

REINMEER

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Measuring Instrument Directive
2014/32/UE



Flow Computer RM-CPT-FLOW

Data sheet

Smart, Real-Time Gas
Flow Computing & Monitoring



Flow Computer

MODEL RM-CPT-FLOW

REINMEER

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Application Areas

Natural Gas Metering and Pressure Regulating Stations
Natural Gas RMS / RMS-A Stations
Gas Metering Skids
Metering Lines Equipped with Ultrasonic Gas Meters
Rotary and Turbine Gas Metering Systems
Differential Pressure Flow Measurement Systems Using Orifice Plates, Venturi Tubes, or Nozzles
Flow Measurement Lines in Oil, Gas, and Process Plants
Applications Requiring Pressure and Temperature Volume Compensation
Natural Gas Systems Requiring Standard Volume Calculation in $\text{Nm}^3 / \text{Sm}^3$
Remote Stations Transmitting Measurement Data to SCADA Systems
Multi-Stream Metering Systems Monitored Through a Single Flow Computer



Features

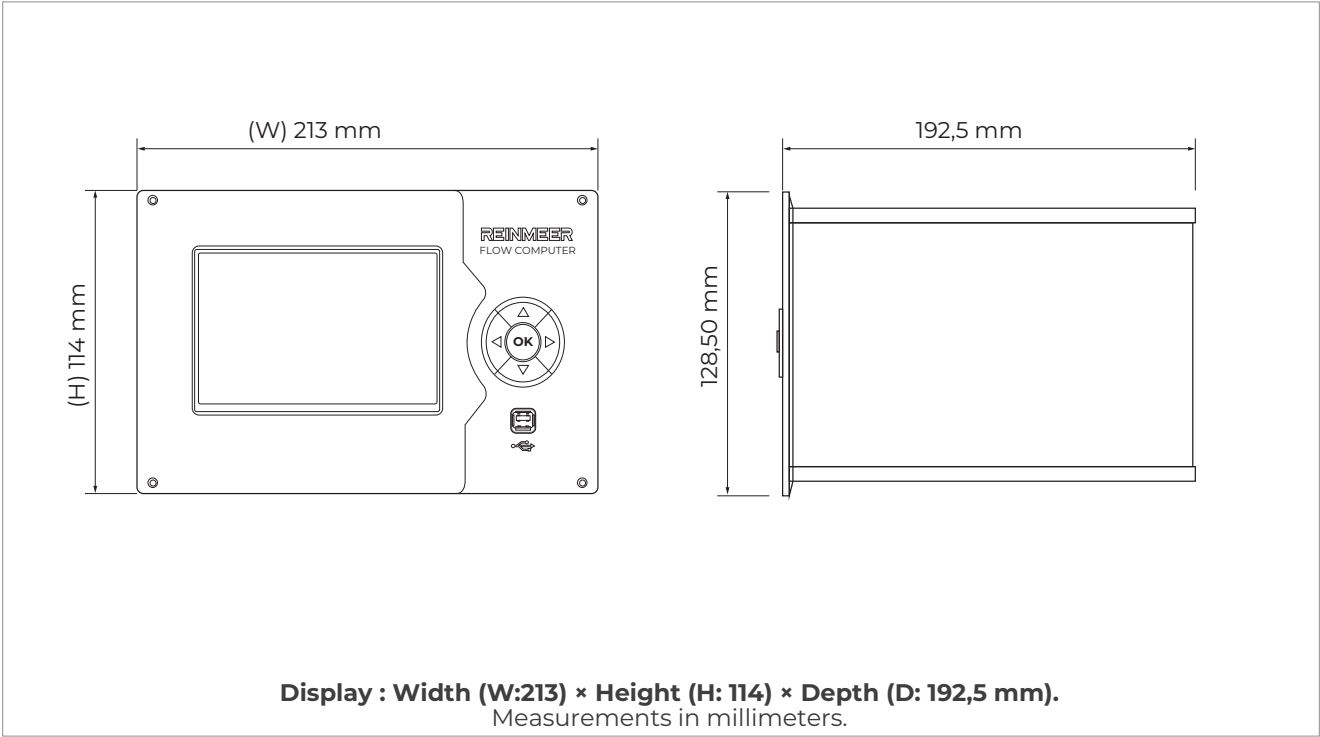
- Up to 5 Flow Measurement Streams
- Real-Time Flow, Pressure and Temperature Processing
- Pressure & Temperature Compensation
- Standard Volume Calculation ($\text{Nm}^3 / \text{Sm}^3$)
- Compressibility Factor Calculation
- Supports Ultrasonic, Turbine, Rotary, Coriolis & DP Flowmeters
- 4–20 mA, Pulse, HART and Modbus Inputs
- Modbus RTU / TCP Master & Slave Communication
- Ethernet, RS232, RS485 and USB Interfaces
- Optional Wi-Fi & Bluetooth Communication
- SCADA Integration & Remote Monitoring
- Internal Data Logging, Event & Alarm Records
- 5.0" Color Touchscreen Display
- User-Configurable Modular I/O Architecture
- Low Power Consumption
- 24 VDC Power Supply
- Support for AGA, ISO, NX19, SGERG and GOST Calculations
- Audit Trail and User Access Control
- FlowSet Configuration Software Support

