

pH/Redox (ORP) Flow System Cartridge Sensors

incorporating Water Wash
Versions

- **Compact cartridge design utilising 'all-in-one' electrode** –
simplifies electrode replacement minimising downtime
- **Detachable cable connection** –
allows easy and convenient replacement and eliminates twisted cable problems
- **Tough, glass-coupled polypropylene body with flat-end pH electrode** –
virtually eliminates risk of breakage
- **Rugged-design reference electrode with high volume electrolyte reservoir plus replaceable liquid junction** –
enables electrolyte recharging and renewal of liquid junction to maximise working life
- **Flow, dip, boss mounting and submersible** –
provides the answer to a wide range of applications.
- **Automatic temperature compensation** –
enables accurate measurement with wide temperature fluctuations
- **Automatic on-line cleaning water wash version** –
enables optimum performance where electrode fouling is a problem



Tough and durable, the cartridge provides confidence and convenience in on-line pH measurement.

ABB Instrumentation

ABB

The Cartridge System

The cartridge electrode system represents a major step forward in the on-line measurement of pH and Redox (ORP).

Manufactured in glass coupled polypropylene the all-in-one sensor can be fitted into a flow chamber using a choice of bayonet or screw-in options. The bayonet fitting version can be fitted directly into a pipeline using a suitable mounting boss, model number 7670-063.

Three versions of the dip system are available in 1m, 2m and 3m lengths for tanks and open channel applications and a range of submersible systems are used where access is difficult or where there is a large rise or fall of the liquid being measured.

The cartridge is a compact rugged industrialized system which utilizes a large electrolyte reservoir and incorporates a double junction reference electrode with a replaceable liquid junction. These features ensure a long-life performance and a minimum of maintenance.

Flow System

These are supplied complete with a flow chamber with 1/2in and 1in BSP or 1/2in NPT process connections for mounting directly into a line or by-pass. The bayonet fit enables rapid and convenient access for calibration – just twist and turn and the cartridge is released.

Dip System

Available in 1m, 2m and 3m lengths

Submersible Systems

Submersible systems are available with integral cable allowing the system to be completely submerged – ideal for boreholes or where there is a large rise and fall in the sample being measured. Provision is made to enable a support chain to be attached to the system.

Water Wash

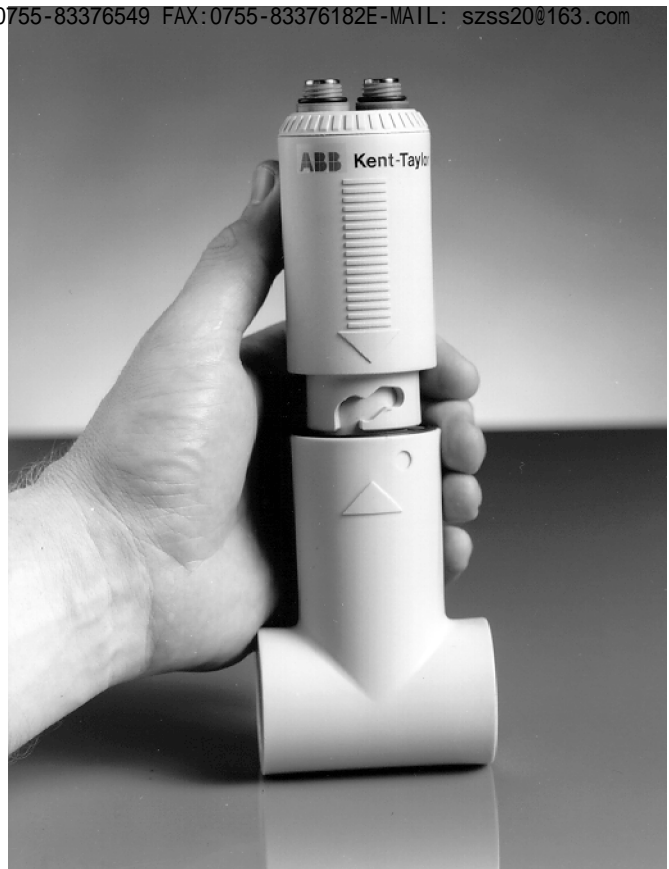
On-line water wash systems are available in both flow and dip system versions.

