

## **BATCHFLUX 5500 C** Handbook

Electromagnetic flowmeter for volumetric filling machines

All rights reserved. It is prohibited to reproduce this documentation, or any part thereof, without the prior written authorisation of KROHNE Messtechnik GmbH.

Subject to change without notice.

Copyright 2014 by  
KROHNE Messtechnik GmbH - Ludwig-Krohne-Str. 5 - 47058 Duisburg (Germany)

1	Safety instructions	5
1.1	Intended use	5
1.2	Safety instructions from the manufacturer	5
1.2.1	Disclaimer	5
1.2.2	Information concerning the documentation	5
1.2.3	Warnings and symbols used	6
1.3	Safety instructions for the operator	6
2	Device description	7
2.1	Scope of delivery	7
2.2	Device description	8
2.3	Nameplate	9
3	Installation	10
3.1	General notes on installation	10
3.2	Storage	10
3.3	Pre-installation requirements	10
3.4	General requirements	11
3.5	Installation conditions	12
3.5.1	Inlet and outlet	12
3.5.2	Control valve	12
3.5.3	Pump	12
3.5.4	Open feed or discharge	13
3.5.5	Mounting position	13
3.5.6	Mounting	14
3.5.7	Installation location	14
3.5.8	Flange deviation	14
3.5.9	Temperatures	15
3.5.10	Hot filling	15
4	Electrical connections	16
4.1	Safety instructions	16
4.2	Grounding	16
4.3	Electrical connection	17
4.3.1	Cable connector M12 - 5 pin	17
4.3.2	Cable connector M12 - 8 pin (with status output)	18
5	Service	19
5.1	Spare parts availability	19
5.2	Availability of services	19
5.3	Returning the device to the manufacturer	19
5.3.1	General information	19
5.3.2	Form (for copying) to accompany a returned device	20
5.4	Disposal	20

6 Technical data	21
<hr/>	
6.1 Measuring principle.....	21
6.2 Technical data.....	22
6.3 Dimensions and weights .....	26
6.4 Counter Flanges .....	29
7 Notes	31
<hr/>	

## 1.1 Intended use

The electromagnetic flowmeter is designed exclusively for measuring the volumetric flowrate of electrically conductive, liquid process products.

### Needed electrical conductivity for products:

- > 5  $\mu\text{S/cm}$  (except for water)
- > 20  $\mu\text{S/cm}$  (for water)

## 1.2 Safety instructions from the manufacturer

### 1.2.1 Disclaimer

The manufacturer will not be liable for any damage of any kind by using its product, including, but not limited to direct, indirect or incidental and consequential damages.

This disclaimer does not apply in case the manufacturer has acted on purpose or with gross negligence. In the event any applicable law does not allow such limitations on implied warranties or the exclusion of limitation of certain damages, you may, if such law applies to you, not be subject to some or all of the above disclaimer, exclusions or limitations.

Any product purchased from the manufacturer is warranted in accordance with the relevant product documentation and our Terms and Conditions of Sale.

The manufacturer reserves the right to alter the content of its documents, including this disclaimer in any way, at any time, for any reason, without prior notification, and will not be liable in any way for possible consequences of such changes.

### 1.2.2 Information concerning the documentation

To prevent any injury to the user or damage to the device it is essential that you read the information in this document and observe applicable national standards, safety requirements and accident prevention regulations.

If this document is not in your native language and if you have any problems understanding the text, we advise you to contact your local office for assistance. The manufacturer can not accept responsibility for any damage or injury caused by misunderstanding of the information in this document.

This document is provided to help you establish operating conditions, which will permit safe and efficient use of this device. Special considerations and precautions are also described in the document, which appear in the form of underneath icons.

### 1.2.3 Warnings and symbols used

Safety warnings are indicated by the following symbols.



**DANGER!**

*This warning refers to the immediate danger when working with electricity.*



**DANGER!**

*This warning refers to the immediate danger of burns caused by heat or hot surfaces.*



**DANGER!**

*This warning refers to the immediate danger when using this device in a hazardous atmosphere.*



**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.*



**LEGAL NOTICE!**

*This note contains information on statutory directives and standards.*



• **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.

## 1.3 Safety instructions for the operator



**WARNING!**

*In general, devices from the manufacturer may only be installed, commissioned, operated and maintained by properly trained and authorized personnel.  
This document is provided to help you establish operating conditions, which will permit safe and efficient use of this device.*

## 2.1 Scope of delivery

**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!**

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

**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.

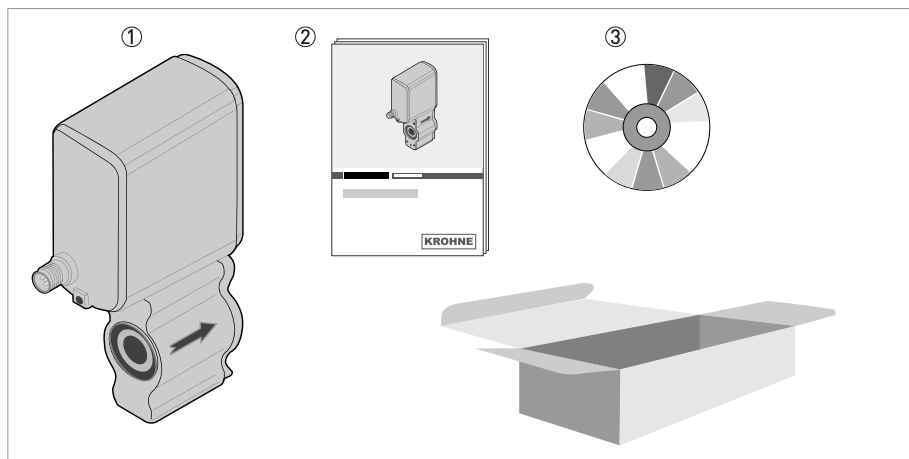


Figure 2-1: Scope of delivery

- ① Flowmeter in ordered size
- ② Product documentation (on request)
- ③ CD-ROM with product documentation

**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

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

The following compact versions are available:

- Version 1: converter directly mounted on cast sensor housing in size DN2.5..6
- Version 2: converter and sensor in solid cast BNG construction for DN10 and DN 15
- Version 3: converter mounted on conventional sensor construction (DN25 and DN40)