Description

RM-CPT Flow Computer is an advanced flow measurement and monitoring solution designed for natural gas, oil, and industrial process applications. It supports up to five measurement streams and performs real-time processing of flow, pressure, temperature, and gas data, including pressure and temperature compensation, compressibility calculations, and standard volume conversion to Nm^3 or Sm^3 . The system is compatible with ultrasonic, turbine, rotary, Coriolis, and differential-pressure-based flowmeters and supports 4–20 mA, pulse, HART, Modbus RTU/TCP, Ethernet, RS232, and RS485 communications. With integrated data logging, event recording, SCADA connectivity, remote monitoring, a 5-inch color touchscreen, and support for international calculation standards including AGA, ISO, NX19, SGERG, and GOST, RM-CPT Flow provides a flexible and reliable platform for modern flow metering systems.



Structure



Overview

Number of Streams	Maximum 5
Calculation Update Rate	Up to 0.2 seconds
Audit Trail	Full audit trail with user identification (password login), event logging (recording of changes), and 4 GB memory storage (data logging).
Calculation Standards	Compliant with international standards: ISO 5167-2, ISO 5167-5 (2003 and 2016) ISO 6976 (1995 and 2016) PTZ, NX19, NX19 G9, SGERG AGA5, AGA7, AGA8, AGA9, AGA10 GOST NX19
Language Options	Number of Streams
Dimension	Width (W) × Height (H) × Depth (D)

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Communication	
Communication	The VIFLOW Flow Computer is supplied as standard with Ethernet, USB and serial ports. These ports enable communication with computer networks, keyboard/mouse, printers, SCADA systems, etc.
Front Panel	1x USB 2.0
Rear Panel	2x Ethernet (10/100 Mbps) / 1x RS232 / 1x RS485
Supported Protocols	MODBUS RTU Master/Slave, MODBUS TCP Master/Slave SMTP, HTTP, FTP
Optional Ports	RS232 / RS485 / BLUETOOTH / WI-FI
Hardware	
Power Supply	+24 VDC (Min.: 19 VDC, Max.: 34 VDC), max. 30 W Fuse protected
Operating Ranges	Operating Temperature: -10...55 °C (14...131 °F) Storage Temperature: -25...70 °C (-13...158 °F)
Standard Modules	PDU Module / CPU Module
Optional Modules	Line Module / Output Module / Communication Module
Optional Ports	Microprocessor-based, minimum 32-bit, 512 MB DDR3 SDRAM 4 GB eMMC, SD card up to 16 GB
Front Panel	
Front Panel	5.0-inch color touchscreen / 5 navigation keys / USB 2.0 port / 3 high-brightness indicator LEDs
Display	User-friendly graphical interface / Multilanguage support / Capacitive durable touch panel / Lexan screen protection
Rear Panel	
Front Panel	Total of 7 slot inputs 5 user-configurable slots Selective Mode Switch
Display	5 selectable module inputs - 2x Ethernet, 1x RS232, 1x RS485 24 VDC power input Backup power output
Other Features	
Metering Technologies	Pulse: Turbine, Rotary Meter, Prover, Ultrasonic, Coriolis Differential Pressure: e.g. Orifice, Venturi, Cone, Nozzle Digital: e.g. Ultrasonic, Coriolis, Turbine / Rotary
Additional Features	Battery can be used only as backup power; regular and remote data access; redundant architecture; user-friendly operation; fast measurement; low power consumption; multi-protocol SCADA support; rapid technical support; serial printer support.

CPU Module

Serial Communication	1x RS232, 1x RS485, max. 38,400 baud; communication with ViFlow; Modbus Master/Slave communication for ultrasonic, Coriolis, GC and analyzer devices.
Ethernet Port	2x RJ45, 100 Mbps, communication with ViFlow

Output Module

Digital Output	4 open-collector outputs, max. 30 V, 300 mA, 100 Hz
Analog Output	4x 4-20 mA loops

Communication Module

Serial Communication Interface	2 UART serial lines up to 115,200 baud: one RS232 and one RS485.
Standard	1 RS232 connection up to 38,400 baud and 1 RS485 connection up to 38,400 baud.
Optional	Optional Wi-Fi, Bluetooth module or dual RS485 connection.
Optional	Modbus Master/Slave communication with ultrasonic, Coriolis, GC and analyzer devices over these serial lines.

