FLOWGENIX

THERMAL MASS FLOWMETER

The ABFlowgenix **Thermal Mass Flowmeter** (TMFM) is designed for precise measurement of gas flow using the principle of thermal dispersion. The meter measures the mass flow directly without requiring temperature or pressure compensation. A heated sensor and a reference temperature detector measure the amount of heat carried away by the gas flow, which is proportional to the mass velocity.

Built for industrial reliability and accuracy, this instrument is ideal for compressed air, natural gas, biogas, nitrogen, and other clean, dry gases. With no moving parts, it ensures long-term stability, minimal maintenance, and energy-efficient operation.

Image is not real .Just for reference

KEY FEATURES

- **Direct mass flow measurement** – no additional sensors required.
- **High accuracy and repeatability** – ±1% to ±3% of reading.
- **Wide turn-down ratio** – up to 100:1 for dynamic range measurement.
- **Fast response time** – ideal for process control and leak detection.
- **Low pressure drop** – energy-efficient and cost-effective.
- **Digital communication** – 4–20mA, Pulse, RS485 (Modbus-RTU), and HART.
- **Rugged build** – IP67 housing and stainless-steel construction.

USER BENEFIT

- **Direct Mass Flow Measurement**: Eliminates the need for external pressure or temperature sensors.
- **Low Maintenance Design**: With no moving parts, it provides long service life and easy upkeep.
- **Wide Rangeability**: Accurately handles low to high flow velocities.
- **Digital Integration**: Seamlessly connects with PLC, SCADA, and automation systems.
- **Long-Term Stability**: Ensures reliable readings in harsh industrial environments.

TECHNICAL SPECIFICATIONS

Parameter	Specification
Measuring Medium	Various gases (except Acetylene)
Pipe Size Range	DN10 to DN4000 mm
Velocity Range	0.1 to 30 / 60 / 100 Nm/s
Accuracy	±1% to ±3% of reading
Sensor Temperature Range	−40°C to +80°C / +150°C / +250°C
Working Pressure	Up to 16 bar (higher available)
Power Supply	24V DC or 230V AC
Output Signals	4–20mA (Isolated), Pulse, RS485, HART
Display	4-line LCD / TFT / LED display for Mass Flow, Volume Flow, Totalizer, Date & Time
Protection Class	IP65 / IP67 / Flameproof
Sensor Material	SS316 / Platinum / PTFE Coating
Installation	Insertion or Inline Type
Repeatability	±0.2% of reading
Turn Down Ratio	Up to 100:1

MATERIAL OPTIONS

Component	Material Options
Probe	SS316 / SS304
Sensor	Platinum RTD / PTFE coated
Housing	Aluminium Anodized / SS304
Display Cover	Polycarbonate (IP67)
Process Connection	Flanged / Threaded / Clamp / Insertion

TYPICAL APPLICATIONS

- Compressed air flow monitoring
- Biogas and natural gas metering
- Energy management in HVAC systems
- Process gas measurement in chemical plants
- Leak detection and consumption monitoring

DISPLAY & INTERFACE

- 4-line LCD or TFT display showing:
- Mass Flow (kg/h, Nm³/h, etc.)
- Totalized Flow
- Gas Temperature
- Backlit screen with high visibility
- Keypad or remote configuration
- Password-protected menu settings

ELECTRICAL CONNECTIONS

- 4–20mA analog output (isolated)
- RS485 Modbus / HART digital output
- Pulse output for totalized flow
- Power: 24V DC or 230V AC
- Relay output for alarms or batch control (optional)

INSTALLATION GUIDELINES

- Ensure straight pipe length: 10D upstream, 5D downstream.
- Verify gas is clean and dry for accuracy.
- Install probe in the center of the pipe for insertion type.
- Ground the transmitter properly to avoid electrical noise

COMMUNICATION PROTOCOL

- Modbus RTU – for PLC and SCADA integration
- HART – for diagnostics and configuration
- Pulse Output – for batch control or totalizing

MAINTENANCE & WARRANTY

- Requires minimal cleaning for dry gases.
- No moving parts — long-term operation without mechanical wear.
- 12-month manufacturer warranty covering manufacturing defects.

ACCESSORIES OPTIONS

Accessory	Description
Remote Display Unit	Up to 50 m cable length
Flow Totalizer Panel	6-digit LED with relay output
Data Logger	RS485 / USB connectivity
Insertion Tool Kit	For on-site installation of probe-type meters
Mounting Hardware	Clamps, gaskets, flanges

ORDERING INFORMATION

Code / Option	Description
Model	FLOWGEN – TMFM
Line Size	Specify pipe size (DN10 to DN4000 mm)
Material of Construction (MOC)	1 – SS304 / 2 – SS316 / 3 – Other
Protection Class	1 – IP65 / 2 – IP67
Pressure Rating	1 – Up to 16 bar / 2 – Other (specify)
Explosion Proof	1 – Yes / 2 – No
Connection Type	1 – Flanged / 2 – Threaded / 3 – Clamp / 4 – Insertion
Output Signal	1 – 4–20mA / 2 – RS485 / 3 – 4–20mA + HART / 4 – 4–20mA + RS485
Operating Temperature	1 – Up to 80°C / 2 – Up to 150°C / 3 – Up to 250°C / 4 – Above 250°C
Relay Option	1 – Switching / 2 – With Additional Output
Power Supply	1 – 24V DC / 2 – 230V AC
Test Certificate	1 – Factory Calibration / 2 – NABL Laboratory Calibration
Display Type	1 – Without Display / 2 – Integral / 3 – Remote Type
Special Requirements	Mention any customized options or process requirements

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