



OPTIFLUX 2070 Handbook

Battery powered electromagnetic flowmeter

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1.1 Intended use

The electromagnetic flowmeter OPTIFLUX 2070 has been designed for measuring potable water and water with suspended particles.

The OPTIFLUX 2070 features not only accurate flow measurement, but also continuous diagnostics in accordance with applicable standards. This self-diagnosis monitors and automatically reports improper functioning of the electronics, or faulty sensor electrodes. It reports battery charge condition and even provides a cable-break alarm.

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, incidental, punitive 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 the manufacturer 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 Display conventions

The following symbols are used to help you navigate this documentation more easily:

**WARNING!**

These warning signs must be observed without fail. Even only partial disregarding such warnings can result in serious health damage, damage to the device itself or to parts of the operator's plant.

**DANGER!**

This symbol designates safety advice on handling electricity.

**CAUTION!**

These warnings must be observed without fail. Even only partial disregarding such warnings can lead to improper functioning of the device.

**LEGAL NOTICE!**

This symbol designates information on statutory directives and standards.

**NOTE!**

This symbol designates 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.

**CONSEQUENCE**

This symbol designates 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.*

1.3.1 Transportation, handling and using instruction for batteries

**WARNING!**

The used Lithium batteries are primary power sources with high energy content. If mistreated, they may present a potential risk.

**NOTE!**

KROHNE assumes no liability for customer failure.

Please observe the following transportation, handling and using instructions:

- Transport only in special packaging with special labels and transportation documents.
- Do not short-circuit, recharge, overcharge or connect with false polarity.
- Do not expose to temperature beyond the specified temperature range or incinerate the battery.
- Do not crush, puncture or open cells or disassemble battery packs.
- Do not weld or solder to the body of the battery.
- Do not expose contents of battery to water.
- Remove the battery from device before returning to KROHNE for service or warranty reasons.
- Dispose battery packs in accordance with local regulations; where possible, recycle used batteries (see Chapter "Disposal" for further information).

2.1 Scope of delivery

- Check the packing list to check if you received all that you ordered.
- Inspect the cartons carefully for damage or signs of rough handling. Report damage to the carrier and to your local KROHNE office.

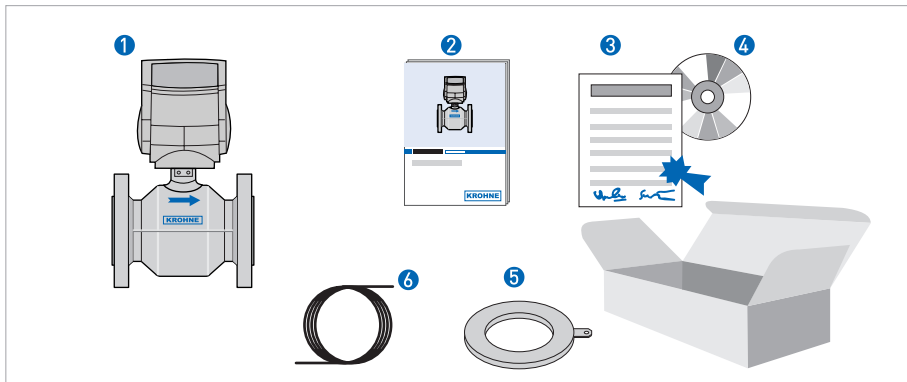


Figure 2-1: Scope of delivery

- 1 OPTIFLUX 2070 with blue protection cap
- 2 Quick Start
- 3 Factory calibration report
- 4 CD-ROM including Handbook, Quick Start, Technical datasheet
- 5 Grounding ring (optional)
- 6 Cable (remote version only)

2.2 Instrument description

Two versions are available. You received a compact version or a remote version.

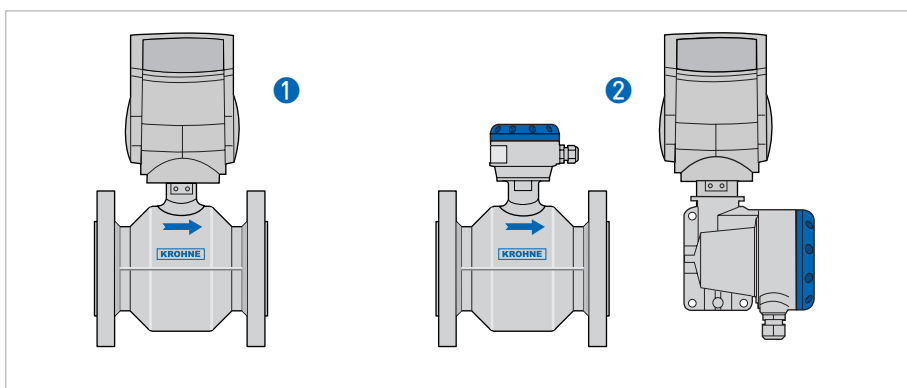


Figure 2-2: Versions

- 1 compact version
- 2 remote version

2.3 Nameplate

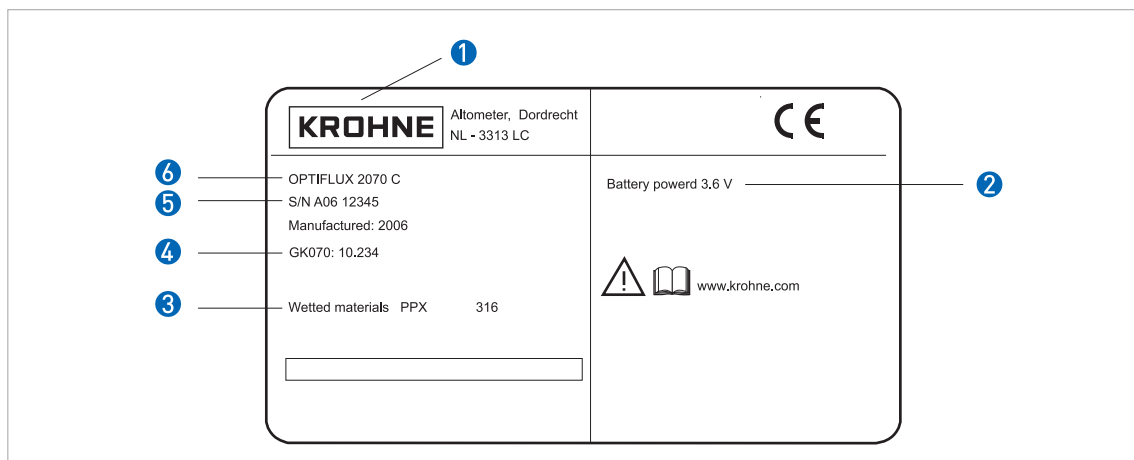


Figure 2-3: Nameplate OPTIFLUX 2070

- ① Manufacturer
- ② Voltage information
- ③ Material of wetted parts
- ④ Meter constant
- ⑤ Serial number
- ⑥ Device type



CAUTION!

Check on the device nameplate, that the device is according to your order.

