Own the flow

AQUAMETRO

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FUEL OIL METERS

CONTOIL® DN 15 - 50

YOUR PROJECT - OUR HIGH-QUALITY PRODUCTS

Since 1928, Aquametro has been among the leading manufacturers and suppliers of measurement, optimization and monitoring solutions for all kinds of fluids on ships, vehicles and industrial applications.

Our range consists of more than 100 different oil fuel meters and management systems which have been developed specially for ships, transport vehicles and other heavy machinery in the shipping and industrial sector.

Aquametro operates from its headquarters in Therwil/Switzerland and Rostock/Germany as well as from Singapore for the Asian market. With further subsidiaries in South Korea, Dubai and China and representation offices in India and Japan plus a global service network and numerous sales partners around the world we can offer you seamless, professional and solution-driven support.



Shipping

Wherever you go in the marine and river ship industry, you'll find Aquametro. On all oceans and rivers, our products and solutions are hard at work.



Vehicles

Precise monitoring of the fuel consumption in all diesel driven vehicles as well as stationary genset and boiler is an important task with an ever growing ecological awareness.



Industrial

Aquametro provides specific products and solutions that help our customers to measure all chemical and industrial liquids at high accuracy and process safety.

CONTOIL®

Fuel oil meters DN 15 - 50

A versatile flow meter for oil, heavy oil and many other oil-like liquids. It is used for efficient consumption measurement of heat burners and various combustion engines. A reliable solution for any application where oil is consumed.

Features:

- State-of-the-art design
- Electronic counter, mass flow, volume flow indication, multiple output signals
- Integrated temperature sensor
- No straight inlets or outlets required
- Independent of viscosity and temperature
- High vibration resistance
- Optional: metrological type approval
- Automatic medium switch based on temperature

Benefits:

- Mass flow measurements
- Highly flexible mounting with very small space requirements
- Reliable monitoring and flexible control of the system
- Accurate measurements
- A reliable solution from a single supplier
- Simplifies consumption optimizing

CONTOIL® VZF3 - the next generation of electronics

Built on our third-generation platform, CONTOIL® VZF3 represents a major advancement in visibility, precision, and usability. A larger backlit display improves readability, the upgraded sensing technology enhances measurement performance, and the modular design enables communication interfaces and tailored customer-specific solutions. Designed for today's applications - engineered for future demands.

Highly accurate flow measurement

The basic module of the CONTOIL® series is the well proven piston r with a mechanic or electronic display. Both VZO and VZF3 offer dive transfer and can also be exchanged during operation.

This kind of upgrading with communication modules is unique and e uninterrupted operation of the system.

For precise fuel consumption measurement:

- Ocean vessels
- Large agricultural vehicles
- Diesel gensets
- Mining vehicles
- Diesel electric railway
- River ships
- Tar and bitumen production
- Industrial boiler
- Lubrication oil



THE RIGHT CHOICE

For flowrates 5 l/h up to 30.000 l/h

Hydraulic			**Meter DN size**						
Nominal diameter		**DN mm**	**15P**	**15**	**15E**	**20**	**25**	**40**	**50**
		inch	1/2	1/2	1/2	3/4	1	1 1/2	2
Installation length		mm	165	165	165	165	190	300	350
Connection thread on meter		inch	3/4	3/4	3/4	1	1 1/4	2	-
Nominal pressure threaded ends	PN	bar	16	16	16	16	16	16	N/A
Nominal pressure flanges	PN	bar	25	25 / 40	25 / 40	25 / 40	25 / 40	25 / 40	25 / 40
Max. medium temperature	T_{max}	°C	130 / 180						
Maximum flow rate	Q_{max}[1)]	l/h	200	600	1500	1500	3000	9000	30000
Continuous flow rate	**Q_{cont}[2)]**	**l/h**	**100**	**400**	**1000**	**1000**	**2000**	**6000**	**20000**
Minimum flow rate	Q_{min}	l/h	5	10	30	30	60	180	750
Approx. starting flow rate		l/h	2	4	12	12	30	90	300
Max. permissible error	VZF3, VZO		±1.0 %	±1.0 %	±1.0 %	±1.0 %	±1.0 %	±1.0 %	±1.0 %
of actual value[1)]	VZFA3, VZOA		-	±0.5 %	±0.5 %	±0.5 %	±0.5 %	±0.5 %	±0.5 %
	VZFA3 lin.		-	±0.3 %	±0.3 %	±0.3 %	±0.3 %	±0.3 %	±0.3 %
Repeatability			-	±0.1 %	±0.1 %	±0.1 %	±0.1 %	±0.1 %	±0.1 %
Measuring chamber volume		cm^3	12	12	36	36	100	330	1200
Safety filter mesh size		mm	0.400	0.400	0.400	0.400	0.400	0.800	0.800
Weight with threaded ends[3)]		kg	2.2	2.2	2.2	2.5	4.2	17.3	-
Weight with flanges PN 25		kg	3.8	3.8	3.8	4.5	7.5	20.3	41.0
Weight with flanges PN 40		kg	4.4	4.4	4.4	5.5	7.8	20.5	42.0

