

A close-up photograph of a dark grey Fisher ARMOR device mounted on a metal rail of industrial equipment. The device has a black antenna and several cables connected to it. In the background, large, light-colored industrial tanks or pipes are visible. A blue banner is overlaid on the top left of the image.

**Protect critical assets and gain insights to support your safety and reliability goals**

## **Fisher™ ARMOR™ – Advanced Remote Monitoring For Operational Reliability**

Combining digital monitoring with asset knowledge to help mitigate your toughest operational challenges.



# Safety, Technology and Workforce Trends Driving Need for Remote Monitoring of Gas Distribution Networks

The natural gas gathering, transmission and distribution network is vital to energy supply globally. Distribution companies operate several million miles of pipelines that are used to deliver an important energy source to residences, commercial applications and industries. These distribution pipelines might be concentrated in areas where there is high population density where a leak could quickly turn into a safety incident, or in remote areas that are difficult to access everyday, obscuring real time visibility into operations. The challenge is to create efficiency gains and mitigate safety risks without driving undue cost and complexity.

As the gas industry evolves, organizations are also grappling with a transitioning workforce. There is more focus on developing valuable technical skills and institutional expertise, and less on truck rolls to gather more data about the network. Upskilling to ensure efficient use of digital tools has become a driver for our customers.

"We have shifted to using electronic pressure recorders linked with a software because it is so much cheaper, especially for a utility of our size."  
- LDC Senior Standards Engineer



"PHMSA PIPES Act Expected to drive monitoring requirements at all District Stations." - "Pipeline and Hazardous Materials", U.S Department of Transportation



"Requiring New Regulator Stations to be Designed with Secondary Pressure Relief Valves and Remote Gas Monitoring to Better Prepare Gas Distribution Systems to Avoid Over Pressurizations and limit damage during incidents"  
- "Gas Pipeline Minimum Federal Safety Standards", Leonel Rondon Pipeline Safety Act, 2020







**What if you could remote monitor your gas distribution networks to increase system efficiencies while improving safety and reliability?**



# Fisher ARMOR™ Natural Gas Monitoring Solution



## Overview

The Fisher ARMOR is an innovative solution with comprehensive monitoring and diagnostics capabilities. It is set to enhance productivity, reliability and safety in gas operations by uniquely monitoring both pressure and regulator travel. Whether the need is regulator health insights or comprehensive station monitoring, the ARMOR is the answer to evolving natural gas digital efficiency. With robust and secure connectivity, and local device polling capabilities balanced by optimal battery life, ARMOR will optimize critical grid data collection and analysis.

## Measurement

- 1/2/3 pressure monitoring (up to 1500 psi)
- Travel monitoring for select Fisher regulators
- Discrete Monitoring

## Power

- Lithium Thionyl-Chloride Battery
- Replaceable battery with up to 5 years of battery life
- External Power option available

## Environmental

- IP66 Water and Dust Resistance
- CSA Class 1 Div 2
- -40°F to +160°F

## Features



### Pressure Monitoring

- Pressure recording functionality as fast as every 60 seconds with "report by exception" capability
- Instrument maintains six months of recorded pressure data on-board
- Reference Accuracy of +/- 0.5%



### Regulator Travel Monitoring

- Regulator position indicators are outfitted with remote position sensors based on LVDT technology
- Sensor accuracy of +/- 0.25% of span
- Up to 100 mm travel measurement
- Mounting bracket for Fisher Regulators only

