

MEASUREMENT INSTRUMENTATION SOLUTIONS

MEASUREMENT | FLOW | REMOTE AUTOMATION | ANALYTICAL & DETECTION



SERVING CUSTOMERS SINCE 1963

Experience industrial innovation at Spartan Controls—the recognized leading provider of industrial automation solutions in Western Canada. Since 1963, Spartan has provided customers with high performance solutions, industry expertise, lifecycle support, and technical training, delivering value our customers want.

OUR PORTFOLIO

MEASUREMENT INSTRUMENTATION

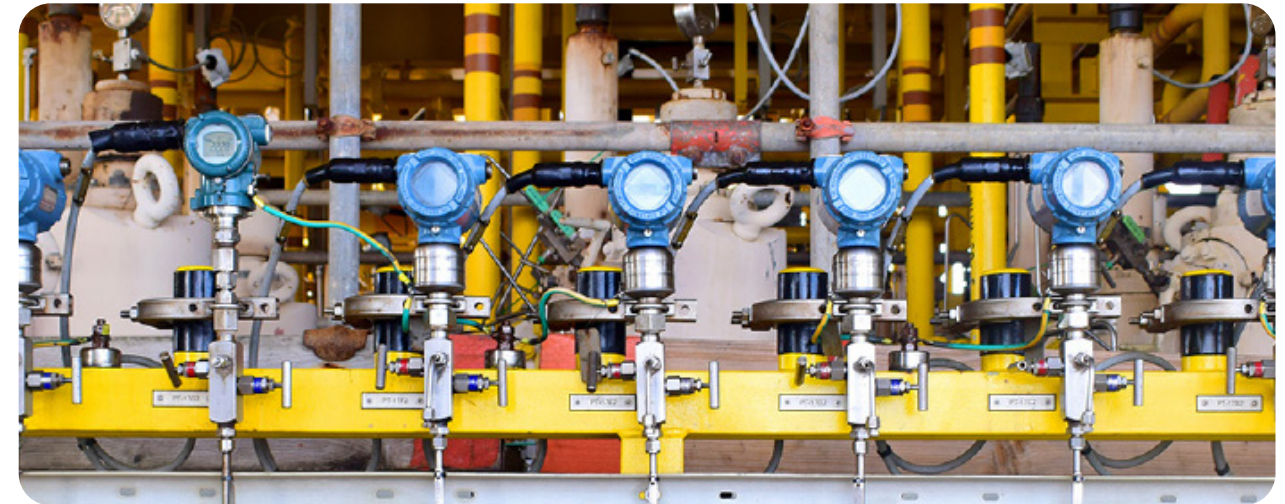


CONNECT WITH EXPERTS TODAY



INDUSTRIES WE SERVE

Our automation solutions power industries like pipeline and municipal, driving sustainability and exceptional customer experiences through expertise and collaboration. With a focus on measurement accuracy and reliability, our products are trusted across all sectors we serve.



Rosemount Pressure Transmitters

ABOUT MEASUREMENT INSTRUMENTATION

At Spartan Controls, we offer a wide range of technologies for measuring pressure, temperature, level, flow, density, viscosity, and more. Our IP-based video systems, including thermal cameras designed for extreme environments, provide comprehensive asset monitoring solutions. We maintain the largest local inventory of instrumentation technology in Western Canada and offer local training through our dedicated education center. Our factory-trained experts and local service team support the products we sell, helping our valued customers achieve lower operating costs and improved reliability.



Turnkey Fluid Transfer Solutions

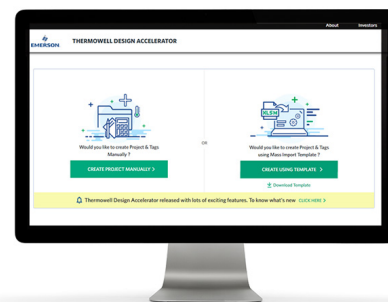
PRESSURE TRANSMITTERS, MANIFOLDS & GAUGES

- Patented Coplanar transmitter platform provides flexibility to support a wide variety of pressure, level, and flow assemblies
- Meet your most demanding applications, from -76 °F (-60 °C) ambient to 770 °F (410 °C) process temperatures
- Incorporates latest technology advancements including wirelessHART and diagnostics
- Drive better decision making and improve uptime through early detection of abnormal situations with Process Intelligence and Plugged Impulse Line diagnostics
- Rosemount R305 and R306 manifolds feature an exclusive Pressure-Lock™ Valve technology with easy-turn valves



TEMPERATURE MEASUREMENT

- Maintain optimal temperature levels and ensure smooth operations with reliable measurement
- Minimize downtime using advanced diagnostics for early detection of issues
- Gain process insights and improve uptime with innovative technologies like Twisted Square Thermowell and X-Well Technology
- Use the Rosemount Thermowell Design Accelerator to perform thermowell calculations up to 90% faster, reducing design time to just 15 minutes



The Engineer's Guide to Industrial Temperature Measurement



ENGINEER'S GUIDE

Thermowell Design Accelerator Online Tool



LEARN MORE

GUIDED WAVE RADAR

- Suitable for most liquid and solids level applications
- Reliable in challenging applications
- Dynamic Vapor Compensation ensures accuracy
- Direct Switch Technology and Probe End Projection enhance reliability
- Online device verification and high-level detection with the verification reflector



NON-CONTACTING RADAR

- Emerson's Rosemount FMCW radar level technology provides accurate measurement in any application
- 80GHz Fast Sweep Technology offers increased reliability
- Solutions for tanks and reactors
- Designed for safety with low failure rates and high diagnostic coverage
- Advanced diagnostics ensure processes are under control

