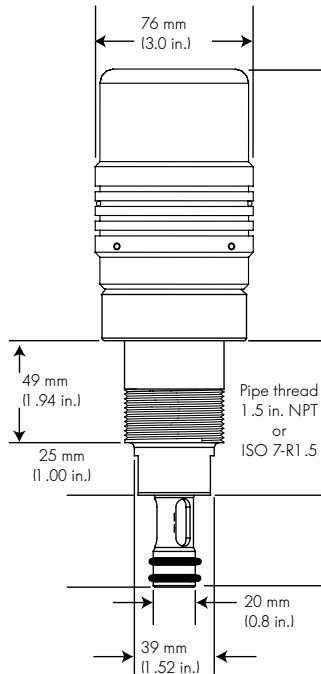
**+GF+ SIGNET**

www.gfsignet.com

## Dimensions

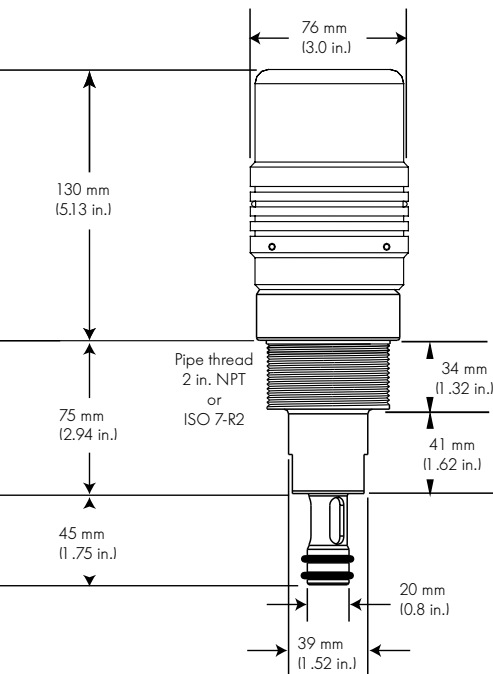
### 3719-1X

For pipe sizes up to 4 in.



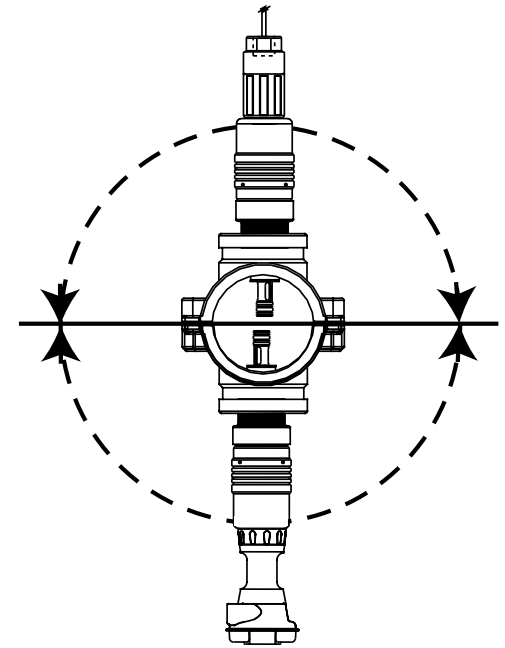
### 3719-2X

For pipe sizes 6 to 12 in.



## Sensor Mounting

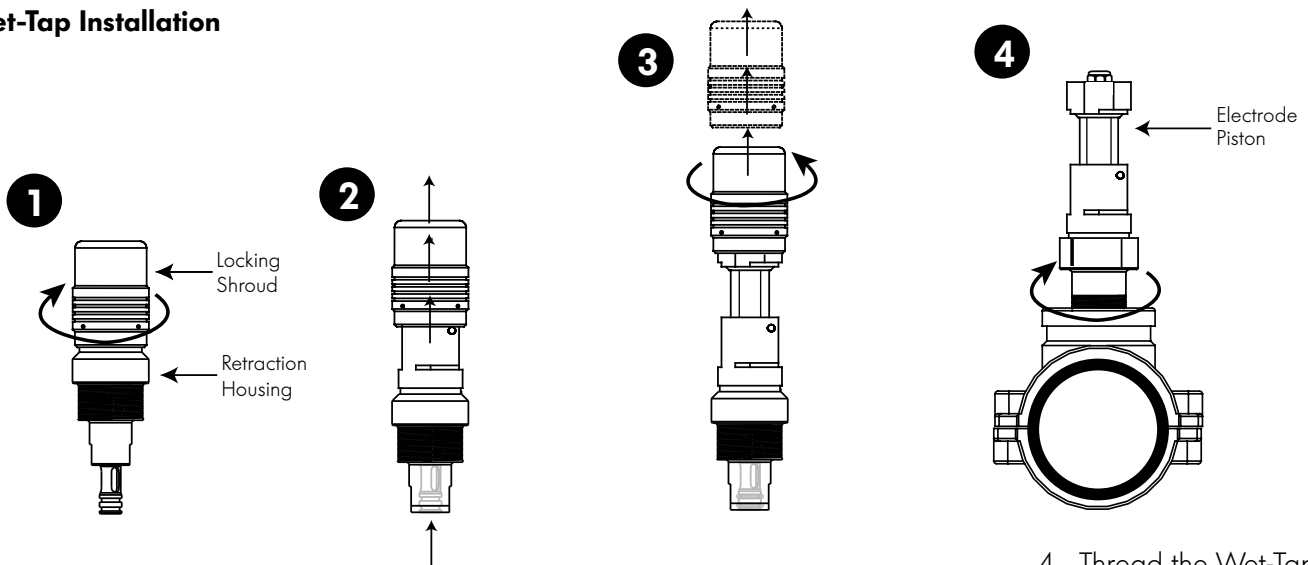
The 3719 can be mounted in any orientation, including horizontal and inverted (shown here with both 2720 preamplifier and 2750 Sensor).



