Level Products

LEVEL MEASUREMENT SOLUTIONS

- **RADAR** – Two-wire, loop powered through-air measurement
- **GUIDED MICROWAVE** – Displacer, float, and bridle replacement solutions
- **OTHER TECHNOLOGIES include:**
  - Ultrasonic
  - Capacitance
  - Process Pressure
  - Vibration

RADIATION-BASED MEASUREMENT TECHNOLOGY

- **LEVEL** – Solid and flexible scintillation technology
- **DENSITY** – Measurement within a pipeline
- **WEIGHT** – Virtually all conveying methods
- **INTERFACE** – Tracking, scanning, and profiling of entire vessel

MAGNETIC LEVEL INDICATORS

- Magnetostrictive Level Transmitters
- Discrete Alarming Switches
- Bridle Measurement Solutions
- Radar or TDR Combination Systems
- Custom Design & Integration
Pressure, Temperature & Flow Products

FLOWMETERS FOR LIQUIDS, GASES & STEAM
- RotaMASS Coriolis Flowmeters
- digitalYEWFLO Vortex Flowmeters
- AXF Magnetic Flowmeters
- EJX 910A Multivariable Pressure Transmitters
- AXR 2-Wire Magnetic Flowmeters
- digitalYEWFLO Reduced Bore Vortex Flowmeter

ULTRASONIC FLOW
- Clamp-On
- Wetted
- Portable
- Flare
- Custody Transfer
- Leak Detection
- High Temperature/Cryogenic

MOISTURE
- Trace Moisture in Gases and Liquids
- Relative Humidity
- Calibration Equipment

GAS
- Hydrogen Purity
- Percent and ppm Oxygen
Pressure, Temperature & Flow Products

**THERMAL MASS FLOW METERS & TEMPERATURE TRANSMITTERS**
- Thermal dispersion gas mass flow measurement
- 1000:1 turndown
- NIST Traceable calibration
- In-situ Cal-V and Zero CAL-CHECK with certificate – integral contract day log book – HART, Modbus, analog communication

**Analytical Products (Gas)**

**Fixed Gas Detection Instruments**
- GAS SENSORS/TRANSMITTERS
  - UltimaX® Gas Monitors
  - Combustibles
  - Toxics
  - O₂
- SAFEYE™ XENON 800 OPEN PATH SYSTEM
  - FlameGard®
- CONTROLLERS
  - Suprema®
  - 9000 Series
  - GasGard®
- INDUSTRIAL ANALYZERS
  - MultiGard®
  - Chemgard®
  - Chillgard®

**Portable Gas Detection Instruments**
- MULTI-GAS INSTRUMENTS
  - Altair® 4
  - Orion®
  - Orion® Plus IR
- SINGLE-GAS INSTRUMENTS
  - ALTAIR®
  - ALTAIR Pro®
- GALAXY® TEST AND CALIBRATION EQUIPMENT
  - ALTAIR®
  - ALTAIR Pro®
Analytical Products (Gas)

Gas Detection Instruments
• Combustible Gas Detectors
• Open Path Infrared Gas Detectors
• Hydrogen Sulfide (H2S) Detectors
• Toxic Gas Detectors
• Carbon Dioxide Detectors
• Gas Leak Detectors
• Gas Monitors

Flame Detection Instruments
• Multi-Spectrum Flame Detectors
• UV/IR Flame Detectors
• Flame Detectors for Hydrogen Applications
• Flame Detection Modules

Fire and Gas Systems
• HazardWatch Fire and Gas System
• HazardWatch II Fire and Gas System
• Two Series Gas and Flame Detection System
• Control Modules

ONLY AVAILABLE IN SELECT AREAS OF TEXAS, OKLAHOMA AND NEW MEXICO

YOKOGAWA

PROCESS MEASUREMENTS:
• Gas Density Analyzer and Detector
• Hydrogen Purity
• Combustion Oxygen
• Process Gas Chromatographs (GC)
• Tuneable Diode Laser Spectroscopy Analyzers
• Analytical Sample Systems Plus System Integration
• Continuous Emissions Monitoring Systems (CEMS)
Analytical Products (Liquid)

YOKOGAWA

ANALYZERS AND SENSORS:

- pH/ORP
- Contacting Conductivity
- Inductive Conductivity
- Dissolved Oxygen
- Turbidity
- HART/Foundation Fieldbus/PROFIBUS Capabilities
- Online Sensor Diagnostics
- Near Infrared Analyzer

K-PATENTS

PROCESS INSTRUMENTS

IN-LINE LIQUID MEASUREMENTS

- Process Refractometers
- Universal Calibration
- Full Measurement Range
- Dual Connectivity
- Ethernet Connection
- Digital System
- Process Temperature Range:
  -20°C to 150°C
  -4°F to 300°F

Asset Condition Monitoring

Bently Nevada

- Vibration Monitoring
- Conditioning Monitoring
- Portable & Diagnostic
- Test & Calibration Equipment
Upstream Oil & Gas Products

Techstar is now a Stocking Distributor for Hammer Unions & Pressure Transmitters!

- Oil and Gas Pressure Sensors
- Test and Control Pressure Sensors
- Process Pressure Sensors

Instrumentation Products

YOKOGAWA

DATA ACQUISITION & CONTROL SOLUTIONS
- DXAdvanced Data Acquisition & Display Station
- UTAdvanced Controllers
- DAWN Wireless I/O

FOX THERMAL INSTRUMENTS, INC.

