DIXON

The Right Connection®



ADS Industrial Fluid Controls

dixonvalve.com

Customer Service
877.582.3569

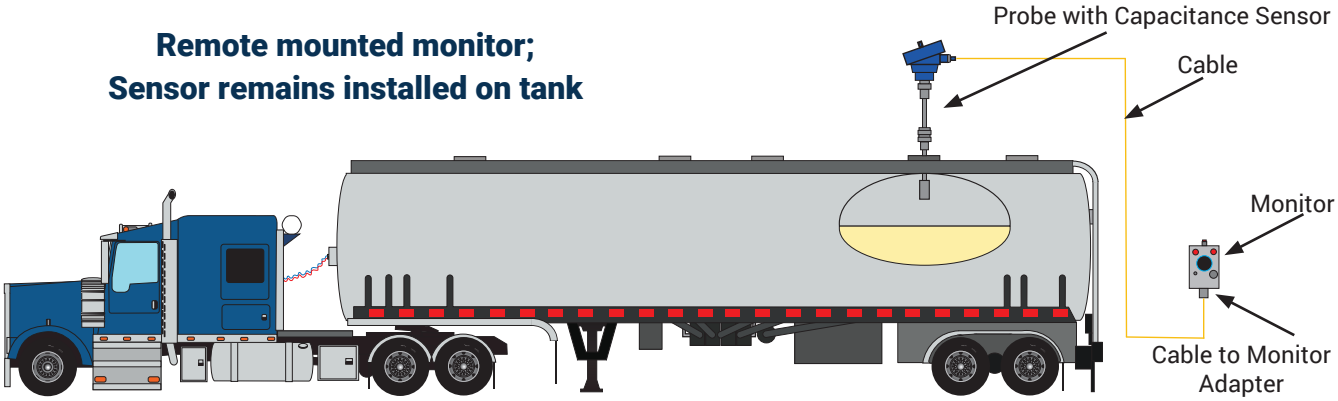
A100 Outalarm®
Self-Contained Portable Outage Alarm

Visual and audible alerts when probe makes contact



Mobile Tank Gauging with Remote A100 Monitor

Remote mounted monitor; Sensor remains installed on tank





Probe with Capacitance Sensor
A200PC36-A-A100M



Cable
A200CB3P25



Cable to Monitor Adapter
A100CBLMTR-002



Monitor
A100MTR

ADS Capacitance probes have been used for

- Petroleum products - gasoline, diesel, kerosene, and jet fuel
- Bio-diesel
- Water-based products
- Water/petroleum waste
- Ether
- Esters
- Surfactants
- Sulfuric acid
- Amines
- Molten sulfur
- Sodium hydroxide
- Methyl diphenyl diisocyanate (MDI)
- Vinyl chloride monomer
- Alcohol and methanol
- Brine

Capacitance probes work with all liquids with a dielectric constant 1.8 or higher.

Dixon® Industrial Fluid Control* manufactures products specifically designed for liquid terminal operations. Our standard product offering is shown on the following pages. However, numerous additional applications, materials, and custom designs are available. For technical information or assistance with ordering these products, please call 513.874.8499 or 877.582.3569 or visit dixonvalve.com.

*Formerly Automated Design Service, Inc. (ADS)

ADS Outalarm®'s with Probe

Applications
- Specifically designed for liquid terminal operation on batch loading and overfill protection, tank cars, tanks trucks, marine barges; suitable for open and closed domes

Sizes
- 24", 36", 48", and 60" probe lengths standard, other lengths available

Features
- Self-contained; no wires, tubing, or external power
- Rugged weather-and corrosion-resistant construction
- No moving parts, tip sensitive phase shift digital capacitance sensor for conductive and non-conductive fluid; conductivity sensor available for conductive fluids
- Requires no calibration or adjustment
- Adjustable insertion length through a standard 1/2" NPT fitting
- High-intensity audible and flashing visual outputs
- Full, hard graduated laser engraved rod
- A100 operates up to 5000 hours on a single Lithium-ion battery in standby mode
- Fail-safe, continuous battery monitor goes to alarm state on low battery
- Battery current drain <0.23 mA during standby; <60 mA in alarm state

Materials
- Wetted materials: 316 stainless steel, PTFE standard, and other materials available

Specifications
- Minimum dielectric constant 1.8 of sensing medium
- Temperature range:
  - capacitance probe: **-4°F** to **250°F (-20°C** to **121°C)**
  - high-temperature capacitance probe: **-4°F** to **325°F (-20°C** to **162°C)**
  - outalarm monitor: **-4°F** to **140°F** (**-20°C** to **60°C**)
- Activation point: 1/4" into liquid surface
- Compatible with most liquid or dry bulk material with a dielectric constant of 1.8 or greater
- Horn intensity: 101 dB at 2'
- Light output: 3 each 3000 mcd high-intensity red flashing LEDs
- Pressure rating on standard unit: **50 PSI**: consult Dixon for applications up to **300 PSI**
- CSA North America, ATEX, and IECEx approval for Class I Div I, Groups A,B,C, D, and Class I Zone 0 Groups IIC hazardous locations