3.1 Pre-installation requirements

Make sure that you have all necessary tools available:

- Allen key (4 mm)
- Philips screwdriver
- Wrench for cable glands
- Wrench for wall mounting bracket (remote version only)
- Torque wrench for installing flowmeter in pipeline

3.2 General installation notes

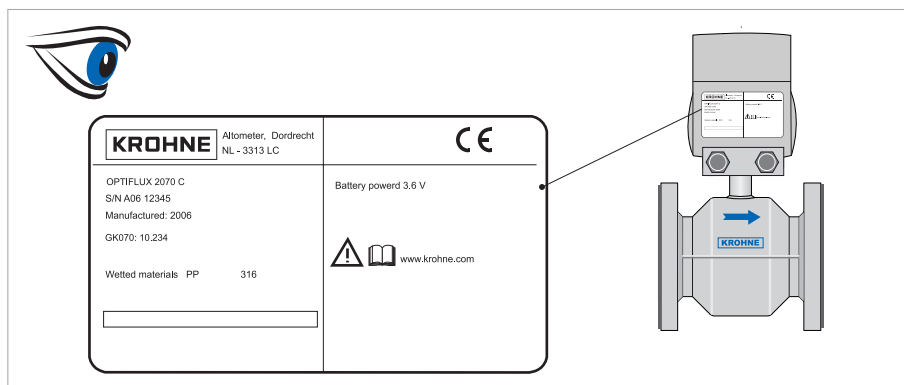


Figure 3-1: Visual check

3.3 Storage

- Store the flowmeter in its original packing
- storage temperature: -40 ... +65 °C

3.4 Transport

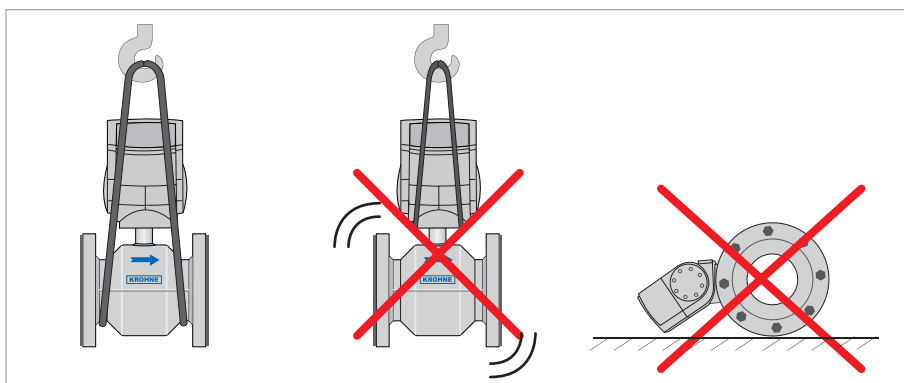


Figure 3-2: Transport

3.5 Installation requirements

3.5.1 Inlet and outlet

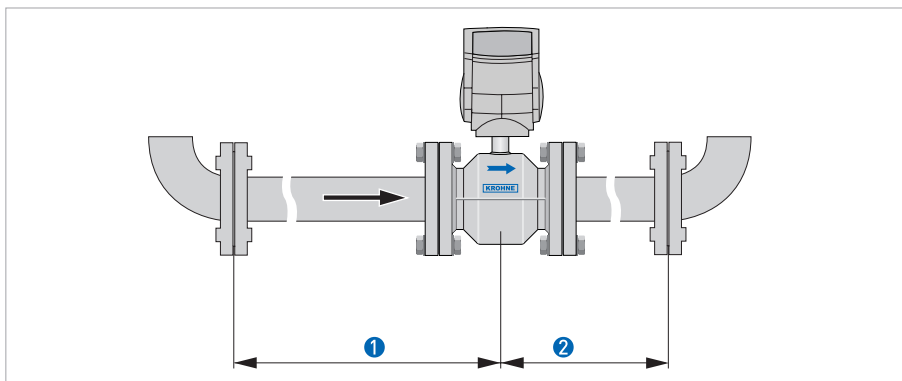


Figure 3-3: Recommended inlet and outlet

- ① $\geq 5 \text{ DN}$
- ② $\geq 2 \text{ DN}$

3.5.2 Mounting position and flange deviation

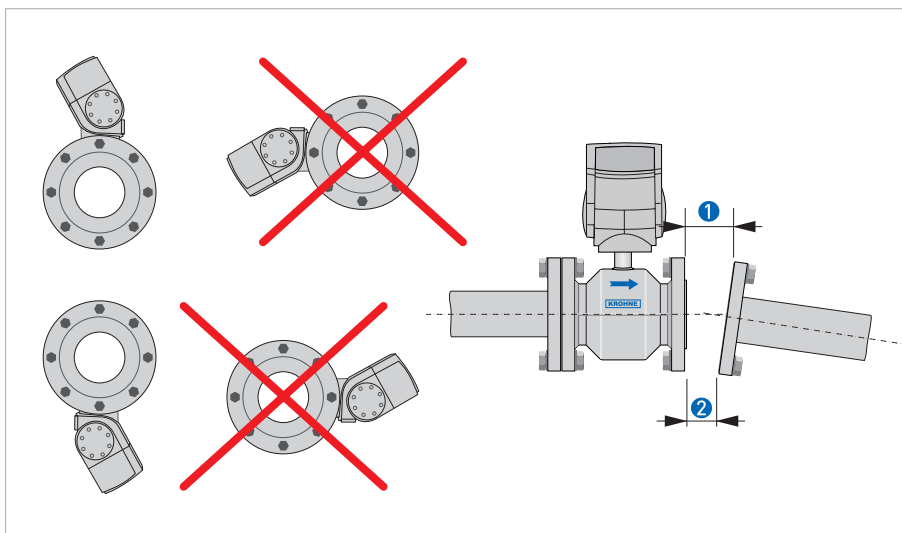


Figure 3-4: Mounting position and flange deviation

- ① L_{\max}
- ② L_{\min}

- Mount flowmeter either with converter aligned upwards or downwards.
- Install flowmeter in line with the pipe axis.
- Pipe flange faces must be parallel to each other.

**CAUTION!**

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

3.5.3 Vibration

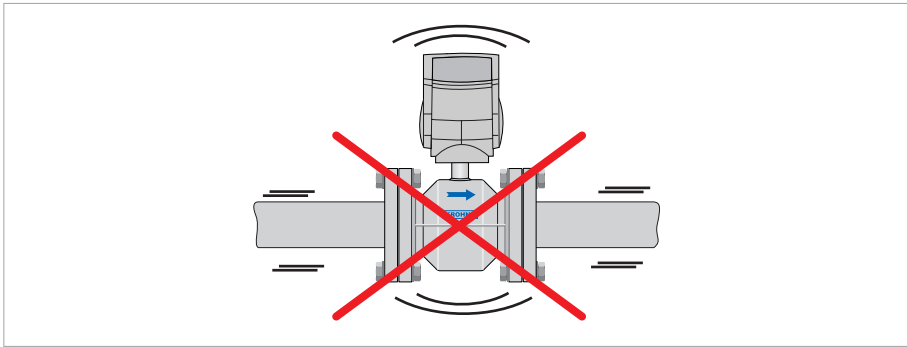


Figure 3-5: Vibration

3.5.4 Magnetic field

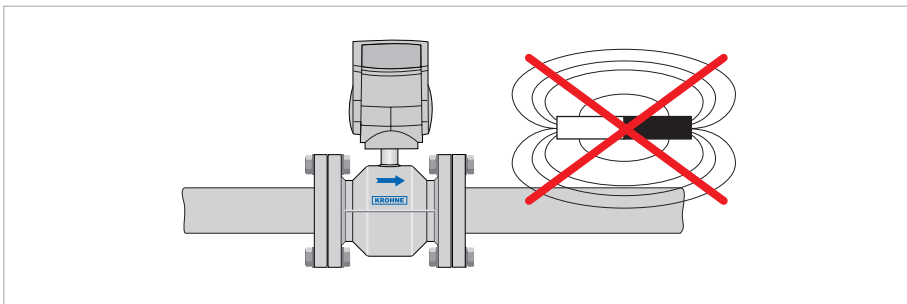


Figure 3-6: Magnetic field

3.5.5 Bends

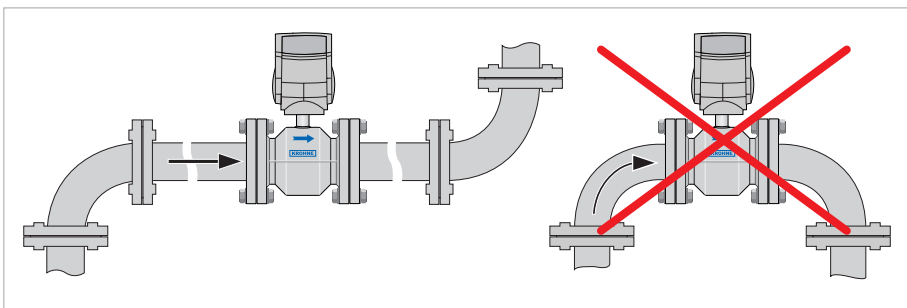


Figure 3-7: Installation in bending pipes

3.5.6 Open discharge

Install meter on a lowered section of the pipe to ensure a full pipe condition through the meter.

