

Continuous Oil Content Meter

Type OWF-100

This meter can continuously measure oil content in water, such as plant effluent, by means of an ultraviolet fluorescent method.

This measurement method directly radiates ultraviolet ray to sample water, which is overflowed from a measurement tank, and measures the oil content by identifying a specific wavelength of fluorescence amount, which emits from the sample water.

Characteristics

■ Continuous measuring device

This device adopts an ultraviolet fluorescent method, and no extraction operations are required. Therefore, there is no influence of turbidity. This makes the continuous measurement possible.

■ No risk of the secondary pollution

This device does not use any extract agent or addition agent, and there is no risk of any secondary pollution.

■ No influence of dirt on a cell

The overflow measurement method does not use glass windows. Therefore, unlike a traditionally cell method, there is little influence of dirt.

■ Easy maintenance

Maintenance is very easy because there are no moving parts.

Standard Specifications

Product Name : Continuous Oil Content Meter  
 Type : OWF-100  
 Measuring Object : Oil content in water (Mineral oil)  
 Measuring Method : Ultraviolet fluorescent method  
 Measuring Range : 0~2.0mg/L, 0~10.0mg/L  
 Repeatability :  $\pm 7\%$ FS (80%FS Uranine solution)  
 Stability : Zero drift  $\pm 5\%$ FS/day  
 (with purified water)  
 Span drift  $\pm 7\%$ FS/day  
 (with 80%FS Uranine solvent)  
 Response : 90% response for approx. 3 minutes  
 (when sample flow is 2L/min)  
 Ambient Temperature : 0~45°C  
 Sample Water Conditions :  
 Temperature  $\dots 0\sim 45^{\circ}\text{C}$  (unfrozen)  
 Pressure  $\dots 0.02\sim 0.3\text{MPa}$   
 Consumption Amount  $\dots 2\sim 7\text{L}/\text{min}$



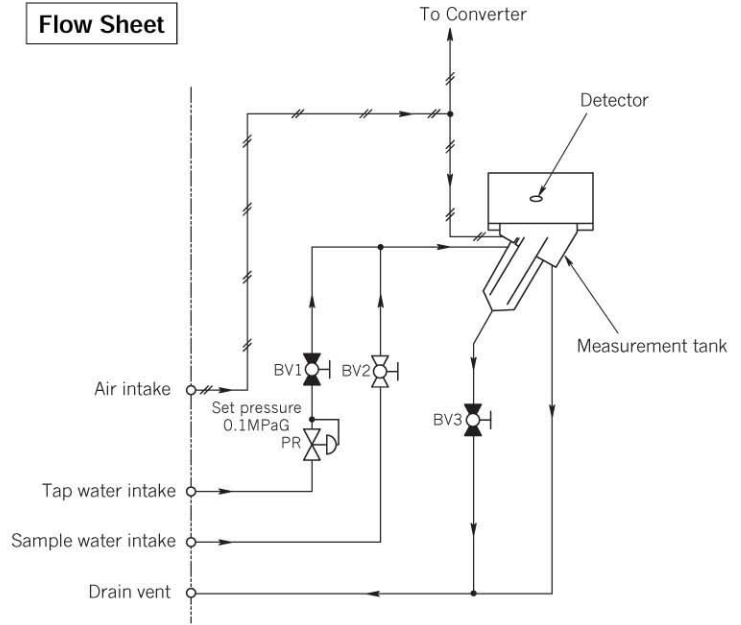
Tap water (\*1) : Pressure  $\dots 0.1\sim 0.5\text{Mpa}$   
 Consumption Amount  $\dots$   
 Approx. 0.5L/min (for washing)  
 \*1 Used when washing the device manually.  
 Transmission Output : Measured output  $\dots \text{DC } 4\sim 20\text{mA}$   
 Load resistance value  $600\Omega$  or less  
 Power Source : AC  $100\text{V}\pm 10\%$  50/60Hz  
 Power Consumption : 50VA  
 (55VA with an air curtain option at the detection part)  
 Structure : Indoor Self-Sustained Type  
 Material : Detection part  $\dots$  Black AS resin  
 (ASA), SPCC metallic silver printing  
 Counter  $\dots$  A5052P (corrosion aluminum  
 plate), equivalent to Mansel N6  
 Converter  $\dots$  ADC12 (aluminum die cast),  
 equivalent to Mansel 5PB8/1  
 Wetted material : Black AS, SUS, Soft rubber tube  
 Dimension : Mainframe  $\dots$   
 $380(\text{W})\times 1500(\text{H})\times 500(\text{D})\text{mm}$   
 Mass : Approx. 40kg  
 Pipe Joint Part : Intake of sample water, Intake of tap  
 water  $\dots$  VP16  
 Drain vent  $\dots$  VP25  
 Air intake  $\dots$  VP16 (for air purge at a  
 converter part)  
 Wire hole : Intake for electricity power cable, etc.  
 $\dots$  Water-proof plug for cables with  
 external diameter 12mm  
 Accessories : Lens cleaner, fuses, a brush, Uranine  
 (for correction)

### Operation Principle

Sample water passes through the sample water adjustment valve and it is defoamed in a defoaming tank inside the double-structured measurement tank. Some of the sample water will be discharged there, but sufficient defoamed sample water at the bottom will inflow into the measuring tank. The structure of this tank, the overflow type, makes it possible to obtain a stable water surface with little waves.

