



OPTISONIC 8300 Quick Start

Ultrasonic flowmeter
for high-temperature gas and superheated steam

ER 1.1.7_

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Warnings and symbols used



DANGER!

This information refers to the immediate danger when working with electricity.



DANGER!

These warnings must be observed without fail. Even partial disregard of this warning can lead to serious health problems and even death. There is also the risk of seriously damaging the device or parts of the operator's plant.



WARNING!

Disregarding this safety warning, even if only in part, poses the risk of serious health problems. There is also the risk of damaging the device or parts of the operator's plant.



CAUTION!

Disregarding these instructions can result in damage to the device or to parts of the operator's plant.



INFORMATION!

These instructions contain important information for the handling of the device.



HANDLING

- This symbol designates all instructions for actions to be carried out by the operator in the specified sequence.

➔ **RESULT**

This symbol refers to all important consequences of the previous actions.

Safety instructions for the operator



CAUTION!

Installation, assembly, start-up and maintenance may only be performed by appropriately trained personnel. The regional occupational health and safety directives must always be observed.



LEGAL NOTICE!

The responsibility as to the suitability and intended use of this device rests solely with the user. The supplier assumes no responsibility in the event of improper use by the customer. Improper installation and operation may lead to loss of warranty. In addition, the "Terms and Conditions of Sale" apply which form the basis of the purchase contract.



INFORMATION!

- *Further information can be found in the manual, on the data sheet, in special manuals, certificates and on the manufacturer's website.*
- *If you need to return the device to the manufacturer or supplier, please fill out the form contained in the manual and send it with the device. Unfortunately, the manufacturer cannot repair or inspect the device without the completed form.*

2.1 Scope of delivery



INFORMATION!

Do a check of the packing list to make sure that you have all the elements given in the order.



INFORMATION!

Inspect the packaging carefully for damages or signs of rough handling. Report damage to the carrier and to the local office of the manufacturer.



INFORMATION!

The field device will arrive in two different packagings. The carton packaging contains the converter.

The flowmeter will be packed depending on size and weight on a wooden pallet protected with cardboard or in a wooden crate

Make sure to combine the correct devices together by comparing the serial numbers

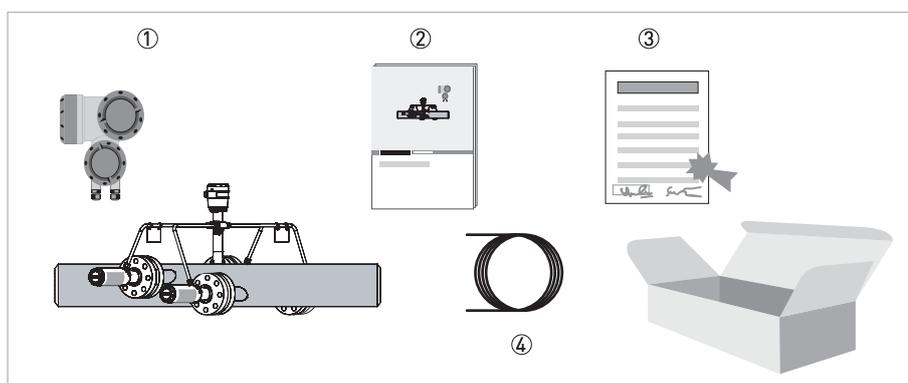


Figure 2-1: Scope of delivery

- ① Ordered flowmeter
- ② Product documentation
- ③ Factory calibration certificate
- ④ Signal cable (DN100 / 4": 1 cable; \geq DN150 / 6": 2 cables)



INFORMATION!

Assembly materials and tools are not part of the delivery. Use the assembly materials and tools in compliance with the applicable occupational health and safety directives.

2.2 Device description

This ultrasonic flowmeter is designed for the continuous measurement of volume flow, enthalpy flow, mass flow, flow speed, speed of sound, gain, signal to noise ratio and diagnosis value. Exclusively for measuring superheated steam in closed, completely filled pipe-line circuits.

Your measuring device is supplied ready for operation. The factory settings for the operating data have been made in accordance with your order specifications.



INFORMATION!

Product specific information and extensive product specification is available using PICK, the Product Information Center KROHNE web-tool.

PICK can be found via the service menu button on the KROHNE.com website.



The following version is available:

- Remote version (electrical connection to the measuring sensor via signal cable)

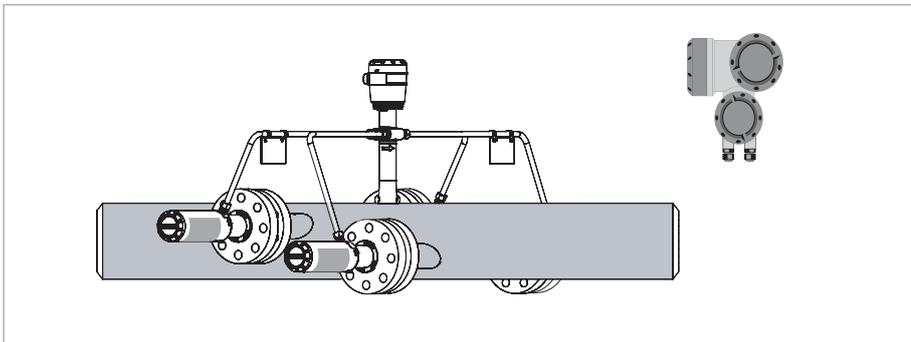


Figure 2-2: Device version

2.3 Nameplates



INFORMATION!

Look at the device nameplate to ensure that the device is delivered according to your order. Check for the correct supply voltage printed on the nameplate.

2.3.1 Example of nameplate for the flow sensor

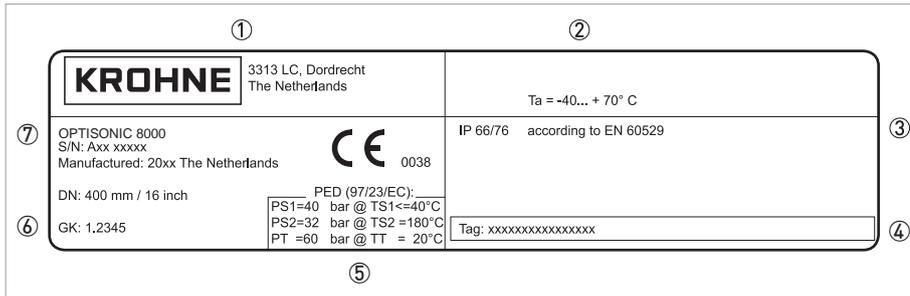


Figure 2-3: Example of nameplate

- ① Name and address of the manufacturer
- ② Ambient temperature
- ③ Ingress protection
- ④ Tag no.
- ⑤ PED data
- ⑥ Calibration data
- ⑦ Type designation of the flowmeter and CE sign with number(s) of notified body / bodies

