

# ULTRAFLOW®

**Cooling flow sensor**

**Ultrasonic flow sensor**

**Compact design**

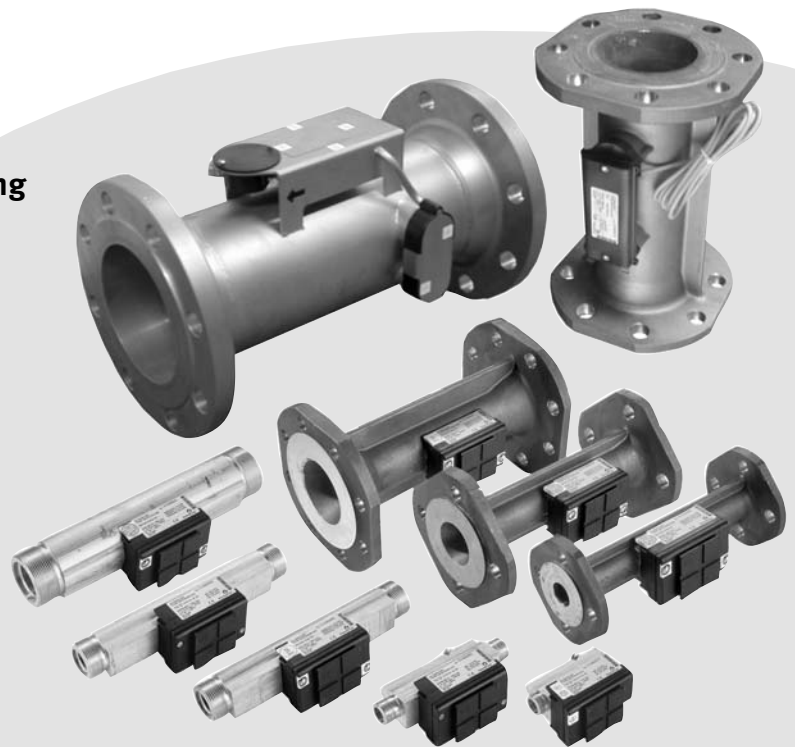
**Static meter with no moving parts**

**Large dynamic range**

**No wear**

**Exceptionally accurate**

**Longevity**



## Application

ULTRAFLOW® type 65-T is a static flow sensor based on the ultrasonic measuring principle. The prime area of application is as a volume flow sensor for use with thermal heat meters such as MULTICAL® and MAXICAL. ULTRAFLOW® type 65-T has been designed for use in cooling installations where water is used as the energy-bearing medium.

ULTRAFLOW® employs micro-processor technology and ultrasonic measuring techniques. All circuits for calculating and measuring are collected on a single board, providing compact and rational design in addition to an exceptionally high level of measuring accuracy and reliability.

The flow is measured using bidirectional ultrasonic technique based on the transit time method, with proven long-term stability and accuracy. Two ultrasonic transducers are used to send the sound signal both against and with the flow direction.

The ultrasonic signal travelling with the flow direction reaches the opposite transducer first. The time difference between the two signals can be converted to a flow velocity and thus a volume.

A multiplug, placed beneath the seal, is used during communication and calibration.

A three-wire pulse cable is used to connect ULTRAFLOW® to the calculator. This cable is used to supply the flow sensor from the calculator and also to send the signal to the calculator. The signal corresponds to the flow, or more correctly, a number of pulses proportional to the water volume flowing through the meter is transmitted.

If required a PULSE TRANSMITTER can be used to supply ULTRAFLOW®, e.g. if the distance between MULTICAL® and ULTRAFLOW® is 10 m or more.

The PULSE TRANSMITTER has a built-in supply and a galvanically separated pulse outlet.



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# Approvals

## CE-marking

ULTRAFLOW® type 65-T is marked in accordance with:

|               |   |
|---------------|---|
| EMC-directive | 89/336/EEC                                      |
| LV-directive  | 73/23/EEC (together with the PULSE TRANSMITTER) |

PE-directive

97/23/EC  
(DN50...DN100 category I,  
DN150...DN250 category II)

# Technical data

## Mechanical data

|                             |  |
|-----------------------------|--|
| Metrological class          | 2 and 3  |
| Environmental class         | Complies with DS/EN 1434 class C               |
| Ambient temperature         | 0...55°C                                       |
| Protection class            |  |
| Flow sensor                 | IP65   |
| PULSE TRANSMITTER           | IP54   |
| Temperature of medium       | 2...50°C                                       |
| Storage temp. drained meter | - 25...70°C, 60°C with fitted/supplied battery |
| Pressure stage              | PN16, PN25 flange                              |
| Time constant               | 6 s, fast response meter                       |

## Electrical data

|                                  |  |
|----------------------------------|--|
| Supply voltage                   | 3.6 V ± 10%  |
| Battery (PULSE TRANSMITTER)      | 3.65 VDC, D-Cell lithium   |
| Replacement interval             | 6 years @ $t_{BAT} < 35^{\circ}C$  |
| Power supply (PULSE TRANSMITTER) | 230 VAC + 15/- 30%, 48...52 Hz<br>24 VAC ± 30%                                       |
| Back-up supply                   | Integral super-cap eliminates operational disturbances due to short-term power-cuts. |
| Cable length, flow sensor        | Max. 10 m  |
| Cable length (PULSE TRANSMITTER) | Depends on calculator  |
| EMC data                         | Complies with DS/EN 1434 class C   |