A100
capacitance probe

A100 Probes

Length	Capacitance Part # 250°F (121°C) Maximum	Hi-Temperature Capacitance Part # 325°F (163°C) Maximum
24"	A100C24ASXE (Replaced A100C24A)	A100A24ASXE (Replaced A100HC24A)
36"	A100C36ASXE (Replaced A100C36A)	A100A36ASXE (Replaced A100HC36A)
48"	A100C48ASXE (Replaced A100C48A)	A100A48ASXE (Replaced A100HC48A)
60"	A100C60ASXE (Replaced A100C60A)	A100A60ASXE (Replaced A100HC60A)

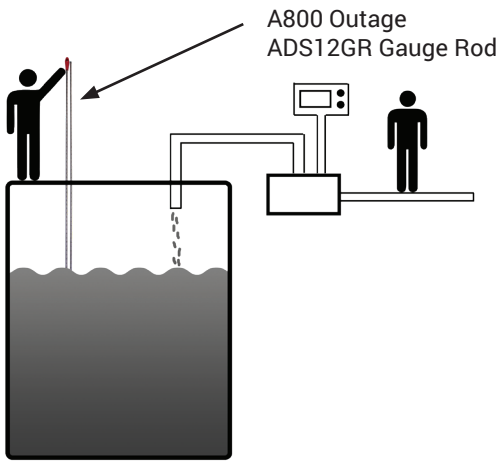
NOTE: Please see page 4 for the part number key.
Other lengths available, please contact Dixon at 877.582.3569 for quotes. For conductivity probe applications, we will need to know the material being sensed when quoting and/or what you want the probe tuned to.

A100 ADS Outalarm®'s with Probe Part Number Key

Dixon® ADS Outalarm's with Probe Part Number Key		Series	Sensing Type	Sensor Probe Length	Pressure Fitting	Shaft Material	Approved Environment
		A100	A-C	0-99	A-B-C-H	H/S	XE
Series	**Code**						
ADS Outalarm with Probe	A100						
Sensing Type	**Code**						
High temperature **325°F (162°C)** N.O. capacitance	A						
Standard temperature **250°F (121°C)** N.O. capacitance	C						
For conductivity, pressure, or tilt, contact a Dixon representative							
Sensor Probe Length	**Code**						
0-99 sensor probe length in inches	0-99						
Pressure Fitting	**Code**						
50 PSI gland 1/2" NPT, stainless steel	A						
150 PSI gland 1/2" NPT, stainless steel	B						
300 PSI gland 1/2" NPT, stainless steel	C						
50 PSI 1/2" NPT, Hastelloy®	H						
Material	**Code**						
Hastelloy probe shaft	H						
Stainless steel probe shaft	S						
Optional Approved Environment	**Code**						
Equipment that has been classified as safe for use in hazardous areas, leave blank for non-approved assemblies	XE						

