



ULTRAFLOW® 85





ULTRAFLW® 85



> 60 °C

At a media temperature higher than 60 °C, the flow sensor should be shielded from unintended contact.



230 VAC

When connecting to a 230 V supply, there is a risk of electric shock.



16/25 bar

When working on the flow sensor in the installation, there is a risk of outflow of (hot) water under pressure.



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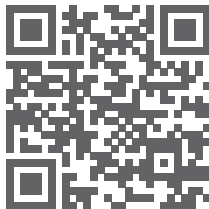
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In general



<https://www.kamstrup.com/en-en/product-centre/ultraflow-85-dn150300#tab=Resources>



<https://www.kamstrup.com/>



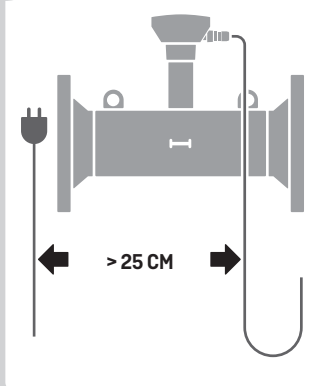
Information



E1



E2



M1



M2



5°C...55°C



ULTRAFLow® 85:

IP68



Cable Extender Box:

IP68



Pulse Transmitter/Divider: IP67



The meter's environmental and mechanical classes. The meter must be mounted indoors in the temperature range of 5 °C...55 °C. The meter's signal cables should be drawn at least 25 cm away from other installations.



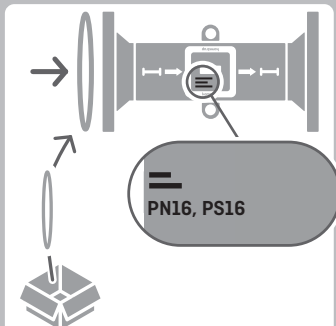
Mounting of flow sensor



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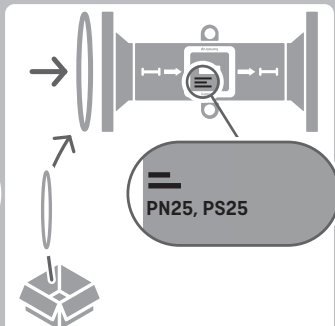
DN150 - DN300



PN16, PS16



PN25, PS25



PN16, PS16



PN25, PS25



Pressure stage of the meter. The pressure stage of the provided accessories follows the markings on the meter.



DN150 - DN300

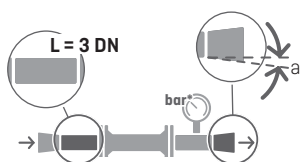


$DN_p = DN_{UF85}$



* $\geq 1.5 \text{ bar @ qp}$; $\geq 2.5 \text{ bar @ qs}$

$a \leq 8^\circ$



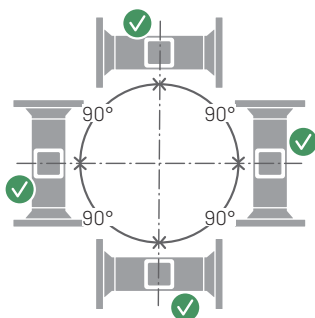
The DN measurements of the meter must fit the installation, but smooth dimension transitions are also acceptable. The static pressure at flow sensor outlet must at all times be above the minimum requirement.



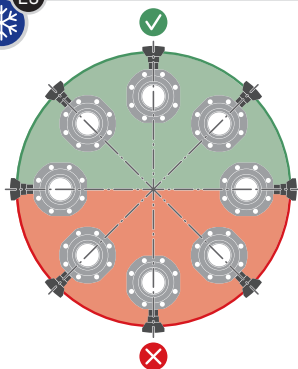
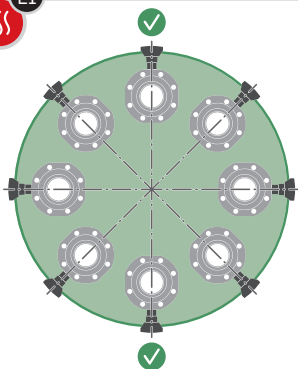
Mounting of flow sensor



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The flow sensor can be mounted horizontally, vertically or at an angle.



