

# Measurement Solutions

FOR THE OIL AND GAS INDUSTRIES

- **Overfill Protection**
- **Water Cut**
- **Mud Pit Level**
- **Total Level**
- **Interface Measurement**
- **Static Grounding**
- **Pressure**
- **Temperature**

**AMETEK®**

# The Products You Need for the Oil & Gas Industry

## BS&W Water Cut

### UNIVERSAL IV CUT MONITOR

- Durable: Offered in either a direct pipe mount which reduces installation costs or an integral spool piece
- Measurement capability of 0-50% in light oil and 0-80% in heavy oil
- Low maintenance
- Temperature compensated
- Suitable for all size LACT units (down to 1")

**APPLICATIONS:** Automatic well testing, LACT units, basic sediment and water, separation vessels, pipeline slug detection, truck unloading



## Overfill Protection for Floating Roofs

### INTELLIPOINT

- Ideal for SIL2 certifications
- No calibration or setpoint adjustments
- Automatically recognizes and ignores coating to prevent false alarms
- Universal power supply automatically detects input power source
- AutoVerify continuously checks electronics and sensing elements for faults
- ManualCertify checks that AutoVerify circuits are functioning
- Cote-Shield circuitry eliminates maintenance required with traditional mechanical switches

**APPLICATIONS:** Overfill/high level alarms, floating roof tank

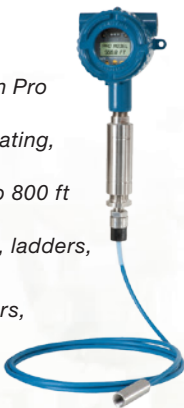


## Interface Measurement

### UNIVERSAL IV

- Fourth generation RF Continuous system with Pro and Lite models available
- Pro model is applicable for: conductive, insulating, and heavy/light coating
- Measurement span as short as 1 in (25 cm) to 800 ft (244 m) with no dead zone areas
- Immune to tank obstructions such as nozzles, ladders, pipes and agitators

**APPLICATIONS:** Interface, desalter/dehydrators, electrostatic separators, heater treater, free water knockout



## Level Transmitter

### USONIC

- Two-wire loop powered, HART
- Display is menu driven and easily configured without detailed procedures
- Units designed for either Intrinsically Safe or Explosion Proof in Class 1 Div 1, Zone 0 environments
- Response time: 300 milliseconds
- Range: up to 30 ft

**APPLICATIONS:** Mud tanks, logging, frac fluids



## Oil/Water Interface Level Control

### DUMPSTAR

- Prevent dumping of valuable oil with water draw-off
- Install directly into existing vessel as retractable sensor will fit through a minimum opening of 7/8 in
- Time Delay: 0-90 seconds, standard

**APPLICATIONS:** Desalter/dehydrator, heater treater, stock tank, low level alarm, automatic well testing, free water knockout



## TDR Level Transmitter

### IMPULSE GUIDED WAVE RADAR

- 2-wire, HART or Modbus communication
- Accuracy to  $\pm 3$  mm and resolution to 1 mm
- Hazardous approvals, Intrinsically Safe, Explosion Proof and Non-Incendive approvals

**APPLICATIONS:** Brine storage, frac trucks, oil storage



## Open Air Radar

### DR5200/DR7000

- 2-wire, loop powered device with easy navigation display and touch screen interface
- Class I, Div 1, Zone 0 installation
- 2 GHz bandwidth determine the true level in the tank even with agitated surfaces
- Process seal ensures vessel integrity
- Antenna types and materials for all applications

**APPLICATIONS:** Coker



## Guided Wave Radar

### DR2000 (Product Level Only) DR7100 (Product Level and Interface)

- 2-wire level gauge with an easy 3-step setup process
- Class I, Div 1, Zone 0 installation
- Special process separator for the most extreme conditions
- Stable measurement through agitated surfaces, foam, and fine dust in the tank
- Probe types and materials for all applications

**APPLICATIONS:** LNG storage, oil storage, chemical tanks





# The Products You Need for the Oil & Gas Industry

## Total Tank Level System

### Multi Variable Liquid Level Sensor

- High Accuracy: 0.01% of measured span - less than 2 mm absolute, over full measurement range (longest lengths)
- The stainless steel probe meets FM approvals for Class 1 Div. 1, Zone 1 Explosion Proof hazardous area installations
- The Kynar flexible probe meets FM approvals for Class 1 Div. 1, Zone 1 Intrinsically Safe hazardous area installations
- Modbus RTU digital output for total level, interface level, temperature, system diagnostics
- No calibration; easy to install