ADS Tank Overfill Prevention Methods

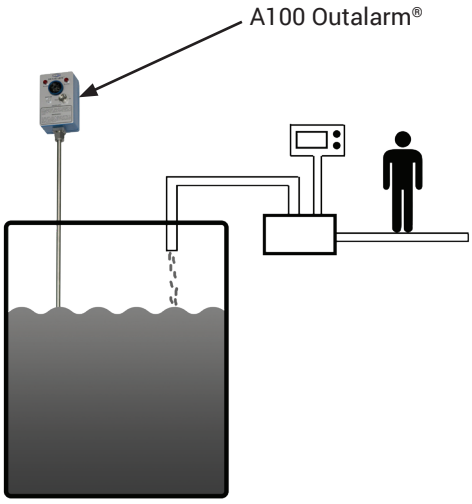
Manual Operator Gauging

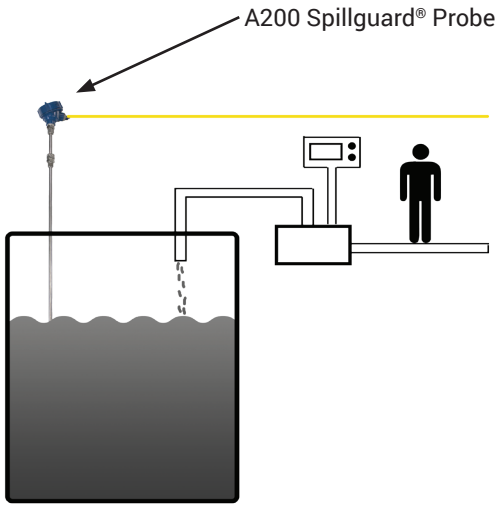



A800OG4


ADS12GR

Overfill Alarm



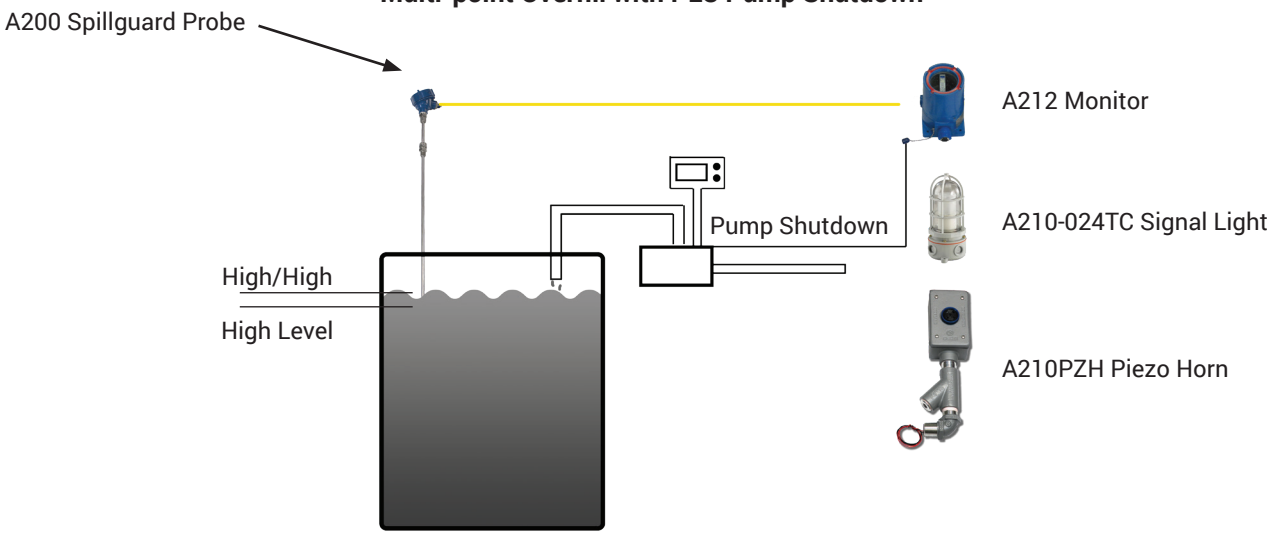



A210 Monitor


A210-024TC Signal Light


A210PZH Piezo Horn

Multi-point Overfill with PLC Pump Shutdown



A212 Monitor

A210-024TC Signal Light

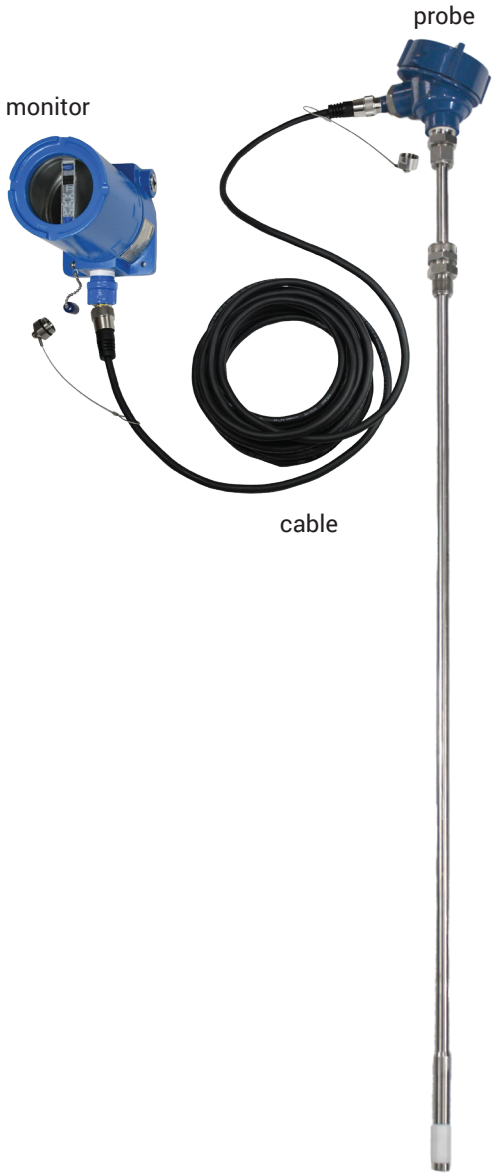
A210PZH Piezo Horn

ADS Spillguard® Systems - Monitors

Applications
- Shutdown and alarm system for tank cars, tank trucks, barges, and ships; suitable for open and closed domes

Sizes
- Standard cable lengths: 15', 25', and 50', other lengths available
- Insertion lengths 4" to 60" standard, other lengths available

Features
- Rugged, explosion-proof, weather-, chemical-, and corrosion-resistant
- LED status lights visible through glass cover
- Inserts into tank through standard 1/2" NPT fitting
- Probe can be portable or permanently installed in the vessel
- Laser engraved graduated rod with 1/4" graduations
- IP67 rated probe connector
- Fail-safe design, unit trips in the event of an open or shorted cable or loss of power
- Choice of capacitance, conductivity, or single-point ultrasonic sensors
- Input power: 120 VAC, 240 VAC, or 24 VDC, 2.5 watts
- Output relay de-energizes on high level, broken or shorted sensor cables, or loss of power
- Low voltage and current sensor, designed to safely operate in hazardous environments
- Optional self-test feature, tilt and ground verification interlocks, and latching circuit available



Materials
- IP66 and NEMA 4X rated explosion-proof aluminum monitor housing
- Stainless steel probe connector