2.3.2 Examples of nameplates on the signal converter (field housing)

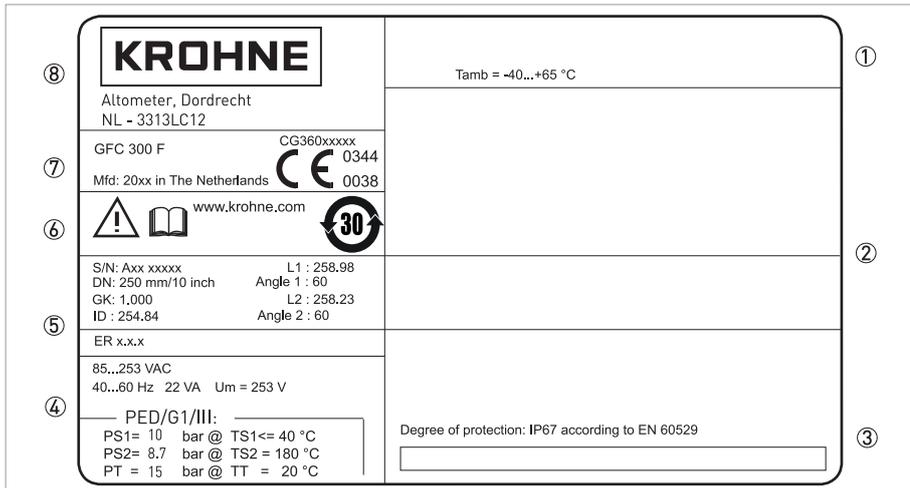


Figure 2-4: Example of nameplate

- ① Ambient temperature
- ② Space for additional information
- ③ Protection class and Tag number
- ④ Main supply and PED data
- ⑤ Calibration data and electronics revision number (ER)
- ⑥ Info / web address and disposal logo
- ⑦ Type designation and manufacturer date of the flowmeter / CE sign with number(s) of notified body / bodies
- ⑧ Name and address of the manufacturer

Electrical connection data of inputs/outputs (example of basic version)

①	POWER		CG 3x xxxxxx S/N: XXXxxxxx	
	PE (FE)			
② ③ ④ ⑤	INPUT / OUTPUT	L(L+)		
		N(L-)		A = Active P = Passive NC = Not connected
		D -	P	PULSE OUT / STATUS OUT I _{max} = 100 mA@f<= 10 Hz; = 20 mA@f<=12 kHz V _o = 1.5 V @ 10 mA; U _{max} = 32 VDC
		D		
		C -	P	STATUS OUT I _{max} = 100 mA; V _{max} = 32 VDC
		C		
		B -	P	STATUS OUT / CONTROL IN I _{max} = 100 mA V _{on} > 19 VDC, V _{off} < 2.5 VDC; V _{max} = 32 VDC
		B		
		A +	A	CURRENT OUT (HART) Active (Terminals A & A+); R _{Lmax} = 1 kohm
		A -	P	Passive (Terminals A & A-); V _{max} = 32 VDC
		A		

Figure 2-5: Example of a nameplate for electrical connection data of inputs and outputs

- ① Power supply (AC: L and N; DC: L+ and L-; PE for ≥ 24 VAC; FE for ≤ 24 VAC and DC)
- ② Connection data of connection terminal D/D-
- ③ Connection data of connection terminal C/C-
- ④ Connection data of connection terminal B/B-
- ⑤ Connection data of connection terminal A/A-; A+ only operable in the basic version

- A = active mode; the signal converter supplies the power for connection of the subsequent devices
- P = passive mode; external power supply required for operation of the subsequent devices
- N/C = connection terminals not connected

**WARNING!**

Do not use the terminals A+ and A- at the same time. The system will be damaged by the direct voltage of 24 VDC and a 1 A peak current.

2.4 Storage

- Store the device in a dry, dust-free location.
- Avoid continuous direct sunlight.
- Store the device in its original packaging.
- Storage temperature: -50...+70°C / -58...+158°F

2.5 Transport

Signal converter

- Do not lift the signal converter by the cable glands.

Flow sensor

- Do not lift the flow sensor by the connection box, transducers nozzles or wiring conduits.
- To transport flange devices, use lifting lugs or lift the device with suitable hoisting belts. Wrap these around both process connections.
- Lift the device in the correct mounting position only.

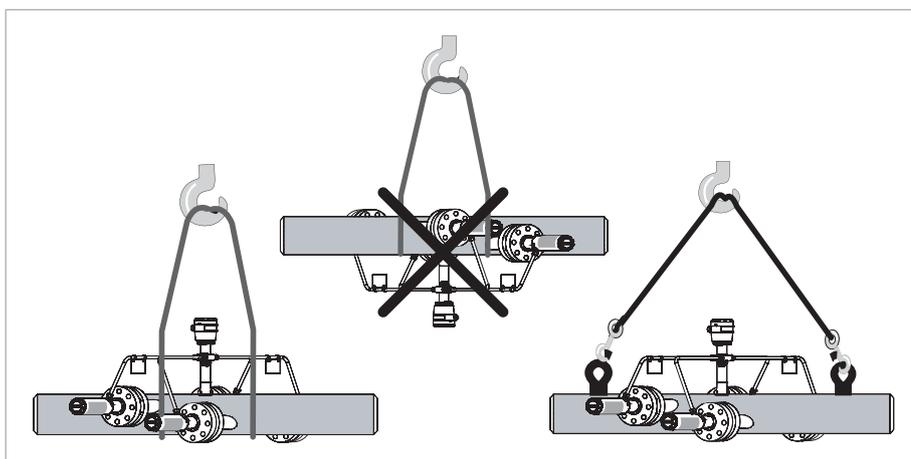


Figure 2-6: Transport

2.6 Pre-installation requirements

**INFORMATION!**

To assure a quick, safe and uncomplicated installation, we kindly request you to make provisions as stated below.

Make sure that you have all necessary tools available:

- Allen key (4 and 5 mm)
- Small screwdriver
- Wrench for cable glands and for pipe mounting bracket (remote version only); refer to *Mounting the field housing, remote version* on page 14

2.7 General requirements

**INFORMATION!**

The following precautions must be taken to ensure a reliable installation.

- Make sure that there is adequate space on the sides.
- Protect the signal converter from direct sunlight and install a sunshade if necessary.
- Signal converters installed in control cabinets require adequate cooling, e.g. by fan or heat exchanger.
- Do not expose the signal converter to intense vibrations and mechanical shocks.

2.7.1 Vibration

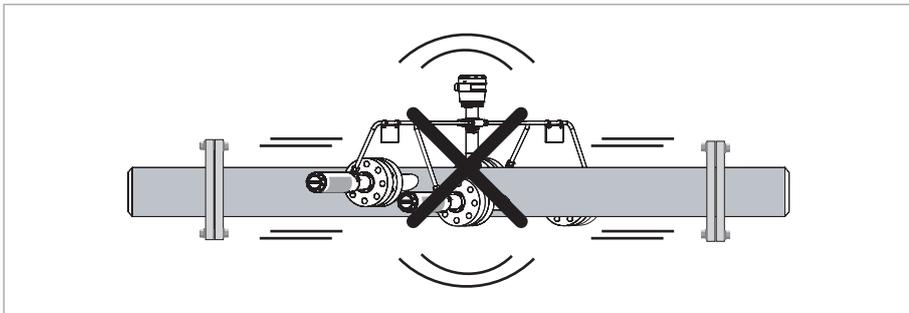


Figure 2-7: Prevent intense vibrations

**INFORMATION!**

In case of too many vibrations, please install supports on both sides of the flowmeter to minimize movement.

