

5.5 DULCOMETER® Measuring and Control Technology

5.5.1 Measured Variable, Fluoride In Drinking Water



PA56003335 - with REFP

Measurement principle and application

The DULCOMETER® fluoride meter is a potentiometric meter which uses an ion selective electrode (ISE) and a reference electrode to deliver a measurement signal in mV. The expertise of the newly developed fluoride ISE lies in the physical-chemical characteristics of the LaF3 crystals and the ion electrolytes which permit long-term stable and continuous measurement without additional use of special conditioning chemicals. Photometric measurement-based calibration is necessary only when commissioning and at occasional intervals.

The typical and only use of our fluoride meter is for continuous monitoring at waterworks in which fluoride is metered for the prevention of tooth decay. Installation conditions for the fluoride electrode

Measurement range: 0.05... 10 mg/l fluoride
pH range: 5.5... 8.5
Temperature range: 1...35 °C
Max operating pressure: 2 bar

We recommend that you install measurement electrodes at atmospheric pressure to facilitate maintenance of all installed electrodes.

Notice: the maximum admissible operating pressure for the following mounted measurement equipment is 2-bar. This is dictated by the inline probe housing used.



PA56003336 - with PHEN

Standard Supply

Fully-mounted Fluoride Monitor

For quick and easy installation our fluoride meter is supplied ready-mounted on a PE panel. The following components are included:

- FLEP 010 SE fluoride sensor, PG 13.5 threaded insert and SN 6 plug end.
- Reference electrode, PG 13.5 threaded insert and SN 6 plug end.
- Pt 100 SE temperature sensor, PG 13.5 threaded insert and SN 6 plug end.
- 4-20 mA FVP1 measurement transducer for direct screw-fitting to fluoride sensor and with connection lead and SN-6 plug for reference electrode.
- DLG IV inline probe housing for electrodes.
- DACa diaLog fluoride monitor, wall-mounted with display of fluoride concentration and temperature, with automatic temperature compensation, 0/4 ... 20 mA output for measured variable, with pause control input, alarm and two threshold value relay outputs, (90-253 VAC).
- Magnetic stirrer with magnetic stirring rod for stirring sample water during calibration.
- PVC pipework with ball stop/adjustment valve, rotameter with sample water connector. All parts are ready mounted on a white 600 x 500 mm PE panel and fully wired.

Power Supply 90-253 VAC

Fluoride Monitor mounted on panel with PHEN PA56003336

Note: c/w air-break, PHEN flowing junction reference electrode, KCl reservoir, 1000ml KCl, 25m 8x5 sample line 1 x 1/2" BSP to 8x5 PVC adaptor.

Fluoride Monitor mounted on panel with REFP PA56003335

Note: c/w air-break, REFP reference electrode, 25m 8x5 sample line, and 1 x 1/2" BSP to 8x5 PVC adaptor.

Note: this unit is **NOT** our STANDARD SUPPLY. If required contact Sydney office.



PA56003043

TISAB Add-on Module assembly c/w 60 lt tank PA56003043

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Double Validation Unit

Using the same sensors as for the single measurement stations, the dual measurement station can be used to give an alarm output if the 2 measured variables differ more than a preset amount.

This means that the unit can be used where there is a requirement for double validation.

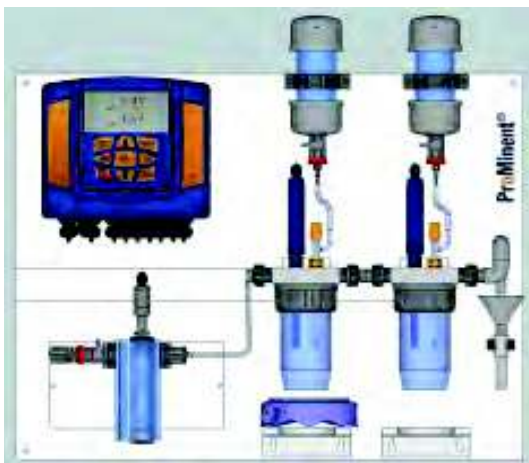
A 0/4...20 mA output is available for each channel of the 2 channel diaLog® instrument.

A single magnetic stirrer is provided as standard as normally one channel is calibrated at a time. A second magnetic stirrer is available as an option.

Both options with the REFP or the PHEN reference electrodes with flowing junctions are available..

All come pre-mounted on a 750mm wide x 600mm high panel, fully wired.

Power Supply 90-253 VAC



Dual Channel Fluoride Monitor with PHEN

PA5600003338

Note: c/w air-break, PHEN flowing junction reference electrodes, KCl reservoir, 1000ml KCl, 25m 8x5 sample line and 1 x 1/2" BSP to 8x5 PVC adaptor.

Dual Channel Fluoride Monitor with REFP

PA5600003337

Note: c/w air-break, REFP reference electrodes, 25m 8x5 sample line, and 1 x 1/2" BSP to 8x5 PVC adaptor.

Note: this unit is **NOT** our STANDARD SUPPLY.

If required contact Sydney office.

Replacement Parts

• FLEP 010 SE fluoride sensor	1028279
• PHEN 112 SE 3D reference electrode	150078
• REFP-SE reference electrode	1018458
• Pt 100 SE temperature sensor	305063
• Transmitter FPV1 4-20mA	1028280
• Polishing paste	559810
• KCl solution 3 molar 250ml.	791440
• KCl solution 3 molar 1000ml.	791441
• KCl Reservoir	PA08023334

For older Systems

• FLE 010 SE fluoride sensor	1010311
• Transmitter FV1 4-20mA	1009962
• Electrolyte Vessel	305058