ARJAY ENGINEERING

Product Guide #AR2012

ppm Oil in Water Monitors •
Oil/Water Interface, Separator and Spill Monitors •
Level and Flow Controls •
Area and Tank Leak Alarms •
Product Presence/Absence Detection •
Process and Product Condition Monitors •

ARJAY ENGINEERING

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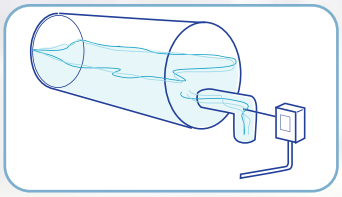
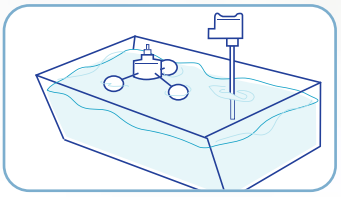
ppm Oil in Water Monitors



Oil/Water Interface, Separator and Spill Monitors



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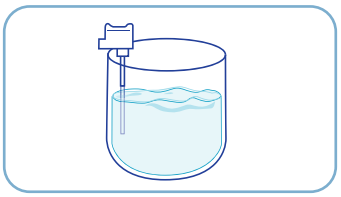
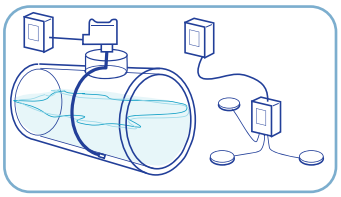
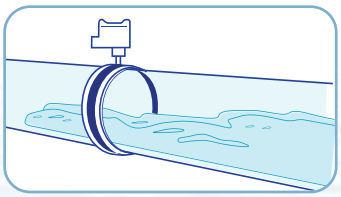


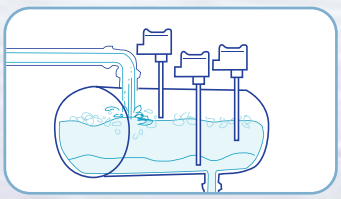
Area and Tank Leak Alarms



Product Presence / Absence Detection



Process and Product Condition Monitors



Thank you

Arjay Engineering is proud of it's history and the exceptional support our staff and technical representatives continue to provide. We are committed to our quality goals and take our ISO 9001:2008 designation very seriously.

As you review our main line products displayed in this catalogue, please keep in mind that we are able to work with you on your special application needs. Our expertise in the technologies used here can apply to many other applications that are unique to your own process.

We look forward to working with you.

Quality Standards

Our products are manufactured under the ISO 9001-2008 quality standard as audited by

ISO 9001:2008
Quality Management Systems
Système de Qualité
www.ca.sgs.com

One or more of the following design and safety certifications is available on every product. We can also work with you to achieve any local regulations that may apply.

A Company from Strong Roots

Arjay Engineering designs, manufactures and distributes instrumentation for the process and environmental industries.

Our growth and success stems from family roots. Officially, Arjay began operations in 1983 although our history extends back many more years. Our long established affiliate company, Can-Am Instruments, had gained valuable knowledge and expertise through their partnerships with key suppliers in the environmental, laboratory and process fields. With a strong base in capacitance technologies, Arjay provided an excellent opportunity to promote this knowledge into a complete product line for monitoring and control of liquids and bulk solids.

In parallel with this pursuit, Arjay developed specialty gas detection equipment for ambient air applications. This focuses on control and ventilation in workplace, commercial and residential environments. Our gas detection products can be viewed at www.SkitterNet.com.

As industry evolves and environmental regulations keep pace, the technologies at Arjay continue to expand. Recent developments include optical fluorescence sensors for oil in water monitoring in water quality applications. This compliments well with our oil spill monitoring equipment, tank alarms, and gas sensors.

As a respected engineering and support company, Arjay designs and manufactures many specialty products for external companies. We are able to provide full design, approval, and manufacturing services from concept to production.

Today, our roots remain strong with our long established customer and corporate partnerships.

FluoroCheck
ppm Oil in Water Monitor

Benchtop and field monitoring of petroleum oils in:

- wastewater and groundwater
- industrial effluents
- cooling water
- produced water

The FluoroCheck offers a fast and easy approach to the measurement of hydrocarbon oils in water. Filtered light energy targets the aromatic component of the water sample and measures the hydrocarbon fluorescence. Through an Arjay or site specific calibration, this aromatic tag is correlated to a total oil reading of your sample.

Arjay offers three test modes in one instrument; letting you determine the most suitable approach for your testing needs. You can choose from the factory preset calibrations for immediate on-site use or do your own calibration specific to your site. You can even run routine solvent-free tests and easily switch to a solvent extraction when a more selective test is warranted. All tests use disposable cuvets to eliminate cross-contamination and cleaning issues.

Direct Water Testing

A water sample can be measured directly in the instrument without solvents or sample preparation. This is ideal for general screening to identify the presence or absence of hydrocarbons in groundwater, wastewater, cooling water and oil/water separator effluents.

CT-1000 Solvent Free Streaming

A large sample volume is streamed through the FluoroCheck using the CT-1000 streaming accessory. The FluoroCheck records over 200 readings of the passing stream and averages these for a more representative and accurate reading. This mode of testing is good for oil/water separators, discharge, produced water, and effluents where oil may normally be present or where quantitative values are desirable.

Solvent Extraction

To optimize the accuracy of the readings or to correlate the FluoroCheck to a specific analytical method, solvent extracted samples can be used. An extraction with hexane, pentane, or other extractive fluid will qualify samples using EPA 1664 Rev A and ISO-9377-2 extraction techniques. A calibration is entered using your local laboratory's results and methodology.

3 Measurement Modes in One Instrument

plus a factory and customer storage library for up to 10 calibrations

FluoroCheck

Features and Benefits

- three modes of sample testing
- solvent extraction qualifies sample to ISO 9377-2 and EPA 1664 Rev A methods
- fast sample preparation and immediate readings
- controlled and safe use of solvents
- easy calibration and instrument set-up
- reading printout serial port
- bright backlit display of ppm readings
- long life LED light source
- multi-point calibration available for increased accuracy
- multiple calibration library of various oils or sites
- LED intensity selection to maximize response to unique oils
- no lag time, sample injection, or evaporation
- ideal for site screening and process trend monitoring
- compliments and supports existing laboratory results
- available with re-chargeable battery pack or vehicle jack

Performance

The performance is based on the site calibration to a known hydrocarbon concentration in stable background water. Changes in hydrocarbon make-up and background stability may affect the reading. Through a simple calibration, this unit correlates well with laboratory ISO 9377-2 and EPA 1664 Rev A methods.

Technical Specifications

Operating Temp.	15˚C to 40˚C, indoor use
Power Input	100-240 VAC, 47-63 Hz, 0.5A or 12 VDC, 1.5A
Approval Standards	UL, CSA, CE (transformer)
Range	0-100 ppm (extended with sample dilution)
Display Resolution	0.1 ppm
Instrument Accuracy	+/- 0.1 ppm

Whatever the mode, it's as easy as...

	1 Prepare	2 Insert	3 Read
Direct Test >			
CT-1000 Streaming >			
Solvent Extraction >			

Grab and Go Kit

'Grab and Go' kits are available for one, two, or all three measurement modes and include all the necessary accessories to start testing. Due to transport restrictions, solvents should be sourced from you own local lab supply company. Arjay will provide typical manufacturer and model numbers.

HydroSense-2410
ppm Oil in Water Monitor

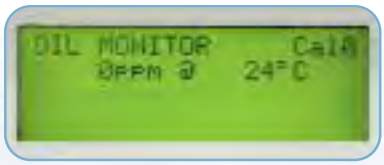
On-line monitoring for ppm concentrations of petroleum oils in effluent and produced water

The HydroSense 2410 is the engineered combination of three unique designs by Arjay. The sensing chamber contributes a continuous controlled water sample while the optical sensor package hovers above the passing stream. The Arjay controller then monitors the multiple signals to provide a reliable ppm concentration output.

- non-contacting sensor design minimizes system maintenance
- fluorescence technology is selective to petroleum hydrocarbons by targeting their aromatic faction
- continuous on-line monitoring without chemicals or lag time

The HydroSense 2410 uses a UV fluorescence technique to target the aromatic component of the oil contamination. Through a site calibration this aromatic tag provides an indication relative to total oil.

A continuous sample flow is tapped or pumped off the process line and directed through the HydroSense chamber. It passes behind the non-contacting UV light source and is targeted with filtered light energy. The soluble and emulsified oils in the water will excite from this light energy and fluoresce light energy back out of the water at a signature wavelength. The intensity of light energy at this wavelength is measured to provide an indication of the ppm concentration.



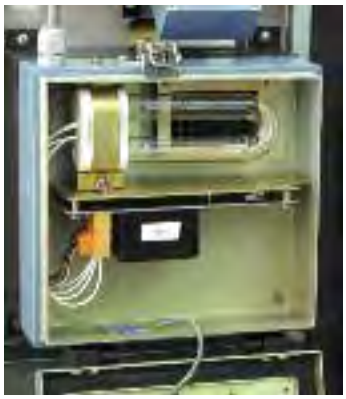
The backlit 4-line display provides easy menu driven commands for set-up, calibration, and diagnostics.

Available accessories include air pressurization/purging systems, sample coolers and pumps.

System Maintenance

To ensure a long term and reliable operation a routine maintenance schedule should be implemented. Arjay has made this operation quick and easy. The following are a few of the standard maintenance and design features built into every unit.

- The sensing chamber is hermetically sealed from the upper control unit. This not only keeps the control components dry but also allows keypad and wiring access without opening the sensing chamber.
- Operator clean time is less than 2 minutes and no tools are required for any procedure. Power or sample flow do not need to be turned off.
- Lamp replacement is equally easy. A sensor independently monitors the lamp life. The LCD display and a maintenance relay will warn of an impending need for replacement so an operator can schedule this replacement without any downtime.
- Full diagnostics are accessed on the LCD display.
- The system automatically compensates for temperature and zero calibration (offset) shifting due to lamp aging.
- The system automatically compensates for background or stray light energy.
- The controller reads the sample over 50 times per second and averages these readings to provide an updated output.
- The unique glass flow plate design provides a stable representative sample of the passing stream.
- All modular components are plug-in for easy servicing



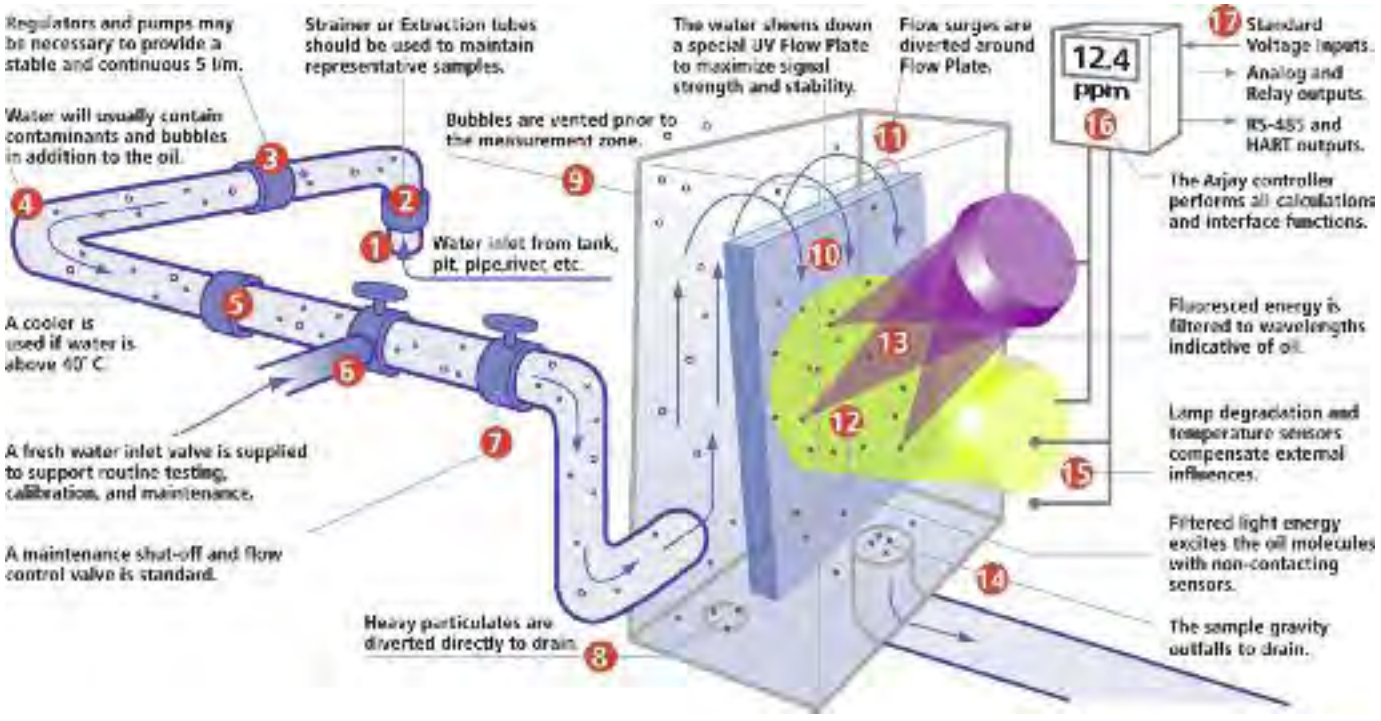
The unique sensing chamber design allows easy access to the controls and wetted components. The lamp/receiver unit is simply lifted and placed onto the convenient door rack. For any routine cleaning, the flow plate can be wiped in place or removed.

HydroSense-**2410**

ppm Oil in Water Monitor

Features and Benefits

- The special UV absorbing flow plate sheens the water over a large surface area.
  The resulting high surface area to depth ratio provides many benefits.
  - The sensitivity to oil molecules is increased by maximizing the optical viewing area
  - The minimal depth discourages oil molecules from 'hiding' behind particulates in the water
  - The large lamp source targets the water from multiple angles to get a representative sampling of all oil
  - The large sample target area ensures a representative and stable snapshot of the water conditions
  - The unit can tolerate suspended solids up to 400 mg/l
- non-contacting optics minimizes maintenance
- compensation for temperature and lamp degradation minimizes recalibration requirements
- alarm warns of impending lamp replacement
- long life lamp expectancy of 18 months
- continuous on-line monitoring reads the water 50 times/second with an averaged display update every one second
- no consumables or chemical used
- sample flow gravity outfalls to drain
- available with CSA Zone 2 approval or with NFPA/ATEX Pressurization Systems for Zone 2
- designed for harsh environments with a 316 SS housing
- no tools necessary for routine maintenance or lamp replacement
- the flow or power does not require to be turned off during routine maintenance
- flow chamber diversion system conditions and clarifies sample
- multi-point calibration available to customize response curves
- overflow baffle de-aerates bubbles
- certified to IMO MPEC.107(49) when interfaced with site logging and by-pass requirements



HydroSense-2410
ppm Oil in Water Monitor

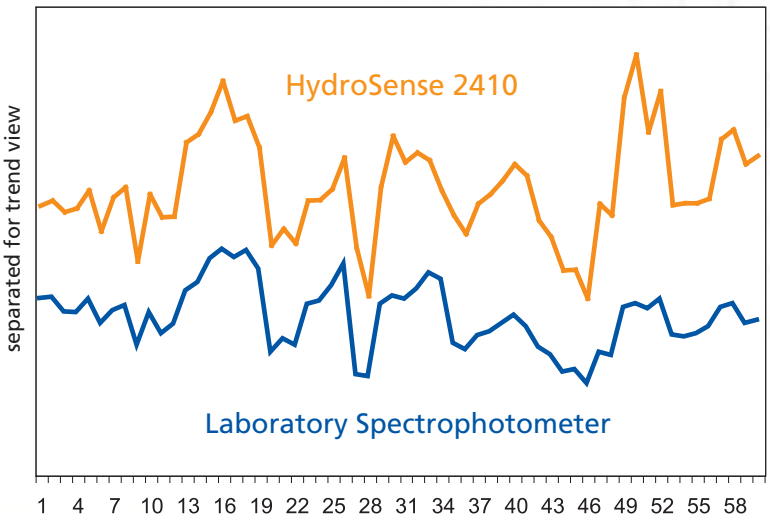
Performance

The performance is based on the site calibration to a known hydrocarbon concentration in stable background water. Changes in hydrocarbon make-up and background stability may affect the output. Through a simple calibration, this unit correlates well with laboratory ISO and EPA methods.

All calibration, relays, signal outputs and power wiring are available at the main control unit.

Technical Specifications - Control Unit

Range	user selectable 0-10 ppm to 0-5,000 ppm minimum alarm setpoint 3 ppm
Display Resolution	0.1 ppm
Instrument Accuracy	+/- 0.1 ppm
Process Accuracy	+/- 1.0 ppm under stable conditions
Oil Type	All PAH hydrocarbons, free and dissolved
Sensitivity	145 ppb diesel reference 463 ppb crude reference
Ambient Operating Temp.	5˚C to 55˚C (best accuracy between 10˚C to 40˚C) Protect from direct sun or rain. Instrument shelter or indoor use is recommended. Air Conditioners available.
Ambient Process Temp.	0˚C to 40˚C (optional cooler for temperatures >40˚C)
Power Input	24 vdc or 110 vac or 220 vac
Alarm Relays	4 x 10 amp, SPDT, dry
Output	4-20 mA, Isolated
Interface	RS-485 standard (optional HART and FF modules)
Standards	UL, CSA, CE, ABS, CSA Div 2, T3C Groups A,B,C,D, Zone 2. Pressurization/Purge available for use in Zone 2. NFPA/ATEX. IMO MPEC.107(49) Certified (see site interface requirements)
Enclosure	316 SS, Type 4X, IP65



documented field results from offshore oil platform (Jan 24 – Mar 04 '02)

The HydroSense 2410 correlates well against laboratory methods and is ideal for process trending and continuous on-line monitoring.

HydroSense **3410**

ppm Oil in Water Monitor

On-line monitoring for ppm petroleum oil in industrial filtered water and cooling water

The HydroSense 3410 offers a high accuracy approach to monitoring low concentrations of free and soluble oils in water. Combining many unique design features into a compact package makes this an ideal solution to monitoring for oil contamination in your water system.

- Fluorescence technology is selective to ppm levels of petroleum hydrocarbons by targeting their aromatic faction
- Continuous on-line monitoring without chemicals or lag time
- Internal ultrasonic pad helps keep the flow-through sample cell clean to reduce contamination error

HYDROSENSE 3410

The HydroSense 3410 uses a UV fluorescence technique to target the aromatic component of the oil contamination. Through a site calibration this aromatic tag is able to provide an indication relative to total oil.

A slip stream approach directs a continuous sample flow through the HydroSense unit and back into the process stream. While it passes through the sample cell, filtered UV light is targeted in the water. The soluble and emulsified oils in the water will excite from this light energy and fluoresce light energy back out of the water at a signature wavelength. The intensity of light energy at this wavelength is measured to provide an indication of the ppm concentration.

Features and Benefits

- ultrasonic disc generates a continuous cleaning action within the sample cell to reduce maintenance frequency
- compensation for temperature and lamp deterioration minimizes re-calibration requirements
- long life lamp
- desiccant chamber keeps electronics dry in humid conditions
- continuous display updates every one second
- no consumables or chemical used
- sample flow returns to the process
- sample cell can be exchanged with prepared samples for easy testing and calibration
- no tools necessary for routine maintenance

Technical Specifications - Control Unit

Operating Temp.	10˚C to 50˚C
Power Input	24 vdc or 110 vac or 220 vac
Alarm Relays	2 x 2 amp, SPDT, dry
Output	4-20 mA or RS-485
Standards	UL, CSA, CE IMO MPEC.107(49) Certified (see site interface requirements)
Enclosure	Type 4X polycarbonate, IP65
Range	0-100ppm, minimum alarm setpoint 3 ppm
Display Resolution	0.1 ppm
Instrument Accuracy	+/- 0.1 ppm
Process Accuracy	+/- 1.0 ppm under stable conditions
Oil Type	All PAH hydrocarbons free and dissolved

Performance

The performance is based on the site calibration to a known hydrocarbon concentration in stable background water. Changes in hydrocarbon make-up and background stability may affect the output. Through a simple calibration, this unit correlates well with laboratory ISO and EPA methods.

The flow-through sample cell is easily removed to insert a test standard.

The unit comes complete with power supply module, sample tubing and control valves.

HydroSense **3420**
ppm Oil in Water Monitor

On-line alarm for oil presence in filtered effluent and cooling water

The HydroSense 3420 offers a low cost approach to monitoring ppm concentrations of emulsified free oils in clean water. Combining many unique design features into a compact package makes this an ideal solution to monitoring for oil leaks in your water system.

- Light scatter technology responds to petroleum, synthetic and vegetable oils
- Continuous on-line monitoring without chemicals or lag time
- Internal ultrasonic pad helps keep the flow-through sample cell clean to reduce contamination error

HYDROSENSE 3420

The HydroSense 3420 uses a light scatter technique to respond to oil contamination in the water.

A slip stream approach directs a continuous sample flow through the HydroSense unit and back into the process stream. While it passes through the sample cell a controlled light source is directed into the water. The emulsified oils in the water will scatter the light toward the light sensors placed strategically around the cell. The intensity of light energy is measured to provide an indication of the ppm concentration.