2.8 General requirements sensor

To secure the optimum functioning of the flowmeter, please note the following observations.

- Install the flow sensor in a horizontal position in a slightly descending line.
- Do not install the flow sensor in a lowered pipe section to avoid that water can collect in the measuring tube.
- Orientate the flow sensor such that the path of the acoustic signal is in the horizontal plane.

For exchanging the transducers, please keep a free space of 0.3 m / 11.81" around the transducer.

2.9 Installation conditions

2.9.1 Inlet and outlet

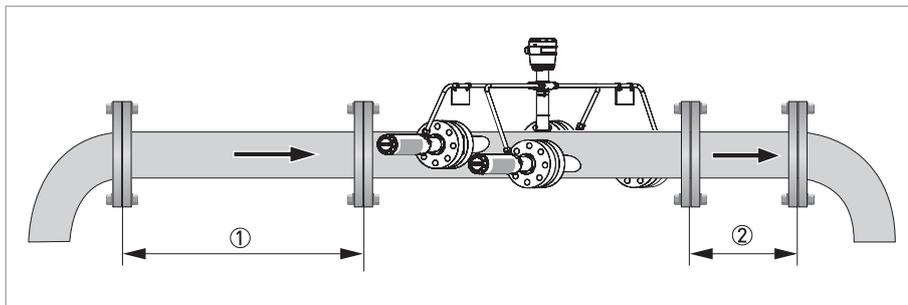


Figure 2-8: Recommended inlet and outlet

- ① ≥ 20 DN
- ② ≥ 3 DN



INFORMATION!

Shorter inlet conditions (< 20 DN) are depending on the upstream pipe configuration.

2.9.2 T-section

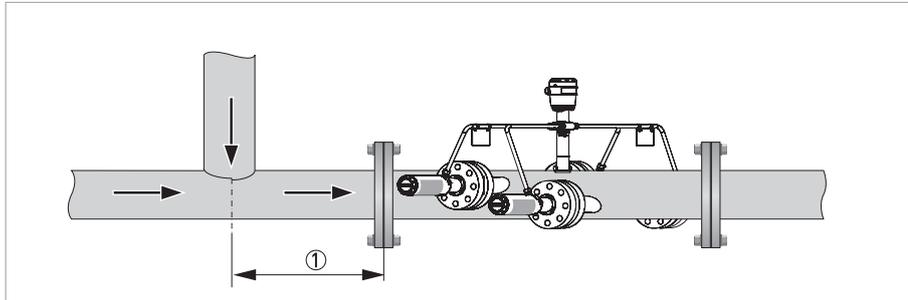


Figure 2-9: Distance behind a T-section

① 20 DN

2.9.3 Flange deviation



CAUTION!

Max. permissible deviation of pipe flange faces:

$L_{max} - L_{min} \ 0.5 \text{ mm} / 0.02''$

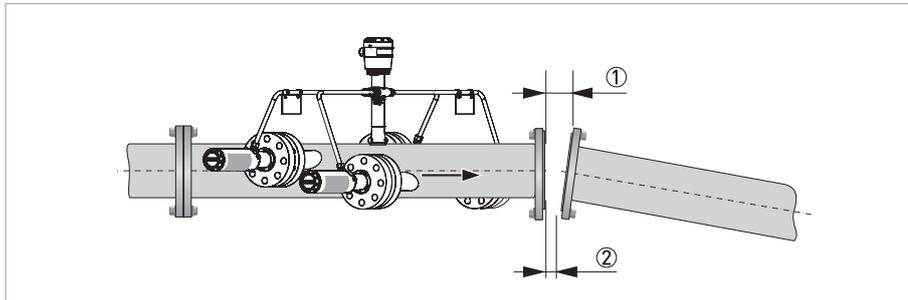


Figure 2-10: Flange deviation

① L_{max}

② L_{min}

2.9.4 Mounting position

- Install the flowmeter in horizontal position only in case of the presence of liquids and/or in steam applications.
- Horizontal or vertical installation position in case of dry gas.

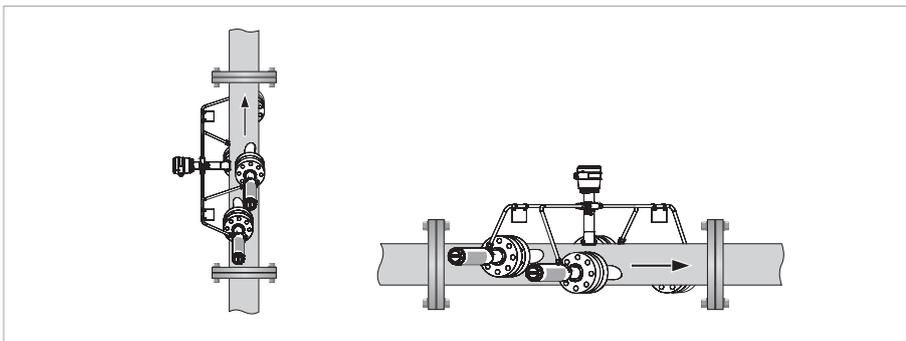


Figure 2-11: Horizontal or vertical installation

- In case of the presence of liquid or steam applications

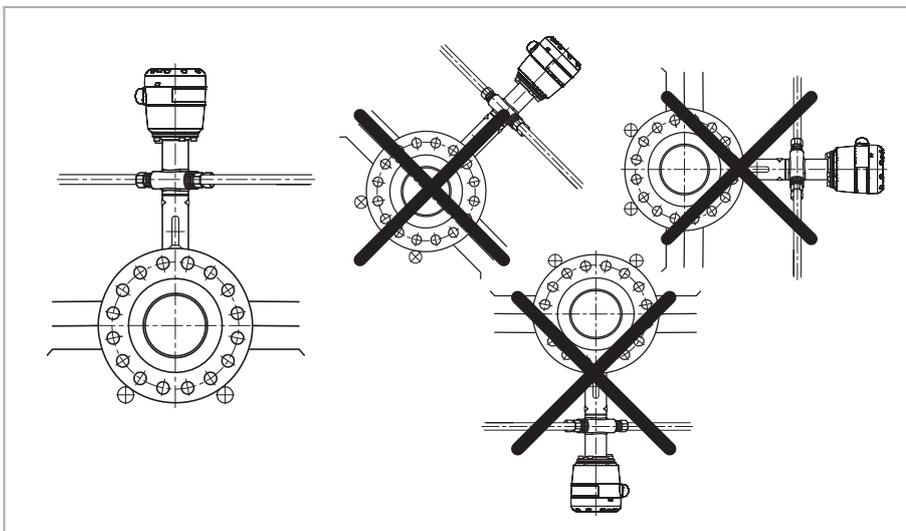


Figure 2-12: Mounting position



WARNING!

Orientate connection box upwards and acoustic path(s) horizontally to avoid liquid in transducers.

2.9.5 Thermal insulation



CAUTION!