## Flow data

| Nom. flow $q_p$<br>[m³/h] | Nom. diameter | Meter factor <sup>1)</sup><br>[pulses/l] | Dynamic range<br>$q_i:q_p$ | $q_s:q_p$  | Flow<br>@125 Hz <sup>2)</sup><br>[m³/h] | $\Delta p$<br>[bar] | Min. cut off<br>[l/h] |
|---------------------------|---------------|--|----------------------------|------------|---|---------------------|-----------------------|
| 0.6                       | DN15 & DN20   | 300                                      | 1:100                      | 2:1        | 1.5                                     | 0.04                | 2                     |
| 1.5                       | DN15 & DN20   | 100                                      | 1:100                      | 2:1        | 4.5                                     | 0.23                | 3                     |
| 3                         | DN20          | 50                                       | 1:100                      | 2:1        | 9                                       | 0.04                | 6                     |
| 3.5                       | DN25          | 50                                       | 1:100                      | 2:1        | 9                                       | 0.06                | 7                     |
| 6                         | DN25          | 25                                       | 1:100                      | 2:1        | 18                                      | 0.16                | 12                    |
| 10                        | DN40          | 15; 25                                   | 1:100                      | 2:1; 1.8:1 | 30; 18                                  | 0.07                | 20                    |
| 15                        | DN50          | 10                                       | 1:100                      | 2:1        | 45                                      | 0.15                | 30                    |
| 25                        | DN65          | 6; 10                                    | 1:100                      | 2:1; 1.8:1 | 75; 45                                  | 0.08                | 50                    |
| 40                        | DN80          | 5  | 1:100                      | 2:1        | 90                                      | 0.2                 | 80                    |
| 60                        | DN100         | 2.5                                      | 1:100                      | 2:1        | 180                                     | 0.01                | 120                   |
| 100                       | DN100         | 1.5                                      | 1:100                      | 2:1        | 300                                     | 0.03                | 200                   |
| 150                       | DN150         | 1  | 1:100                      | 2:1        | 450                                     | 0.02                | 300                   |
| 250                       | DN150         | 0.6                                      | 1:100                      | 2:1        | 750                                     | 0.055               | 500                   |
| 400                       | DN150         | 0.4                                      | 1:100                      | 2:1        | 1125                                    | 0.038               | 800                   |
| 400                       | DN200         | 0.4                                      | 1:100                      | 2:1        | 1125                                    | 0.01                | 800                   |
| 400                       | DN250         | 0.4                                      | 1:100                      | 2:1        | 1125                                    | 0.01                | 800                   |
| 600                       | DN200         | 0.25                                     | 1:100                      | 2:1        | 1800                                    | 0.022               | 1200                  |
| 600                       | DN250         | 0.25                                     | 1:100                      | 2:1        | 1800                                    | 0.022               | 1200                  |
| 1000                      | DN250         | 0.25                                     | 1:100                      | 1.8:1      | 1800                                    | 0.015               | 2000                  |

<sup>1)</sup> The meter factor can be seen on the label on the side of the meter.

<sup>2)</sup> Saturation flow. Max. pulse frequency 128 Hz is maintained at higher flow rates.

## Materials

### Wetted parts

#### ULTRAFLOW®, q<sub>p</sub> 0.6 and 1.5 m<sup>3</sup>/h

|                |   |
|----------------|---|
| Housing        | Enkotal (alpha brass)                     |
| Transducers    | AISI 316 (W.no. 1.4401)                   |
| Gaskets        | EPDM                                      |
| Reflectors     | PES 30% GF and AISI 304<br>(W.no. 1.4301) |
| Measuring pipe | PES 30% GF                                |

#### ULTRAFLOW®, q<sub>p</sub> 3 to 100 m<sup>3</sup>/h

|                 |                         |
|-----------------|-------------------------|
| Housing, gland  | Enkotal (alpha brass)   |
| Housing, flange | RG5204 (red brass)      |
| Transducers     | AISI 316 (W.no. 1.4401) |
| Gaskets         | EPDM                    |
| Measuring pipe  | PES 30% GF              |
| Reflectors      | AISI 304 (W.no. 1.4301) |

#### ULTRAFLOW®, q<sub>p</sub> 150 to 1000 m<sup>3</sup>/h

|                |                              |
|----------------|------------------------------|
| Housing        | AISI 304 (W.no. 1.4301)      |
| Transducers    | AISI 316/Enkotal             |
| Gaskets        | EPDM                         |
| Measuring pipe | Integral part of the housing |

### Electronic housing

|      |            |
|------|------------|
| Base | PBT 30% GF |
| Lid  | PC 10% GF  |

### Connection cable q<sub>p</sub> 0.6 to 100 m<sup>3</sup>/h

Silicone cable (3 x 0.5<sup>□</sup>)

## Type summary

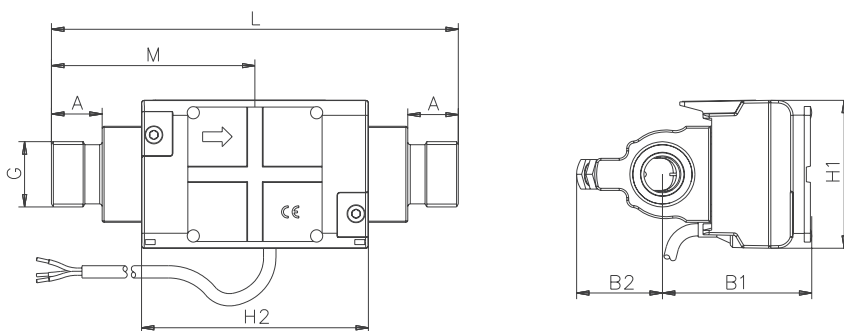
| Nom. flow q <sub>p</sub><br>[m <sup>3</sup> /h] | Size                                   |  |                |             |             |
|---|--|--|----------------|-------------|-------------|
|   |  |  |                |             |             |
| 0.6   | G <sup>3</sup> / <sub>4</sub> x 110 mm | G1 x 130 mm                            |                |             |             |
| 1.5   | G <sup>3</sup> / <sub>4</sub> x 110 mm | G <sup>3</sup> / <sub>4</sub> x 165 mm | G1 x 130 mm    | G1 x 165 mm | G1 x 190 mm |
| 3   | G1 x 190 mm                            | DN20 x 190 mm                          |                |             |             |
| 3.5   | G5/4 x 260 mm                          | DN25 x 260 mm                          |                |             |             |
| 6   | G5/4 x 260 mm                          | DN25 x 260 mm                          |                |             |             |
| 10  | G2 x 300 mm                            | DN40 x 300 mm                          |                |             |             |
| 15  | DN50 x 270 mm                          |  |                |             |             |
| 25  | DN65 x 300 mm                          |  |                |             |             |
| 40  | DN80 x 300 mm                          |  |                |             |             |
| 60  | DN100 x 360 mm                         |  |                |             |             |
| 100   | DN100 x 360 mm                         |  |                |             |             |
| 150   | DN150 x 500 mm                         |  |                |             |             |
| 250   | DN150 x 500 mm                         |  |                |             |             |
| 400   | DN150 x 500 mm                         | DN200 x 500 mm                         | DN250 x 600 mm |             |             |
| 600   | DN200 x 500 mm                         | DN250 x 600 mm                         |                |             |             |
| 1000  | DN250 x 600 mm                         |  |                |             |             |