Features and Benefits

- ultrasonic disc generates a continuous cleaning action within the sample cell to reduce maintenance frequency
- compensation for temperature and lamp deterioration minimizes re-calibration requirements
- long life lamp
- desiccant chamber keeps electronics dry in humid conditions
- continuous display updates every one second
- no consumables or chemical used
- sample flow returns to the process
- sample cell can be exchanged with prepared samples for easy testing and calibration
- no tools necessary for routine maintenance

Technical Specifications - Control Unit

Operating Temp.	10˚C to 50˚C (optional to 90˚C)
Power Input	24 vdc or 110 vac or 220 vac
Alarm Relays	2 x 2 amp, SPDT, dry
Output	4-20 mA or RS-485
Standards	UL, CSA, CE
Enclosure	Type 4X polycarbonate, IP65
Range	0-100ppm, minimum alarm setpoint 3 ppm
Display Resolution	0.1 ppm
Instrument Accuracy	+/- 0.1 ppm
Process Accuracy	+/- 1.0 ppm under stable conditions
Oil Type	All free and non-dissolved oils, > 2 micron

Performance

The performance is based on the site calibration to a known oil concentration in stable background water. Changes in oil make-up and background stability may affect the output. Through a simple calibration, this unit correlates well with laboratory ISO and EPA methods.

The flow-through sample cell is easily removed to insert a test standard.

The unit comes complete with power supply module, sample tubing and control valves.

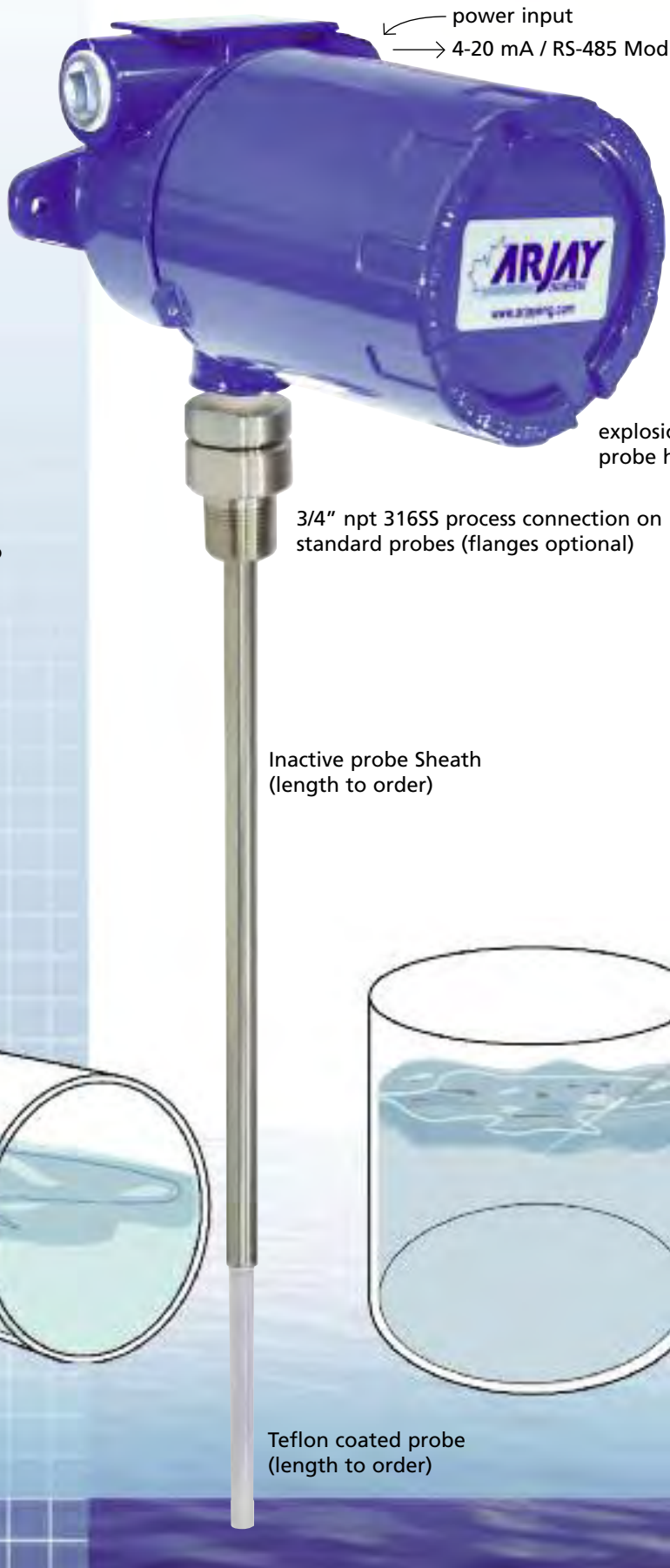
2880-OWI / 2881-OWI / 2882-OWI
Oil/Water Interface Transmitter

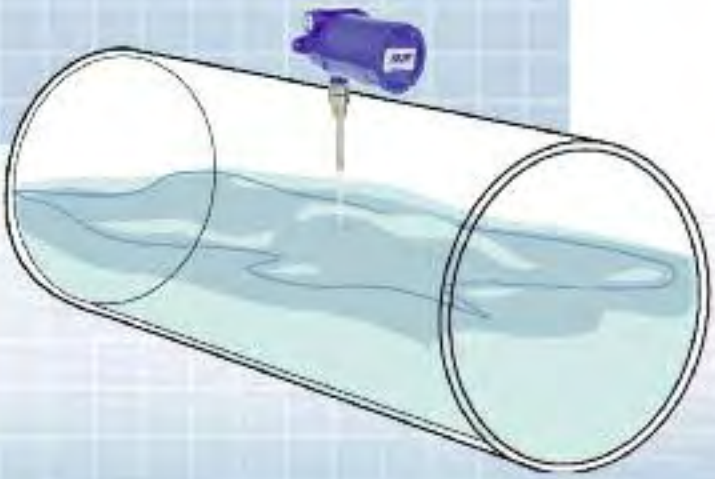
Reliable monitoring of oil/water interface and emulsions

Over 40 years of capacitance experience stands behind the 2880-OWI transmitter. The sensing probe continuously monitors the capacitance of the inserted probe. As the interface or emulsion layer (rag layer) crosses over the probe, a proportional 4-20 mA output is provided. Typical applications include oil water separators, oil/water knock-out tanks, treater trains and decanting tanks.

- capacitance technology does not foul or require cleaning
- no moving parts
- remote monitor mounts safely away from the process

The 2880-OWI sensing probe monitors the capacitance field around the probe. A calibration is performed against the an oil condition and a water condition. The active portion of the probe is fully submerged into the liquid and sized to your targeted range of interest. As the oil/water interface or emulsion crosses or envelopes the probe, the capacitance change is tracked and an output of 4-20 mA is provided.





2880-OWI

Features and Benefits

- no moving parts
- electronics is integral to the probe
- high corrosion resistant Teflon and stainless steel wetted parts
- capacitance technology responds to all oil types
- HF capacitance technology does not require routine cleaning
- easy calibration and control set-up

Technical Specifications - Electronics

Operating Temp.	-20˚C to +55˚C
Resolution	.007% (.07 pF at 1,000 pF)
Accuracy	.04% of full scale pF
Power Input	12 vdc or 24 vdc, 0.1 amp max. 100-240 vac +/- 10%
Communication	RS-485 Modbus
Control Interface	
2880-OWI	0/4-20 mA non-isolated output
2881-OWI	0/4-20 mA isolated output
2882-OWI	0/4-20 mA non-isolated output and 2 x 10amp@240 vac, SPDT, dry relays
Optional	Viewing window of % Level LCD

Technical Specifications - Probe

Process Temp.	-60°C to +260°C (Teflon probe)
Pressure	103 bar/10342 kPA/1500psi at stable temperature
CRN	ABSA-CRN #OF07450.2
Wetted Parts	316SS and Teflon

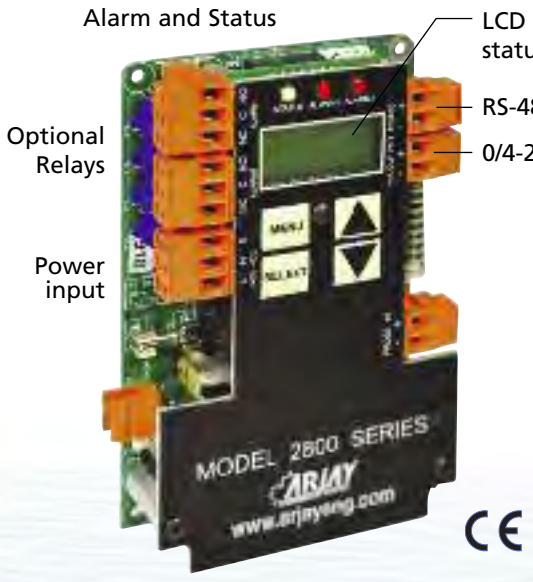
Probe materials are eligible for NACE MR-0175 Compliance

Hazardous Location Use

Available Component Certifications may be suitable to your application. Consult Arjay for assistance.

2880 Electrical Safety	UL, CSA, or IEC 61010
Housing	UL / FM / CSA Class 1, Group B,C,D; Class II, Group E,F,G
Probe	CSA Class 1, Group C,D

The electronics for this model can also be mounted remote from the probe. Refer to the Model 2852-OWI. The probe becomes Intrinsically Safe when ordered with an IS Barrier installed in 2852-OWI control panel: CSA Div 1, Class 1, Groups A,B,C,D



All calibration and power wiring is done at the main control unit. This is mounted directly onto the probe.

2852-OWI / 2851-OWI
Oil/Water Interface Monitor

Reliable monitoring of oil/water interface and emulsions

Over 40 years of capacitance experience stands behind the 2852-OWI monitor. The sensing probe continuously monitors the capacitance of the inserted probe. As the interface or emulsion layer (rag layer) crosses over the probe, a proportional 4-20 mA output is provided. Typical applications include oil water separators, oil/water knock-out tanks, treater trains and decanting tanks.

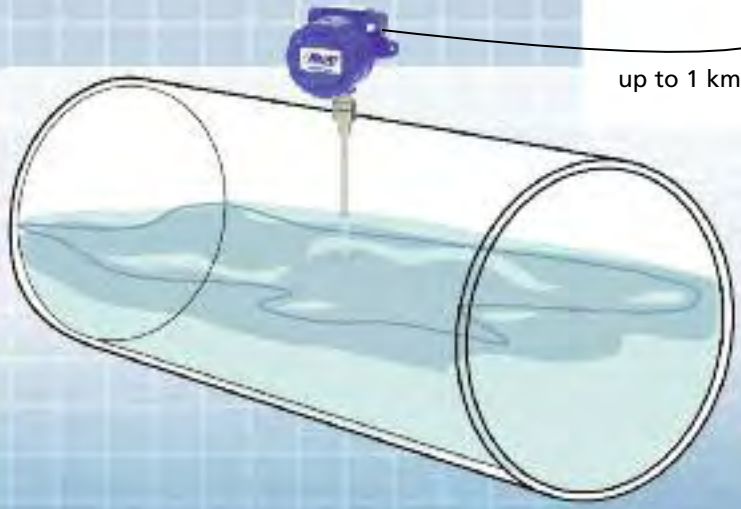
- capacitance technology does not foul or require cleaning
- no moving parts
- remote monitor mounts safely away from the process

The 2852-OWI sensing probe monitors the capacitance field around the probe. A calibration is performed against the an oil condition and a water condition. The active portion of the probe is fully submerged into the liquid and sized to your targeted range of interest. As the oil/water interface or emulsion crosses or envelopes the probe, the capacitance change is tracked and an output of 4-20 mA is provided.

optional alarm light and/or buzzer

Remote Electronics available in painted steel, SS or polycarbonate enclosure

up to 1 km



2852-OWI

Features and Benefits

- no moving parts
- remote electronics via standard twisted pair
- explosion proof probe is standard
- probe is available with Intrinsically Safe option for alternative HazLoc protection
- high corrosion resistant Teflon and stainless steel wetted parts
- capacitance technology responds to all oil types
- HF capacitance technology does not require routine cleaning
- easy calibration and control set-up

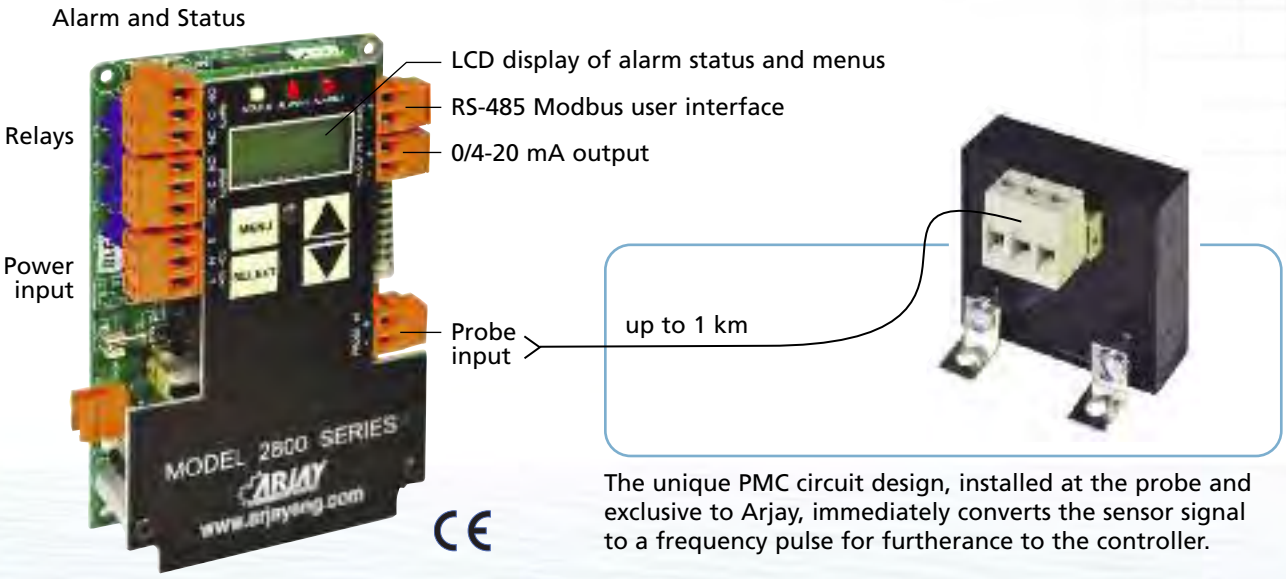
Technical Specifications - Control Unit

Operating Temp.	-20˚C to +55˚C
Resolution	.007% (.07 pF at 1,000 pF)
Accuracy	.04% of full scale pF
Power Input	12 vdc or 24 vdc or 100-240 vac +/- 10%
Alarm Relay	2 x 10 amp@240 vac, SPDT dry, discrete relays with differential control (2852-OWI only)
Analog Output	4-20mA proportional output, non-isolated
Communication	Modbus RS-485
Certified	UL 61010-1, 2nd Edition CAN/CSA-22.2 61010-1-4 IEC/EN 61010-1, 2nd Edition IEC 61326-1 CE Declared
Enclosure	Type 4/IP 66 painted steel or Type 4X/IP 66 polycarbonate or SS
Optional	Light, buzzer, beacon (2852-LT only)
2851-OWI	as above: no relays, isolated 4-20mA

Technical Specifications - Probe

Probe	-60˚C to +260˚C
PMC	-60˚C to +55˚C
Approval	CSA Div 1, Class 1, Groups C,D ABSA-CRN #0F07450.2
Intrinsic Safety	CSA Intrinsically Safe when ordered with Approved Barrier in Control Unit Div 1, Class I, Groups A,B,C,D; Class II, Groups E,F,G; Class III, Encl.Type 4
Wetted Parts	316SS and Teflon

Sensor materials are eligible for NACE MR-0175 Compliance



The unique PMC circuit design, installed at the probe and exclusive to Arjay, immediately converts the sensor signal to a frequency pulse for furtherance to the controller.

2852-IFA
Liquid Interface Alarm

Reliable interface monitoring for alarm between two liquids

Over 40 years of capacitance experience stands behind the 2852-IFA Liquid Interface Alarm. The sensing probe continuously monitors the liquid in a vessel and will alarm when the interface of a different dielectric liquid crosses the active probe. Typical applications include oil/water interface in pipes and separators, water accumulation in fuel tank bottoms, and product phase changes in process piping streams.

- capacitance technology does not foul or require cleaning
- no moving parts
- remote alarm unit mounts away from the process for safety and ease of control wiring

The 2852-IFA sensing probe monitors the capacitance field around the probe. The probe is calibrated to one of the liquids. As the interface of the second product crosses over the probe, the probe capacitance changes. This change is used to activate the relays for alarm and control.

2852-IFA

Features and Benefits

- no moving parts
- remote electronics via standard twisted pair
- explosion proof probe is standard
- probe is available with Intrinsically Safe option for alternative HazLoc protection
- high corrosion resistant Teflon and stainless steel wetted parts
- capacitance technology responds to all liquid types
- HF capacitance technology does not require routine cleaning
- easy calibration and control set-up

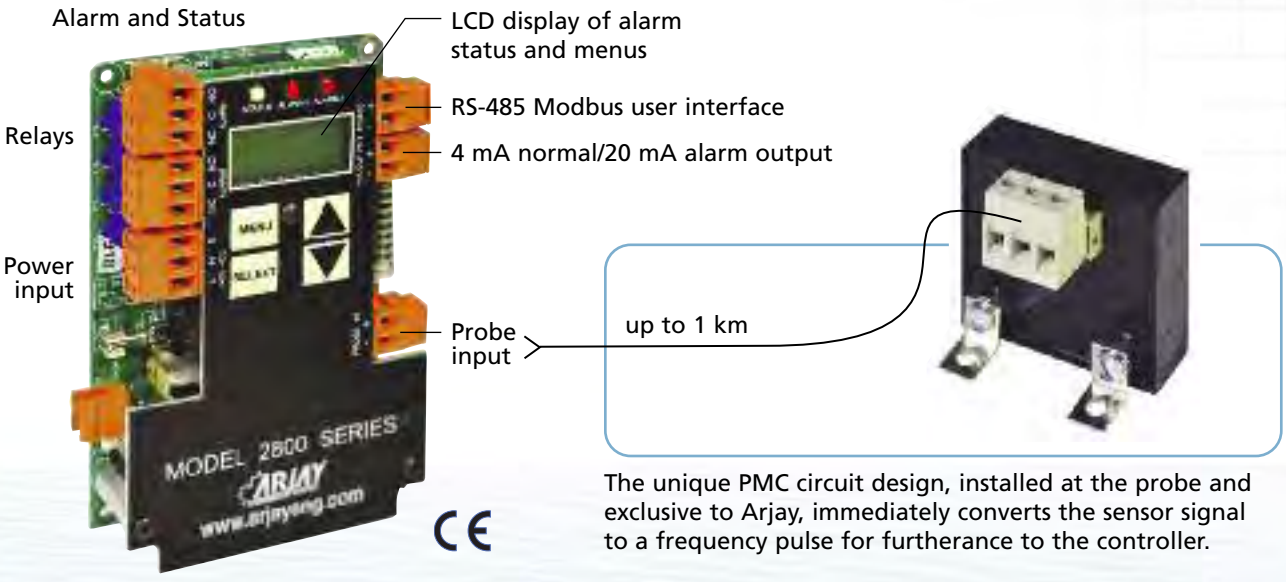
Technical Specifications - Control Unit

Operating Temp.	-20˚C to +55˚C
Resolution	.007% (.07 pF at 1,000 pF)
Accuracy	.04% of full scale pF
Power Input	12 vdc or 24 vdc or 100-240 vac +/- 10%
Alarm Relay	2 x 10 amp@240 vac, SPDT, dry
Analog Output	4 mA normal/20 mA alarm
Communication	Modbus RS-485
Certified	UL 61010-1, 2nd Edition CAN/CSA-22.2 61010-1-4 IEC/EN 61010-1, 2nd Edition IEC 61326-1 CE Declared
Enclosure	Type 4/IP 66 painted steel or Type 4X/IP 66 polycarbonate or SS
Optional	Light, buzzer, beacon

Technical Specifications - Probe

Probe	-60˚C to +260˚C
PMC	-60˚C to +55˚C
Approval	CSA Div 1, Class 1, Groups C,D
Intrinsic Safety	CSA Intrinsically Safe when ordered with Approved Barrier in Control Unit Div 1, Class I, Groups A,B,C,D; Class II, Groups E,F,G; Class III, Encl.Type 4
Wetted Parts	316SS and Teflon

Probe materials are eligible for NACE MR-0175 Compliance



The unique PMC circuit design, installed at the probe and exclusive to Arjay, immediately converts the sensor signal to a frequency pulse for furtherance to the controller.

2852-OWS
Oil/Water Separator & Sump Alarm

Reliable interface monitoring of oil/water separators, sump pits and containments for pump control and alarm

Over 40 years of capacitance experience stands behind the 2852-OWS oil/water alarms. The sensing probe continuously monitors for the oil/water interface in a water filled sump or separator. It is typically used to control pumps, operate valves, or activate alarms.

- capacitance technology does not foul or require routine cleaning
- no moving parts
- remote monitor mounts away from the process for operator safety and ease of control wiring.