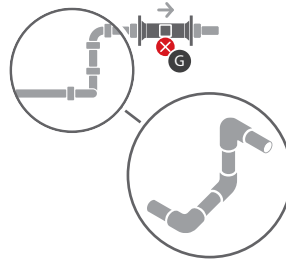
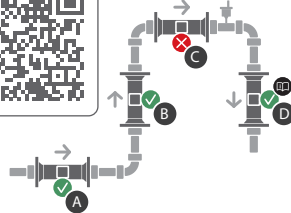
ULTRAFLow® 85 can be installed in different orientations around the pipe axis.
In case of a cooling installation the display must not be positioned downwards.



Mounting of flow sensor



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- A** Recommended position - horizontally mounted.
- B** Recommended position - vertically mounted with flow pipe upwards.
- C** Unacceptable position due to risk of air build-up.
- D** Acceptable position in closed systems - vertically mounted with flow pipe downwards.
- E** Ought not to be placed immediately after a valve, with the exception of block valves (ball valve type) which must be fully open when not used for blocking.
- F** Ought not to be placed immediately before or after a pump.
- G** Ought not to be placed immediately after a double bend in two planes.



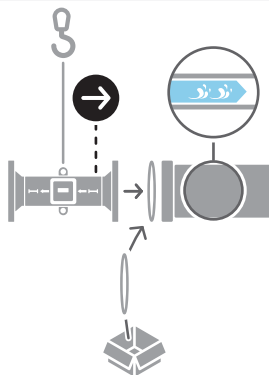
Mounting of flow sensor



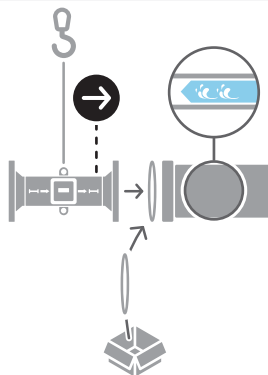
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MULTICAL® ✓



MULTICAL® 603-S&U/803-A ✓



ULTRAFLOW® 85 is prepared to measure both forward flow, indicated with arrows on the flow sensor, and reverse flow. For reverse flow consult the data sheet of ULTRAFLOW® 85.



Mounting of flow sensor

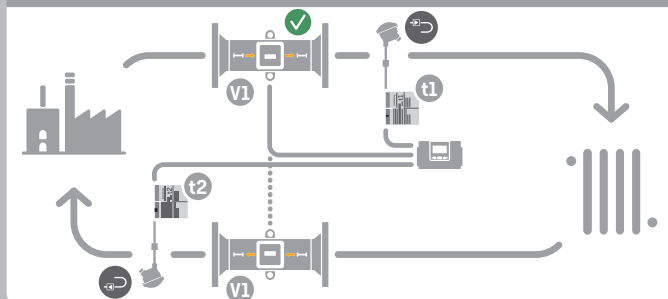


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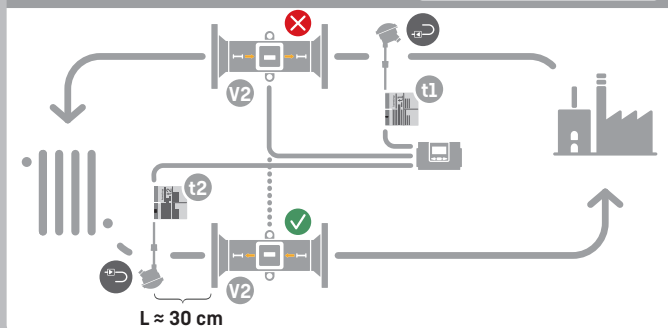


