# ULTRAFLOW® 54

Ultrasonic volume measuring device

## Your benefits

- Durable, wear-free ultrasonic volume measuring device:
  **High measurement stability and operational reliability**
- Compact design:
  **Requires little installation space on site**
- High resolution of pulse values:
  **Precise instantaneous values**
- CH refrigeration certification (METAS) incl. initial calibration:
  **Approved for use in commercial transactions**

## Applications

- Particularly suitable for district heating/cooling applications (main meters, transfer stations, etc.) in billing transactions
- Replacement of mechanical impeller heat meters
- Heat and/or cooling consumption measurement in building services engineering
- Can only be used with MULTICAL® series calculators

## Properties

- Nominal diameters:
  Heating: DN 20 to DN 300
  Combined heating/cooling: DN 150 to DN 300
  Cooling: DN 150 to DN 300
- Nominal flow rates:
  Heat: $q_p$ 1.5 to $q_p$ 1000
  Heat/cooling combined: $q_p$ 150 to $q_p$ 1000
  Cooling: $q_p$ 150 to $q_p$ 1000
- Low pressure loss
- No moving parts
- Signal transmission to the computing unit and power supply to the volume measuring device via a 3-wire cable
- Medium temperature:
  Heat: 15 to 130 °C
  Heat/cooling combined: 2 to 130 °C
  Cooling: 2 to 130 °C
  From 90 °C, a flange meter, wall mounting of the electronic unit of the volume measuring part from DN 150, and relocation of the calculator are recommended.
- Type approval/certification:
  - Heat: Compliance with European Measuring Instruments Directive (MID)
  - Cold: Swiss certification (METAS) including initial calibration

## Options

- Pulse transmitter with its own power supply for cable lengths >10 m

GWF AG
Obergrundstrasse 119
6005 Lucerne, Switzerland

T +41 41 319 50 50
info@gwf.ch, www.gwf.ch

Technical support:
T +41 41 319 52 00, support@gwf.ch

Last updated: 13.02.2026

# Technical data ULTRAFLOW® 54 (DN 20-65)

| Series | | | ULTRAFLOW® 54 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Nominal diameter** | **DN** | **mm** | **20** | **20** | **25** | **25** | **25** | **25** | **32** | **40** | **40** | **50** | **65** |
| **Nominal flow rate** | **$q_p$** | **p $m^3$ /h** | **1.5** | **2.5** | **3.5** | **3.5** | **6** | **6** | **6** | **10** | **10** | **15** | **25** |
| **Nominal pressure** | **PN** | **bar** | **-** | **-** | **16** | **-** | **16** | **-** | **-** | **16** | **-** | **-** | **-** |
| **Nominal pressure with flanges** | **PN** | **bar** | **25** | **25** | **-** | **25** | **-** | **25** | **25** | **-** | **25** | **25** | **25** |
| Connection thread with meter | G...B | Zoll | - | - | 1¼ | - | 1¼ | - | - | 2 | - | - | - |
| Maximum flow rate | $q_s$ | $m^3$ /h | 3 | 5 | 7 | 7 | 12 | 12 | 12 | 20 | 20 | 30 | 50 |
| Minimum flow rate +/- 5% | $q_i$ | l/h | 15 | 25 | 35 | 35 | 60 | 60 | 60 | 100 | 100 | 150 | 250 |
| Kvs value | | $m^3$ /h | 3.2 | 13.4 | 13.4 | 13.4 | 13.4 | 13.4 | 13.4 | 40 | 40 | 40 | 102 |
| Start-up value | | l/h | 3 | 5 | 7 | 7 | 12 | 12 | 12 | 20 | 20 | 30 | 50 |
| Temperature | | max. °C | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 |
| Standard measuring range | $q_i/q_p$ | | 1:100 | 1:100 | 1:100 | 1:100 | 1:100 | 1:100 | 1:100 | 1:100 | 1:100 | 1:100 | 1:100 |