**APPLICATIONS:** Total level, interface level, temperature (5 sensors over active range)



## Sta-Kool Cooling Element

- Designed for pressure measurement in extreme temperatures
- Laboratory tested—reduces 400° F process temperature down to 100° F
- Max. operating temperature of 750° F and max. pressure of 5,000 psi
- 316L stainless steel material
- 1/2-14 NPT male x 1/2-14 NPT female connection

**APPLICATIONS:** Distillation separation, fractioning columns, cokers, gas plants



## XR Series

### Gauges and Diaphragm Seal

- Leak Proof, tamper resistant gauge and seal
- Model 1981: 316L stainless steel socket and 316L stainless steel seamless bourdon tube
- Model 1986: MONEL socket and MONEL seamless bourdon tube
- Range: 0-15 psi to 0-3,000 psi
- Seal fill fluid: DC 200 silicone standard; other options available

**APPLICATIONS:** Well testing, mud drilling, alkylation unit



## Model 1981 Gauge

- 316L stainless steel with seamless bourdon tube
- Advantage model includes dampened movement option
- Accuracy:  $\pm 0.5$  of span
- Available in liquid filled or field fillable configurations
- High temperature acrylic window; laminated shatter-resistant glass options available

**APPLICATIONS:** Well testing, free water knockout, stock tanks, LACT, mud drilling, desalter/dehydrator, coker, field dehydration, LNG storage



## Model 656 Gauge

- 304 stainless steel case and 2-1/2 inch (63mm) and 4 inch (100mm) sizes
- Filling liquid: glycerin, silicone, mineral oil
- Ideal for pumps, compressors, and machine tools

**APPLICATIONS:** Well testing, free water knockout, stock tanks, LACT, compression stations



## Electronic Pressure Measurement

### Model 831 and IDT Transmitters

- 316 stainless steel construction
- Pressure ranges from 6 psig to 5000 psig
- Differential Pressure, Standard and Low Power models available
- Cable and connection options available
- Model 831 is CSA approved, explosion proof, NACE standard for offshore applications
- Model IDT is FM approved for Intrinsically Safe operation