## Installation

- Initial installation must be performed under non-pressurized conditions.
- The 3719-11 has a 1.5 in. NPT process connection for use with accessory saddle fittings from 2.5 to 4 in.
- The 3719-21 has a 2 in. NPT process connection for use with accessory saddle fittings from 6 to 12 in.
- Select a location that will provide sufficient clearance to remove and install the electrode. A total of 500mm (20 in.) from the pipe O.D. is required.
- See instruction manual for detailed installation instructions.
- For 3719 installation into pipe sizes less than 2.5 in., contact your local George Fischer sales and support office.

## Wet-Tap Installation



1. Grasp the retraction housing below the locking shroud; turn the locking shroud 1/4-turn clockwise.

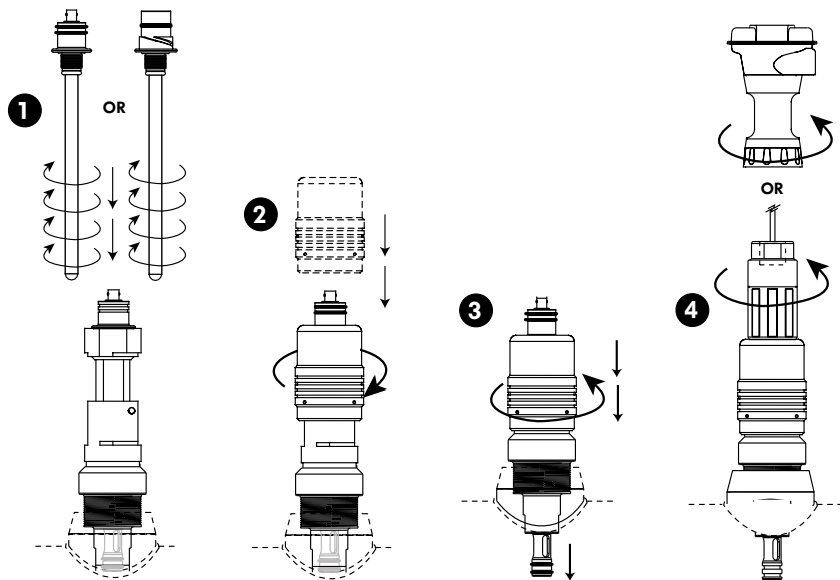
2. Pull the locking shroud straight up until both O-rings are seated inside the housing.

3. Turn the shroud 1/4-turn counterclockwise and lift it completely away from the electrode piston.

4. Thread the Wet-Tap assembly into the pipe fitting. Smaller pipes may require bracing to support the Wet-Tap weight. The piping system may now be pressurized.

# Installation

## Electrode Installation



1. Slide electrode (Twist-Lock or DryLoc™) straight down into electrode piston. Thread electrode into place until connector shoulder is flush with top of electrode piston. Hand tighten only.
2. Place the Locking Shroud over electrode; turn 1/4-turn clockwise to unlock the piston, then press down firmly on the locking shroud to lower the electrode piston into the pipe.
3. Turn the Locking Shroud 1/4-turn counterclockwise to lock the piston.
4. Install the 2720 Twist-Lock Pre-amplifier or 2750 DryLoc™ pH/ORP Sensor onto the electrode connector (see individual operation manuals for more detail).