The flow sensor must be insulated to prevent humidity problems caused by condensation. Please make sure that the insulation is installed in accordance with the illustration below. In case of low-pressure steam in combination with low ambient temperature, electric heat tracing may be applied to prevent condensation and/or to reduce startup time.



WARNING!

Keep the transducers and connection box free of insulation to allow cooling by free convection. The transducers can reach a temperature of up to +200°C/+392°F!

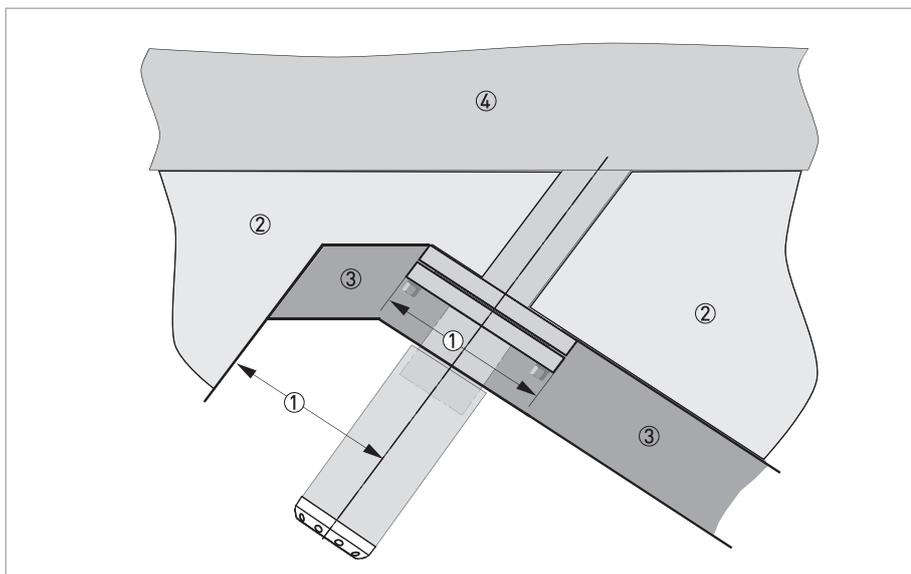


Figure 2-13: Thermal insulation

- ① Width of flange = free distance
- ② Standard insulation
- ③ Insulation for $T_{\text{process}} \leq +250^{\circ}\text{C}/+482^{\circ}\text{F}$
- ④ Sensor tube



DANGER!

For devices in a hazardous area, additional maximum temperature and insulation precautions apply. Please refer to the Ex documentation.

2.10 Mounting the field housing, remote version



INFORMATION!

Assembly materials and tools are not part of the delivery. Use the assembly materials and tools in compliance with the applicable occupational health and safety directives.

2.10.1 Wall mounting

Mounting the field version (F) on the wall

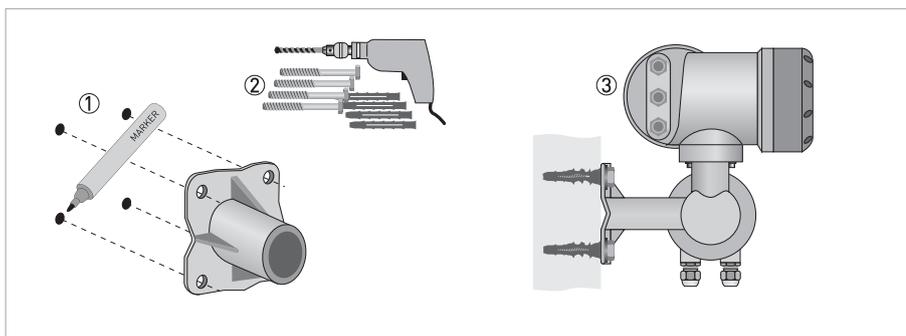


Figure 2-14: Wall mounting of the field housing



- ① Prepare the holes with the aid of the mounting plate. further information refer to *Mounting plate of field housing* on page 25.
- ② Use the mounting material and tools in compliance with the applicable occupational health and safety directives.
- ③ Fasten the housing securely to the wall.
- ④ Screw the signal converter to the mounting plate with the nuts and washers.

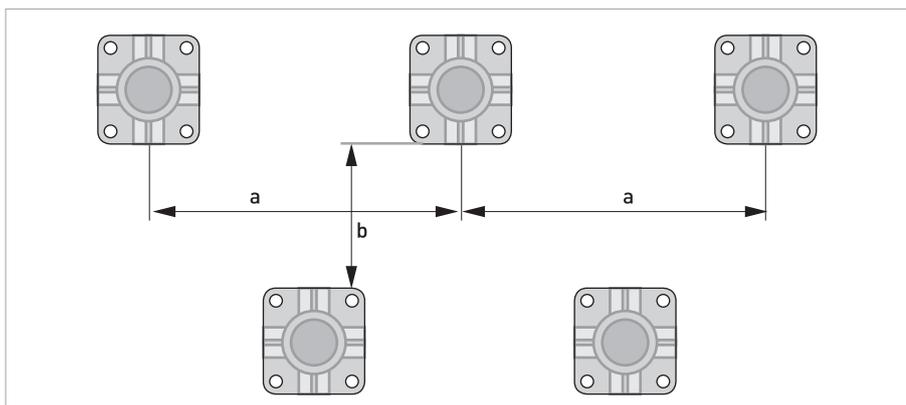


Figure 2-15: Mounting multiple devices next to each other

$a \geq 600 \text{ mm} / 23.6''$

$b \geq 250 \text{ mm} / 9.8''$

2.10.2 Turning the display of the field housing version

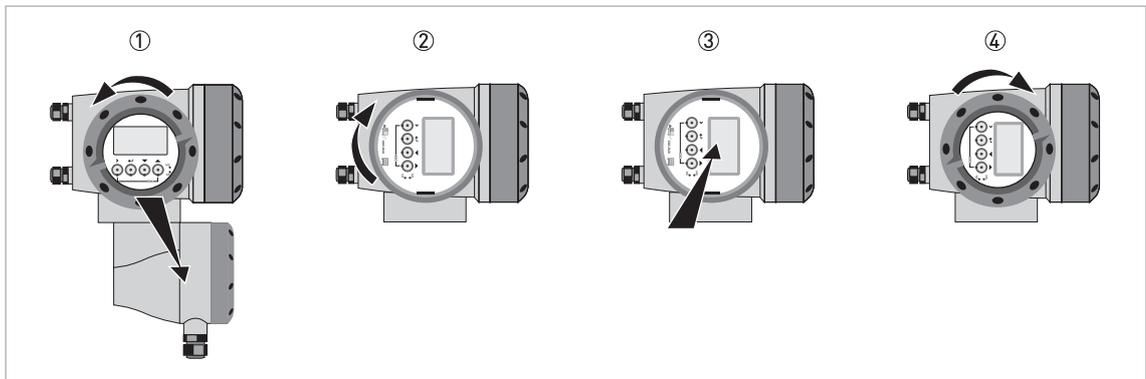


Figure 2-16: Turning the display of the field housing version



The display of the field housing version can be turned in 90° increments

- ① Unscrew the cover from the display and operation control unit.
- ② Pull out the display and rotate it to the required position.
- ③ Slide the display back into the housing.
- ④ Re-fit the cover and tighten it by hand.



