

Magnetic-inductive flow measurement device
Type VOLUMTEC - *best performance*



Version examples: VOLUMTEC in compact version with process connection adapter, welding adapter for pipes according to DIN 11850 and VOLUMTEC in separate version without process connection adapter

CHARACTERISTICS

- **FLEXIBLE PROCESS INTEGRATION WITH CONNECTION ADAPTER**
- **MEASURING RANGE 30 L/h ... 640 m³/h f. MEASURING FLOW AND VOLUME OF CONDUCTIVE LIQUIDS WITH HIGH ACCURACY IN THE ENTIRE MEASURING RANGE**
- **MEASURING PIPE DIAMETER = PROCESS PIPE DIAMETER, NO PRESSURE LOSS >> HYGIENIC DESIGN IN DETAIL**
- **RESISTANT AGAINST ACIDS + BASES DUE TO LINING MATERIAL PFA**
- **VACUUM-RESISTANT MEASURING PIPE DESIGN EVEN AT HIGHER MEDIUM TEMPERATURES**
- **SELF-MONITORING AND AUTOMATICALLY RE-ADJUSTING ELECTRONICS**
- **SUITED FOR METERING TASKS + SMALL PULSATING FLOWS**
- **EXCELLENT PRICE/PERFORMANCE RATIO**
- **"QUICK START" FUNCTION FOR SIMPLE AND USER-FRIENDLY PARAMETRISATION**

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DESCRIPTION

The VOLUMTEC magnetic-inductive flow measuring device was designed for measuring/metering the flow and volume of all liquids from 5 $\mu\text{S}/\text{cm}$ upwards, complying with high hygienic requirements. VOLUMTEC fulfils the high-level requirements for modern flow measurements due to its compact and simplified but effective design that is fully implemented in stainless steel as well as due to its electrical features. The special electronics of VOLUMTEC smoothenes the signals and therefore also makes it suitable for applications with small, pulsating flows, e.g. in systems with piston pumps.

The integrated monitoring methods for the whole measuring chain provide not only reliable but also very accurate measurements. This was officially certified by the European OIML certificate. These methods make a major contribution to the monitoring and optimisation of production processes. A special function makes it possible to initiate an inspection routine for documenting process safety by issuing a quality certificate.

A standard, integrated and turnable display facilitates continuous observation of the measuring values during initial operation and fast and easy operation without opening the device.

The graphic display shows text messages and the flow profile. This information and the "Quick Start" menu help during initial operation.

The activation of the Bluetooth interface is useful for inaccessible installations as well as for changing and reading parameters.

VOLUMTEC has no moving parts and therefore no risk of mechanical wear. Regular exchange of the process seals may be beneficial for hygiene and preventative reasons.

An internal monitoring routine ensures that a plain text message is sent in the event of a fault and that an appropriate signal is sent to the control unit.

Modern circuits reduce the power requirements of the electronic system and increase sustainability. A more favourable energy balance when using several VOLUMTECs implies lower operating costs for the operator and protection of the environment.

Flexible process integration due to a range of standardised as well as manufacturer-specific connection adapters as well as different additional functions have proven their worth during their use on site, resulting in reduced stock-keeping and a compact design that is always appreciated. The design complies with hygiene criteria. Design without "corners and edges" is not only implemented for the standard, aseptic process connector, but also for the milk-compatible sensor. The process pipe diameter is equal to the measuring pipe diameter, which ensures that no pressure drop occurs.

The resistance against all cleaning processes and the materials used for this purpose, e.g. bases and acids, results from the full stainless steel construction and the use of PFA as a lining material. The measuring pipe construction is resistant against low pressure, even at higher temperatures, as well as against flows higher than the nominal flow, e.g. during CIP processes. An automatic measuring range selection with intelligent electronics even compensates for excessive flow rates. The devices measure in both flow directions.

The VOLUMTEC is available in a compact version and a separate version and allows applications with process temperatures up to 120 °C.


Analogue output, either active or passive, and impulse outputs are provided as a standard. Actions and processes can be controlled with a digital output. The counter can be reset, stopped or re-activated by using the impulse input.