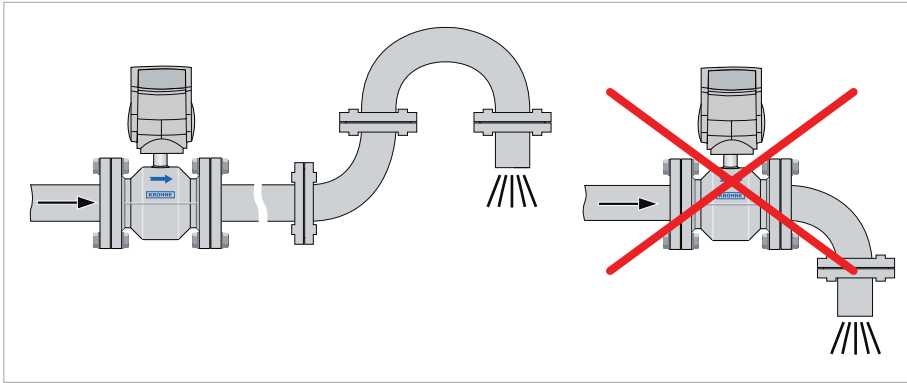


Figure 3-8: Preferable installation close to open discharge

3.5.7 T-section

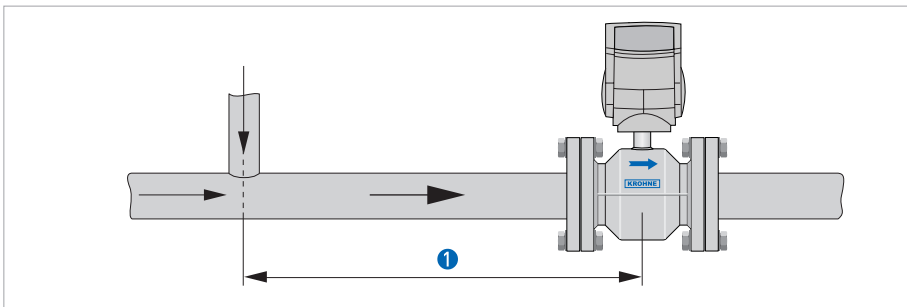


Figure 3-9: Recommended inlet for T-section installation

① ≥ 10 DN

3.5.8 Control valve

Always install control valves downstream of flowmeter in order to avoid cavitation or distortion of flow profile.

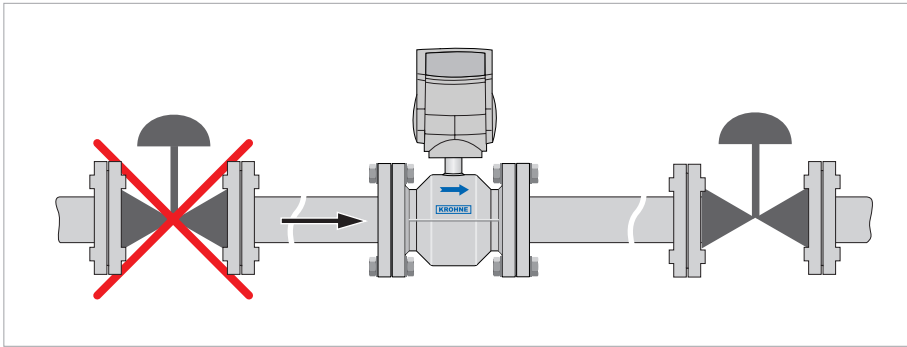


Figure 3-10: Position of control valve

3.5.9 Pump

Never install flowmeter at a pump suction side in order to avoid cavitation or flashing into the flowmeter.

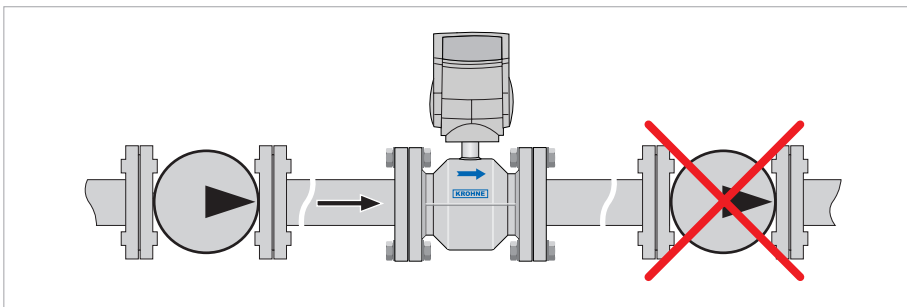


Figure 3-11: Preferable position of pump

3.5.10 Grounding

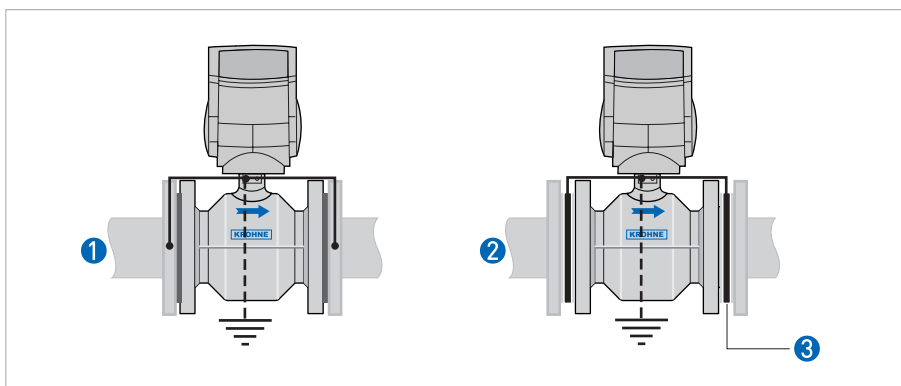


Figure 3-12: The grounding of the flowmeter

- ① Metal pipelines, not internally coated. Grounding without grounding rings!
- ② Metal pipelines with internal coating and non-conductive pipelines. Grounding with grounding rings!
- ③ Grounding rings

**CAUTION!**

The grounding of the flowmeter provides a stable and accurate measurement.

3.6 Installation

Here you find the maximum pressure and torques for the flowmeter. All values are theoretical and calculated for optimum conditions and use with carbon steel flanges.

