

# TD-4100XD

HYDROCARBONS IN WATER



The TD-4100 XD is a ruggedized version of the TD-4100 continuous on-line oil in water monitor. The XD is designed specifically for offshore/onshore oil production, refining, petro-chemical, mining, and other industries that require robust on-line hardware for severe duty and hazardous area locations. The monitor is skid mounted and constructed of 316 stainless steel, including an external keypad, for operation in corrosive environments.

The TD-4100 XD detects and measures crude oil, refined fuels, fuel oils, lubricating or hydraulic fluids, and aromatic solvents in water. Detection limits range from low ppb ( $\mu\text{g/L}$ ) to high ppm ( $\text{mg/L}$ ).



 **TURNER DESIGNS**  
Hydrocarbon Instruments

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## Continuous On-Line Monitor

Continuous on-line monitoring with the TD-4100XD provides the most responsive feedback loop for measuring hydrocarbons in water. Continuous monitoring is reliable, effective, and recognized for its ability to improve process management for treating, discharging and detecting hydrocarbons in water. Compared to laboratory grab sample analysis, on-line monitoring provides cost effective, continuous, remote, operator unattended measurement of hydrocarbons in water.



### NON-CONTACT, NON-FOULING FLOW CELL

The TD-4100 XD does not have a glass flow cell. Hydrocarbons are detected in a stream of water falling through an open chamber; the water does not contact, dirty or foul the optical windows. A proprietary Air Curtain system keeps optical windows fog-free in hot water applications.

### LOW MAINTENANCE

The instrument is stable within 10% over 6 months. Other than sample line maintenance, routine maintenance involves changing a lamp twice a year. System checks are easily performed with the CheckPOINT® solid standard.

### DIRECT, CONTINUOUS MONITORING

The TD-4100 XD monitors a flowing water stream continuously. No chemicals, no pre-treatment, no mechanical manipulation or mixing of the sample is required to monitor hydrocarbons in water.

### ACCURATE

The TD-4100 XD directly measures fluorescing hydrocarbons in water with accuracies that consistently correlate to regulated laboratory methods in most cases.



### HIGH SENSITIVITY AND SELECTIVITY SENSITIVE

BTEX, gasoline, diesel, jet fuel, crude oil, aromatic solvents and refined petroleum products are detected by the TD-4100 XD from low ppb (mg/L) to high ppm (mg/L). For example, the TD-4100 XD can detect 1 ppb of diesel fuel in water free of interfering compounds.

### SELECTIVE

The TD-4100 XD continuously measures fluorescent hydrocarbons in water. Fluorescence occurs when a molecule absorbs light energy and emits light energy at longer wavelengths.

### EFFECTIVE MONITORING IN DIRTY WATER

Fluorescence technology makes the TD-4100 XD resistant to interferences from turbid or dirty water that impact on-line UV, IR absorption, or light scatter instruments. Most substances absorb light, but very few fluoresce; if a substance does not fluoresce at the specific wavelengths for the monitored hydrocarbon, it will not interfere.

### OPERATOR FRIENDLY

The TD-4100 XD is designed for easy operation. Simple on-board software controls alarms, 4-20 mA output, diagnostics and calibration. "Turner Designs Hydrocarbon Instruments is the recognized expert for oil in water monitoring technology."

# TD-4100 XD



## TYPICAL SPECIFICATIONS

Envelope Dimensions:	55.5 cm W x 63.5 cm D x 241 cm H [22" W x 25" D x 95" H]
Weight:	82 Kg [180 lbs] plus accessories
Power Requirements:	100-240 VAC, 50/60 Hz $\pm$ 10%, 200 W, 1 ph or 21-56 VDC, 200 W startup, 50-60 W operation (optional)
Inlet Plumbing Requirements:	½" MNPT (standard) or ½" tube
Outlet Plumbing Requirements:	1-1/2" MNPT
Inlet Sample Flowrate:	7.5-11.5 L/min [2-3 US gallons/min], optional sample pump
Inlet Sample Pressure:	34-136 kPag [5-20 psig]
Outlet Sample Pressure:	Atmospheric (standard) or optional sample return pump
Sample Temperature:	0-88°C [32-190°F] standard, higher temperatures optional
Ambient Temperature:	0-49°C [0-120°F] standard, optional cold and high temperature protection
Operational Principle:	Fluorescence
Detection Range:	1 ppb - 1000 ppm depending upon target hydrocarbon and water quality
Stability:	10% or better over 6 months
Response Time:	< 10 seconds continuous real-time response
Calibration:	Multiple-point or un-calibrated
Alarms:	Baseline, early warning, high alarm, system-function, local display and audible tone
Alarm Outputs:	Two user-settable, independently-protected, solid-state AC relay standard or optional dry contact relays
Analog Output:	4-20 mA or 0-20 mA, isolated, powered (standard), other protocol options available
Diagnostics:	System failure reports to relay and local display
Security:	Two level password protected, lockable cabinet
Electronics Cabinet:	316 stainless steel, NEMA 4X, IP 66
Air Purge Options:	ATEX Zone 1, ATEX Zone 2, Class 1 Division 1, Class 1 Division 2, or non-hazardous environment purge

  
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