RHEONIK

RHE26

Rack/Panel Mount
Multifunction Coriolis
Flow Transmitter

Features

- Rack/Panel Mounting
- Operate with RHM sensor in hazardous area
- Selectable Units for Mass, Volume, Density and Temperature
- Positive, negative and net totalizers for both volume and mass flow
- Two configurable pulse/frequency/status outputs
- Analog output configurable for Mass, Volume, Density or Temperature
- Digital input configurable for zeroing, measurement hold and totalizer operations
- Connectivity to control systems through Modbus RTU
- Simple user interface – Back Lit Color LCD display and 3 operator buttons with intuitive menu design
- USB connection for quick service & settings
- Built-in *Assurance View®* Advanced Diagnostic Set – simple publication of measurement status with *Assurance Factor®* and/or color changing display

- Password Protected Setup
- Upload and download of configuration files
- Power consumption less than 5 W
- Optional lockable front cover

Applications

- General process flow measurement
- Feed stocks and transfers
- OEM applications

Benefits

- More insight into process and measurement conditions with *Assurance View®*
- *Assurance Factor®* for proactive maintenance
- Works with all Rheonik RHM flow sensors
- Fast and easy setup using *RHECom* software
- Remote electronics provides installation flexibility

RHE26 General Specifications

Housing:	IEC61554 Panel mount housing. Lockable front cover and DIN rail mount options available
Enclosure Rating:	IP20 (front). Optional IP54 front cover, lockable
Ambient Temperature:	-20°C to +60°C (-4°F to +140°F)
Dimensions:	96mm x 96mm x 61/75mm
Display:	High contrast backlit LCD. Screen changes color to indicate warning or error
Weight:	0.45kg / 1lb
Operation:	3 x front panel operator buttons for all menu navigation and settings
Sensor Connection:	Pluggable screw terminal strip. Cable available in lengths up to 100m for connection to remote sensor
Analog Outputs:	1 x 4-20mA output (active / passive) compliant to NAMUR NE-43
Pulse/Frequency/Status Outputs:	2 x configurable outputs (IEC 60946), max 10 kHz
Digital Inputs:	1 x configurable control inputs (to IEC60946)
Power Supply:	12-24 VDC +/- 10%, 4W
Digital Data Communications:	Modbus RTU (RS485) Mini-USB for PC connection - Rheonik RHECom software
Hazardous Area Approvals:	ATEX/IEC: Ex II (1)G [Ex ia Ga] IIC - for Ex i RHM in zone 0,1 (RHE in ordinary area) ATEX: Ex II 3G Ex nA IIC T4 Gc - for zone 2 (RHE must be mounted in an IP54 cabinet – please consult factory)

Hazardous Area Installation Overview

ATEX/IECEx Zone 0,1   ATEX Zone 2 (RHE in Cabinet)   Ordinary Area

Program Features

Mass Flow Operating System (Part Number Code S0)

The RHE2x Mass Flow programming package provides the following measurement and function features:

Direct Mass Flow Measurement
Mass flow is calculated using the Coriolis principle to provide a high accuracy Mass Flow measurement of the fluid flowing through an Omega Tube Coriolis meter.

Temperature Measurement
Each Omega Tube Coriolis Sensor provides a temperature measurement from built in sensors.

Fixed Density Function
The Fixed Density function allows density to be generated based upon process temperature. A base/reference density at a known temperature is entered for the fluid being measured along with a coefficient describing the change in density per temperature unit. The firmware in the transmitter calculates flowing density based upon this information to use for volumetric flow calculations.

Actual Volume Measurement for Liquids and Gas
Volume measurement for liquids is calculated by multiplying direct mass flow measurement by the density value calculated by the fixed density function

Standardized/Normalized Volume Measurement for Gas
This function calculates the volume of gas passing through the meter at standard conditions. The density of the gas at standard conditions is entered into the transmitter and the volume is calculated using this in conjunction with the flowing mass.

Password Protection
All setup and calibration parameters within the meter are protected with passwords to prevent unintentional or unauthorized change once installed.

Multifunction Package (Part Number Code DO)

The RHE2x Multifunction programming package includes all features from the Standard programming package plus the following measurement and function features:

Direct Density and Volume Measurement
The flowing density of the fluid in an Omega Tube Coriolis Sensor is determined from the measured resonant frequency of the sensor and used to calculate instantaneous volumetric flowrate.

Brix/Baume Units
The unit can be configured to read out in °Brix or Baume. °Brix or Baume are used extensively in the sugar and beverage industries.

Program Packages and Features

Multifunction Package with Assurance Diagnostics Suite (Part Number Code AF)

The RHE2x Multifunction Package with Assurance Diagnostics Suite includes everything from the Multifunction package plus the following advanced diagnostic functions:

Assurance View® Diagnostics

Inbuilt self-monitoring functions are available that can be used to determine the reliability of the flow meter readings at all times. Diagnostics are quickly accessed through dedicated menu displays, RHECom software and the MODBUS interface.

Assurance Factor®

Assurance Factor® is a numeric value generated by an internal algorithm that in indicates the overall health of the flow meter and measurement. **Assurance Factor®** value can be used to trigger changes in screen color (White – Amber – Blue – Red), providing highly visible wide area condition indication.

