TRZ 04 Turbine Gas Flowmeter is a Solution for the Most Demanding Gas Custody Transfer Applications.

The TRZ 04 Turbine Gas Flowmeter continues the tradition of Honeywell’s field-proven turbine meter technology, delivering the highest levels of accuracy and reliability. The TRZ 04 improves low-flow performance and includes a rugged, redesigned meter head for enhanced usability and ease of installation.

Proven Technology. Superior Performance.
Respected Product Lines
Honeywell is the right partner wherever natural gas needs to be moved, measured or stored. We are focused on the design and manufacture of products for the most demanding gas metering and regulating applications. Our respected RMG and Mercury product lines have a heritage of improving the performance, reliability and safety of industrial operations worldwide.

Superior Technology
Today, advanced solutions are needed to measure and analyze the quality and volume of natural gas at every stage of its movement, storage and utilization. Gas industry organizations can meet this requirement with Honeywell’s Mercury and RMG product families, which are available individually or as complete measuring systems for gas metering stations.

Proven Experience
No other control and instrumentation supplier has more experience in the fast-growing natural gas market than Honeywell. From upstream gas production, to transmission, storage and distribution, we understand all facets of the industry.

Application Know-how
We partner closely with industrial, commercial and gas distribution customers to provide the right flow metering solution to optimize the measurement of natural gas, non-aggressive and manufactured gases, nitrogen, carbon dioxide and propane, and other gases.

Local Service
You can depend on Honeywell for long-term product reliability and performance, lowest total cost of ownership and installation, and outstanding technical training. Our technical support organization provides multiple layers of service and support to customers, with certified specialists located near you for the best possible delivery of field services.

Improving on a Winner
Honeywell’s turbine flowmeters have been offered for gas custody transfer applications for more than 35 years. Our RMG brand is recognized for unsurpassed accuracy and reliability. For example, the TRZ 03 Turbine Gas Flowmeter was launched in 1983 and incrementally improved over its lifetime, with tens of thousands of installed units globally. The new TRZ 04 meter delivers even higher levels of performance in demanding fiscal metering environments.

Typical Applications Include:
- Fiscal metering
- Low-pressure custody/ non-custody (atmospheric) transfer
- Allocation metering
- Check metering
- Gas transportation and distribution
- Underground gas storage (bi-directional)
- Gas-fired power plants
- Gas processing plants
- Refining and petrochemicals
- Industrial

In today’s competitive environment, the need for precise flow measurement in custody transfer and allocation has never been more critical. Each time a product changes ownership, both the buyer and seller expect an accurate accounting of their asset share.

When it comes to measuring the volume of royally-bearing products such as natural gas, the right flow metering solution is key. A tiny error in the flow measurement of gas being transferred can cost a company millions of dollars in a single year.

The selection of a flow measurement instrument depends upon the process conditions, the intended rangeability of the system, and the fluid properties. Fiscal metering requires exceptional accuracy, repeatability, and auditable values.

Every process plant in the world takes in bulk raw materials. Operators must measure these materials and finished products in the most precise manner possible. Accurate flow metering not only helps define the point at which product ownership changes hands, based on regulatory standards, but also maximizes overall production and movement efficiency.

Rely on Honeywell
- Over 150 years of combined experience in the natural gas industry
- Worldwide solution leader in control, measurement and analysis technology
- More than 1,500 successful gas installations worldwide
- 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.
The TRZ 04 provides important benefits to gas industry users:

Rugged, Accurate and Dependable
The TRZ 04 provides important benefits to gas industry users:

- High accuracy and linearity
- Excellent performance in low-flow ranges
- Tamper protection with alarm output
- Suitability for vertical or horizontal gas flows
- Low maintenance requirements
- Superior reliability in demanding environments

Advantages of TRZ 04
Honeywell’s TRZ 04 Turbine Gas Flowmeter is an advanced instrument designed to meet strict requirements for flow measurement in custody transfer. It employs a new, innovative meter head (Type G), which can be rotated 355° to allow for optimal readability and easy installation. The TRZ 04 also offers a wider measurement range for increased application flexibility. Combining the latest fluid dynamic simulation with hands-on industry experience has led to an enhanced measuring unit with reduced friction to improve performance in the lower flow ranges of the meter. A tamper contact was also implemented in the meter head to lower the risk of manipulation resulting in unaccounted gas flow.

Put a Proven Meter to Use
A turbine flowmeter is among the best methods for monitoring gas flow due to its measuring sensitivity, which is one of the basic requirements for custody transfer. The meter has a wide range and can accommodate very low flow rates as well as a high speed of flow. The signal provided by a turbine meter also has a high frequency so it does not get distorted during transmission to data acquisition and monitoring systems. In addition, the turbine meter design is both reliable and flexible in use. Even in high pressure and temperature environments, it provides dependable and cost-effective performance.

Responding to Your Needs
As the demand for energy is increasing with climbing prices, the need for accurate and trustworthy custody transfer and measurement is becoming crucial.

