

GAS MEASUREMENT AND DATA MANAGEMENT SOLUTIONS

IIoT Ready Integrated Gas Metering Solutions
to Improve Safety, Reliability and Efficiency



Solutions for Gas Transmission & Distribution

There is growing pressure on natural gas companies to deliver more energy, increase profitability and minimize financial losses. Greater capital expenditures are needed to ensure system integrity and replace aging infrastructure. At the same time, operators must reduce OPEX and tightly control capital budgets. This environment requires optimization of the distribution infrastructure used to deliver natural gas to households and commercial and industrial (C&I) consumers.

Your Complete Partner

- Over 150 years in the natural gas industry
- Extensive automation and control portfolio
- Global domain expertise with local support
- Broad suite of products, from single instruments to turnkey solutions
- Seamless integration with plant-wide automation and security
- Guaranteed compliance and accuracy in custody transfer.

Why Honeywell?

Honeywell delivers best-in-class measurement, control and analysis solutions to gas industry customers around the world. The Honeywell Mercury line pioneered precision instrumentation, and today we provide end-to-end, smart metering solutions for everything from wellhead to burner tip applications.

Honeywell's advanced technology helps gas transmission and distribution companies increase efficiency, protect assets, save money, and safeguard the environment. Our products and services also enable superior performance and optimal maintenance that extends the life of your critical investments.

With decades of natural gas measurement and control experience, Honeywell offers solutions to optimize today's gas value chain. Our Gas Measurement and Data Management Solutions range from advanced electronic volume correctors, pressure recorders and collaboration software, to robust meter data management systems turning operational data into valuable knowledge.

The Expertise You Need

Now, more than ever, gas industry firms need the tools and know-how to effectively store, transport and deliver gas globally to meet rising demand.

Gas metering data must be collected more frequently and in smaller increments. The trend towards smart metering has demonstrated the importance of meter data management (MDM) in realizing the full potential of advanced metering infrastructure (AMI).

Honeywell can help gas industry firms meet their rigorous business and operational demands. We offer a full breadth of Gas Measurement and Data Management Solutions that provide the lowest total cost of ownership (TCO) while optimizing the entire gas value chain. Our products and systems enable users to exercise full control over their regulating and measuring needs.



Fully Integrated Solution

The Honeywell Mercury family provides the highest standard for gas measurement products and corrected gas volume in the natural gas industry. Users migrating from legacy gas measurement and control systems can now take advantage of a complete, end-to-end solution that's future-ready for emerging technologies like the Industrial Internet of Things (IIoT) and provides a host of valuable productivity benefits.

The Gas Measurement and Data Management Solutions portfolio is comprised of five main components:

- Best-in-class PTZ gas volume corrector and pressure recorders
- Highly accurate rotary gas meter
- Advanced 4G low-power wireless modem
- Innovative configuration and calibration software
- Powerful meter data management software.

With a fully integrated platform for data collection and management, and remote meter monitoring, gas operators can improve the output from equipment assets, avoid unplanned downtime, implement preventive maintenance, and maximize their total return on investment (ROI).

Ultimately, Gas Measurement and Data Management Solutions help gas industry customers make their own businesses more profitable. By pairing advanced meter data management software with the latest instruments for gas volume correction, they're able to enhance efficiency, reduce costs, and minimize risks to operation.

350 Series Gas Volume Corrector and Pressure Monitoring Platform

Local gas distribution companies utilize PTZ gas volume correctors to convert gas volume from operating conditions to reference pressure and temperature conditions. They are a key element in the gas value chain—from the meter to billing data.

Gas Utilities typically use pressure recording devices to monitor low pressure points in the Gas distribution network. Honeywell's EC 350 Gas Volume Corrector and ER 350 Pressure Recorders are intended to simplify and optimize custody transfer and industrial measurement. This new electronic corrector platform offers best-in-class accuracy, expanded memory, advanced diagnostics and integrated cellular communications. The EC 350 and ER 350 also reduces maintenance requirements and is intuitive and simple to use.