Gland ISO 228-1

Flange EN 1092-1/-3, PN25

# Dimension sketches

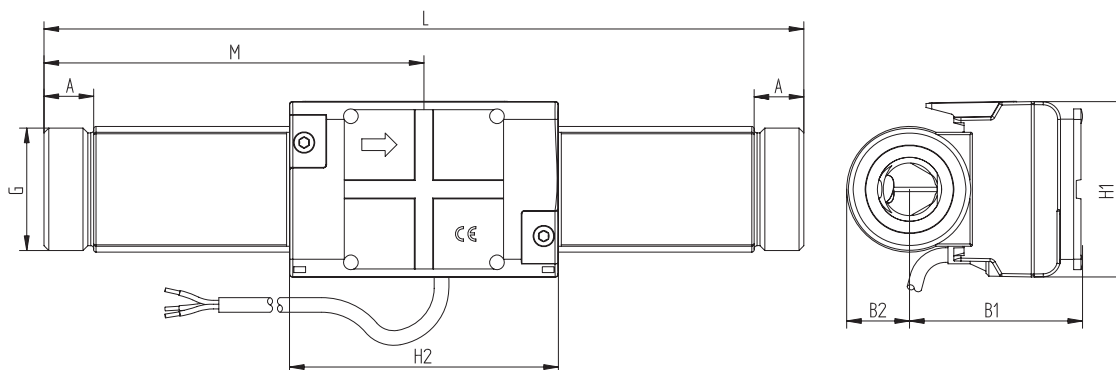
## ULTRAFLOW® type 65-T, G<sup>3</sup>/<sub>4</sub> and G1



### Gland ISO 228-1

| Thread                        | L   | M   | H2 | A    | B1 | B2 | H1 | App. weight [kg] |
|-------------------------------|-----|-----|----|------|----|----|----|------------------|
| G <sup>3</sup> / <sub>4</sub> | 110 | L/2 | 92 | 10.5 | 61 | 35 | 60 | 0.8              |
| G1                            | 130 | L/2 | 92 | 20.5 | 61 | 35 | 60 | 0.9              |
| G <sup>3</sup> / <sub>4</sub> | 165 | L/2 | 92 | 20.5 | 61 | 35 | 60 | 1.2              |
| G1                            | 165 | L/2 | 92 | 20.5 | 61 | 35 | 60 | 1.2              |
| G1 (q <sub>p</sub> 1.5)       | 190 | L/2 | 92 | 20.5 | 61 | 35 | 60 | 1.4              |
| G1 (q <sub>p</sub> 3.0)       | 190 | L/2 | 92 | 20.5 | 60 | 36 | 60 | 1.3              |

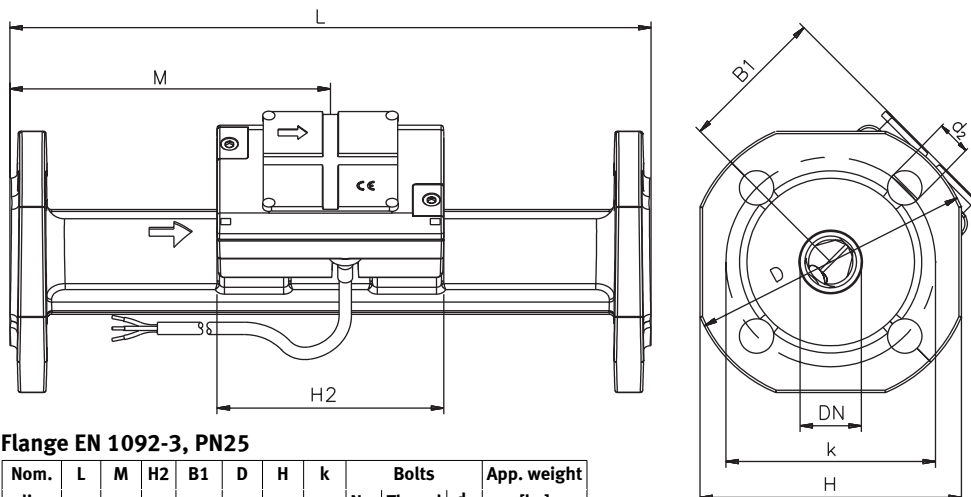
## ULTRAFLOW® type 65-T, G<sup>5</sup>/<sub>4</sub> and G2



### Gland ISO 228-1

| Thread                        | L   | M   | H2 | A  | B1 | B2 | H1 | App. weight [kg] |
|-------------------------------|-----|-----|----|----|----|----|----|------------------|
| G <sup>5</sup> / <sub>4</sub> | 260 | L/2 | 92 | 17 | 60 | 22 | 60 | 2.3              |
| G2                            | 300 | L/2 | 92 | 21 | 68 | 31 | 60 | 4.5              |