Nominal size DN[mm]	Pressure rating	Bolts	Max. torque [Nm]	
			Polypropylene	Hardrubber
50	PN 40	4 × M 16	55	31
65	PN 16	4 × M 16	51	42
80	PN 40	8 × M 16	47	25
100	PN 16	8 × M 16	39	30
125	PN 16	8 × M 16	53	40
150	PN 16	8 × M 20	68	47
200	PN 10	8 × M 20	-	68
250	PN 10	12 × M 20	-	65
300	PN 10	12 × M 20	-	76
350	PN 10	16 × M 20	-	75
400	PN 10	16 × M 24	-	104
450	PN 10	20 × M 24	-	93
500	PN 10	20 × M 24	-	107
600	PN 10	20 × M 27	-	138

Nominal size [inch]	Flange class [lbs]	Bolts	Max. torque [Nm]	
			Polypropylene	Hardrubber
2	150	4 × 5/8"	24	23
3	150	4 × 5/8"	43	39
4	150	8 × 5/8"	34	31
5	150	8 × 3/4"	48	43
6	150	8 × 3/4"	61	51
8	150	8 × 3/4"	-	69
10	150	12 × 7/8"	-	79
12	150	12 × 7/8"	-	104
14	150	12 × 1"	-	93
16	150	16 × 1"	-	91
18	150	16 × 1 1/8"	-	143
20	150	20 × 1 1/8"	-	127
24	150	20 × 1 1/4"	-	180

Procedure to setup max. torque:

- Step 1: approx. 50% of max. torque
- Step 2: approx. 80% of max. torque
- Step 3: 100% of max. torque given in tables before

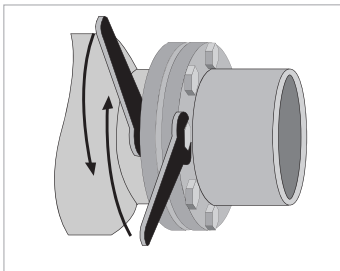


Figure 3-13: Maximum torque

3.7 Mounting of converter



NOTE!
Only applicable for remote versions

3.7.1 Mounting of IFC 070 F



- Mount IFC 070 F with mounting plate on wall or standpipe.
- Keep distance between sensor and signal converter as short as possible.
- Observe length of the delivered signal cable.

4.1 Safety instructions

**WARNING!**

Observe the regional occupational health and safety regulations without fail. Only work on the device electrics if you are appropriately trained.

**DANGER!**

Observe national installation regulations!

4.2 Terminal assignment of IFC 070

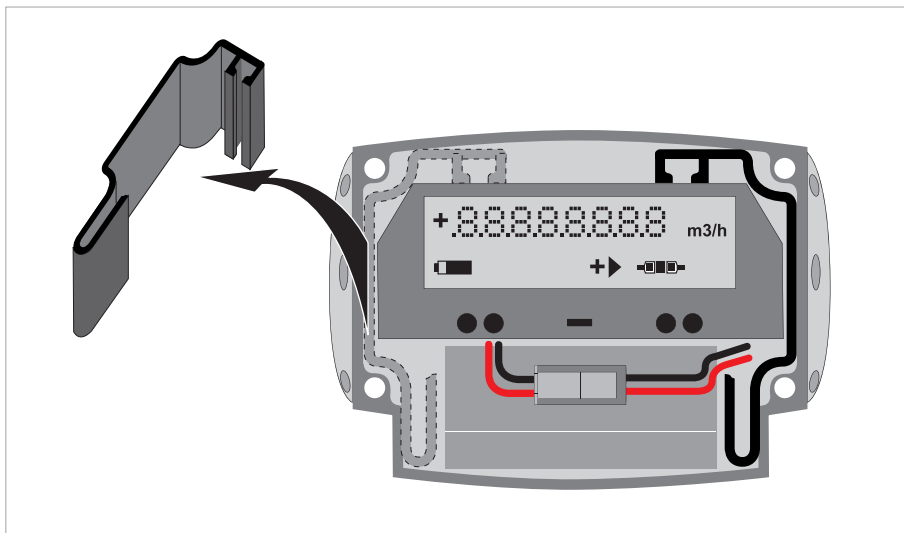


Figure 4-1: Removing side cap

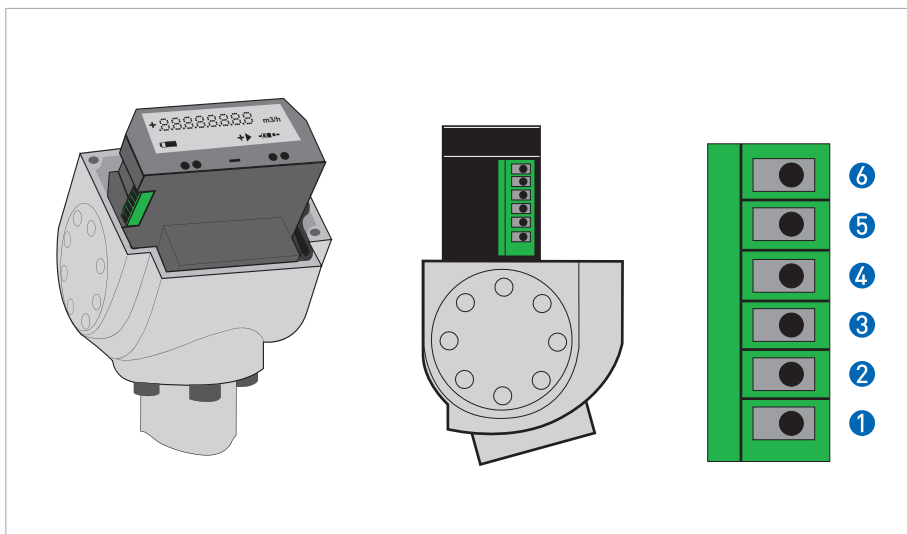


Figure 4-2: Terminal assignment

- ① Status output 1
- ② Status output 2
- ③ Not connected
- ④ Ground
- ⑤ Pulse output A
- ⑥ Pulse output B

Electrical values

- **Pulse output passive:**
 $f \leq 500 \text{ Hz}$; $I \leq 10 \text{ mA}$; $U: 5 \dots 24 \text{ VDC}$ ($P \leq 100 \text{ mW}$)
- **Status output passive:**
 $I \leq 10 \text{ mA}$; $U: 5 \dots 24 \text{ VDC}$ ($P \leq 100 \text{ mW}$)

4.3 Signal cable



CAUTION!

Always use the supplied KROHNE signal cable.



NOTE!

You only receive a signal cable if you ordered a remote version.

4.4 Cable connection for field version

4.4.1 Flow sensor side

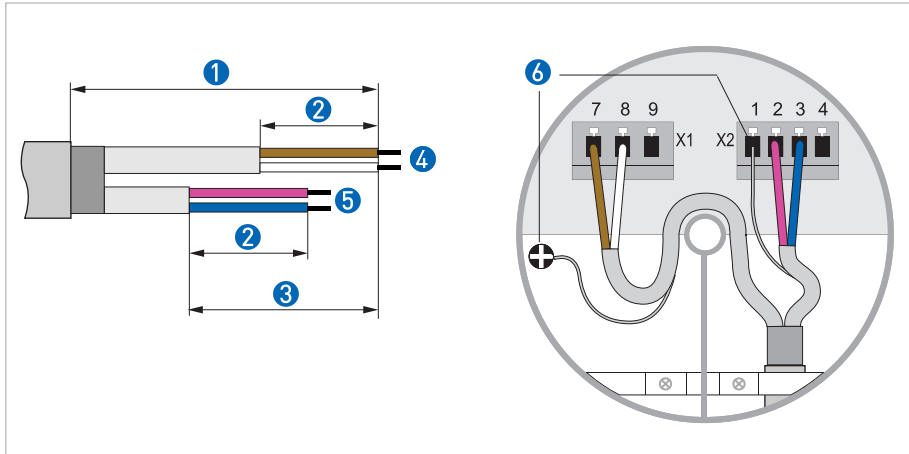


Figure 4-3: Cable connection at flow sensor side

- ① cable length: 13 cm / 5"
- ② cable length: 5 cm / 2"
- ③ cable length: 8 cm / 3"
- ④ brown + white cable, used for field current
- ⑤ purple + blue cable, used for electrode signals
- ⑥ shield (terminal 1 of connector X2 + U-clamp)



- Prepare appropriate cable lengths (①...③).
- Connect the shield to the U-clamp, the brown cable to terminal 7 and the white to terminal 8.
- Connect the shield to terminal 1, the purple cable to terminal 2 and the blue to terminal 3.

