MODCON

SYSTEMS LTD

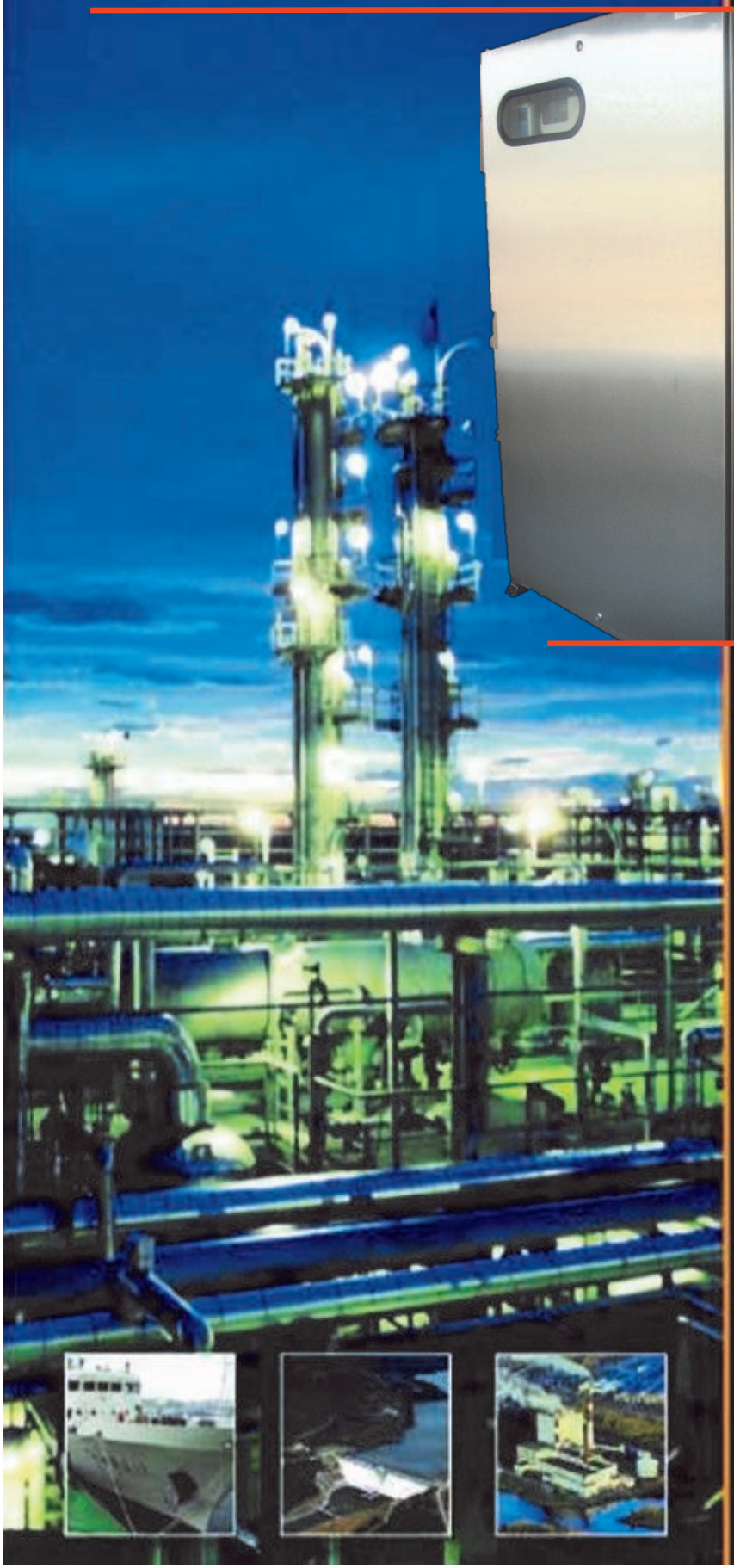
ON-LINE HYDROCARBONS IN WATER ANALYZER

MODEL «MOD-1100»

LEADERS IN PROCESS ANALYSIS AND CONTROL

MOD-1100

ON-LINE HYDROCARBONS IN WATER ANALYZER



The MOD-1100 is a “Closed Cell” version of the rugged, world industry standard MOD-1100 Oil in Water Monitor. It was designed for normally clean water applications or dirty water applications where fouling can be controlled by chemical injection or optional on-board cleaning systems. It utilizes a clear tube flow cell to contain the sample water at pressure to prevent oxygen contamination in steam systems and to return the sample to the process at pressure. It uses a unique internal Cell Condition Monitor to alert operations of the need for cleaning or to trigger the optional on-board cleaning system.
As with all Modcon monitors it includes a field validation method.

- Fluorescence measurement technology with lowest detection limits available.
- Minimal sample conditioning plumbing hardware reduces cost.
- Easy calibration with long term stability.
- Low maintenance.
- User friendly.
- Ruggedized for harsh environments, internationally certified for hazardous areas.
- Custom Configurations, and wetted materials.

The MOD-1100 detects and measures crude oil, refined fuels, fuel oils, lubricating or hydraulic fluids, and aromatic solvents in water. Detection limits range from low ppb (|jg/L) to high ppm (mg/L).