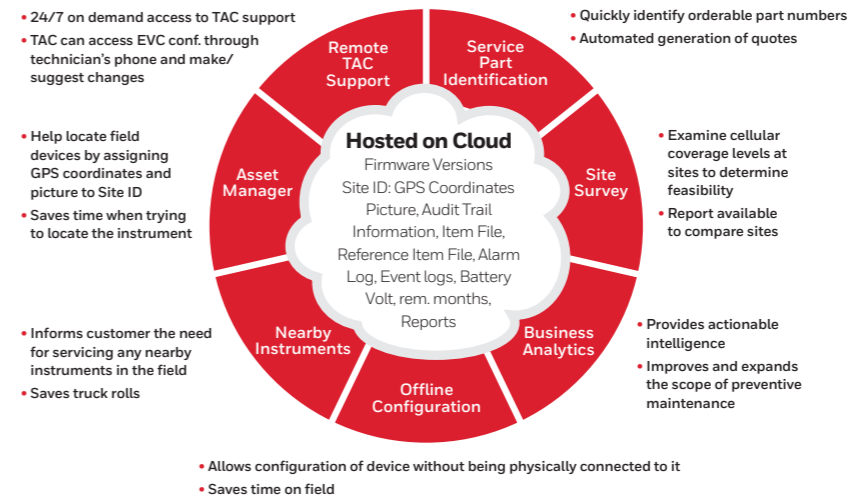
The 350 series provides:

- Greater flexibility in gas volume correction and pressure monitoring applications
- Intuitive operation for all corrector applications
- Versatile UMB-, rotary- and wall-mount options
- Expanded communication options via internal cellular modem
- IR port allowing for easy configuration
- Advanced audit trail
- Robust diagnostics to reduce maintenance
- Extended 10-year lithium battery life
- Low ownership and operating costs.

The 350 line provides many operational advantages. These flexible devices have a common look and feel, and utilize state-of-the-art technology such as a reverse flow capability. They also incorporate a highly accurate, plug-and-play digital pressure transducer and an enclosure optimized for serviceability. Featuring long-term stability and extended battery life, the EC 350 minimizes the need for site visits and simplifies field repairs.

Best of all, the EC 350 and ER 350 utilizes the same familiar UMB and pulse-sensing mechanism as our field-proven Mini-Max volume corrector. It also uses a robust latching and locking mechanism similar to the Mini-Max and ERX standard for ruggedness and reliability.





Honeywell Elster Rotary Gas Meter RABO

Gas distribution companies require very robust and accurate measurement instruments. Their applications demand gas meters with exceptional performance and reliability. This includes low pressure drop, wide rangeability, and high maximum operating pressure. Honeywell meets these requirements, and more.



The Honeywell Elster Rotary Gas Meter provides:

- Greater rangeability than competitive meters
- Significant reduction in device inventory
- Mechanical Index and variety of corrector and TC mountings
- Increased maximum operational pressure (MAOP)
- Low pressure drop enabling flexibility in station design
- Reduction in hazardous noise for safer operations
- Reduction in piston speed for longer asset life
- Low total cost of ownership
- Simple installation and commissioning
- Compact design and ease of use
- Environmentally friendly
- Bundled with electronic volume corrector for single-vendor sourcing

Cloud Link 4G Modem

Designed for battery-powered applications and outdoor operations in hazardous locations, the Cloud Link 4G Modem is an easy to configure and troubleshoot wireless cellular modem.

Integrated with the EC 350 volume corrector, it is fully field-programmable and simple to use through its short-range wireless communication or serial interfaces, and associated set of programming software.

The Cloud Link 4G Modem provides:

- 4G LTE transparent serial communication unit
- Certification with AT&T, T-Mobile, Verizon and Rogers
- Fall-back to UMTS/HSPA and GSM/GPRS

- RS232/485 interface
- IPv4 and IPv6 support for future proof operation
- Single digital input
- Internal modem power control
- Configuration via MasterLink (PC and app versions), over the air or using the serial link.