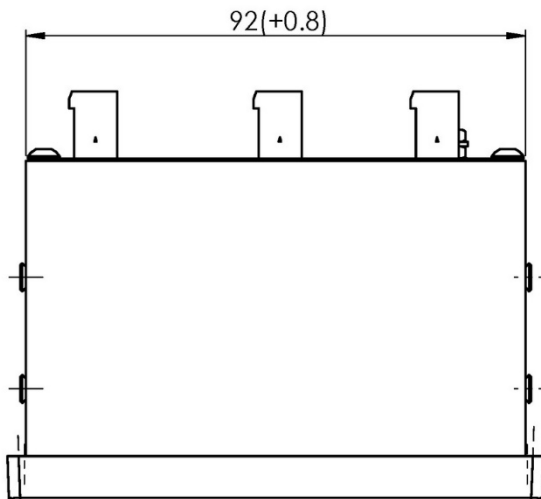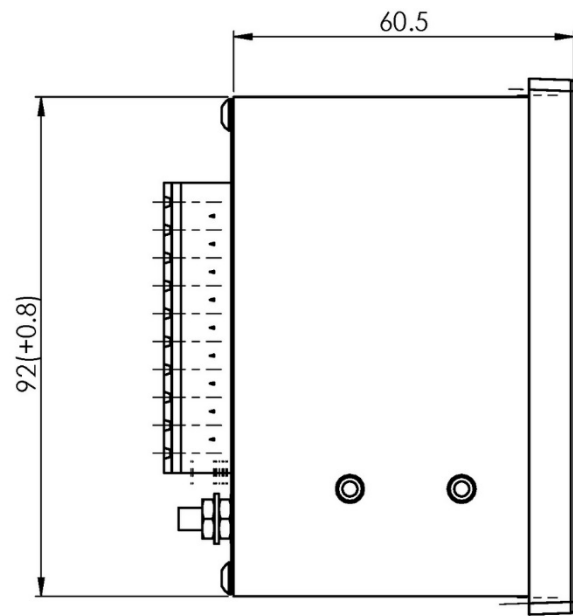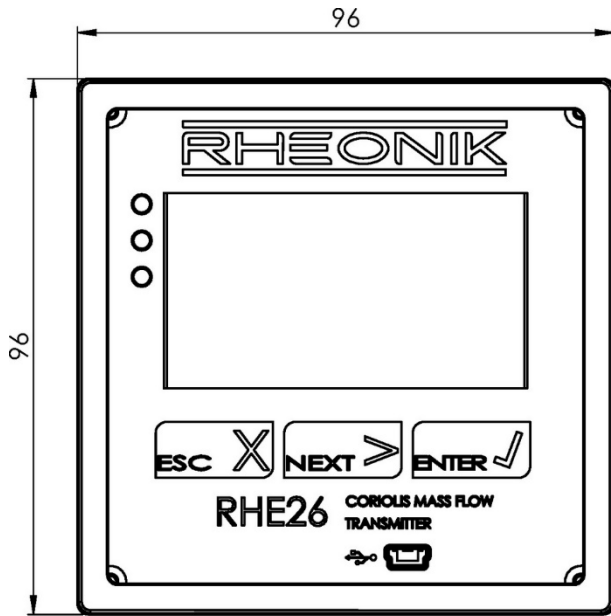| ASSURANCE FACTOR®			
White	Amber	Blue	Red
Normal Operation	Operation Not Optimal	Operation at Limit	Measurement Failure
No faults present. All parameters within expected limits. Meter fully operational	*Sensor subject to noise / changing conditions in pipe. Measurement quality may be compromised*	*Sensor experiencing disturbance. Measurement quality compromised*	*Sensor experiencing extreme disturbance / meter in fault. Measurement offline*

RHECom Software

The transmitter is a fully featured device with many sophisticated functions. Careful configuration is necessary if these functions are to perform as desired. **RHECom is provided at <u>no extra cost</u> with every RHE2x transmitter.**

