

CROSS SMART SENSOR

FA7-FM: FDOM

Digital technology for optimized measures



FA7 series of fluorometer sensors are designed for water quality measurements based on UV to visible fluorescence spectroscopy. **FDOM (Fluorescent Dissolved Organic Matter)** are primarily anthropogenic sources of hydrocarbons (for example, mineral oils, pesticides, herbicides, and fungicides). FDOM is a subset of Total Organic Carbon (TOC) compounds which also include naturally occurring fulvic and humic acids derived from decaying plant debris. Some of the compounds that contribute to the TOC pool also fluoresce. In the literature it is common to refer to the fluorescent part of the TOC as FDOM. Although FDOM is composed of both natural and man-made substances, the complex cyclic molecules contained in fungicides, pesticides, and herbicides tend to fluoresce far more brightly than the simpler, straight-chain natural substances found in plant debris. The FA7-FM is a highly sensitive sensor for detection of very low concentrations (on the order of micrograms per liter) of FDOM. It may be used to detect oil-in-water if mineral oil is the main component. The sensor may be connected to a GDC terminal enabling both stationary use (shafts, flows or piping) and mobile use. An optional clamp-on wiper for automatic cleaning of the optical window minimizes the maintenance downtime.



FEATURES AND BENEFITS

- ❖ In-situ application
- ❖ Direct immersion or bypass flow-cell installations
- ❖ Complete measurement within 10 seconds
- ❖ No reagents
- ❖ Compact size
- ❖ High sensitivity
- ❖ Algorithm compensation for ambient light
- ❖ Low power consumption
- ❖ Low cost of ownership
- ❖ Optional automatic cleaning wiper

TYPICAL APPLICATIONS:

Surface waters and recreational waters

FDOM are possibly harmful chemicals in surface waters and recreational waters. A fast and reliable measuring system is necessary. UV fluorescence is the most cost-effective method to meet these requirements.

Drinking water production and treatment

FDOM are dangerous pollutants that need to be detected early in both source waters and distributing networks.

Wastewater monitoring

The effluents of chemical and other industrial plants need to remain below prescribed limits to meet applicable environmental regulations.

SPECIFICATIONS	
Measuring system	Light Source: LED (375nm) Fluorescence Detection Band: 400nm to 600nm
Principle	Fluorescence
Measuring range	FDOM: 0 to 200 ppb Typical. Mineral Oil-in-Water: 0-1.5 ppm, 0-15 ppm Typical. (up to 1000 ppm, consult factory)
Accuracy	± 3 %
Respond Time	T90 < 10s
Measuring Interval	5 s
Operate Pressure	3 bar, 1 bar in Flow cell 2 to 4 L/min
Operate Temp.	14 to 140 °F (-10 to 60 °C)
Power	9-36VDC, Max. 1 W
Digital Interface	RS485 Modbus RTU
Housing	Material: 316L, titanium is optional
Auto Cleaning	Optional clamp-on wiper
Protection Rate	>IP68, submersible
Dimension	Dia. 2" (50.8 mm), Length 9" (229 mm)
Weight	4.6 lbs (2.1 kg) with 30" Cable

ORDER CODE

FA7-FM: FDOM		
	Measuring Range	
	-1 0 to 200 ppb	Other range contact factory
	Cable Length	
	-C10 10' (3 m) cable	
	-C20 20' (6 m) cable	Other length contact factory.
FA7-FM	-1	-C30

TERMINALS

GDC-01/02 Terminal
Single or dual-channels



GDC-04/06/08 Controller
Multi-channels up to eight



GDC-Ex Terminal
Single channel Ex-proof



DELTA-PHASE ELECTRONICS, INC.