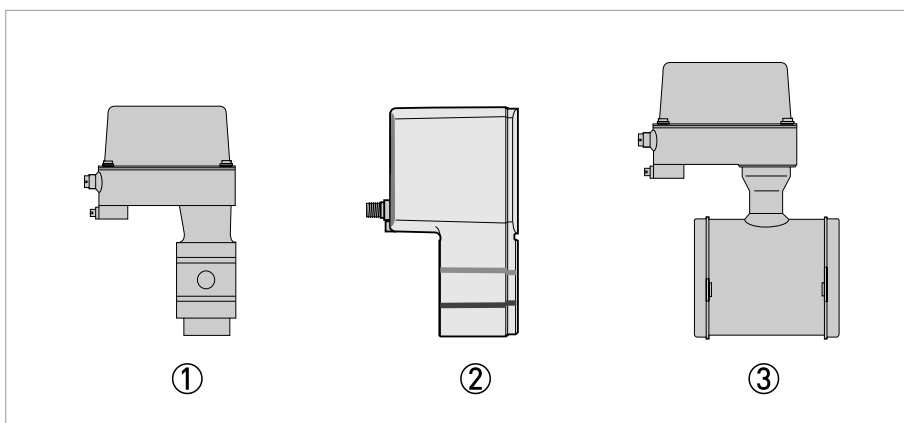


Figure 2-2: Device version

- ① DN2.5 - 4 - 6 (  $1/10$  -  $1/6$  -  $1/4$  " ).
- ② DN10 - DN15 (  $3/8$  -  $1/2$  " ).
- ③ DN25 - DN40 (  $1 - 1 1/2$  " ).



## 2.3 Nameplate





①	<b>KROHNE</b> Altometer, Dordrecht NL - 3313 LC	CE			⑤
②	BATCHFLUX 5500 C Rev.: xxx S/N: A13123456 Manufactured: 2014	17 - 31 VDC 4 W	⑥		
③	GK 1.627 DN 15mm / 1/2 inch Wetted materials: CER CMT IP66 / 67 Pmax: 16 bar	Output: 0 -1000 Hz 0 - 0.5 L/s	⑦		
④	<input type="text"/>	  www.krohne.com	⑧		

Figure 2-3: Nameplate

- ① Name and address of the manufacturer
- ② Type designation, S/N nr and year of manufacturing
- ③ Calibration and device data
- ④ Tag number
- ⑤ Marking ( ao. CE and 3-A logo )
- ⑥ Electrical values and software revision nr.
- ⑦ Output data
- ⑧ Additional info ( e.g. manufacturer website)

### 3.1 General notes on installation

**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!**

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

**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 Storage

- Store the device in a dry and dust-free location.
- Avoid lasting direct exposure to the sun.
- Store the device in its original packaging.
- Storage temperature: -50 ...+70°C / -58...+158°F

### 3.3 Pre-installation requirements

**Make sure that you have all necessary tools available:**

- Small wrench (M5) for connection to ground
- Torque wrench for installing flowmeter in pipeline

Assecoires necessary for the correct installations are available on request at the manufacturer

**Make sure that these accessoires are available before starting installation;**

- O- ring / L-ring gasket
- Special pipe flanges
- Stud bolt with lockwasher, plain washer and nut

**INFORMATION!**

*To facilitate servicing and/or exchanging of the device, please note that:  
it must be possible to shut off the flow through the pipeline ( control valve upstream in pipeline).  
Drain the pipeline before removing device ( provide drain valve)*

### 3.4 General requirements

**INFORMATION!**

The following precautions must be taken to ensure reliable installation.

- Make sure that there is adequate space to the sides.
- Protect the signal converter from direct sunlight and install a sun shade if necessary.
- Support the pipeline on both side of the flowmeter.
- Do not expose the signal converter to intense vibration. The flowmeters are tested for a vibration level in accordance with IEC 60068-2-64.

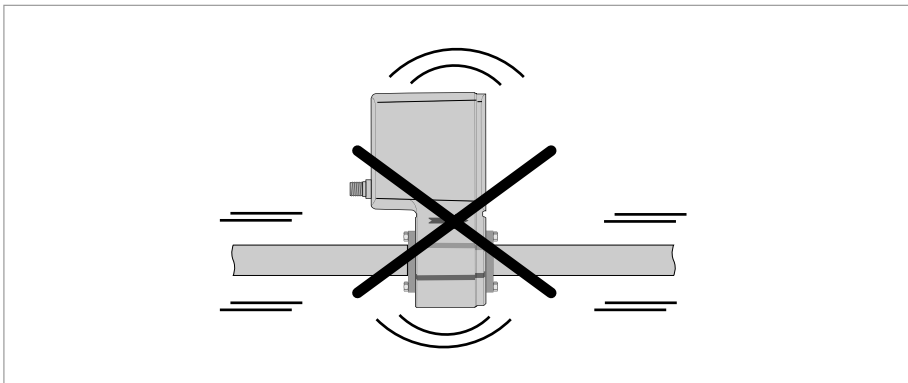


Figure 3-1: Avoid vibrations

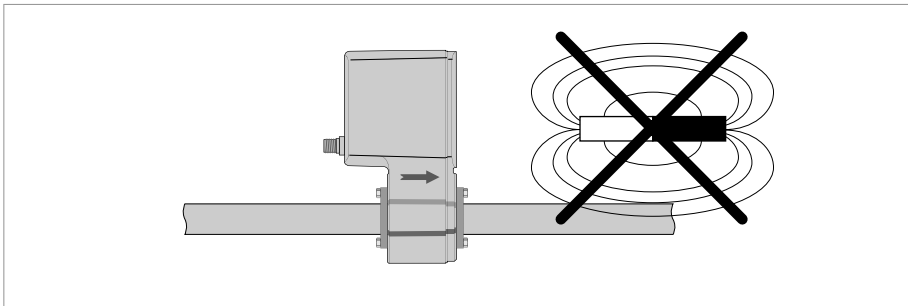


Figure 3-2: Avoid strong magnetic fields

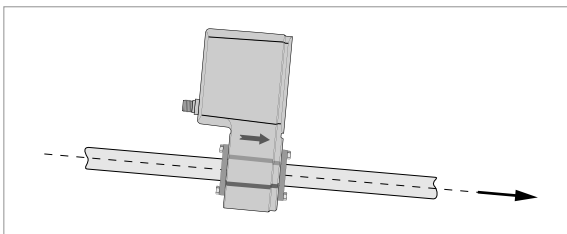


Figure 3-3: Horizontal pipeline

**CAUTION!**

Install in a slightly descending pipe section to prevent air from collecting and to avoid faulty measurements (meter can drain).