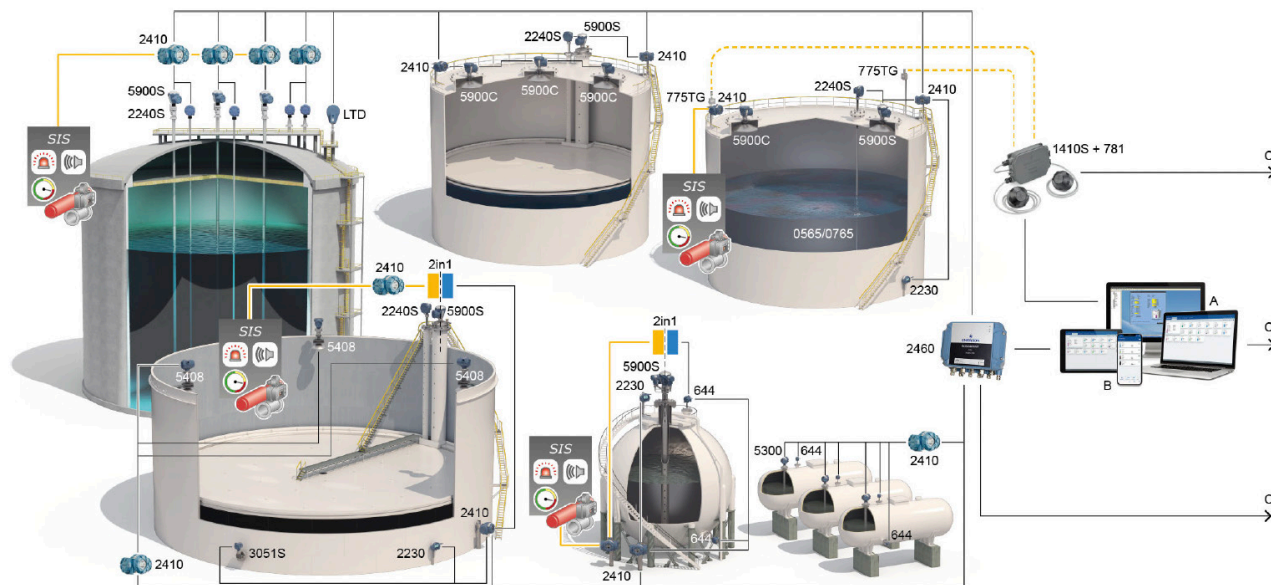


The Engineer's Guide to Level Measurement



INVENTORY TANK GAUGING

Optimize operations and minimize risk with the Rosemount Tank Gauging System, delivering precise measurements of tank storage data, including level, temperature, and pressure for accurate volume and density calculations. Emerson's tailored solutions are ideal for bulk liquid storage in tank terminals, refineries, and LNG/cryogenic applications.



- Measure level, temperature, and pressure for accurate volume and mass calculations
- Utilize complete inventory, hybrid, and custody transfer functions
- Use certified system solutions for both automatic tank gauging, process control, and overfill prevention for API2350 Compliance
- Get dual-level data utilizing a single nozzle with 2-in-1 technology
- Increase employee safety by performing remote proof-testing from the control room
- Monitor floating roof position
- Make cost-efficient, step-by-step upgrades of existing equipment from any major supplier on the market
- Replace old or malfunctioning field and control room equipment seamlessly
- Use existing cabling and communication protocols for quick and easy installation
- Reduce maintenance costs for more efficient operations



VIBRATING FORK LEVEL

- Ensure a safe process state with the most reliable point level detector in its class
- Simple proof-testing reduces human error and minimizes interruptions
- Robust design ensures reliability in harsh environments
- Continuously health monitoring with built-in diagnostics alerts you to issues
- Plan maintenance proactively with corrosion and coating detection
- Unique sand switch detects sediment build-up
- First wired HART® detector with smart diagnostics and remote proof-testing for greater ease and flexibility



SOLID SWITCHES

- Solids Level Switches provide a reliable, cost-effective solution for monitoring solids in tanks and vessels
- Suitable for various applications, including food and beverage, chemical processing, and wastewater treatment
- Easy to install with accurate and dependable measurements
- Ideal for any solids application



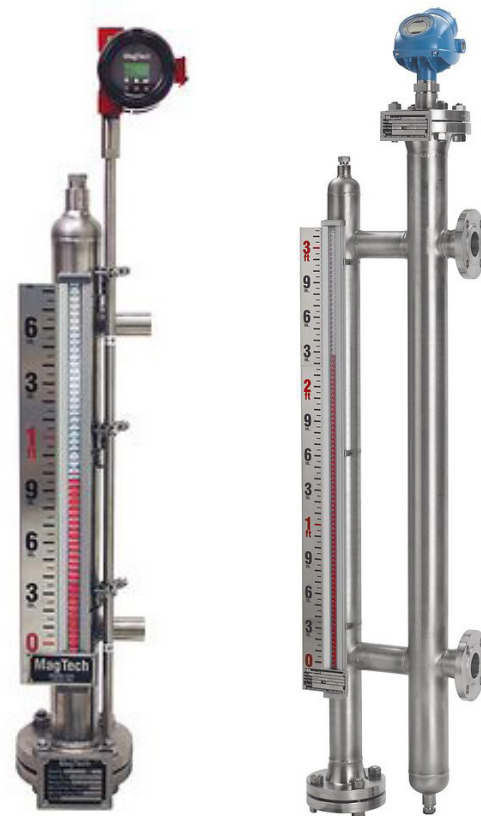
DIFFERENTIAL PRESSURE LEVEL

- Rosemount 3051S ERS System removes impulse piping and capillaries with digital architecture for distillation towers and tall vessels
- Tuned-System™ Assemblies enhance response time and cut costs by up to 20% for shorter spans and high-pressure applications
- Thermal Range Expander and Thermal Optimizer eliminate heat tracing, handling temperatures up to 770°F (410°C)