Specifications
- Monitor: -4**°F** to **150°F (-20°C** to **70 °C)**
- Minimum dielectric constant 1.8
- Probe pressure rating: **50 PSI** with standard fitting; consult Dixon® for applications up to **300 PSI**
- Output relay dry contacts 2 form C (2PDT) rated 2 amps at 120/240 VAC, 1 form C (SPDT) with optional latching circuit and reset switch
- Monitor constructed from CSA/ATEX components
- Monitor designed for installation in Class I Division 1 Group BCD and Class I Zone 1 Group IIC hazardous locations
- Monitor designed for connection to probe operating in Class I Division 1 Group ABCD and Class I Zone 0 Group IIC hazardous locations

A210 Spillguard Monitors

Monitor Options	24V DC Part #	120V DC Part #
A210 Spillguard monitor	A210S0243 (Replaced A210-24)	A210S1203 (Replaced A210-120)
A210 Spillguard monitor with external reset switch	A210SR0243 (Replaced A210R-24)	A210SR1203 (Replaced A210SR103)
A212 Spillguard dual control monitor	A212S0243 (Replaced A212-24)	A212S1203 (Replaced A212-120)

NOTE: Please see page 7 for the part number key.

A21 ADS Spillguard® Monitor Part Number Key

Dixon® A21 ADS Spillguard Monitor Part Number Key		Series	Single or Dual Channel	Optional Special Operation	Supply Voltage	Connector
		A21	0-2-4	A-B-G-S-R	024-120	0-1-3-5-W
Series	**Code**					
ADS Spillguard Monitor	A21					
Single Or Dual Channel	**Code**					
Single channel	0					
Dual channel	2					
Four channel	4					
Optional Special Operation	**Code**					
Auto reset latching	A					
Bypass timer (not approved for hazardous locations)	B					
Ground verification	G					
Standard operation	S					
Resettable latching circuit	R					
Supply Voltage	**Code**					
24VDC supply	024					
120VAC supply	120					
Connector	**Code**					
No connector (conduit)	0					
Ten position	1					
Three position	3					
Five position	5					
Wireless	W					

ADS Spillguard® Systems - A200 Capacitance Probes



Capacitance Probes

Application
- For materials with dielectric constant > 1.8, liquids, powders, and slurries

Features
- 1/2" NPT sliding fitting standard, 3/4" fitting optional
- Open dome adapter and washout fitting available
- Tilt sensor optional

Materials
- Probe: 316 stainless steel
- Housing: NEMA 4X, IP66

Specifications
- Capacitance probe: **-4°F** to **250°F (-20°C** to **121°C)**
- High temperature capacitance probe: **-4°F** to **325°F (-20°C** to **162°C)**
- Monitor designed for installation in Class I Division 1 Group BCD and Class I Zone 1 Group IIC hazardous locations
- Monitor designed for connection to probe operating in Class I Division 1 Group ABCD and Class I Zone 0 Group IIC hazardous locations

Length	Capacitance Part # 250°F (121°C) Maximum	Hi-Temperature Capacitance Part # 250°F (121°C) Maximum
24"	A200C324AS (Replaced A200PC24A)	A200A324AS (Replaced A100PHC24A)
36"	A200C336AS (Replaced A200PC36A)	A200A336AS (Replaced A100PHC36A)
48"	A200C348AS (Replaced A200PC48A)	A200A348AS (Replaced A100PHC48A)
60"	A200C360AS (Replaced A200PC60A)	A200A360AS (Replaced A100PHC60A)

NOTE: Please see page 9 for the part number key.
Other lengths available, please contact Dixon at 877.582.3569 for quotes. For conductivity probes for conductive fluids we will need to know material being sensed when quoting and/or what you want the probe tuned to.

A200 ADS Spillguard® Probes Part Number Key

Dixon® A200 ADS Spillguard Probes Part Number Key		Series	Sensing Type	Connector	Sensor Probe Length	Pressure Fitting	Shaft Material
		A200	A/C	0-1-3-5	0-99	A-B-C-H	H-S
Series	**Code**						
ADS Spillguard Probes	A200						
Sensing Type	**Code**						
High temperature **325°F (162°C)** N.O. capacitance	A						
Standard temperature **250°F (121°C)** N.O. capacitance	C						
For conductivity, pressure, or tilt, contact a Dixon representative							
Connector	**Code**						
Wireless	0						
Ten position connector	1						
Three position connector	3						
Five position connector	5						
Sensor Probe Length	**Code**						
Sensor probe length in inches	0-99						
Pressure Fitting	**Code**						
50 PSI standard 1/2" NPT, stainless steel	A						
150 PSI gland 1/2" NPT, stainless steel	B						
300 PSI gland 1/2" NPT, stainless steel	C						
50 PSI 1/2" NPT, Hastelloy®	H						
Shaft Material	**Code**						
Hastelloy probe shaft	H						
Stainless steel probe shaft	S						