Detachable Cables

The use of detachable cable connections maintains the easy-to-use philosophy and prevents 'cable twist' problems from occurring when replacing the cartridge. IP67 plug and socket connections make sure that no problems occur due to moisture and allows the system to operate reliably in the most demanding conditions.

Only One Spare

The main attraction of this system is the simplicity of use which is further enhanced by virtue of the fact that there is only one component – the sensor cartridge which makes spares stockholding and reordering easy to plan.



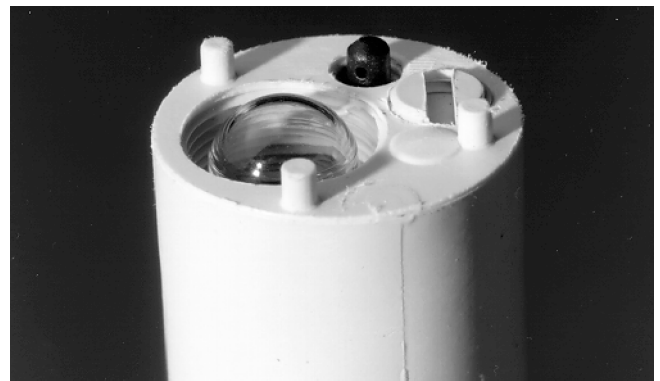
Application

Small pipelines, 1/2 in or 1 in nominal bore, are obvious applications, as are open tanks, or channels, where the dip version provides easy access. The screw-in version has been designed to fit standard 'Tee' connectors enabling the system to replace existing equipment without incurring additional installation costs.

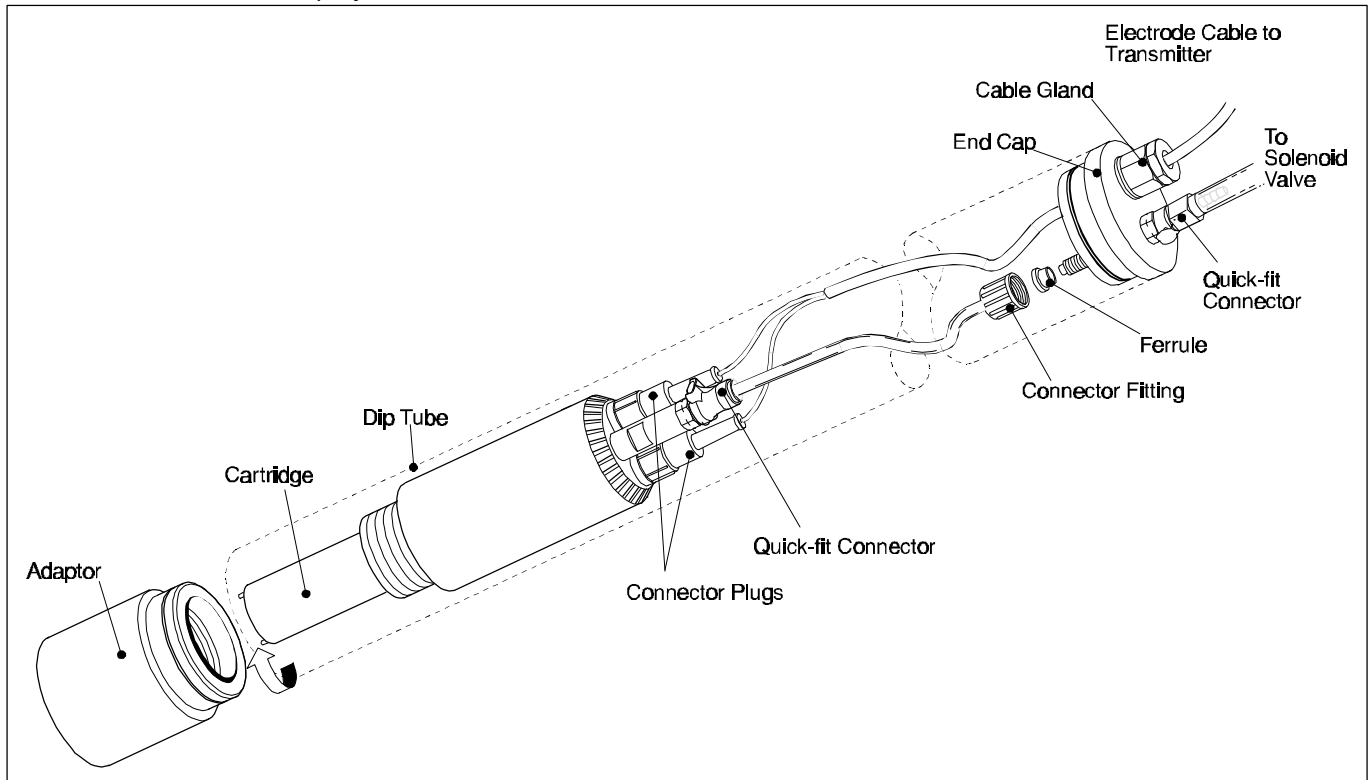
For users who have applications for both flow and dip versions, a further advantage is that the 'sensor cartridge' is common to both types.