**APPLICATIONS:** Well testing, drilling mud, well head pressure



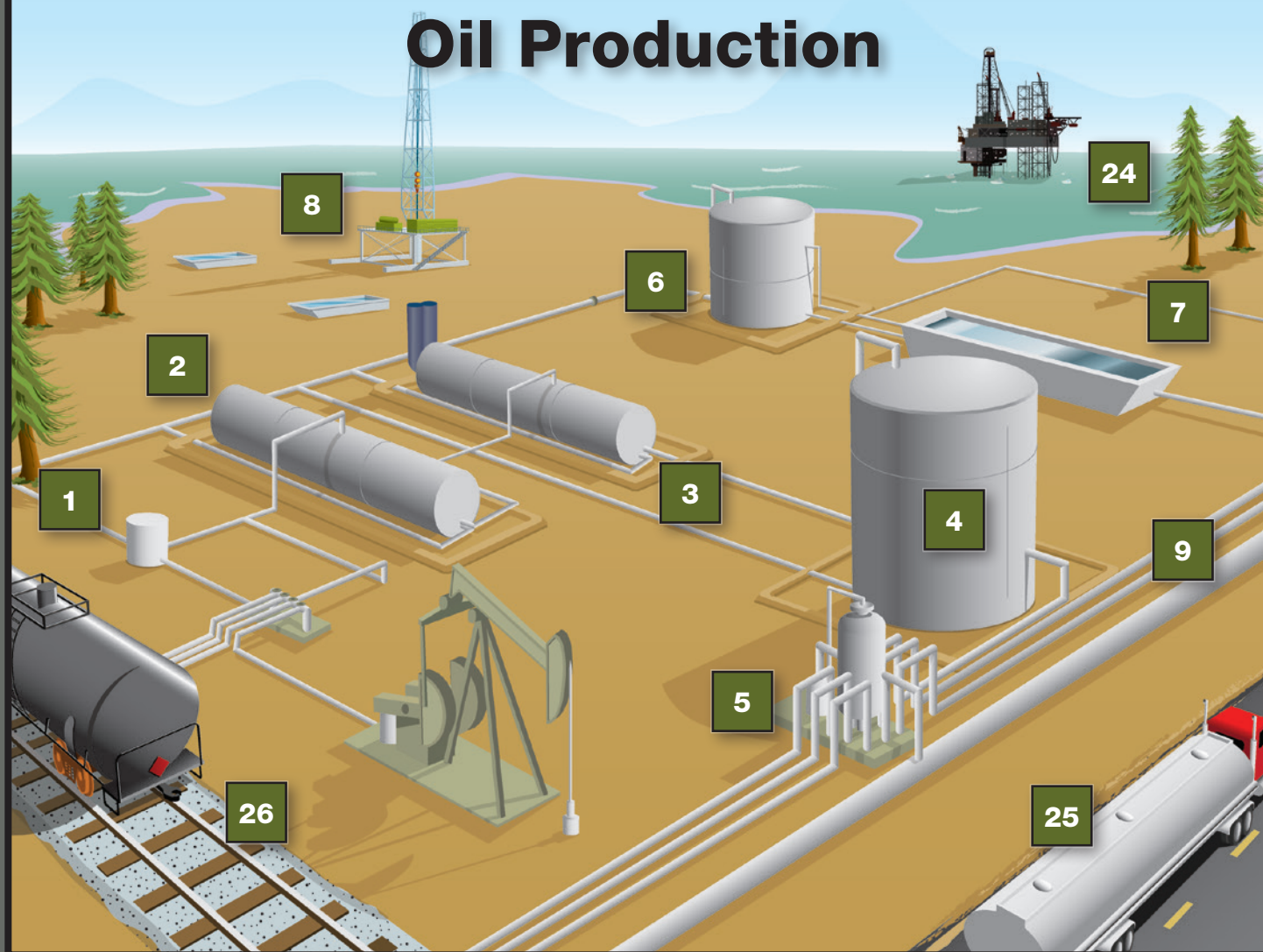
## Static Grounding Reels

- 20 ft, 50 ft, 75 ft, 100 ft cable lengths
- Light Duty and Heavy Duty models
- Tested to 5,000 cycles
- 10 ohms maximum resistance between clamp and mounting base
- Multiple clamp and cable options