$$E1 = V1 \times (t1 - t2) \times k_{d/t2}$$

$$E3 = V1 \times (t2 - t1) \times k_{d/t2}$$



$$E2 = V2 \times (t1 - t2) \times k_{t2}$$



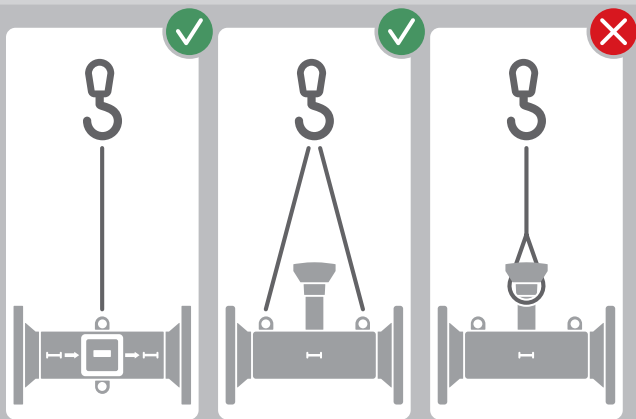
When measuring forward flow ($V1$), ULTRAFLow® 85 can be mounted in inlet and outlet. When ULTRAFLow® 85 is measuring reverse flow ($V2$), the flow sensor must be mounted in outlet next to $t2$ to obtain a correct energy calculation.



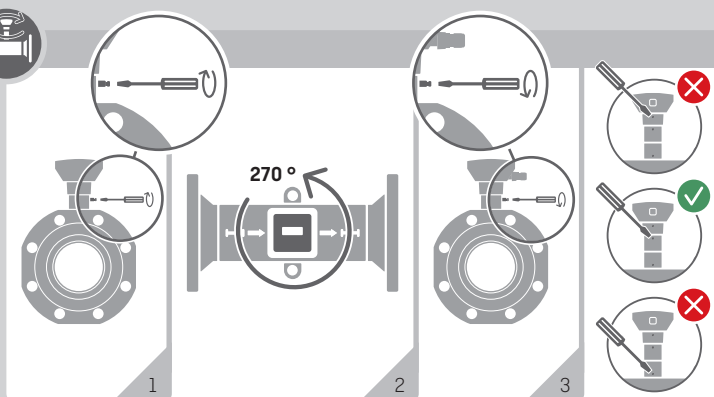
Mounting of flow sensor



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ULTRAFLow® 85 may be lifted in the lifting rings only. Do not lift on the electronics box.



The top cover including display can be rotated by 270 °.

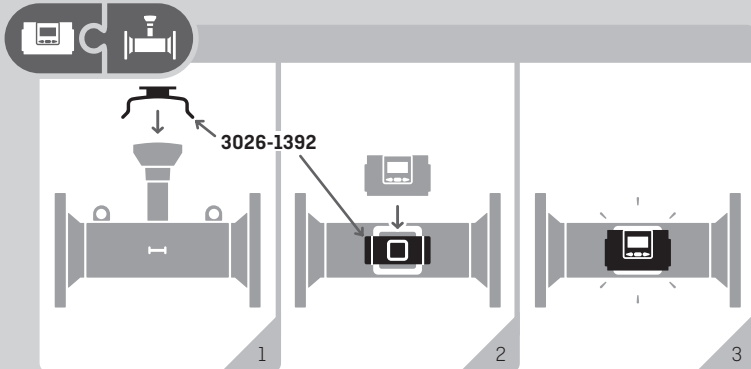
- 1 Loosen the screw on the side
- 2 Rotate the top cover
- 3 Fasten the screw again



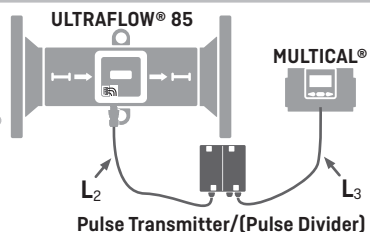
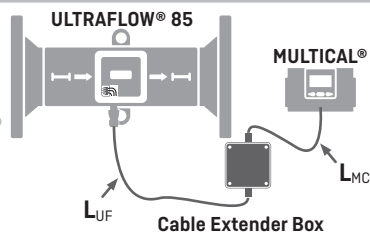
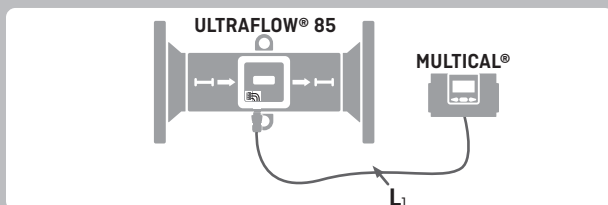
Mounting of flow sensor



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ULTRAFLOW® 85 with calculator mount bracket 3026-1392 allows direct mounting of MULTICAL® 603/803 on the top cover of ULTRAFLOW® 85.