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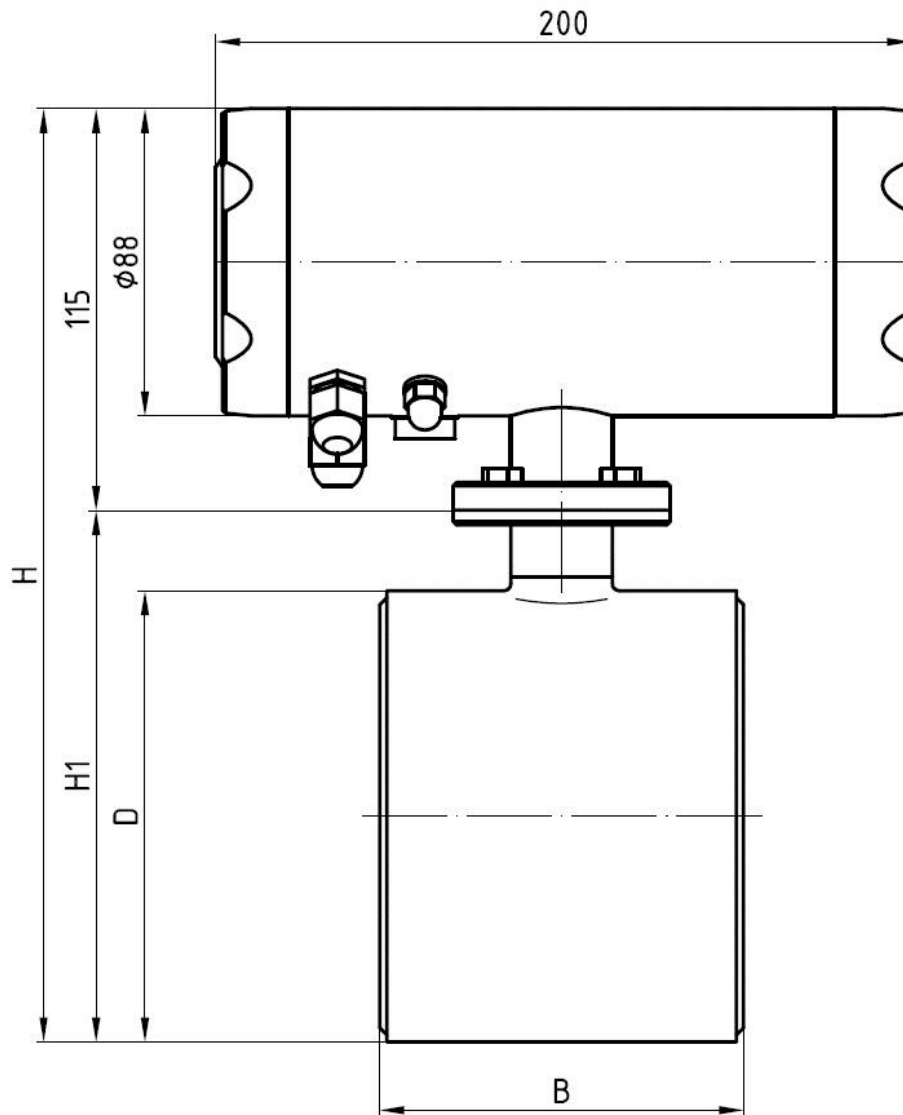
TECHNICAL DATA

General information	
Device type	VOLUMTEC magnetic-inductive flow-measuring device for liquid media
Input	
Flow range	30l/h ... 640m ³ /h (depending on the nominal diameter)
Pressure range	0.1 ... 11bar abs. (PN 10)
Control input	3...32V DC, R _i < 3,2 kΩ
Output	
Flow output	0/4...20mA, active or passive, load max. 500Ω
Impulse output (volume)	2x opto-coupler, 24 V / 20mA, max. 1000Hz
Status output	Opto-coupler, ready, fault, direction
Measuring accuracy	
Typical accuracy	± 0.20% FS
Conditions for use	
Medium temperature	Compact: 0...100°C permanent temperature, 130°C max. for 30 minutes Separate: 0...120°C permanent temperature
Environmental temperature	-25 ... + 55°C
Storage temperature	-25 ... + 55°C
Minimum conductivity medium	Compact version ≥ 5μS/cm Separate version ≥ 15μS/cm, or see connection cable
Upstream	≥ 5 x DN
Downstream	≥ 3 x DN
Protection class EN 60529	IP67, standard
Grounding resistance	< 10Ω
Electromagnetic compatibility	according to EMC Directive 2004/108/EC
Design configuration	
Process connection	modular connection system with aseptic collar flange according to DIN11864-2 Form A
Process connection adapter	welded necks for pipes according to DIN 11850 , threaded necks and conical connections with grooved union nut according to DIN11851, clamp, etc.
Materials for compact and separate version	housing: 304 in contact with product: Electrodes 316L PFA measuring pipe lining (FDA) seal: on process side: EPDM (FDA)
Surface roughness	housing R _a ≤ 2.5μm measuring pipe lining R _a ≤ 0.8μm
Nominal diameter	DN10 ... DN150
electrical connection	3x cable clamp M16x1,5
Connection cable for separate version	shielded cable: 2x0,5mm ² F-CYOZ, 4x0,5mm ² LIYCY-0
Display	graphics LCD display 46 x 23 mm, illuminated
Longer connection cable for separate version	
max. 5m	conductivity from 15-50μs/cm
max. 20m	conductivity from 50-200μs/cm
max. 50m	conductivity from > 200μs/cm
Auxiliary energy	
Supply voltage	DC version: 9...32V DC AC version: 100...240V AC, 50...60 Hz
Power input	7W
Configuration interfaces	
Interface	CS3-BUS / RS485
Fieldbus	PROFIBUS DP
Radio connection	Bluetooth  Class 2