**APPLICATIONS:** Tank bodies, railcars, dock platforms



# Oil Production

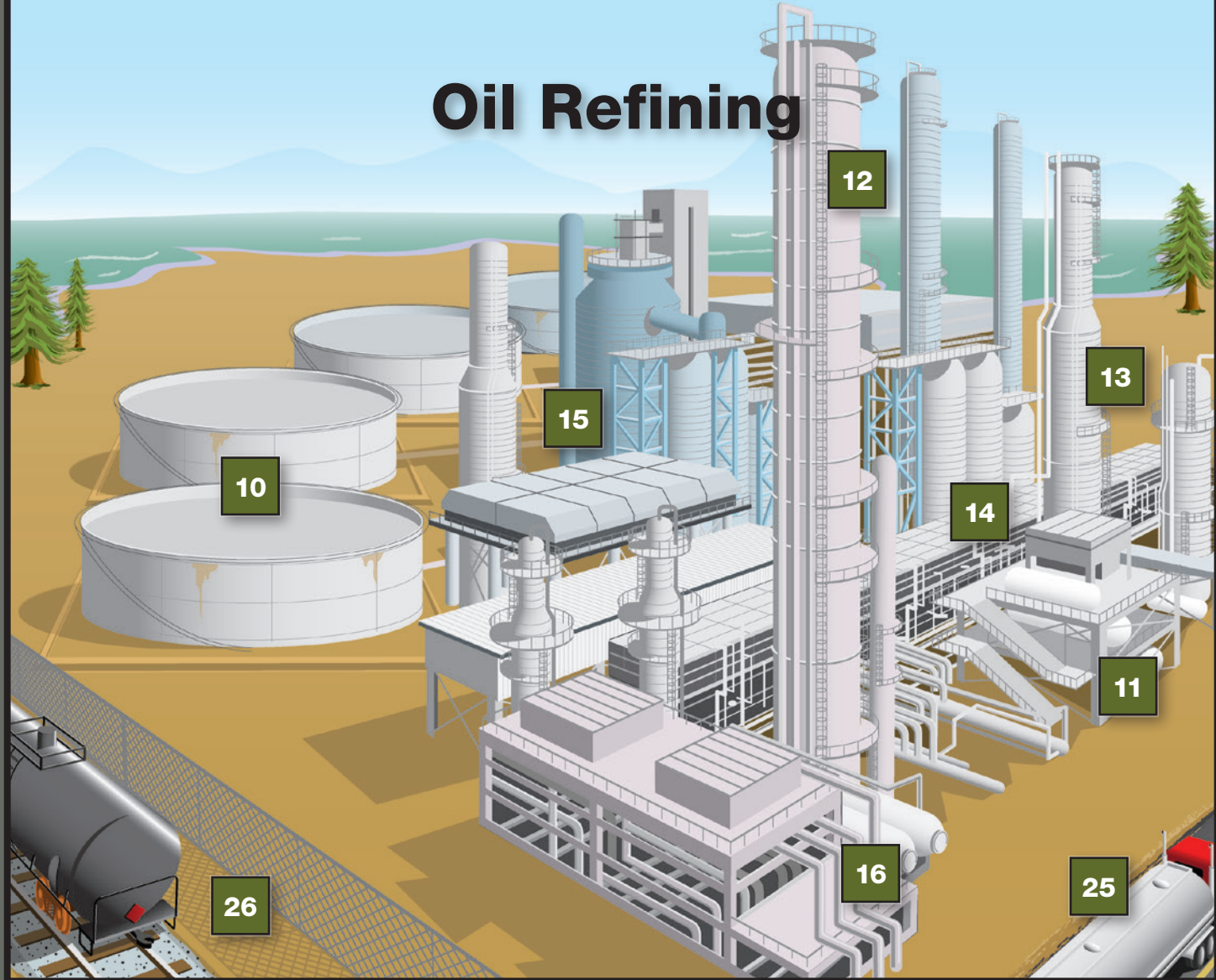


## MODBUS AND LOW POWER DEVICES AVAILABLE

APPLICATION	MEASUREMENT	AMETEK SOLUTION
1 Automatic Well Testing	Interface Control Interface Alarm Water Cut High Level Alarm Pumping Capacity	Universal IV™ IntelliPoint™ Universal IV Cut Monitor IntelliPoint™ XR-81/831 – RF Continuous Level Transmitter – RF Point Level Transmitter – BS&W Water Cut – RF Point Level Transmitter – Pressure Transducer
2 Multi-Phase Separator/Free Water Knock-Out	Interface Control Water Dump High Level Alarm Water Cut Separator Back Pressure	Universal IV™ Dumpstar™ IntelliPoint™ Universal IV Cut Monitor 1981/656 – RF Continuous Level Transmitter – RF Oil/Water Interface Control – RF Point Level Transmitter – BS&W Water Cut – Pressure Gauge
3 Heater Treater	Interface Control Water Dump High Level Alarm Water Cut Heat Wellstream Oil	Universal IV™ Dumpstar™ IntelliPoint™ Universal IV Cut Monitor ADJ Bimet – RF Continuous Level Transmitter – RF Oil/Water Interface Control – RF Point Level Transmitter – BS&W Water Cut – Bimetallic Thermometers
4 Stock Tank	Interface Control Water Dump High Level Alarm Oil Storage Line Pressure	Universal IV™ Dumpstar™ IntelliPoint™ 1981/656/ICDT – RF Continuous Level Transmitter – RF Oil/Water Interface Control – RF Point Level Transmitter – Pressure Gauge/Transducer
5 Lease Automatic Custody Transfer (LACT)	Water Cut Panels/Pressure Transmitters	Universal IV Cut Monitor 1981/656/IDT – BS&W Water Cut – Pressure Gauge/Transmitters
6 Skim Tank	Interface Control Water Dump High Level Alarm Pump Pressure	Universal IV™ Dumpstar™ IntelliPoint™ 1981/656 – RF Continuous Level Transmitter – RF Oil/Water Interface Control – RF Point Level Transmitter – Pressure Gauge

