

# DULCOTEST sensors for fluoride

Reliable online measurement of fluoride – with DULCOTEST sensors



Accurate measurement of fluoride with DULCOTEST sensors in the monitoring of potable water and waste water, suitable for pH values up to 9.5.

## Technical Details

- pH value: 5.5...9.5
- Temperature: 1...35 °C
- Pressure: max. 6 bar, 3 bar (30 °C)



# DULCOTEST sensors for fluoride

## Reliable online measurement of fluoride – with DULCOTEST sensors

### Fluoride Sensor FLEP 010-SE / FLEP 0100-SE

Highly selective, online fluoride sensor, for the fluoridation of potable water and monitoring of industrial waste water in the semiconductor industry and electroplating with a pH of up to 9.5

#### Your Benefits

- Highly selective measurement of fluoride by LaF<sub>3</sub> single crystal silicon
- Unique pH range of up to pH 9.5 by optimisation of the electrolyte
- Two measuring ranges available: 0.05 -10 ppm for potable water; 0.5 -100 ppm for waste water. Higher measuring ranges on request

#### Technical Details

A 4-20 mA transmitter, a reference electrode and sensor for temperature compensation are needed in addition to the fluoride electrode.

Measured variable	Fluoride ion concentration
Reference method	Photometrically (Photometer DT2C)
Measuring range	<b>With transmitter FPV1:</b> 0.05...10 mg/l <b>With transmitter FP100V1:</b> 0.5...100 mg/l
pH-range	5.5...9.5
Temperature	1...35 °C
Max. pressure	7.0 bar (no pressure surges)
Min. conductivity	100 µS/cm
Shaft diameter	12.0 mm
Installation length	120 mm
Thread	PG 13.5
Electrical Connection	SN6 plug-in head
Enclosure rating	IP 65
Process integration	Bypass: open outlet or return of the sample water into the process line, inline: direct installation into the pipework; fixed or replaceable (replaceable fitting), tank, channel: Immersion in the immersion tube
Flow	10...200 l/h
Intake flow (recommended)	20 l/h
Response time T95 (open)	30 s (for conc. > 0.5 ppm)
Shelf life	6 months
Sensor fitting	Bypass fitting DLG IV
Controllers	D1C, DAC, DULCOMARIN
Typical applications	Monitoring the fluoridation of potable water in waterworks, industrial waste water in the semiconductor industry and electroplating.
Resistance to	Disinfectant, solids content (turbid types of water)
Measuring principle, technology	Direct potentiometric measurement, 2 electrodes, gel electrolyte, ceramic diaphragm, separate temperature measurement needed for temperature compensation. Low pH values of < 5 reduce the concentration of free fluoride ions by forming undissociated hydrofluoric acid (HF). High pH values > 9.5 influence the signal and the slope at concentrations in the lower ppm range. The calibration line flattens off there (gentler slope) and the fluoride sensor is outside its linear range.

#### Order no.

FLEP 010-SE / FLEP 0100-SE	1028279
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**Notes:** A 4-20 mA transmitter, a reference electrode and sensor for temperature compensation are needed in addition to the fluoride electrode. Measuring ranges from 5 ... 1,000 mg/l and 50 ... 10,000 mg/l available on request.