



Model W-700 UV Organics Analyzer



On-line 254nm UV Organics Water Analyzer for continuous measurement of stream and condensate.

- ▶ Operating range 0-50 ppm
- ▶ Rapid analysis cycle results in 15 seconds or less
- ▶ Excellent repeatability to 0.5ppm or less
- ▶ Large full color LCD display with continuous run chart
- ▶ Compact design with separate enclosures for electronics and analytics
- ▶ No sample conditioning necessary
- ▶ Automatically compensates for turbidity

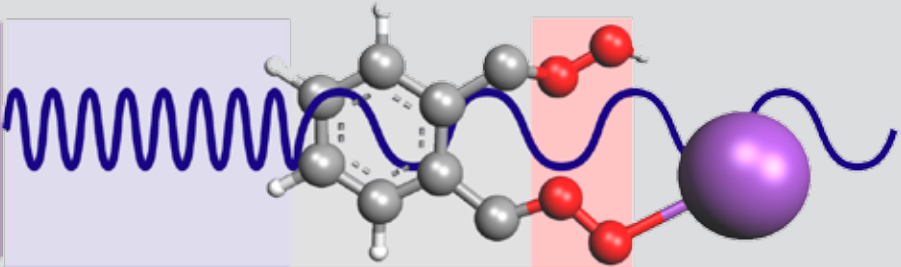
The Model W-700 Organics Analyzer combines state-of-the-art technology with over 20 years of analyzer design and manufacturing experience. The result is the perfection of on-line water measurements with rapid measurement that doesn't sacrifice accuracy, repeatability or reliability. A UV light source and a 254nm optical filter combine to measure organic light absorption and determine the organic levels. This provides TOC and COD results without additional chemical consumption or support. These cost-efficient and rugged analyzer meets worldwide industry safety requirements.

APPLICATION

Since the Introduction of the Clean Water Act in 1977 by the Environmental Protection Agency, it has become increasingly important to continuously monitor the quality of effluents and waste water prior to discharge. Finding a cost effective method of accurately obtaining results has plagued industrial companies for years due to the nature of the chemistry involved.

The development of photometric and spectroscopic techniques has proved an invaluable tool in the application of on-line effluents monitoring. The removal of hazardous solutions and high temperature applications coupled with fast response and high accuracy has brought the use of photometric correlation techniques to the forefront of waste water monitoring.

COMPARISON OF ORGANIC MEASUREMENT METHODS



Parameters	254 nm UV Absorption	TOC Analysis	COD Analysis
Response Time	< 15 sec.	> 10 min.	> 30 min.
Detection of unsaturated organics	Yes	Yes	Yes
Filtering	No	Yes	Yes
Installation Preparation	Easy	Hard	Hard
Installation Time	Minutes	Hours	Hours
Size	Compact	Large	Large
Maintenance	Easy	Difficult	Difficult
Analyzer Cost	Low	High	High
Cost of Operation	Low	High	High
Chemical Usage	No	Yes	Yes

OPERATING PRINCIPLE

The W-700's measurement cycle is based on the DIN 38404-C3.

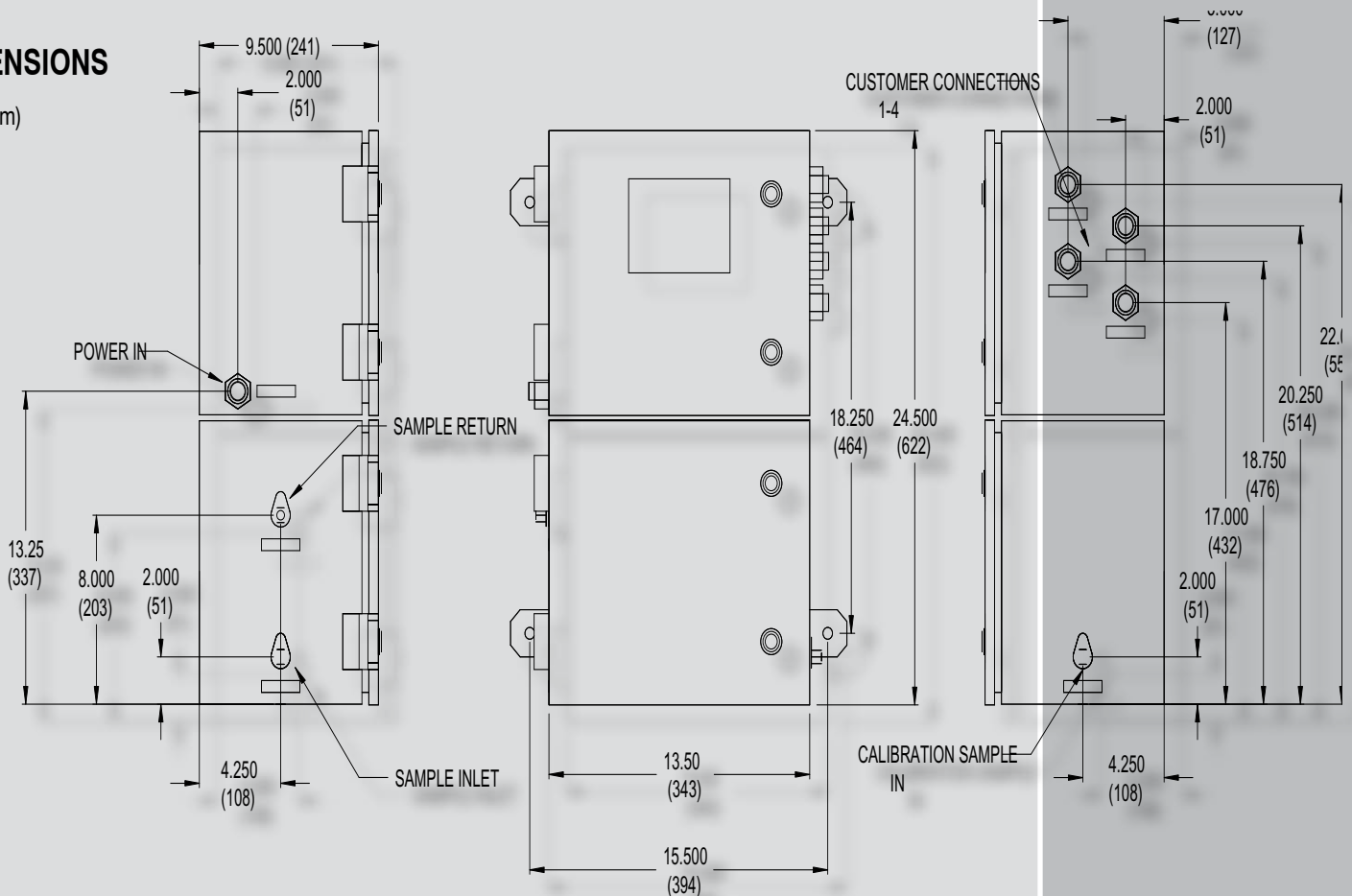
The water analysis begins with sample entering an optical cell. On either side of the quartz windows is a UV light source and an optical sensor. Sample passes through the flow cell as UV light is passed through the sample via the optical windows. UV absorbance is measured, the sample is refreshed and the cycle repeats itself. The measurement cycle runs on a continuous basis as sample flows through the cell and constantly refreshed to ensure analysis of new samples on each cycle.