### 3.5 Installation conditions

#### 3.5.1 Inlet and outlet

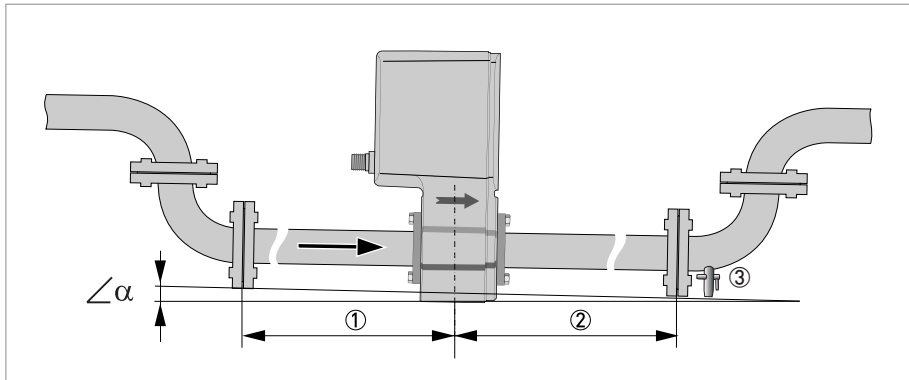


Figure 3-4: Inlet and outlet section

- ①  $\geq 5$  DN
- ②  $\geq 2$  DN
- ③ Drain valve (to empty pipeline)