**Reverse these steps for electrode removal.**

## Technical Data

### Wet-Tap

- Compatible Electrodes:
  - 2716-WT Twist-Lock pH Electrode
  - 2717-WT Twist-Lock ORP Electrode
  - 2756-WT DryLoc™ pH Electrode
  - 2757-WT DryLoc™ ORP Electrode
- Shipping Weight: Approx. 1.2 kg (2.7 lbs.)
- Process Connection:
 

3719-11: NPT 1.5 in.	3719-21: NPT 2 in.
3719-12: ISO 7/1 - R1.5	3719-22: ISO 7/1 - R2
- Operating Pressure: 100 psi (6.9 bar) maximum
- Materials:
 

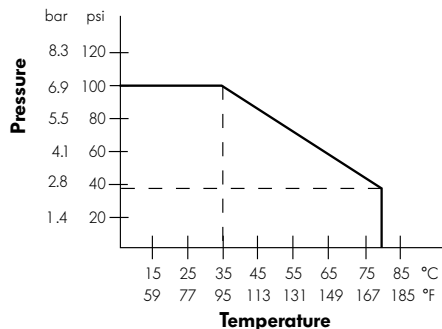
Retraction Housing (Wetted):	CPVC
O-rings (Wetted):	FPM
Locking Shroud:	PVC
Hardware:	316 stainless steel
- Maximum Flow Velocity: 10 ft/s

### Environmental

- Storage Temperature: -15 to 120°C (5 to 248°F)
- Process Temperature: 0 to 80°C (32 to 176°F)

### Standards/Approvals

- Manufactured under ISO 9001 and ISO 14001



### Electrode

- Compatibility: +GF+ SIGNET 3719 Wet-Tap
- Connector (CPVC): Twist-Lock or DryLoc™
- Efficiency: > 97% @ 25°C (77° F)
- Response Time:
  - pH: <5s for 95% of signal change
  - ORP: Application dependent
- Drift: < 2 mV per week
- Operating Range:
  - pH: 0 to 14 pH
  - ORP: -2000 to +2000 mV
- Accuracy: ± 0.1% over full range
- Reference Junctions: Porous PTFE
- Electrolyte: 3.5M KCl
- Elements: Ag/AgCl
- Temp. Sensor (pH): 3K Balco (3-2716-WT)
- Temp. Sensor (ORP): PT-1000 (3-2756-WT)
- Temp. Response Time (τ): 438s
- Temp. & Pressure Limit: 6.9 bar @ 65°C (100 psi @ 149°F)
- Sodium Ion Error: < 0.05 pH in 0.1 molar Na+ ion at 12.8 pH
- Impedance (pH): <150 MΩ @ 25°C
- Wetted Materials
 

Body :	Glass
Junctions :	Porous PTFE
Sensing surface:	Glass Membrane (pH)
	Platinum (ORP)
O-rings:	FPM

### Environmental

- Storage Temperature: 0° to 85°C (32° to 185°F)
- Process Temperature: 0° to 85°C (32° to 185°F)

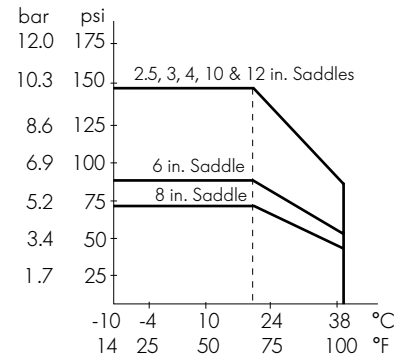
### Standards/Approvals

- Manufactured under ISO 9001

## Technical Data (continued)

### Low Profile Clamp-on Saddle Fittings

- Materials
  - Saddle body (wetted): Polypropylene (Grade 8, ASTM D2565, 1-8, UV stabilized)
  - Gasket (wetted): FPM
  - Saddle Hardware: 316 Stainless steel
  - Reinforcement Ring: 430 Stainless steel
- Size Range: 2.5 to 12 in. (ASTM)



## Ordering Information

Mfr. Part No.	Code	Description
3-3719-11	159 000 804	Wet-Tap Assembly, 1.5 in. NPT
3-3719-21	159 000 805	Wet-Tap Assembly, 2 in. NPT
3-3719-12	159 000 806	Wet-Tap Assembly, ISO 7/1-R 1.5
3-3719-22	159 000 807	Wet-Tap Assembly, ISO 7/1-R 2
3-2716-WT	159 000 809	Twist-Lock pH Electrode (use with +GF+ SIGNET 2720 Preamplifier)
3-2717-WT	159 000 811	Twist-Lock ORP Electrode (use with +GF+ SIGNET 2720 Preamplifier)
3-2720	198 864 602	Twist-Lock Preamplifier, 3/4 in. NPT
3-2720-2	198 864 603	Twist-Lock Preamplifier, ISO 7/1-R 3/4
3-2756-WT	159 000 834	DryLoc™ pH Electrode (use with 2750 pH/ORP Sensor)
3-2757-WT	159 000 835	DryLoc™ ORP Electrode (use with 2750 pH/ORP Sensor)
3-2750-1	159 000 744	In-line DryLoc™ pH/ORP Sensor with Junction Box
3-2750-2	159 000 745	In-line DryLoc™ pH/ORP Sensor with Junction Box and EasyCal
2007-0225	159 000 812	PP Clamp-on Saddle, 2.5 in. x 1.5 in. (ASTM, NPT)
2007-0230	159 000 813	PP Clamp-on Saddle, 3 in. x 1.5 in. (ASTM, NPT)
2007-0240	159 000 814	PP Clamp-on Saddle, 4 in. x 1.5 in. (ASTM, NPT)
2007-0260	159 000 815	PP Clamp-on Saddle, 6 in. x 2 in. (ASTM, NPT)
2007-0280	159 000 816	PP Clamp-on Saddle, 8 in. x 2 in. (ASTM, NPT)
2007-0210	159 000 817	PP Clamp-on Saddle, 10 in. x 2 in. (ASTM, NPT)
2007-0212	159 000 818	PP Clamp-on Saddle, 12 in. x 2 in. (ASTM, NPT)
1220-0114	159 000 854	3719 O-ring, FPM (spare part)
3-3719.390	159 000 855	3719 Locking Shroud (spare part)