RM-CPT Flow digitally processes data received from flow sensors to calculate flow rate, volume and other relevant measurement parameters. The device is designed for integration with differential pressure, temperature and pressure sensors.

• Measurement Data Acquisition

RM-CPT Flow collects real-time measurement values from connected ultrasonic, vortex, Coriolis, turbine and rotary meters, gas chromatographs (GC), and differential pressure sensors. The measured variables include:

- Pressure (P) - Analog (4-20 mA), HART transmitter, Modbus.
- Temperature (T) - Pt100, Analog (4-20 mA), HART transmitter, Modbus.
- Volumetric Flow (Q) - via pulse inputs or Modbus communication.
- Gas Composition Data - via Modbus communication.

• Correction and Standard Volume Calculation

The measured gas or liquid volume, which varies with temperature and pressure, is corrected in accordance with international standards:

- Actual volume is converted to volume at standard conditions (Nm³ or Sm³) by applying pressure and temperature compensation.
- For natural gas applications, calculations are performed in accordance with standards such as AGA-8, AGA-10 and NX-19.

- **Data Logging and Storage**

- Measured and calculated data are recorded in internal memory at defined intervals.
- Alarm and event logs are maintained.
- Data are transferred to central systems via protocols such as Ethernet, RS485 and Modbus RTU/TCP.

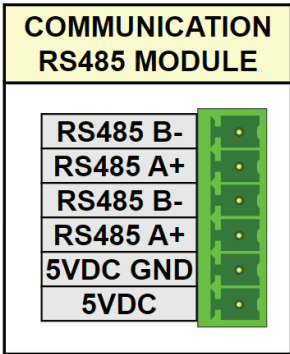
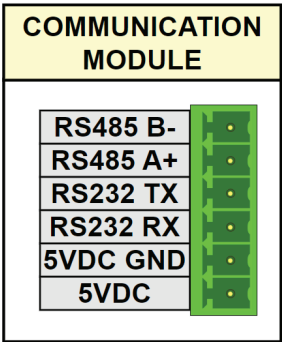
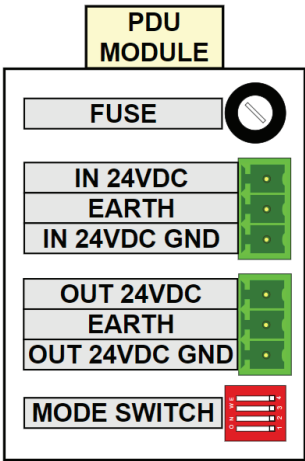
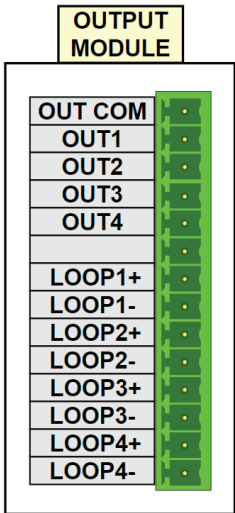
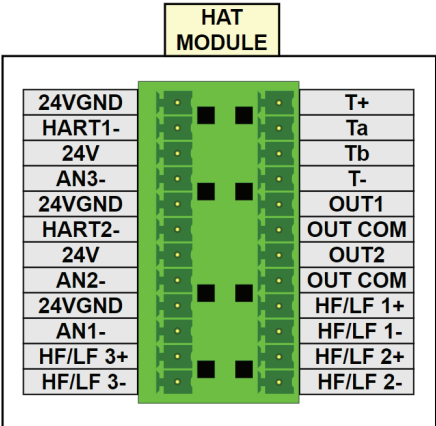
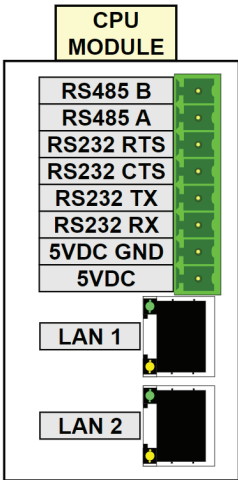
- **Security and Validation**

- Calibration and fault-detection mechanisms are provided.

- **User Interface and Remote Monitoring**

- Users can view real-time measurement data via the device touchscreen or remote-access software.
- Parameters can be configured through the menu or via SCADA systems.
- Settings and configurations can be performed using FlowSet software.

Terminal Information



Contact us

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