#### 3.5.2 Control valve

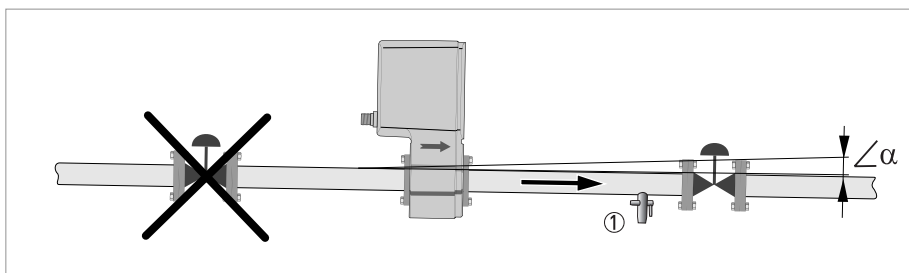


Figure 3-5: Installation before control valve

#### 3.5.3 Pump

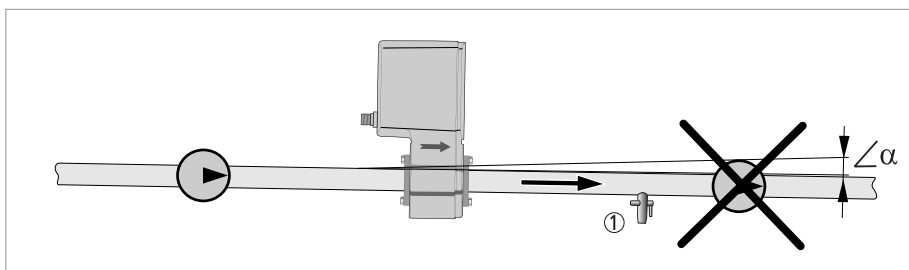


Figure 3-6: Installation after pump

$\angle \alpha > 2^\circ$

1. Drain valve (to empty pipeline)

### 3.5.4 Open feed or discharge

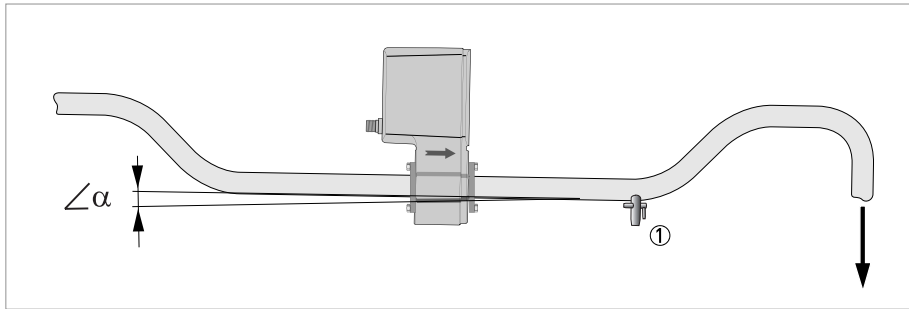


Figure 3-7: Installation before an open discharge

### 3.5.5 Mounting position

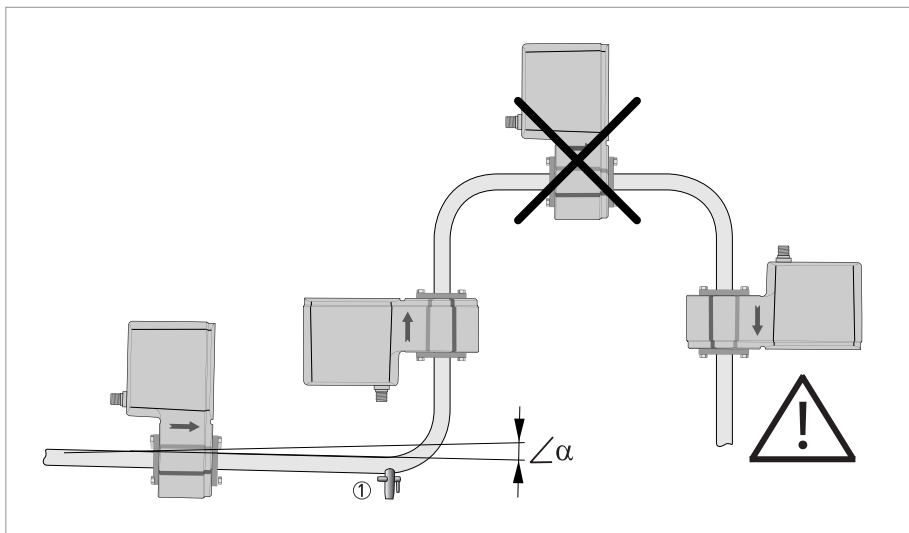


Figure 3-8: Installation in bending pipes

$\angle \alpha ; > 2^\circ$

1. Drain valve ( to empty pipeline)



**CAUTION!**  
Avoid draining or partial filling of the flow sensor.



**WARNING!**  
Vertical down position only in conjunction of a control valve

3.5.6 Mounting

3.5.7 Installation location

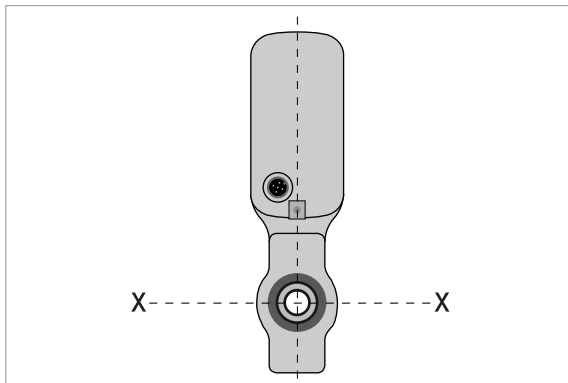


Figure 3-9: Installation location



**CAUTION!**

Mount the flow sensor in such a way that the electrode axis (X-----X) is approximately in a horizontal pipe run.

3.5.8 Flange deviation

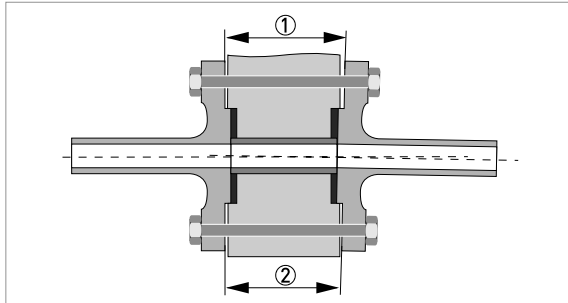


Figure 3-10: Mounting position and flange deviation

- ①  $L_{max}$
- ②  $L_{min}$

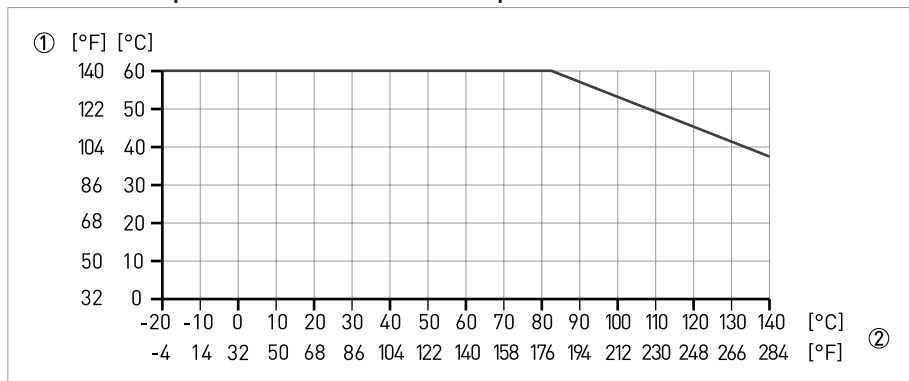


**CAUTION!**

Max. permissible deviation of pipe flange faces:  
 $L_{max} - L_{min} \leq 0.5 \text{ mm} / 0.02''$

### 3.5.9 Temperatures

Process temperature vs ambient temperature



- ① Ambient temperature
- ② Process temperature

### 3.5.10 Hot filling

Installation position

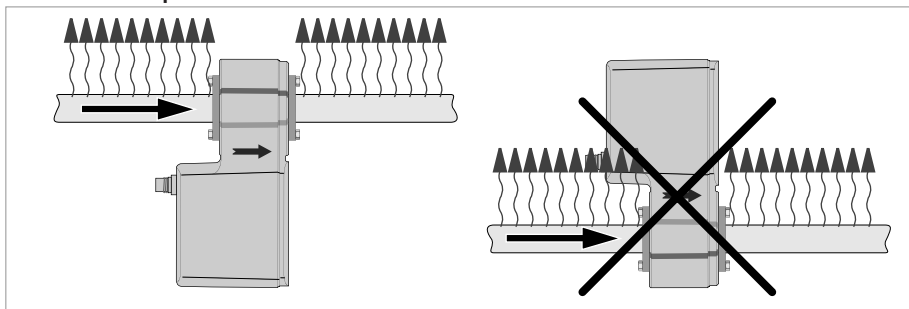


Figure 3-11: In case of hot fluids



**INFORMATION!**

Avoid installation near hot product tanks. If possible, try to insulate the flowmeter from radiant heat sources.



**CAUTION!**

On high temperature pipes and where temperatures exceed 100°C, provide facilities to compensate for longitudinal expansion of pipeline (due to heat-up). Use flexible pipe elements (e.g. elbows).

## 4.1 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!



**WARNING!**

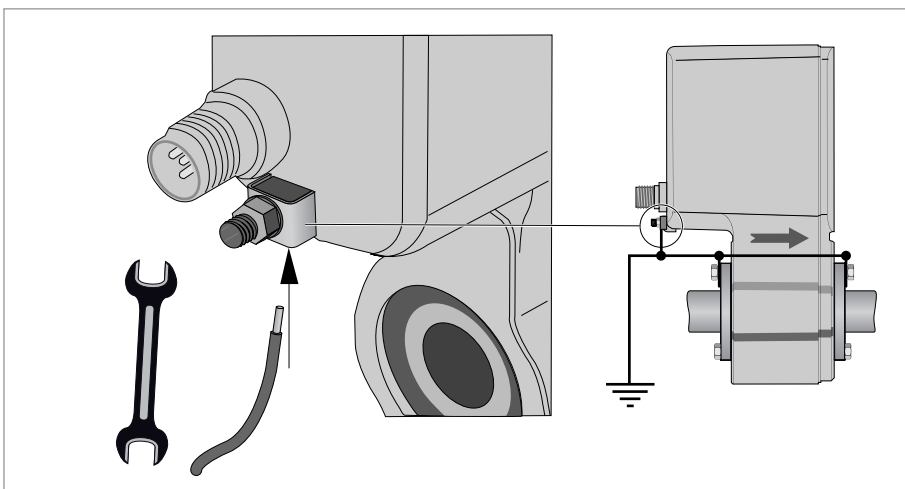
Observe without fail the local occupational health and safety regulations. Any work done on the electrical components of the measuring device may only be carried out by properly trained specialists.



