

Mass Flowmeter CoriolisMaster

Multivariable functionality and precision for Flow, Density and Temperature



- Multi-purpose flowmeter for virtually all applications
- Easy to install and operate
- Simple to high precision solution in one design
- Single transmitter for all sensors with 'easy setup' quickstart routine and FRAM technology
- Unique, universal explosion protection concept giving plant cost saving
- Comprehensive diagnostics on-board
- Common HMI interface saves maintenance and training costs

ABB Instrumentation



The CoriolisMaster series – the master for your application

From measuring the smallest drop to filling ocean going tankers



Due to its multivariable capability and precision in flow, density and temperature, the CoriolisMaster is the universal solution for all liquid mass flow applications. The unique S shape tube design and impressive platform concept make CoriolisMaster the ideal instrument for your high performance measurement requirements.

- Easy to install in any orientation
- No wear surfaces to fail – sturdy design
- Measuring conductive or non-conductive fluids
- Insensitive to vibrations or gas inclusions due to excellent signal amplitude and optimized electronic systems
- Short delivery times



Modular platform concept

- The S-design can be easily installed where self draining is required
- Flexible connection sizes enable optimal adaptation to process
- Accuracy class can be tailored to your requirements, providing simple and highly accurate solutions with one installation length
- The tube housing can provide secondary containment protection for critical processes
- The universal transmitter can be connected to all sensor sizes without factory re-calibration

Solutions for outstanding applications

- **Concentration measurement**
The CoriolisMaster provides solutions for direct BRIX measurement, net-oil computing and temperature compensated concentration measurements.
- **Filling and dosing**
The FillMass software option offers direct control of one or two stage fillings with up to 4 preset quantities as a stand-alone solution. Overrun quantities are corrected automatically.



Unique S-Design with strong signal level

Comprehensive, practice-oriented diagnostic functions

- Comprehensive measuring tube monitoring
- Self-monitoring transmitter
- Comprehensive alarm capability
- Wide range of communication options provide device information at any time

The Master for the chemical and petrochemical industry

The CoriolisMaster is ideal for filling or dosing of oils or chemicals, measuring online mass flow, density and concentration of different fluids, including high viscosity materials. The extended density option provides superior accuracy for quality checking of product.

Typical fluids

Sodium hydroxide	Nitric acid
Isopropanol	Benzene
Methanol	Crude oil
Sulfur	Diesel
Sulfuric acid	Kerosene
	and many more

- Unique, flexible Ex-concept – “e” and “i” output rating in one electronic package and within an Ex “d” housing.
- ATEX Ex protection up to Zone 0
- Double safety through ignition type intrinsic safety [ia] outputs for 3 passive signal outputs plus configurable contact input and output
- Type tested according to NAMUR
- Pressure proof housing option (secondary containment)
- Different materials of construction available
- NACE conformity
- Operation up to 180 °C / 356 °F
- SIL assessed



The Master for the food and beverage and pharmaceutical industry

The CoriolisMaster is ideal for many applications in dairies, cheese production, breweries, the beverage industry a general food manufacturing and processing. Direct calculation of concentration (Brix, Plato, Baumé etc.) provides unique advantages for online measurement and blending of, for example, fruit juices, fat content of milk or alcohol content. As the CoriolisMaster is insensitive to noise from gas or solid content it is ideal for the most demanding applications.

- Excellent cleanability, EHEDG certified
- CIP or SIP suitable up to 180 °C / 356 °F
- Polished materials for fluid wetted parts
- Flexible, hygienic fitting concept (Tri-Clamp, DIN11864 etc.)

Typical fluids

Alcohol	Mayonnaise
Oils	Beer
Fats	Cream
Mashes	Spirits
Pastes	Sugar
Concentrates	Chocolate
Acids	Dehydrated water
Leaches	Juices
Milk products	Whey
Flavors	and many more



The Master for pulp and paper

The CoriolisMaster sets the standard for flow and density measurement in color and coating kitchens for pulp and paper. It is perfect for measuring expensive chemicals, air content measurement around the head box and for precise measurement of high viscosity fluids whilst maintaining a huge turndown ratio. Online density measurement simplifies fluid quality control of colors and other chemicals, and can be used for liquid interface detection.

Typical Fluids

Slimicide	Coating colors
Optical brightener	Kaolin
Calcium carbonate	Defoamer
Synthetic thickener	Talc
Synthetic binders	Biozide
Wet strength agent	Starch
Sodium hydroxide	Lubricant
Oils and fuels	and many more



The Master for power and water & waste water

The CoriolisMaster enables highly accurate flow and density measurement without any radioactive waste. CoriolisMaster is the standard for measuring the density of lime milk and other chemicals used in the power, waste water and incinerator industries. For example, high accuracy measurement of expensive biocides is helping to cut plant operating costs as well as keeping chemical usage to environmentally acceptable limits. The direct mass flow measurement of fuel oils for burners in power plants makes combustion control much more effective and precise, again reducing costs and helping the environment.