LEVEL INDICATORS & TRANSMITTERS

- The Magtech MLT Level Transmitter can be used as a direct insertion transmitter or mounted externally for non-invasive measurement
- Ideal for high-pressure, high-temperature applications when combined with the Magtech Magnetic Level Indicator
- Combines the reliability of Magtech LG Series indicators, magnetostrictive transmitters, and Rosemount guided wave radar transmitters
- Provides a redundant, diversified system suitable for a wide range of applications



MASS FLOW METERS

- Micro Motion Coriolis flow meters offer unmatched accuracy, functionality, and range for critical processes
- Scalable platform supports a wide range of line sizes and applications, including hygienic, cryogenic, and high-temperature
- Application-specific software includes Batching, Advanced Phase Measurement, and Concentration Measurement
- Smart Meter Verification checks meter and process health without isolating the flow meter
- Advanced Phase Measurement handles liquid or gas flow in limited multiphase conditions
- Transmitters feature broad I/O options, digital protocol support, and integrated Webserver software
- Data historian and visualization tools provide insight into process events, fluid quality, and measurement stability
- Real-Time Clock timestamps process data, alerts, and audit logs



DENSITY & VISCOSITY SOLUTIONS

- Density and viscosity meters offer robust measurement for critical liquid and gas applications
- Single, flexible, common transmitter across density and viscosity portfolio
- Enhanced readings with external variable input via HART I/O
- Pre-configured outputs simplify startup and lower commissioning costs
- Internal diagnostics for fast verification of meter health and installation



VORTEX FLOW METERS

- No impulse lines, ports, or gaskets for improved reliability
- All-welded, gasket-free design with no clog-prone ports or crevices
- Mass balancing of sensor system and Adaptive Digital Signal Processing (ADSP) provide vibration immunity
- Non-wetted sensor eliminates the need for bypass piping
- Unique non-wetted sensor requires no bypass piping even in the most difficult process environments
- Eliminate the need to shut down the process during routine maintenance
- CriticalProcess valve allows verification of primary containment integrity
- Rosemount™ 8800 Quad Vortex Flow Meters offer redundant flow measurement with four independent sensors and transmitters, using a 2oo3 voting method for high reliability



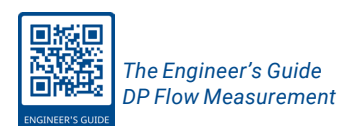
MAGNETIC FLOW METER

- Magnetic flow meters, or mag meters, are obstruction-free, cost-effective, bidirectional, and highly accurate
- Various liner materials, electrodes, and sizes fit diverse applications; the Slurry Platform suits aggressive, high-noise environments
- Smart Meter Verification monitors performance continuously without process interruption
- Dual compartment transmitter housing and all-welded sensors prevent moisture ingress and ensure safe local configuration
- Temperature characterization and verification reduce ambient temperature impact on transmitters



DIFFERENTIAL PRESSURE FLOW MEASUREMENT SOLUTIONS

- Customized solutions with primary elements, transmitters, and flow meters
- Leading DP innovations like Rosemount Annubar™ and MultiVariable™ excel in critical applications
- Real-time compensated mass and energy flow with multivariable capabilities
- Fully-integrated wireless flow meters allow for easy installation



ULTRASONIC FLOW METERS

Reduce Measurement Uncertainty

- Troubleshoot with performance-based diagnostics, expert analysis, disturbance alerts, and suggested corrective actions

Maximize Uptime, Minimize Costs

- Advanced meter design has no moving parts and offers bi-directional flow capabilities with high rangeability of >100:1, resulting in increased flow capacity

Highest Accuracy for Custody Transfer

- Eight-path gas meter offers best-in-class resolution of flow and swirl calculation for flow distortions

Rosemount Gas and Liquid Ultrasonic Flow Meters offer high accuracy, wide rangeability, and advanced diagnostics. They are suitable for custody transfer, allocation measurement, check metering, leak detection, and inventory control applications.



NON-INTRUSIVE CLAMP-ON ULTRASONIC FLOW METER

- FLEXIM is the leader in clamp-on ultrasonic flow measurement for liquids, gases, and steam
- Measures extreme temperatures from -250°C to 630°C
- Measures practically any line size from 1/8in to 20+ feet
- On-board historian
- No piping modifications required
- Consistent quality management according to DIN ISO 9001 is essential for FLEXIM, which has a calibration laboratory certified to ISO/IEC 17025:2018
- Advanced Meter Verification (AMV) allows you to check the health of your FLEXIM flow measurement device directly onsite without the need for process interruption



THERMAL MASS FLOW METERS

- Fox Thermal manufactures a full line of advanced thermal mass flow meters
- Direct mass flow measurement of air and gases in standard volumetric units (e.g., SCFM or NM3/H) or mass units (e.g., LBS/M or KG/H)
- No additional pressure or temperature compensation required
- Low pressure drop, no moving parts, cost-effective
- Repeatability and exceptionally broad measurement range: up to 1000:1 (100:1 typical)
- Insertion, inline, and remote styles
- Measures flow rate and temperature
- Advanced features such as; Gas-SelectX® field-selectable gases or gas mixtures and CAL-V™ and Zero CAL-CHECK® Calibration Validation
- Data Logger with 7-year history