**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.

## 4.2 Grounding



**CAUTION!**

The grounding wire should not transmit any interference voltage. Therefore do not ground any other electrical device at the same conductor.



**CAUTION!**

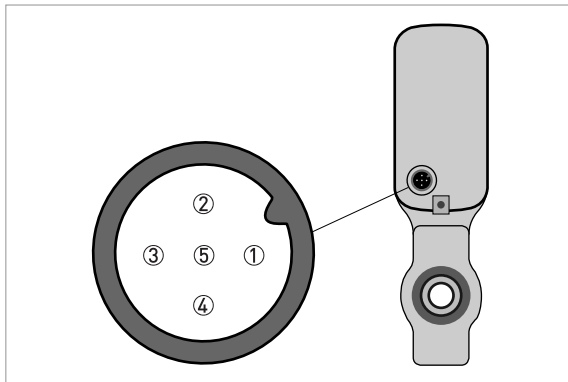
When connecting to functional extra-low voltages (24VDC), ensure that you use protective separation (PELV) according to IEC 364/IEC 536 or VDE 0100/VDE 0106.



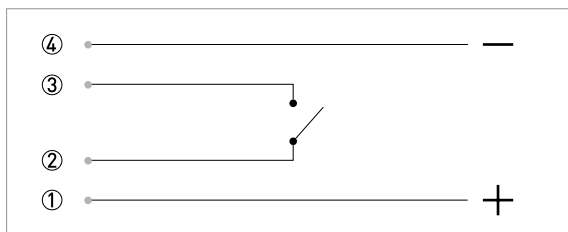
### 4.3 Electrical connection

#### 4.3.1 Cable connector M12 - 5 pin

All operating data for the BATCHFLUX 5500 C are preset at the factory. For changing the parameters and diagnostic purposes BATCHMon plus operation software can be used.



- ① +24 VDC
- ② Frequency output
- ③ Frequency output (ground)
- ④ Ground
- ⑤ To be connected for servicing only



Use one of the following attachment plug types to connect the flowmeter to a third party system:

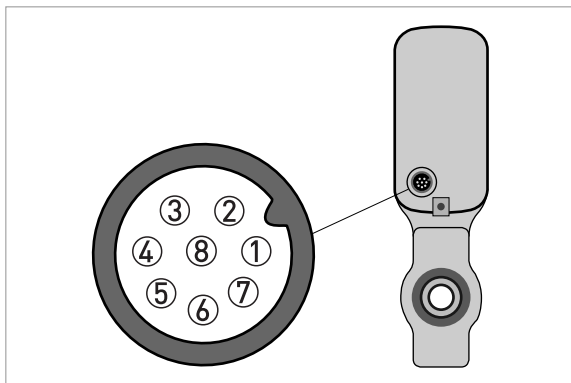
- moulded plug, straight or angle-entry form
- integrally extruded plug with cable in various lengths
- moulded plug, straight form, especially suitable for high-interference environments

Possible vendors of these plugs are:

- Binder
- Hirschmann
- Lumberg
- Amphenol
- Coninvers

### 4.3.2 Cable connector M12 - 8 pin (with status output)

The 8 pin electric connection has a status output. This status output, is configurable to customer specifications and offers either the flow direction (of the medium) or an error signal.



- ① + 24 VDC
- ② Not Connected
- ③ To be connected for servicing only
- ④ Ground
- ⑤ Frequency output
- ⑥ Ground common I/O
- ⑦ Status output
- ⑧ Not Connected

Options on status output ⑦; Off / Error / Flow direction

#### Mode

- Status output On / Off
- Flow direction
  - Default value :Flow Direction
  - Forward flow : status output; open
  - Reversed flow ; status output ; closed
- Error software / application failure

Error signaling for following events: software failure or application failure (detection of empty pipe only). No error ; status output open

## 5.1 Spare parts availability

The manufacturer adheres to the basic principle that functionally adequate spare parts for each device or each important accessory part will be kept available for a period of 3 years after delivery of the last production run for the device.

This regulation only applies to spare parts which are subject to wear and tear under normal operating conditions.

## 5.2 Availability of services

The manufacturer offers a range of services to support the customer after expiration of the warranty. These include repair, maintenance, technical support and training.



### **INFORMATION!**

*For more precise information, please contact your local sales office.*

## 5.3 Returning the device to the manufacturer

### 5.3.1 General information

This device has been carefully manufactured and tested. If installed and operated in accordance with these operating instructions, it will rarely present any problems.



### **CAUTION!**

*Should you nevertheless need to return a device for inspection or repair, please pay strict attention to the following points:*

- *Due to statutory regulations on environmental protection and safeguarding the health and safety of our personnel, manufacturer may only handle, test and repair returned devices that have been in contact with products without risk to personnel and environment.*
- *This means that the manufacturer can only service this device if it is accompanied by the following certificate (see next section) confirming that the device is safe to handle.*



### **CAUTION!**

*If the device has been operated with toxic, caustic, flammable or water-endangering products, you are kindly requested:*

- *to check and ensure, if necessary by rinsing or neutralising, that all cavities are free from such dangerous substances,*
- *to enclose a certificate with the device confirming that it is safe to handle and stating the product used.*

## 5.3.2 Form (for copying) to accompany a returned device

Company:		Address:	
Department:		Name:	
Tel. no.:		Fax no.:	
Manufacturer's order no. or serial no.:			
The device has been operated with the following medium:			
This medium is:	water-hazardous		
	toxic		
	caustic		
	flammable		
	We checked that all cavities in the device are free from such substances.		
	We have flushed out and neutralized all cavities in the device.		
We hereby confirm that there is no risk to persons or the environment through any residual media contained in the device when it is returned.			
Date:		Signature:	
Stamp:			

## 5.4 Disposal

**CAUTION!**

*Disposal must be carried out in accordance with legislation applicable in your country.*

## 6.1 Measuring principle

An electrically conductive fluid flows inside an electrically insulated pipe through a magnetic field. This magnetic field is generated by a current, flowing through a pair of field coils. Inside of the fluid, a voltage  $U$  is generated:

$$U = v * k * B * D$$

in which:

$v$  = mean flow velocity

$k$  = factor correcting for geometry

$B$  = magnetic field strength

$D$  = inner diameter of flow meter

The signal voltage  $U$  is picked off by electrodes and is proportional to the mean flow velocity  $v$  and thus the flow rate  $q$ . A signal converter is used to amplify the signal voltage, filter it and convert it into signals for totalising, recording and output processing.