Thanks to its targeted design, the Cloud Link 4G Modem requires less power to operate than any other cellular modem available today.

MasterLink Configuration & Calibration Software

Utility companies in the gas transmission and distribution market need modern, future-proof solutions supporting key industry trends such as digital innovation, IIoT applications and the growth of mobile technology.

Honeywell's MasterLink is an integrated software solution that works across the entire gas portfolio. It provides a single software package to configure, calibrate and access data from the gas volume corrector. The software's intuitive dashboard enables users to quickly determine the overall health status of the instrument. Employing standardized terminology, it is easy to configure and calibrate instruments, import data, and generate reports and graphs—eliminating time-consuming manual effort.

MasterLink software provides:

- Automation of routine configuration and calibration tasks
- Increased productivity and cost savings
- Reduced time spent in the field
- Ease of locating devices at unfamiliar sites
- Comprehensive site survey to eliminate uncertainty before CAPEX decisions
- Remote TAC support to minimize downtime
- Integration to meter data management and cloud solutions.

The latest version of MasterLink software addresses the increasing adoption of mobile devices for functions like checking the health of field devices, downloading reports, instrument calibration and other activities once performed exclusively on a laptop. The software offers wireless connectivity and is compatible with the latest versions of both the iOS and Android operating systems.

Honeywell's value-added services have transformed the MasterLink software from simply a configuration and calibration tool to a robust collaboration solution driving increased productivity throughout the customer's instrumentation maintenance department.

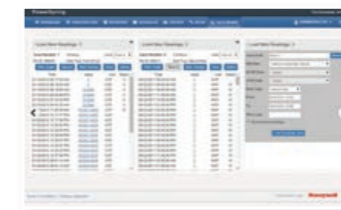
PowerSpring Meter Data Management System

Investing in smart grid and Advanced Metering Infrastructure (AMI) solutions is one thing, but capitalizing on the wealth of valuable data they deliver is something else. Success hinges on advanced meter data management technology, which can deliver meter data throughout the utility enterprise and turn it into valuable knowledge.

Honeywell's PowerSpring MDM system is a critical component in realizing the full potential of AMI or smart metering, especially for industrial and commercial meters used in the gas distribution business. It enables users to access MasterLink metering data from the cloud and frame it into manageable and familiar information. This approach eliminates operational blind spots, as well as isolated silos of important asset data.

PowerSpring MDM provides:

- Powerful data collection capabilities
- Robust data management solution
- Expanded repository for data storage
- Web-based user interface
- Customizable, flexible, and scalable architecture.



PowerSpring utilizes its database repository and gas distribution business logic

to automate the complex process of collecting meter data from multiple technologies. The system also evaluates the quality of data and publishes it in the appropriate format to utility enterprise systems for billing, metering, operations, engineering, customer service, etc.

In addition, PowerSpring aggregates large volumes of granular interval meter data, and then pre-processes it smartly and efficiently for commercial processing by various other enterprise utility applications. The system also handles the storage and distribution of non-billing data and messaging such as two-way commands, Hi/Lo pressure alarms, outage alarms, zero flow conditions, tamper alarms, etc.

Data Hosting Services

Total Data Services integrates Honeywell's field-proven advanced data acquisition and communications technologies into a state-of-the-art internet-based e-business platform.

TDS stores and delivers accurate and timely energy consumption information—information which customers need to manage their energy usage and costs. TDS also provides 24/7 access to meter data together with weather information, commodity data and industry news.

Being part of a fully integrated Honeywell's Gas Measurement and Data Management Solutions TDS can be a trusted MDM with differentiated & valuable offerings. It provides the customer with a powerful customizable analytical tool and a trustworthy cash register.