The 2852-OWS sensing probe monitors the capacitance field around the active probe tip. As the volume of separated oil increases in the separator or is drawn down toward the probe tip, the probe capacitance changes. This change is used to activate the relay for alarm interface and control.

explosion proof head

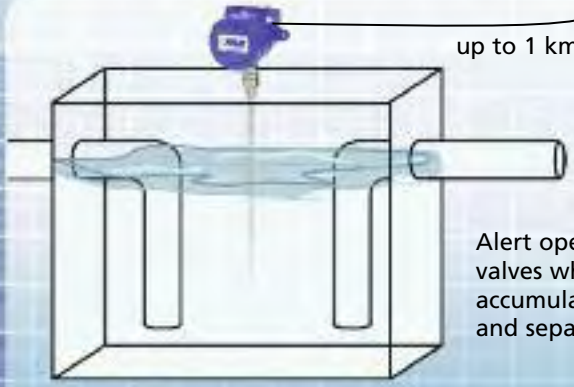
3/4" npt 316SS
process connection

optional alarm light and/or buzzer

Remote Electronics available in painted steel, SS or polycarbonate enclosure

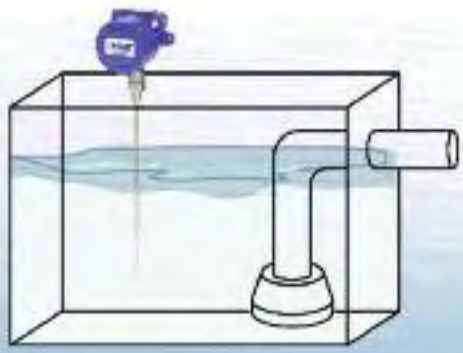
Inactive sheath
eliminates false alarms
from surging

up to 1 km



Alert operators or control valves when oil has accumulated in interceptors and separators

Shut down of pumps in sumps to avoid the risk of pumping oil to the drain



Teflon sensing probe

2852-OWS

Features and Benefits

- no moving parts
- remote electronics via standard twisted pair
- explosion proof probe is standard
- probe is available with Intrinsically Safe option for alternative HazLoc protection
- high corrosion resistant Teflon and stainless steel wetted parts
- capacitance technology responds to all oil types
- HF capacitance technology does not require routine cleaning
- easy calibration and control set-up

Need to know the oil depth in your separator?
Look to the **Arjay 4100-OWS** Oil/Water Separator Monitor

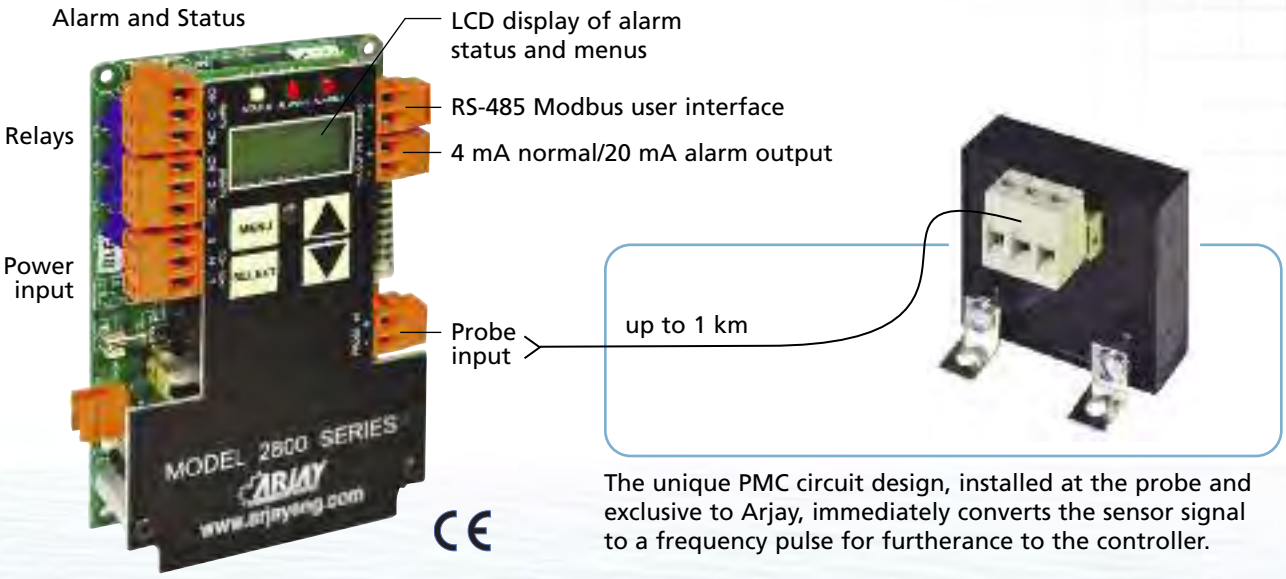
Technical Specifications - Control Unit

Operating Temp.	-20˚C to +55˚C
Resolution	.007% (.07 pF at 1,000 pF)
Accuracy	.04% of full scale pF
Power Input	12 vdc or 24 vdc or 100-240 vac +/- 10%
Alarm Relay	2 x 10 amp@240 vac, SPDT, dry
Analog Output	4 mA normal/20 mA alarm
Communication	Modbus RS-485
Certified	UL 61010-1, 2nd Edition CAN/CSA-22.2 61010-1-4 IEC/EN 61010-1, 2nd Edition IEC 61326-1 CE Declared
Enclosure	Type 4/IP 66 painted steel or Type 4X/IP 66 polycarbonate or SS
Optional	Light, buzzer, beacon

Technical Specifications - Probe

Probe	-60˚C to +260˚C
PMC	-60˚C to +55˚C
Approval	CSA Div 1, Class 1, Groups C,D (also available I.S. with an Intrinsic Safety Barrier at the Contol unit) ABSA-CRN #0F07450.2
Intrinsic Safety	CSA Intrinsically Safe when ordered with Approved Barrier in Control Unit Div 1, Class I, Groups A,B,C,D; Class II, Groups E,F,G; Class III, Encl.Type 4
Wetted Parts	316SS and Teflon

Probe materials are eligible for NACE MR-0175 Compliance



The unique PMC circuit design, installed at the probe and exclusive to Arjay, immediately converts the sensor signal to a frequency pulse for furtherance to the controller.

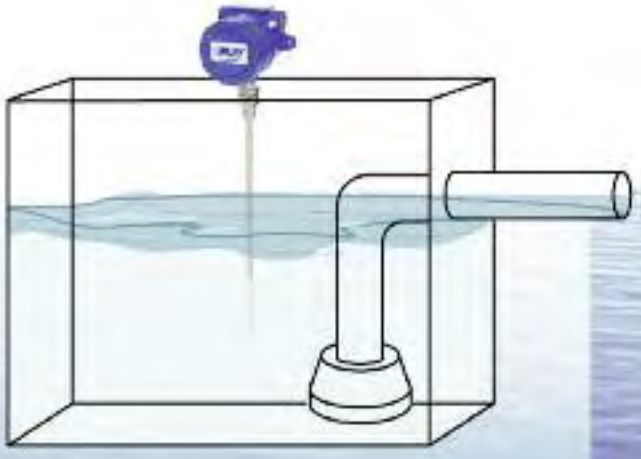
2882-OWS
Oil/Water Separator & Sump Alarm

Reliable monitoring for the oil/water interface in separators

Over 40 years of capacitance experience stands behind the 2882-OWS Separator Alarm. The probe is inserted into the separator or sump to the depth of desired oil accumulation. The electronics is calibrated to the capacitance field around the probe. As oil accumulates and displaces the water, the capacitance change around the probe tip is monitored to activate the relays.

- no moving parts
- electronics are integral to probe
- high corrosion resistant Teflon and 316SS parts
- HF capacitance does not require routine cleaning
- easy calibration and control set-up

Adjustable time delay and sensitivity adjustment is standard to suppress spurious alarms from intermittent turbulence and wash-down.



2882-OWS

Features and Benefits

- no moving parts
- electronics is integral to the probe
- high corrosion resistant Teflon and stainless steel wetted parts
- capacitance technology responds to all oil types
- HF capacitance technology does not require routine cleaning
- easy calibration and control set-up

Technical Specifications - Electronics

Operating Temp.	-20˚C to +55˚C
Resolution	.007% (.07 pF at 1,000 pF)
Accuracy	.04% of full scale pF
Power Input	12 vdc or 24 vdc, 0.1 amp max. 100-240 vac +/- 10%
Communication	RS-485 Modbus
Control Interface	2 x 10amp@240 vac, SPDT, dry relays plus 4mA Normal / 20 mA alarm output

Technical Specifications - Probe

Process Temp.	-60°C to +260°C (Teflon probe)
Pressure	103 bar/10342 kPA/1500psi at stable temperature
CRN	ABSA-CRN #OF07450.2
Wetted Parts	316SS and Teflon

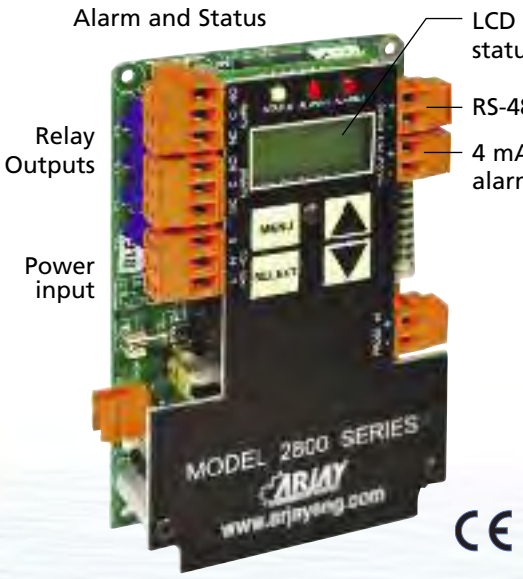
Probe materials are eligible for NACE MR-0175 Compliance

Hazardous Location Use

Available Component Certifications may be suitable to your application. Consult Arjay for assistance.

2880 Electrical Safety	UL, CSA, or IEC 61010
Housing	UL / FM / CSA Class 1, Group B,C,D; Class II, Group E,F,G
Probe	CSA Class 1, Group C,D

The electronics for this model can also be mounted remote from the probe. Refer to the Model 2852-OWS. The probe becomes Intrinsically Safe when ordered with an IS Barrier installed in 2852-OWS control panel: CSA Div 1, Class 1, Groups A,B,C,D



All calibration and power wiring is done at the main control unit. This is mounted directly onto the probe.

4100-**OWS**
Oil/Water Separator Level Monitor

Continuous interface monitoring of static level oil/water separators

explosion proof
probe head

2" npt 316SS
process connection
or flanges available

316SS shield
for accuracy and
Auto Calibration

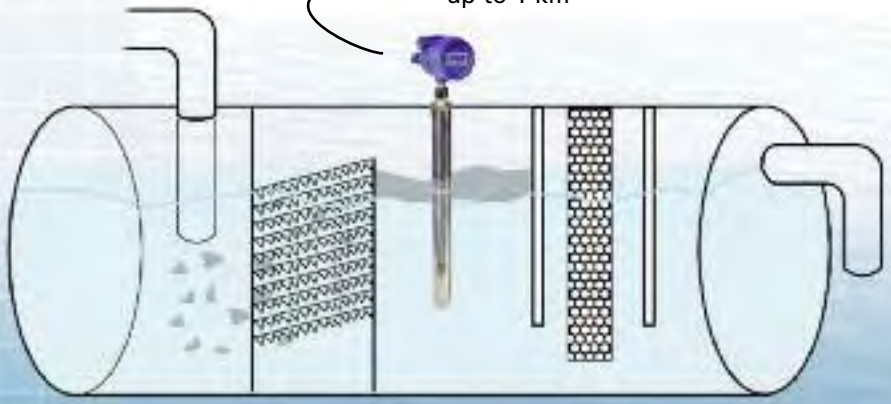
Over 40 years of Arjay's field proven HF capacitance experience has been applied to the 4100-OWS series monitors. This unique oil level system provides complete flexibility for monitoring oil water separators in one complete package.

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

The 4100-OWS sensing probe monitors the capacitance field between the probe and the concentric shield. As the oil accumulates and displaces the water, the probe capacitance changes. This interface signal is used to provide outputs, displays and relay control.

(beacon and buzzer optional)

up to 1 km



4100-OWS

Features and Benefits

- no moving parts
- remote electronics via standard twisted pair
- all set-up, calibration and diagnostics is done at the control panel
- 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
- tank view display for ease of reading
- trend display of hour, day or month increments
- single point calibration
- relays for valve control, alarms and pump run-time

Optional Interfaces

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

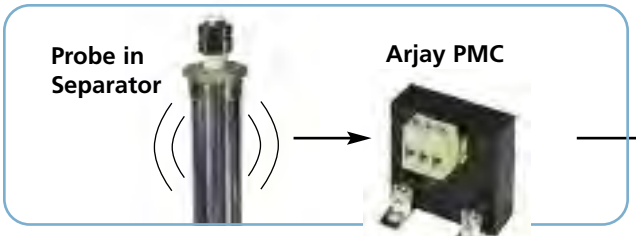
Technical Specifications - Control Panel

Operating Temp.	0˚C to +55˚C
Resolution	.007% (.07 pF at 1,000 pF)
Accuracy	.04% 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 of oil trend line selectable hours, days or none
Relay Output	four SPDT, 10 amp @ 240 vac, dry Pump relay has a discrete run time with level re-set
Enclosure	Type 4 metal painted blue / IP 66 optional Type 4X SS or polycarbonate
Approvals to	UL / CSA / CE IEC 61010

Technical Specifications - Probe

Process Temp.	-60˚C to +260˚C
Ambient Temp.	-60˚C to +55˚C
Pressure	103 bar/10342 kPA/1500psi at stable temperature
Process Connection	available 2" npt threaded or flanged
Explosion Proof Intrinsic Safety	CSA Div 1, Class 1, Groups C,D Approved Intrinsically Safe when ordered with Approved Barrier in Control Unit CAN/CSA E60079-11: Class I, Groups A,B,C,D; Class II, Groups E,F,G; Class III, Encl.Type 4
CRN	ABSA-CRN #OF07450.2
Wetted Parts	316SS and Teflon

Probe materials are eligible for NACE MR-0175 Compliance



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 separator 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-OWS. This board monitors and controls the signals from the separator probe, applies the appropriate calibration algorithms and interfaces this information to the touch screen and PLC hardware.

2852-HCF
Floating Oil Spill Alarm

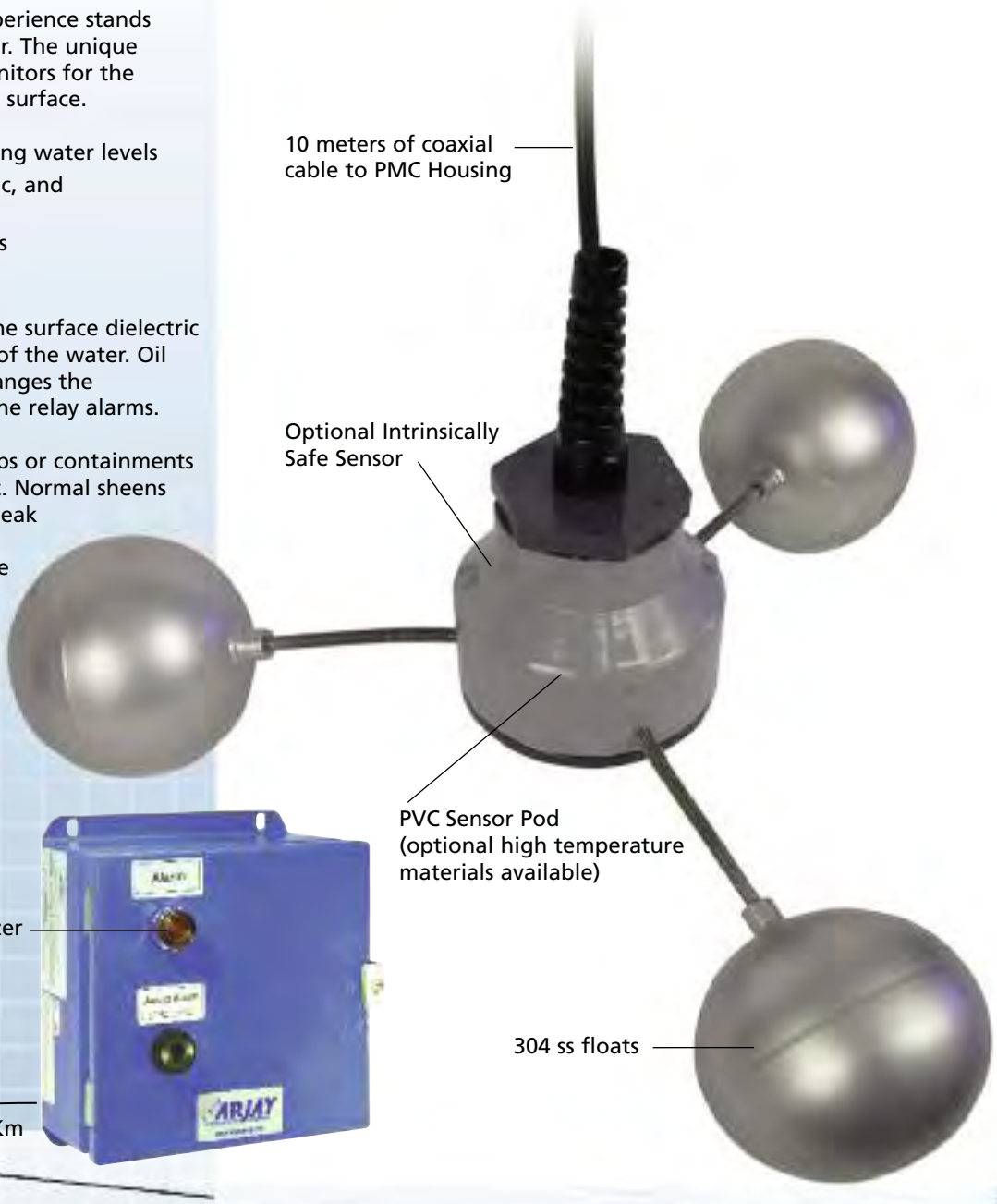
Reliable monitoring of sumps and containments for oil spills

Over 40 years of capacitance experience stands behind the 2852-HCF Oil Monitor. The unique floating sensor continuously monitors for the accumulation of oil at the water surface.

- Floating sensor follows changing water levels
- Alarms on petroleum, synthetic, and vegetable oils
- Potted stable sensor eliminates nuisance alarms

The 2852-HCF sensor monitors the surface dielectric and locks in on the capacitance of the water. Oil that separates to the surface changes the capacitance field and activates the relay alarms.

This unit is typically used in sumps or containments where oil is not typically present. Normal sheens will not alarm but an upstream leak or spill that accumulates in the sump will alarm the monitor. The floating design allows the unit to track the changing water level in the sump and immediately alert operators, pumps or valves if there is an accumulation of oils.



The 2852-HCF protects facilities from accidental pumping of oils to municipal storm drains or streams. Ideal in utilities, factories, treatment plants & commercial applications. Anywhere oil on water should be acknowledged.

2852-HCF

Features and Benefits

- stable tri-float design follows level changes
- adjustable time delay and sensitivity to eliminate nuisance alarms
- remote electronics via standard twisted pair
- sensor available Intrinsically Safe for Hazardous Locations
- waterproof PVC and SS wetted parts allow for use in harsh environments
- unit also alarms on dry sump conditions to shut down pumps
- capacitance technology responds to all types of oils and separated liquids of similar dielectrics
- alarms at a minimum of 2 mm surface oil, can be desensitized to 25mm oil

Need to know the oil thickness?
Look to the **Arjay 4100-HCF** Oil Thickness Monitor

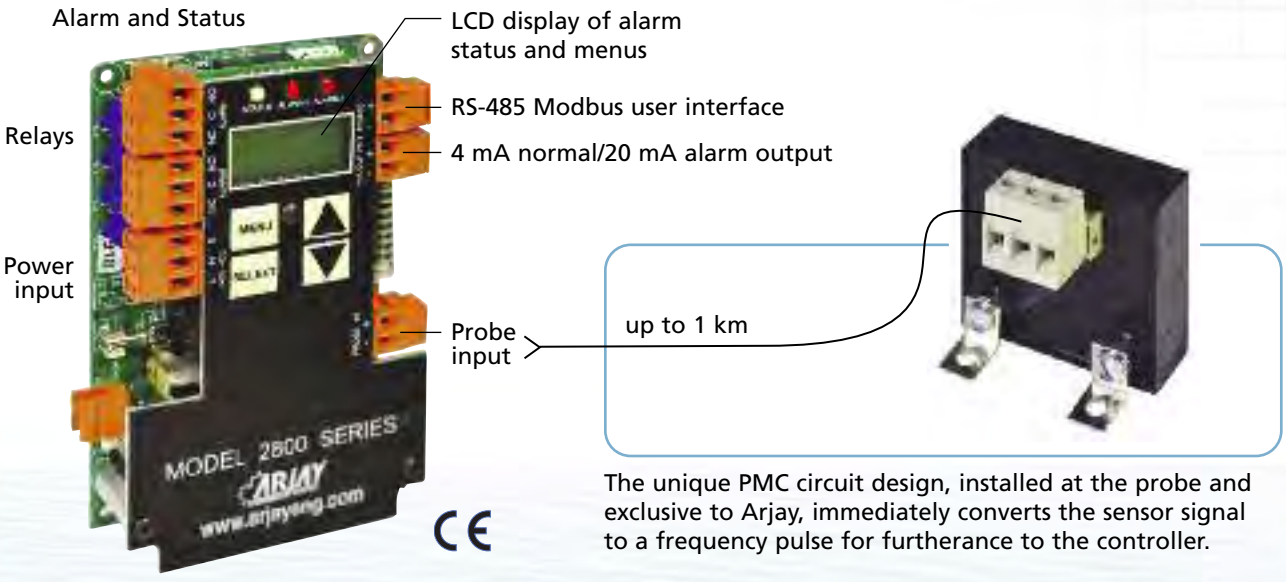
Technical Specifications - Control Unit

Operating Temp.	-20˚C to +55˚C
Resolution	.007% (.07 pF at 1,000 pF)
Accuracy	.04% of full scale pF
Power Input	12 vdc or 24 vdc or 100-240 vac +/- 10%
Alarm Relay	2 x 10 amp@240 vac, SPDT, dry
Analog Output	4 mA normal/20 mA alarm
Communication	Modbus RS-485
Certified	UL 61010-1, 2nd Edition CAN/CSA-22.2 61010-1-4 IEC/EN 61010-1, 2nd Edition IEC 61326-1 CE Declared
Enclosure	Type 4/IP 66 painted steel or Type 4X/IP 66 polycarbonate or SS
Optional	Light, buzzer, beacon

Technical Specifications - Float Sensor

Operating Temp.	0˚ to +55˚C (optional to 141˚C)
Intrinsic Safety	CSA Intrinsically Safe when ordered with Approved Barrier in Control Unit Div 1, Class I, Groups A,B,C,D; Class II, Groups E,F,G; Class III, Encl.Type 4
Wetted Parts	PVC and 304SS

