

# GF 2751-7 pH Electronics



3-2751-7.090 Rev 1 02/22

## Operating Instructions



### Description

The 2751-7 pH Smart Sensor Electronics processes analog signals from a pH electrode and transmits digital data via a three wire cable to the 9950-X Chlorine Controller. The DryLoc® electrode connector quickly forms a robust assembly with the sensor. Smart Sensor Electronics offers broken glass and high impedance detection, manufacturing electrode data and storage of environmental extremes for temperature and pH levels.

The pH electrode is necessary to accurately calculate Free Chlorine levels in applications that are above pH 7.1 to a maximum pH level of 8.2. Because Chlorine Dioxide is not pH dependent, the pH electronics and electrode are offered as an option.

The data stream also includes important information regarding the performance and life span of the pH electrode. The 9950-X provides the operator with a calculated slope of the electrode (electrode health) and can detect when the electrode requires cleaning.

The 2751-7 is compatible with 4630-13, 4630-14, 4630-23, 4630-24, 4630-33, 4630-34, and 4632-13 only. For all other 4630-XX part numbers please contact the factory for support.

\* NOTE: The 9950-X Chlorine Controller is not compatible with the standard 9950 controller.

**WARNING**

Refer to the 3-463X Chlorine manual for additional important information regarding safety and installation.



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## Warranty Information

Refer to your local Georg Fischer Sales office for the most current warranty statement.

All warranty and non-warranty repairs being returned must include a fully completed Service Form and goods must be returned to your local GF Sales office or distributor.

Product returned without a Service Form may not be warranty replaced or repaired.

GF products with limited shelf-life (e.g. pH, ORP, chlorine electrodes, calibration solutions; e.g. pH buffers, or other solutions) are warranted out of box but not warranted against any damage, due to process or application failures (e.g. high temperature, chemical poisoning, dry-out) or mishandling (e.g. broken glass, damaged membrane, freezing and/or extreme temperatures).

## Safety Information

- Remove electrical power from the transmitter before wiring input connections.
- Follow instructions carefully to avoid personal injury or damage to the electronics.

	<b>Caution / Warning / Danger</b> Indicates a potential hazard. Failure to follow all warnings may lead to equipment damage, injury, or death
	<b>Electrocution Danger</b> Alerts user to risk of potential of injury or death via electrocution.
	<b>Electrostatic Discharge (ESD)</b> Alerts user to risk of potential damage to product by ESD
	<b>Personal Protective Equipment (PPE)</b> Always utilize the most appropriate PPE during installation and service of GF products.
	<b>Note / Technical Notes</b> Highlights additional information or detailed procedure.

## Specifications

### General

Compatible Electrode ..... 2724-00 Flat pH Electrode  
Compatible Instrument ..... 9950-X Chlorine Controller  
Mounting ..... DryLoc® connection  
Materials ..... PC+PBT  
Cable ..... 4.6 m (15 ft) 3 conductor shielded, 22 AWG  
Shipping Weight ..... 0.64 kg (1.41 lb)

### Performance

Electronics Accuracy .....  $\pm 0.02$  pH @ 25 °C  
pH .....  $\leq 0.01$  pH  
Response Time ..... < 6 s for 95% of change  
(includes electrode response)  
Operational Range ..... -1.0 to 15.00 pH

### Electrical

Input Specifications  
Input Impedance .....  $> 10^{11} \Omega$   
Temperature Drift .....  $\pm 0.002$  pH per °C  
Input Resolution ..... 0.02 pH, 0.3 °C  
Output Specifications  
Digital (S<sup>3</sup>L) ..... Serial ASCII, TTL level 9600 bps  
Max. Cable Length ..... 30 m (100 ft)

### Environmental

Storage Temperature ..... -20 °C to 85 °C (-4 °F to 185 °F)  
Operating Temperature ..... 0 °C to 85 °C (32 °F to 185 °F)  
(electronics only)  
Relative Humidity ..... 0 to 95%, non-condensing  
Enclosure Requirements ..... NEMA 4X/IP65 with electrode connected

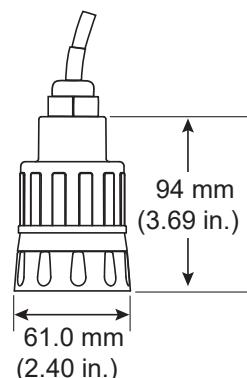
### Standards and Approvals

- CE, WEEE
- RoHS Compliant
- Manufactured under ISO 9001, ISO 14001 and ISO 45001  
China RoHS (Go to gfsignet.com for details)

### Declaration of Conformity according to FCC Part 15

**FCC** This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:  
(1) This device may not cause harmful interference, and  
(2) This device must accept any interference received, including interference that may cause undesired operation.

## Dimensions

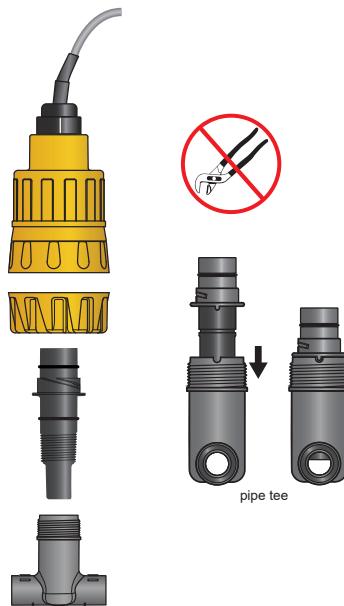


## Installation

Lubricate O-rings with a non-petroleum based, viscous lubricant (grease) compatible with the system. It is not necessary to lubricate the electrodes body O-ring when using the 463X Flow Cell.