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MOD-1100 HYDROCARBONS IN WATER

Continuous On-Line Monitor

Continuous on-line monitoring with the MOD-1100 provides the most responsive feed back 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 MOD-1100 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

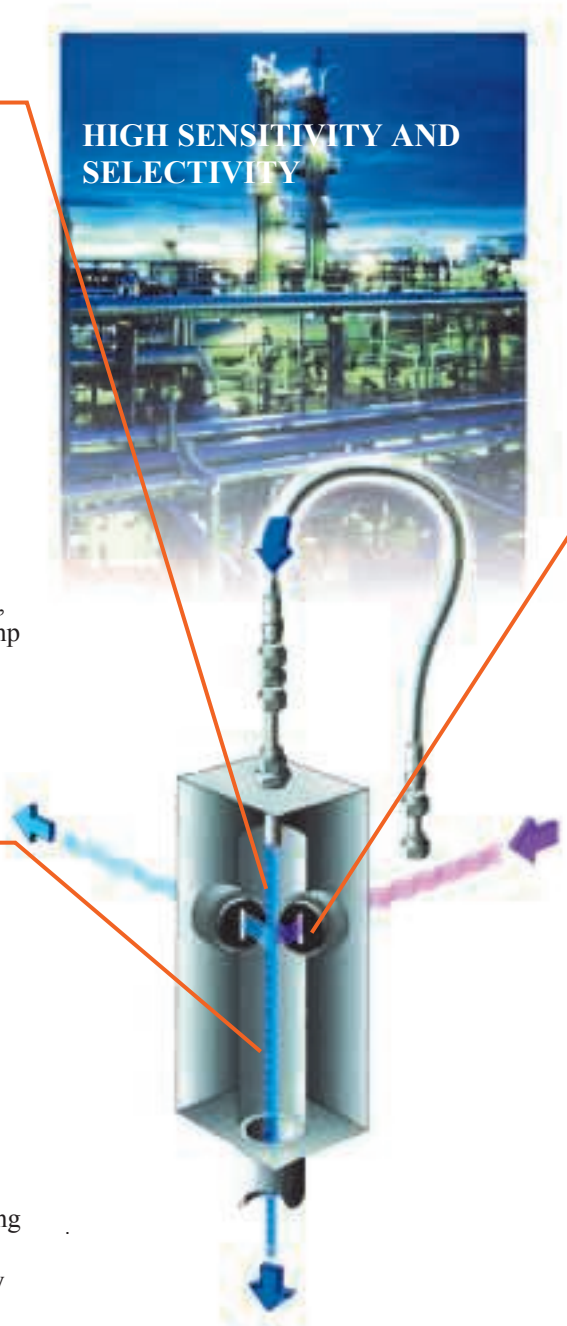
The instrument is stable within 10% over 6 months. Other than sample line maintenance, routine maintenance involves changing a lamp twice a year. System checks are easily performed with the CheckPOINT® solid standard.

DIRECT, CONTINUOUS MONITORING

The MOD-1100 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 MOD-1100 directly measures fluorescing hydrocarbons in water with accuracies that consistently correlate to regulated laboratory methods in most cases.



SENSITIVE

BTEX, gasoline, diesel, jet fuel, crude oil, aromatic solvents and refined petroleum products are detected by the MOD-1100 from low ppb (mg/L) to high ppm (mg/L). For example, the MOD-1100 can detect 1 ppb of diesel fuel in water free of interfering compounds.

SELECTIVE

The MOD-1100 continuously measures fluorescent hydrocarbons in water. Fluorescence occurs when a molecule absorbs light energy and emits light energy at longer wavelengths.

EFFECTIVE MONITORING DIRTY WATER

Fluorescence technology makes the MOD-1100 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 MOD-1100 is designed for easy operation. Simple on-board software controls alarms, 4-20 mA output, diagnostics and calibration. "Modcon Systems Hydrocarbon Instruments is the recognized expert for oil in water monitoring technology."

Field-Proven Applications

Produced Water

- Overboard Discharge Compliance and Process Control
- Re-Injection Or Water Flood Water Quality Control
- Produced Water Reuse - RO Feed Water, Steam Generator Feed Water

Non-Contact Cooling Water

- Heat Exchanger Leak Detection
- Boiler Feed Protection
- Cooling Tower Protection
- Open-Loop Discharge

Wastewater

- Process Water Discharge
- Industrial Discharge

Marine Water

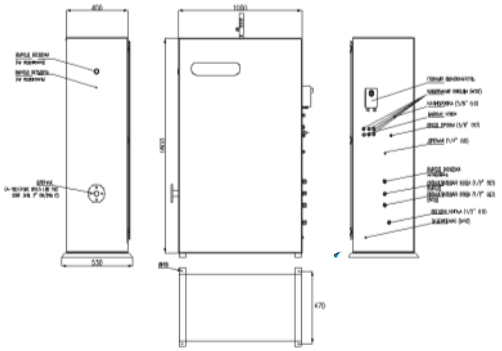
- Drilling and Production Rig Slop Tanks / Deck Drains
- Bilge Water Discharge
- Ballast Water Discharge

Hydrocarbons Detected

- BTEX
- Gasoline
- Diesel
- Jet Fuel
- PAH's (Poly-aromatic hydrocarbons)
- Creosol
- Crude Oil
- Heat Transfer Fluids
- Aromatic Solvents
- Aromatic Chemicals (Styrene, Phenol, etc.)
- Lubricating Oils
- Fuel Oil
- Longwall Fluid

The Water

- Oil-Produced Water
- Deck Drains / Slops Tanks
- Process Water
- Non-Contact Cooling Water
- Ballast Water
- Bilge Water
- Industrial Wastewater
- Hydroelectric Water
- Storm Water
- Groundwater
- Municipal Wastewater
- Potable Water



TYPICAL SPECIFICATIONS

Detection Range:	1 ppb - 1000 ppm *depending upon target hydrocarbon and water quality
Envelope Dimensions:	1267 mm W x 520 mm D x 2106 mm H
Weight:	250 Kg
Display:	YES
Power Requirements:	100-240 VAC, 50/60 Hz ± 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:	0-88oC [32-190oF] standard, higher temperatures optional
Ambient Temperature:	0-49oC [0-120oF] standard, optional cold and high
Operational Principle:	Fluorescence
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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