FLARE ULTRASONIC FLOW METERS

- The Fluenta FGM 160 Field Computer stands as a benchmark in flare gas measurement, offering unmatched accuracy and reliability
- Engineered with advanced signal processing technology, this ultrasonic flow meter could achieve an accuracy of $\pm 0.75\%$ across pipe diameters ranging from 6 to 100 inches, ensuring dependable operations

Flare Gas
Measurement
brochure



WATER-CUT ANALYZER

- Top supplier of Water Cut Analyzers for precise, real-time fluid measurement in pipelines and wells
- Phase Dynamics' patented oscillator load-pull technology instantly responds to changes in materials in the Analyzer's Measurement Section
- Each Phase Dynamics Analyzer is factory calibrated with precise control of temperature, pressure, and material properties
- Density-corrected water-cut for custody transfer accuracy
- Touch screen (optional) electronics provides data logging and other capabilities, including graphics



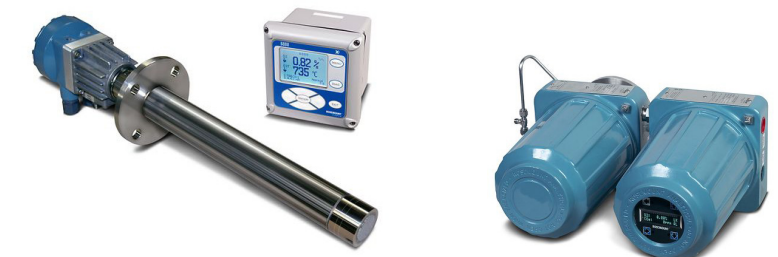
LIQUID ANALYSIS

- Measure pH, ORP, conductivity, dissolved oxygen, ozone, chlorine, and turbidity levels in your liquid process
- Emerson's global expertise and proven technology provide a comprehensive range of analyzers, transmitters, and sensors for maintaining and controlling demanding applications
- Dependable, accurate liquid analysis ensures profitable and productive processes



COMBUSTION ANALYSIS

- Accurate oxygen and combustion flue gas measurement (available in high-temperature applications)
- Optimize your combustion process to reduce energy costs, minimize emissions, and meet regulations
- Emerson's Rosemount Combustion portfolio covers power plants, refining, petrochemical plants, cement kilns, and chemical plants
- Industrial and commercial boilers
- Process heater furnaces
- Incinerators
- Catalyst regeneration
- Gas turbines
- Flue gas analysis



GAS ANALYSIS

Improve process control, reduce fiscal measurement uncertainty, and ensure continuous emission monitoring compliance.

Gas Chromatographs

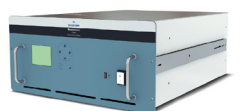
- Full Range of Process & Natural Gas Chromatographs

X-Stream Analyzers

- The Rosemount X-STREAM Enhanced Series of Continuous Gas Analyzers offers versatile design for multi-component and multi-method analysis of over 60 gases
- Achieve significant cost savings by combining non-dispersive infrared (NDIR)/ultraviolet (UV), paramagnetic, electrochemical oxygen, and thermal conductivity sensor technologies in one instrument

Quantum Cascade Laser Technology

- Optimize your process with enhanced target gas selectivity and sensitivity using the industry's first hybrid QCL/TDL laser gas analyzers
- Analysis of up to ten different gases, in a single instrument, provides broader application flexibility and process insights
- Solid-state components deliver reliable measurement and decades of laser life for improved quality and increased uptime



WIRELESSHART SOLUTIONS

- Wireless technology boosts visibility across facilities, supporting digital transformation
- Facilitates data interaction with IT and cloud applications through effective architectures
- Scalable software enhances visibility and provides actionable insights to transform processes
- Leverage Spartan's expertise in monitoring, consulting, education, and implementation for operational success



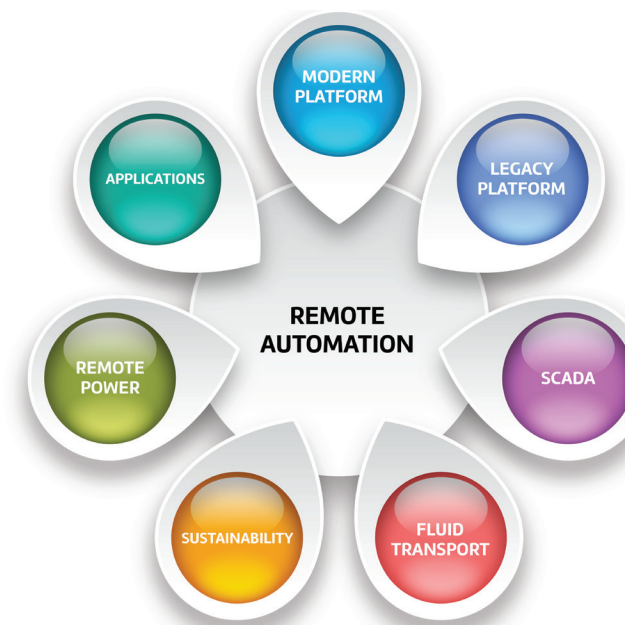
LOW POWER ENVIRONMENTAL SOLUTIONS

- Our low power environmental solutions focus on reducing vented emissions in remote applications ([LCO Technologies](#))
- The LCO CROSSFIRE Solar-Powered Chemical Injection Pump is a highly efficient device that cuts chemical and maintenance costs while eliminating methane emissions
- The LCO CROSSFIRE Instrument Air Compressor is an ultra-low power device that drives standard pneumatic instruments and eliminates venting
- The LCO Vapor Recovery Unit (VRU) for tank blanket gas recovery