ADS Multi-Point Ultrasonic Sensors

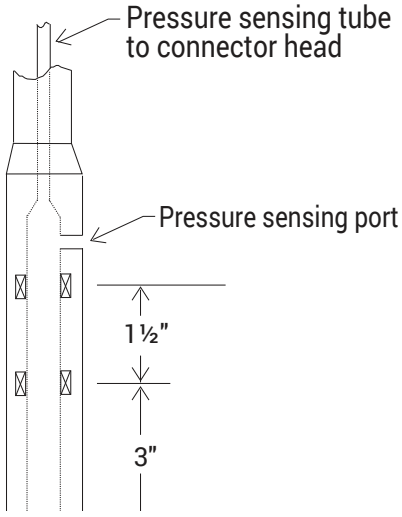
Applications
- For use when multiple detection points are required such as dribble mode, pump shutoff, overfill alarm, and where splashing is a concern

Features
- Intrinsically safe design class I, Div 1, Groups A, B, C, and D
- Up to five detection points available
- Rugged "tube in tube" ultrasonic sensor welded construction
- Individual level and pressure outputs
- Silicone strain gauge pressure transducer available, welded diaphragm, 0-50 PSIA standard range, single set point or alarm outside of a gap
- Tilt option
- Ground verification option
- Full hard heavy wall probe shaft, laser engraved scale up to 96" long

Material
- Wetted material: 316 stainless steel

Specifications
- Operating temperature range: **-40°F (-40°C)** to **250°F (121°C)**
- Monitor designed for installation in Class I Division 1 Group BCD and Class I Zone 1 Group IIC hazardous locations
- Monitor designed for connection to probe operating in Class I Division 1 Group ABCD and Class I Zone 0 Group IIC hazardous locations

Example:
3 point ultrasonic sensor





Sensor O.D.
is 7/8"

ADS Multi-Point Ultrasonic Sensors Part Number Key

Dixon® ADS Multi-Point Ultrasonic Sensors Part Number Key		Series	Sensor Length	Pressure Option	Tilt Option	Liquid Sensor Points[1]	Custom Number
		A330U	08-60	P	T	1-5	XXXXX
Series	**Code**						
ADS Multi-Point Ultrasonic Sensor	A330U						
Sensor Length	**Code**						
8″	08						
12″	12						
13″	13						
24″	24						
26″	26						
36″	36						
48″	48						
60″	60						
Pressure Option	**Code**						
Pressure	P						
Tilt Option	**Code**						
Tilt	T						
Liquid Sensor Points[1]	**Code**						
1 detection point	1						
2 detection points	2						
3 detection points	3						
4 detection points	4						
5 detection points	5						
Custom Assigned Number by Dixon	**Code**						
Custom Number	xxxxx						

[1] Contact Dixon at 877.582.3569 for distance between sensor points. Probes with three or more detection points require a custom monitor.

Wireless ADS Spillguard® Systems

Applications
- Shutdown and alarm system for tank cars, tank trucks, barges, and ships
- Suitable for open and closed domes

Sizes
- Insertion lengths: 4" to 60" standard; other lengths available

Features
- Rugged, explosion-proof, weather, chemical, and corrosion-resistant
- LED status lights visible through receiver glass cover
- Probe inserts into tank through standard 1/2" NPT process connection
- Probe is portable
- Laser engraved graduated rod with 1/4" graduations
- Fail-safe design: unit trips in the event of lost wireless communications
- Choice of capacitance, conductivity, or single or dual point ultrasonic sensors
- Input power: 120 VAC, 240 VAC, or 24 VDC
- Output relays de-energize on wetted sensor, broken wireless link, or loss of power and when charging
- Integral tilt interlock
- Lithium-ion battery powered
- 168 hrs (7 days) battery life
- Bluetooth 5.0
- Wireless range 115 ft.

Materials
- Monitor and probe housings: IP66 NEMA 4X rated explosion-proof aluminum
- Wetted sensor parts: PTFE and stainless steel

Specifications
- Capacitance sensor
- Minimum dielectric constant: 1.8
- Temperature range:
  - Capacitance probe: -**4°F** to **250°F (-20°C** to **121°C)**
  - High-temperature capacitance probe: -**4°F** to **325°F (-20°C** to **162°C)**
  - Probe pressure rating: **50 PSI** with standard fitting; consult Dixon® for applications up to **300 PSI**
- Output relay dry contacts 2 form C (2PDT) rated 2 amps at 120/240 VAC, 1 form C (SPDT) for fault status
- Monitor constructed from CSA/ATEX components
- Monitor designed for installation in Class I Division 1 Group BCD and Class I Zone 1 Group IIC hazardous locations
- Probe designed to operate in Class I Division 1 Group BCD and Class I Zone 1 Group IIC hazerdous locations



Probe



Controller



Battery Charger

Description	Part #
36" capacitance probe with tilt function	A200CTW36AS
24VDC receiver for installation in Hazardous locations	A212S024WXE
24VDC charger for installation in Hazardous Locations	A200CHG024XE

NOTE: Additional lengths available, for technical assistance or help with your application, please contact Dixon at 877.582.3569.