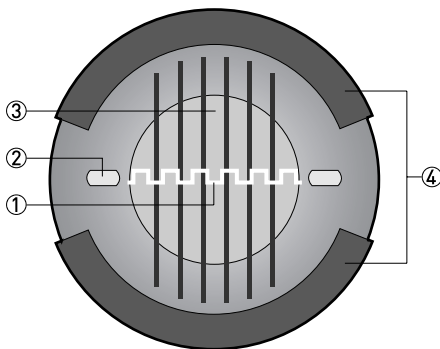


Figure 6-1: Measuring principle

- ① Induced voltage (proportional to flow velocity)
- ② Electrodes
- ③ Magnetic field
- ④ Field coils

## 6.2 Technical data



### INFORMATION!

- The following data is provided for general applications. If you require data that is more relevant to your specific application, please contact us or your local sales office.
- Additional information (certificates, special tools, software,...) and complete product documentation can be downloaded free of charge from the website (Download Center).

### Measuring system

Measuring principle	Faraday's law
Application range	Electrically conductive fluids
<b>Measured value</b>	
Primary measured value	Flow velocity
Secondary measured value	Volume flow

### Design

Features	Tube: Zirconium oxide
	Electrodes: Fused-in cermet (DN2.5...15) / Platinum (DN25...40)
	Standard wet calibration
Modular construction	The measurement system consists of a flow sensor and a signal converter. It is only available as compact version.
Compact version	BATCHFLUX 5500 C
Nominal diameter	DN2.5...40 / 0.1...1½"
Measurement range	-12...+12 m/s / -39...+39 ft/s
<b>User interface</b>	
Operating data	Factory set to customer specification.
Human Machine Interface (HMI)	Option: BATCHMon Plus software
Cable connections	Standard; 1x M12, 5-pin connector With status output; 1x M12, 8-pin connector

## Measuring accuracy

Reference conditions	Medium: water	
	Inlet / outlet section: 10 DN / 5 DN	
	Valve closing time variation: < 1 ms	
	Flow velocity: 1 m/s, flow conditions similar to EN 29104	
	Operating pressure: 1 bar / 14.5 psi	
<b>Error limits at reference conditions for tap water, 400 µS/cm, 20°C / 68°F:</b>		
Maximum measuring error	<b>DN2.5...6:</b>	
	v ≤ 1 m/s: ±0.4% of measured value + 1 mm/s	
	v > 1 m/s: ±0.5% of measured value	
	<b>DN10...15:</b>	
	±0.2% of measured value + 1 mm/s	
	<b>DN25...40:</b>	
	v ≤ 1 m/s: ±0.2% of measured value + 1 mm/s	
v > 1 m/s: ±0.3% of measured value		
Repeatability	<b>DN2.5...6 / DN25...40:</b>	<b>Standard deviation:</b>
	Filling time 1.5...3 s:	≤ 0.4%
	Filling time 3...5 s:	≤ 0.2%
	Filling time > 5 s:	≤ 0.1%
	<b>DN10...15:</b>	<b>Standard deviation:</b>
	Filling time 1.5...3 s:	≤ 0.3%
	Filling time 3...5 s:	≤ 0.15%
	Filling time > 5 s:	≤ 0.08%
	<b>Error limits at reference conditions for hot water, 400 µS/cm, 80°C / 176°F:</b>	
Maximum measuring error	<b>DN10...15:</b>	
	±0.2% of measured value + 1 mm/s	
Repeatability	<b>DN10...15:</b>	<b>Standard deviation:</b>
	Filling time 1.5...3 s:	≤ 0.3%
	Filling time 3...5 s:	≤ 0.2%
	Filling time > 5 s:	≤ 0.1%

**Operating conditions**

<b>Temperature</b>	
Process temperature	Dependent on ambient temperature. See chapter "Temperatures".
Cleaning temperature	SIP: Maximum 1 hour at 150°C / +302°F
	CIP: Maximum 1 hour at 140°C / +284°F
Shock	≤ 3 K/s
Ambient temperature	-40...+60°C / -40...+140°F
Storage temperature	-50...+70°C / -58...+158°F
<b>Pressure</b>	
Ambient	Atmospheric
Process pressure	up to 16 bar / 232 psi for DN10...15
	up to 40 bar / 580 psi for DN2.5...6 / DN25...40
Vacuum load	0 mbara / 0 psig
<b>Chemical properties</b>	
Physical condition	Liquids
Electrical conductivity	≥ 5 μS/cm (≥ 20 μS/cm for demineralised water)
Recommended flow velocity	-12...+12 m/s / -39...+39 ft/s

**Installation conditions**

Installation	For detailed information see chapter "Installation".
Inlet run	≥ 5 DN
Outlet run	≥ 2 DN
Dimensions and weights	For detailed information see chapter "Dimensions and weights".

**Materials**

Sensor- and converter housing	Stainless steel 1.4404 / 1.4408
Measuring tube	Fused in-place
Measuring electrodes	DN2.5...15: Cermet
	DN25...40: Platinum

**Process connections**

Connection	Sandwich design
	Optional: Pressure relief groove at flange facing of the sensor
	Construction drawings of recommended counter flanges are available from download centre.



**Electrical connections**

Power supply	24 VDC ± 25%
Power consumption	≤ 3 W
Switch on current	≤ 5 A (< 100 µs) at 24 VDC
Voltage loss	Possible for a maximum of 20 ms according to NAMUR NE21.
BATCHMON Plus	For parameter setting and diagnostic purposes, communication via PC with a single device (optional)
Status output	Configurable; error, flow direction, on/off
<b>Frequency output</b>	
Type	Frequency (passive) / galvanically isolated from power supply
Function	All operating data preset at factory.
Interval	Counter gate time ≥ 1000 / [P <sub>100%</sub> [Hz]]
Frequency output	≤ 10 kHz
Pulse width at full scale value	≤ 10 Hz: 50, 100, 200 or 500 ms
	> 10 Hz: automatic, pulse width = 1 / (2 x f <sub>100%</sub> ) or symmetrical, 1:1
Passive operation	Connection of electronic or electromechanical counters.
	External voltage: ≤ 30 VDC / ≤ 24 VAC
	Load: I <sub>max</sub> ≤ 20 mA
Low flow cut-off	Threshold: 0...20%
	Hysteresis: 0...20%
	Hysteresis ≤ threshold
	Depending on customers specifications.