Please check the compatibility of the seals with the medium for each application!

DIMENSIONAL DRAWINGS

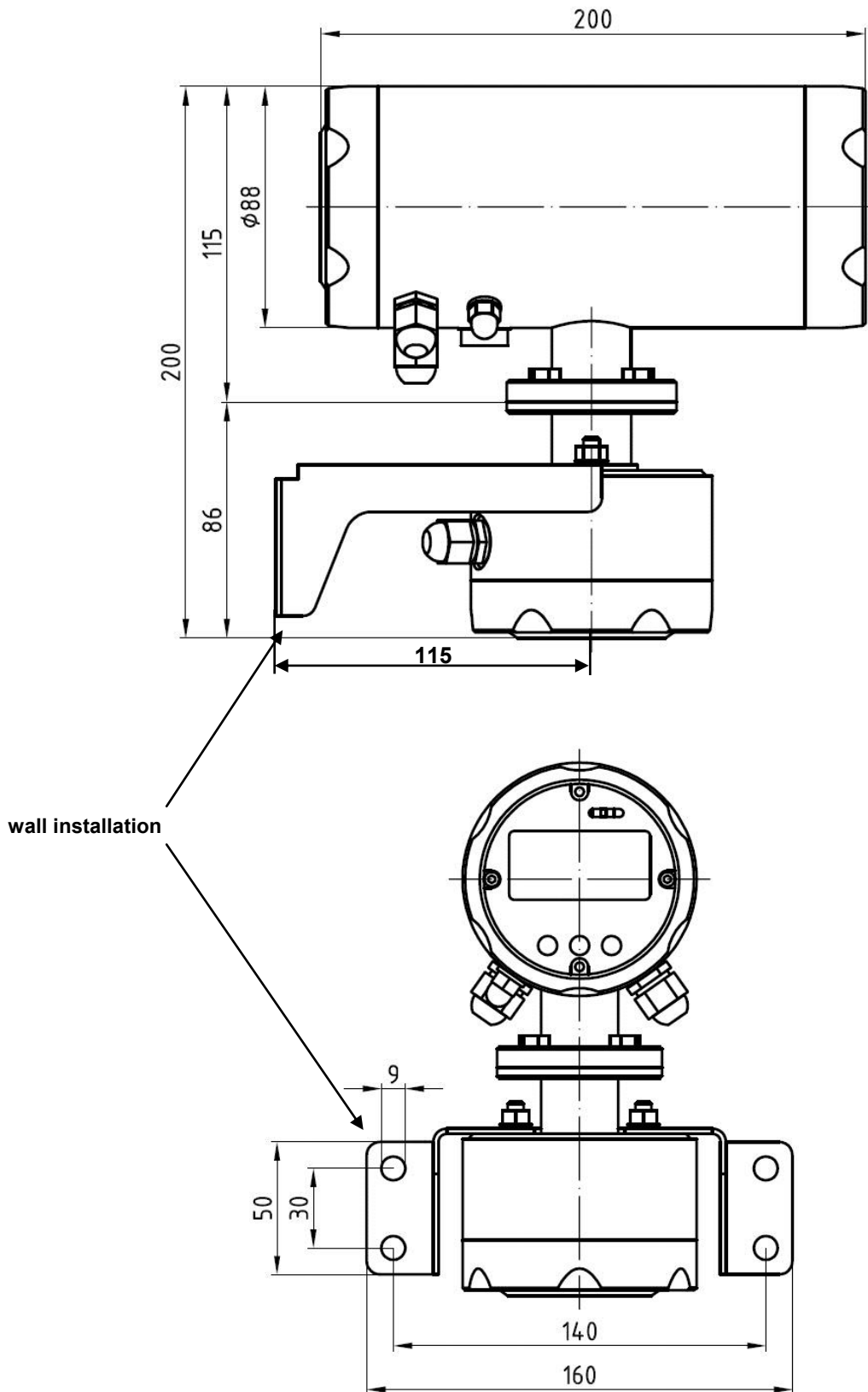
compact-version
(without process-connection adapters)