CAUTION!

The ribbon cable of the display must not be folded or twisted repeatedly.



INFORMATION!

*Each time a housing cover is opened, the thread should be cleaned and greased. Use only resin-free and acid-free grease.
Ensure that the housing gasket is properly fitted, clean and undamaged.*

3.1 Safety instructions



DANGER!

All work on the electrical connections may only be carried out with the power disconnected.
Take note of the voltage data on the nameplate!



DANGER!

Observe the national regulations for electrical installations!



DANGER!

For devices used in hazardous areas, additional safety notes apply; please refer to the Ex documentation.



WARNING!

Observe without fail the local occupational health and safety regulations.
Any work done on the electrical components of the measuring device may only be carried out by properly trained specialists.



INFORMATION!

Look at the device nameplate to ensure that the device is delivered according to your order.
Check for the correct supply voltage printed on the nameplate.

3.2 Connection of signal cable to signal converter

The flow sensor is connected to the signal converter via one or two signal cables, with 2 inner Triax cables for the connection of one or two acoustic path(s). A flow sensor with one acoustic path has one cable. A flow sensor with two acoustic paths has two cables.

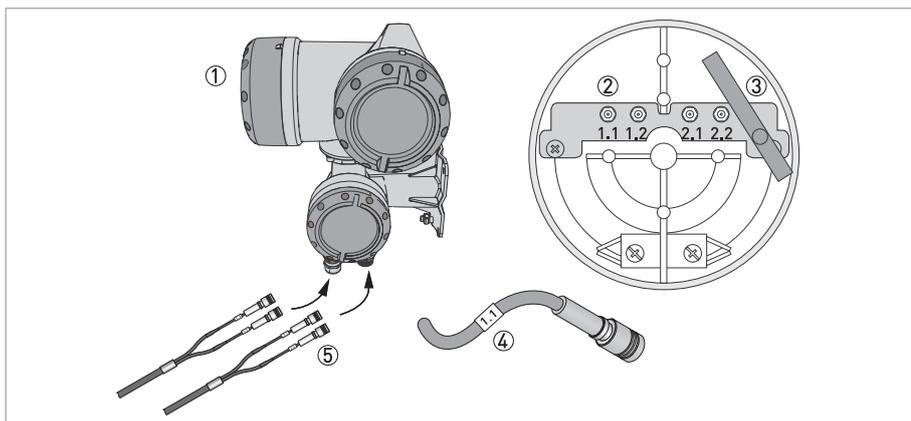


Figure 3-1: Connection of signal cable to signal converter

- ① Signal converter
- ② Open connection box
- ③ Tool for releasing connectors
- ④ Marking on cable
- ⑤ Insert cable (1 path flowmeter) or cables (2 path flowmeter) through cable glands

**CAUTION!**

To ensure smooth functioning, always use the signal cable(s) included in the delivery.

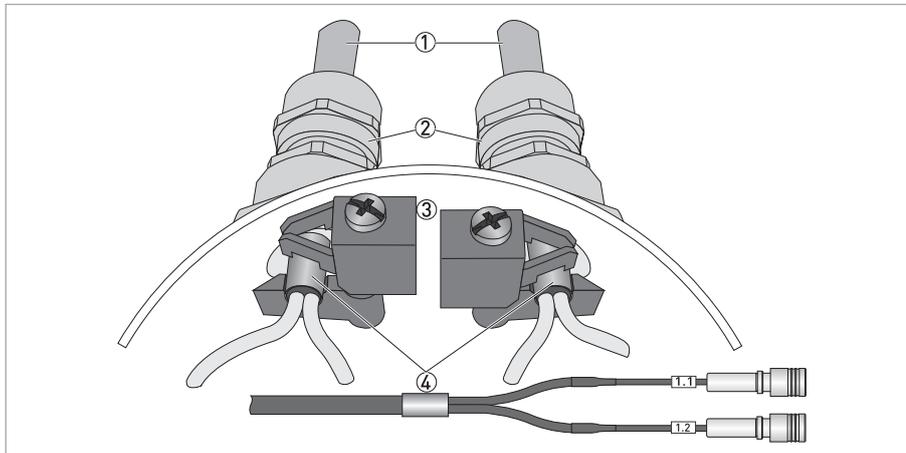


Figure 3-2: Clamp the cables on the shielding bush

- ① Cables
- ② Cable glands
- ③ Grounding clamps
- ④ Cable with metal shielding bush

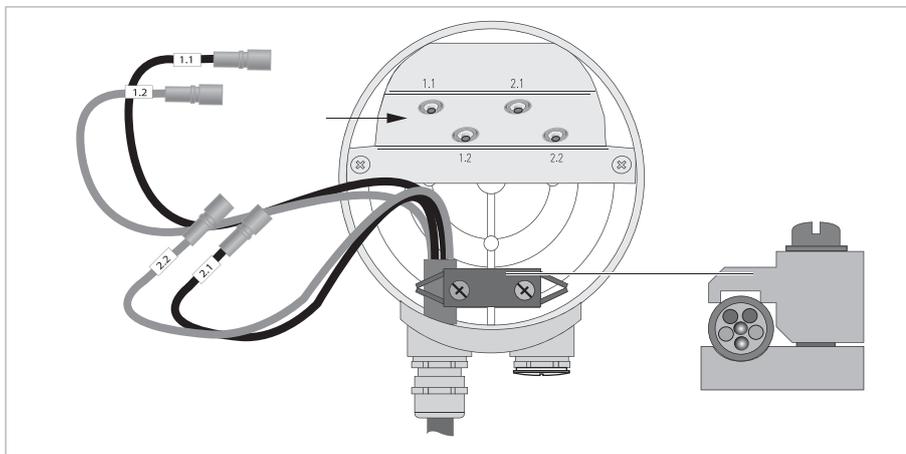


Figure 3-3: Connect the cables in the connection box of the sensor

**INFORMATION!**

Connect the cable on connector with similar numeral marking

3.3 Power supply connection



WARNING!

When this device is intended for permanent connection to the mains. It is required (for example for service) to mount an external switch or circuit breaker near the device for disconnection from the mains. It shall be easily reachable by the operator and marked as the disconnecting the device for this equipment. The switch or circuit breaker and wiring has to be suitable for the application and shall also be in accordance with the local (safety) requirements of the (building) installation (e.g. IEC 60947-1/-3)



DANGER!

For devices used in hazardous areas, additional safety notes apply; please refer to the Ex documentation.



INFORMATION!

The power terminals in the terminal compartments are equipped with additional hinged lids to prevent accidental contact.

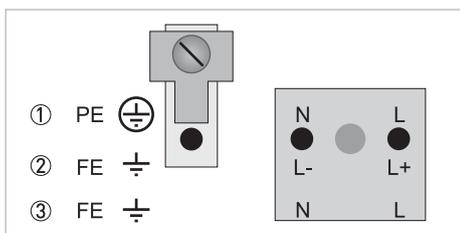


Figure 3-4: Power supply connection

- ① 100...230 VAC (-15% / +10%), 22 VA
- ② 24 VDC (-55% / +30%), 12 W
- ③ 24 VAC/DC (AC: -15% / +10%; DC: -25% / +30%), 22 VA or 12 W



DANGER!