**Approvals and certifications**

<b>CE</b>	
	This device fulfills the statutory requirements of the EC directives. The manufacturer certifies successful testing of the product by applying the CE mark.
Electromagnetic compatibility	Directive: 2004/108/EC
	Harmonized standard: EN 61326-1: 2006
Low voltage directive	Directive: 2006/95/EC
	Harmonized standard: EN 61010: 2010
Pressure equipment directive	Directive: 97/23/EC
	Category SEP
	Fluid group 1 Production module H
<b>Other approvals and standards</b>	
Protection category acc. to IEC 529 / EN 60529	DN2.5...6 / DN25...40: IP 66/67
	DN10...15: IP 69K
Shock test	IEC 60068-2-27
Vibration test	IEC 60068-2-64
Hygienic	DN2.5...15: 3A
	FDA approved materials

### 6.3 Dimensions and weights

DN2.5...6

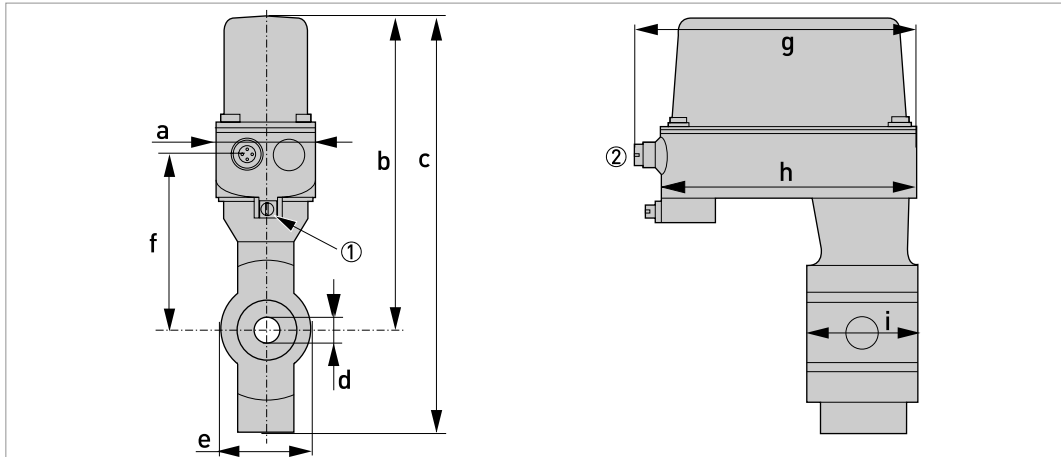


Figure 6-2: Dimensions

- ① [Grounding]
- ② M12; 5 - 8 pins connector

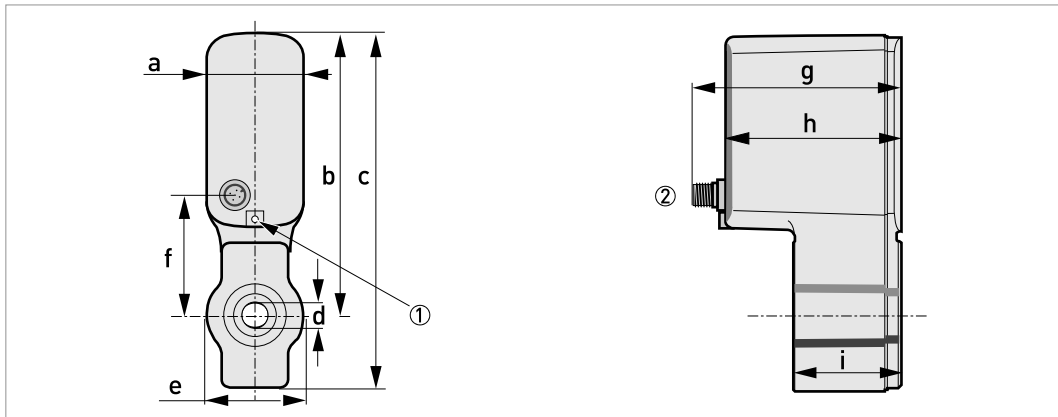
Nominal size	Dimensions [mm]									Weight [kg]
	a	b	c	d	e	f	g	h	i	
DN2.5	50	156	206	6 → 2.5	44	88	141	128	54	1.5
DN4	50	156	206	7 → 3.2	44	88	141	128	54	1.6
DN6	50	156	206	9 → 4.8	44	88	141	128	54	1.6

Note on dimension d: As the diameter reduces to the middle, the diameter is specified for the inlet and for the middle

Nominal size	Dimensions [inches]									Weight [lb]
	a	b	c	d	e	f	g	h	i	
1/10"	1.97	6.14	8.11	0.24 → 0.10	1.73	3.46	5.55	5.0	2.13	3.4
1/6"	1.97	6.14	8.11	0.28 → 0.13	1.73	3.46	5.55	5.0	2.13	3.6
1/4"	1.97	6.14	8.11	0.35 → 0.19	1.73	3.46	5.55	5.0	2.13	3.6

Note on dimension d: As the diameter reduces to the middle, the diameter is specified for the inlet and for the middle

DN10...15



- ① (Grounding)
- ② M12; 5 - 8 pins connector

Nominal size	Dimensions [mm]									Weight [kg]
	a	b	c	d	e	f	g	h	i	
DN10	50	140	179	10.5 → 8	45.4	60	106.5	88	54	1.4
DN15	50	140	179	14 → 12	45.4	60	106.5	88	54	1.4

Note on dimension d: As the diameter reduces to the middle, the diameter is specified for the inlet and for the middle

Nominal size	Dimensions [inches]									Weight [lb]
	a	b	c	d	e	f	g	h	i	
3/8"	1.97	5.51	7.05	0.41 → 0.31	1.79	2.36	4.19	3.46	2.13	3.1
1/2"	1.97	5.51	7.05	0.55 → 0.47	1.79	2.36	4.19	3.46	2.13	3.1

Note on dimension d: As the diameter reduces to the middle, the diameter is specified for the inlet and for the middle