- Thermal Mass Flowmeters: Flare and Vent Gas Measurement
- VRU’s
- Gas Allocation Measurement
Connectivity Solutions

- Temperature, Transmitters, Sensors and Assemblies
- Limit Alarm Trips and Switches
- Smart HART® Loop Monitors and Interfaces
- Signal Transmitters, Isolators and Converters
- I/P and P/I Converters
- Safety Instrumented Systems
- Process Controls and Distributed I/O Networks
- Process Controllers, Monitors and Backup Stations
- Fieldbus Device Couplers and Power Supplies
- Indicators and Displays

Wireless and Telemetry Solutions

- Wireless Sensors & I/O Networks
- Hazardous Location Transmitter
- Chemical Injection System
- Wireless I/O System
- Field Monitor
**Positive Level Verification (PLV)**

- Satisfies API 2350 AOPS Proof Testing requirements and eliminates “Wet Testing”
- Meets API 2350 requirements for AOPS on floating roof ASTs
- Simulates the dk value of the tank product
- Provides a method for required Proof Testing of continuous level radar transmitters installed in a SIL rated system
- In situ two point level calibration

**Sump Pump Control Solution for Overfill Protection**

- Provides Overfill protection according to SIL 2
- Provides Dry Run protection according to SIL 2
- Reduces risk of an environmental incident
- Increases life expectancy of rotating equipment via pump monitoring

**Pump Control Solution for Pump Protection**

- Improves pump efficiency through the use of continuous radar level measurement
- Provides Overfill protection according to SIL 2
- Provides Dry Run protection according to SIL 2
- Optional pressure sensors

**Customized Automation Solutions**

- Radar Level Monitoring and Control
- Wired or Wireless Solutions
- Web hosted data solutions for remote monitoring — no software needed
- Local control panel and display via pump monitoring
# Product Offering

## Analytical Product Offering

### Liquid Analytics
- pH/ORP
- Conductivity/Resistivity
- Dissolved Oxygen
- Turbidity
- Nuclear Density
- Refractive Index/Percent Concentration
- Colorimeters
- Oil/Water
- Water/Oil
- Silica, Fluoride, Ammonia, Chloride

### Gas Analytics
- Area & Perimeter Analyzers
- LEL Detectors
- Gas Detectors
- Oxygen Detectors
- Refrigerant
- Point Infrared Detectors
- Flame Detectors
- Open Path Monitor
- Photoacoustic Infrared
- Moisture
- TDLS Systems
- Fire and Gas Systems
- Two Series Gas and Flame Detection System
- Control Modules

### Condition Monitoring
- Vibration
- Travel
- Stroke

## Instrumentation Product Offering

### Level
- Nuclear
- Nuclear Interface
- Radar for Liquids
- Radar for Solids
- Guided Wave Radar
- Guided Wave Radar Interface
- Magnetostrictive Level Gage
- Magnetic Level Indicator
- DP: Differential Pressure
- Point Switch, Vibration,
  - Nuclear & Microwave Barrier
- Ultrasonic
- Capacitive

### Flow
- Thermal Mass Gas Flowmeters
- Wedge Meters
- Vortex Meters
- Ultrasonic Meters
- Portable Ultrasonic Meters
- Coriolis Meters
- Magnetic Meters
- Multivariable
- Pitot Tubes
- Orifice Meters
- Flow Computers

### Temperature
- Field-Mounted Transmitters
- Universal Input Transmitters
- Rail-Mounted Transmitters
- RTDs
- Thermocouples
- Thermowells

## General Instrumentation
- Paperless VGR
- Chart Recorders
- P.I.D. Controllers
- Positioners
- Actuators
- Signal Conditioners
- Pump Controllers
- Wireless Systems
- HART® Communicators
- Instrument Stands
- Nuclear Brackets
- Stilling Wells

## Pressure Tanks & Sensors
- Differential
- Gauge
- Absolute
- Multivariable
- Hydrostatic
- Pressure Calibrators
- Manometers

## Connectivity Solutions
- Signal Interface Modules
- Cable Interface Modules
- Din-Rail Mounted Terminal Blocks
- Printed Circuit Board Products
- Industrial Ethernet – Class 1, Div 2
- Sensor Actuator Interfaces
- Wireless Monitoring Systems
- Enclosures
- Rectangular Connectors
- Tools/Marking Products
- HMI Solutions
TechStar Services

Nuclear Services
• Onsite Commissioning, Calibration and Start-up
• Source Holder and Shutter Repair
• Leak Tests and Shutter Checks
• Source Disposal Facilitation
• Bracket Fabrication
• Radiological Services
• Maintenance and Troubleshooting

Manufacturer Software Calibration Procedures
Flow Surveys
Wireless Surveys
Care and Maintenance of Analyzer Systems
Supervision
• Pre-Installation
• Installation/Start-up

Factory Certified In-House Bench Repairs
Upstream Automation Projects
Project Management Services for VEGA, Yokogawa & MSA
Portable Instrumentation Recalibration & Repair
TECHSTAR offers a variety of training services that can be administered at our training facility in Deer Park, Dallas, Corpus Christi or at your location. Through coordination with our various manufacturers, we can provide training courses that are specifically designed to meet your needs. Training is conducted by factory certified personnel with the goal of providing students hands-on experience and detailed technical training materials.

Training

- Level Measurement Training
  - Basic
  - Advanced
- Radiation Based Measurements
- Basic Gauge User Course
- Smart Pro Training
- PC Hart Communication Software
- Radiation Safety Officer Certification
- Gas Analyzer Maintenance & Long-Term Care

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