The oil content of the sample water will emit fluorescence when ultraviolet ray is radiated from an excitation light source to the surface. The detection part detects the emission amount, and the indication converter converts the density after photoelectric transfer.

### Flow Sheet



### Notes

#### ■ Points to be noted

This device detects materials, such as crude oil, which emit fluorescence when ultraviolet ray is radiated. However, ingredients of these organic materials are not constant depending on places of origins, and therefore they cannot be treated as standard materials. To solve this problem, this device uses Uranine solvent, a chemical material that has constant fluorescence intensity.

Strictly speaking, the device is Uranine Conversion Oil Content Meter. Users must use this device by assuming that there is a constant correlation between measuring targets.

#### ■ Effect of Interfering Substance

There are some materials, such as turbidity and fluorescence detergent, which cause errors when measuring oil content in water.

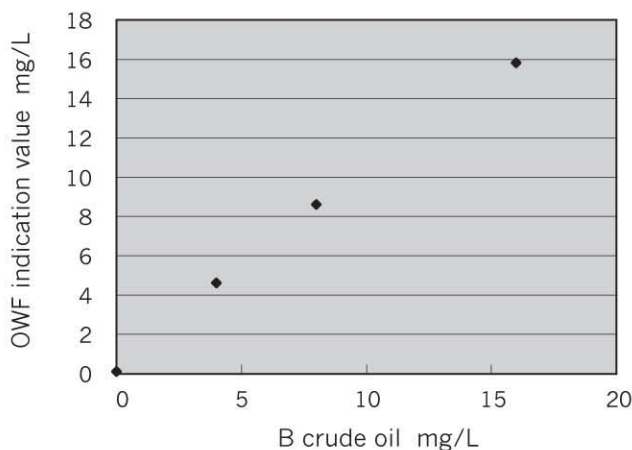
Theoretically speaking, if the wave length of the fluorescence material is same as the wave length that is used for measurement, the result includes plus errors. In case of turbidity components, minus errors will be generated.

If these materials are included in measuring target, please contact us.

#### ■ Option : Air curtain

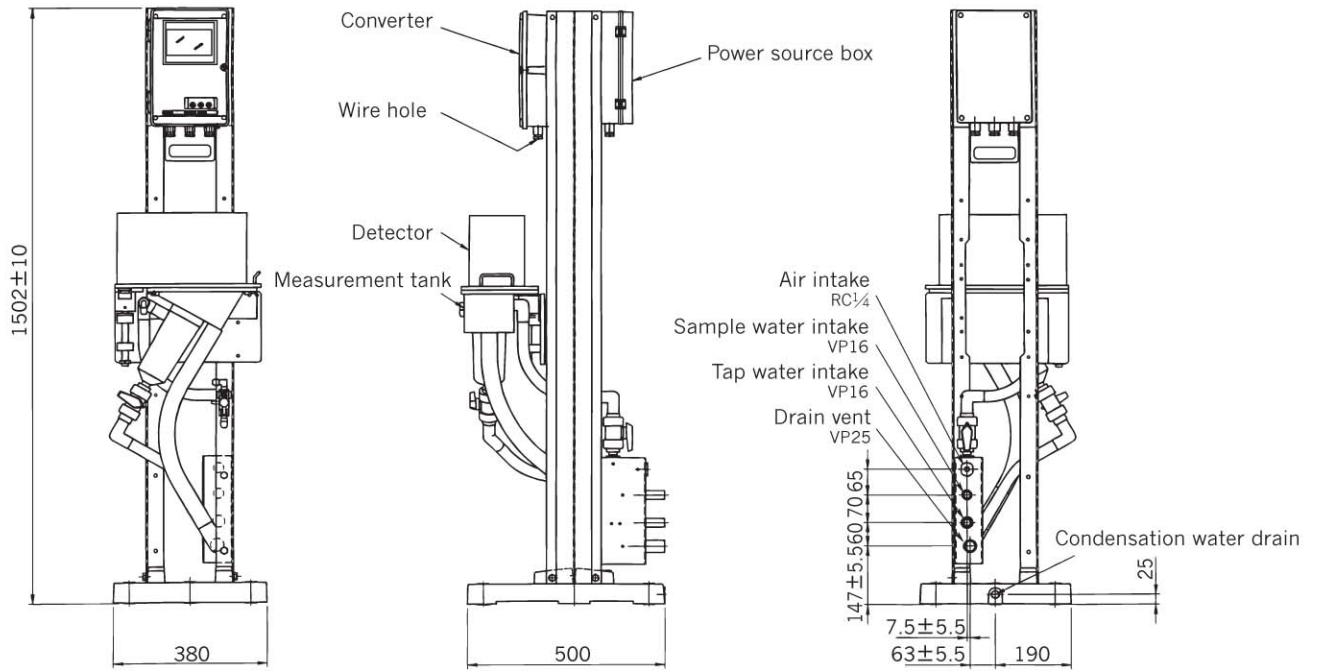
Some measurement errors may be identified if condensation occurs due to a difference between the water and air temperatures. In such a case, you can use an air curtain that is an option part.

### Correlation Data



**External Size**

Unit : mm



**External Connection Terminals**