DN25..40

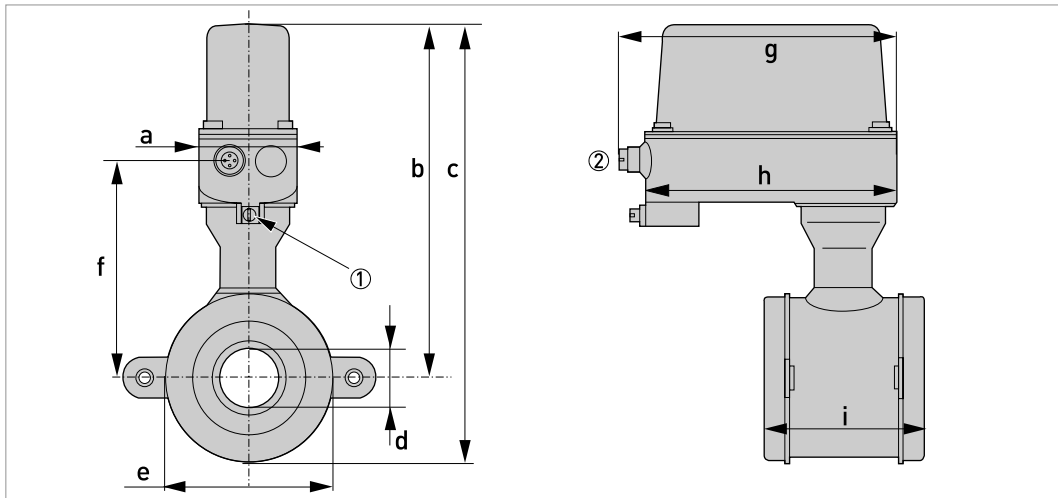


Figure 6-3: Dimensions

- ① (Grounding)
- ② M12; 5 - 8 pins connector

Nominal size	Dimensions [mm]									Weight [kg]
	a	b	c	d	e	f	g	h	i	
DN25	50	170	204	26 → 20	68	102	141	128	58	1.6
DN40	50	177	219	39 → 30	84	117	141	128	83	2.3

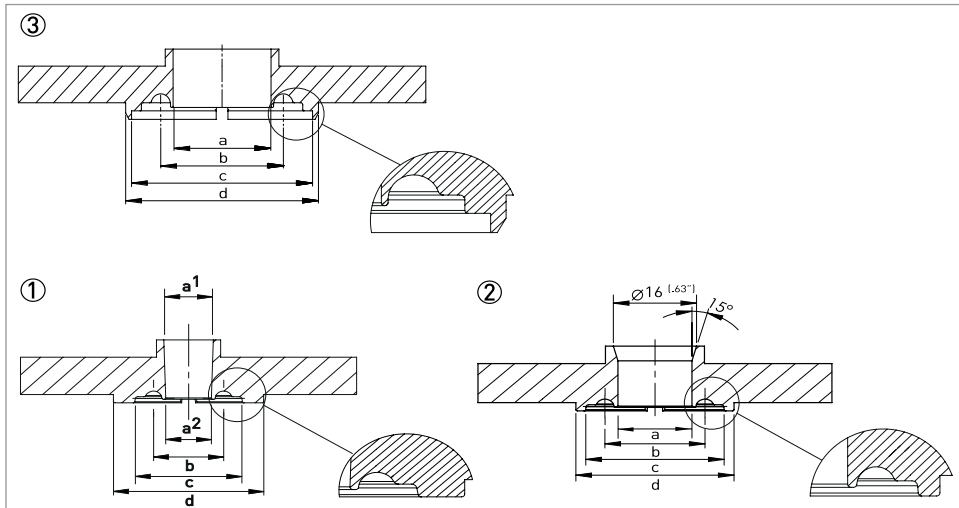
Note on dimension d: As the diameter reduces to the middle, the diameter is specified for the inlet and for the middle

Nominal size	Dimensions [inches]									Weight [lb]
	a	b	c	d	e	f	g	h	i	
1"	1.97	6.69	8.03	1.02 → 0.79	2.68	4.02	5.55	5.04	2.28	3.6
1 1/2"	1.97	6.97	8.62	1.54 → 1.18	3.30	4.61	5.55	5.04	3.27	5.1

Note on dimension d: As the diameter reduces to the middle, the diameter is specified for the inlet and for the middle

### 6.4 Counter Flanges

The BATCHFLUX 5500 can be mounted between various types of counter flanges.



#### Sizes of flanges

	DN	a [mm]	b [mm]	c [mm]	d [mm]	O-ring
Flange ①	2,5...10	* see table below	* see table below	* see table below	Ø 30.4	Special L-ring
Flange ②	15	Ø 14.2	Ø 19.2	Ø 26.6	Ø 30.4	15.47 * 3.53
Flange ③	25	Ø 25	Ø 31.3	Ø 41.2	Ø 49.2	15.47 * 3.53

Size DN	a <sup>1</sup> [mm]	a <sup>2</sup> [mm]	b [mm]	c [mm]
2,5	Ø 10	Ø 6.2	Ø 11.1	Ø 18.4
4	Ø 10	Ø 7.2	Ø 12.1	Ø 19.4
6	Ø 10	Ø 9.2	Ø 14.2	Ø 21.5
10	Ø 10	Ø 10.7	Ø 15.7	Ø 23

Note; flanges must be fully welded and surface roughness, grinded and polished ( roughness 0,8). See for more information the 3A CCE 2007-2 Coordination Bulletin.



**INFORMATION!**

The O-rings require periodic inspection and replacement. As the interval depends on process-specific variables, the length of the interval cannot be specified.

The O-rings are not part of the portfolio of KROHNE.



**INFORMATION!**

For 3A applications, O-rings must conform to the requirements of the 3A sanitary standard for Flow meters, number 28-04 Class I or Class II (max. 8% milk fat).

The used O-rings must also withstand the processing, sterilization and chemical conditions for the intended use ( for more information, contact the manufacturer)

## Reference to specific dimensions and drawing numbers

Size DN	Pcd [mm]	D [mm]	W [mm]	Drawing number
2,5	Ø 56	Ø 68	14.5	4000587801
4	Ø 56	Ø 68	14.5	4000587807
6	Ø 56	Ø 68	14.5	4000587810
10	Ø 56	Ø 68	14.5	4000587815
15	Ø 56	Ø 68	14.9	4000587818
25	Ø 84	Ø 104	16.5	4000587824
40	#	#	#	#

# Dimensions for DN40; on request

**INFORMATION!**

*Detailed construction drawings of the above sketches are available from the download centre (see table for drawing numbers)*