



ABB Instrumentation

CoriolisMaster

Coriolis Mass Flow Measurement Made in ABB

Coriolis Mass Flow Measurement With the ABB CoriolisMaster

Your application easily mastered:
with the CoriolisMaster series made in ABB.

The flexible and extremely precise Coriolis mass flowmeter meets your requirements for various industries and applications with the most different measuring ranges – from the smallest water drop to filling ocean going tankers. Take advantage of the versatile CoriolisMaster for reliable measurement of mass and volume flow, density, concentration and temperature.

CoriolisMaster in an overview

Unique design

- The CoriolisMaster stands out for its unique S-design. It can be easily installed in any position and orientation where self draining is required.
- Due to its sturdy design, strong signal level and optimized electronics the CoriolisMaster is insensitive to external vibrations and gas content in the fluid.
- It is suitable to fluid temperatures up to 200 °C / 392 °F.

Modular platform concept

- Flexible connection sizes enable optimal adaption to the process.
- Various accuracy classes provide both simple and highly accurate solutions with one installation length and thereby help to minimize your stock keeping cost.
- Simple and consistent operating concept as the universal modular transmitter can be connected to all sensor sizes.

Explosion proof design

The universal explosion proof design concept provides the best temperature classes on the market plus international approvals like ATEX, IECEx, FM, NEPSI and GOST.

Comprehensive diagnostics

- Extensive measuring tube monitoring, for example for detecting a tube rupture or blockage.
- Self-monitoring transmitter.
- Elaborate alarm concept.
- Wide range of communication options provide device information at any time.
- Measuring tube diagnosis to detect abrasion and deposits by storage of device-specific data (finger print). This option allows easy meter verification in the field.

Concentration measurement

Due to its integral DensiMass software the CoriolisMaster allows for direct Brix measurements, net oil calculations or temperature-standardized concentration calculations. The software provides the largest database currently on the market as a calculating basis and can be activated in the field at any time.

Communication

- Easily accessible fieldbus address setting, even without power supply.
- Three freely configurable current and pulse outputs, active or passive, are standard.
- Freely configurable contact input and output.
- Simple field optimization for mass and volume flow, density, concentration and temperature measurement.
- Wide range of function tests and simulation routines for commissioning.



Nominal diameters and maximum measuring ranges

Typ	Nominal diameter	Max. measuring range Q_{max}
MS2	"S" DN 1.5 (1/16")	0 ... 65 kg/h
MS2	"T" DN 3 (1/10")	0 ... 250 kg/h
MS2	"U" DN 6 (1/4")	0 ... 1000 kg/h
MC2	"E" DN 20 (3/4")	0 ... 100 kg/min
MC2	"F" DN 25 (1")	0 ... 160 kg/min
MC2	"G" DN 40 (1 1/2")	0 ... 475 kg/min
MC2	"H" DN 50 (2")	0 ... 920 kg/min
MC2	"I" DN 65 (2 1/2")	0 ... 1890 kg/min
MC2	"J" DN 80 (3")	0 ... 2460 kg/min
MC2	"K" DN 100 (4")	0 ... 4160 kg/min
MC2	"L" DN 150 (6")	0 ... 11000 kg/min

Transmitter ME2

- Universal transmitter for all sensors and applications for ambient temperatures between -40 and 60 °C / -40 to 140 °F.
- Remote or integral mount design.
- Continuously rotatable transmitter head in compact design.
- Illuminated graphic display with easy to read clear text menu in various languages.
- Universal menu operating philosophy and easy installation using the 'Easy Set-up' function.
- FRAM technology for rapid transmitter exchange without re-programming.



MS2

Sensor MS2

- Contoured single tube design
- DN 1.5 / 3 / 6 / 10 / 15 (1/16" / 1/8" / 1/4" / 1/2")
- 0.15 % / 0.25 % / 0.4 % of range
- Density accuracy 10 g/l
- T_{medium} -50 ... 180 °C (-58 ... 356 °F)
- Standard pressure rating up to PN 100 ASME CI 600
- Higher pressure ratings on request



MC2

Sensor MC2

- S-shape twin tube design
- DN 15 ... DN 150 (1/2 ... 3")
- 0.1 % / 0.15 % / 0.25 % / 0.4 % of range
- Density accuracy up to 1 g/l
- T_{medium} -50 ... 200 °C (-58 ... 392°F)
- Standard pressure rating up to PN 100 ASME CI 600
- Higher pressure ratings on request



MC2 Hygienic

Sensor MC2 Hygiene

- S-shape twin tube design
- DN 15 ...DN 80 (1/2 ... 6")
- 0.1 % / 0.15 % / 0.25 % / 0.4 % of range
- Density accuracy up to 1 g/l
- EHEDG-certified
- T_{medium} -50 ... 200 °C (-58 ... 392°F)
- Polished tubes and fittings

ABB is a leader in power and automation technologies. We enable you to improve performance and use power efficiently. The starting point of both efficiency increase and energy saving is always high-accuracy measurement. ABB's CoriolisMaster provides extremely precise measuring results. Direct mass flow measurement, for example, allows for exact dosing of raw materials. This is how CoriolisMaster helps you increase efficiency and save resources.