REMOTE AUTOMATION

- Remote Automation offers RTUs, flow computers, measurement solutions, and environmental products for industry
- Remote Automation provides products and solutions for the most demanding oil and gas applications



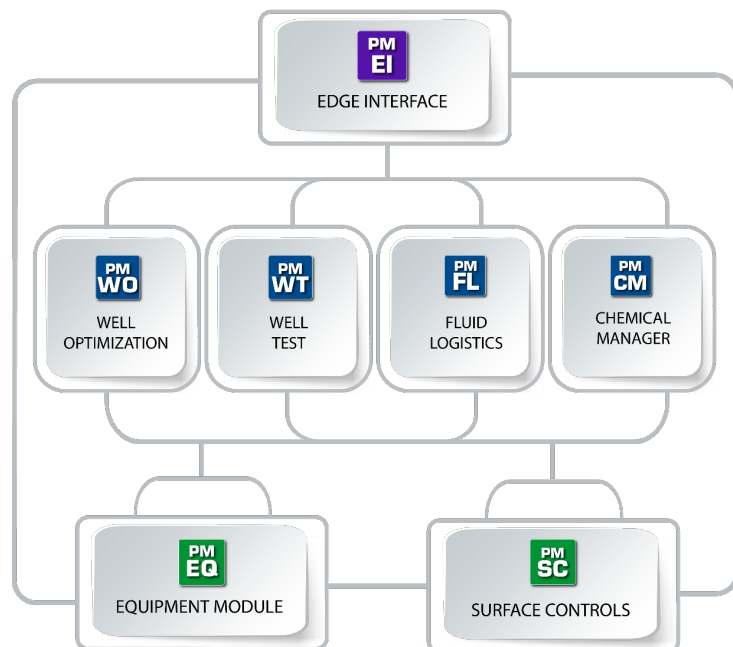
FLOW COMPUTERS & RTUs

- From measurement to host systems, we focus on our technology integrating with your SCADA system of choice
- Suite of oil and gas applications
- Modern cyber-secure communication protocols
- Rugged and low-power solutions built for wide area networks
- Improving productivity and efficiency of your applications
- Our products and systems enable you to:
 - Monitor, control and measure remotely
 - Optimize assets with greater visibility of your field
 - Enhance safety by streamlining process knowledge
- Multivariable sensor measuring differential pressure, static pressure, and temperature



PRODUCTION MANAGER EDGE®

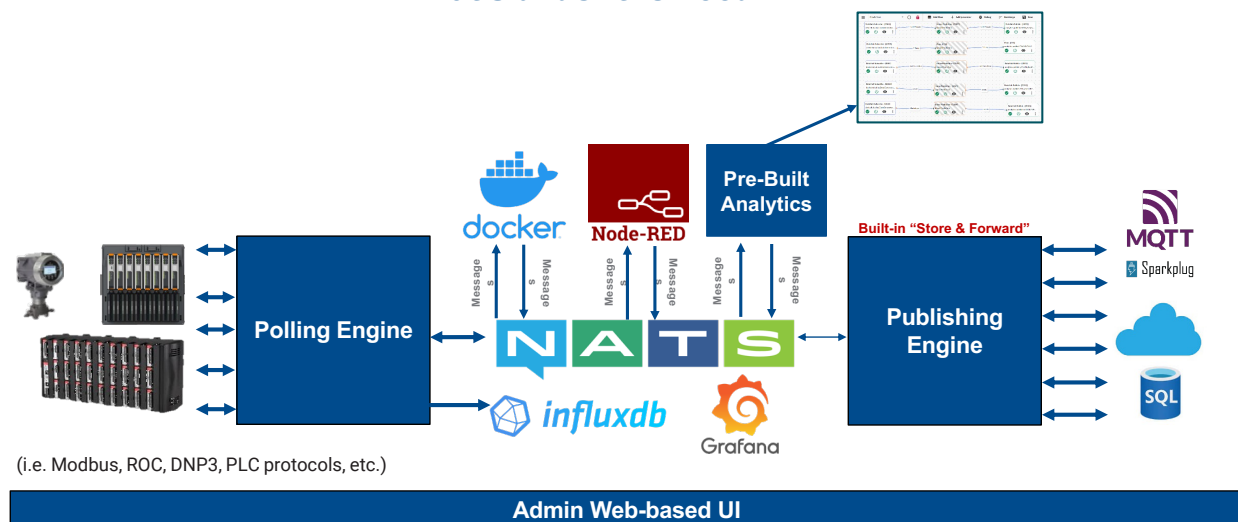
- Optimize well performance and operate with confidence with the suite of applications designed and field-proven for the oil and gas industry:
 - ProductionManager™ Equipment Module
 - ProductionManager™ Well Optimization
 - ProductionManager™ Well Test