L ₁	≤ 10 m	3 x Ø 0.5 mm ²
L ₂	≤ 10 m	3 x Ø 0.5 mm ²
L ₃	≤ 10 m	3 x Ø 0.5 mm ²
L ₃	≤ 100 m	2 x Ø 0.5 mm ²
L _{UF}	≤ 29 m	3 x Ø 0.5 mm ²
L _{MC}	≤ 1 m	3 x Ø 0.5 mm ²

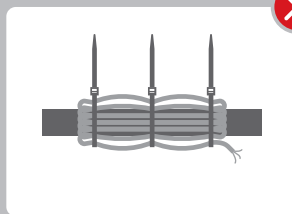
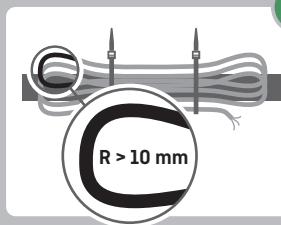
Summary of cable lengths, diameters, and connections between ULTRAFLOW® 85 and MULTICAL®. Use Cable extender box 66-99-036 and Pulse Transmitter 66-99-903-YZ-XXX/[Divider 66-99-907-YZ-XXX] for extensions. Refer to supplementary technical documentation for details.



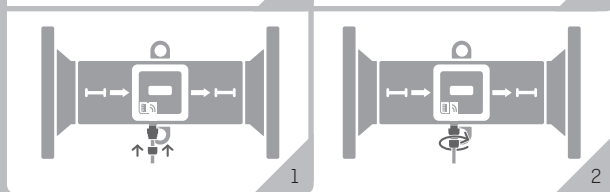
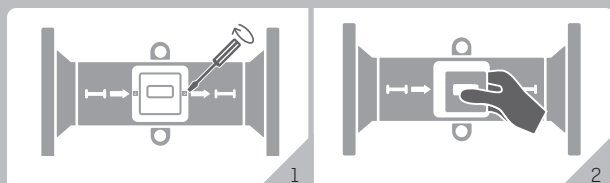
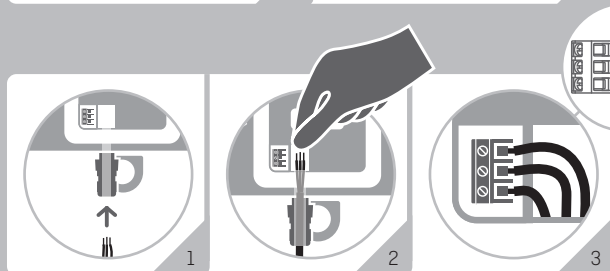
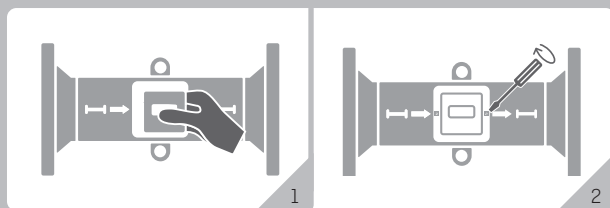
Mounting of cables



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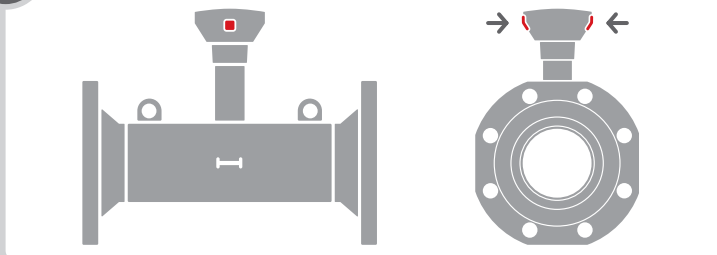
If too long cables are bent in connection with the mounting, a bending radius of at least 10 mm must be ensured.