## ULTRAFLOW® type 65-T, DN20 to DN50

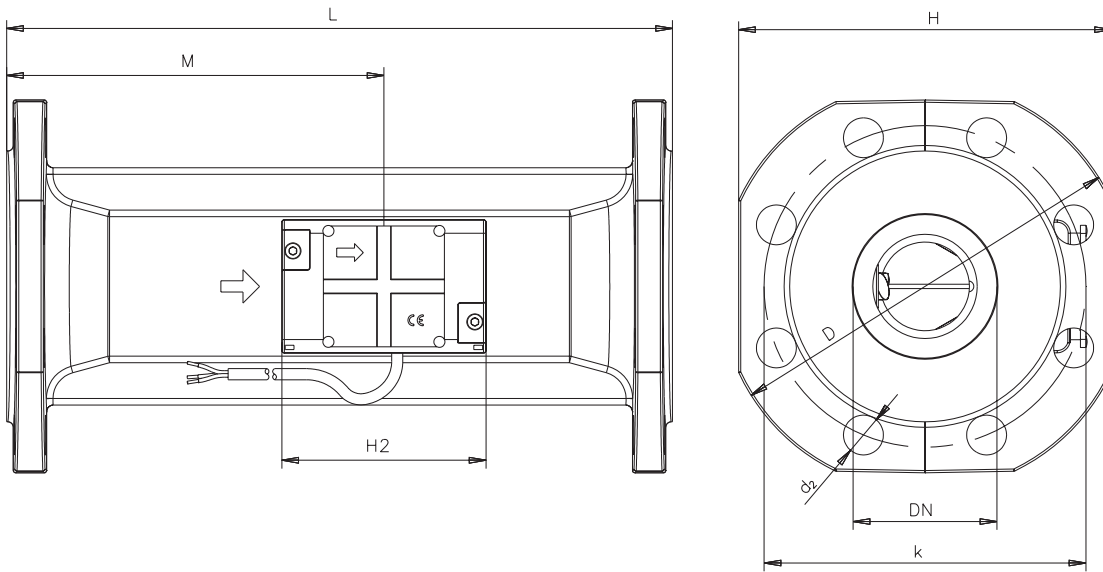


### Flange EN 1092-3, PN25

| Nom. dia. | L   | M   | H2 | B1   | D   | H   | k   | Bolts |        |                | App. weight [kg] |
|-----------|-----|-----|----|------|-----|-----|-----|-------|--------|----------------|------------------|
|           |     |     |    |      |     |     |     | No.   | Thread | d <sub>2</sub> |                  |
| DN20      | 190 | L/2 | 92 | 60   | 105 | 95  | 75  | 4     | M12    | 14             | 2.9              |
| DN25      | 260 | L/2 | 92 | 60   | 115 | 106 | 85  | 4     | M12    | 14             | 5.0              |
| DN40      | 300 | L/2 | 92 | <D/2 | 150 | 136 | 110 | 4     | M16    | 18             | 8.3              |
| DN50      | 270 | 155 | 92 | <D/2 | 165 | 145 | 125 | 4     | M16    | 18             | 10.1             |

## Dimension sketches (continued)

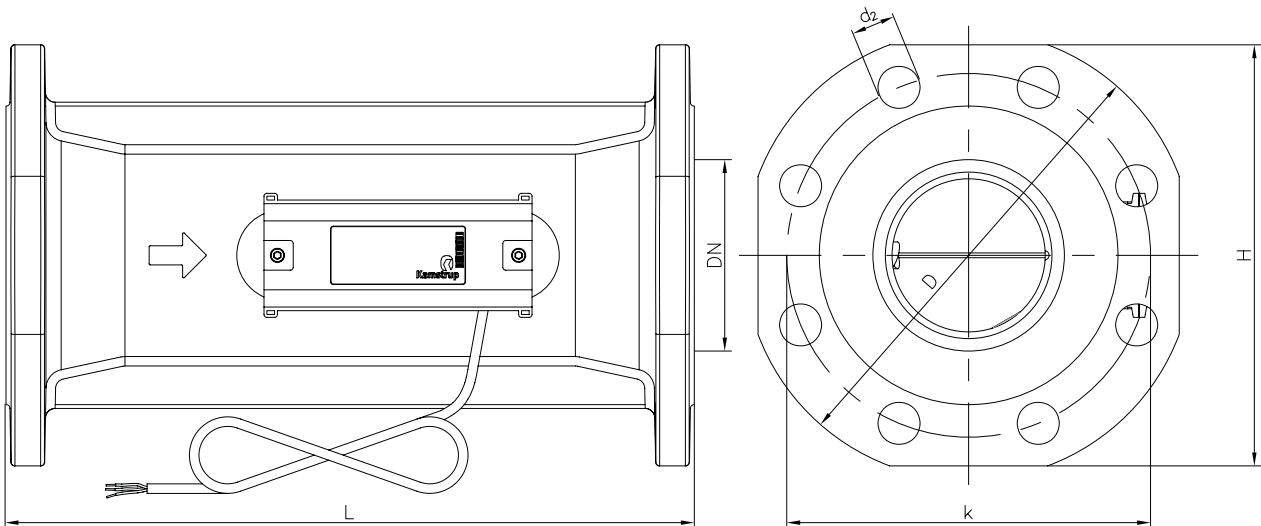
### ULTRAFLOW® type 65-T, DN65 and DN80



### Flange EN 1092-3, PN25

| Nom. dia. | L   | M   | H2 | B1   | D   | H   | k   | Bolts |        |                | App. weight [kg] |
|-----------|-----|-----|----|------|-----|-----|-----|-------|--------|----------------|------------------|
|           |     |     |    |      |     |     |     | No.   | Thread | d <sub>2</sub> |                  |
| DN65      | 300 | 170 | 92 | <H/2 | 185 | 168 | 145 | 8     | M16    | 18             | 13.2             |
| DN80      | 300 | 170 | 92 | <H/2 | 200 | 184 | 160 | 8     | M16    | 18             | 16.8             |

### ULTRAFLOW® type 65-T, DN100

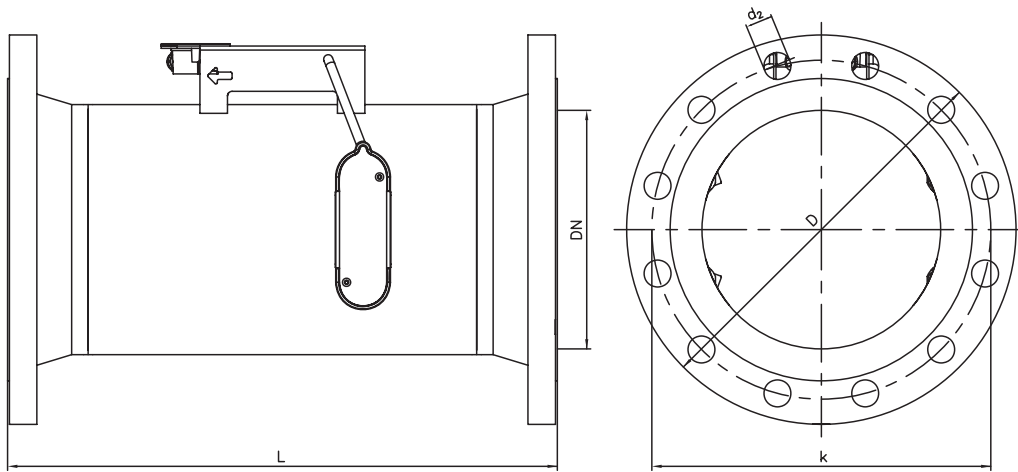


### Flange EN 1092-3, PN25

| Nom. dia. | L   | D   | H   | k   | Bolts |        |                | App. weight. [kg] |
|-----------|-----|-----|-----|-----|-------|--------|----------------|-------------------|
|           |     |     |     |     | No.   | Thread | d <sub>2</sub> |                   |
| DN100     | 360 | 235 | 220 | 190 | 8     | M20    | 22             | 25.6              |

