

# Proline Prosonic Flow G 300/500 Redefines process gas measurement

The robust ultrasonic gas flowmeter with integrated pressure and temperature sensors for highly accurate, real-time measured values

Thanks to state-of-the-art drilling technology, tremendous gas reserves are still being discovered and tapped into. It is expected that the demand for natural gas as a fuel or energy source, for example, will continue to increase in the future. Whether natural gas, process gas or gas mixtures, either in the offshore or onshore sector: the new Prosonic Flow G from Endress+Hauser is the ideal flowmeter for demanding applications. This flowmeter combines tried-and-tested ultrasonic flow measuring technology with decades of experience in the oil and gas as well as chemical industries.

Prosonic Flow G measures both dry and wet gases with high reliability. Together with the extensive functionality of the Proline 300/500 transmitters, this opens up new options for process control and monitoring. Prosonic Flow G ensures precise measured values ( $\pm 0.5\%$ ) with unmatched repeatability, even when process and ambient conditions fluctuate significantly. The robust industrial design makes it possible to operate the device over a long term without maintenance, thus saving time and money for the user. Prosonic Flow G operates at process temperatures up to  $150\text{ }^{\circ}\text{C}$  ( $302\text{ }^{\circ}\text{F}$ ) and pressures up to 100 bar (1450 psi). It can also be ordered with built-in temperature and pressure sensors. The input from these sensors can be combined with the measured sound velocity to calculate a great number of additional gas properties that are important for process control.

## Comprehensive process monitoring thanks to extended gas analysis

Prosonic Flow G 300/500 can be supplied with an “Extended Gas Analysis” function package, e.g. for special applications or for increased process control requirements. Depending on the selected gas type (pure gases, gas mixtures, coal gas, natural gas, customer-specific gases, etc.), this function enables the calculation of additional parameters and process variables. Some examples are volume flow, corrected volume flow, mass flow, energy flow, calorific value, Wobbe index, gas type, molar mass, methane content (%), density or viscosity.

## Robust and industry-optimized

Prosonic Flow G 300/500 stands out for its very high degree of robustness. All wetted parts are made of stainless steel and are compliance to the stringent requirements of NACE MR0175/MR0103. The ultrasound transducers are even available in titanium Grade 2. As a result, the measuring system features high corrosion resistance and is ideally suited for applications in the oil and gas and chemical industries. Since the entire sensor housing surface consists of corrosion-resistant stainless steel as well, Prosonic Flow G is especially suited for harsh ambient conditions in the offshore and onshore sectors. The Prosonic Flow G also features maximum robustness when measuring moist or wet gases. The innovative sensor concept is equipped with a special drainage system that immediately dissipates any condensate that forms in the sensor pocket area. The ultrasonic measurement, therefore, remains unimpeded, i.e. without any negative effects on the signal quality.

### **Process reliability around the clock**

Since the Prosonic Flow G measuring system has been developed in accordance with IEC 61508 (SIL), it is also preferred for use in safety-related applications. Additional security is provided thanks to a permanently installed rupture disk for controlled discharge of excess pressure in the event of potential leakage. Any device or process errors that may occur are clearly categorized and indicated in accordance with NAMUR NE107. This makes it possible to take fast and targeted corrective actions.

### **Heartbeat Technology – for reliable measurements and maximum operational safety**

Heartbeat Technology is another highlight. This testing function is integrated into all Proline measuring devices and enables permanent self-diagnostics with the highest diagnostic coverage (>95%) as well as a TÜV-certified, metrologically traceable device verification without process interruption. All of this reduces complexity and hazards in a plant and increases its reliability as well as availability.

### **Web server – direct data access in the field**

Proline 300/500 transmitters include a web server as a standard. Using a standard Ethernet cable and a laptop – or wireless via WLAN –, users have direct access to all diagnostic, configuration and device data without additional software or hardware. This enables targeted and time-saving maintenance and service.

### **HistoROM – simply unforgettable**

The one-of-a-kind data storage concept (HistoROM) ensures maximum data security – before, during and after service. All calibration data and device parameters are stored securely on the HistoROM data storage module and are automatically reloaded after maintenance work. Installing spare parts is easy, saves time and thus reduces unnecessary downtimes.

### **Transmitters for seamless system integration**

Prosonic Flow G can be combined with two different transmitters: as a compact version (Proline 300) or as a remote version (Proline 500) with up to four inputs and outputs. Proline transmitters make no compromises in terms of performance and accuracy. The digital signal processing begins in the intelligent sensor and is the basis for a real multivariable measurement. This means that the Prosonic Flow G is able to simultaneously detect multiple measured values that are important for process control – e.g. flow velocity, ultrasound speed, pressure and temperature – and forward these values to a process control system. Full access to all measurement data, including diagnostic data acquired by Heartbeat Technology, is possible at any time thanks to digital data transmission via HART or Modbus RS485, as well as via WLAN or the freely combinable inputs and outputs.



**Picture: ProsonicFlowG300\_DN300\_Alum\_Press\_OG.jpg**

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## The Endress+Hauser Group

Endress+Hauser is a global leader in measurement instrumentation, services and solutions for industrial process engineering. The Group employs approximately 14,000 personnel across the globe, generating net sales of over 2.4 billion euros in 2018.

### Structure

With dedicated sales centers and a strong network of partners, Endress+Hauser guarantees competent worldwide support. Our production centers in 12 countries meet customers' needs and requirements quickly and effectively. The Group is managed and coordinated by a holding company in Reinach, Switzerland. As a successful family-owned business, Endress+Hauser is set for continued independence and self-reliance.

### Products

Endress+Hauser provides sensors, instruments, systems and services for level, flow, pressure and temperature measurement as well as analytics and data acquisition. The company supports customers with automation engineering, logistics and IT services and solutions. Our products set standards in quality and technology.

### Industries

We work closely with the chemical, petrochemical, food & beverage, oil & gas, water & wastewater, power & energy, life science, primaries & metal, renewable energies, pulp & paper and shipbuilding industries. Endress+Hauser supports its customers in optimizing their processes in terms of reliability, safety, economic efficiency and environmental impact.

### History

Founded in 1953 by Georg H Endress and Ludwig Hauser, Endress+Hauser has been solely owned by the Endress family since 1975. The Group has developed from a specialist in level measurement to a provider of complete solutions for industrial measuring technology and automation, with constant expansion into new territories and markets.

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