Remove top cover and unscrew the transparent lid. Guide the signal cable through the cable screw connection. Mount the 3-wire cable in the screw terminal as indicated and remount transparent lid and top cover. The cable screw connection must be tightened.



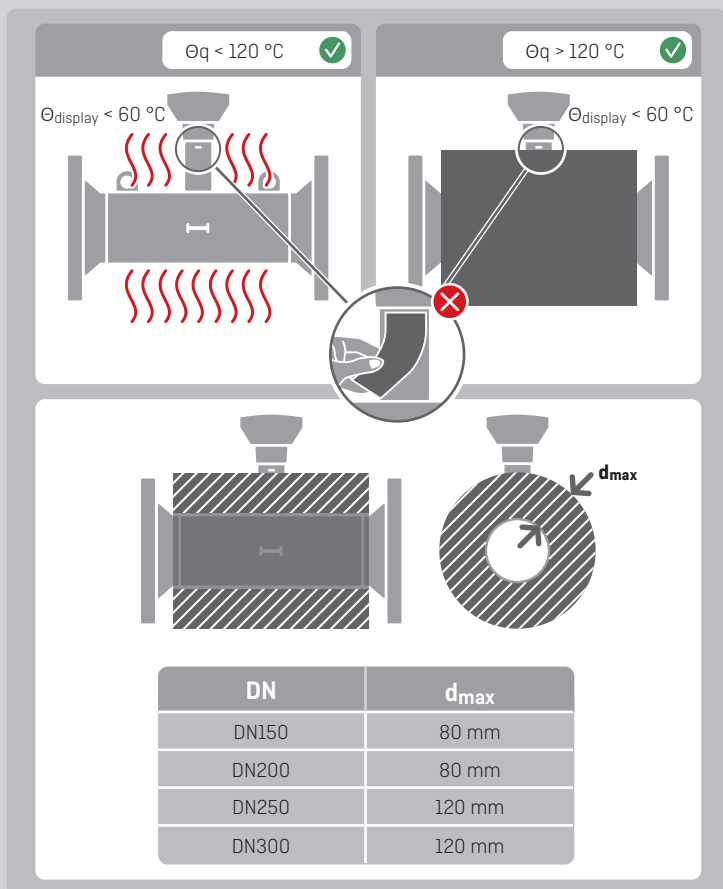
Sealings



Mounting of installation seals. To protect ULTRAFLow® 85 against fraud the top cover must be sealed with sealing labels.



Insulation



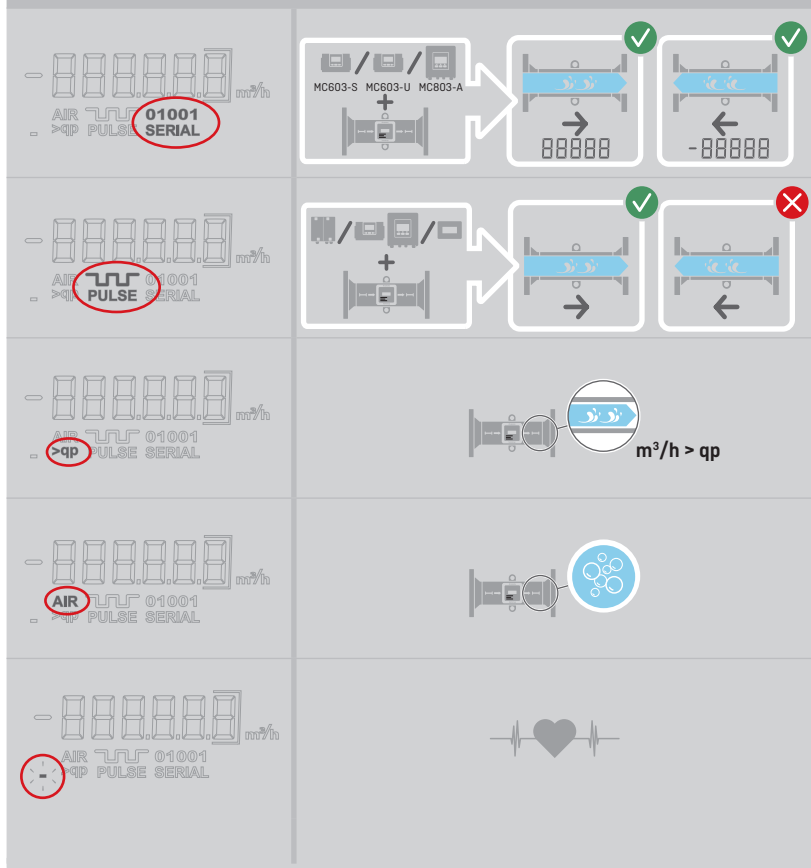
At a medium temperature $\Theta_q > 120\text{ °C}$ the flow sensor must be insulated to avoid overheating of the display. The ventilation hole must not be covered, when insulating the flow sensor. Consider the max thickness of the insulation sheet as indicated in the tabel to avoid covering of the ventilation hole.



