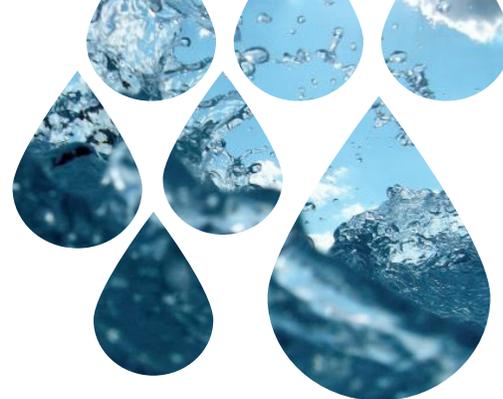


# Direct Fluoride Monitor

## Model Q46F/82



Flowcell Assembly

Many drinking water systems add fluoride to their water to help their residents prevent tooth decay. To achieve a fluoride concentration of about 1 PPM, a hydrofluorosilicic acid or sodium fluoride solution is metered into the process at a rate that is proportional to total plant flow. However, flow control problems may result in a loss of chemical feed or over-feed condition. An on-line fluoride monitor can provide reliable control of chemical addition for a consistent fluoride concentration.

ATI's Model Q46F/82 Fluoride Monitor provides continuous measurement of free fluoride concentration in potable water without sample conditioning. The system employs a fluoride sensitive ion selective electrode (ISE) which provides reliable measurements down to 0.1 PPM and as high as 1000 PPM. The system is designed for use in applications where the pH and conductivity of the water are relatively stable. Fluoride measurement applications with widely varying sample conditions may require a more sophisticated system employing automated sample conditioning such as ATI's Q46F-AutoChem system.

Fluoride monitoring systems are easy to install, requiring a 1/4" O.D. sample tube connected to a special flowcell provided as part of the system. Inlet flow must be regulated to 6 GPH (0.4 LPM) or less and should be stable. As an option, ATI can supply the fluoride monitoring system factory mounted on a panel containing all necessary flow controls and a visual flow indicator.

# Q46F/82 SPECIFICATIONS

## ELECTRONIC MONITOR

<b>Display Range</b>	0-20.00 PPM Minimum, 0-2000 PPM Maximum
<b>Accuracy</b>	± 1 mV concentration equivalent (0.1 PPM at 1 PPM; 0.5 PPM at 10 PPM)
<b>Repeatability</b>	± 0.5 mV concentration equivalent
<b>Drift</b>	< 0.5 PPM per month on 20 PPM scale (stable pH & Conductivity)
<b>Power</b>	100-240 VAC, 50/60 Hz., 10 VA Maximum 12-24 VDC, 500 mA maximum
<b>Analog Output</b>	Two isolated 4-20 mA, 500 Ω load maximum
<b>Relays</b>	Three SPDT, contacts rated 6 amp @ 250 VAC, 5 amp @ 24 VDC
<b>Digital Output</b>	Options for Profibus-DP, Modbus RTU & TCP/IP, or Ethernet-IP
<b>Display</b>	4 digit, 0.75" numeric LCD with 12 character second line, LED back light
<b>Enclosure</b>	NEMA 4X (IP-66) Polycarbonate, V-0 flammability
<b>Operating Temperature</b>	Electronics: -20-60° C

## SENSOR

<b>Fluoride Sensor</b>	Combination Fluoride ISE Sensor
<b>Sensor Cable</b>	10 feet standard
<b>Response Time</b>	T <sub>90</sub> = 60 seconds
<b>Measurement Chamber</b>	Cast Acrylic
<b>Inlet Sample Flow Rate</b>	1-6 GPH through flowcell (0.06 - 0.40 LPM)
<b>Sample Inlet</b>	1/4" O.D. Instant Tube Fitting
<b>Sample Outlet</b>	1/4" O.D. Instant Tube Fitting
<b>Operating Temp.</b>	2-50°C
<b>pH Range</b>	5-9 pH but stable to ±0.2 pH
<b>Conductivity</b>	Stable to ±50 uS
<b>Inlet pressure</b>	Control to < 5 PSI (0.3 bar) 5-150 PSI (0.3-10 bar) for flow plate assembly

## ORDERING INFORMATION

Model Q46F/82-A-B-C Fluoride Monitor

### Suffix A - Power

- 1 - 100-240 VAC, +/-10%, 50/60 Hz
- 2 - 12-24 VDC, (requires 300 mA)

### Suffix B - Digital Output

- 1 - None
- 2 - Profibus DP
- 3 - Modbus RTU
- 4 - Ethernet/IP
- 5 - Modbus TCP/IP

### Suffix C - System Assembly

- 1 - None - Sensor and flowcell only. Customer flow control required.
- 2 - Panel with flow controls, without flow switch
- 3 - Panel with flow controls, with flow switch

## ACCESSORIES

- 09-0066** Fluoride Standard, 100 PPM, 120 ml  
**09-0067** Fluoride Standard, 1000 PPM, 120 ml  
**05-0108** Fluoride Standards Dilution Kit (1000 ml & 10 ml graduated cylinders)  
**05-0094** Panel mount bracket kit  
**47-0005** 2" U-bolt, 304SS

**Note:** One 120 ml. bottle of 100 PPM fluoride standard is included with each system.



Panel Assembly with Flow Controls



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