The heart of any custody transfer system is the flow-measuring device. The flowmeter serves as a “cash register,” capturing process-critical data that records how much product is transferring between the buyer and seller. If your cash register isn’t running right, your business will suffer.

A minor uncertainty in measurement during custody transfer of gas results in an accurate amount of transfer has lead to disputes between customer and client. Therefore, the precision of metering product is transferring between the buyer and seller. If your cash register isn’t running right, your business will suffer.

The Right Choice
Turbine flowmeters are the technology-of-choice for high-accuracy measurements in custody transfer applications involving all types of gases. They have a cost advantage over other technologies in many cases.

Method of Operation
The TRZ 04 Turbine Flowmeter is suitable for gas measurement in compliance with EN12261 and International Organization of Legal Metrology (OIML) standards, where the rate of flow is indicated by a mechanical totalizer in units of volume (cubic meters at flowing conditions) under prevailing pressure and temperature. The gas flow is constricted to a definite cross section and drives a coaxially mounted turbine wheel. The speed of the wheel, which is proportional to the flow rate, is reduced by gearing and transmitted to the mechanical index via a magnetic coupling.

Standard Features

**Flowmeter**
- Nominal size: DN 50 to DN 200
- Pressure rating: PN 10 to PN 100/ANS 600
- Measuring ranges: Up to 1:160 depending on nominal size and operating pressure, with flow rates up to 2500 m³/h
- Operating temperature range: -13°F to 131°F (-25°C to 55°C)
- Intrinsically safe pulse transmitters (Zone 1)
- Approved for fiscal metering within EU in compliance with MID
- Accuracy class: 1.0
- DIN/DVGW-certified
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**“Type G” Meter Head**
- Universal meter head
- Readable at an angle (under 45°)
- Rotatable by 355° (without breaking a seal)
- Plastic case (aluminum optional)
- 2x low-flow reed contacts
- Tamper contact
- Protection class: IP 67
- Built-in encoder option
- Mechanical drive shaft (with aluminum cover)

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Key Components

HF Pulse Transmitters
In addition to the meter head, the TRZ 04 Turbine Gas Flowmeter can be supplied with digital HF-2 and HF-3 pulse transmitters, which scan the turbine wheel or reference wheel. These new pulse transmitters are especially temperature-stable and provide a digital NAMUR signal.

Sizes DN80 and above can be optionally equipped with an inductive pulse transmitter that scans the turbine wheel (HF-3) and provides a maximum frequency of approximately 2.1 kHz.

Meters in sizes DN 100-200 have the option to be installed with an additional high-frequency pulse transmitter scanning the reference wheel within the measuring unit (HF-2). This output provides a maximum frequency of approximately 2.1 kHz, and can be used to monitor the health of the turbine wheel (done by comparing HF-2 and HF-3 outputs in the flow computer).

LF Pulse Transmitters
The TRZ 04’s LF pulse transmitters provide 2x low frequency pulse outputs and are located in the meter head “G.” The LF outputs are reed contacts and have a maximum frequency of approximately 0.3 Hz.

Turbine Wheel
The flowmeter’s turbine wheel, also called the rotor, is constructed out of a special plastic (Delrin) or aluminum alloy. The turbine wheel is one of the most important parts of the meter and is responsible for its accuracy and reliability. For this reason, it undergoes a stringent quality control procedure at the factory. Wheel material applications are as follows:

Choice of Body Materials

Ease of Maintenance
The TRZ 04 is a mechanical flowmeter with moving parts that need to be lubricated. Depending on the meter size (see table below for details), the device is either equipped with permanently lubricated bearings or a push button pump. Under normal operating conditions, a meter with an oil pump needs to be manually lubricated every three months. For details, please see the operating manual.

Specifications

Dimensions/Weight

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<th>Diameter (mm)</th>
<th>G-value (m/s²)</th>
<th>Qmin (m³/h)</th>
<th>Qmax (m³/h)</th>
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Flowmeter sizing is critical to achieve the best possible measuring results. Although the TRZ 04 can handle overflow of up to 20% for a short time, it should be operated in the approved measuring ranges given in the table below. Depending on the operating pressure in the application, an extension of the measuring range of up to 1:160 is possible for certain sizes. The standard measuring range of the TRZ 04 is 1:20.
A Trusted Partner

No other supplier has Honeywell's resources for the global process industries. With personnel working in key industry locations, including unmatched local technical support, we are your single-source partner for the gas value chain.

Honeywell combines industry best practices with our own set of experience-based internal procedures, augmenting them with an extensive suite of tools and knowledge databases. This approach is effective in helping engineering firms, system integrators, local distribution companies, EPCs, gas distribution companies, and pipeline/gas storage operators prepare for new construction projects, technology upgrades and migration strategies, and then specify the right metering solution.

From detailed engineering, to project execution and training for operators and field technicians, you can trust Honeywell to help make your project more successful—and your operation more profitable.

For More Information
To learn more about Honeywell's Turbine Gas Flowmeter, visit www.honeywellprocess.com or contact your Honeywell account manager.

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