EDGE GATEWAY SOFTWARE SOLUTIONS

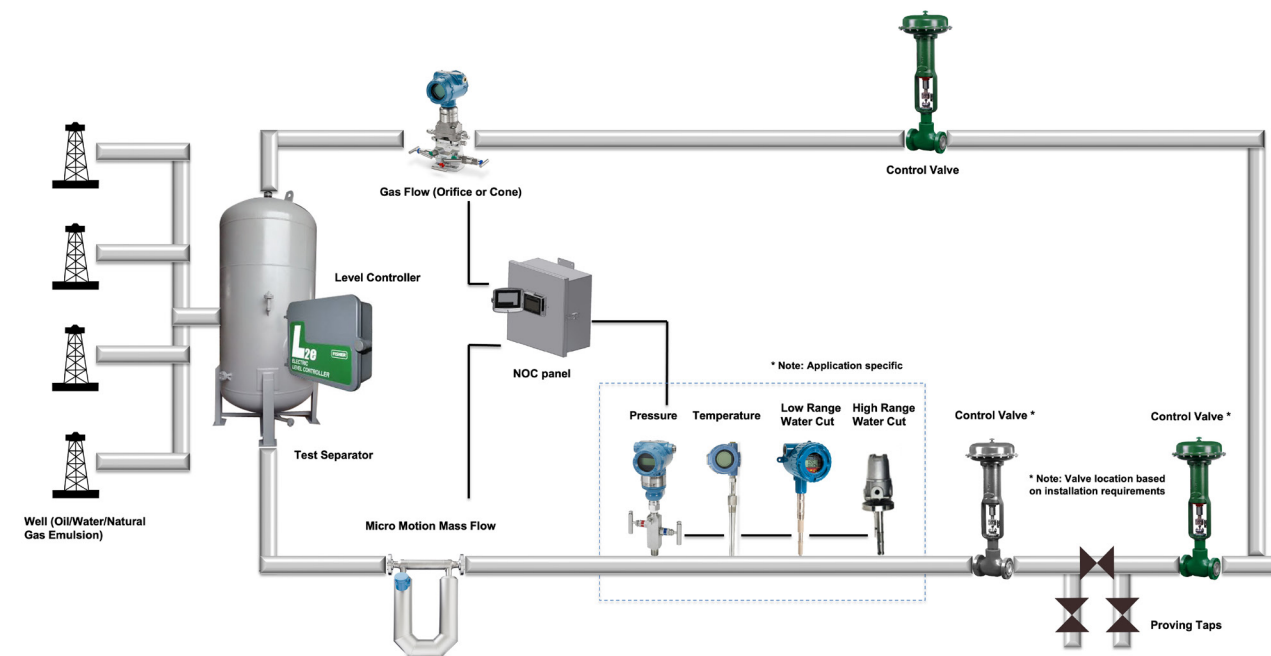
- Local data logging with high-frequency data capture
- Supports key data protocols (MQTT, Sparkplug, SQL) for data transmission to the cloud for remote access
- Perform real-time analytics at site for high-accuracy results
- IT-lead cybersecure methods
- Highly configurable with support for open-source technology and programming (Docker, Node-Red, Grafana)

What's under the hood?



SPARTANPRO™ NOC

- Part of the SpartanPRO™ suite of applications built for the FB3000
- Accurately determine oil and water components in a flowing emulsion by using either a dedicated water cut analyzer or inferred density water cut from Micro Motion coriolis meter
- Accommodates up to 2 separators that could be used for well testing or LACT measurements
- Compliant with provincial regulator agencies (i.e. AER Directive 017) for hydrocarbon gas and liquid measurements
- Electronic Flow Meter system compliancy maintained to API MPMS Ch 21.1 & 21.2 audit trail and reporting requirements



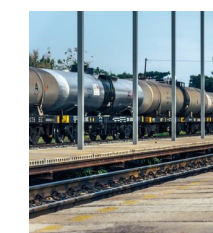
TRUCK TRANSPORT SOLUTIONS

TruckVue™ System is based on best-in-class technologies and state-of-the-art user interface built to handle loading and unloading applications across the hydrocarbon spectrum (heavy oil to liquefied natural gas). Designed specifically for oil and gas and pipeline applications, it is in full regulatory compliance with provincial regulatory bodies (i.e. Alberta Energy Regulator (AER) Directive 017 - Section 10) and American Petroleum Institute (API) Manual of Petroleum Measurement Standards (MPMS) Chapters 5.6, 11, 12, 21.



RAIL TRANSPORT SOLUTIONS

RailVue™ System is based on three pillars: measurement, service/support, and interface/data integration. Our RailVue™ system is designed specifically for rail terminal loading and unloading applications. It is in full regulatory compliance with American Petroleum Institute (API) Manual of Petroleum Measurement Standards (MPMS) Chapters 5.6, 11, 12, and 21, and API RP 3000.



INDUSTRY SOLUTIONS

SpartanPRO™ CEMS Solution

The [SpartanPRO™ Continuous Emissions Monitoring System \(CEMS\) Dry Extractive](#) is a turnkey solution designed to help industrial plants prove compliance with environmental regulations and reporting requirements.

The SpartanPRO™ CEMS-DE is designed to measure the emissions from boilers, fired heaters, and other large combustion plants.

The system uses the cold extractive measurement technique, eliminating the need to correct for moisture content.



SpartanPRO™ Surge Relief System

As a standalone system, the SpartanPRO™ Surge Relief System enables you to accurately control the nitrogen used to operate a pipeline surge relief valve. The user-friendly HMI, surge event history, nitrogen usage trending, alarming, and remote connectivity make the SpartanPRO™ an industry leader in surge relief valve control.

