

4100-PRO Oil / Water Tank Profiler



Continuous profiling of oil / water interface and emulsions in tanks

Over 40 years of Arjay's field proven HF capacitance experience has been applied to the 4100-PRO Tank Profiler. This unique system provides multiple probes to profile the oil separation in treater trains, oil/water knock-out vessels and separators.

- unique capacitance approach minimizes routine cleaning
- no moving parts
- control and interface panel mounts safely away from the process
- multiple probe monitoring

The 4100-PRO uses multiple sensing probes to measure the capacitance field at distinct points within the tank. The resulting profile can be used to track the vertical location of an interface/rag layer and the emulsion thickness. The data can be used for flow control, diluent and other chemical injection, and alarms of impending control excursions. This instrument is ideal for trending of process conditions to maximize your oil/water separation efficiency.

explosion proof probe

3/4" npt 316SS process connection

Probe shown with inactive sheath



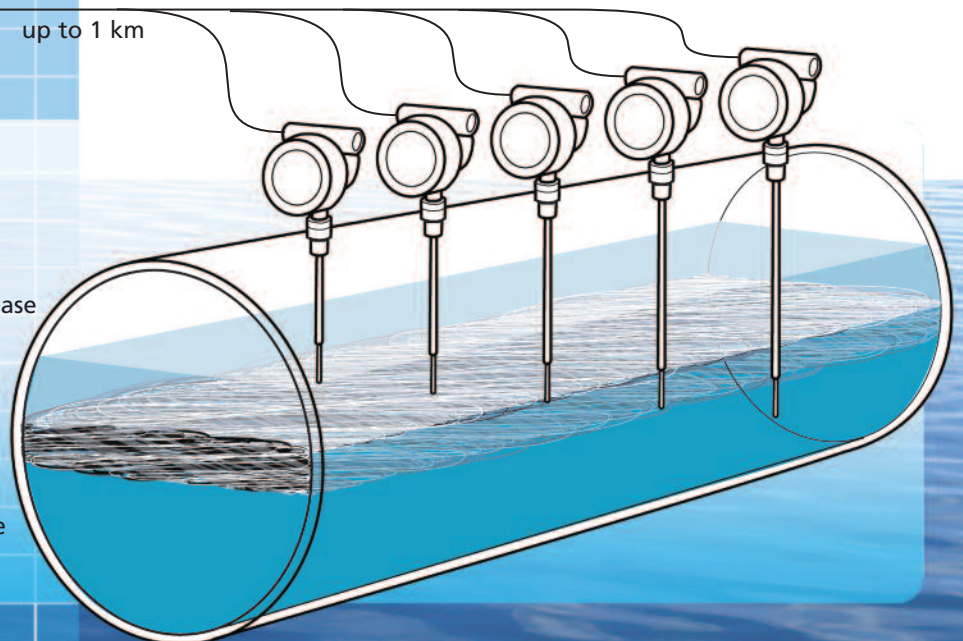
(beacon and buzzer optional)



Note: Sketch view shown with discrete probes. Retraction devices and probe cluster assemblies are available.

up to 1 km

gas phase
oil phase
emulsion layer
water phase



4100-PRO

Features and Benefits

- no moving parts
- remote electronics via standard twisted pair
- all set-up, calibration and diagnostics are accessed at the control panel
- multiple probe inputs
- 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

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

Technical Specifications - Control Panel

Operating Temp.	0°C to +55°C
Resolution	.007% (.07 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

Optional Interfaces

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

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.

Certifications (certificates available on website)

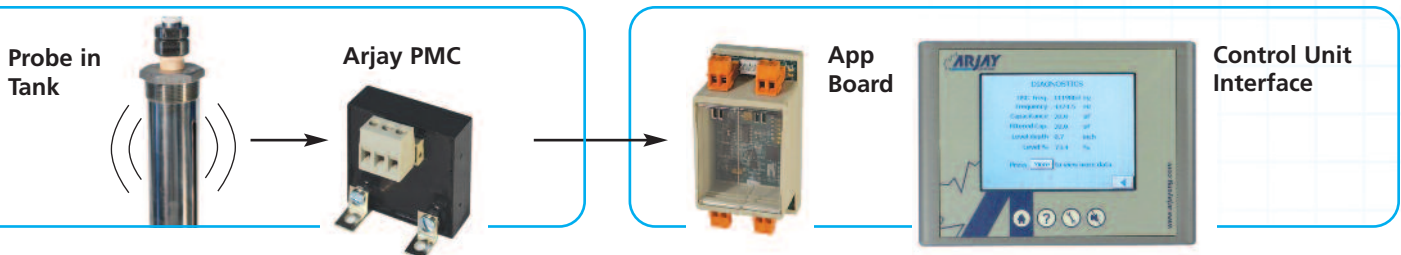
Included Standard on Control Unit and Probe - Ordinary Location Use
UL/CSA/IEC 61010-1
CAN/CSA 22.2
CE

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-PRO. 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.



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