A240-Series Ground Verification Monitor

Applications

- Tank truck and railcar loading facilities
- Drum and barrel filling sites
- Loading of stationary tanks

Features

- Bright red and green indicators communicate A240-series ground monitor status
- Convenient user terminal blocks make installation easy
- Environmentally sealed enclosure provides long service life even in outdoor environments
- Integrates easily into process control systems
- Provides and verifies ground bond through a single connection



Specifications

- Temperature rating: **-40°F to 140°F (-40°C to 60°C)**
- Ingress protection: IEC 60529 IP 66
- NEMA rating: NEMA Type 4, 4X, 7, 9
- Conduit entries: three
- Suitable for installation in hazardous locations: Class I, Division 1 & 2, Groups B, C, and D hazardous locations, Class II, Division 1 & 2, Groups E, F, and G hazardous locations, and Class III hazardous locations
- Suitable for connection to hazardous locations: Class I, Division 1 & 2, Groups A, B, C, and D hazardous locations and Class I, Zone 0, 1 & 2, Groups IIC, IIB, and IIA hazardous locations
- Ground connection threshold: relay is energized when ground clamp connection is less than 10Ω
- Number of output relays: one
- Output replay configuration: one set of FORM C contacts (Normally Open, Common, and Normally Closed contacts)
- Output relay contact rating: 4Amp at 250VAC
- Monitor constructed from CSA/ATEX components
- Monitor designed for installation in Class I Division 1 Group BCD and Class I Zone 1 Group IIC hazardous locations
- Monitor designed for connection to probe operating in Class I Division 1 Group ABCD and Class I Zone 0 Group IIC hazardous locations

Description	Part #
ground verification monitor 120VAC	A240120
ground verification monitor 24VDC	A240024

A540-Series Ground Clamp and Junction Box

Applications
- Tank truck and railcar loading facilities
- Drum and barrel filling sites
- Loading of stationary tanks

Features
- Clamp is tethered to the cable by a stainless steel strap that protects the connection from strain and wear
- Pull-out resistant cord grip on junction box holds cable tighter the harder it is pulled
- Junction box creates convenient service point for hazardous location installations
- Coiled cable provides compact storage
- Strong clamping force penetrates grime and remains connected during loading process
- Provides ground and a ground-verification signal in a single clamp



Materials
- Jacket: thermoplastic elastomer
- Teeth: stainless steel

Specifications
- Temperature rating: **-40°F to 194°F (-40°C to 90°C)**
- Ingress protection: weatherproof, rain-tight, and dust tight
- Conduit entries: one 3/4" trade size hole and a factory-installed cable on the bottom
- Suitable for installation in hazardous locations: Class I, Division 1 & 2, Groups A, B, C, and D hazardous locations, Class II, Division 1 & 2, Groups E, F, and G hazardous locations and Class III hazardous locations
- Recommended wire between controller and the clamp: 18 GA stranded copper wire (THHN)

Description	Part #
ground clamp and junction box	A540CSB0251

ADS Outage Gauges

Applications
- Set level fill point for manual / visual fill control
- Measure outage requirements on mobile tanks

Feature
- Open dome bracket

Material
- 316 stainless steel



Length	Standard Outage Gauge Part #	Outage Gauge with J Bar Part #
2'	A800OG2	A8000GJ2
3'	A800OG3	A8000GJ3
4'	A800OG4	A8000GJ4
5'	A800OG5	A8000GJ5



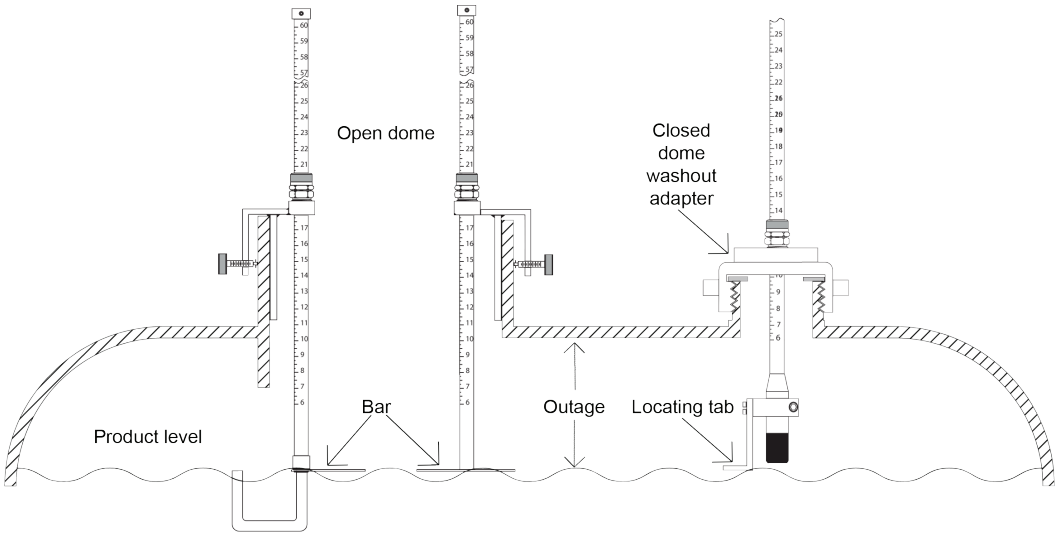
laser engraving closeup

Setting Outage on Closed Dome with A100LT Locating Tab

1. Screw the washout adapter onto the washout nozzle.
2. Withdraw gauge rod until tab touches inside shell of tank. Note reading on rod.
3. Add desired outage to reading and push down rod to the calculated reading.
4. The probe sensor is now at the desired outage.