### Discrete Limit Switch Monitoring

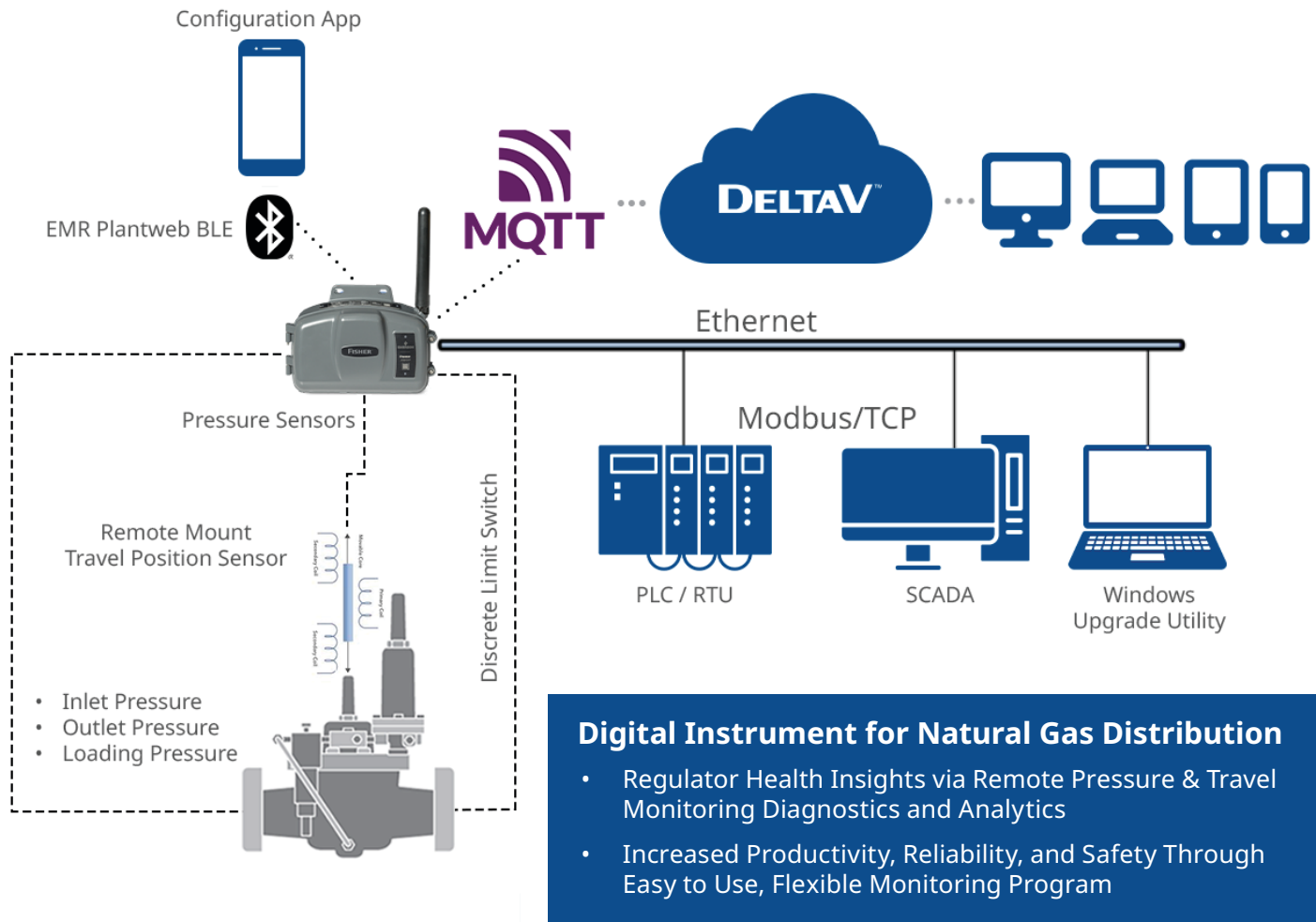
- Slam-shut monitoring
- Security fence or box lid
- Pressure relief valves

### Gauge Pressure Ranges

- 0-5 psig
- 0-100 psig
- 0-500 psig
- 0-1500 psig



# Fisher ARMOR™ – Digital Instrument for Natural Gas Distribution



## Clear Benefits with Remote Monitoring

### Monitoring systems independent of SCADA



Create realizable efficiency gains for operations teams without driving increased cost and complexity for gas control.

### Increased reporting burdens create opportunity for remote monitoring platforms



Regulatory bodies in certain states mandating more frequent reporting of system pressures to mitigate risk of over-pressure events.