### 3610 Flow Tee Installation

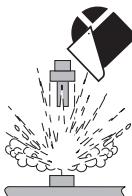
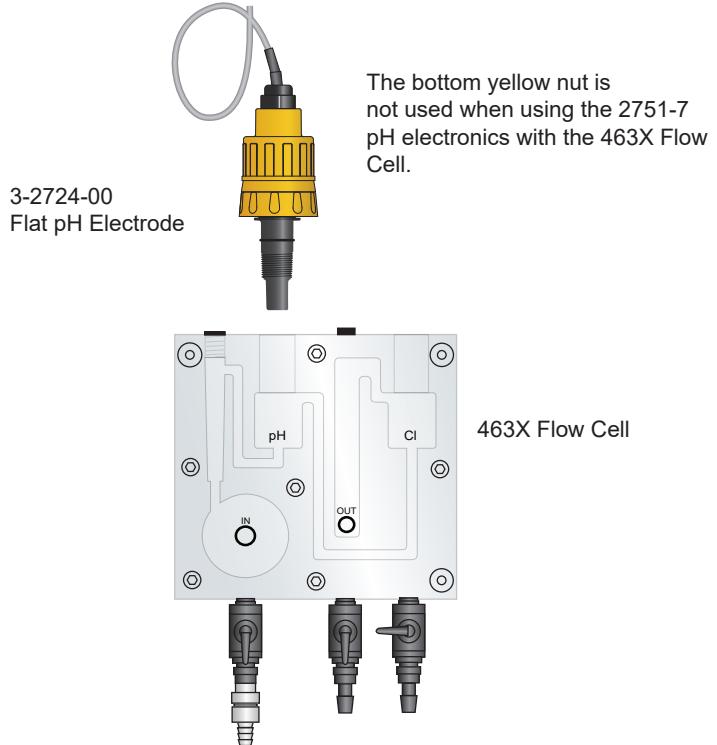
1. Lubricate the Dry-Loc and the electrode body O-rings with a non-petroleum lubricant.
2. Insert fully into the fitting.
3. Install bottom retaining nut onto the fitting and hand tighten. Do not use tools.



**Do Not Use Lubricant or Sealing Tape on Threads.  
Do Not Overtighten.**

### 463X Flow Cell Installation

1. Lubricate the Dry-Loc O-ring with a non-petroleum lubricant. (DO NOT lubricant the electrode body O-ring.)
2. Insert the sensor into the 2751-7.
3. Insert into the Chlorine (Cl) flow chamber and push lightly to secure.



### CHEMICAL COMPATIBILITY WARNING

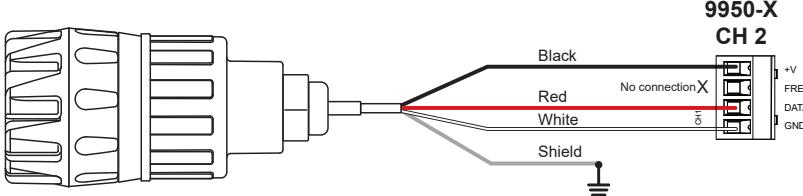
The retaining nuts of pH and ORP sensors are not designed for prolonged contact with aggressive substances. Strong acids, caustic substances and solvents or their vapor may lead to failure of the retaining nut, ejection of the sensor and loss of the process fluid with possibly serious consequences, such as damage to equipment and serious personal injury. Retaining nuts that may have been in contact with such substances, e.g. due to leakage or spilling, must be replaced.

## Wiring

### Wiring to the 9950-X Chlorine Controller

To replace the 2751-7 pH electronics in a 463X Chlorine panel:

- Measuring from the yellow housing threaded end, cut the cable to approximately 838 mm (33 in.).
- Remove approximately 10 mm (0.4 in.) of insulation and tin each conductor before inserting into terminals.



- For calibration and configuration please refer to the 463X Chlorine Analyzer System and 9950-X Chlorine Controller manuals.

## Ordering Information

Mfr. Part No.	Code	Description
3-2751-7	159 001 957	pH Electronics (4630-13, 4630-14, 4630-23, 4630-24, 4630-33, 4630-34 and 4632-13)
3-2750-7	159 001 671	pH Electronics (Retired 4630/32-10,11,20,21,30,31)
3-2724-00	159 001 545	Flat pH Electrode Dryloc®, Pt1000, 3/4" NPT or Signet fitting
3-2724-01	159 001 548	Flat pH Electrode, DryLoc®, Pt1000, ISO 7/1-R% or Signet fittings
3-0700.390	198 864 403	pH Buffer kit
3-2700.395	159 001 605	Calibration kit: included 3 PP cups, cup stand, 1 pint pH 4.01, 1 pint pH 7.00
3822-7004	159 001 581	pH 4.01 buffer solution, 1 pint (473 ml) bottle
3822-7007	159 001 582	pH 7.00 buffer solution, 1 pint (473 ml) bottle
3800-5000	159 838 107	3.0M KCl Storage solution for pH and ORP, 1 pint (473 ml) bottle
3-2700.398	159 001 886	O-ring lubricant kit (5 packs of Super Lube, 1cc each)



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