## Dimension sketches (continued)

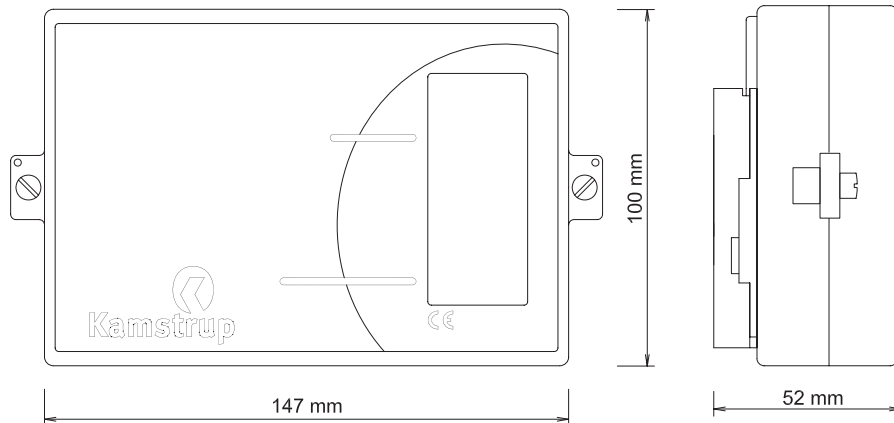
### ULTRAFLOW® type 65-T, DN150, DN200 and DN250



#### Flange EN 1092-1, PN25

| Nom. dia.  | L   | D   | k   | Bolts |        |                | App. weight [kg] |
|--|-----|-----|-----|-------|--------|----------------|------------------|
|  |     |     |     | No.   | Thread | d <sub>2</sub> |                  |
| DN150  | 500 | 300 | 250 | 8     | M24    | 26             | 37               |
| DN150<br>(q <sub>p</sub> 400 m <sup>3</sup> /h)  | 500 | 300 | 250 | 8     | M24    | 26             | 32               |
| DN200  | 500 | 360 | 310 | 12    | M24    | 26             | 47               |
| DN250  | 600 | 425 | 370 | 12    | M27    | 29.5           | 68               |
| DN250<br>(q <sub>p</sub> 1000 m <sup>3</sup> /h) | 600 | 425 | 370 | 12    | M27    | 29.5           | 65               |

#### PULSE TRANSMITTER



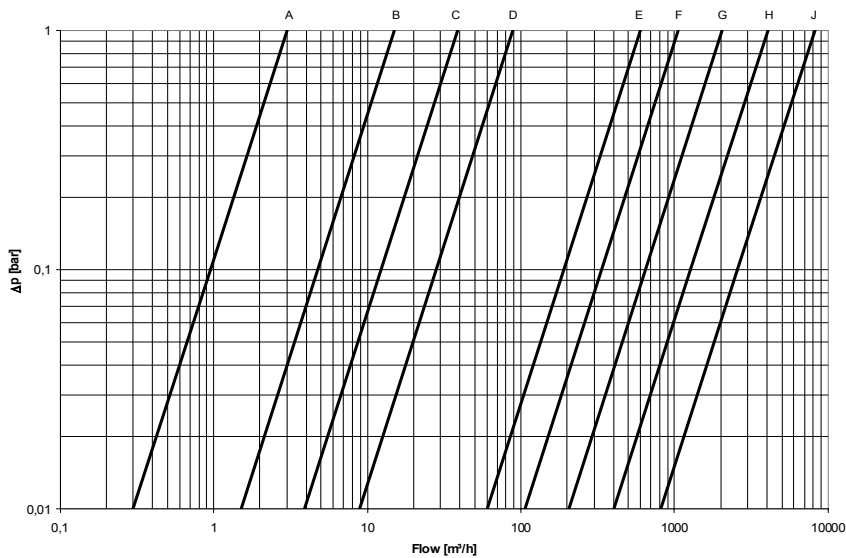
## Pressure loss

| Graph | q <sub>p</sub> [m <sup>3</sup> /h] | Nom. diameter | k <sub>v</sub> <sup>3)</sup> | Q @ 0.25 bar [m <sup>3</sup> /h] |
|-------|------------------------------------|---------------|------------------------------|----------------------------------|
| A     | 0.6 & 1.5                          | DN15 & DN20   | 3                            | 1.5                              |
| B     | 3 & 3.5 & 6                        | DN20 & DN25   | 15                           | 7.5                              |
| C     | 10 & 15                            | DN40 & DN50   | 39                           | 19                               |
| D     | 25 & 40                            | DN65 & DN80   | 89                           | 45                               |
| E     | 60 & 100                           | DN100         | 600                          | 300                              |
| F     | 150 & 250                          | DN150         | 1060                         | 530                              |
| G     | 400                                | DN150         | 2050                         | 1025                             |
| H     | 400 & 600                          | DN200 & DN250 | 4040                         | 2020                             |
| j     | 1000                               | DN250         | 8160                         | 4080                             |

<sup>3)</sup>  $q = k_v \times \sqrt{\Delta p}$

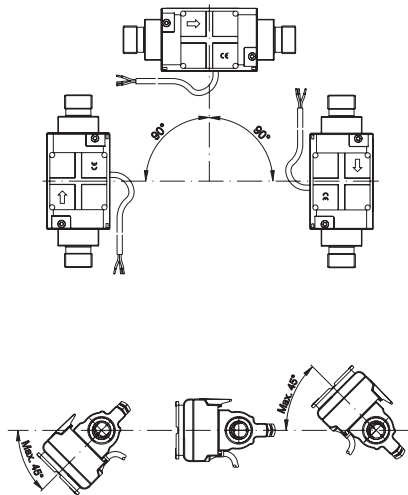
# Pressure loss graphs

$\Delta p$  ULTRAFLOW® type 65-T



## Installation

### ULTRAFLOW® ≤ DN100



ULTRAFLOW® may be installed horizontally, vertically or at an angle.

**IMPORTANT!**

With ULTRAFLOW® ≤ DN100 (100 m³/h), the electronics/plastic case must be placed to the side (with horizontal installation).

ULTRAFLOW® may be turned up to ± 45° in relation to the pipe axis.