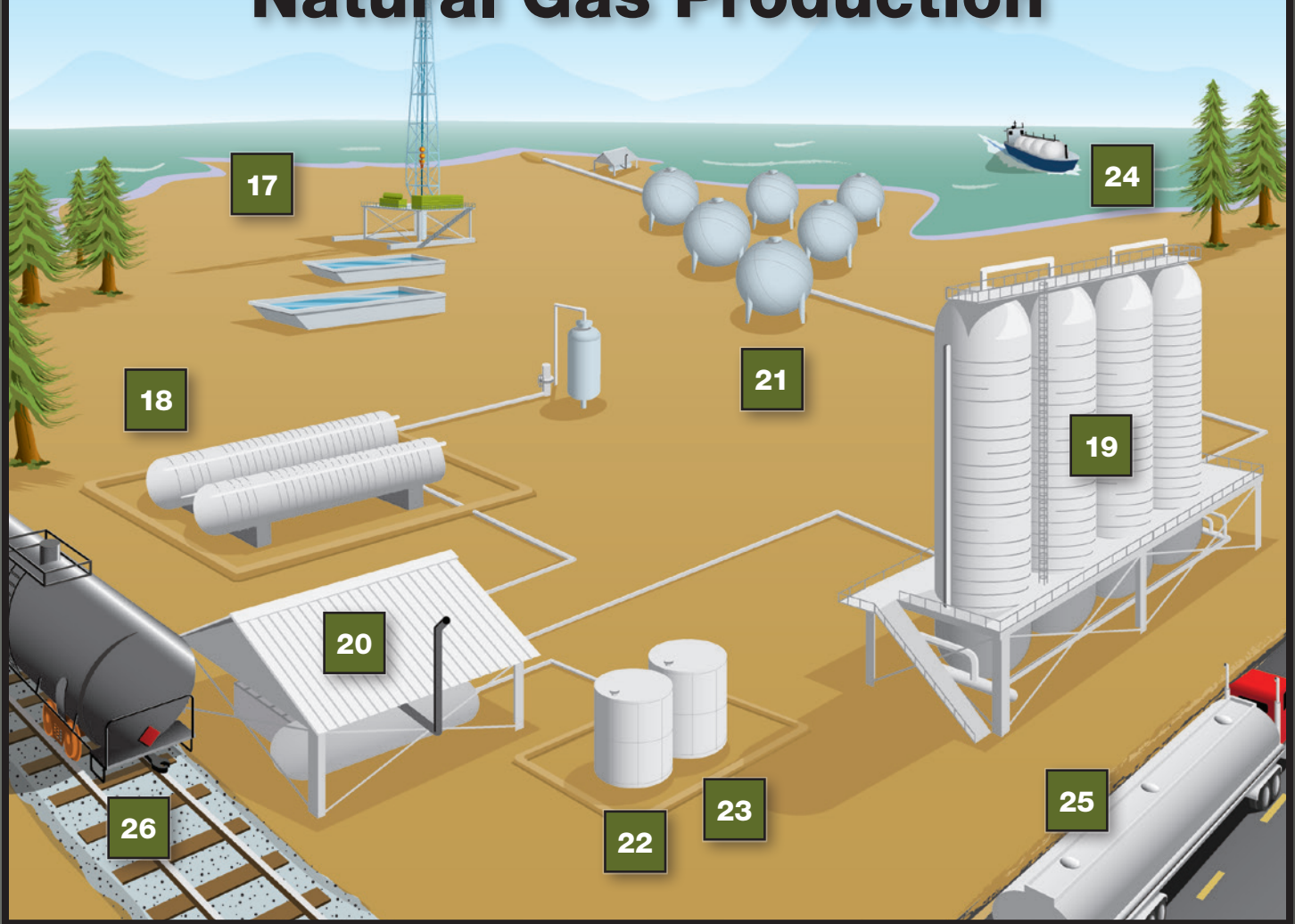


# Oil Refining



	APPLICATION	MEASUREMENT	AMETEK SOLUTION
7	Flotation Cell	Interface Control Pump Pressure	Universal IV™ 1981/656 – RF Continuous Level Transmitter – Pressure Gauge
8	Drilling Mud	Pit Level Sensor Compressor Pressure	USonic™ XR-81/831 – Ultrasonic Level Transmitter – Pressure Transducer
9	Pipeline Slug Detection	Water Cut Pipeline Pressure	Universal IV Cut Monitor XR-81/831 – BS&W Water Cut – Pressure Transducer
10	Tank Farms	High Level Alarm Floating/Fixed Roof Water Bottom Water Cut Overfill/Low Level Alarm	IntelliPoint™ IntelliPoint™ Universal IV™ Universal IV Cut Monitor IntelliPoint™ – RF Point Level Transmitter – RF Point Level Transmitter – RF Continuous Level Transmitter – BS&W Water Cut – RF Point Level Transmitter
11	Desalter/Dehydrator	Grid-Interface Control Interface Backup Alarm Water Cut Grid Guard Pressure Temperature	Universal IV Cut Monitor Dumpstar™ Universal IV Cut Monitor Universal IV Cut Monitor 1981/656 ADJ Bimet – BS&W Water Cut – RF Oil/Water Interface Control – BS&W Water Cut – BS&W Water Cut – Pressure Gauge – Bimetallic Thermometers
12	Atmospheric & Vacuum Fractionating Columns	Interface Control High Temperature Pressure	Universal IV Cut Monitor ADJ Bimet 1981LS – BS&W Water Cut – Bimetallic Thermometers – Pressure Gauge
13	Alkylation Unit	Acid/Alkylate Interface Low Level Alarm % Acid in Alkylate Continuous Storage Level Pressure	Universal IV™ Dumpstar™ Universal IV Cut Monitor Universal IV™ 1986/XR-86 – RF Continuous Level Transmitter – RF Oil/Water Interface Control – BS&W Water Cut – RF Continuous Level Transmitter – Pressure Gauge

