

# 4100-OWM % Water in Oil Monitor



## Continuous monitoring for % concentration of water in oil emulsions

Over 40 years of Arjay's field proven HF capacitance experience has been applied to the 4100-OWM monitor. This unique system provides complete flexibility for monitoring tanks and flows for % concentrations of water in oil.

- unique capacitance approach eliminates routine cleaning
- no moving parts
- control and interface panel mounts safely away from the process
- tank or pipe installation

The 4100-OWM sensing probe monitors the capacitance field around the probe within a concentric shield, tank or pipe. The emulsion characteristics of water to oil is not strictly linear and the Arjay controller allows for a 5 point calibration to enhance accuracy over an extended range. This instrument is ideal for general monitoring and trending of process conditions.



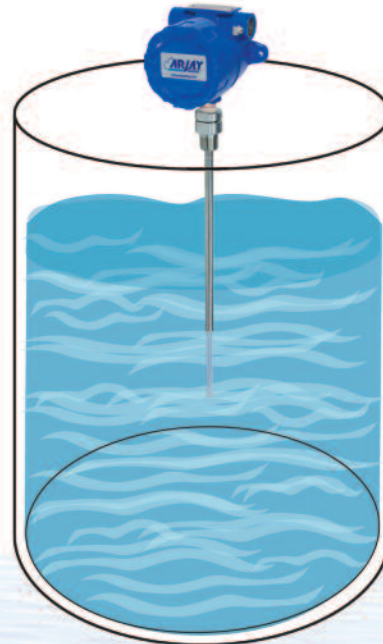
explosion proof sensor

316SS wetted metals with Teflon coated probe

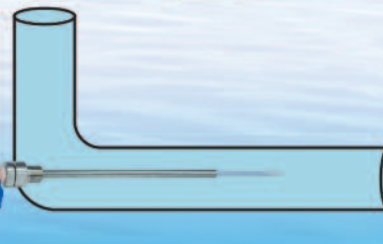


(beacon and buzzer optional)

up to 1 km



In Tank Solutions



In Pipe Solutions



# 4100-OWM

## Features and Benefits

- no moving parts
- remote electronics via standard twisted pair
- all set-up, calibration and diagnostics are accessed at the control panel
- multi-point calibration curve
- all control wiring and interface is done at the control panel
- HF capacitance technology does not require routine cleaning
- touch screen interface for easy set-up and user interface
- trend display of hour, day or month increments

## Optional Interfaces

Analog Output                      4-20 mA non-isolated  
Communication                      RS-485 Modbus

## Technical Specifications - Control Panel

Operating Temp.                      0°C to +55°C  
Resolution                              .04 pF at 1,000 pF  
Accuracy                                0.2% of full scale pF  
Power Input                              24 vdc or 80-240 vac +/-10%, 1P, 50-60 HZ  
Display                                    touch screen full colour tank view graphics,  
% and engineering units  
trend line selectable hours, days or none  
Relay Outputs                            four SPDT, 10 amp @ 240 vac, dry  
Enclosure                                Type 4 metal painted blue / IP 66  
optional Type 4X SS or polycarbonate

## Technical Specifications - Probe

Process Temp.                          -60°C to +200°C  
Ambient Temp.                         -40°C to +55°C  
Pressure                                 103 bar/10342 kPA/1500psi  
at stable temperature  
Process Connection                    available threaded or flanged  
Wetted Parts                            316SS and Teflon

### Certifications (certificates available on website)

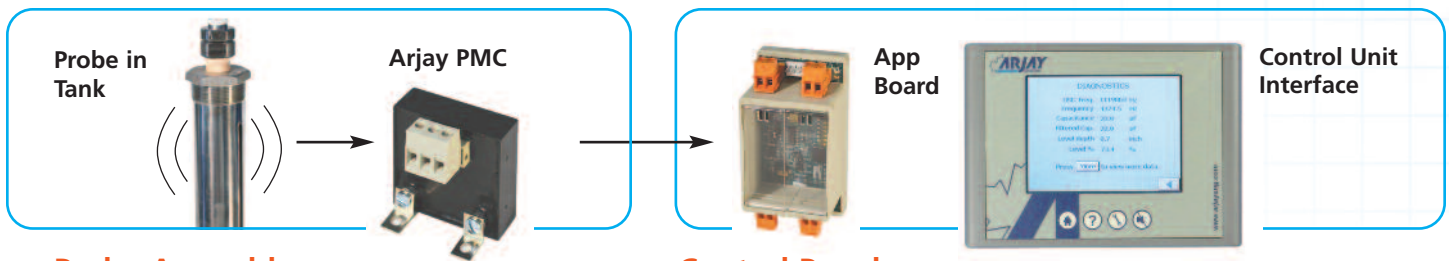
**Included Standard on Control Unit and Probe - Ordinary Location Use**  
UL/CSA/IEC 61010-1  
CAN/CSA 22.2  
CE

**Included Standard on Probe - Hazardous Location Use - Explosion Proof**  
USA/Canada CSA Zone 1,2; AEx db IIC T5 Gb  
IECEX/ATEX Zone 1,2; Ex db IIC T5 Gb

### Optional on Probe - Hazardous Location Use - Intrinsically Safe

UL/CSA/IEC 60079  
ANSI/UL 913-2013  
Class I; Division 1,2; Groups A,B,C,D; T4  
Class II; Division 1,2; Groups E,F,G  
Class III; Division 1,2  
Class 1, Zone 0,1,2; Ex ia IIC T4 Ga

**Included Standard on Probe**  
CRN # 0F07450.2 (all provinces)  
NACE MR-0175 Compliant where applicable



## Probe Assembly

The Arjay PMC (pulse module circuit) installed at the probe converts the separator signals to a frequency pulse. This allows the controller to be safely mounted up to 1 km away from the tank with virtually no loss to signal stability. No operator interface is required at the probe using this unique Arjay PMC design.

## Control Panel

All calibration, control interface and power wiring is done at the main control unit. The touch screen provides a simple menu-driven operator interface and display.

The Arjay App board is the heart of the 4100-OWM. This board monitors and controls the signals from the probe, applies the appropriate calibration algorithms and interfaces this information to the touch screen and PLC hardware.

**Accuracy Note:** Reading accuracy is dependent on many variables such as fluid dielectric stability, temperature, blending dynamics, etc. This monitor is designed for general monitoring and trending of process conditions. A 5-point calibration curve can be entered to enhance accuracy within your desired range.

**Minimum Calibration Range: 0-5% water in oil    Maximum Calibration Range: 0-40% water in oil**



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