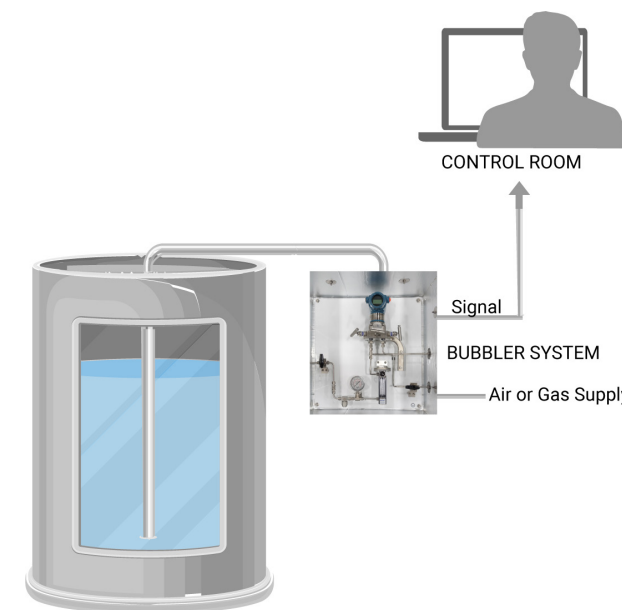
Winterization

It's essential that instruments are winterized to ensure they do not fail during the cold winter months.

Spartan's insulated NEMA4 enclosures utilize a thermostatically controlled heater to maintain a consistent temperature.

This results in a controlled ambient temperature that the transmitter can function without any problems, even under extreme weather conditions.

- Pressure Transmitters
- Flexim Non-Intrusive Flow Transmitters



Bubbler Panels

Our custom-designed bubbler systems for liquid level measurement are suitable for measuring the level of various liquids, including water, viscous fluids, slurries, sewage, liquids with suspended solids, and sludge.

These systems are reliable and robust as they have no moving parts. They have been tried and tested for many years and are an economical solution for a wide range of environments.

Sample Handling & Conditioning Systems

Spartan's Sample Conditioning Solutions include components to protect your assets from process events like pressure or temperature deviations, or liquid carryover. The system prepares the sample by performing actions such as reducing the pressure and temperature, filtering the sample streams to be measured, and more.



Quality Measurement System

- Streamlining automated liquid sampling and quality measurement
- Our systems use top instruments for full visibility into pipeline density, viscosity, and water cut
- Remote connectivity offers real-time info, data logging, and alarms



DETECTION BUSINESS

Spartan Controls Detection Business is focused on protecting people and plant assets. Leveraging technology and expertise, we deliver effective fire and gas detection, IP video monitoring, and emergency warning systems that **minimize operating costs, improve reliability, and increase overall plant safety.**

Spartan provides:

- Solutions for the detection of toxic or combustible gases and fires
- Horns, strobes, and complete public address/general alarm systems to alert employees to problems such as gas leaks, fire, or other emergencies
- Industrial IP video and thermal camera systems to allow operators to observe facilities, remote sites, gates, fences, and operations

Spartan's unrivaled products, knowledge, and service capabilities ensure our customers receive the best solutions in fire and safety technology.

DETECT: FIRE & GAS DETECTION SYSTEMS

Boreal Laser Inc.

Boreal Laser Inc. has developed reliable, calibration-free tunable laser diode gas detectors for toxic and combustible hazards since 1998.



Det-Tronics

Det-Tronics is the global leader in fire and gas safety systems, providing premium flame and gas detection and hazard mitigation systems for high-risk processes and industrial operations.



Sensidyne

Dependable solutions for continuous monitoring of combustible and toxic gases and oxygen enrichment or deficiency.



ALERT: INDUSTRIAL SIGNALING & COMMUNICATIONS

Federal Signal

Federal Signal stands unmatched in industrial audible and visual signaling devices. Their extensive range includes: warning lights, sirens, strobes, and everything from hazardous and general location horns to full site-wide public address and general alarm (PA/GA) systems for complete emergency communication.



MONITOR: INDUSTRIAL VIDEO SYSTEMS

FLIR

FLIR is the global leader in designing and manufacturing thermal imaging infrared cameras used for process control, safety and security applications.



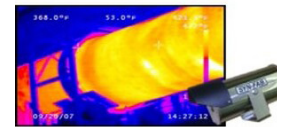
Pelco

Pelco leads in video surveillance, providing real-time situational awareness for better safety decisions



SynFab

SynFab has specialized in the design and manufacture of high-temperature and industrial CCTV and imaging systems since 1974.



PRECISION DIGITAL

- Fully-Approved Explosion-Proof and Intrinsically Safe Loop-Powered Indication Displays
 - Loop-powered backlight
 - Optional loop-powered solid-state relays
- Explosion-proof process and temperature meter
 - 4-20 mA, +/- 10 V, TC & RTD field selectable inputs
 - 2 relays + isolated 4-20 mA output option
 - On-board RS-485 serial communications
- Panel Mount Multivariable Controller
 - Modular design for inputs and outputs flexibility
 - Math formulas, such as: totalizer, open channel flow, tank volume calculation, and more
 - Auto-tune PID control for multiple control loops
 - USB data logger feature



MEASUREMENT INSTRUMENTATION SERVICES



LIFECYCLE SERVICES

Supporting customer initiatives to improve **Performance, Reliability, and Optimize:**

Performance

- On-demand service, shutdown turnaround outage support, inventory management, calibration, preventative maintenance, education, site assessments, and software management

Reliability

- Condition-based monitoring, emissions surveys, regulatory compliance, asset data, and turnaround optimization
- Regulatory compliance support

Optimization

- Energy management, digital integration and data management, critical equipment performance, remote/empowered solutions, and decarbonization

FIELD SERVICES

- Three provinces locally served
- Journeyman technicians, factory-trained, authorized, and equipped
- We strive to provide high-value, differentiated service and solutions for our customers' needs
- 24/7 Demand Service
- Commissioning and start-up services