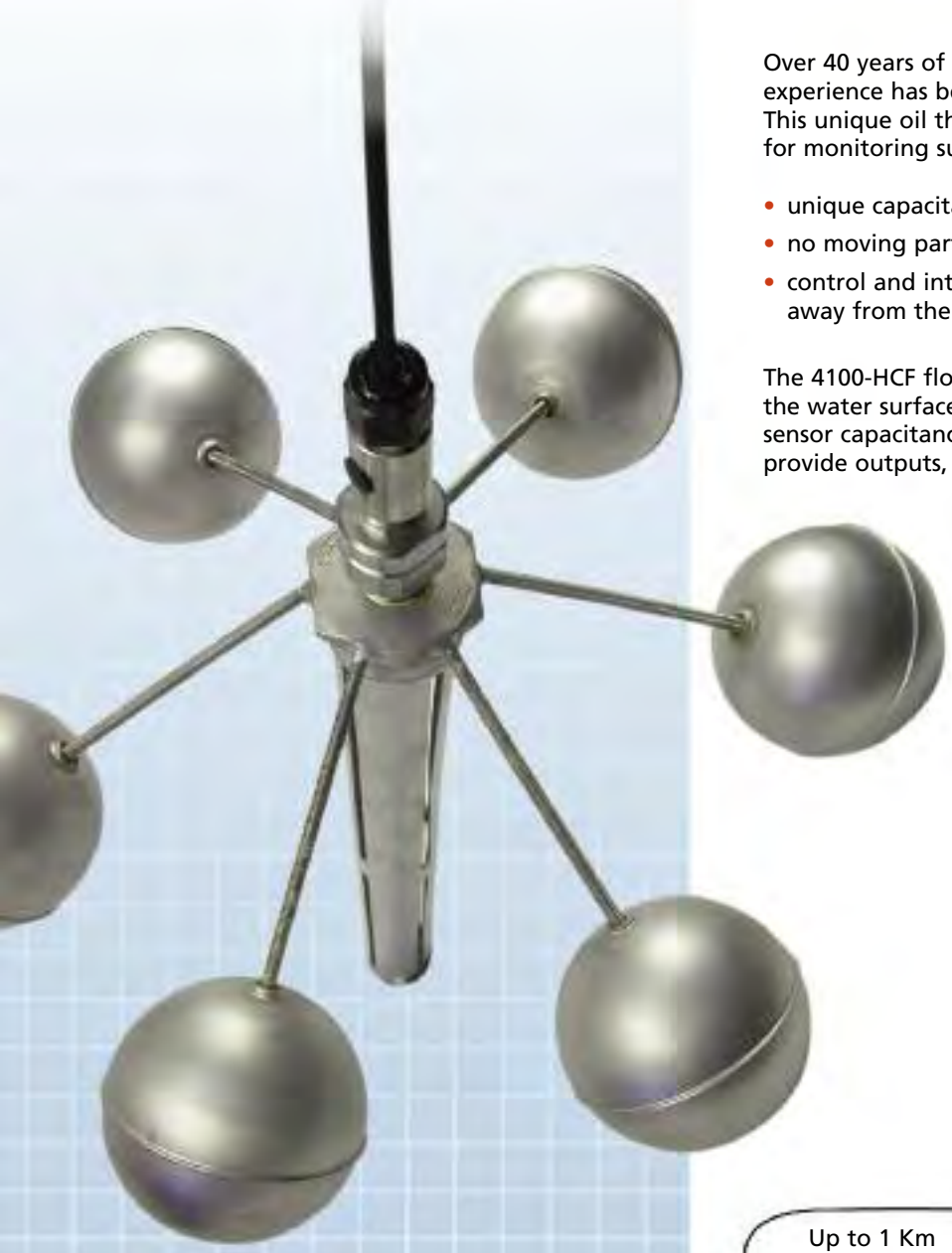
Optional sensor materials are eligible for NACE MR-0175 Compliance



The unique PMC circuit design, installed at the probe and exclusive to Arjay, immediately converts the sensor signal to a frequency pulse for furtherance to the controller.

4100-**HCF**
Floating Oil Thickness Monitor

Continuous monitoring of separated oil thickness on a water surface



Over 40 years of Arjay's field proven HF capacitance experience has been applied to the 4100-HCF series monitors. This unique oil thickness system provides complete flexibility for monitoring surface oil in one complete package.

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

The 4100-HCF float sensor monitors the capacitance field of the water surface. As the oil accumulates on the surface, the sensor capacitance changes. This interface signal is used to provide outputs, displays and relay control.

Up to 1 Km

(beacon and buzzer optional)

PMC Housing

Shown with Float #A00525
0-300mm range

4100-HCF

Features and Benefits

- no moving parts
- remote electronics via standard twisted pair
- all set-up, calibration and diagnostics is at the control panel
- all control wiring and interface is at the control panel
- HF capacitance technology does not require routine cleaning
- touch screen interface for easy set-up and user interface
- sump view display for ease of reading
- trend display of hour, day or month increments
- single point calibration
- relays for valve control, alarms and pump run-time

Optional Interfaces

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

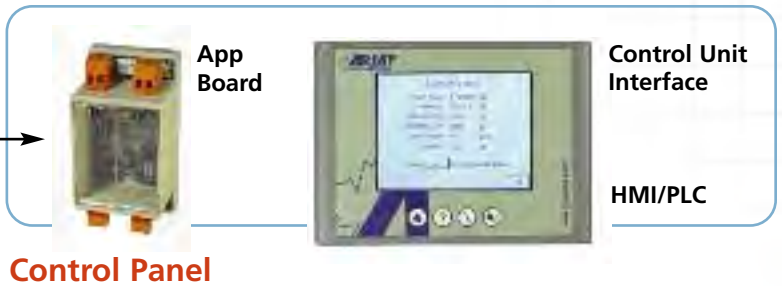
Technical Specifications - Control Panel

Operating Temp.	0˚C to +55˚C
Resolution	.007% (.07 pF at 1,000 pF)
Accuracy	.04% of full scale pF
Power Input	24 vdc or 80-240 vac +/-10%, 1P, 50-60 HZ
Display	touch screen full colour sump view graphics, % and engineering units of oil selectable trend line view or none
Relay Outputs	four SPDT, 10 amp @ 240 vac, dry Pump relay has a discrete run time with level re-set
Enclosure	Type 4 metal painted blue / IP 66 optional Type 4X SS or polycarbonate
Approvals to	UL / CSA / CE IEC 61010

Technical Specifications - Float Sensor

Style #A00083	0 to 25 mm (0-2") oil thickness range
Style #A00525	0 to 300mm (0-12") oil thickness range
Process Temp.	0˚C to +55˚C
Ambient Temp.	-60˚C to +55˚C
Intrinsic Safety	Approved Intrinsically Safe when ordered with Approved Barrier in Control Unit CAN/CSA E60079-11: Class I, Groups A,B,C,D; Class II, Groups E,F,G; Class III, Encl.Type 4
CRN	ABSA-CRN #OF07450.2
Wetted Parts	304SS, PVC and Teflon

Optional probe materials are eligible for NACE MR-0175 Compliance



Float Assembly

The Arjay PMC (pulse module circuit) installed near the float sensor converts the oil/water signals to a frequency pulse. This allows the controller to be safely mounted up to 1 km away from the sensor with virtually no loss to signal stability. No operator interface is required at the sensor 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-HCF. This board monitors and controls the signals from the separator probe, applies the appropriate calibration algorithms and interfaces this information to the touch screen and PLC hardware.

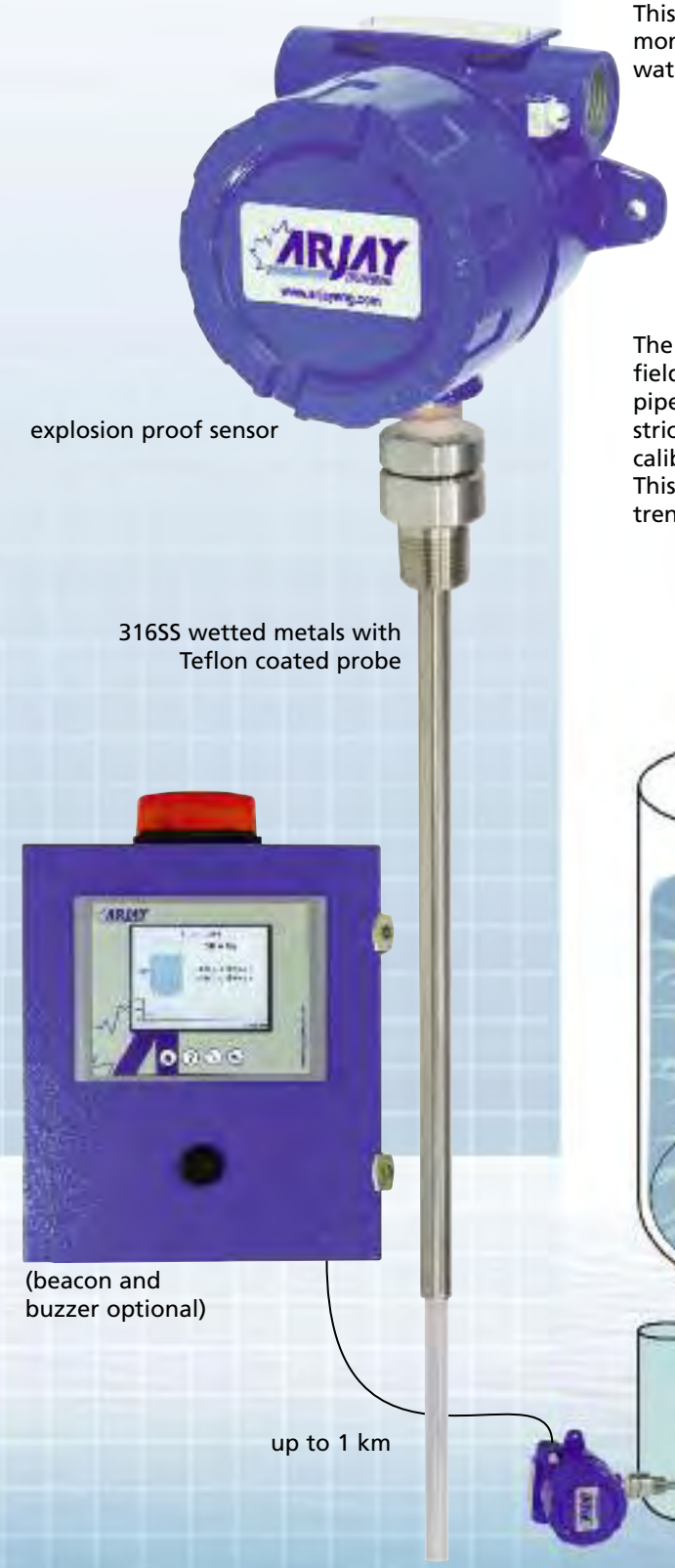
4100-**OWM**
% Oil/Water Monitor

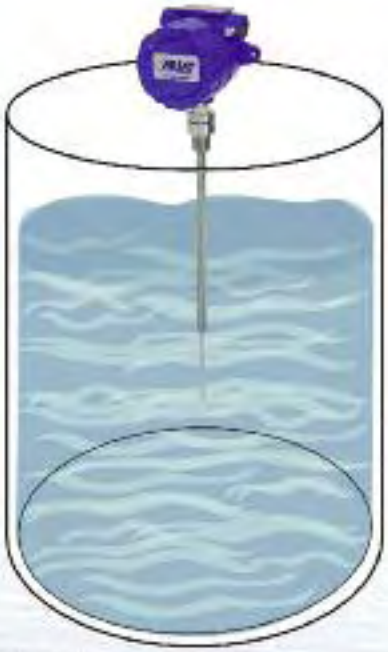
Continuous monitoring for % concentration of water in oil emulsions

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.

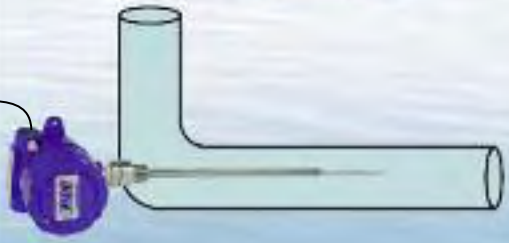
- unique capacitance approach eliminates routine cleaning
- no moving parts
- control and interface panel mounts safely away from the process
- tank or pipe installation

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.





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

Technical Specifications - Probe

Process Temp.	-60˚C to +260˚C
Ambient Temp.	-60˚C to +55˚C
Pressure	103 bar/10342 kPA/1500psi at stable temperature
Process Connection	available threaded or flanged
Explosion Proof	CSA Div 1, Class 1, Groups C,D
Intrinsic Safety	Approved Intrinsically Safe when ordered with Approved Barrier in Control Unit CAN/CSA E60079-11: Class I, Groups A,B,C,D; Class II, Groups E,F,G; Class III, Encl.Type 4
CRN	ABSA-CRN #OF07450.2
Wetted Parts	316SS and Teflon

Probe materials are eligible for NACE MR-0175 Compliance

Technical Specifications - Control Panel

Operating Temp.	0˚C to +55˚C
Resolution	.007% (.07 pF at 1,000 pF)
Accuracy	.04% 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
Approvals to	UL / CSA / CE IEC 61010

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. 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:	0-100%
Expected Accuracies in stable conditions:	
<1%:	not recommended
1-25% water in oil:	+/- 5% of reading
25-40% water in oil:	+/- 10% of reading
40-60% water in oil:	+/- 50% of reading
60-100% water in oil:	+/- 30% of reading

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.

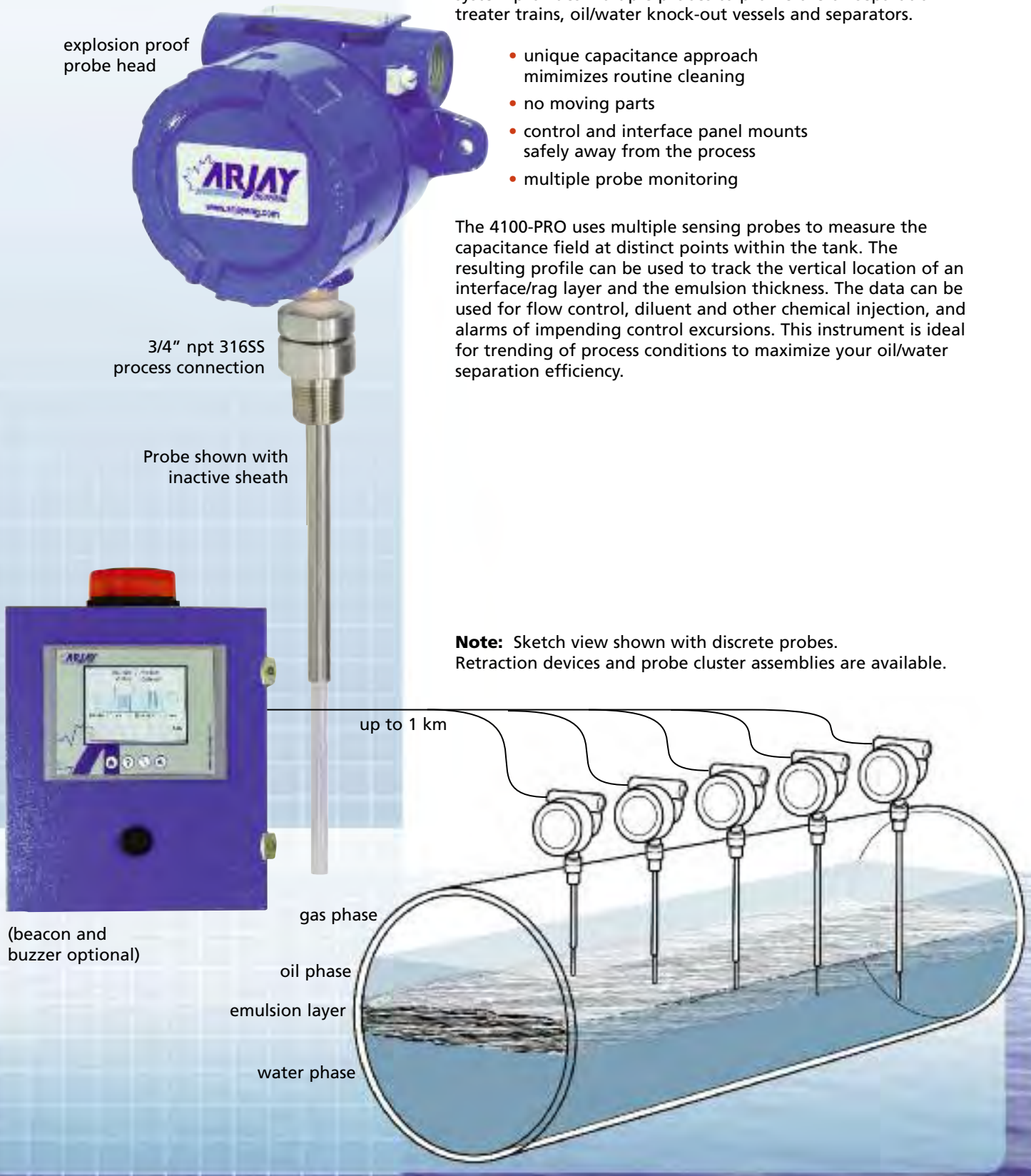
4100-**PRO**
Oil / Water Tank Profiler

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 mimimizes 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.



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

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 +260˚C
Ambient Temp.	-60˚C to +55˚C
Pressure	103 bar/10342 kPA/1500psi at stable temperaturepp
Process Connection	available threaded or flanged
Explosion Proof	CSA Div 1, Class 1, Groups C,D
Intrinsic Safety	Approved Intrinsically Safe when ordered with Approved Barrier in Control Unit CAN/CSA E60079-11: Class I, Groups A,B,C,D; Class II, Groups E,F,G; Class III, Encl.Type 4
CRN	ABSA-CRN #OF07450.2
Wetted Parts	316SS and Teflon

Probe materials are eligible for NACE MR-0175 Compliance

Technical Specifications - Control Panel

Operating Temp.	0˚C to +55˚C
Resolution	.007% (.07 pF at 1,000 pF)
Accuracy	.04% 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
Approvals to	UL / CSA / CE IEC 61010

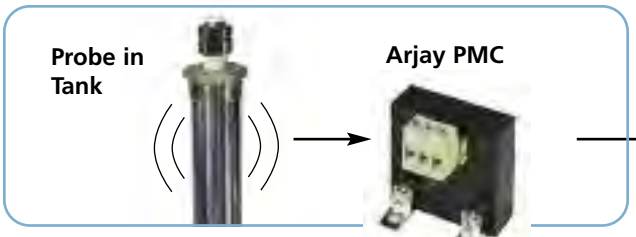
Optional Interfaces

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.

Minimum Calibration Range: 0-100%
Expected Accuracies:

0-25% water in oil:	+/- 5% of reading
25-40% water in oil:	+/- 10% of reading
40-60% water in oil:	+/- 25% of reading
60-100% water in oil:	+/- 20% of reading



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.

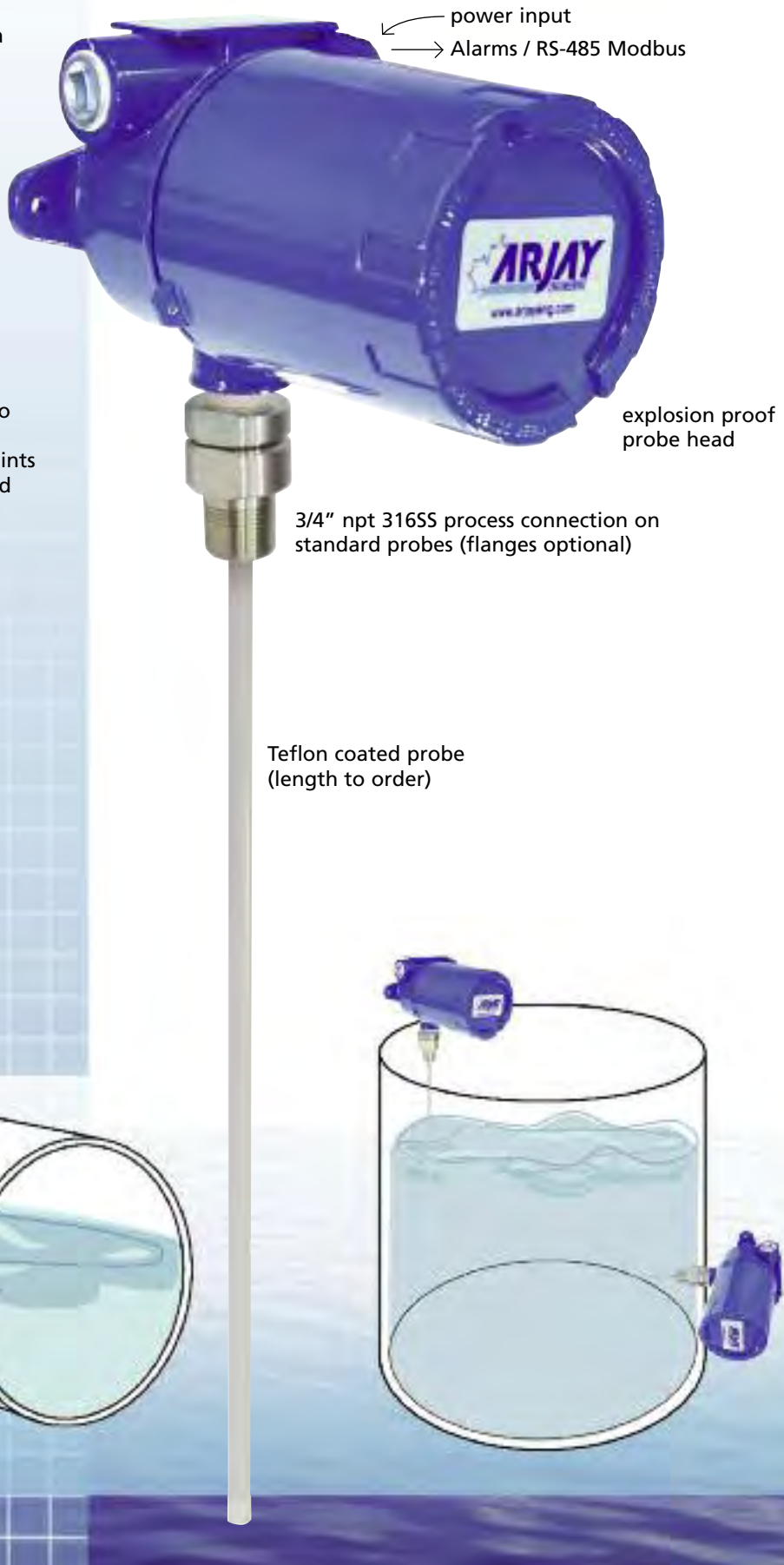
2882-LS
Probe Mounted Level Switch

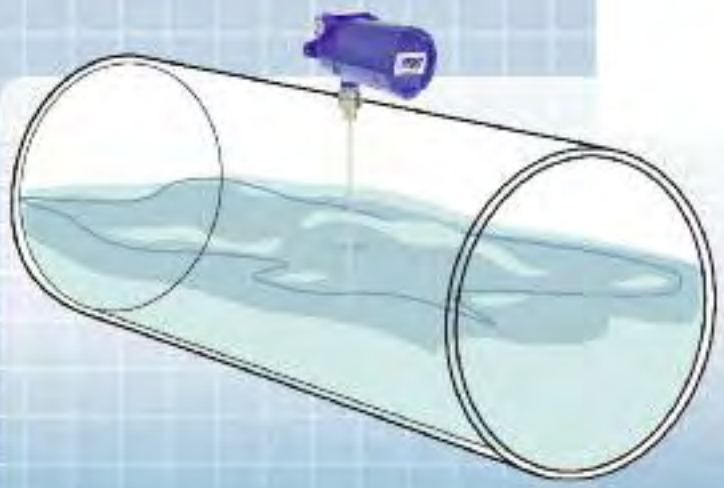
Reliable level alarm and control of liquids and solids

Over 40 years of capacitance experience stands behind the 2882-LS Level Switch. As a liquid or solid rises or lowers around the probe, the capacitance field changes. This is monitored and used to control the two onboard relays.