4.4.2 Converter side

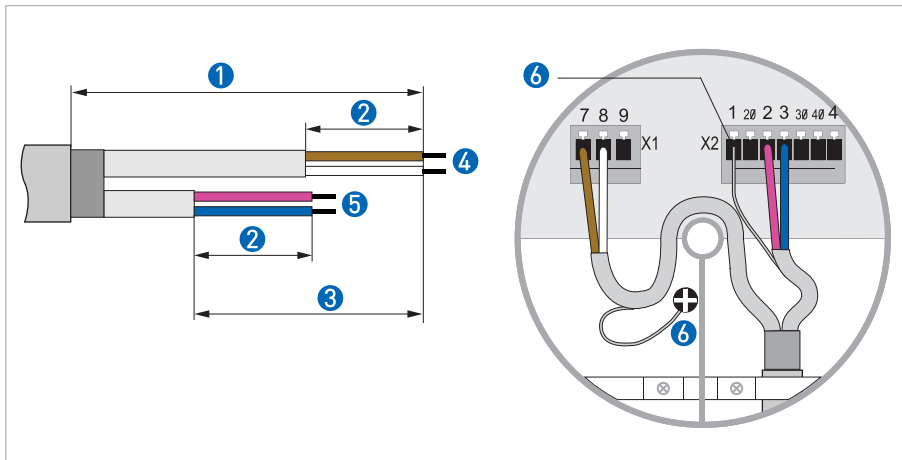


Figure 4-4: Cable connection at converter side

- ① cable length: 16 cm / 6.3"
- ② cable length: 5 cm / 2"
- ③ cable length: 10 cm / 4"
- ④ brown + white cable, used for field current
- ⑤ purple + blue cable, used for electrode signals
- ⑥ shield (terminal 1 of connector X2 + U-clamp)



- Prepare appropriate cable lengths (①...③).
- Connect the shield to the U-clamp, the brown cable to terminal 7 and the white to terminal 8.
- Connect the shield to terminal 1, the purple cable to terminal 2 and the blue to terminal 3.

5.1 Connection of battery



CAUTION!

Please connect battery before first use.

KROHNE delivers each IFC 070 converter with a disconnected battery.

5.1.1 Internal battery

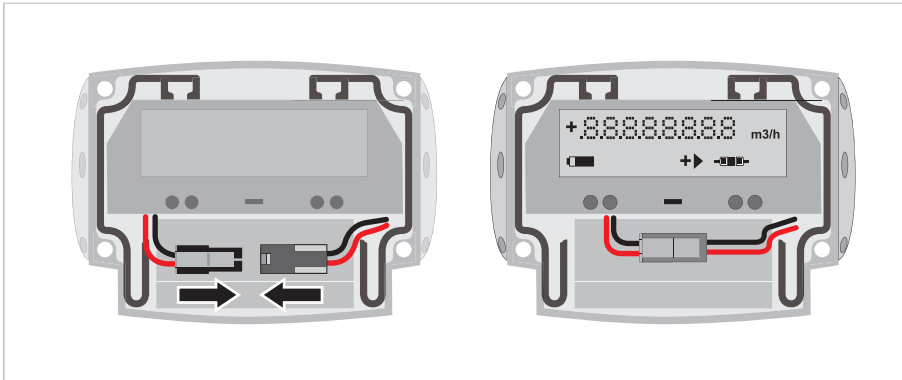


Figure 5-1: Connecting battery



- remove the blue protection cap
- remove the 4 Allen keys (4 mm)
- remove the cover
- fasten the battery connector to the internal connector in the IFC 070 converter
- check that the display lights up
- replace the cover



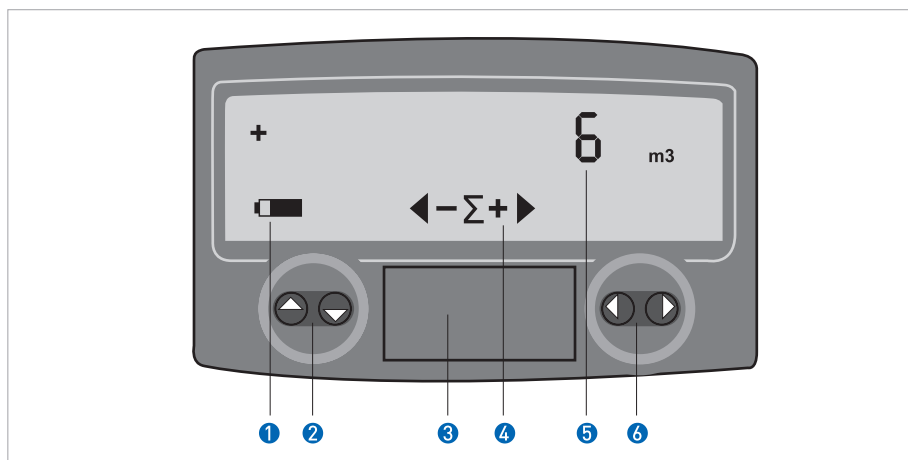
WARNING!

Make sure that the battery cable is not jammed by the cover.



- tighten the 4 Allen bolts
- replace the blue protection cap

6.1 Display and operating elements



- ① battery status
- ② optical key ▽ to navigate through the menu and to scroll through the measuring pages
- ③ reset button (only accessible with removed cover)
- ④ flow direction
- ⑤ measured value and measuring unit
- ⑥ optical key ▷ to navigate through the menu

6.2 Menu of IFC 070 converter



- to enter the menu, hold the ▽ and ▷ key for 5 seconds
- ➡ the display flashes
- press the ▷ key to enter the menu
- ➡ you see the menu number at the left (12 at the beginning) and the value at the right side of the display
- scroll through the available positions with the ▽ key to the position you want to change
- press the ▷ key to enter the value
- ➡ the value flashes
- use the ▷ and ▽ key to change the value
- hold the ▷ key for 3 seconds to confirm the new value
- to leave the programming mode, hold the ▽ key for 3 seconds to store the new value(s). If you do not want to store the new values, do not touch any key for 60 seconds

other functions:

- display test: press ▷ key twice for 1 second
- software version: press ▷ key for 1 second

**CAUTION!**

Take care with changing menu number 13. If you set this to "1", the display locks. IF this happens:



- Remove the blue protection cap
- Remove the 4 Allen keys (4 mm)
- Remove the cover
- Press both keys together with the reset button for 6 seconds as shown in the graph below
- Use a small screwdriver for the reset button
- Display starts with the menu, beginning with menu no. 12
- Go to menu no. 13 and change 1 into 0
- Confirm this value