nominal width	B [mm]	H [mm]	D [mm]	H1 [mm]	flow rate [L/h]	weight [kg]
						compact version
DN 10	104	225	90	110	30...3.000	6
DN 15	104	225	90	110	70...7.000	6
DN 25	104	225	90	110	180... 18.000	6
DN 32	104	240	105	125	300...30.000	7
DN 40	104	240	105	125	450...45.000	7
DN 50	104	265	130	150	700...70.000	8
DN 65	104	265	130	150	1.200...120.000	8
DN 80	105	290	155	175	1.800...180.000	12
DN 100	110	305	170	190	2.800...280.000	17
DN 125	110	355	220	240	4.400...440.0 00	22
DN 150	140	355	220	240	6.400...640.000	25

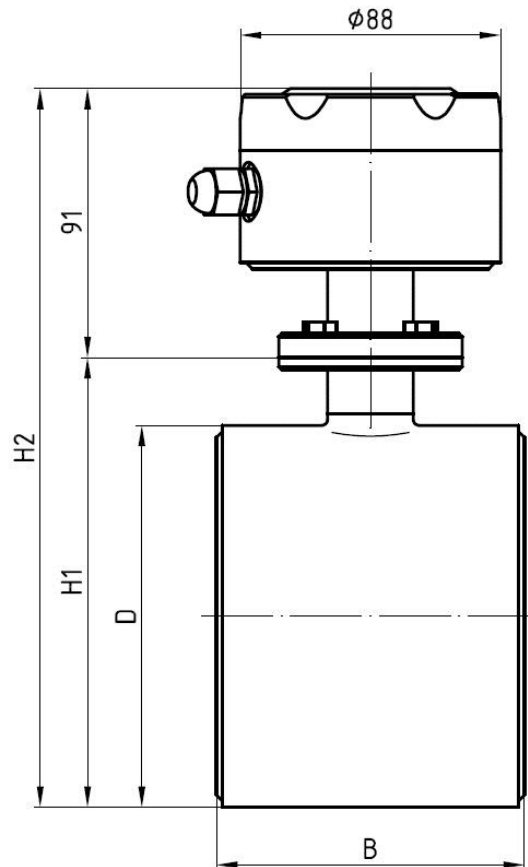
DIMENSIONAL DRAWINGS

separated-version transmitter
(without process-connection adapters)



DIMENSIONAL DRAWINGS

separated-version sensor
(without process-connection adapters)



nominal width	B [mm]	D [mm]	H1 [mm]	H2 [mm]	flow rate [L/h]	weight [kg]	
						separated version	transmitter
DN 10	104	90	110	201	30...3.000	4	5
DN 15	104	90	110	201	70...7.000	4	5
DN 25	104	90	110	201	180...18.000	4	5
DN 32	104	105	125	216	300...30.000	5	5
DN 40	104	105	125	216	450...45.000	5	5
DN 50	104	130	150	241	700...70.000	6	5
DN 65	104	130	150	241	1.200...120.000	6	5
DN 80	105	155	175	266	1.800...180.000	10	5
DN 100	110	170	190	281	2.800...280.000	15	5
DN 125	110	220	240	331	4.400...440.000	20	5
DN150	140	220	240	331	6.400...640.000	23	5

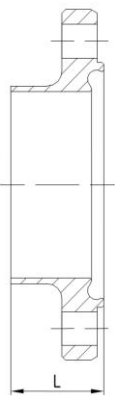
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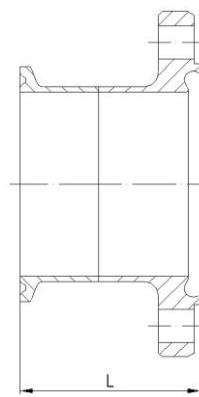
DIMENSIONAL DRAWINGS

welding adapters for pipes according to DIN 11850



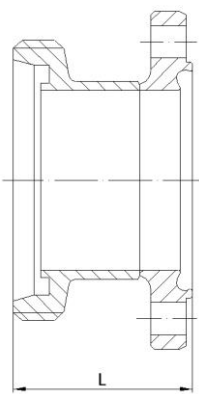
nominal width	L [mm]
DN10	25,5
DN15	25,5
DN25	25,5
DN32	25,5
DN40	25,5
DN50	25,5
DN65	25,5
DN80	27,5
DN100	27,5
DN125	29,5
DN150	29,5