Water Wash

This unique product enables a water jet to periodically flush water over the pH glass membrane. This significantly reduces the maintenance levels and optimises the performance in difficult applications. The cleaning cycle is programmed within the transmitter and the frequency and duration of the water jet can be customer selected dependent upon the demands of the particular application. The water wash facility is available on both flow and dip versions.



Schematic of Water Wash Dip System



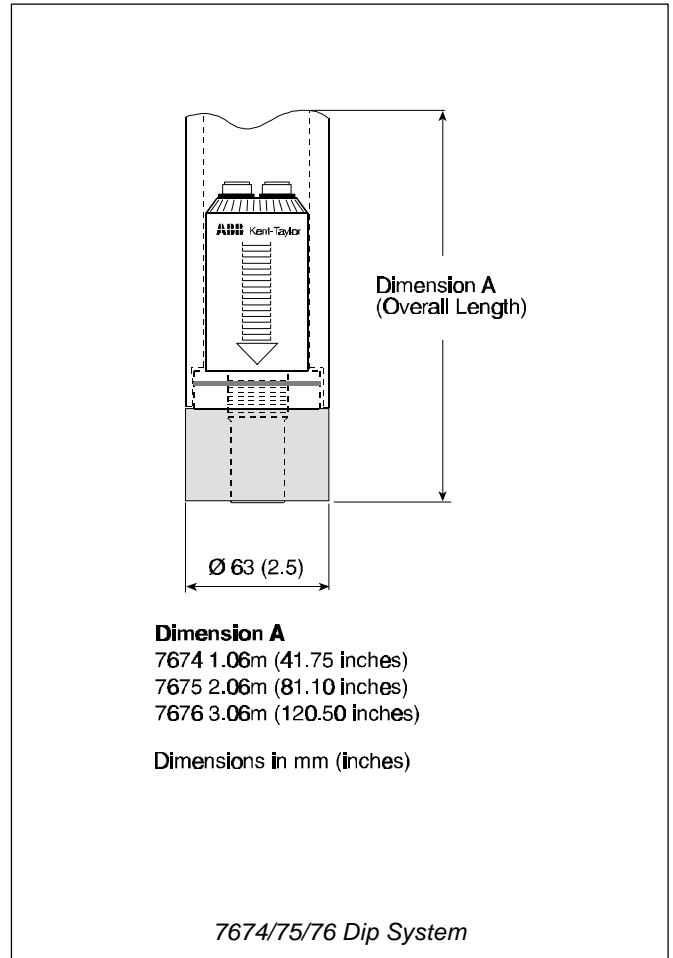
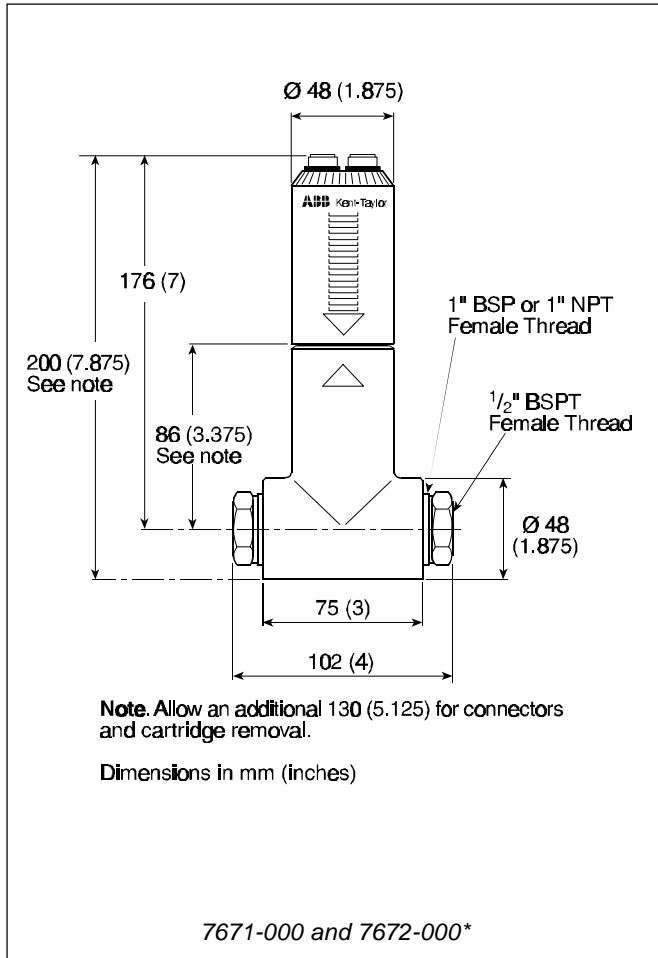