The device must be grounded in accordance with regulations in order to protect personnel against electric shocks.

100...230 VAC (tolerance range for 100 VAC: -15% / +10%)

- Note the power supply voltage and frequency (50...60 Hz) on the nameplate.
- The protective ground terminal **PE** of the power supply must be connected to the separate U-clamp terminal in the terminal compartment of the signal converter

**INFORMATION!**

240 VAC + 5% is included in the tolerance range.

24 VDC (tolerance range: -55% / +30%)**24 VAC/DC (tolerance range: AC: -15% / +10%; DC: -25% / +30%)**

- Note the data on the nameplate!
- For measurement process reasons, a functional ground **FE** must be connected to the separate U-clamp terminal in the terminal compartment of the signal converter.
- When connecting to functional extra-low voltages, provide a facility for protective separation (PELV) (according to VDE 0100 / VDE 0106 and/or IEC 60364 / IEC 61140 or relevant national regulations)

3.4 Laying electrical cables correctly

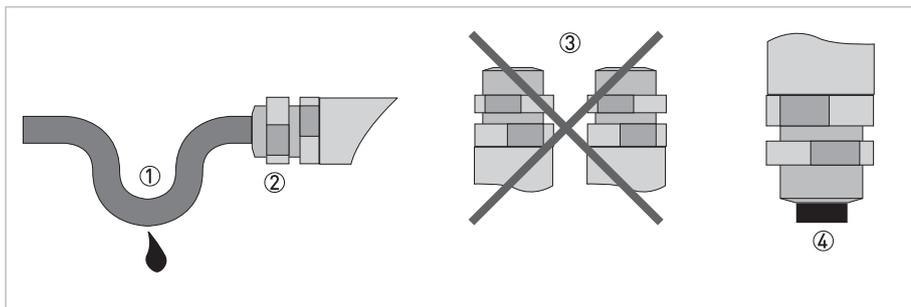


Figure 3-5: Protect housing from dust and water



- ① Lay the cable in a loop just before the housing.
- ② Tighten the screw connection of the cable entry securely.
- ③ Never mount the housing with the cable entries facing upwards.
- ④ Seal cable entries that are not needed with a plug.

3.5 Inputs and outputs, overview

3.5.1 Combinations of the inputs/outputs (I/Os)

This signal converter is available with various input/output combinations.

Basic version

- Has 1 current output, 1 pulse output and 2 status outputs/limit switches.
- The pulse output can be set as status output/limit switch and one of the status outputs as a control input.

Ex i version

- Depending on the task, the device can be configured with various output modules.
- Current outputs can be active or passive.
- Optionally available also with Foundation Fieldbus.

Modular version

- Depending on the task, the device can be configured with various output modules.

Bus systems

- The device allows intrinsically safe and non intrinsically safe bus interfaces in combination with additional modules.
- For connection and operation of bus systems, please note the supplementary documentation.

Ex option

- For hazardous areas, all of the input/output variants for the housing designs with a terminal compartment in the Ex d (pressure-resistant casing) or Ex e (increased safety) versions can be delivered.
- For connection and operation of Ex devices, note the supplementary instructions.

3.5.2 Description of the CG number

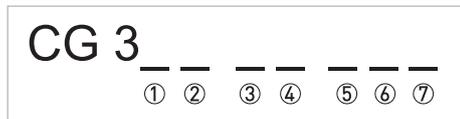


Figure 3-6: Marking (CG number) of the electronics module and input/output variants

- ① ID number: 6
- ② ID number: 0 = standard
- ③ Power supply option
- ④ Display (language versions)
- ⑤ Input/output version (I/O)
- ⑥ 1st optional module for connection terminal A
- ⑦ 2nd optional module for connection terminal B

The last 3 digits of the CG number (⑤, ⑥ and ⑦) indicate the assignment of the terminal connections. Please see the following examples.

Examples for CG number

CG 360 11 100	100...230 VAC & standard display; basic I/O: I_a or I_p & S_p/C_p & S_p & P_p/S_p
CG 360 11 7FK	100...230 VAC & standard display; modular I/O: I_a & P_N/S_N and optional module P_N/S_N & C_N
CG 360 81 4EB	24 VDC & standard display; modular I/O: I_a & P_a/S_a and optional module P_p/S_p & I_p

Abbreviation	Identifier for CG no.	Description
I_a	A	Active current output
I_p	B	Passive current output
P_a/S_a	C	Active pulse output, frequency output, status output or limit switch (changeable)
P_p/S_p	E	Passive pulse output, frequency output, status output or limit switch (changeable)
P_N/S_N	F	Passive pulse output, frequency output, status output or limit switch according to NAMUR (changeable)
C_a	G	Active control input
C_p	K	Passive control input
C_N	H	Active control input to NAMUR Signal converter monitors cable breaks and short circuits according to EN 60947-5-6. Errors indicated on LC display. Error messages possible via status output.
II_n_a	P	Active current input (for Modular I/O)
II_n_p	R	Passive current input (for Modular I/O)
$2 \times II_n_a$	5	Two active current inputs (for Ex i I/O)
-	8	No additional module installed
-	0	No further module possible

Table 3-1: Description of abbreviations and CG identifier for possible optional modules on terminals A and B

3.5.3 Fixed, non-alterable input/output versions

This signal converter is available with various input/output combinations.

- The grey boxes in the tables denote unassigned or unused connection terminals.
- In the table, only the final digits of the CG no. are depicted.
- Connection terminal A+ is only operable in the basic input/output version.

CG no.	Connection terminals								
	A+	A	A-	B	B-	C	C-	D	D-

Basic I/Os (standard)

1 0 0		I _p + HART® passive ①	S _p / C _p passive ②	S _p passive	P _p / S _p passive ②
	I _a + HART® active ①				

Ex i I/Os (option)

2 0 0				I _a + HART® active	P _N / S _N NAMUR ②
3 0 0				I _p + HART® passive	P _N / S _N NAMUR ②
2 1 0		I _a active	P _N / S _N NAMUR C _p passive ②	I _a + HART® active	P _N / S _N NAMUR ②
3 1 0		I _a active	P _N / S _N NAMUR C _p passive ②	I _p + HART® passive	P _N / S _N NAMUR ②
2 2 0		I _p passive	P _N / S _N NAMUR C _p passive ②	I _a + HART® active	P _N / S _N NAMUR ②
3 2 0		I _p passive	P _N / S _N NAMUR C _p passive ②	I _p + HART® passive	P _N / S _N NAMUR ②
2 3 0		IIn _a active	P _N / S _N NAMUR C _p passive ②	I _a + HART® active	P _N / S _N NAMUR ②
3 3 0		IIn _a active	P _N / S _N NAMUR C _p passive ②	I _p + HART® passive	P _N / S _N NAMUR ②
2 4 0		IIn _p passive	P _N / S _N NAMUR C _p passive ②	I _a + HART® active	P _N / S _N NAMUR ②
3 4 0		IIn _p passive	P _N / S _N NAMUR C _p passive ②	I _p + HART® passive	P _N / S _N NAMUR ②

① Function changed by reconnecting

② Changeable

3.5.4 Alterable input/output versions

This signal converter is available with various input/output combinations.