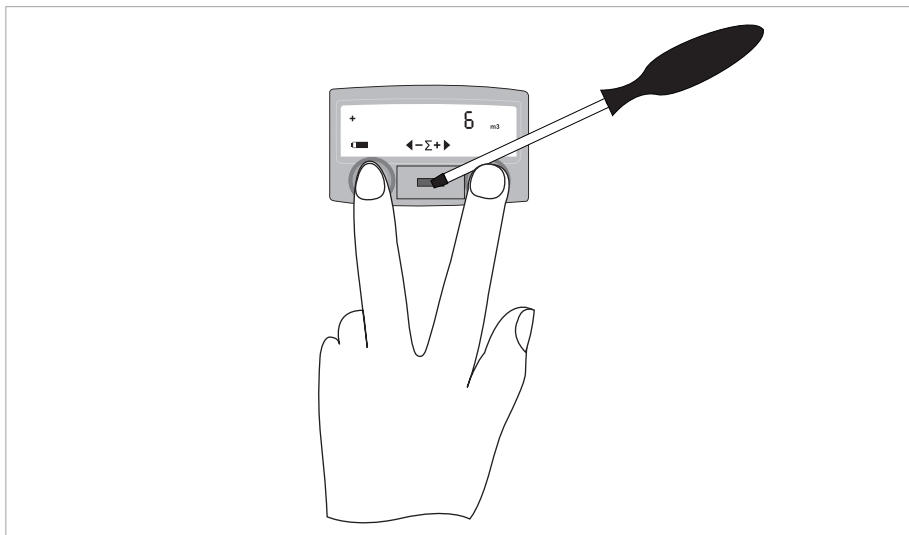


Figure 6-1: Resetting the menu

Software version 2.0.0				
Menu No.	Description	Display default	Selection list	Remarks
12	Measuring unit	x	0 = m3, 1 = USG	Customer defined
13	Fiscal metering	0	0 = No, 1 = Yes	Blocks menu
21	Meter size	xxx	Defined at factory callibration	-
22	Meter constant	xx.xxx	Defined at factory callibration	-
23	Zero offset calibration	0	Set to 1	In situ determination of zero point.
			Confirm with ">" for 3 seconds	After countdown meter switches to measuring mode. Menu no. 24 is automatically set to 1.
24	Zero selection	0	0 = factory calibration	Selection which zero point to use
			1 = measured	
25	Flow direction	0	0 = Forward, 1 = Reverse	-
26	Measuring rate	10	1, 5, 10, 15, 20 seconds	Measurement interval in seconds
27	Low flow cut off	20	0, 5, 10, 20 mm/s	Below value no measurement
28	Time constant flow reading	2	1 = fast, 2 = normal, 3 = slow	Timeconstant of display
29	Factory calibration / comm. mode	0	0 = No, 1 = Yes	For factory use only, blocks menu
30	Self check	0	0 = off, 1 = on	-
32	Simulate outputs	0	0 = off, 1 = On	1 puls / second (for cable testing)
41	Output A (pulse)	0	0 = off, 1 = on	-
42	Output B (pulse)	0	0 = off, 1 = on	-
43	Phase shift pulse output	90	90, 180 degrees offset or	
			F - r (A-forward, B-reverse flow)	
44	Pulse width	1	1, 5, 10, 50, 100 ms	-
45	Pulse value	xx.xxx	in m3 / pulse or USG / pulse	-
51	Status output 1 Self checking	0	0 = off, 1 = on	Active at instrument failure
52	Status output 1 Battery pre warning	0	0 = off, 1 = on	Active 1 year before empty battery
53	Status output 1 Battery final warning	0	0 = off, 1 = on	Active at low battery
54	Status output 1 Counter overrun	0	0 = off, 1 = on	After 99999999 counter starts at zero
55	Status output 2 Self checking	0	0 = off, 1 = on	Active at instrument failure

Software version 2.0.0				
Menu No.	Description	Display default	Selection list	Remarks
56	Status output 2 Battery pre warning	0	0 = off, 1 = on	Active 1 year before empty battery
57	Status output 2 Battery final warning	0	0 = off, 1 = on	Active at low battery
58	Status output 2 Counter overrun	0	0 = off, 1 = on	After 99999999 counter starts at zero
59	Status outputs pulsating	1	0 = off, 1 = on	Pulse of 1 ms every second
60	Show Flow Rate	0	0 = off, 1 = on	-
61	Show Counter Forward	0	0 = off, 1 = on	-
63	Show Counter Reverse	0	0 = off, 1 = on	-
65	Show Net Counter	1	0 = off, 1 = on	-
66	All counters reset	88888	Set to 00000	After reset display value is back to 88888
			Confirm with ">" for 3 seconds	
71	Counters Run/Stop	1	0 = stop, 1 = run	
72	All Errors Reset	0	Set to 1	After reset display value is back to 0
			Confirm with ">" for 3 seconds	
73	Battery type	1	1 = single, 2 = dual, 2 = external	External battery is in preparation
74	Battery pack capacity	xx	Value in Ah	-
75	Reset battery life time counter	0	Set to 1	After reset display value is back to 0
			Confirm with ">" for 3 seconds	
76	Load default settings	0	Set to 1	After reset display value is back to 0
			Confirm with ">" for 3 seconds	
77	Fiscal metering verification reading	0	0 = off, 1 = on	For legal verification only

7.1 Replacement of battery

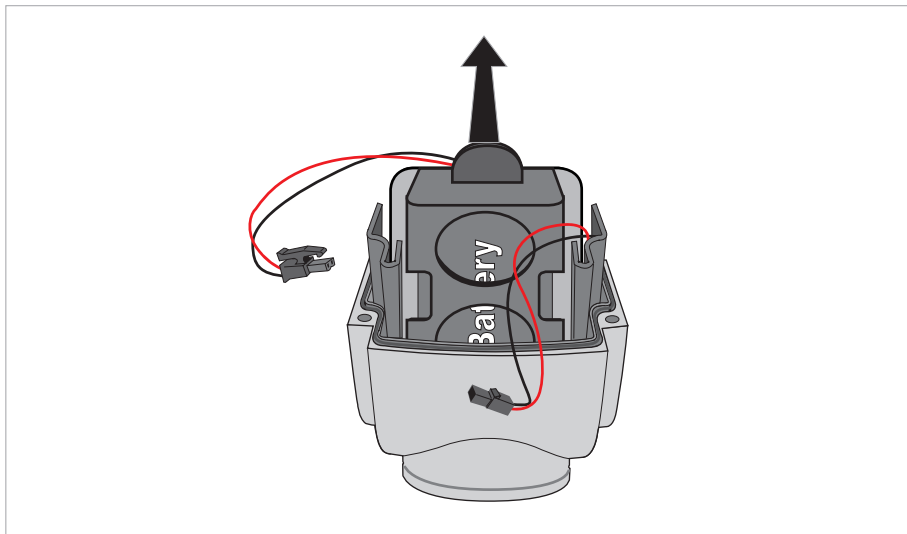


Figure 7-1: Removing battery



- Remove the blue protection cap.
- Remove the 4 Allen keys (4 mm).
- Remove the cover.
- Disconnect the connector of the battery.
- Remove the battery holder by pulling it upwards.

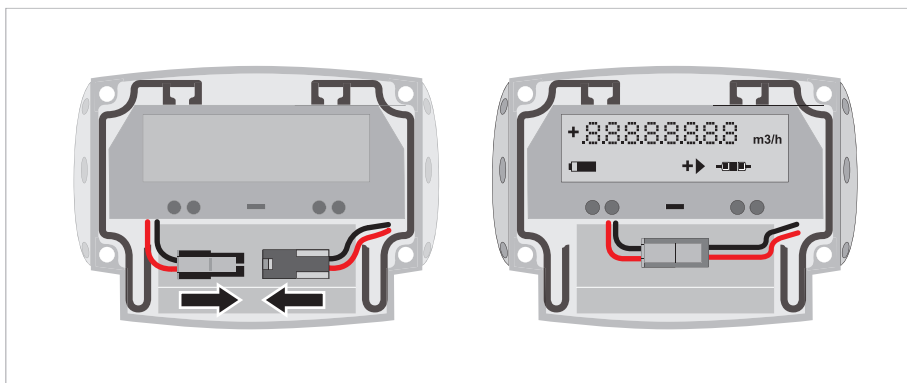


Figure 7-2: Connecting battery



- Remove the battery from the holder.
- Insert the new battery in the holder.
- Replace the holder.
- Fasten the battery connector to the internal connector in the IFC 070 converter.
- Check that the display lights up.