7670-600 Submersible Systems

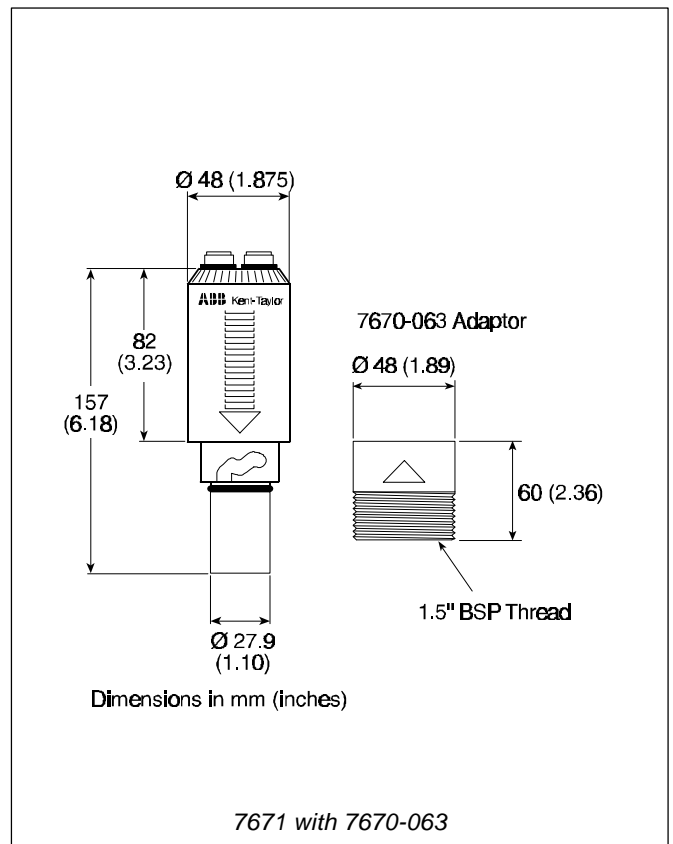
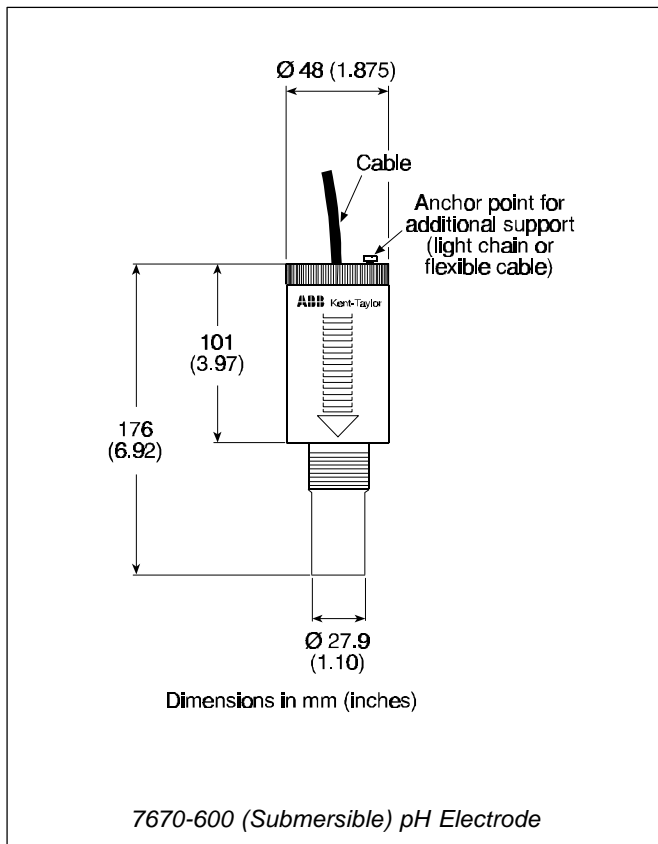


7671 with 7670-063 Pipeline Adaptor





* Applicable to both the standard and water wash versions.



7671/72 Flow Systems

pH range

0 to 14pH

Temperature range

0 to 100°C (32 to 212°F)

Pressure

0 to 100psi at 25°C (77°F)

Process connections

1/2in or 1in BSP

1/2in or 1in NPT

'O' ring material

Viton

Temperature compensation

3-wire Pt100

Material of construction

Glass-coupled polypropylene

7670-063 Pipeline Adaptor

Material of construction

Glass-coupled polypropylene

Temperature range

0 to 100°C (32 to 212°F)

Pressure

0 to 80psi at 25°C (77°F)

Process connection

1 1/2 inches BSP

7674/75/76 Dip Systems

pH range

0 to 14pH

Temperature range

0 to 80°C (176°F)

Pressure

N/A

Process connections

N/A

Fixing bracket

Not supplied

Immersion length

1m (39in), 2m (78in) or 3m (118in)

'O' ring material

Viton

Material of construction

Glass-coupled polypropylene and polypropylene (dip tube)

Temperature compensation

3-wire Pt100

pH range

2 to 12pH

Temperature range

0 to 50°C

Pressure

N/A

Process connections

N/A

Immersion length

Dependent on cable length. Minimum cable length supplied 10m, maximum cable length supplied 40m.