# Natural Gas Production

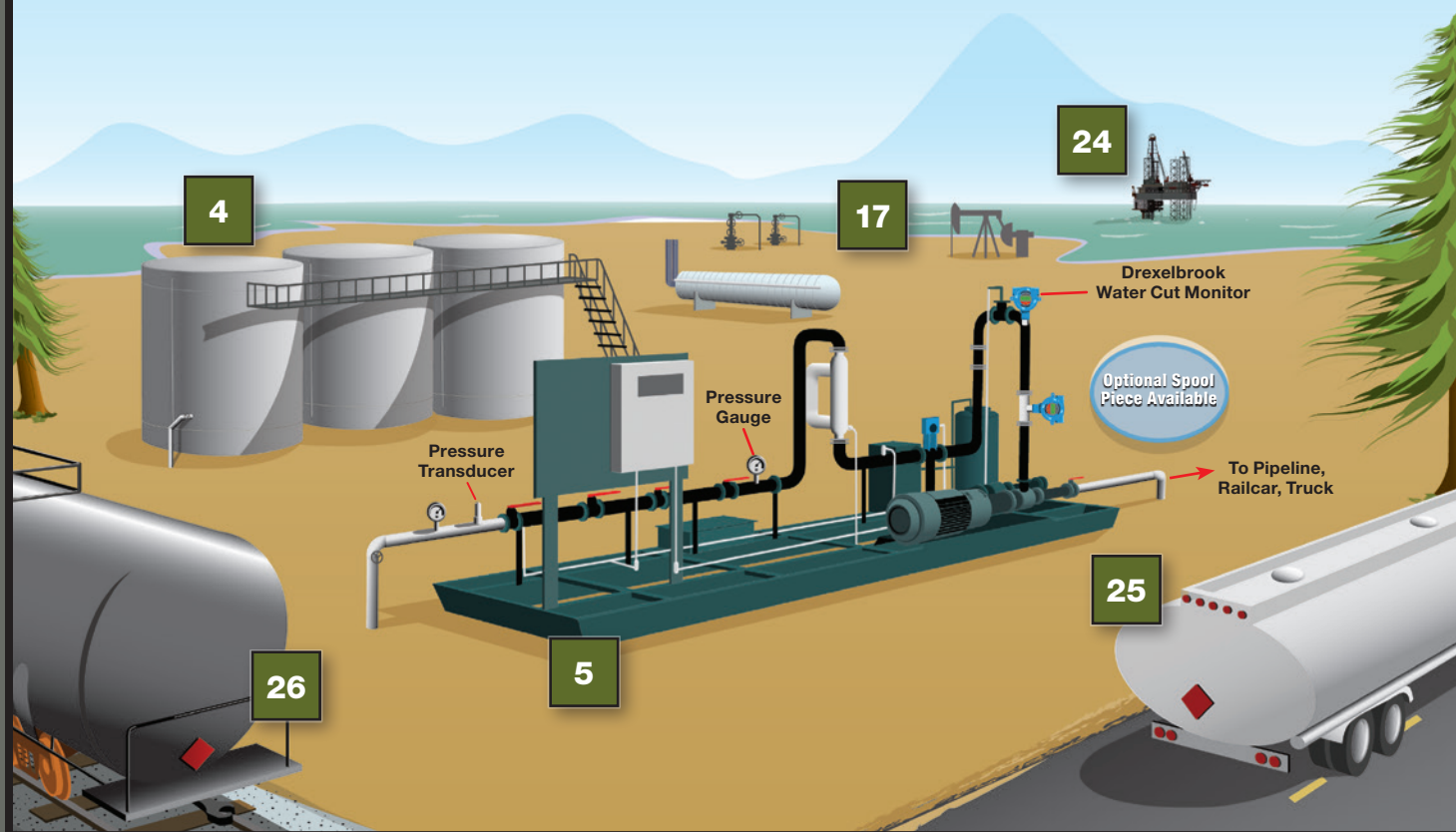


MODBUS AND LOW POWER DEVICES AVAILABLE

APPLICATION	MEASUREMENT	AMETEK SOLUTION
14 Coker	Drum Level Pressure Temperature	DR7000™ 1981 ADJ Bimet – Radar Level Transmitter – Pressure Gauge – Bimetallic Thermometers
15 Lube Oil Plant	Interface Control Water Dump High Level Alarm Pressure	Universal IV™ Dumpstar™ IntelliPoint™ 1981/656 – RF Continuous Level Transmitter – RF Oil/Water Interface Control – RF Point Level Transmitter – Pressure Gauge
16 Distillation Separator	High Temperature Pressure	ADJ Bimet 1981LS – Bimetallic Thermometers – Pressure Gauge
17 Drilling Mud	Pit Level Sensor	USonic™ – Ultrasonic Level Transmitter
18 Field Dehydration	Separator Separator Condensate Tank Condensate Tank Water Storage Tank Water Storage Tank Pressure	Universal IV™ IntelliPoint™ Total Tank Level System Impulse™ TDR Impulse™ TDR IntelliPoint™ 1981 – RF Continuous Level Transmitter – RF Point Level Transmitter – Magnetostrictive Level Transmitter – TDR Level Transmitter – TDR Level Transmitter – RF Point Level Transmitter – Pressure Gauge
19 Gas Plant/Gas Fractionation	Liquid/Gas and Liquid/Liquid Control Pressure Temperature	Universal IV™ 1981 ADJ Bimet – RF Continuous Level Transmitter – Pressure Gauge – Bimetallic Thermometers
20 Compressor Stations	Total Level & Interface Pressure	Tank Tracker™ 1981/IDT – Magnetostrictive Level Transmitter – Pressure Gauge/Transmitters



# Lease Automatic Custody Transfer (LACT) Unit



APPLICATION		MEASUREMENT	AMETEK SOLUTION	