DEPOT SERVICES

- Emerson-accredited service provider
- Our Edmonton facility is ISO 9001 certified and boasts CSA-certified repair capabilities, demonstrating our commitment to the highest quality standards
- Factory certified, NIST traceable flow proving stand
- Differentiated service deliverables with specialized equipment

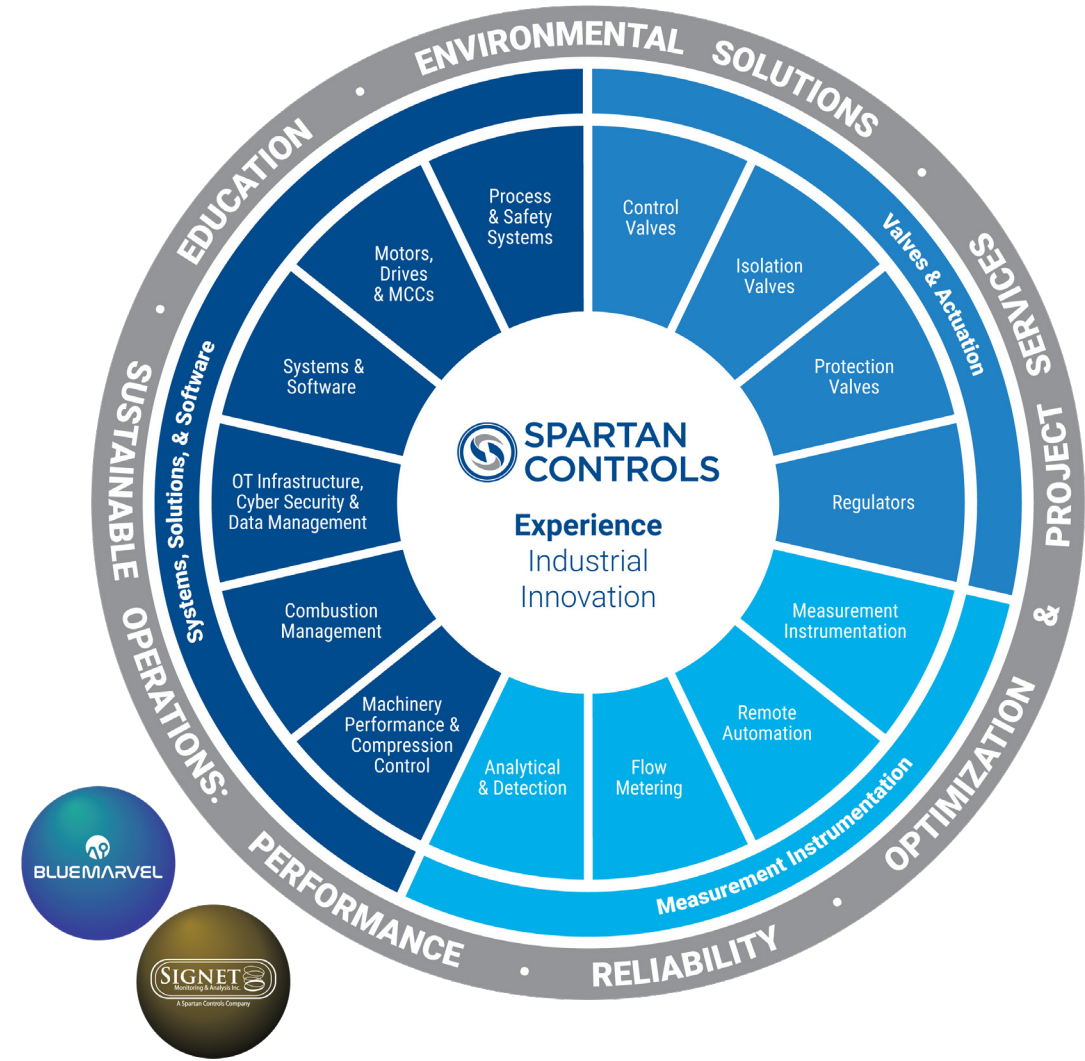
SAFETY & SUSTAINABILITY

- Using Spartan's expert services, integrated solutions, and applied technologies, customers can reduce CO2e emissions and improve environmental outcomes
- We abide by environmental, social, and corporate governance standards
- Spartan has been a part of the Partners in Reduction (PIR) program and has been COR-certified for over 20 years
- Is a member of ISN, ComplyWorks, and Avetta

MEASUREMENT INSTRUMENTATION



SPARTAN CONTROLS COMPLETE PORTFOLIO



MEASUREMENT INSTRUMENTATION

- Measurement Instrumentation
- Remote Automation
- Flow Metering
- Analytical & Detection

VALVES & ACTUATION

- Control Valves
- Isolation Valves
- Protection Valves
- Regulators

SYSTEMS, SOLUTIONS, & SOFTWARE

- Machinery Performance & Compression Control
- Combustion Management
- OT Infrastructure, Cyber Security & Data Management
- Systems & Software
- Motors, Drives, & MCCs
- Process & Safety Systems





Experience Industrial Innovation

Call us today or request a quote online!

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Alberta

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Fort McMurray	+1 (780) 790-0440
Grande Prairie	+1 (780) 539-1161
Red Deer	+1 (403) 348-5251
Whitecourt	+1 (780) 778-5445

British Columbia

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Fort St. John	+1 (250) 785-0285
Kitimat	+1 (877) 278-6404
Prince George	+1 (250) 960-9765

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Measurement Instrumentation

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