RHECom software is designed to ensure simple and expedient setup of the transmitter features and functions. The program operates on Windows^{TM} based computers and has an intuitive user interface. Connection is via a standard USB port or the native RS485 connection of the transmitter. Communication between RHECom software and the transmitter uses MODBUS protocol.
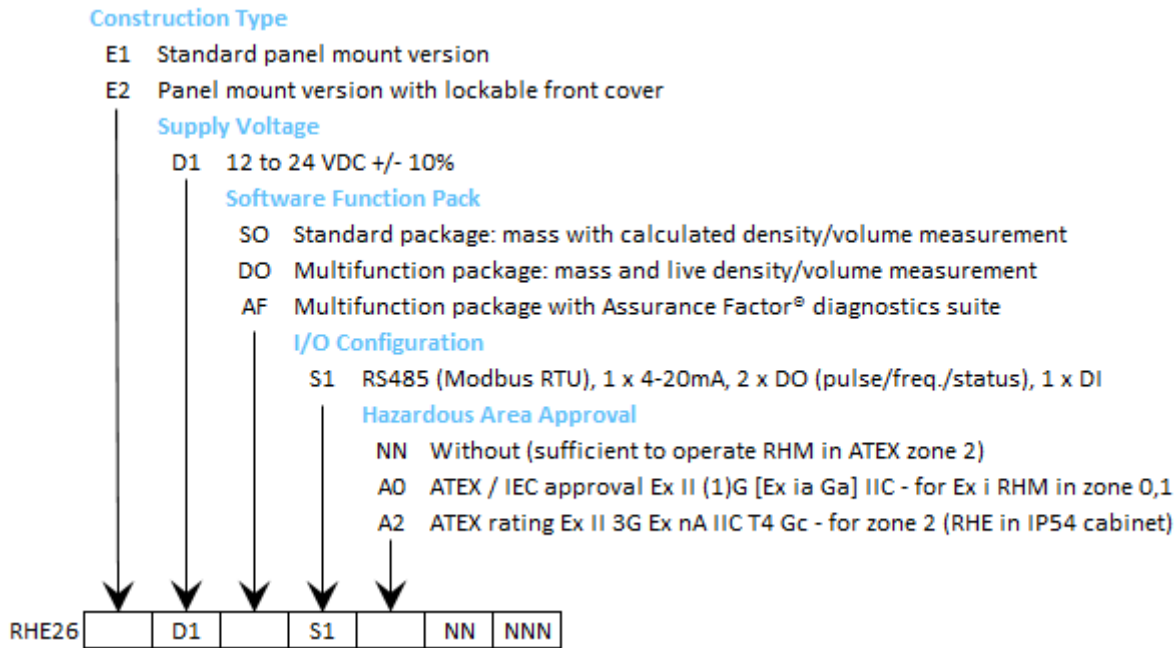
MODBUS protocol may also be used by other systems to configure the transmitter and/or read measurement results through the native RS485 port. A full and detailed MODBUS register listing is available for designers when connecting the transmitter to supervisory control systems.

RHE26 Dimensions

Dimensions in mm

RHE26 Part Number Code

Construction Type
E1   Standard panel mount version
E2   Panel mount version with lockable front cover

Supply Voltage
D1   12 to 24 VDC +/- 10%

Software Function Pack
SO   Standard package: mass with calculated density/volume measurement
DO   Multifunction package: mass and live density/volume measurement
AF   Multifunction package with Assurance Factor® diagnostics suite

I/O Configuration
S1   RS485 (Modbus RTU), 1 x 4-20mA, 2 x DO (pulse/freq./status), 1 x DI

Hazardous Area Approval
NN   Without (sufficient to operate RHM in ATEX zone 2)
A0   ATEX / IEC approval Ex II (1)G [Ex ia Ga] IIC - for Ex i RHM in zone 0,1
A2   ATEX rating Ex II 3G Ex nA IIC T4 Gc - for zone 2 (RHE in IP54 cabinet)

RHE26		D1		S1		NN	NNN

RHE26 Options and Accessories

Part Number	Description
ARHE-C4	Transmitter-sensor interconnecting cable with blue outer covering, _fire retardant and halogen-free_. Max. cable length 100 meters (30 meters max for RHM 30 and bigger sensors).
ARHE26-DH	DIN rail mounting kit
ARHE26-RM	Rack mount panel for RHE26 (3U x 42HP)
ARHE26-TN	Terminal adapter set (spare) for connection of Power I/O (for RHE without Ex approval)
ARHE26-TA	Terminal adapter set (spare) for connection of Power I/O (for RHE with Ex approval)
ARHE-RS	PC interconnection cable (Mini USB to PC USB)
ARHE-SO	RHECom software (requires Mini USB to PC USB cable or direct RS485 connection)
ARHE-MO	Converter Modbus RS485 terminals to PC USB

Flow Sensor Range

Some of the many RHM mass flow sensors available

The RHM range of mass flow sensors features:

Line Sizes	From DN1 to DN300 / 1/24" to 12"
Pressure Ratings	Up to 1379 bar / 20000 psi
Temperature Ratings	From -200°C to 400°C / -328°C to 752°F
Wetted materials	Stainless Steel, Alloy C22, Duplex, Super Duplex, Tantalum, Others

RHE26 transmitters can be connected to all RHM Flow Sensors in the Rheonik Omega Tube range. Together they make a high performance measurement package suitable for many applications.
For specific details on any sensor size, please see the relevant specification sheet.

About Rheonik

Rheonik has a single purpose: to design and manufacture the very best Coriolis meters available. Our research and engineering resources are dedicated to finding new and better ways to provide cost effective accurate mass flow solutions. Our manufacturing group care for each and every meter we produce from raw materials all the way to shipping and our service and support group are available to help you specify, integrate, start-up and maintain each and every Rheonik meter you have in service. Whether you own just one meter or have hundreds, you will never be just another customer to us, you are a valued business partner. Need a special configuration for your plant - don't compromise with a "standard" product from elsewhere. If we can't configure it from our extensive product range, we can build you what you need as a custom meter.

Rheonik only make Coriolis meters - we are **The Coriolis Experts** - contact us for all of your Coriolis meter requirements.