- no moving parts
- electronics are integral to probe
- high corrosion resistant Teflon and 316SS parts
- HF capacitance does not require routine cleaning
- easy calibration and control set-up

Each relay includes full differential control to allow the relay to activate and de-activate between two distinct at user determined points on the probe. This can be used for pump and valve control between high and low level points. Adjustable time delay is standard to suppress spurious alarms from turbulence.





2882-LS

Features and Benefits

- no moving parts
- electronics is integral to the probe
- high corrosion resistant Teflon and stainless steel wetted parts
- capacitance technology responds to all product types
- HF capacitance technology does not require routine cleaning
- easy calibration and control set-up

Technical Specifications - Electronics

Operating Temp.	-20˚C to +55˚C
Resolution	.007% (.07 pF at 1,000 pF)
Accuracy	.04% of full scale pF
Power Input	12 vdc or 24 vdc, 0.1 amp max. 100-240 vac +/- 10%
Communication	RS-485 Modbus
Control Interface	2 x 10amp@240 vac, SPDT, dry relays plus 4mA Normal / 20 mA alarm output

Technical Specifications - Probe

Process Temp.	-60°C to +260°C (Teflon probe)
Pressure	103 bar/10342 kPA/1500psi at stable temperature
CRN	ABSA-CRN #OF07450.2
Wetted Parts	316SS and Teflon

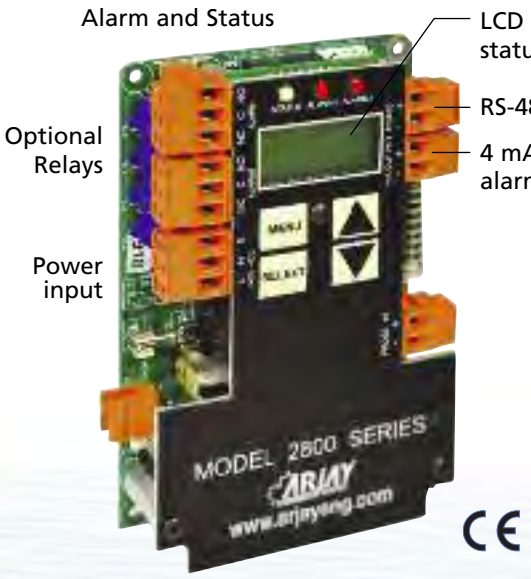
Probe materials are eligible for NACE MR-0175 Compliance

Hazardous Location Use

Available Component Certifications may be suitable to your application. Consult Arjay for assistance.

2880 Electrical Safety	UL, CSA, or IEC 61010
Housing	UL / FM / CSA Class 1, Group B,C,D; Class II, Group E,F,G
Probe	CSA Class 1, Group C,D

The electronics for this model can also be mounted remote from the probe. Refer to the Model 2852-LS. The probe becomes Intrinsically Safe when ordered with an IS Barrier installed in 2852-LS control panel: CSA Div 1, Class 1, Groups A,B,C,D



All calibration and power wiring is done at the main control unit. This is mounted directly onto the probe.

2852-**LS**
Two Point Level Switch

Reliable level alarm and control of liquids and solids

Over 40 years of capacitance experience stands behind the 2852-LS level controller. The sensing probe continuously monitors the level changes in a vessel to alarm at user defined setpoints. It is typically used to control pumps and valves, alarm of high or low product conditions, or alert to potential overflow and dry conditions.

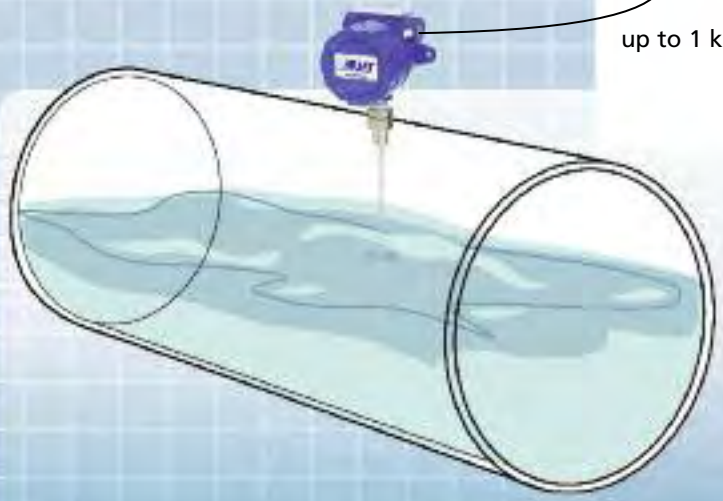
- capacitance technology does not foul or require routine cleaning
- no moving parts
- remote monitor mounts away from the process for operator safety and ease of control wiring.
- two discrete relay setpoints, each with full differential control

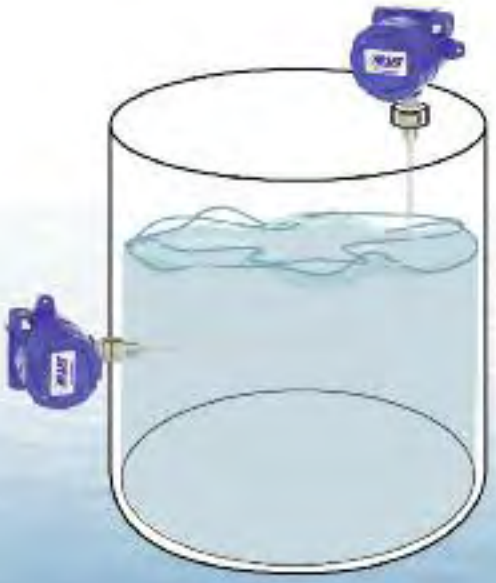
The 2852-LS sensing probe monitors the capacitance field around the probe. As the level of product increases or decreases in the vessel, the probe capacitance changes. This change is used to activate the relays for alarm and control.

optional alarm light and/or buzzer

Remote Electronics available in painted steel, SS or polycarbonate enclosure

up to 1 km





2852-LS

Features and Benefits

- no moving parts
- remote electronics via standard twisted pair
- explosion proof probe is standard
- probe is available with Intrinsically Safe option for alternative HazLoc protection
- high corrosion resistant Teflon and stainless steel wetted parts
- capacitance technology responds to all liquid and solid types
- HF capacitance technology does not require routine cleaning
- easy calibration and control set-up
- two discrete relay setpoints on one probe, each with 100% differential control

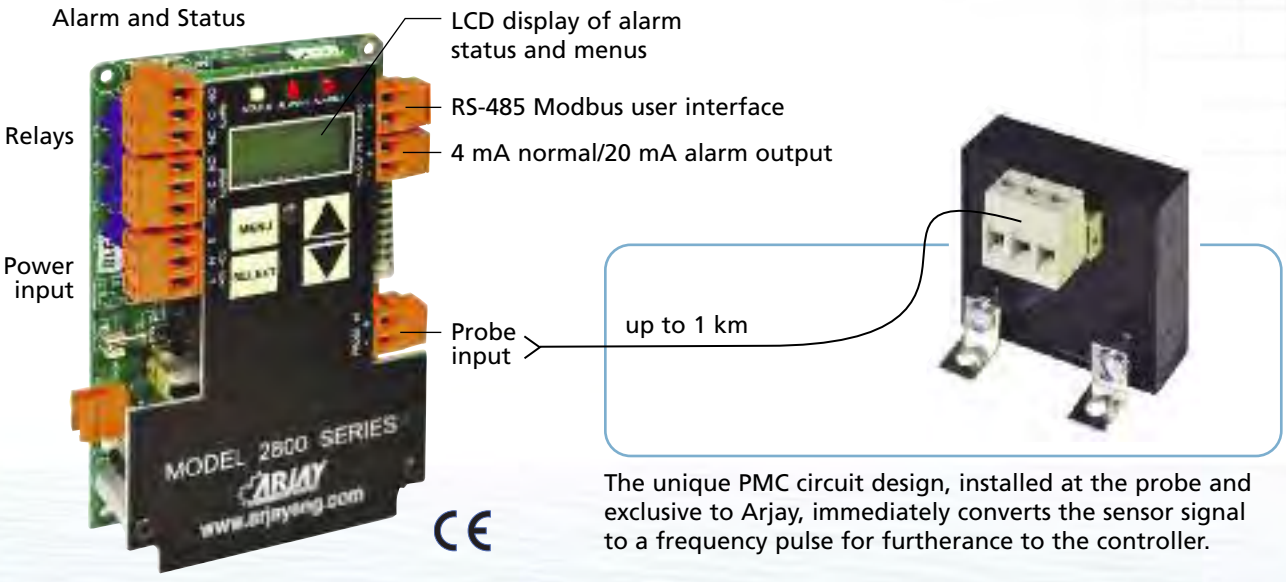
Technical Specifications - Control Unit

Operating Temp.	-20˚C to +55˚C
Resolution	.007% (.07 pF at 1,000 pF)
Accuracy	.04% of full scale pF
Power Input	12 vdc or 24 vdc or 100-240 vac +/- 10%
Alarm Relay	2 x 10 amp@240 vac, SPDT dry, discrete relays with differential control
Analog Output	4 mA normal/20 mA alarm pegged to Relay 1 high differential setpoint
Communication	Modbus RS-485
Certified	UL 61010-1, 2nd Edition CAN/CSA-22.2 61010-1-4 IEC/EN 61010-1, 2nd Edition IEC 61326-1 + CE Declared
Enclosure	Type 4/IP 66 painted steel or Type 4X/IP 66 polycarbonate or SS
Optional	Light, buzzer, beacon

Technical Specifications - Probe

Probe	-60˚C to +260˚C
PMC	-60˚C to +55˚C
Pressure	103 bar/10342 kPA/1500psi at stable temp
Explosion Proof	CSA Div 1, Class 1, Groups C,D
Intrinsic Safety	Approved Intrinsically Safe when ordered with Approved Barrier in Control Unit CAN/CSA E60079-11: Class I, Groups A,B,C,D; Class II, Groups E,F,G; Class III, Encl.Type 4
CRN	ABSA-CRN #OF07450.2
Wetted Parts	316SS and Teflon

Probe materials are eligible for NACE MR-0175 Compliance



The unique PMC circuit design, installed at the probe and exclusive to Arjay, immediately converts the sensor signal to a frequency pulse for furtherance to the controller.

2880-LT / 2881-LT / 2882-LT
Probe Mounted Level Transmitter

Reliable monitoring of liquids and solids for a continuous level output

Over 40 years of capacitance experience stands behind the 2880-LT level transmitter. The probe continuously monitors product levels to provide a proportional level signal for pumps, alarms or control system interface.

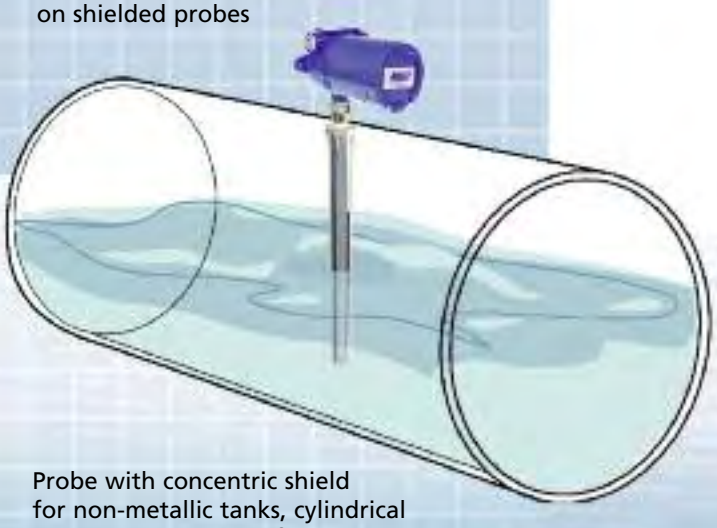
- capacitance technology does not foul or require cleaning
- no moving parts
- electronics is close coupled to probe
- simple keypad calibration with display
- diagnostics and level display

The 2880-LT sensing probe monitors the capacitance field around the active probe. As the volume of product increases in the vessel, the probe capacitance changes. A 4-20 mA output signal is provided for interface with customer controls and systems. A quick calibration can be set using any two points along the probe length.

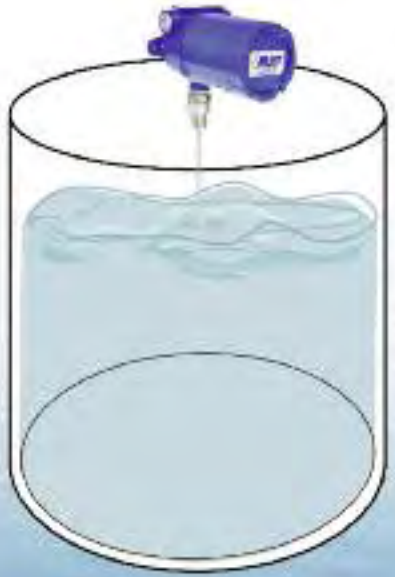
3/4" npt 316SS process connection on standard probes (flanges optional)

Teflon coated probe (length to order)

2" npt 316SS process connection on shielded probes



Probe with concentric shield for non-metallic tanks, cylindrical horizontal vessels, or fuel/oil applications



2880-LT

Features and Benefits

- no moving parts
- electronics is integral to the probe
- high corrosion resistant Teflon and stainless steel wetted parts
- capacitance technology responds to all product types
- HF capacitance technology does not require routine cleaning
- easy calibration and control set-up

Technical Specifications - Electronics

Operating Temp.	-20˚C to +55˚C
Resolution	.007% (.07 pF at 1,000 pF)
Accuracy	.04% of full scale pF
Power Input	12 vdc or 24 vdc, 0.1 amp max. 100-240 vac +/- 10%
Communication	RS-485 Modbus

Control Interface

2880-LT	0/4-20 mA non-isolated output
2881-LT	0/4-20 mA isolated output
2882-LT	0/4-20 mA non-isolated output and 2 x 10amp@240 vac, SPDT, dry relays

Optional Viewing window of % Level LCD

Technical Specifications - Probe

Process Temp.	-60°C to +260°C (Teflon probe)
Pressure	103 bar/10342 kPA/1500psi at stable temperature
CRN	ABSA-CRN #OF07450.2
Wetted Parts	316SS and Teflon

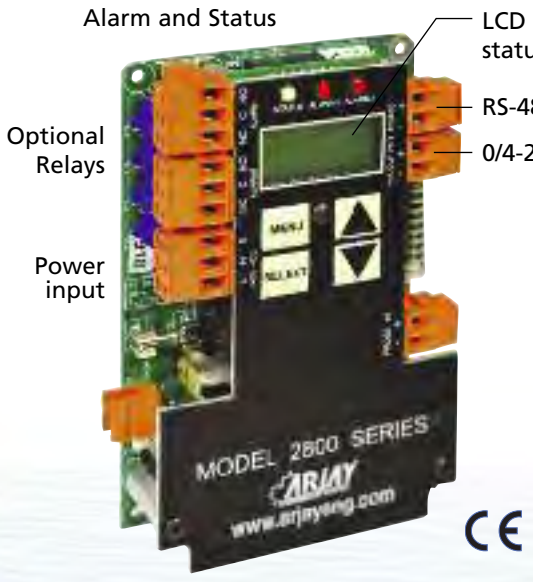
Probe materials are eligible for NACE MR-0175 Compliance

Hazardous Location Use

Available Component Certifications may be suitable to your application. Consult Arjay for assistance.

2880 Electrical Safety	UL, CSA, or IEC 61010
Housing	UL / FM / CSA Class 1, Group B,C,D; Class II, Group E,F,G
Probe	CSA Class 1, Group C,D

The electronics for this model can also be mounted remote from the probe. Refer to the Model 2852-LT. The probe becomes Intrinsically Safe when ordered with an IS Barrier installed in 2852-LT control panel: CSA Div 1, Class 1, Groups A,B,C,D



All calibration and power wiring is done at the main control unit. This is mounted directly onto the probe.

2852-LT / 2851-LT
Remote Mount Level Monitor

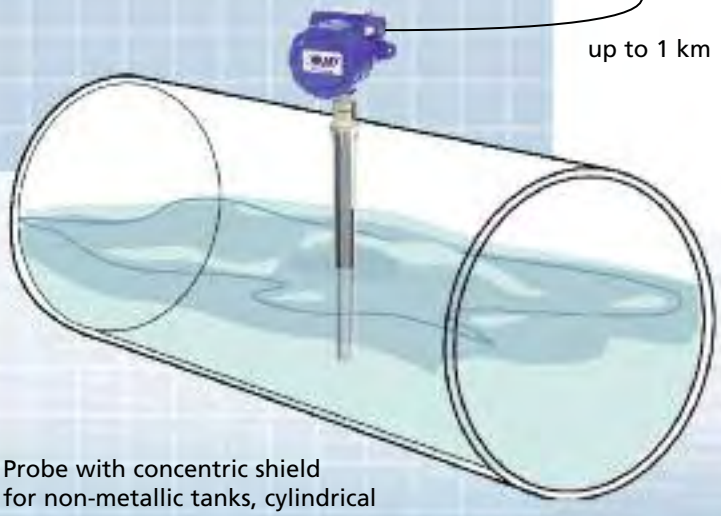
Reliable level monitoring of liquids and solids for measurement and control

Over 40 years of capacitance experience stands behind the 2852-LT level monitor. The unit continuously monitors the liquid or solids level in a tank, stand-pipe or containment. Outputs include analog, digital, and relay control for interface to alarms, valves, pumps and other process monitoring equipment.

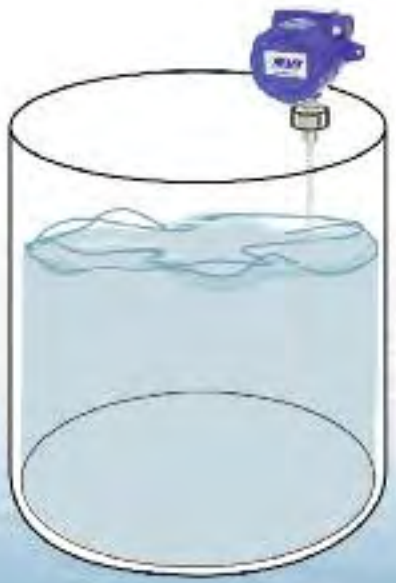
- capacitance technology does not foul or require routine cleaning
- no moving parts
- remote monitor mounts away from the process for operator safety and ease of control wiring.

The 2852-LT sensing probe monitors the capacitance field around the probe. As the product rises in the tank or vessel the probe capacitance increases. This change is used to provide a 4-20 mA proportional output and two setpoint alarm relays.