Clamp according to DIN 32676



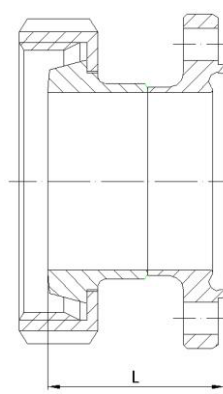
nominal width	L [mm]
DN10	49,5
DN15	49,5
DN25	49,5
DN32	49,5
DN40	49,5
DN50	49,5
DN65	49,5
DN80	49,0
DN100	71,5
DN125	56,5
DN150	56,5

threaded socket according to DIN 11851



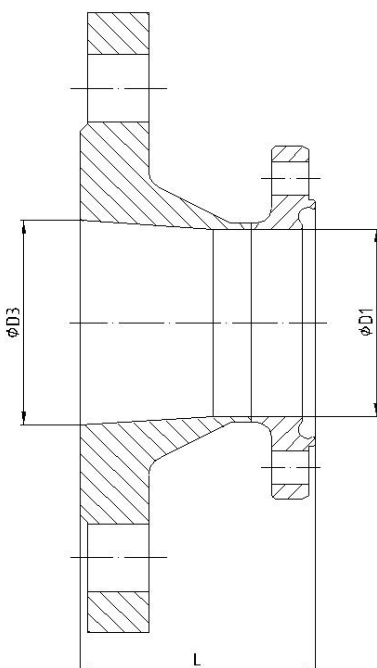
nominal width	L [mm]
DN10	49,5
DN15	49,5
DN25	49,5
DN32	49,5
DN40	49,5
DN50	49,5
DN65	49,5
DN80	49,0
DN100	71,5
DN125	56,5
DN150	56,5

conical socket with groove nut according to DIN 11851



nominal width	L [mm]
DN10	49,5
DN15	49,5
DN25	49,5
DN32	49,5
DN40	49,5
DN50	49,5
DN65	49,5
DN80	49,0
DN100	71,5
DN125	56,5
DN150	56,5

DIN flange EN ISO 1092-1



nominal width	L [mm]
DN10	49,5
DN15	49,5
DN25	49,5
DN32	49,5
DN40	49,5
DN50	49,5
DN65	49,5
DN80	49,0
DN100	71,5
DN125	56,5
DN150	56,5

threaded holes device side

nominal width	quantity	thread width
DN10	4	M8
DN15	4	M8
DN25	4	M8
DN32	4	M8
DN40	4	M8
DN50	4	M8
DN65	8	M8
DN80	8	M10
DN100	8	M10
DN125	8	M10
DN150	8	M12

All non-dimensioned sizes are per
DIN EN 1092-1
PN16, type 11, Form B (DN10-100)
PN10, type 11, Form B (DN125-150)

*further dimensional drawings on request

F-VOLUMTEC-D-e-13-1/7

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ORDERING-INFORMATION

Version

K	compact-version: sensor and transmitter are directly connected
G	separated: connection between sensor and transmitter via cable, 5m (standard)

Auxiliary supply

DC	9...32 V DC
AC	100...240 V AC, 50...60 Hz

Elektronics

0	Standard
1	PROFIBUS DP

Nominal width

B	DN 10 PN 10
C	DN 15 PN 10
D	DN 25 PN 10
E	DN 32 PN 10
F	DN 40 PN 10
G	DN 50 PN 10
H	DN 65 PN 10
I	DN 80 PN 10
K	DN 100 PN 10
L	DN 125 PN 10
M	DN 150 PN 10

VOLUMTEC				
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ORDERING-INFORMATIONEN PROCESS CONECTION ADAPTERS *

Process connection adapter

FES	welding adapters for pipes according to DIN 11850
FAF	FG hygiene flange
FMN	conical socket with groove nut according to DIN 11851
FMG	threaded socket according to DIN 11851
FCL	Clamp according to DIN 32676
FVA	VARIVENT [®] flange
FFB	flange PN10 DIN EN 1092-1, type 11, form B
FS9	other process-connection adapter

Nominal width

B	DN10 PN10
C	DN15 PN10
D	DN25 PN10
E	DN32 PN10
F	DN40 PN10
G	DN50 PN10
H	DN65 PN10
I	DN80 PN10
K	DN100 PN10
L	DN125 PN10
M	DN150 PN10

		FVLT
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* customer-specific process connection adapter for existing applications on request

Our products are constantly in further development, therefore subjects to modifications.