Coriolis Mass Flow Measurement Using the ABB CoriolisMaster

Your chemical and petrochemical applications easily mastered

The CoriolisMaster is ideal for filling or dosing of oils, solvents and chemicals. It measures online the mass and volume flow, density, concentration and temperature of different fluids. The high-precision density measurement provides superior accuracy for quality checking of the products or for inline blending, for example automatic mixing of different product components. As an integral part of the standard software you will find the greatest database for concentration measurement on the market.

Product details

- Excellent temperature classes in explosion hazardous areas. Example: T_{med} 200 °C / 392 °F at T_{amb} 60 °C / 140 °F, even with compact design models.
- Unique flexible explosion proof design concept – “e” and “i” in one electronic package, switchable.
- Comprehensive explosion proof design concept including solutions for zone 0, zone 1 and zone 2.
- Flameproof enclosure offers special protection for critical processes.
- Double safety through type of protection [ia] with three passive outputs and contact input and output.
- Type tested and standardized according to NAMUR.
- NACE conformity.
- Heatable up to 200 °C / 392 °F.
- SIL assessed.
- Insensitive to noise from gas or solid content in the fluid.

Examples of typical fluids

- Sodium hydroxide
- Isopropanol
- Methanol
- Sulfur
- Sulfuric acid
- Nitric acid
- Benzol
- Crude oil
- Benzine
- Kerosine
- Polymers



Your food & beverage and pharmaceutical applications easily mastered

The CoriolisMaster is used for many applications in dairies, breweries, the alcohol industry, the beverage industry and starch production. Direct calculation of concentration like Brix, Plato or Baumé provides advantages for blending processes of, for example, fruit juices or for the fat content adjustment of milk. As the CoriolisMaster is insensitive to noise from gas or solid content in the fluid it is ideal for the most demanding applications.

Product details

- Direct mass flow measurement with an accuracy of 0.1% of range.
- Density measurement with an accuracy of 0.001 kg/l.
- Excellent cleanability, EHEDG certified.
- CIP and SIP suitable up to 200 °C / 392 °F.
- Polished fluid wetted parts.
- Flexible, hygienic fitting concept. (For example Tri-Clamp or DIN11864).
- Measurement of both conductible and non-conductible fluids.
- Insensitive to noise for example from external vibrations or from gas and solid content in the fluid.

Examples of typical fluids

- Alcohol
- Oils
- Fats
- Mash
- Pastes
- Concentrates
- Acids
- Leaches
- Milk products
- Gyle
- Flavors
- Mayonnaise
- Beer
- Cream
- Spirits
- Sugar
- Chocolate
- Whey
- Demineralized water
- Juices



Coriolis Mass Flow Measurement Using the ABB CoriolisMaster

Your power and water & waste water applications easily mastered

The CoriolisMaster enables the measurement of mass and volume flow, density, concentration and temperature with a single measuring instrument. It is also well-proven for lime milk density measurement. Contrary to radioactive density measurement no radioactive material is required for Coriolis measurement. Other typical applications are the dosing of expensive biocides and high-precision fuel supply to burners in power plants where an important increase in efficiency is achieved through direct fuel mass flow measurement.

Product details

- Direct mass flow measurement with an accuracy of 0.1% of range.
- Density measurement with an accuracy of 0.001 kg/l.
- Process safety through sturdy design and thick wall tubes.
- Virtually wear-free, no moving mechanical parts contained.
- Heatable up to 200 °C / 392 °F.
- Insensitive to noise for example from external vibrations or from gas and solid content in the fluid.

Examples of typical fluids

- Crude oil
- Diesel
- Biodiesel
- Ethanol
- Lime milk
- Ferrous oxide
- Biocide
- Iron salt solution
- Demineralized water



Your pulp and paper applications easily mastered

The CoriolisMaster sets the standards for the measurement of mass and volume flow, density, concentration and temperature in color and coating kitchens. It is perfect for the measurement of expensive chemicals, for air content measurement around the head box and for especially precise measurement of high viscosity fluids whilst maintaining a huge turndown ratio. Online density measurement simplifies, for example, quality control of colors.

Product details

- Direct mass flow measurement with an accuracy of 0.1% of range.
- Density measurement with an accuracy of 0.001 kg/l.
- Sturdy design and thick wall tubes.
- Virtually wear-free, no moving mechanical parts contained.
- Insensitive to noise from gas or solid content.

Examples of typical fluids

- Slimicide
- Optical brightener
- Calcium carbonate
- Defoamer
- Synthetic thickener
- Synthetic binder
- Wet strength agent
- Oils and fuels
- Lubricants
- Sodium hydroxide
- Coating colors
- Kaolin
- Talc
- Biocide
- Starch
- Black liquor
- White liquor



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