Display

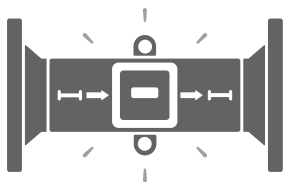


The actual flow and the status of the flow sensor is indicated in the display.

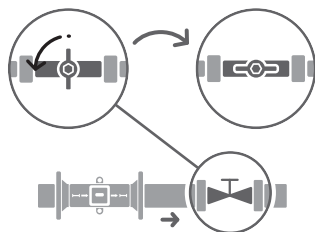




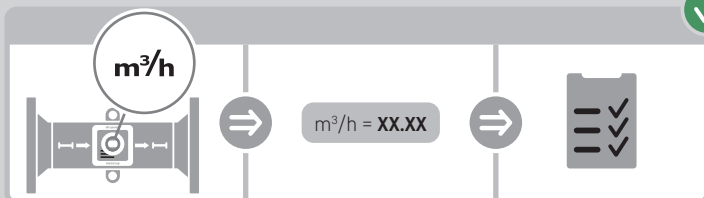
Testing of function



1



2



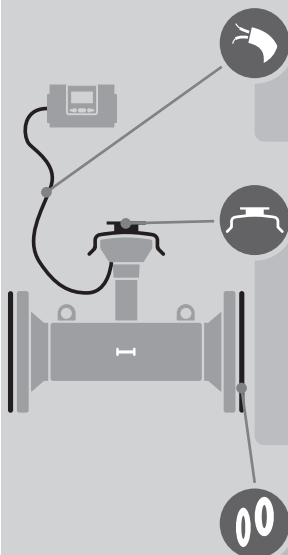
After the installation is completed, the meter is checked to ensure it functions correctly. Open thermoregulators and valves to establish water flow through the system. Then check if reliable values are shown for flow.



Accessories



<https://www.kamstrup.com/en-en/heat-solutions/meters-devices/accessories>



2.5 m silicone cable (3-wire)	5000-333	✓
5 m silicone cable (3-wire)	5000-259	✓
10 m silicone cable (3-wire)	5000-270	✓

Bracket for MULTICAL® 603/803*	3026-1392	✓
Cable Extender Box	66-99-036	✓
Pulse Transmitter	66-99-903-YZ-XXX	✓
Pulse Divider	66-99-907-YZ-XXX	✓

* + =

MC803 30-26-857

MULTICAL® 803 also
requires bracket 30-26-857

Gasket, DN150 PN16 (1 pc.)	1150-214	✓
Gasket, DN200 PN16 (1 pc.)	1150-215	✓
Gasket, DN250 PN16 (1 pc.)	1150-216	✓
Gasket, DN300 PN16 (1 pc.)	1150-164	✓
Gasket, DN150 PN25 (1 pc.)	1150-140	✓
Gasket, DN200 PN25 (1 pc.)	1150-139	✓
Gasket, DN250 PN25 (1 pc.)	1150-141	✓