| Dimensions and weights | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Length without screw connection** | **A** | **mm** | **-** | **-** | **260** | **-** | **260** | **-** | **-** | **300** | **-** | **-** | **-** |
| Total height | B | mm | - | - | 80 | - | 80 | - | - | 96 | - | - | - |
| Height from center of pipe | C | mm | - | - | 58 | - | 58 | - | - | 65 | - | - | - |
| Width | D | mm | - | - | 55 | - | 55 | - | - | 55 | - | - | - |
| **Length with PN 25/16 flanges** | **A** | **mm** | **190** | **190** | **-** | **260** | **-** | **260** | **260** | **-** | **300** | **270** | **300** |
| Height with flanges | E | mm | 95 | 95 | - | 106 | - | 106 | 128 | - | 136 | 145 | 168 |
| Flange outer diameter [1] | H | mm | 105 | 105 | - | 115 | - | 115 | 140 | - | 150 | 165 | 185 |
| Bolt circle diameter [1] | K | mm | 75 | 75 | - | 85 | - | 85 | 100 | - | 110 | 125 | 145 |
| Number of screws [1] | | pcs | 4 | 4 | - | 4 | - | 4 | 4 | - | 4 | 4 | 8 |
| Weight without screw connection | | approx. kg | - | - | 2,3 | - | 2,3 | - | - | 4,5 | - | - | - |
| Weight with flanges | | approx. kg | 2,9 | 2,9 | | 5,0 | - | 5,0 | 5,2 | - | 8,3 | 10,1 | 13,2 |

1] DIN EN 1092

# Technical data ULTRAFLOW® 54 (DN 80-300)

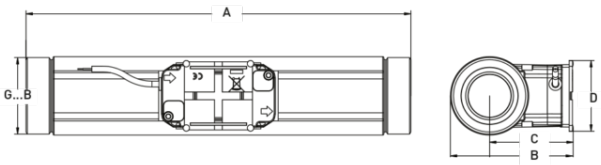
| Series | | | ULTRAFLOW® 54 | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Nominal diameter** | **DN** | **mm** | **80** | **100** | **100** | **125** | **150** | **150** | **150** | **200** | **200** | **250** | **250** | **250** | **300** |
| **Nominal flow rate** | **$q_p$** | **$m^3/h$** | **40** | **60** | **100** | **100** | **150** | **250** | **400** | **400** | **600** | **400** | **600** | **1000** | **1000** |
| **Nominal pressure** | **PN** | **bar** | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **Nominal pressure with flanges** | **PN** | **bar** | **25** | **25** | **25** | **25** | **25** | **25** | **25** | **25** | **25** | **25** | **25** | **25** | **16** |
| Connection thread with meter | G...B | Zoll | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Maximum flow rate | $q_s$ | $m^3/h$ | 80 | 120 | 200 | 200 | 300 | 500 | 800 | 800 | 1200 | 800 | 1200 | 2000 | 2000 |
| Minimum flow rate +/- 5% | $q_i$ | l/h | 400 | 600 | 1000 | 1000 | 1500 | 2500 | 4000 | 4000 | 6000 | 4000 | 6000 | 10000 | 10000 |
| Kvs value | | $m^3/h$ | 179 | 373 | 373 | 373 | 1060 | 1060 | 2000 | 4040 | 4040 | 4040 | 4040 | 8160 | 8160 |
| Start-up value | | l/h | 80 | 120 | 200 | 200 | 300 | 500 | 800 | 800 | 1200 | 800 | 1200 | 2000 | 2000 |
| Temperature | | max. °C | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 |
| Standard measuring range | $q_i/q_p$ | | 1:100 | 1:100 | 1:100 | 1:100 | 1:100 | 1:100 | 1:100 | 1:100 | 1:100 | 1:100 | 1:100 | 1:100 | 1:100 |