Temperature compensation

3-wire Pt100

Material of construction

Glass-coupled polypropylene

Support chain

Not supplied

Water Wash Version

7671/72 Flow Systems

pH range

0 to 14pH

Temperature range

0 to 100°C (32 to 212°F)

Pressure (flow)

0 to 60psi at 25°C (77°F)

Process connections

1/2in or 1in BSP

1/2in or 1in NPT

7674/75/76 Dip Systems

1m (39in), 2m (78in) or 3m (118in)

Material of construction

Glass-coupled polypropylene and polypropylene

Temperature range

0 to 80°C (0 to 176°F)

'O' ring material

Viton

Water supply

Mains water

Line pressure

1 to 4 bar

Note.

ABB Instrumentation does not supply the solenoid valve and recommends that the tubing between the valve and the sensor should be 1/4in I.D. p.v.c. for both dip and flow systems. The solenoid valve must be mounted as close to the pH system as possible, in order to reduce pressure loss in the supply line.

ORDERING INFORMATION

7670 Series pH/REDOX Flow System Cartridge Sensors

Select one character or set of characters from each category and specify complete catalog number as per sample below.

Code No. Description

7670 Series pH/ORP Electrode System - Cartridge type
767 BASE NUMBER - 1st thru 3rd character

SYSTEM TYPE AND MATERIAL - 4th and 5th characters
 Polypropylene Systems - Includes electrode

1-		Flow System complete with flow chamber, Bayonet mount
2-		Flow System complete with flow chamber Screw-in mount
	4-	1 Meter Dip System (39 in.)
	5-	2 Meter Dip System (78 in.)
	6-	3 Meter Dip System (118 in.)

PROCESS CONNECTION - 6th character

0	0	1"BSP Process Connection, Flow Systems / Only choice for Dip Systems
1		1/2"BSP Process Connection
2		1"NPT Process Connection
3		1/2"NPT Process Connection

CONNECTION CABLE for 7670 CARTRIDGE pH SYSTEMS TYPE / LENGTH - 7th character
Automatic Temperature Compensation - pH

- 0 No connection cable
- 1 Cable complete with plugs and tag connections 10 ft.
- 2 Cable complete with plugs and tag connections 16 ft.
- 3 Cable complete with plugs and tag connections 33 ft.
- 4 Cable complete with plugs and tag connections 65 ft.
- S Cable special length - refer to Rochester

For ORP (Redox) Measurement

- 0 No connection cable
- 5 Cable complete with plugs and tag connections 10 ft.
- 6 Cable complete with plugs and tag connections 16 ft.
- 7 Cable complete with plugs and tag connections 33 ft.
- 9 Cable complete with plugs and tag connections 65 ft.
- M Connection cable special order

SENSOR - 8th character

- 0 pH Standard
- 2 pH Water Wash
- 5 ORP (Redox)
- 7 ORP (Redox) Water Wash

7672-215 - SAMPLE CATALOG NUMBER

7670 Submersible pH Electrode System

7670-600 Submersible pH Electrode System

7670 SERIES pH - Replacement Cartridges

Standard

- 7670-101** Replacementt Cartridge for model 7671, Bayonet mount
- 7670-102** Replacement Cartridge for models 7672,7674, 7675, 7676 or for direct screw in into process piping
- 7670-211** Replacement Cartridge for 7671 ORP (Redox), Bayonet mount
- 7670-212** Replacement Cartridge for dip 7672, 7674, 7675 and 7676 ORP (Redox) systems

Water Wash Replacement Cartridges

- 7670-301** Replacementt Cartridge for model 7671, Bayonet mount
- 7670-302** Replacement Cartridge for models 7672,7674, 7675, 7676 or for direct screw in into process piping
- 7670-311** Replacement Cartridge for 7671 ORP (Redox), Bayonet mount
- 7670-312** Replacement Cartridge for dip 7672, 7674, 7675 and 7676 ORP (Redox) systems

7670-063 Pipeline adaptor (1.5 inch BSP threads)



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SS pH/Redox CRT 97.5

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