- The grey boxes in the tables denote unassigned or unused connection terminals.
- In the table, only the final digits of the CG no. are depicted.
- Term. = (connection) terminal

CG no.	Connection terminals								
	A+	A	A-	B	B-	C	C-	D	D-

Modular IOs (option)

4 __		max. 2 optional modules for term. A + B	I _a + HART® active	P _a / S _a active ①
8 __		max. 2 optional modules for term. A + B	I _p + HART® passive	P _a / S _a active ①
6 __		max. 2 optional modules for term. A + B	I _a + HART® active	P _p / S _p passive ①
B __		max. 2 optional modules for term. A + B	I _p + HART® passive	P _p / S _p passive ①
7 __		max. 2 optional modules for term. A + B	I _a + HART® active	P _N / S _N NAMUR ①
C __		max. 2 optional modules for term. A + B	I _p + HART® passive	P _N / S _N NAMUR ①

FOUNDATION Fieldbus (option)

E __		max. 2 optional modules for term. A + B	V/D+ (2)	V/D- (2)	V/D+ (1)	V/D- (1)
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Modbus (option)

G __ ②		max. 2 optional modules for term. A + B		Common	Sign. B (D1)	Sign. A (D0)
H __ ③		max. 2 optional modules for term. A + B		Common	Sign. B (D1)	Sign. A (D0)

① Changeable

② Not activated bus terminator

③ Activated bus terminator

4.1 Dimensions and weight

The OPTISONIC 8300 is available as weld-in or flanged version. The design of the tube of the flowmeter will be based on the specifications of the connecting piping. Detailed information for the dimensions and weights cannot be specified as they will vary with each application. The information below should therefore be regarded as indicative.



INFORMATION!

Please note size *d*, the required extra space for installation and maintenance of the transducers.

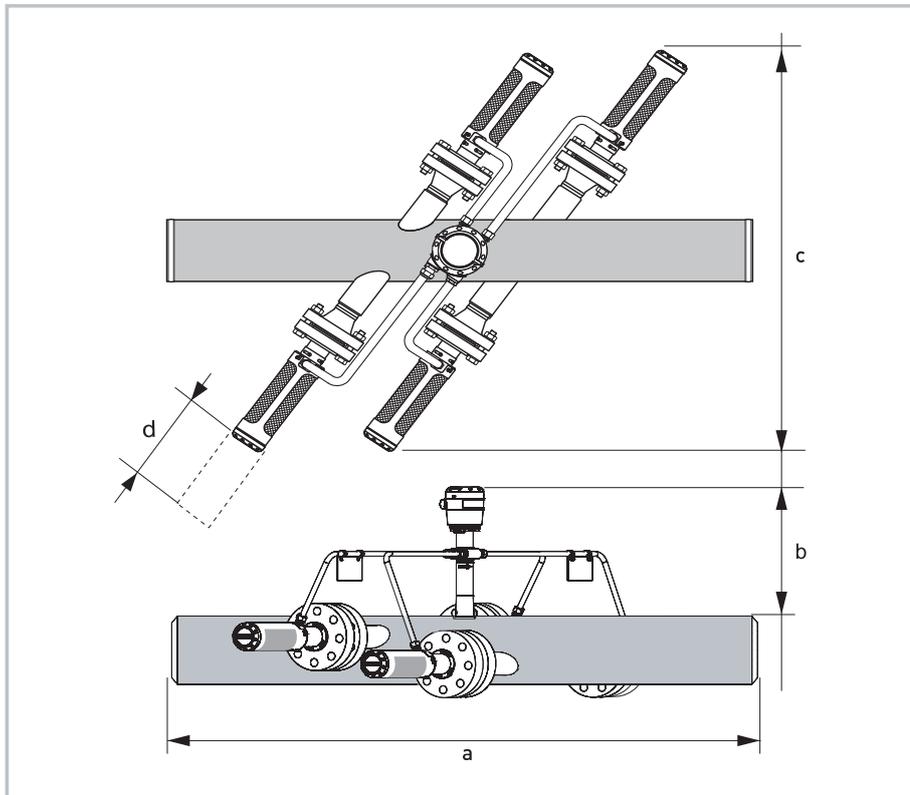


Figure 4-1: Top and front view of the OPTISONIC 8000

Dimensions of the OPTISONIC 8000 in mm and inches

	[mm]	[inches]
a	DN100 / 4": 1000	DN100 / 4": 39.37
	DN150...600 / 6...24": 2000	DN150...600 / 6...24": 78.74
b	414	16.3
c	Transducer flange rating 600 lbs: 1184 + Di	600 lbs: 46.61 + Di
	Transducer flange rating 1500 lbs: 1205 + Di	1500 lbs: 47.44 + Di
d	300	11.8

4.2 Converter housing

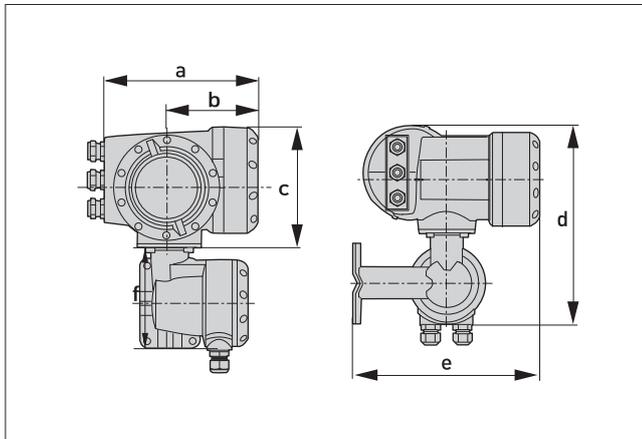


Figure 4-2: Field housing (F) - remote version.

Dimensions and weights in mm and kg

Dimensions [mm]					Weight [kg]
a	b	c	d	e	
202	120	155	295.8	277	5.7

Dimensions and weights in inches and lb

Dimensions [inches]					Weight [lb]
a	b	c	d	e	
7.75	4.75	6.10	11.60	10.90	12.60

4.3 Mounting plate of field housing

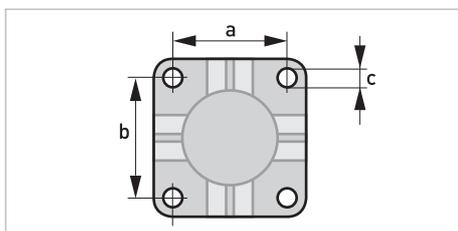


Figure 4-3: Dimensions for mounting plate of field housing

	[mm]	[inch]
a	72	2.8
b	72	2.8
c	Ø9	Ø0.4

Table 4-1: Dimensions in mm and inch

5.1 Switching on the power

Before connecting to power, please check that the system has been correctly installed. This includes:

- The device must be mechanically safe and mounted in compliance with the regulations.
- The power connections must have been made in compliance with the regulations.
- The electrical terminal compartments must be secured and the covers have been screwed on.
- Check that the electrical operating data of the power supply are correct.