Teflon sensing probe



Probe with concentric shield for non-metallic tanks, cylindrical horizontal vessels, or fuel/oil applications



2852-LT

Features and Benefits

- no moving parts
- remote electronics via standard twisted pair
- explosion proof probe is standard
- probe is available with Intrinsically Safe option for alternative HazLoc protection
- high corrosion resistant Teflon and stainless steel wetted parts
- capacitance technology responds to all liquid and solids types
- HF capacitance technology does not require routine cleaning
- easy calibration and control set-up

Need more than 2 relays or a visual display of the level? Look to the **Arjay 4100-LEV** Level Monitor

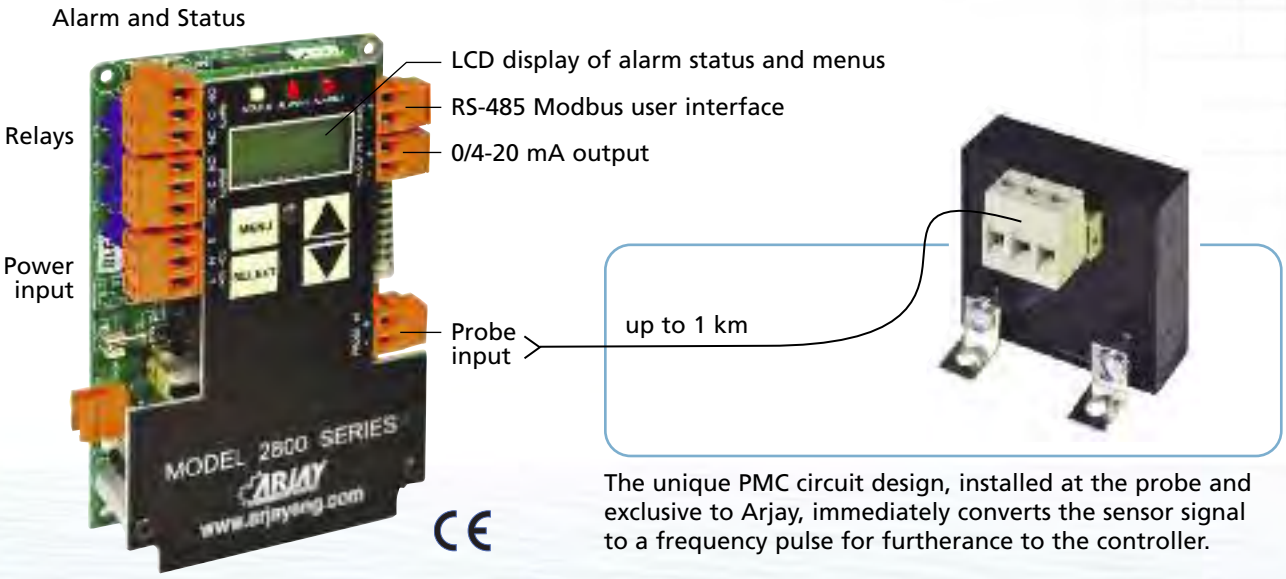
Technical Specifications - Control Unit

Operating Temp.	-20˚C to +55˚C
Resolution	.007% (.07 pF at 1,000 pF)
Accuracy	.04% of full scale pF
Power Input	12 vdc or 24 vdc or 100-240 vac +/- 10%
Alarm Relay	2 x 10 amp@240 vac, SPDT dry, discrete relays with differential control (2852-LT only)
Analog Output	4-20mA proportional output, non-isolated
Communication	Modbus RS-485
Certified	UL 61010-1, 2nd Edition CAN/CSA-22.2 61010-1-4 IEC/EN 61010-1, 2nd Edition IEC 61326-1 CE Declared
Enclosure	Type 4/IP 66 painted steel or Type 4X/IP 66 polycarbonate or SS
Optional	Light, buzzer, beacon (2852-LT only)
2851-LT	as above: no relays, isolated 4-20mA

Technical Specifications - Probe

Probe	-60˚C to +260˚C
PMC	-60˚C to +55˚C
Approval	CSA Div 1, Class 1, Groups C,D ABSA-CRN #0F07450.2
Intrinsic Safety	CSA Intrinsically Safe when ordered with Approved Barrier in Control Unit Div 1, Class I, Groups A,B,C,D; Class II, Groups E,F,G; Class III, Encl.Type 4
Wetted Parts	316SS and Teflon

Sensor materials are eligible for NACE MR-0175 Compliance



The unique PMC circuit design, installed at the probe and exclusive to Arjay, immediately converts the sensor signal to a frequency pulse for furtherance to the controller.

4100-**LEV**
Level-Ease Monitor

Continuous level monitoring of liquids and bulk solids

Over 40 years of Arjay's field proven HF capacitance experience has been applied to the Level-Ease 4100 series monitors. This unique level system provides complete flexibility for monitoring one or more tanks in one complete package.

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

The Level-Ease 4100 sensing probe monitors the capacitance field between the probe and it's concentric shield of the tank wall. As the level of product increases, the probe capacitance changes. This level signal is used to provide outputs, displays and relay control.

explosion proof probe head

2" npt 316SS process connection

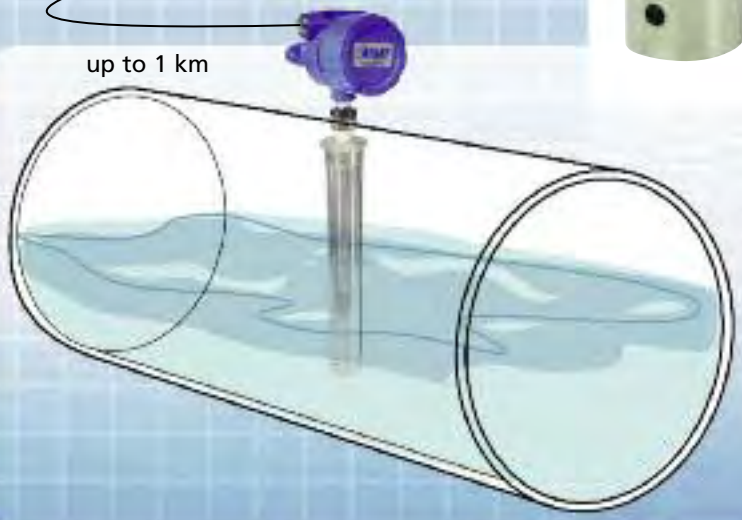
3/4" npt 316SS process connection

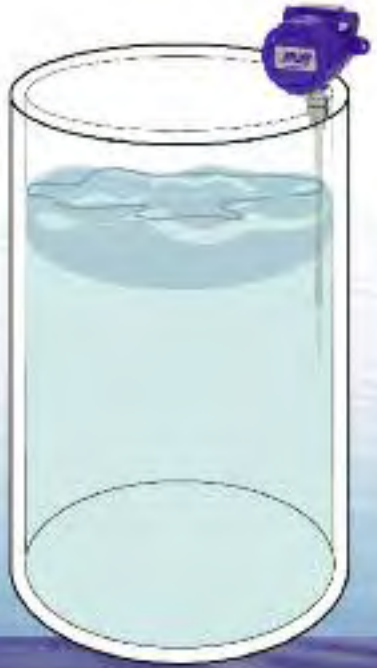
Probe with concentric shield for non-metallic, cylindrical horizontal or fuel/oil applications

Probe shown with inactive sheath

(beacon and buzzer optional)

up to 1 km





4100-LEV

Features and Benefits

- no moving parts
- remote electronics via standard twisted pair
- all set-up, calibration and diagnostics are accessed at the control panel
- 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
- tank view display for ease of reading
- 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	.007% (.07 pF at 1,000 pF)
Accuracy	.04% 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 of level selectable trend line view 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
Approvals to	UL / CSA / CE IEC 61010

Technical Specifications - Probe

Process Temp.	-60˚C to +260˚C
Ambient Temp.	-60˚C to +55˚C
Pressure	103 bar/10342 kPA/1500psi at stable temperature
Process Connection	available threaded or flanged
Explosion Proof	CSA Div 1, Class 1, Groups C,D
Intrinsic Safety	Approved Intrinsically Safe when ordered with Approved Barrier in Control Unit CAN/CSA E60079-11: Class I, Groups A,B,C,D; Class II, Groups E,F,G; Class III, Encl.Type 4
CRN	ABSA-CRN #OF07450.2
Wetted Parts	316SS and Teflon

Probe materials are eligible for NACE MR-0175 Compliance

Probe Assembly

The Arjay PMC (pulse module circuit) installed at the probe converts the tank 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-LEV. This board monitors and controls the signals from the tank probe, applies the appropriate calibration algorithms and interfaces this information to the touch screen and PLC hardware.

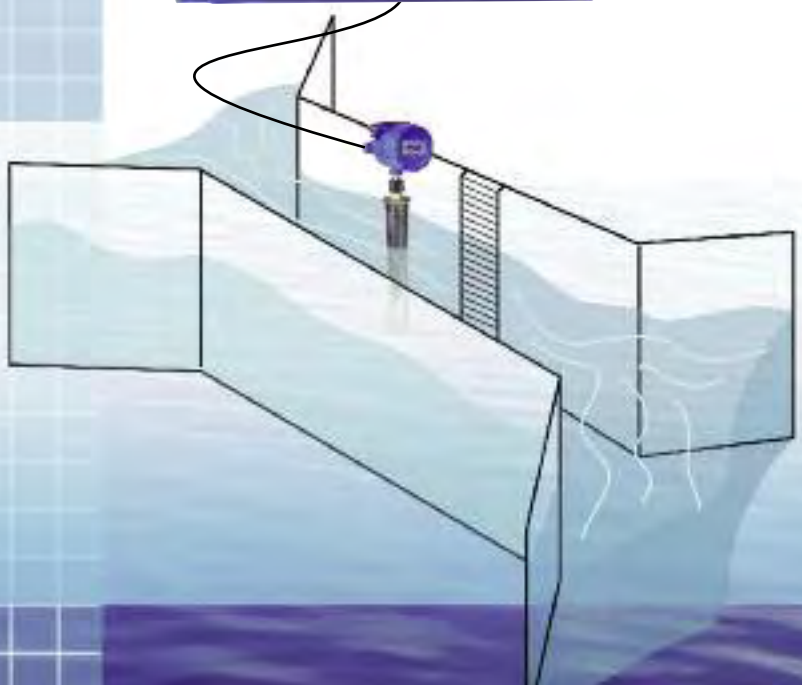
4100-**OCF**
Open Channel Flow Monitor

Continuous flow & level monitoring of open channel flumes and weirs

Over 40 years of Arjay's field proven HF capacitance experience has been applied to the 4100-OCF monitor. This unique flow system provides complete flexibility for monitoring a variety of flumes and weirs.

- unique capacitance approach eliminates routine cleaning
- no moving parts
- control and interface panel mounts safely away from the process
- flowrate and totalalization of flow

The 4100-OCF sensing probe monitors the capacitance field between the probe and it's concentric shield within a primary flow device. The Arjay controller converts the water level to flow using the applied Manning equation selected for the flow channel. The 4100-OCF provides a display of flow and totalization. Relays and analog outputs are available for control and interface.



4100-OCF

Features and Benefits

- no moving parts
- remote electronics via standard twisted pair
- all set-up, calibration and diagnostics are acessed at the control panel
- 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
- channel view display for ease of reading
- 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	.007% (.07 pF at 1,000 pF)
Accuracy	.04% of full scale pF
Power Input	24 vdc or 80-240 vac +/-10%, SP, 50-60 HZ
Display	touch screen full colour channel view graphics, % and engineering units of flow trend line selectable hours, days or none
Relay Outputs	up to four SPDT, 10 amp @ 240 vac, dry
Enclosure	Type 4 metal painted blue / IP 66 optional Type 4X SS or polycarbonate
Approvals to	UL / CSA / CE IEC 61010

Technical Specifications - Probe

Process Temp.	-60˚C to +260˚C
Ambient Temp.	-60˚C to +55˚C
Pressure	103 bar/10342 kPA/1500psi at stable temperature
Process Connection	available threaded or flanged
Explosion Proof	CSA Div 1, Class 1, Groups C,D
Intrinsic Safety	Approved Intrinsically Safe when ordered with Approved Barrier in Control Unit CAN/CSA E60079-11: Class I, Groups A,B,C,D; Class II, Groups E,F,G; Class III, Encl.Type 4
CRN	ABSA-CRN #OF07450.2
Wetted Parts	316SS and Teflon

Probe materials are eligible for NACE MR-0175 Compliance

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-OCF. 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.

2852-**LPS**
Area Leak Alarm

Reliable monitoring of liquid leaks in containments and floor spaces

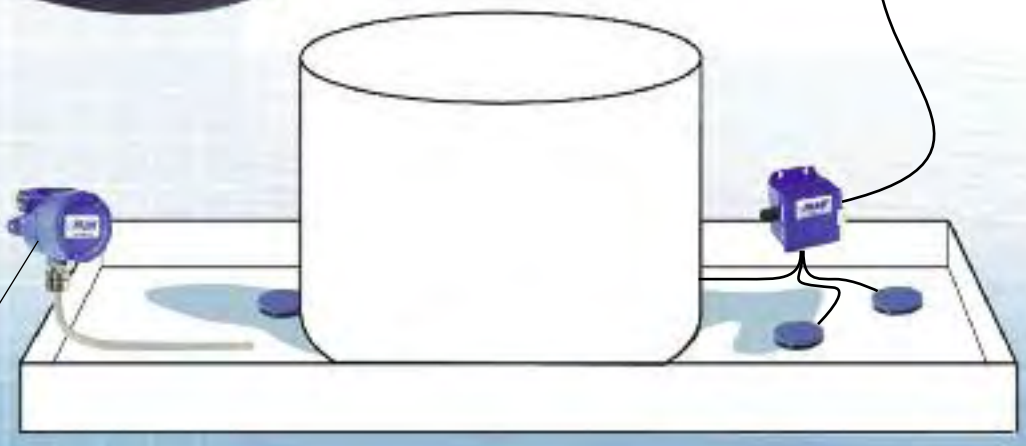
Over 40 years of capacitance experience stands behind the 2852-LPS leak alarm. The sensors continuously monitor for the accumulation of liquid in a normally dry condition.

- capacitance technology alarms on any liquid
- no moving parts
- remote alarm unit mounts safely away from monitoring area
- available for hazardous rated locations

The 2852-LPS sensor monitors the capacitance field between the sensor pad and the floor. A single push button calibration at the controller locks in on the capacitance field of all sensing pads. Any liquid that intrudes into the pad space will increase the capacitive field and initiate an alarm.

Remote Electronics available in painted steel, SS or polycarbonate enclosure

- **tank and room leaks**
- **underground vaults**
- **sub floors**
- **valve and pump pans**



2852-LPS

Features and Benefits

- sensor pads can be placed in key locations and tight spaces
- up to 3 sensor pads can connect to one control unit
- adjustable time delay and sensitivity to eliminate nuisance alarms
- remote electronics via standard twisted pair
- sensor available Intrinsically Safe for Hazardous Locations
- high grade epoxy and PVC wetted parts allow for corrosive environments
- capacitance technology responds to all types of liquids

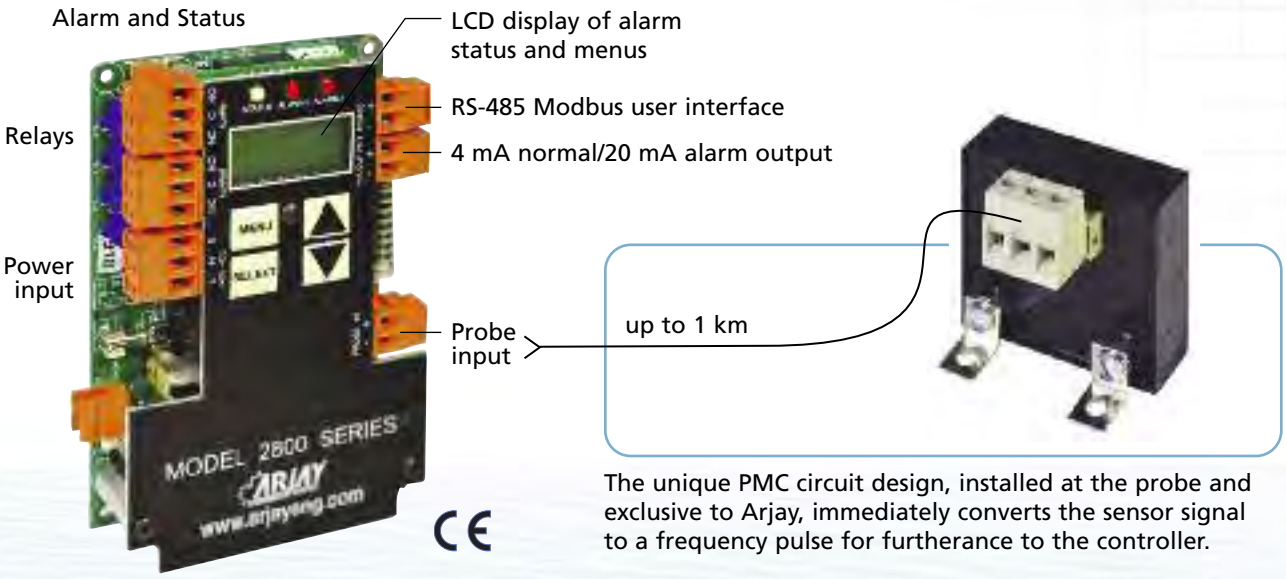
Technical Specifications - Control Unit

Operating Temp.	-20˚C to +55˚C
Resolution	.007% (.07 pF at 1,000 pF)
Accuracy	.04% of full scale pF
Power Input	12 vdc or 24 vdc or 100-240 vac +/-10%
Alarm Relay	2 x 10 amp@240 vac, SPDT, dry
Analog Output	4 mA normal/20 mA alarm
Communication	Modbus RS-485
Certified	UL 61010-1, 2nd Edition CAN/CSA-22.2 61010-1-4 IEC/EN 61010-1, 2nd Edition IEC 61326-1 CE Declared
Enclosure	Type 4/IP 66 painted steel or Type 4X/IP 66 polycarbonate or SS
Optional	Light, buzzer, beacon

Technical Specifications - Sensing Pads

Operating Temp.	-60˚C to +55˚C
Intrinsic Safety	CSA Intrinsically Safe when ordered with Approved Barrier in Control Unit Div 1, Class I, Groups A,B,C,D; Class II, Groups E,F,G; Class III, Encl. Type 4
Wetted Parts	High grade marine epoxy and PVC (optional PVDF/TFE).

Sensor materials are eligible for NACE MR-0175 Compliance



The unique PMC circuit design, installed at the probe and exclusive to Arjay, immediately converts the sensor signal to a frequency pulse for furtherance to the controller.

2852-ILA
Interstitial Tank Leak Alarm

Reliable monitoring of the interstitial space in double wall tanks

Optional Intrinsically Safe Sensor

flanges available to mate with tank flanges or threaded for customers own flange/union assembly

Over 40 years of capacitance experience stands behind the 2852-ILA leak alarm. The flexible cable probe continuously monitors for the accumulation of liquid in the normally dry tank wall.

- capacitance technology alarms on any liquid
- no moving parts
- remote alarm unit mounts safely away from tank site

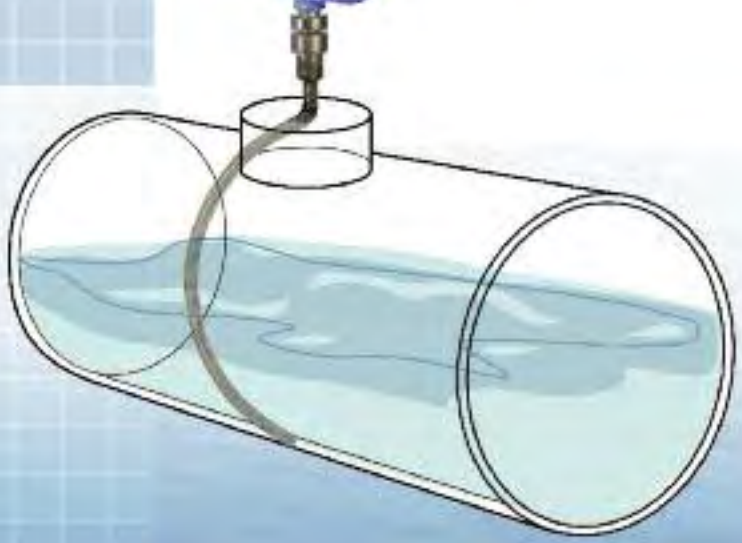
The 2852-ILA probe monitors the interstitial space near the bottom of the tank and locks in on the capacitance field around the probe tip. Any liquid that intrudes into this space will increase the capacitive field and initiate an alarm.

The leak source can be from the stored product leaking from the tank or from groundwater leaking through the outer wall.

Remote Electronics available in painted steel, SS or polycarbonate enclosure

optional alarm light and/or buzzer

up to 1 km



The probe includes a flexible SS sheath to ignore level changes in fiberglas tanks. The alarm tip is inserted to approximately the 7 o'clock position to ignore condensation alarms.

2852-ILA

Features and Benefits

- stable stationary probe wraps the tank belly
- adjustable time delay and sensitivity to eliminate nuisance alarms
- remote electronics via standard twisted pair
- available with Intrinsic Safety Barrier for Hazardous Locations
- SS and PVC wetted parts allow for corrosive environments
- capacitance technology responds to all types of liquids

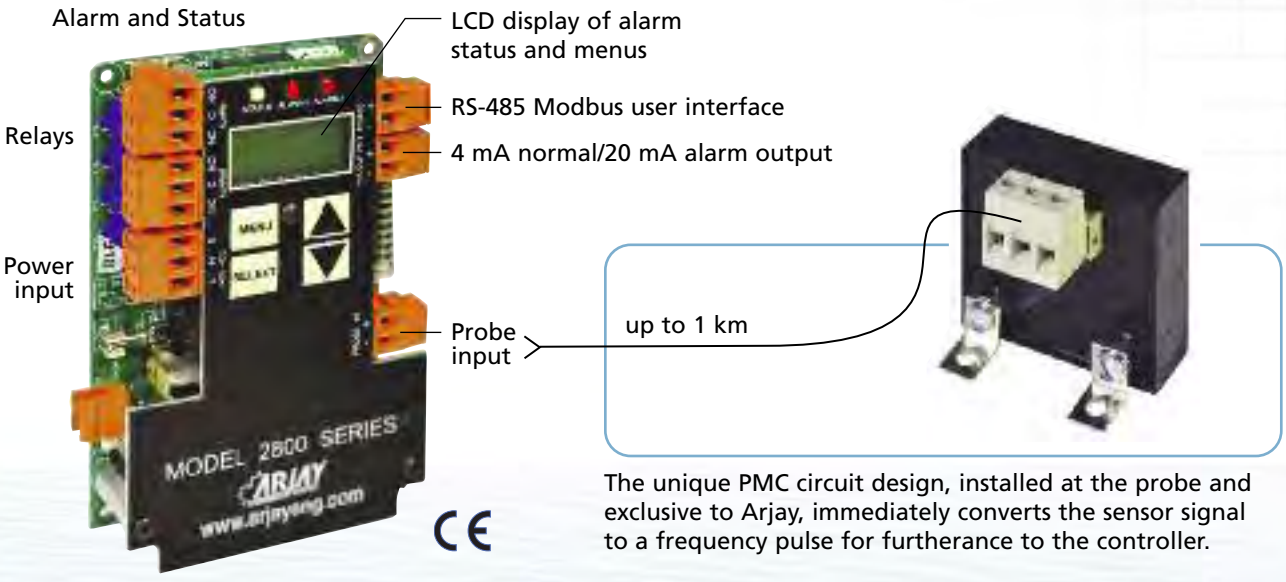
Technical Specifications - Control Unit

Operating Temp.	-20˚C to 55˚C
Resolution	.007% (.07 pF at 1,000 pF)
Accuracy	.04% of full scale pF
Power Input	12 vdc or 24 vdc or 100-240 vac +/- 10%
Alarm Relay	2 x 10 amp@240 vac, SPDT, dry
Analog Output	4 mA normal/20 mA alarm
Communication	Modbus RS-485
Certified	UL 61010-1, 2nd Edition CAN/CSA-22.2 61010-1-4 IEC/EN 61010-1, 2nd Edition IEC 61326-1 CE Declared
Enclosure	Type 4/IP 66 painted steel or Type 4X/IP 66 polycarbonate or SS
Optional	Light, buzzer, beacon

Technical Specifications - Sensing Probe

Operating Temp.	-60˚C to +55˚C
Intrinsic Safety	CSA Intrinsically Safe when ordered with Approved Barrier in Control Unit Div 1, Class I, Groups A,B,C,D; Class II, Groups E,F,G; Class III, Encl.Type 4
Wetted Parts	316SS and Teflon

Probe Materials are eligible for NACE MR-0175 Compliance



The unique PMC circuit design, installed at the probe and exclusive to Arjay, immediately converts the sensor signal to a frequency pulse for furtherance to the controller.