### Straight inlet/outlet

Recommended in connection with ULTRAFLOW® class 3:

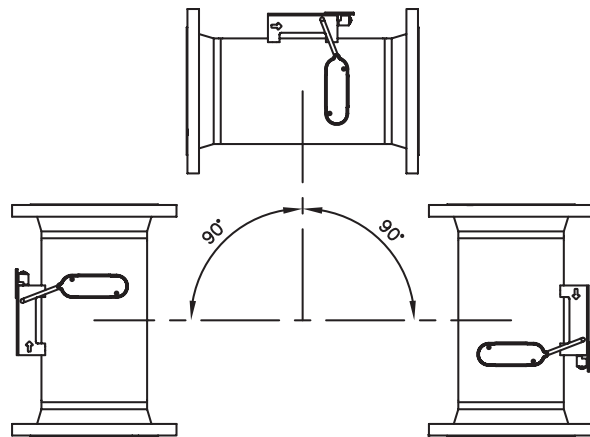
- DN15...DN20 no requirements
- DN25...DN80 3...5 x DN inlet
- DN100...DN250 10 x DN inlet and 3 x DN outlet

Recommended in connection with ULTRAFLOW® class 2:

- DN15...DN20 Min 5 x DN
- DN25...DN80 Min 10 x DN
- DN100...DN250 10 x DN inlet and 3 x DN outlet

For general information on installation see CEN report DS/CEN/CR 13582: Heat meter installation - Some guidelines for selecting, installation and operation of heat meters.

### ULTRAFLOW® ≥ DN150



ULTRAFLOW® may be installed horizontally, vertically or at an angle.

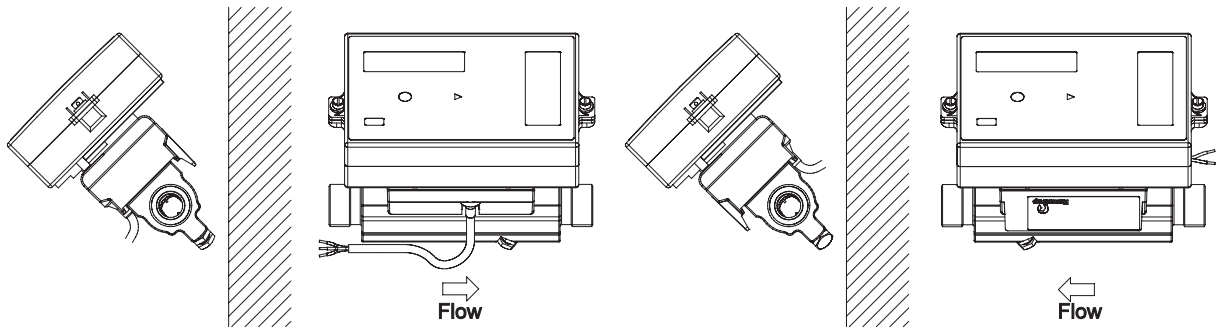
**IMPORTANT!**

With ULTRAFLOW® ≥ DN150 (150 m³/h), the electronics/plastic case must be placed upwards (with horizontal installation).

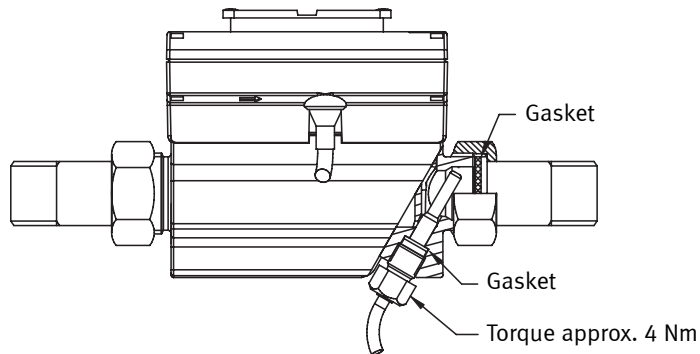
ULTRAFLOW® may be turned up to ± 45° in relation to the pipe axis.

## Examples of installation

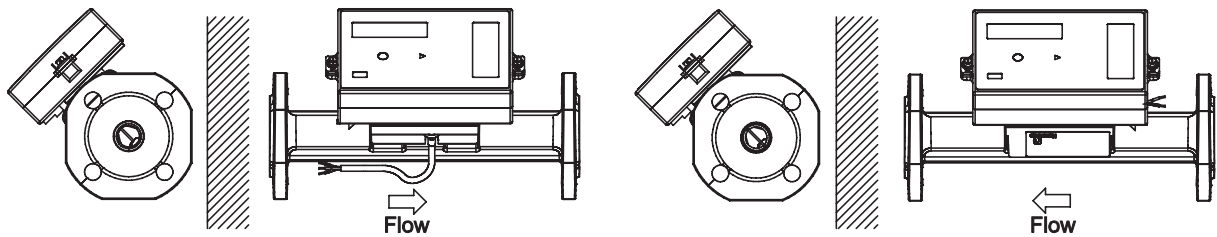
Gland meter with MULTICAL®/PULSE TRANSMITTER fitted directly on ULTRAFLOW®.



Glands and short direct sensor fitted in ULTRAFLOW® (G $\frac{3}{4}$  (R $\frac{1}{2}$ ) and G1 (R $\frac{3}{4}$ ) only).



Flange meter with MULTICAL®/PULSE TRANSMITTER fitted directly on ULTRAFLOW®.



NB: For meters  $\geq$  DN100 MULTICAL® or the PULSE TRANSMITTER cannot be fitted directly on the flow part.

# Electrical connection

## Connecting MULTICAL®/MAXICAL III & ULTRAFLOW®

| ULTRAFLOW®          | -> | MULTICAL®, MAXICAL III |
|---------------------|----|------------------------|
| Blue (ground)/11A   | -> | 11                     |
| Red (supply)/9A     | -> | 9                      |
| Yellow (signal)/10A | -> | 10                     |

| ULTRAFLOW®          | -> | PULSE TRANSMITTER |     | -> | MULTICAL® |
|---------------------|----|-------------------|-----|----|-----------|
|                     |    | In                | Out |    |           |
| Blue (ground)/11A   | -> | 11                | 11A | -> | 11        |
| Red (supply)/9A     | -> | 9                 | 9A  | -> | 9         |
| Yellow (signal)/10A | -> | 10                | 10A | -> | 10        |

## Connecting via pulse transmitter

| 3.65 VDC supply <sup>4)</sup> | -> | PULSE TRANSMITTER |
|-------------------------------|----|-------------------|
| Red (+)                       | -> | 60                |
| Black (-)                     | -> | 61                |