- Density accuracy: 0.001 kg/l
- Sturdy design and thick wall tubes extend the lifetime of the meter

Typical Fluids

Crude oil	Lime milk
Diesel / Biodiesel	Ferrum-oxide
Ethanol	Biocide

The CoriolisMaster in an overview

ME2 – DSP transmitter

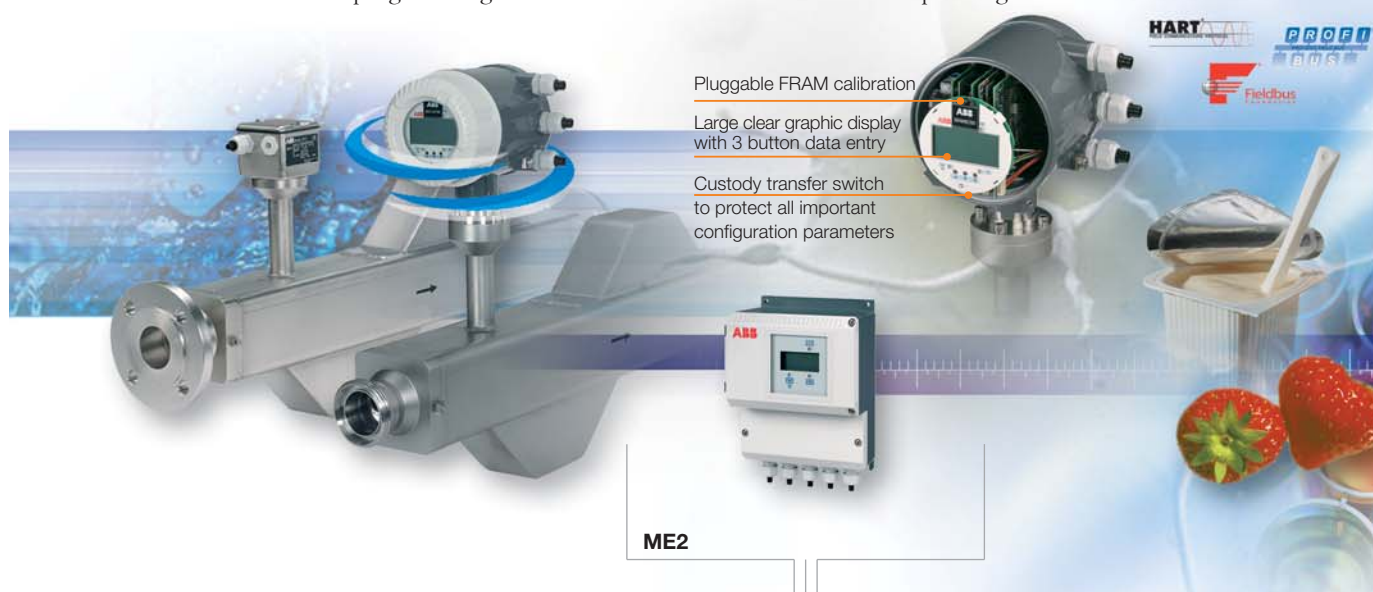
The universal transmitter for all sensors and applications operates at ambient temperatures of between -40 to 60 °C (-40 to 140 °F) and comes in remote and integral versions. The integral transmitter head can be rotated through 350° without steps, with display rotation for integral, vertically mounted installations.

The illuminated, graphical display with easy to read clear text menu is available in different languages and is outstanding in its ease of configuration. ABB ensures an universal menu operating philosophy which saves stock and training costs. The FRAM technology enables a rapid electronic exchange without re-programming.

Further stunning details are found in the specialist software for filling and dosing (FillMass MM2) and the concentration software.

The whole world of communication

- Fieldbus address selection is by simple DIL hardware switch
- Two configurable current outputs and one pulse output (field configurable for active or passive) are standard
- One configurable contact input and contact output as standard
- Simple field optimization for flow and density
- Wide range of function test and simulation routines for commissioning, including built in mA source for loop testing



MS2



Contoured single tube
 DN 1.5 / 3 / 6 / 10 / 15
 1/16" / 1/8" / 1/4" / 1/2"
 0.15 % / 0.25 % / 0.4 % o.r.
 10 g/l
 T_{medium} -50 ... 180 °C (-58 ... 356 °F)
 Standard pressure rating up to
 PN100 / ASME CI 600
 Higher pressure ratings on request

MC2



S-shape twin tube design
 DN 15 ... DN 150
 1/2 ... 3"
 0.1 % / 0.15 % / 0.25 % / 0.4 % o.r.
 Up to 1 g/l
 T_{medium} -50 ... 180 °C (-58 ... 356 °F)
 Standard pressure rating up to
 PN100 / ASME CI 600
 Higher pressure ratings on request

MC2 Hygiene



S-shape twin tube design
 DN 15 ... DN 80
 1/2 ... 6"
 0.1 % / 0.15 % / 0.25 % / 0.4 % o.r.
 Up to 1 g/l
 EHEDG certified
 T_{medium} -50 ... 180 °C (-58 ... 356 °F)
 Polished tubes and fittings

ABB is a leader in power and automation technologies that enable utility and industry customers to improve performance while lowering environmental impact. The ABB Group of companies operates in around 100 countries and employs about 111,000 people.

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Printed in Germany (03.2008)

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