Setting Outage on Open Dome Operation

1. Clamp bracket to vertical section of dome.
2. Withdraw gauge rod until bar touches inside shell of tank. Note reading on rod.
3. Add desired outage to reading and push down rod to the calculated reading.
4. The bar is now at the desired outage.
5. For tanks with manway protruding past shell, use J-bar gauge.



ADS Gauge Rods



Application
- Used to gauge liquid levels in any mobile tank

Size
- 1/2" x .065 weight

Features
- Laser engraved scale with 1/4" graduations
- Rods come in two sections that screw together at the midpoint
- Foot marks inscribed on rod at 1' intervals below the inch mark
- Heavyduty plastic handle

Material
- 316 stainless steel



laser engraving closeup

Description	Part #	Part # w/ Sliding Innage Bar
gauge rod, 4' length, one-piece	ADS4GR	ADS4GR-IB
gauge rod, 8' length, two-piece	ADS8GR	ADS8GR-IB
gauge rod, 12' length, two-piece	ADS12GR	ADS12GR-IB

ADS Spillguard® Cables

Features
- 3 or 5 pin connector
- 316 stainless steel armored cable, yellow rubber cable, or extreme life cable
- Custom lengths available, please call 877.582.3569 for more information

Armored Cables



Length	3 Pin Part #	5 Pin Part #
15'	A200CA3P15	A200CA5P15[1]
20'	A200CA3P20	A200CA5P20[1]
25'	A200CA3P25	A200CA5P25[1]
50'	A200CA3P50	A200CA5P50[1]

[1] Legacy part numbers

Rubber Cables



Length	3 Pin Part #
25'	A200CB3P25[1]
30"	A200CB3P30

[1] Legacy part numbers
Note: For use with (-M) mini connectors only.

Heavy Duty Cables



Length	3 Pin Part #	5 Pin Part #
15'	A400ESS0315XE	A400ESS0515XE
25'	A400ESS0325XE	A400ESS0525XE
50'	A400ESS0350XE	A400ESS0550XE

NOTE: Please see page 17 for part number key.

A400 Heavy Duty Cable Part Number Key

Dixon® A400 Extreme Life Cable Part Number Key		Series	Jacket Material	Male End Orientation	Female End Orientation	Number Of Conductors/ Connector Pins	Cable Length In Feet	Approved Environment
		A400	A-C-E-P	F-R-S	F-R-S	03-05-10	15-25-50	XE
Series	**Code**							
Extreme Life Cable	A400							
Jacket Material	**Code**							
Armored PVC	A							
Coiled TPU	C							
Extreme life	E							
Polyvinyl-Chloride (PVC)	P							
Male End Orientation	**Code**							
Flying leads	F							
Right angle connector	R							
Straight connector	S							
Female End Orientation	**Code**							
Flying leads	F							
Right angle connector	R							
Straight connector	S							
Number Of Conductors/ Connector Pins	**Code**							
Three position cable	03							
Five position cable	05							
Ten position cable	10							
Cable Length In Feet	**Code**							
15 feet	15							
25 feet	25							
50 feet	50							
Optional Approved Environment	**Code**							
Equipment that has been classified as safe for use in hazardous areas, leave blank for non-approved assemblies	XE							

ADS Parts and Accessories



A100DA

ADS Open Dome Adapters

Features

- Flexible design fits most domes
- 1/2" and 3/4" NPT port for Outalarm® probes

NPT Size	Stainless Steel Part #
1/2"	A100DA
3/4"	A100DB



A100TTA

Tank Washout Caps

Description	Part #
tank truck 3" washout adapter, 1/2" NPT	A100TTA
tank truck 3" washout adapter, 3/4" NPT	A100TTB
washout cap with swivel	A200SA
washout cap with swivel and 2" vent	A200SVA



A200SA



A210CR-3

Cable Junction Boxes

Description	Part #
3 pin cable junction box	A210CR-3
5 pin cable junction box	A210CR-5



A210PZH-24

Additional Parts & Accessories

Description	Part #
1" cam & groove coupler and 1/2" NPT bushing, stainless steel	A100CA1050
1" cam & groove coupler with 1/2" NPT bushing and 1" NPT vent tee, stainless steel	A100CA1050V
A100 / 200 splash guard, with 1-1/8" diameter poly	A100SG-POLY
locating tab for A100 / 200 probes	A100LT
replacement A100 monitor only	A100MTR
cable to monitor adapter	A100CBLMTR
A210 Piezo horn 24V DC	A210PZH-24
tri-color external signal light 24V DC	A210-24TC
tri-color external signal light 120V AC	A210-120TC



A210-12TC

ADS Parts and Accessories

A100 Monitor Repair Parts

Description	Part #	Qty
foam battery retainer	30030	1
horn assembly repair kit	30031RK	1
horn retaining ring	30032BLA	1
switch guard	30040SS	1
serial number instruction label	30044AL	1
A100 enclosure gasket	30205SI	1