1) Manufacturer's specification, valid for the reference conditions as specified under reference conditions. Do not use this value for the design.

2) For burners and engines or motors, the fuel oil meter must be selected on the basis of the permanent flow rate. For higher viscosities, or if the meter is installed on the suction side, the pressure drop and any reduction in the measuring range must be taken into consideration.

3) Weight without couplings.

CONTOIL® CE MID 2014/32/EU fuel oil meters are also available for verified applications where an approved measurement

» Conformity approved read out

Low flow rate for highly viscous m[illegible]?

Our new flow meter **CONTOIL® VZF3 15P** offers exceptional chemical resistance, durability, and stability under demanding maritime conditions. The advanced design ensures reliable measurement of viscous fluids, making it an ideal solution for vessels that require precise monitoring of lubrication oil consumption and distribution. The device features a ring piston designed from high-performance PEEK (Polyether Ether Ketone



- measuring flow starting from just 5 l/h ensuring precise monitoring of lubrication systems

Electronic display

CONTOIL® VZF3 with multifunctional display and adjustable outputs



Output signals:

- Actual flow rate and mass flow
- Fluid temperature
- Volume and mass pulses
- Limiting values (Q_{min}, Q_{max})
- Status switch (alarm, error)
- Analog signal 4 - 20 mA
- Modbus communication
- External power supply 12 - 24 VDC

Mechanical display

CONTOIL® VZO/A total volume display

Total volume display on roller counter



CONTOIL® VZO/A RV/IN total volume display and remote transmission

Total volume display on roller counter with

- Reed pulse (RV) for remote totalization
- Inductive pulse (IN) for control purposes

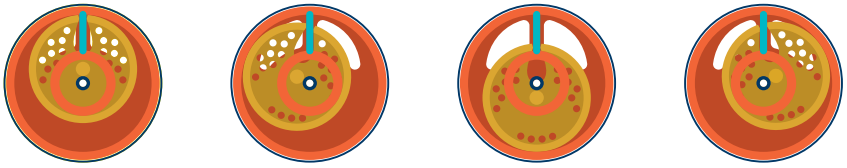




OPERATING PRINCIPLE

Function

CONTOIL® fuel oil meters work on the volumetric principle of rotary piston meters (positive displacement meters). The main features of this measuring principle are large measuring ranges, high accuracy, suitability for high viscosities and independence from power supply.
Flow disturbances do not influence proper operation.



Leading manufacturers of oil burners and operators of heating systems, ships or diesel engines rely on CONTOIL® fuel oil meters - and with good reasons.

SELECTION CRITERIA

1. Find out fuel scheme, **direct or differential**, to find out if you need **1 or 2 flowmeter**
2. Chose the desired **accuracy class**
3. Find out the **supply flowrate** and/or **engine consumption**
4. Select the right **flowmeter size acc. to supply flowrate**
5. Select the **flowmeter acc. to physical properties** (connection, pressure, temperature rating)
6. Select the right **display** and **output options**

CALIBRATION AND CERTIFICATION

High precision measuring systems

As an authorised and recognised calibration laboratory for Switzerland and Germany, we maintain an independent, Europe-wide accredited calibration laboratory for oil quantities according to ISO / IEC 17025.

We propose test and calibration services for all our meters and volume measuring parts as well as their additional components on our own test and calibration equipment. A calibration certificate according to EN 17025 documents the quality of our products and systems

MI 005
MID 2014/32/EU



You will find detailed technical data on the product range and project planning notes in our technical documentation.

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