Protect Your Critical Assets

Gas industry operators can employ Honeywell's Gas Measurement and Data Management Solutions with confidence. Our fully integrated, end-to-end platform for gas transmission and distribution is based on a single design standard and follows strict cyber security and IT data security guidelines uniformly across all components. As such, there is no weak link to be exploited by cyber criminals.

Honeywell's advanced security features provide:

- Role-based login mechanism with different levels of authorization for greater flexibility and secure access control
- SSL security for the EVC integrated radio
- Safe list to enter trusted IP addresses, thus preventing incoming connections from any unwanted device
- IPv6 built-in security to reduce chances of hacking and phishing
- Push notifications on critical alarms or events
- Cloud storage and AMR software providing redundancy on multiple levels
- Advanced event log to record each user access and changes made.



Benefits to Gas Operators

Reduce Operating Costs

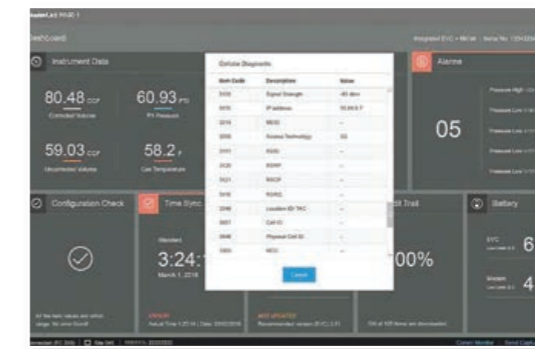
- Reduce the number of trips to the field and minimize revenue losses thanks to optimal transducer accuracy and long-term stability
- Shorten service time and prevent mistakes using a plug-and-play transducer with preloaded coefficients
- Lower requirements to stock SKUs due to a wider dynamic range
- Minimize the need for field service calls with OTA firmware upgrade
- Locate installed assets faster and optimize service efficiency using GIS routing
- View critical information clearly on an auto-populated dashboard to streamline operator workload
- Simplify troubleshooting and reduce downtime with on-demand support and remote access
- Ensure diagnostics and alarms are captured and reported early as part of a fully integrated MDM solution.

Minimize Risk

- Simplify EVC installation, configuration and set-up while improving operational efficiency and reliability with an integrated cellular radio
- Perform crucial call-outs on alarms to the MDM system
- Reuse existing, field-proven components (e.g., UMB, digital input front-end, door lock mechanism, Alkaline battery pack) to minimize training and support requirements
- Survey the feasibility of sites by analyzing the available signal strengths
- Ensure safe data storage and minimize the risk of unavailability with cloud support
- Avert potential problems and perform root cause analysis with insightful analytics.

Simplify Routine Tasks

- Understand operational procedures more clearly using intuitive, field-proven technology
- Reduce configuration time with plug-and-play technology
- Employ automated, wizard-based software to guide technicians through routine tasks
- Identify performance issues with a single, integrated dashboard view of asset health
- Optimize data storage with one-touch upload to the cloud
- Simplify transfer of key data like audit trails, event logs and alarm logs via built-in email support
- Automate the collection of data across different meter technologies, evaluate its quality, and publish the data to utility enterprise systems for billing, metering, operations and customer service
- Utilize short-range wireless communication for touch-free connectivity
- Ensure a fully redundant pulse counting mechanism for early detection of billing disputes.



Maximize Your ROI

- Identify alarms quickly and easily to assist field operators and save extra truck rolls
- Employ expert remote support to enhance asset utilization and keep the cash register running longer
- Adopt future-ready technologies to better manage field equipment, increase productivity and improve predictive maintenance
- Take advantage of free annual upgrades in tune with the supported OS version
- Benefit from the latest EVC technology without losing out on familiar and proven performance
- Improve auditing capabilities and mine data efficiently to support maximum resource utilization.



For More Information

To learn more about Honeywell Smart Gas Metering Solutions, visit www.honeywellprocess.com or contact your Honeywell account manager.

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