2852-**DPM**
Dry Pump Monitor

Pipe monitoring for dry conditions to protect pumps and equipment

Over 40 years of capacitance experience stands behind the 2852-DPM pipe monitor. The unique in-line sensor continuously monitors for the change from a wet to dry condition or a liquid change from one dielectric to another.

- capacitance technology responds to any liquid type
- no moving parts
- remote alarm unit mounts safely away from pipe
- no intrusion into stream flow

Optional Intrinsically Safe Sensor

The 2852-DPM sensor monitors a cross sectional area of the pipe and locks in on the capacitance field of the fluid passing through. A change toward a dry condition or a liquid of a different dielectric will upset the capacitive field and initiate an alarm.

The sensing plates are embedded into a wafer flange which provides monitoring without any intrusion into the stream flow.

up to 1 km

optional alarm light and/or buzzer

PVC sensing flange (150# Ansi configuration)

Remote Electronics available in painted steel, SS or polycarbonate enclosure

2852-DPM

Features and Benefits

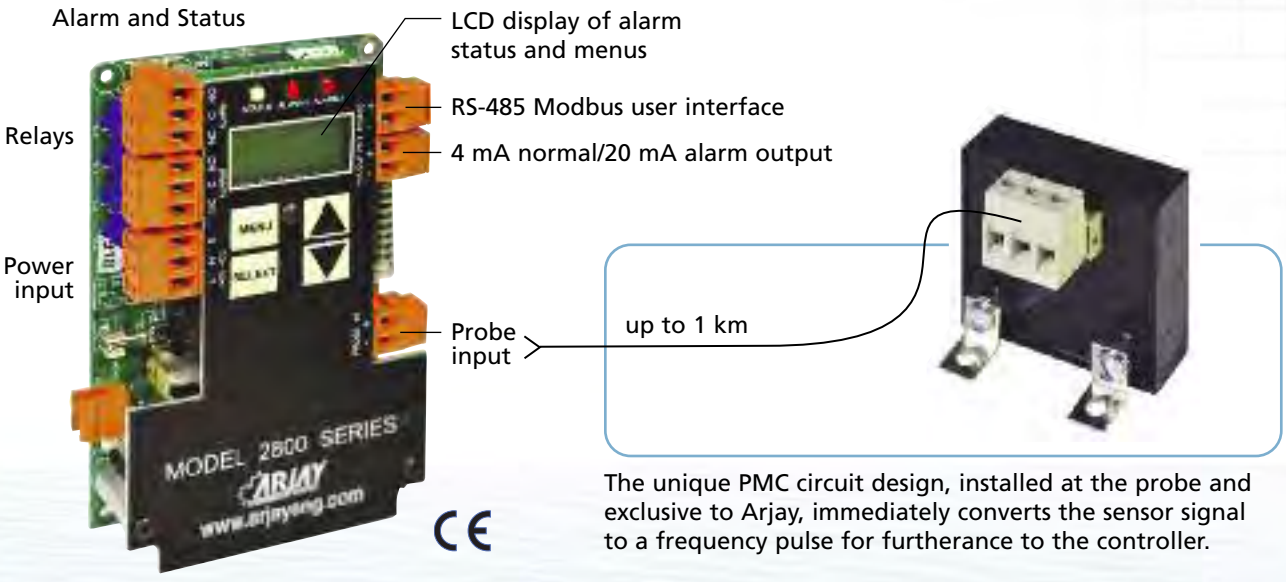
- wafer flange sensor for easy installation
- adjustable time delay and sensitivity to eliminate nuisance alarms from bubbles
- remote electronics via standard twisted pair
- Sensor available Intrinsically Safe for Hazardous Locations
- PVC wetted parts for corrosive environments
- capacitance technology responds to all types of liquids
- non-intrusive sensor design does not restrict flow

Technical Specifications - Control Unit

Operating Temp.	-20˚C to 55˚C
Resolution	.007% (.07 pF at 1,000 pF)
Accuracy	.04% of full scale pF
Power Input	12 vdc or 24 vdc or 100-240 vac +/- 10%
Alarm Relay	2 x 10 amp@240 vac, SPDT, dry
Analog Output	4 mA normal/20 mA alarm
Communication	Modbus RS-485
Certified	UL 61010-1, 2nd Edition CAN/CSA-22.2 61010-1-4 IEC/EN 61010-1, 2nd Edition IEC 61326-1 CE Declared
Enclosure	Type 4/IP 66 painted steel or Type 4X/IP 66 polycarbonate or SS
Optional	Light, buzzer, beacon

Technical Specifications - Sensor

Operating Temp.	-60˚C to +55˚C
Intrinsic Safety	CSA Intrinsically Safe when ordered with Approved Barrier in Control Unit Div 1, Class I, Groups A,B,C,D; Class II, Groups E,F,G; Class III, Encl.Type 4
Wetted Parts	PVC (optional PVDF)



The unique PMC circuit design, installed at the probe and exclusive to Arjay, immediately converts the sensor signal to a frequency pulse for furtherance to the controller.

2852-**PCD**
Plugged Chute Detector

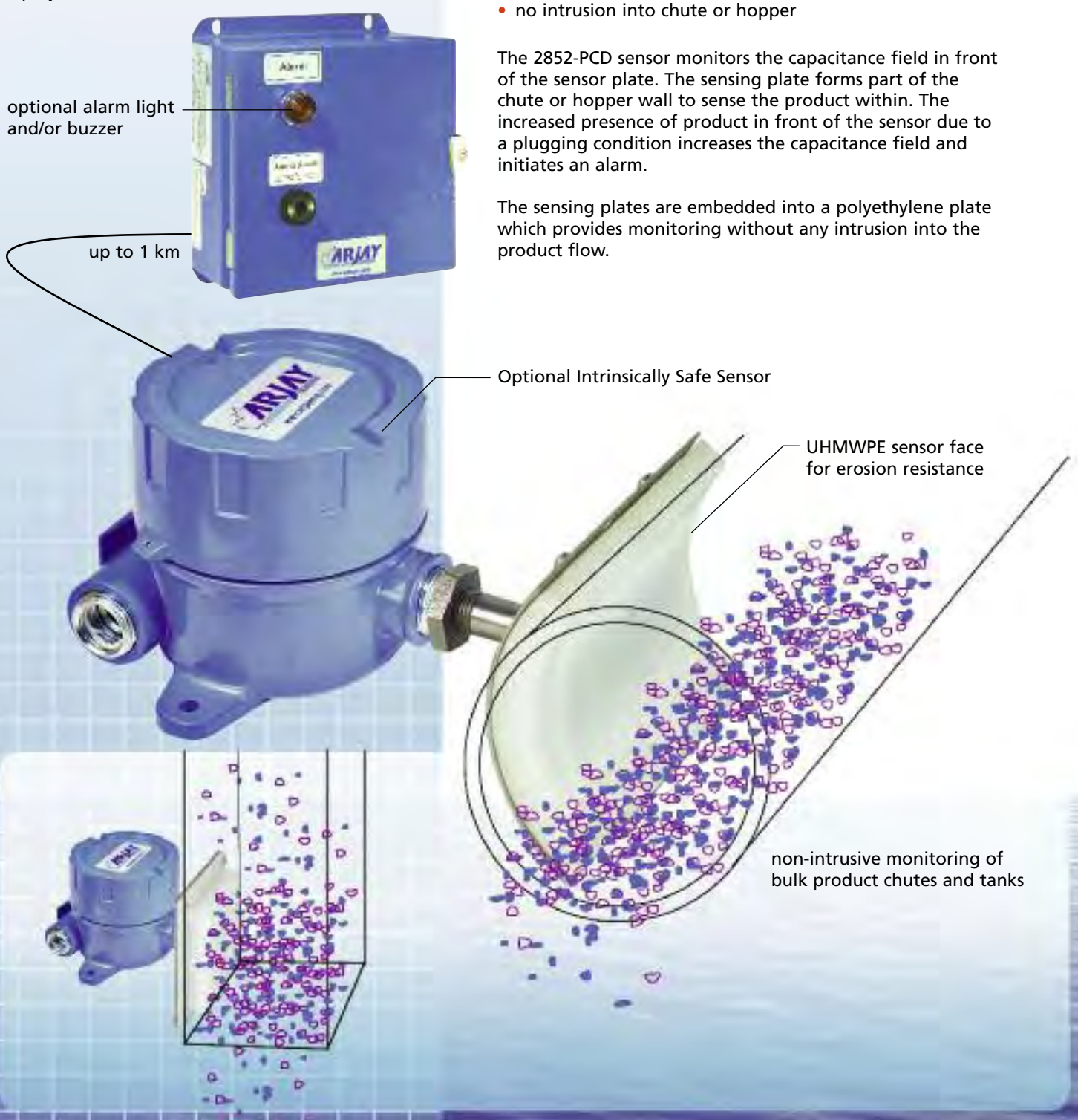
Non-intrusive monitoring of chutes and hoppers for bulk material detection

Over 40 years of capacitance experience stands behind the 2852-PCD plugged chute detectors. The flush mount sensor continuously monitors the change from a normal material chute condition to a plugged condition.

- capacitance technology responds to any material type
- no moving parts
- remote alarm unit mounts safely away from pipe
- no intrusion into chute or hopper

The 2852-PCD sensor monitors the capacitance field in front of the sensor plate. The sensing plate forms part of the chute or hopper wall to sense the product within. The increased presence of product in front of the sensor due to a plugging condition increases the capacitance field and initiates an alarm.

The sensing plates are embedded into a polyethylene plate which provides monitoring without any intrusion into the product flow.



2852-PCD

Features and Benefits

- flush mount sensor forms part of the chute wall
- adjustable time delay and sensitivity to eliminate nuisance alarms
- remote electronics via standard twisted pair
- Sensor available Intrinsically Safe for Hazardous Locations
- high erosion resistant polyethylene resists wear
- capacitance technology responds to all types of bulk materials
- non-intrusive sensor design does not restrict product movement

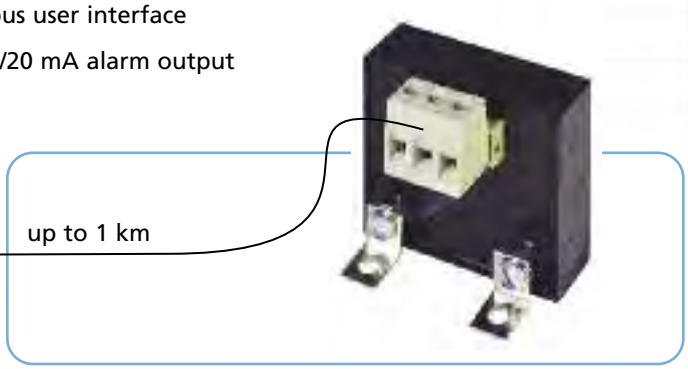
Alternate probe designs are available for specialty applications.

Technical Specifications - Control Unit

Operating Temp.	-20˚C to +55˚C
Resolution	.007% (.07 pF at 1,000 pF)
Accuracy	.04% of full scale pF
Power Input	12 vdc or 24 vdc or 100-240 vac +/- 10%
Alarm Relay	2 x 10 amp@240 vac, SPDT, dry
Analog Output	4 mA normal/20 mA alarm
Communication	Modbus RS-485
Certified	UL 61010-1, 2nd Edition CAN/CSA-22.2 61010-1-4 IEC/EN 61010-1, 2nd Edition IEC 61326-1 CE Declared
Enclosure	Type 4/IP 66 painted steel or Type 4X/IP 66 polycarbonate or SS
Optional	Light, buzzer, beacon

Technical Specifications - Sensor

Operating Temp.	-60˚C to +55˚C
Intrinsic Safety	CSA Intrinsically Safe when ordered with Approved Barrier in Control Unit Div 1, Class I, Groups A,B,C,D; Class II, Groups E,F,G; Class III, Encl.Type 4
Wetted Parts	UHMWPE (optional Teflon)



The unique PMC circuit design, installed at the probe and exclusive to Arjay, immediately converts the sensor signal to a frequency pulse for furtherance to the controller.

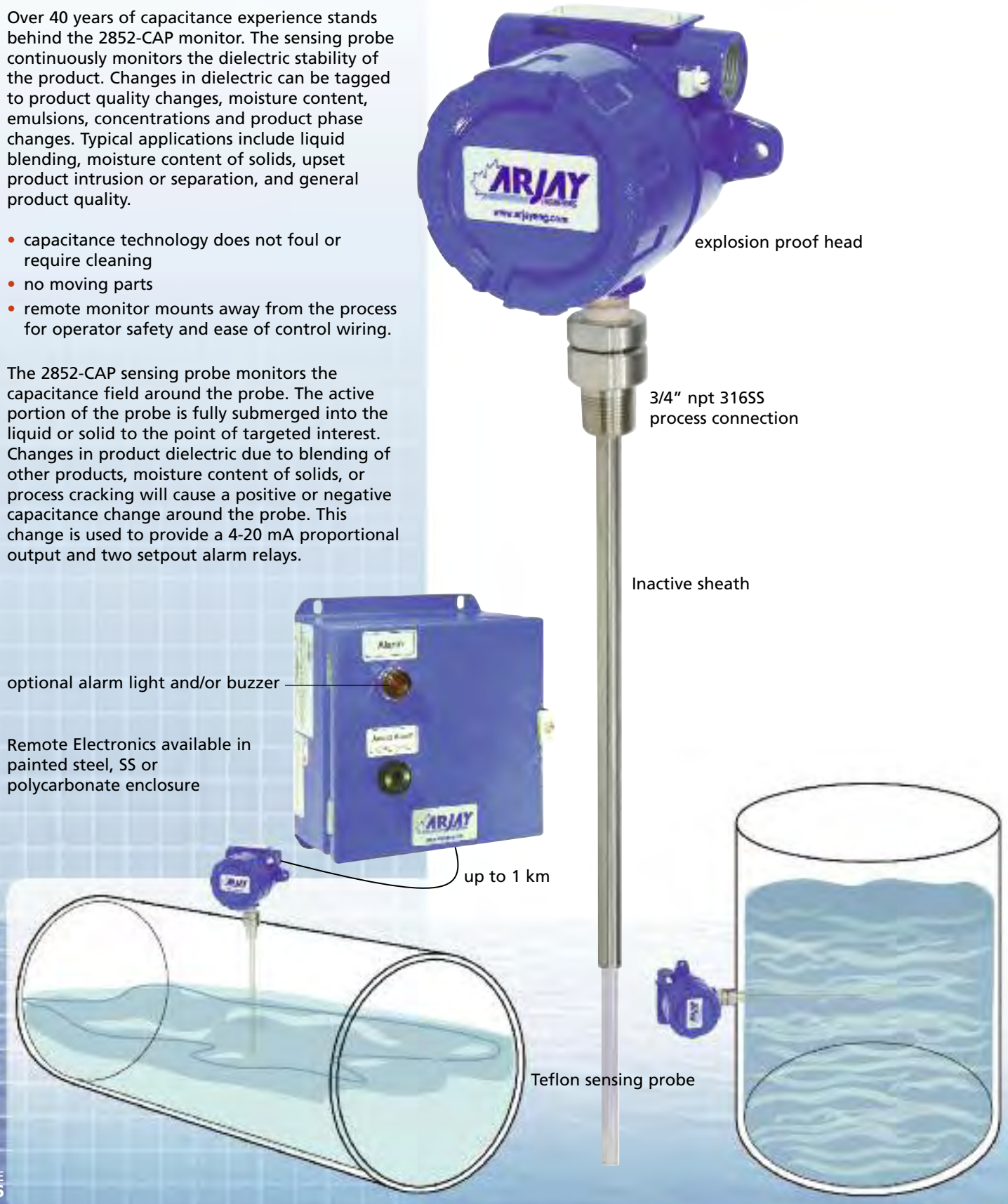
2852-CAP
Capacitance Monitor

Reliable monitoring of process conditons and concentration

Over 40 years of capacitance experience stands behind the 2852-CAP monitor. The sensing probe continuously monitors the dielectric stability of the product. Changes in dielectric can be tagged to product quality changes, moisture content, emulsions, concentrations and product phase changes. Typical applications include liquid blending, moisture content of solids, upset product intrusion or separation, and general product quality.

- capacitance technology does not foul or require cleaning
- no moving parts
- remote monitor mounts away from the process for operator safety and ease of control wiring.

The 2852-CAP sensing probe monitors the capacitance field around the probe. The active portion of the probe is fully submerged into the liquid or solid to the point of targeted interest. Changes in product dielectric due to blending of other products, moisture content of solids, or process cracking will cause a positive or negative capacitance change around the probe. This change is used to provide a 4-20 mA proportional output and two setpout alarm relays.



2852-CAP

Features and Benefits

- no moving parts
- remote electronics via standard twisted pair
- explosion proof probe is standard
- probe is available with Intrinsically Safe option for alternative HazLoc protection
- high corrosion resistant Teflon and stainless steel wetted parts
- capacitance technology responds to all product types
- HF capacitance technology does not require routine cleaning
- easy calibration and control set-up

Need more than 2 relays or a visual display of your process activity? Look to the **Arjay 4100-CAP** series Level Monitor.

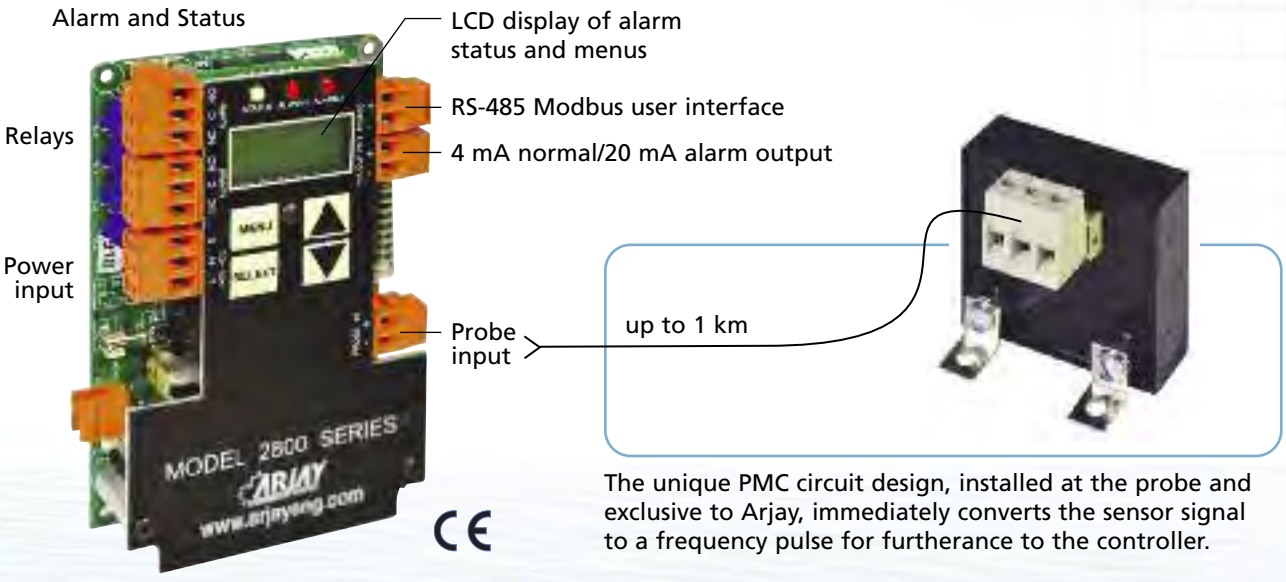
Technical Specifications - Control Unit

Operating Temp.	-20˚C to +55˚C
Resolution	.007% (.07 pF at 1,000 pF)
Accuracy	.04% of full scale pF
Power Input	12 vdc or 24 vdc or 100-240 vac +/- 10%
Alarm Relay	2 x 10 amp@240 vac, SPDT dry, discrete relays with differential control
Analog output	4-20mA proportional output, non-isolated
Communication	Modbus RS-485
Certified	UL 61010-1, 2nd Edition CAN/CSA-22.2 61010-1-4 IEC/EN 61010-1, 2nd Edition IEC 61326-1 CE Declared
Enclosure	Type 4/IP 66 painted steel or Type 4X/IP 66 polycarbonate or SS
Optional	Light, buzzer, beacon

Technical Specifications - Sensing Probe

Probe	-60˚C to +260˚C
PMC	-60˚C to +55˚C
Approval	CSA Div 1, Class I, Groups C,D
Intrinsic Safety	CSA Intrinsically Safe when ordered with Approved Barrier in Control Unit Div 1, Class I, Groups A,B,C,D; Class II, Groups E,F,G; Class III, Encl.Type 4
CRN	ABSA-CRN #OF07450.2
Wetted Parts	316SS and Teflon

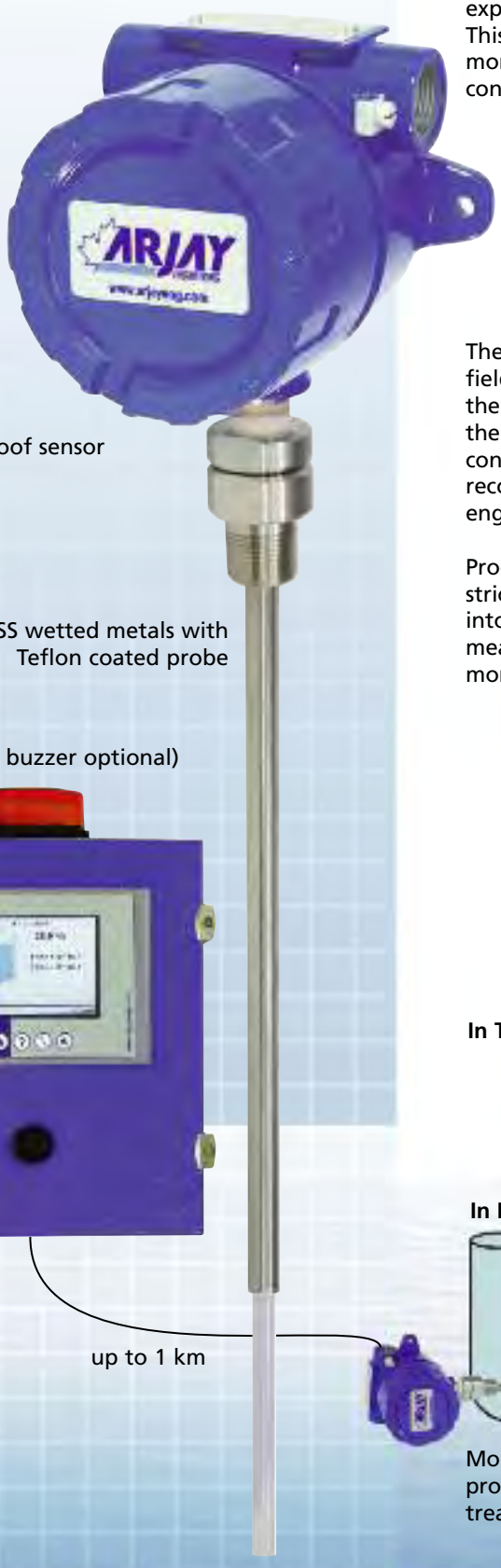
Probe materials are eligible for NACE MR-0175 Compliance



The unique PMC circuit design, installed at the probe and exclusive to Arjay, immediately converts the sensor signal to a frequency pulse for furtherance to the controller.