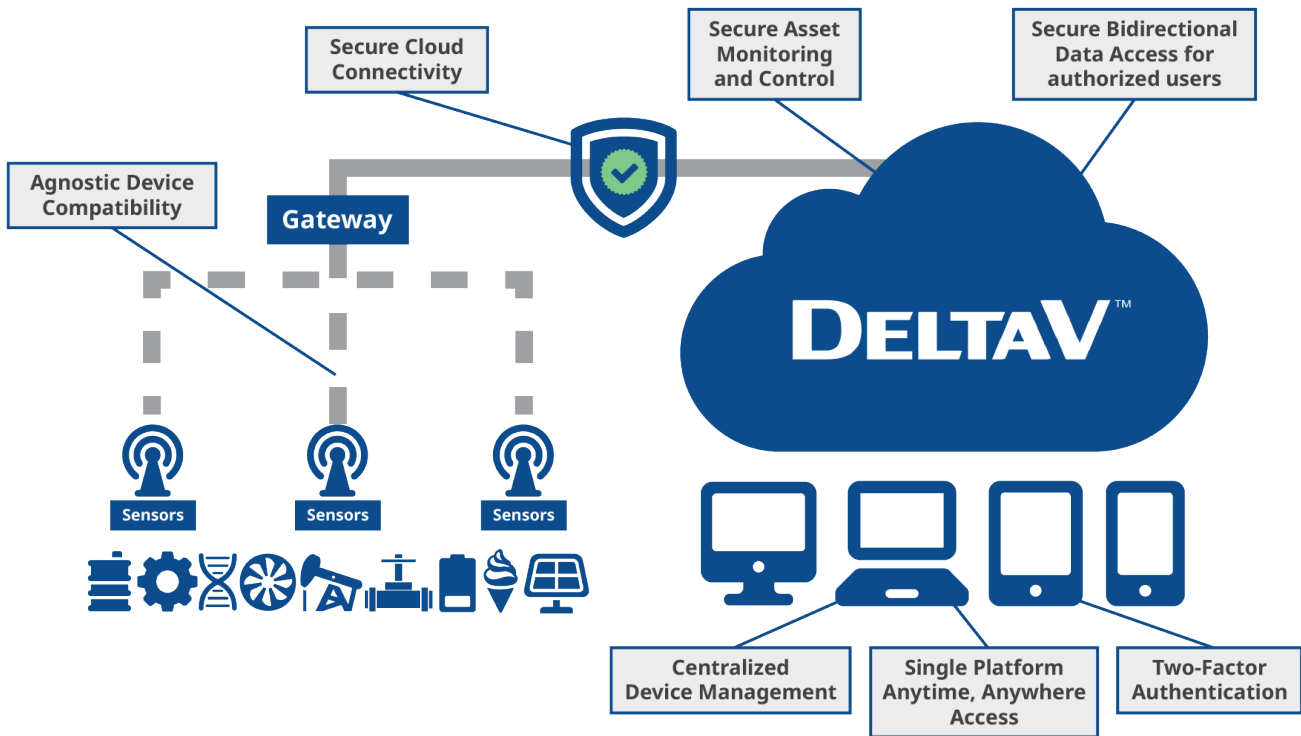
### Transitioning workforce and industry experience



Solutions are necessary to drive step change in efficiency and upskilling of strained operations and maintenance teams.



# DeltaV™ SaaS – Cloud-Native IIoT Platform with Advanced Analytics



## Connectivity Considerations

- Battery powered operation will disable Ethernet to reduce power consumption
- DeltaV SaaS configured SIM card
- Developed to ISA 62443 cybersecurity standards
- Low Energy Bluetooth® with Dedicated app
- DeltaV SaaS supports data export to centralized, on-premises systems

## Cellular Connectivity

- Compatible with 4G CAT-M1 Cellular Networks
- IIoT cellular plans allow for decreased cellular plan cost
- Cellular connectivity limited to DeltaV SaaS
- DeltaV SaaS remote anytime, anywhere access (web or mobile)

## Ethernet Connectivity and Integration

- Modbus/TCP Server connectivity to RTU

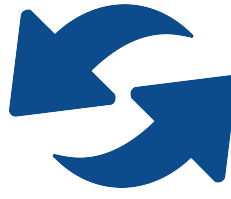


## Securely Connect to Anyone, Anywhere at Anytime



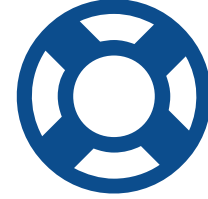
### Security

- Monthly automatic security updates
- Secure access anywhere, anytime
- Two-factor authentication
- Backups & disaster recovery
- ~3500 Microsoft™ security experts



### Scalability

- Flexible for 1 to 1000s of assets
- Web or mobile access
- Customer roadmap involvement
- Effortless platform updates
- Quickly and easily add devices



### Service

- Live 24/7/365 support included
- eLearning courses & workshops
- Project Management available
- Data Exchange service available
- Alarm Management available

## Next-Level Your Alarms

- Easily view alarm set points
- Quickly acknowledge alarms
- Configure alarms based on history
- Create groups on routes or roles
- Notifications via text, email or callout
- Create schedules for alarms
- Easily set up escalation options
- Optimize & configure alarms
- Create custom notifications

## Focused on Your Security



### Foundational Security

- Two-Factor Authentication
- Encrypted connections
- 3-2-1 Backup Strategy
- Zero-tolerance data loss
- Planned & unplanned notifications
- Live 24/7/365 support included
- eLearning courses & workshops



### Reliability Updates

- 99.9%\* System availability
- Monthly automatic security updates
- Customize account policies
- Authorize by users, groups or roles
- Redundant storage & network
- It's YOUR data - extraction available
- Historical data adapts to all updates



### Proven Approach

- Customer platform segregation
- On-going pentests & row auditing
- Cloud-native & built for web
- Tunneled network access
- Activity is recorded & logged
- ~3500 Microsoft™ security experts
- Three layers of expert data defense



# Gain insights into critical safety and operations of your gas network



**FISHER™**

Emerson delivers well researched and tested solutions for monitoring applications. Whether you need regulator health insights or comprehensive station monitoring, the Fisher ARMOR™ is the answer to your evolving safety and reliability needs. Don't miss out on the opportunity to embrace the future of gas distribution with Fisher ARMOR.

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