The operating principle is based on the Beer-Lambert Law, which quantifies the concentration of an effluent based on its absorbance of light at a specified wavelength. This absorbance intensity is compared against a reference absorbance intensity at a different wavelength. This allows the analyzer to adjust for turbidity or slow fouling of the measurement cell which is automatically compensated for by the auto-zero function which resets the baseline for full UV light intensity. The auto-zero interval may be customized for specific applications by the end-user.

To further enhance the overall performance of the system, multi-band options are available to give the analyzer a broader measurement range. Multiple stream measurements are also available through use of external relays.

DIMENSIONS

inch (mm)



PRODUCT GUIDE

Petroleum Analyzers

- Flash Point
- Salt In Crude
- RVP
- RVP/VL20
- Freeze Point
- Cloud Point
- Pour Point
- Viscosity
- Viscosity Index

Water Analyzers

- UV-COD
- UV-Oil in Water

Other Products

- Environmental Cabinets
- Sample Conditioning Systems
- Sample Recovery Systems
- Spare Parts

Analyzer Services

- Field Service
- Start-Ups
- Training
- Technical Support



SPECIFICATIONS: W-700 UV ORGANICS ANALYZER

ANALYSIS PERFORMANCE	
Measurement Cycle Time	less than 15 seconds
Measurement Range	0-50 ppm
Repeatability	± 0.5 ppm
Accuracy	± 10% of full scale
SAMPLE REQUIREMENTS	
Sample Bypass Flow Rate	0-5 l/min
Sample Pressure	0-75 psi (0-5 bar)
Sample Temperature	5-95°C (41°F-203°F)
ENCLOSURE/INSTALLATION REQUIREMENTS	
Dimensions	Width 16 in (406mm) – Height 25 in (635mm) – Depth 10 in (254mm)
Weight	approximately 60 lbs (50 kg)
Operating Temperature	5-40°C (41°F-104°F)
Enclosure Material/Rating	stainless steel - NEMA 4X / IP65
Area Classification	optional NEC Class 1 Div 1 Group C + D or ATEX Zone 1 Group II
Power	100 to 240 VAC (± 10%), 50/60 Hz, single phase, 2A
Purge Gas Supply, optional	Clean, dry Nitrogen (better than 98% pure) or other inert gas at Min. 80 psi (5.5 bar) – Max. 100 psi (6.8 bar) / external leakage compensation 1 l/min
END USER CONNECTIONS	
Analog Stream Switching Output	end-user programmable analog output from one of four relay signals (12 or 24 VDC output)
Analog Output Signal	single isolated 4-20 mA output (optional second output available), selectable for sample concentration, analyzer system warning or analysis measurement indication
Relay Output Contact	two (2) SPDT Relays with contacts rated at 3A resistive load at 250VAC, selectable for sample concentration alarm, analyzer system warning or analyzer system shutdown alarm
Serial Input/Output Signal	single RS232 or RS485 bi-directional / optional ModBus output available

HOW TO ORDER

ANALYZER SYSTEMS	
Catalog Number W-700-1100	ORB Model W-700 UV Organics Analyzer, Ex Area ready for NEC Class 1 Div 1 Group C + D
Catalog Number W-700-1200	ORB Model W-700 UV Organics Analyzer, Ex Area ready for ATEX Zone 1 Group II
Catalog Number W-700-1300	ORB Model W-700 UV Organics Analyzer, for General Purpose Area
OPTIONS	
Catalog Number 700235	Validation/Grab Sample System
Catalog Number 700236	Peristaltic Pump for non-pressurized sample
ACCESSORIES	
Catalog Number 700240	Free-standing Mounting Rack
Catalog Number 700251	1-Year Spare Parts Kit
Catalog Number 700252	2-Year Spare Parts Kit

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