21	LNG Storage	Level Control Level Control High Level Alarm LNG Discharge Alarm Pressure	DR5200, DR7100™ Impulse™ TDR, DR2000 IntelliPoint™ IntelliPoint™ 1981	– TDR Level Transmitter – TDR Level Transmitter – RF Point Level Transmitter – RF Point Level Transmitter – Pressure Gauge
22	Condensate Storage	Total Level & Interface Pressure	Tank Tracker™ 1981/656	– Magnetostrictive Level Transmitter – Pressure Gauge
23	Water Storage/Brine Storage	Water Level High Level Alarm Pressure	Impulse™ TDR IntelliPoint™ 1981/656	– TDR Level Transmitter – RF Point Level Transmitter – Pressure Gauge
24	Drill Platform/Ship	Static Grounding Static Grounding	Rota-Reel™ Rota Reel ST™	– Painted Housing – Stainless Steel Housing
25	Fuel Truck	Static Grounding Static Grounding	Rota-Reel™ Rota Reel ST™	– Painted Housing – Stainless Steel Housing
26	Railcar	Static Grounding Static Grounding Overfill Protection/High Level Alarm	Rota-Reel™ Rota Reel ST™ RRT Retractable Switch	– Painted Housing – Stainless Steel Housing

*The Oil, Gas and Petrochemical industries are a major global market for Drexelbrook. Our RF Admittance point and continuous level instruments have met the extreme environments found in oil refineries, offshore platforms and chemical plants for over 50 years. Drexelbrook has a wide selection of products and technology offerings, and the expertise to apply them, affording Drexelbrook the unique position to provide the best possible solution to meet the instrumentation requirements specific to the Oil, Gas and Petrochemical Industries.*



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