- Replace the cover.

**WARNING!**

Make sure that the battery cable is not jammed by the cover.



- Tighten the 4 bolts.
- Enter the programming mode, hold the ▽ and ▷ key for 5 seconds.
- ➡ The display flashes.
- Press the ▷ key to enter the menu.
- Scroll through the available positions with the ▽ key to position 74 and check the battery capacity (important for battery life indication).
- Go to position 75 and enter "1" (reset battery counter).
- ➡ Battery capacity symbol at the display should be "full".
- Hold the ▽ key for 3 seconds to confirm the new value and go back to the measuring mode.
- Replace the blue protection cap.

8.1 Technical data

OPTIFLUX 2070 flowmeter

Versions

Compact	OPTIFLUX 2070 C: IFC 070 C converter on top of OPTIFLUX 2000 flow sensor
Field	OPTIFLUX 2070 F: IFC 070 F converter separate from OPTIFLUX 2000 flow sensor

Performance

Measurement functionality	Default: totalised volume
	Selectable: actual volume flowrate, + counter totaliser, - counter totaliser
Measuring range	0...12m/s (0...39ft/s)
Max. deviation (under reference conditions) ①	±0.5% of measured flowrate value ± 2mm/s
Repeatability	±0.3% (v > 0.5 m/s / 1.5 ft/s)
Process conditions	Potable water
	Surface water / clean ground water

① See graph.

Nominal diameter	VN14						VN15							
	2"	2 1/2"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	24"
ASME [inch]														
DN [mm]	50	65	80	100	125	150	200	250	300	350	400	450	500	600

Nominal flange pressure

EN 1092-1 - PN 40	■	■	■	■	■	■	■	■	■	■	■	■	■	■
EN 1092-1 - PN 25		■	■	■	■	■	■	■	■	■	■	■	■	■
EN 1092-1 - PN 16		■		■	■	■	■	■	■	■	■	■	■	■
EN 1092-1 - PN 10							■	■	■	■	■	■	■	■
EN 1092-1 - PN 6														
ISO insertion length	■	■	■	■	■	■	■	■	■	■	■	■	■	■
ASME B16.5 - 150 lbs RF	■	■	■	■	■	■	■	■	■	■	■	■	■	■
ASME B16.5 - 300 lbs RF	■	■	■	■	■	■	■	■	■	■	■	■	■	■
ASME B16.5 - 600 lbs RF	■	■	■	■	■	■	■	■	■	■	■	■	■	■
ASME B16.5 - 900 lbs RF	■	■	■	■	■	■	■	■	■	■	■	■	■	■
ASME B16.5 - 1500 lbs RF	■	■	■	■	■	■	■	■	■	■	■	■	■	■
AWWA - class B or D FF														
JIS 10 K	■	■	■	■	■	■	■	■	■	■	■	■	■	■
JIS 20 K							■	■	■	■	■	■	■	■

Nominal diameter	VN14						VN15								
	ASME [inch]	2"	2 1/2"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	24"
DN [mm]	50	65	80	100	125	150	200	250	300	350	400	450	500	600	24"

Liner

Polypropylene	[Blue bar]														
Hardrubber	[Grey bar]														
See pressure and temperature limits for various liners															

Electrodes

Hastelloy C4	[Blue bar]														
Stainless steel 1,4571 (AISI 316 Ti)	[Grey bar]														
Titanium	[Grey bar]														

Grounding rings

Hastelloy C4	[Blue bar]														
Stainless steel 1,4571 (AISI 316 Ti)	[Grey bar]														
Titanium	[Grey bar]														

Flanges

Steel 1.0460 (C 22,8)	[Blue bar]														
Steel 1.0038 (RSt37-2)	[Blue bar]														
Stainless steel 1.4404 (AISI 316 L)	[Grey bar]														
Stainless steel 1.4571 (AISI 316 Ti)	[Grey bar]														

Materials

Measuring tube - austenitic stainless steel	[Blue bar]														
Housing (polyurethane coated) sheet steel	[Blue bar]														
Housing stainless steel	[Grey bar]														
Die-cast aluminium connection box (polyurethane coated)	[Blue bar]														
Stainless steel connection box	[Grey bar]														
Other materials on request															

Protection category

IP 66 / 67 eq. NEMA 4/4X / 6	[Blue bar]														
IP 68 eq. NEMA 6P	[Grey bar]														

Nominal diameter	VN14						VN15							
ASME [inch]	2"	2 1/2"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	24"
DN [mm]	50	65	80	100	125	150	200	250	300	350	400	450	500	600

Versions

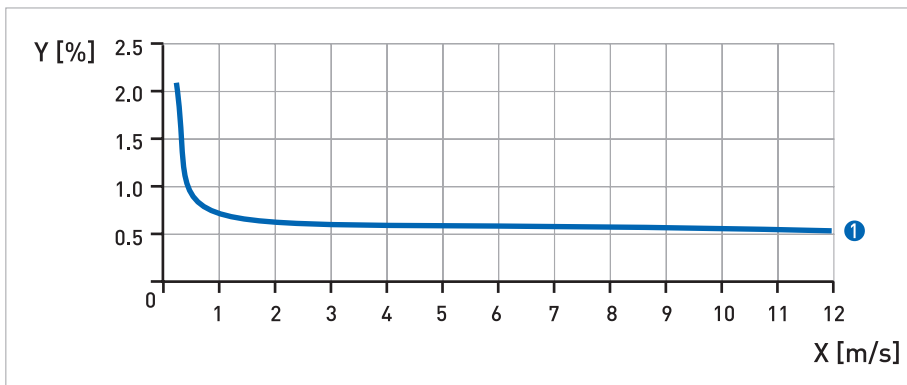
Compact	<input checked="" type="checkbox"/>
Separate	<input checked="" type="checkbox"/>

Electrical conductivity

Min. conductivity	50 µS/cm
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standard optional on request

Maximum deviation Y [%] vs flow velocity X [m/s]



1 OPTIFLUX 2070

IFC 070 flow converter

Functions

Flow direction	Bi-directional measurement
Low flow cut-off	Selectable

Design

Display	8 digits LCD
	Status indication for battery, diagnostics
Units	m ³ , US Gallons
	m ³ /h, USGPM

Cable connections

Standard	2x M20 x 1,5
Optional	1/2" NPT, PF 1/2

Materials

Converter housing	Die-cast aluminium (polyurethane coated)
-------------------	--

In- and output

Outputs	2 passive pulse outputs for remote totalising
	$f \leq 500 \text{ Hz}$; $I \leq 10 \text{ mA}$; $U: 5 \dots 24 \text{ VDC}$ ($P \leq 100 \text{ mW}$)
	2 passive status outputs
	$I \leq 10 \text{ mA}$; $U: 5 \dots 24 \text{ VDC}$ ($P \leq 100 \text{ mW}$)

Power supply

Standard	2 lithium batteries (D-cell), typical lifetime 6 years.
Alarms	Pre-alarm 1 year before battery depletion and final alarm
Battery replacement	Possible without loss of totaliser data

Approvals

Protection class	IP 66/67 (NEMA 4X/6)
------------------	----------------------

Temperature range

	Process [°C]		Ambient [°C]	
	min.	max.	min.	max.