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

<b>A</b>	Georg Fischer Rohrleitungssysteme GmbH, Sandgasse 16, A-3130 Herzogenburg, Tel. 02782/56 43-0, Fax 02782/51 56
<b>AUS</b>	George Fischer IPS Pty Ltd., 186-190 Kingsgrove Road, Kingsgrove, NSW 2208, Tel. 02 9554 3977, Fax 02 9502 2561
<b>B/L</b>	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
<b>BAR</b>	George Fischer Ltda Av. dos Nações Unidas, 21689 CEP 04795-100 - S.Paulo - SP Tel.: 155111 247 1311 Fax: 155111 247 6009
<b>CH</b>	Georg Fischer Rohrleitungssysteme (Schweiz) AG, Amsler-Laffon-Strasse 1, Postfach, CH-8201 Schaffhausen, Tel. 052/631 3026, Fax 052/631 2897
<b>D</b>	Georg Fischer GmbH, Daimlerstraße 6, Postfach 1154, D-73093 Albershausen, Tel. 07161/302-0, Telex 727867, Fax 07161/302259
<b>DK</b>	Georg Fischer A/S, Klintehøj Vænge 17, DK-3460 Birkerød, Tel. 42/81 1975, Fax 42/81 1622
<b>E</b>	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
<b>F</b>	George Fischer S.A., 105-113, rue Charles Michels, B.P.174, F-93208 Saint-Denis Cedex 1, Tél. 1/49 22 1341, Fax 1/49 22 1300
<b>GB</b>	George Fischer Sales Limited, Paradise Way, Coventry, CV2 2ST, Tel. 01203/53 55 35, Telex 330032, Fax 01203/53 04 50-51
<b>I</b>	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
<b>J</b>	Georg Fischer Ltd., 2-47, Shikitsuhigashi, 1-chome, Naniwa-ku, Osaka 556, Tel. 6/648 2838, Telex 526 7785, Fax 6/648 2565
<b>N</b>	Georg Fischer A.S., Bygdøy Allé 23, Postboks 3223 Elisenberg, N-0208 Oslo 2, Tel. 22/444 110, Fax 22/434 019
<b>PRC</b>	Georg Fischer Piping Systems, Ltd., No. 218 Kang Qiao Dong Road, Pudong Shanghai 201319 Tel. 86 21 58 13 33 33, Fax 86 21 58 13 33 66
<b>RA</b>	George Fischer Inc., Lavalle 2614, 1640 Martinez Buenos Aires, Tel. 01/798 74 01, Fax 01/798 40 74
<b>NL</b>	Georg Fischer N.V., Lange Veenteweg 19, Postbus 35, NL-8160 AA Epe, Tel. 0578678222, Fax 0578621768
<b>S/SF</b>	Georg Fischer AB, Box 113, S-12523 Älvsjö-Stockholm, Tel. 08/7274700, Fax 08/7492370
<b>SGP</b>	George Fischer Pte. Ltd., 15 Kaki Bukit Road 2, KB Warehouse Complex, SGP-417 845 Singapore/Singapore, Tel. 7 4706 11, Fax 7 4705 77
<b>USA*</b>	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

\*Serving North, Central, and South America

## +GF+ SIGNET

Signet Scientific Company, 3401 Aerojet Avenue, El Monte, CA 91731-2882 U.S.A. • Tel. (626) 571-2770 • Fax (626) 573-2057

For Worldwide Sales and Service, visit our website: [gfsignet.com](http://gfsignet.com) • e-mail: [info@gfsignet.com](mailto:info@gfsignet.com)

Specifications subject to change without notice. All rights reserved. All corporate names and trademarks stated herein are the property of their respective companies.