Additional Parts & Accessories

Description	Part #
capacitance probe tester	A500
pressure tester	A400PSAL10012
cable to A100 adapter kit	A100CBLMTR
cable to monitor adapter kit, 3 pin mini	A100CBLMTR-002
stahl repeater parts for A210	30092RK
stahl repeater parts for A211	30093RK
replacement timer for A210B-series	30399RK
A100 capacitance probe subassembly	30077-xxx[1]
A200 capacitance probe subassembly	30139-xxx[1]

[1] 001-099 = probe length in inches



A500

Dielectric Constant Common Materials

Fluid	Dielectric Constant
Acetal	3.8
Acetaldehyde	15
Acetamide	59.2
Acetic acid	6.2
Acetone	20.7
Acetophenone	18
Acetyl bromide	16.2
Acetyl chloride	15.9
Acetylacetone	23
Acetylene dibromide	7.2
Acetylene tetrabromide	5.6
Aconite acid ester	6.3
Adipic acid	1.8
Aerosile	1
Aether	4
Alcohol, allyl	20.6
Alcohol, cetyl	3.6
Alcohol, diacetone	18.2
Alcohol, ethyl (ethanol)	24.3
Alcohol, methyl (methanol)	33.1
Alcohol, propyl	21.8
Allyl chloride	8.2
Allyl iodide	6.1
Aluminum bromide	3.4
Ammonia	15
Ammonia solution 25%	31.6
Amyl amine	4.5
Aniline	7.3
Anisole	4.5
Antimony hydride	1.8
Argon	1.5
Arsine	2.1
Arsole	2.3
Azoxybenzene	5.2
Benzene	2.3
Bromine	3.1
Butane	1.4
Butanoic acid	3
Caproic acid	2.6
Caprylic acid	2.5
Carbon disulfide	2.64
Carbon tetrachloride	2.23
Castor Oil	4.7
Chlorine, chlor fluid	2
Chlor benzene	5.7
Chloroform	4.8
Coconut oil, refined	2.9
Cotton seed oil	3.1
Cresol	10.6
Cumene	2.4
Decane	2
Diesel oil, fuel	2.1
Dodecane	2
Ether	4.3

Fluid	Dielectric Constant
Ethylamine	6.3
Ethylene glycol	37
Fish oil	2.6
Fluorobenzene	6.4
Furan	3
Furfural	42
Gasoline, gas	2
Glycerine	47 - 68
Glycerol	42.5
Glycerol water	37
Glycol	37
Heptane	1.9
Hexane	2
Hexanol	13.3
Hydrazine	52
Iodine	11.1
Isopropanol	18
Jet fuel	1.7
Kerosene	1.8
Linoleic acid	2.6 - 2.9
Linseed oil	3.2 - 3.5
Methane	1.7
Naphthalene	2.5
Octane	2
Oil	2
Olive oil	3.1
Oxygen	1.51
Palmitic acid	2.3
Palm seed oil	1.8
Paraffin	1.6
Pentane	1.8
Phenol	4.3
Pentanol	14.8
Phosgene	4.7
Phosphorus liquid	3.9
Pinene	2.7
Propane	1.6
Propanol, propyl alcohol	2.2
Propylene	11.9
Propyl Ether	3.3
Pyridine	1.12
Resorcinol	3.2
Stearic acid	2.3
Styrene	2.4
Terpinene	2.7
Toluene	2.0 - 2.4
Transformer oil	2.1
Turpentine (wood), white spirit	2.2
Vinegar	24
Water	10
Water, demineralized	29.3
Water, heavy	78.3
Water - oil emulsion	24
Wine	25

A comprehensive list is available on dixonvalve.com.

Sensor Selection Guidelines

Capacitance

Capacitance probes work with all liquids with a dielectric constant minimum of 1.8 or higher (Higher numbers on dielectric chart are good, 3-100 makes no difference to sensor)

- Temperature does affect the dielectric constant
- Solution and chemical compatibility to be monitored also need to be considered
  - Note: Some high-viscosity, sticky materials may adhere to the sensor and cause the sensor to read wet

Ultrasonic

- For multi-point applications – up to 5 sense points
- Ideal for areas where splashing is a problem
- Pressure sensing options available - specify pressure at time of order

Conductivity

All conductivity probe orders must include product used and/or specific tuning requested. Standard conductivity tuning is 200K Ohm.

These two liquids are the most common for conductivity probe use:

- Alcohol: Low in conductivity, requires 2 megOhm tune
- HCL: High in conductivity requires 10K Ohm tune[1]

[1] **HCL fumes are very invasive. Capacitance sensors not recommended. Use conductivity sensors only** ⚠

Conductivity probes are an alternative to capacitance probes if the liquid is conductive and there is risk of the capacitance probe being falsely tripped from splashing.

Dual electrode conductivity probes are good for liquids that may stick to the electrode. The exposed electrodes can easily be wiped off between loads.

NOTE: There are always exceptions to these basic rules. Please call Dixon at 877.582.3569 if you have any questions regarding your application.

Notes

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