4100-**CAP**
Capacitance Monitor

Continuous capacitance / dielectric monitoring of liquids and solids

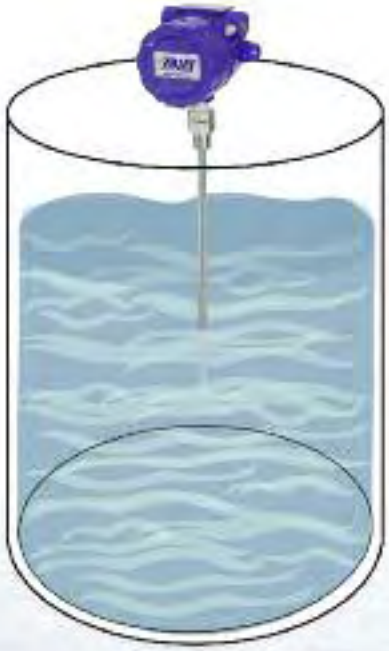


Over 40 years of Arjay's field proven HF capacitance experience has been applied to the 4100-CAP monitor. This unique system provides complete flexibility for monitoring solids and liquids for concentration, moisture content, blending, and quality control.

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

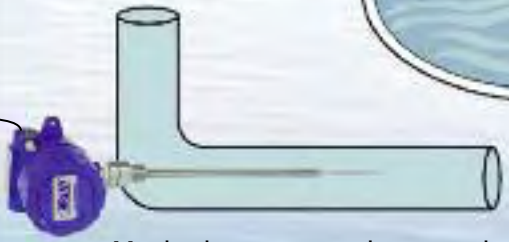
The 4100-CAP sensing probe monitors the capacitance field around the probe within a shield, tank or pipe. As the dielectric characteristics of a fluid or solid change, the resulting capacitance change is monitored and configured into a useable signal for process control and recording. A display is available in user configured engineering units.

Product dielectric changes in your application may not be strictly linear. Arjay has designed a 5-point calibration into the controller to enhance accuracy over an extended measurement range. This instrument is ideal for general monitoring and trending of process conditions.



In Tank Solutions

In Pipe Solutions



Monitoring concentrations to assist in process batching, oil/water knock-out treaters, glycol in water blending, etc.

4100-CAP

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

Technical Specifications - Probe

Process Temp.	-60˚C to +260˚C
Ambient Temp.	-60˚C to +55˚C
Pressure	103 bar/10342 kPA/1500psi at stable temperature
Process Connection	available threaded or flanged
Explosion Proof	CSA Div 1, Class 1, Groups C,D
Intrinsic Safety	Approved Intrinsically Safe when ordered with Approved Barrier in Control Unit CAN/CSA E60079-11: Class I, Groups A,B,C,D; Class II, Groups E,F,G; Class III, Encl.Type 4
CRN	ABSA-CRN #OF07450.2
Wetted Parts	316SS and Teflon

Probe materials are eligible for NACE MR-0175 Compliance

Technical Specifications - Control Panel

Operating Temp.	0˚C to +55˚C
Resolution	.007% (.07 pF at 1,000 pF)
Accuracy	.04% 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
Approvals to	UL / CSA / CE IEC 61010

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.

Minimum Calibration Range: 2.0 pF
Maximum Calibration Range: 2000 pF

Probe Assembly

The Arjay PMC (pulse module circuit) installed at the probe converts the probe 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-CAP. 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.

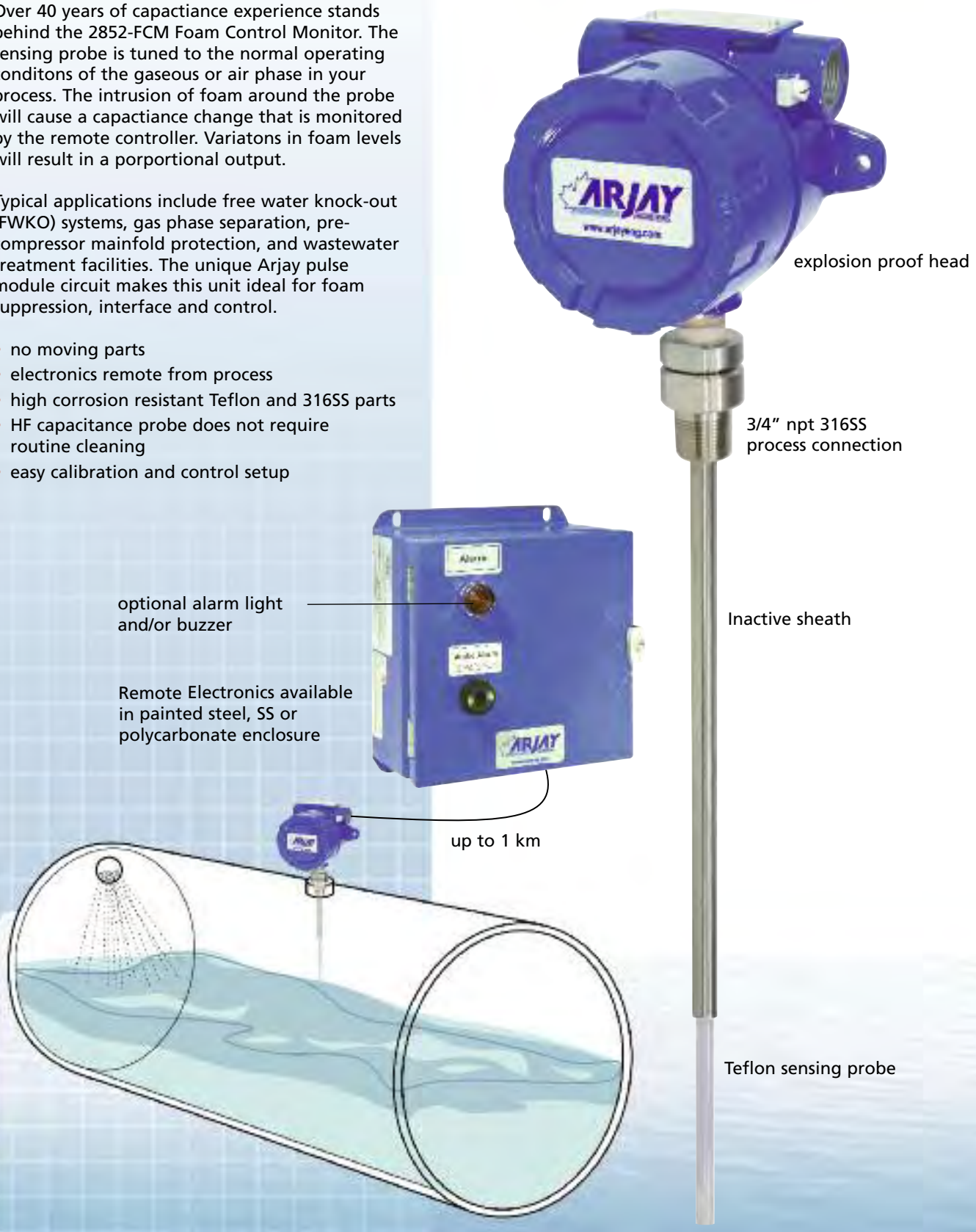
2852-**FCM**
Foam Control Monitor

Reliable monitoring of foaming conditions in process applications

Over 40 years of capactiance experience stands behind the 2852-FCM Foam Control Monitor. The sensing probe is tuned to the normal operating conditons of the gaseous or air phase in your process. The intrusion of foam around the probe will cause a capactiance change that is monitored by the remote controller. Variatons in foam levels will result in a porportional output.

Typical applications include free water knock-out (FWKO) systems, gas phase separation, pre-compressor mainfold protection, and wastewater treatment facilities. The unique Arjay pulse module circuit makes this unit ideal for foam suppression, interface and control.

- no moving parts
- electronics remote from process
- high corrosion resistant Teflon and 316SS parts
- HF capacitance probe does not require routine cleaning
- easy calibration and control setup



2852-FCM

Features and Benefits

- no moving parts
- remote electronics via standard twisted pair
- explosion proof probe is standard
- probe is available with Intrinsically Safe option for alternative HazLoc protection
- high corrosion resistant Teflon and stainless steel wetted parts
- capacitance technology responds to all product types
- HF capacitance technology does not require routine cleaning
- easy calibration and control set-up

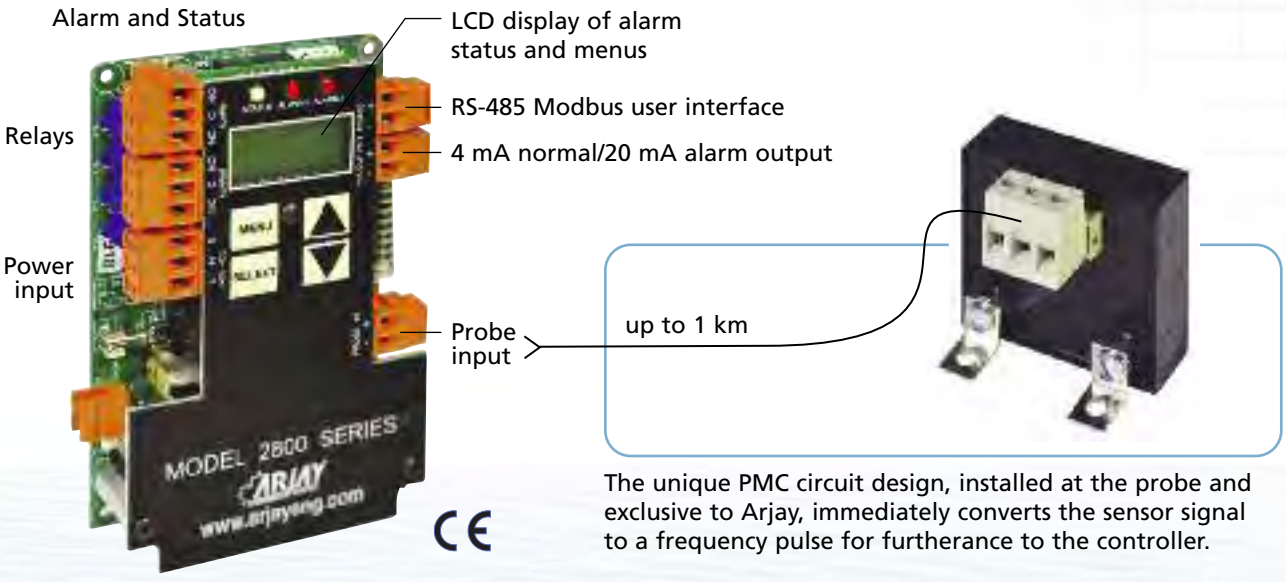
Technical Specifications - Control Unit

Operating Temp.	-20˚C to +55˚C
Resolution	.007% (.07 pF at 1,000 pF)
Accuracy	.04% of full scale pF
Power Input	12 vdc or 24 vdc or 100-240 vac +/- 10%
Alarm Relay	2 x 10 amp@240 vac, SPDT dry, discrete relays with differential control
Analog output	4-20mA proportional output, non-isolated
Communication	Modbus RS-485
Certified	UL 61010-1, 2nd Edition CAN/CSA-22.2 61010-1-4 IEC/EN 61010-1, 2nd Edition IEC 61326-1 CE Declared
Enclosure	Type 4/IP 66 painted steel or Type 4X/IP 66 polycarbonate or SS
Optional	Light, buzzer, beacon

Technical Specifications - Sensing Probe

Probe	-60˚C to +260˚C
PMC	-60˚C to +55˚C
Approval	CSA Div 1, Class I, Groups C,D
Intrinsic Safety	CSA Intrinsically Safe when ordered with Approved Barrier in Control Unit Div 1, Class I, Groups A,B,C,D; Class II, Groups E,F,G; Class III, Encl.Type 4
CRN	ABSA-CRN #OF07450.2
Wetted Parts	316SS and Teflon

Probe materials are eligible for NACE MR-0175 Compliance



The unique PMC circuit design, installed at the probe and exclusive to Arjay, immediately converts the sensor signal to a frequency pulse for furtherance to the controller.

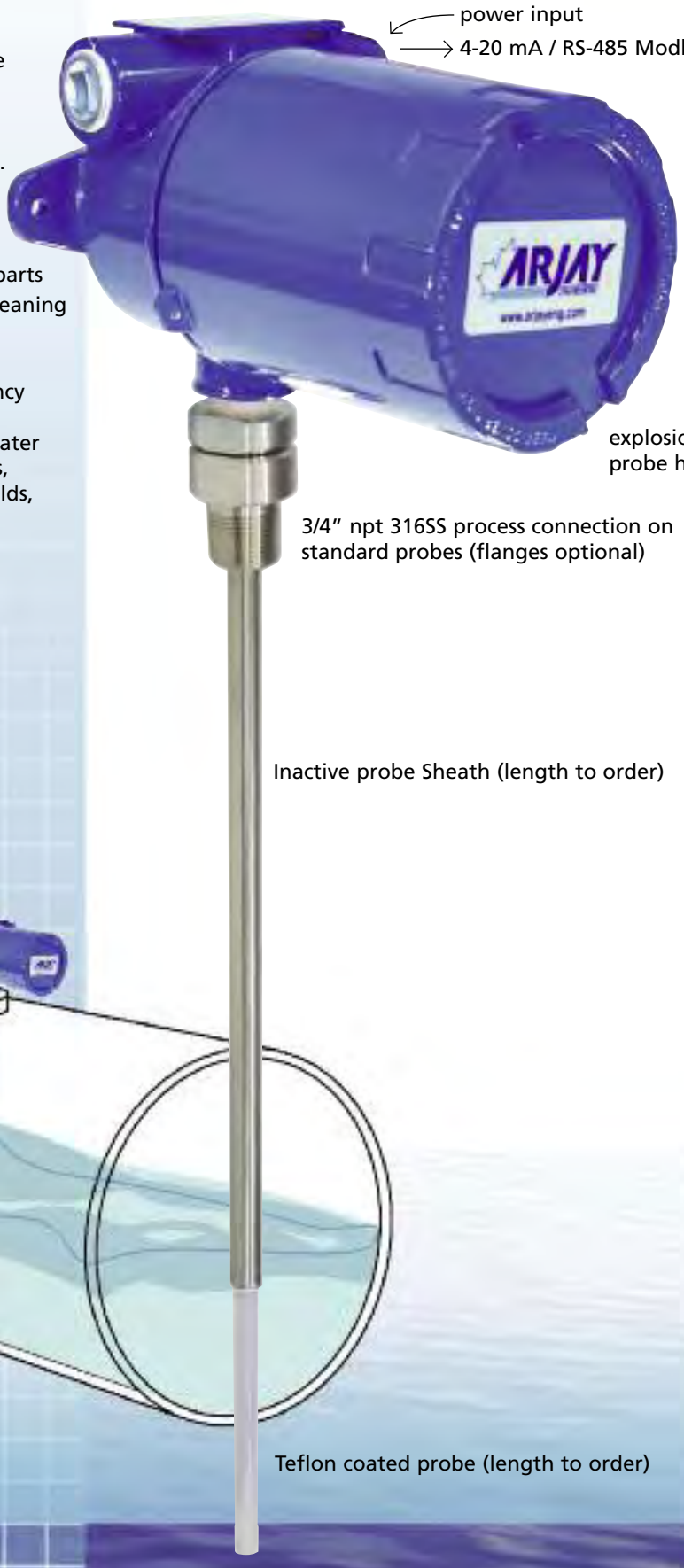
2880-FCM / 2881-FCM / 2882-FCM
Foam Control Monitor

Reliable monitoring of foaming conditions in process applications

Over 40 years of capacitance experience stands behind the 2880-FCM transmitter. The sensing probe continuously monitors the capacitance of the inserted probe. As the foam intrudes into the normal air or vapour space of the probe, the capacitance changes and a proportional signal output is provided.

- no moving parts
- electronics are integral to probe
- high corrosion resistant Teflon and 316SS parts
- HF capacitance does not require routine cleaning
- easy calibration and control set-up

The unique processor and oscillation frequency combination make this unit ideal for foam suppression applications. These include oil/water knock-out and treater trains, bulk separators, coalescing chambers, pre-compressor manifolds, wastewater sumps and ponds.



2880-FCM

Features and Benefits

- no moving parts
- electronics is integral to the probe
- high corrosion resistant Teflon and stainless steel wetted parts
- capacitance technology for high sensitivity
- HF capacitance technology does not require routine cleaning
- easy calibration and control set-up

Technical Specifications - Electronics

Operating Temp.	-20˚C to +55˚C
Resolution	.007% (.07 pF at 1,000 pF)
Accuracy	.04% of full scale pF
Power Input	12 vdc or 24 vdc, 0.1 amp max. 100-240 vac +/- 10%
Communication	RS-485 Modbus

Control Interface

2880-FCM	0/4-20 mA non-isolated output
2881-FCM	0/4-20 mA isolated output
2882-FCM	0/4-20 mA non-isolated output and 2 x 10amp@240 vac, SPDT, dry relays

Optional Viewing window of % Level LCD

Technical Specifications - Probe

Process Temp.	-60°C to +260°C (Teflon probe)
Pressure	103 bar/10342 kPA/1500psi at stable temperature
CRN	ABSA-CRN #OF07450.2
Wetted Parts	316SS and Teflon

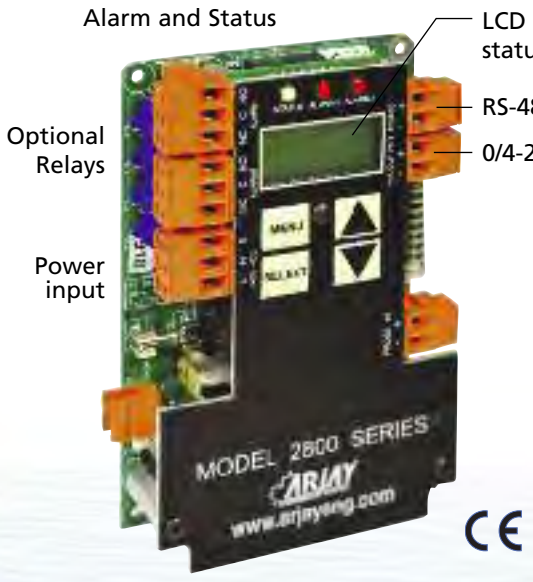
Probe materials are eligible for NACE MR-0175 Compliance

Hazardous Location Use

Available Component Certifications may be suitable to your application. Consult Arjay for assistance.

2880 Electrical Safety	UL, CSA, or IEC 61010
Housing	UL / FM / CSA Class 1, Group B,C,D; Class II, Group E,F,G
Probe	CSA Class 1, Group C,D

The electronics for this model can also be mounted remote from the probe. Refer to the Model 2852-FCM. The probe becomes Intrinsically Safe when ordered with an IS Barrier installed in 2852-FCM control panel: CSA Div 1, Class 1, Groups A,B,C,D



All calibration and power wiring is done at the main control unit. This is mounted directly onto the probe.

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