Hardrubber

Separate flow sensor (OPTIFLUX 2000 F)	-5	80	-40	65
Compact with IFC 070 (OPTIFLUX 2070 C)	-5	80	-40	65

Polypropylene ①

Separate flow sensor (OPTIFLUX 2000 F)	-5	90	-40	65
Compact with IFC 070 (OPTIFLUX 2070 C)	-5	90	-40	65

① Polypropylene available for DN 50 - 150

	Process [°F]		Ambient [°F]	
	min.	max.	min.	max.

Hardrubber

Separate flow sensor (OPTIFLUX 2000 F)	23	176	-40	149
Compact with IFC 070 (OPTIFLUX 2070 C)	23	176	-40	149

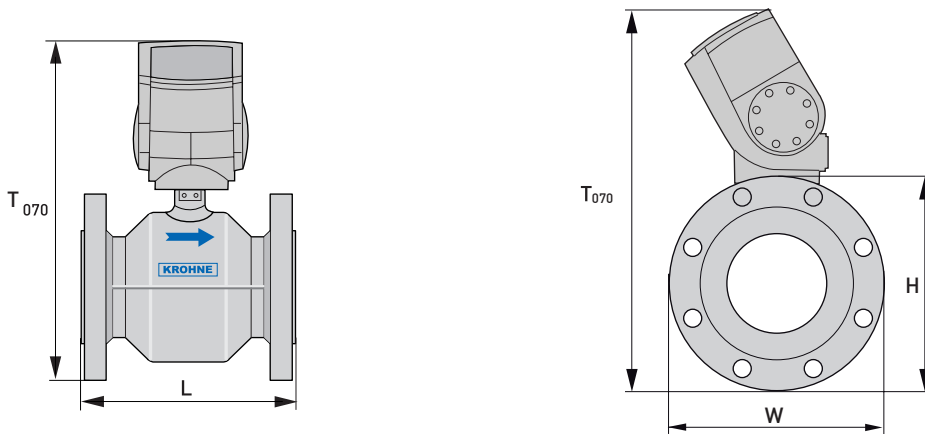
Polypropylene ①

Separate flow sensor (OPTIFLUX 2000 F)	23	194	-40	149
Compact with IFC 070 (OPTIFLUX 2070 C)	23	194	-40	149

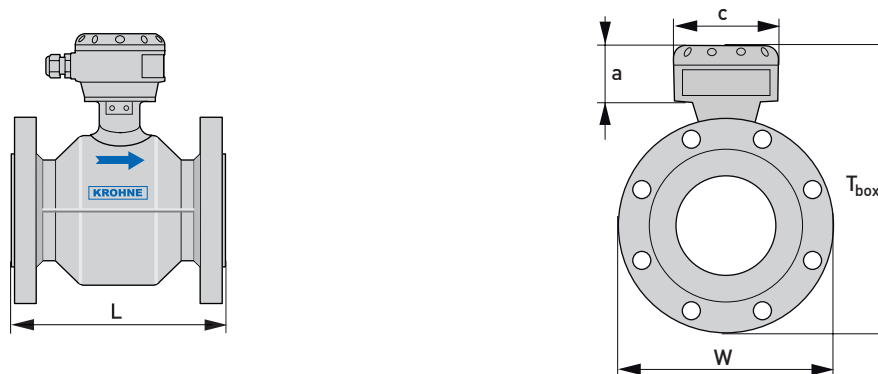
① Polypropylene available for ASME 2" - 6"

8.2 Dimensions and Weights

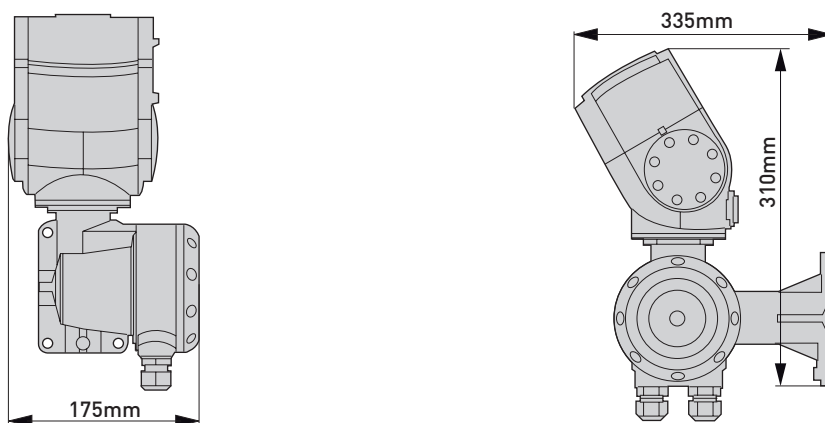
OPTIFLUX 2070 C



OPTIFLUX 2000 F



IFC 070 F



Dimensions and weights in mm and kg

Flanges acc. EN 1092-1		Dimensions [mm]					Approx. weight [kg]
DN	PN	L	H	W	T _{box}	T ₀₇₀	
50	40	200	186	165	264	356	13
65	16	200	200	185	278	370	11
80	16	200	209	200	287	379	17
100	16	250	237	220	315	407	17
125	16	250	266	250	344	436	21
150	16	300	300	285	378	470	29
200	10	350	361	340	439	531	36
250	10	400	408	395	486	578	50
300	10	500	458	445	536	628	60
350	10	500	510	505	588	680	80
400	10	600	568	565	646	738	103
450	10	600	618	615	696	788	113
500	10	600	671	670	749	841	132
600	10	600	781	780	859	951	167

Dimensions and weights in inch, psig and lbs

Flanges acc. ASME B16.5		Dimensions for 150 lbs flanges [inch]					Approx. weight [lbs]
DN	PN	L	H	W	T _{box}	T ₀₇₀	
2	150	7,9	7,05	5,98	10,12	13,75	34
3	150	7,9	8,03	7,5	11,10	14,73	42
4	150	9,8	9,49	9,0	12,56	16,19	56
5	150	9,84	10,55	10,00	13,62	17,25	65
6	150	11,8	11,69	11,0	14,76	18,39	80
8	150	13,8	14,25	13,5	17,32	20,95	100
10	150	15,75	16,30	16,00	19,37	23,00	148
12	150	19,69	18,78	19,00	21,85	25,48	212
14	150	27,56	20,67	21,00	23,74	27,37	289
16	150	31,50	22,95	23,50	26,02	29,65	369
18	150	31,50	24,72	25,00	27,80	31,42	415
20	150	31,50	26,97	27,50	30,04	33,67	497
24	150	31,50	31,38	32,00	34,45	38,08	680

Dimensions and weights in mm, bar and kg

Flanges acc. ASME B 16.5		Dimensions for 150 lbs flanges [mm]					Approx. weight [kg]
DN	PN	L	H	W	T _{box}	T ₀₇₀	
2	150	200	179	152	257	349	15
3	150	200	204	190,5	282	374	19
4	150	250	241	228,6	319	411	25
5	150	250	268	254	346	438	29
6	150	300	297	279,4	375	467	36
8	150	350	362	342,9	440	532	45
10	150	400	414	406,4	492	584	67
12	150	500	477	482,6	555	647	96
14	150	700	525	533,4	603	695	131
16	150	800	583	596,9	661	753	167
18	150	800	628	635,0	706	798	188
20	150	800	685	698,5	763	855	225
24	150	800	797	812,8	875	967	308

KROHNE Product Overview

- Electromagnetic flowmeters
- Variable area flowmeters
- Mass flowmeters
- Ultrasonic flowmeters
- Vortex flowmeters
- Flow controllers
- Level measuring instruments
- Pressure gauges
- Temperature measuring instruments
- Water solutions & analysis
- Oil and gas turnkey solutions

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