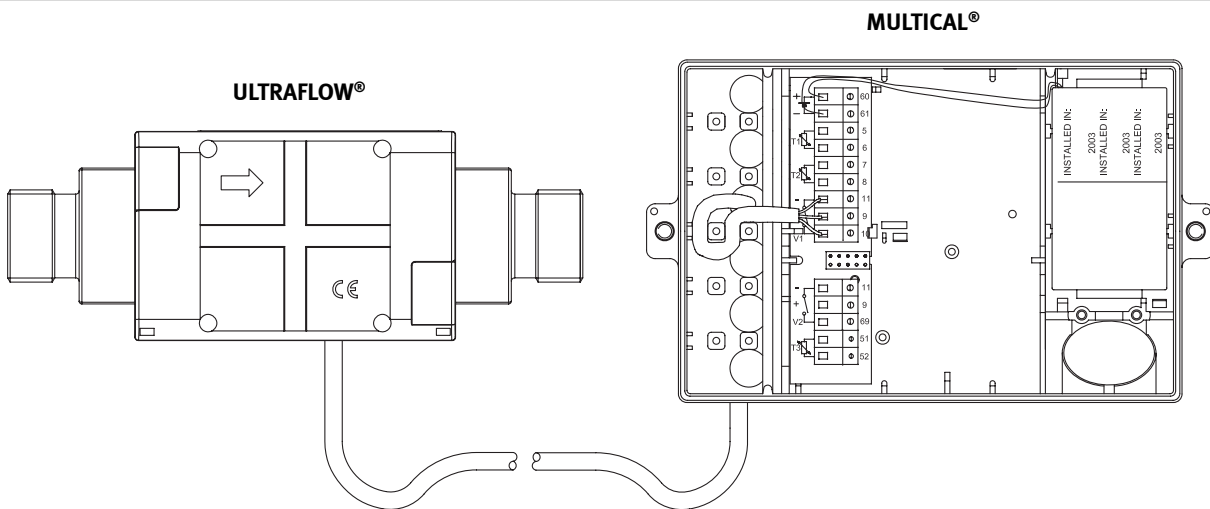
| ULTRAFLOW®          | -> | PULSE TRANSMITTER |     | -> | MAXICAL III |
|---------------------|----|-------------------|-----|----|-------------|
|                     |    | In                | Out |    |             |
| Blue (ground)/11A   | -> | 11                | 11A | -> | 11          |
| Red (supply)/9A     | -> | 9                 |     |    |             |
| Yellow (signal)/10A | -> | 10                | 10A | -> | 10          |

<sup>4)</sup> From battery or supply module.

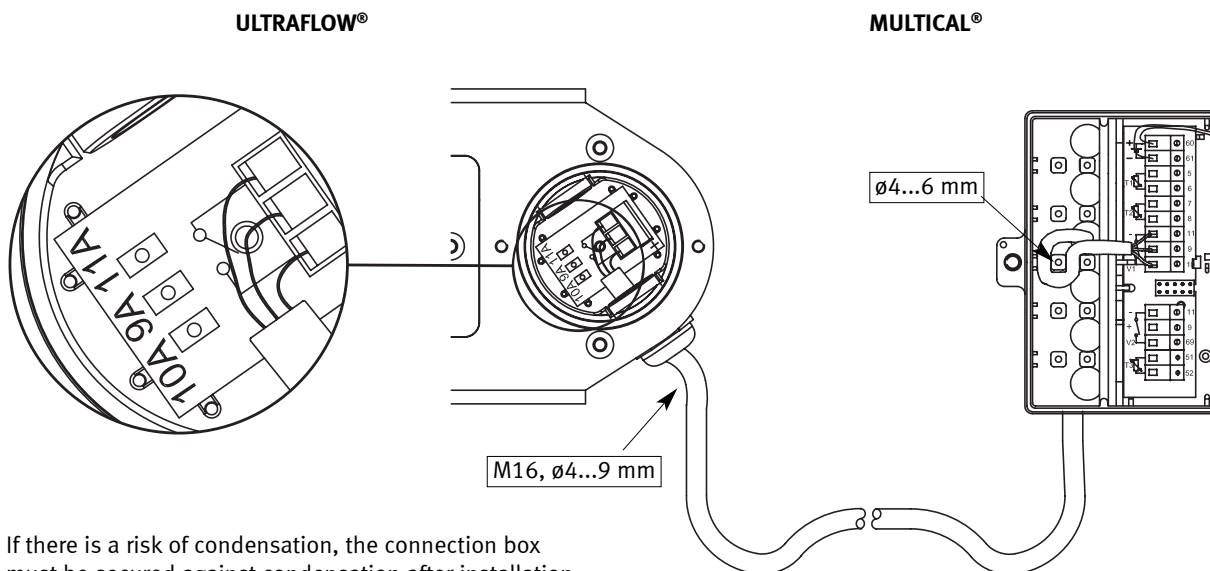
If long signal cables are used, please consider the installation carefully. There must be at least 25 cm between the signal cable and all other cables due to EMC.

## Example of connecting ULTRAFLOW® and MULTICAL®

### ULTRAFLOW® type 65-T, $q_p \leq 100 \text{ m}^3/\text{h}$



### ULTRAFLOW® type 65-T with terminal, $q_p \geq 150 \text{ m}^3/\text{h}$



If there is a risk of condensation, the connection box must be secured against condensation after installation.

## Order specification

The list below shows type numbers for ULTRAFLOW® type 65-T.

