

RHEOTHERM®
FLOW INSTRUMENTS

Model 210 Flow Meter

Trusted Rheotherm precision with added versatility, functionality and safety

- Precision low flow meters with signal processing electronics integrally mounted to the sensor, installable at the process site
- Capable of measuring liquid as well as gas flows
- Measures liquid flows as low as one gallon per year and gases as low as 20 sccm
- Chemically compatible with most process liquids and gases
- Little or no maintenance, no moving parts
- Extended temperature compensation for reliable flow measurement under a wide range of process conditions
- Interface with infrared-equipped PDAs using Palm® OS
- Self diagnostics
- Available with inline sensors and insertion probe sensors
- Optional remote electronics configuration
- CE marked (24 Vdc models only)
- FM and cFM approved options for hazardous locations (see reverse)



FM approved electronics and sensor package available with inline TU sensor or insertion probe



Electronics can be installed remotely from sensors (sensors and electronics not shown to scale)



INTEK –

Your Process Flow Partner

For decades, Intek's *Rheotherm* flow meters have proven their performance in a variety of critical installations. Today, they are routinely specified for NASA aerospace applications, including the International Space Station. All meters feature minimal pressure drop, a low maintenance design with no moving parts, and excellent chemical compatibility. In addition, the TU and TUL sensors incorporate an unobstructed flow path. Quality is assured with Intek's ISO-9001: 2000 certified quality assurance program.

Model 210 Features

- Advanced temperature compensation
- Multiple calibration data storage: 4 fluid calibrations at 4 temperatures each
- Wide turndown capability: up to 200:1
- Enhanced self diagnostics
- Field adjustable calibration using infrared-equipped PDA with Palm® OS

Applications

- Low flow: liquids as low as 10 cc/day, and gases as low as 20 sccm
- Gas mass, volume, or velocity flow rates in ducts: 5 sfpm and higher
- Homogeneous slurries
- Hazardous environment options:
 - FM approved intrinsically safe sensors with remote electronics*
 - FM and cFM approved explosion-proof integral units**
- Choice of fittings and cleaning options for use in sanitary or high purity applications
- Optional materials for chemical compatibility include stainless steel, quartz, Hastelloy C®, Monel®, and other alloys

* Class I, Division 1, Groups A, B, C, and D
Class I, Zone 1, IIB+H2 (US Only)
Class II, Division 1, Groups E, F, and G
Class III, Division 1

** Same as above, except Group A is not included.

Model 210 Specifications

Line Size

1/16" OD or larger

Response Time

1 second

Time Constant (63% of flow change)

3 to 5 seconds (typical)

Repeatability

±0.5% of reading (typical)

Accuracy

±1% of reading (typical)

Enclosure

- Standard: NEMA 4X/NEMA 7
- Optional: NEMA 4 (remote electronics)

Display Options

- "Blind" (no display)
- 2 x 16 backlit LCD displays all of the following:
 - Mass/volume flow rate
 - Temperature in °C or °F
 - Total accumulated flow

Output

- Standard: 4/20 mA (flow rate only)
- Optional:
 - 0-10 Vdc or 0-5 Vdc (flow rate, temperature)
 - Pulse (open collector, 5 Vdc, remote electronics only)
 - SPDT switch (remote electronics only)
 - 4/20 mA (temperature, remote electronics only)

Input Power

- Standard: 24 Vdc
- Optional: 85-250 Vac (remote electronics only)

Multiple Calibrations

Up to four calibration curves can be stored. Channel A is the primary factory calibration, with additional factory or user calibrations stored in channels B, C and D. These can be for different fluids or different ranges of flow.

Field Adjustment



On-site calibration adjustments are easily accomplished using an infrared-equipped PDA using Palm® OS. Input the desired reading, and the Model 210 automatically adjusts the flow curve. A key feature of the instrument allows a two point adjustment without any interaction between the current adjustment and the previous one. Factory-set calibration is easily recoverable.

Self Diagnostics

The Model 210 reduces troubleshooting time by detecting electronic systems problems and alerting the user through fault codes. Fault detection is per NAMUR NE 43 using 4/20 mA output.

Non-Integrated Option

The Model 210 is available with the electronics separately mounted up to 200 ft. away from the sensor.



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