- Switching on the power.

5.2 Starting the signal converter

The measuring device, consisting of the flow sensor and the signal converter, is supplied ready for operation. All operating data have been set at the factory in accordance with your order specifications.

When the power is switched on, a self test is carried out. After that the device immediately begins measuring, and the current values are displayed.

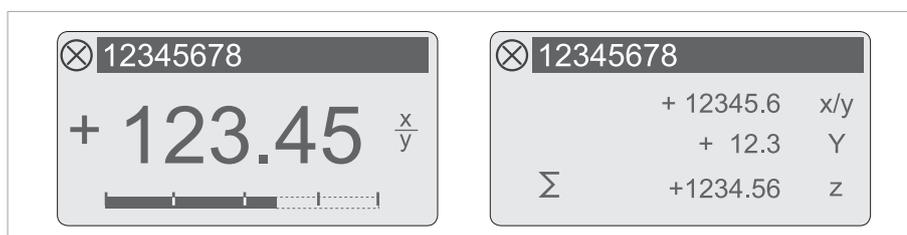


Figure 5-1: Displays in measuring mode (examples for 2 or 3 measured values)
x, y and z denote the units of the measured values displayed

It is possible to change between the two measured value windows, the trend display and the list with the status messages by pressing the keys \uparrow and \downarrow .

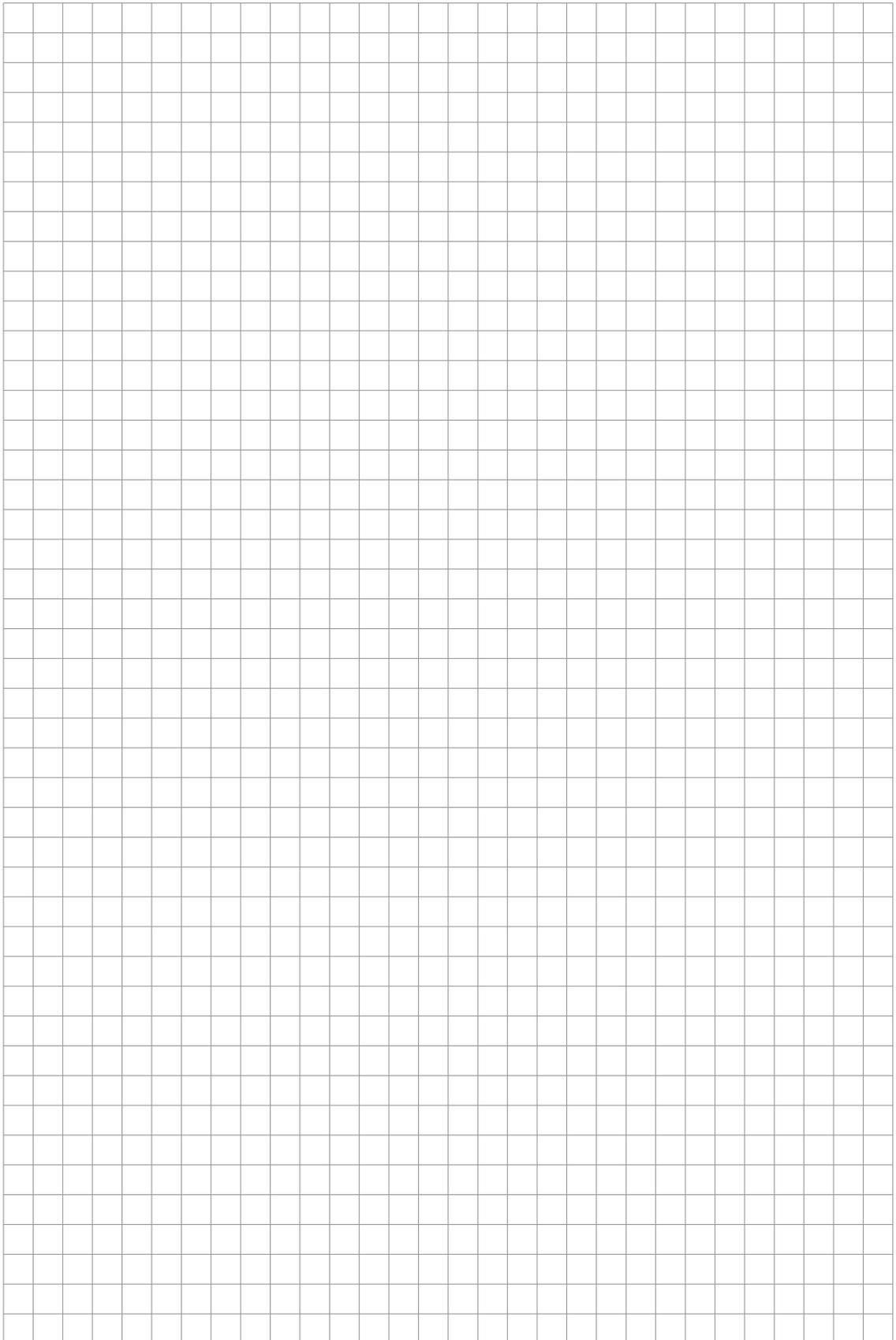
5.3 Menu overview

Measuring mode	Select menu	Select menu and/or sub-menu	Select function and set data
←	Press > 2.5 s		
	A quick setup	> A1 language < A2 tag A3 reset > A3.1 reset errors < A3.2 counter 1 A3.3 counter 2 A3.4 counter 3 A4 GDC IR interface	> <
	↓ ↑	↓ ↑	↓ ↑ >

Measuring mode	Select menu	Select menu and/or sub-menu	Select function and set data
←	Press > 2.5 s		
	B test	> B1 simulation ←	> B1.1 volume flow ← B1.2 velocity of sound B1._ current in X B1._ current out X B1._ pulse out X B1._ frequency output X B1._ control input X B1._ limit switch X B1._ status output X
		B2 actual values ←	> B2.1 act. volume flow ← B2.2 act. corrected flow ① B2.3 act. enthalpy flow ② B2.4 act. mass flow B2.5 act. molar mass ① B2.6 act. specific enthalpy ② B2.7 act. density ② B2.8 act. dynamic viscosity ② B2.9 act. flow speed B2.10 act. vel. of sound B2.11 act. gain B2.12 act. SNR B2.13 act. pressure B2.14 act. temperature B2.15 current in A B2.16 current in B B2.17 operating hours
		B3 information ←	> B3.1 C number ← B3.2 process input B3.3 SW.REV.MS B3.4 SW.REV.UIS B3.6 Electronic Revision ER
	↓ ↑	↓ ↑	↓ ↑

- ① Gas flow option
- ② Steam flow option

Measuring mode		Select menu	Select menu and/or sub-menu			Select function and set data
←	C setup	>	C5 device	>	C5.1 device info	>
		←		←	C5.2 display	←
					C5.3 1. meas. page	
					C5.4 2. meas. page	
					C5.5 graphic page	
					C5.6 special functions	
					C5.7 units	
					C5.8 HART	
					C5.9 quick setup	
	↓ ↑		↓ ↑		↓ ↑	↓ ↑ >



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