| Type number <sup>5)</sup> | q <sub>p</sub><br>[m <sup>3</sup> /h] | q <sub>i</sub><br>[m <sup>3</sup> /h] | q <sub>s</sub><br>[m <sup>3</sup> /h] | Connection   | Length<br>[mm] | Meter factor<br>[pulses/l] | CCC |
|---------------------------|---------------------------------------|---------------------------------------|---------------------------------------|--|----------------|----------------------------|-----|
| 65-T-CAAA-XXX             | 0.6                                   | 0.006                                 | 1.2                                   | G <sup>3</sup> / <sub>4</sub> B (R <sup>1</sup> / <sub>2</sub> ) | 110            | 300                        | 116 |
| 65-T-CAAD-XXX             | 0.6                                   | 0.006                                 | 1.2                                   | G1B (R <sup>3</sup> / <sub>4</sub> )                             | 130            | 300                        | 116 |
| 65-T-CDAA-XXX             | 1.5                                   | 0.015                                 | 3.0                                   | G <sup>3</sup> / <sub>4</sub> B (R <sup>1</sup> / <sub>2</sub> ) | 110            | 100                        | 119 |
| 65-T-CDAC-XXX             | 1.5                                   | 0.015                                 | 3.0                                   | G <sup>3</sup> / <sub>4</sub> B (R <sup>1</sup> / <sub>2</sub> ) | 165            | 100                        | 119 |
| 65-T-CDAD-XXX             | 1.5                                   | 0.015                                 | 3.0                                   | G1B (R <sup>3</sup> / <sub>4</sub> )                             | 130            | 100                        | 119 |
| 65-T-CDAE-XXX             | 1.5                                   | 0.015                                 | 3.0                                   | G1B (R <sup>3</sup> / <sub>4</sub> )                             | 165            | 100                        | 119 |
| 65-T-CDAF-XXX             | 1.5                                   | 0.015                                 | 3.0                                   | G1B (R <sup>3</sup> / <sub>4</sub> )                             | 190            | 100                        | 119 |
| 65-T-CFAF-XXX             | 3.0                                   | 0.03                                  | 6.0                                   | G1B (R <sup>3</sup> / <sub>4</sub> )                             | 190            | 50                         | 136 |
| 65-T-CFBA-XXX             | 3.0                                   | 0.03                                  | 6.0                                   | DN20   | 190            | 50                         | 136 |
| 65-T-CGAG-XXX             | 3.5                                   | 0.035                                 | 7.0                                   | G5/4B (R1)   | 260            | 50                         | 151 |
| 65-T-CGBB-XXX             | 3.5                                   | 0.035                                 | 7.0                                   | DN25   | 260            | 50                         | 151 |
| 65-T-CHAG-XXX             | 6.0                                   | 0.06                                  | 12                                    | G5/4B (R1)   | 260            | 25                         | 137 |
| 65-T-CHBB-XXX             | 6.0                                   | 0.06                                  | 12                                    | DN25   | 260            | 25                         | 137 |
| 65-T-C1AJ-XXX             | 10                                    | 0.1                                   | 18                                    | G2B (R1 <sup>1</sup> / <sub>2</sub> )                            | 300            | 25                         | 137 |
| 65-T-C1BD-XXX             | 10                                    | 0.1                                   | 18                                    | DN40   | 300            | 25                         | 137 |
| 65-T-CJAJ-XXX             | 10                                    | 0.1                                   | 20                                    | G2B (R1 <sup>1</sup> / <sub>2</sub> )                            | 300            | 15 <sup>6)</sup>           | 178 |
| 65-T-CJBD-XXX             | 10                                    | 0.1                                   | 20                                    | DN40   | 300            | 15 <sup>6)</sup>           | 178 |
| 65-T-CKBE-XXX             | 15                                    | 0.15                                  | 30                                    | DN50   | 270            | 10                         | 120 |
| 65-T-C2BG-XXX             | 25                                    | 0.25                                  | 45                                    | DN65   | 300            | 10                         | 120 |
| 65-T-CLBG-XXX             | 25                                    | 0.25                                  | 50                                    | DN65   | 300            | 6 <sup>6)</sup>            | 179 |
| 65-T-CMBH-XXX             | 40                                    | 0.4                                   | 80                                    | DN80   | 300            | 5                          | 158 |
| 65-T-FACL-XXX             | 60                                    | 0.6                                   | 120                                   | DN100  | 360            | 2.5                        | 170 |
| 65-T-FBCL-XXX             | 100                                   | 1.0                                   | 200                                   | DN100  | 360            | 1.5                        | 180 |
| 65-T-FCCN-XXX             | 150                                   | 1.5                                   | 300                                   | DN150  | 500            | 1                          | 147 |
| 65-T-FDCN-XXX             | 250                                   | 2.5                                   | 500                                   | DN150  | 500            | 0.6                        | 181 |
| 65-T-FECN-XXX             | 400                                   | 4.0                                   | 800                                   | DN150  | 500            | 0.4                        | 171 |
| 65-T-FECP-XXX             | 400                                   | 4.0                                   | 800                                   | DN200  | 500            | 0.4                        | 171 |
| 65-T-FECP-XXX             | 400                                   | 4.0                                   | 800                                   | DN250  | 600            | 0.4                        | 171 |
| 65-T-FFCP-XXX             | 600                                   | 6.0                                   | 1200                                  | DN200  | 500            | 0.25                       | 172 |
| 65-T-FFCR-XXX             | 600                                   | 6.0                                   | 1200                                  | DN250  | 600            | 0.25                       | 172 |
| 65-T-F1CR-XXX             | 1000                                  | 10.0                                  | 1800                                  | DN250  | 600            | 0.25                       | 172 |

<sup>5)</sup> XXX-code pertaining to final assembly, approvals etc. is determined by Kamstrup A/S.

Some variants may not be included in national approvals.

<sup>6)</sup> New pulse figures compared with ULTRAFLOW® II.

ULTRAFLOW® type 65-T ≤ DN100 is as standard supplied with 2.5 m cable, but can also be supplied with 5 or 10 m cable.

ULTRAFLOW® ≥ DN150 is supplied without cable. A 5 m or 10 m cable can be ordered and delivered, separately.

### PULSE TRANSMITTER - type No. 66-99-603

The PULSE TRANSMITTER is supplied with built in supply for ULTRAFLOW®. Battery, 24 VAC and 230 VAC supply are available. Please state the required supply type when ordering.

## Accessories

### Glands including gaskets (PN16)

| Size                                       | Type No.  | 2 pcs.    |
|--|-----------|-----------|
| DN15, (R $\frac{1}{2}$ x G $\frac{3}{4}$ ) |           | 65-61-321 |
| DN20, (R $\frac{3}{4}$ x G1)               |           | 65-61-322 |
| DN25, (R1 x G $\frac{5}{4}$ )              | 65-61-313 |           |
| DN40, (R1 $\frac{1}{2}$ x G2)              | 65-61-315 |           |

### Gaskets for glands

| Size            | Type No. |
|-----------------|----------|
| G $\frac{3}{4}$ | 2210-061 |
| G1              | 2210-062 |
| G $\frac{5}{4}$ | 2210-063 |
| G2              | 2210-065 |

### Gaskets for flange meters

| Size  | Type No. |
|-------|----------|
| DN20  | 2210-147 |
| DN25  | 2210-133 |
| DN40  | 2210-132 |
| DN50  | 2210-099 |
| DN65  | 2210-141 |
| DN80  | 2210-140 |
| DN100 | 1150-142 |
| DN150 | 1150-140 |
| DN200 | 1150-139 |
| DN250 | 1150-141 |

## **Authorized distributor**

Please contact Kamstrup A/S for information about your nearest distributor.