| Dimensions and weights | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Length without screw connection** | **A** | **mm** | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Total height | B | mm | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Height from center of pipe | C | mm | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Width | D | mm | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **Length with PN 25 flanges** | **A** | **mm** | **300** | **360** | **360** | **350** | **500** | **500** | **500** | **500** | **500** | **600** | **600** | **600** | **500** |
| Height with flanges | E | mm | 184 | 220 | 220 | 260 | 300 | 300 | 300 | 360 | 360 | 425 | 425 | 425 | 460 |
| Flange outer diameter [1] | H | mm | 200 | 235 | 235 | 270 | 300 | 300 | 300 | 360 | 360 | 425 | 425 | 425 | 460 |
| Bolt circle diameter [1] | k | mm | 160 | 190 | 190 | 220 | 250 | 250 | 250 | 310 | 310 | 370 | 370 | 370 | 410 |
| Number of screws [1] | | Stk. | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 12 | 12 | 12 | 12 | 12 | 12 |
| Weight without screw connection | | ca. kg | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Weight with flanges | | ca. kg | 16,8 | 21,7 | 21,7 | 28,2 | 37 | 37 | 36 | 49 | 49 | 79 | 79 | 75 | 76 |

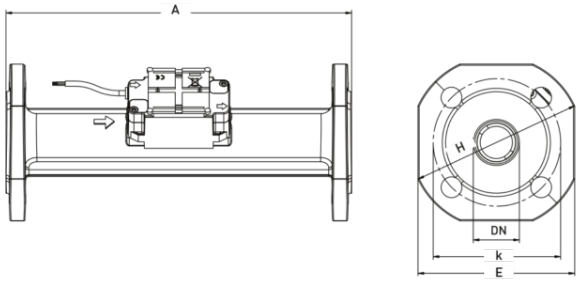
1] DIN EN 1092

# Dimension Diagram

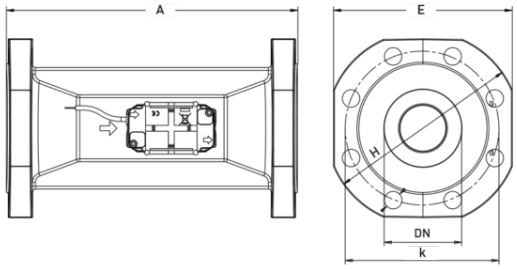
ULTRAFLOW® 54, G1¼B and G2B



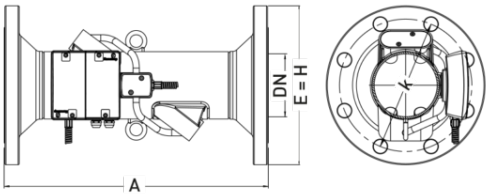

ULTRAFLOW® 54, DN 20 to DN 50



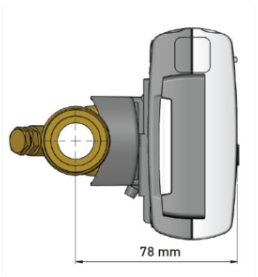

ULTRAFLOW® 54, DN 65 to DN 125

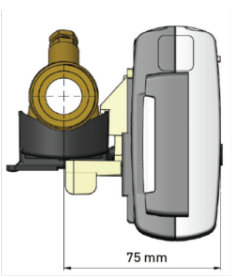


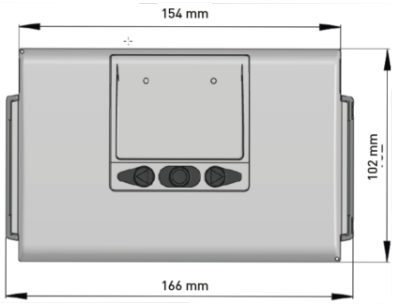

ULTRAFLOW® 54, DN 150 – DN 300




Calculator MULTICAL©
installed on ULTRAFLOW©54



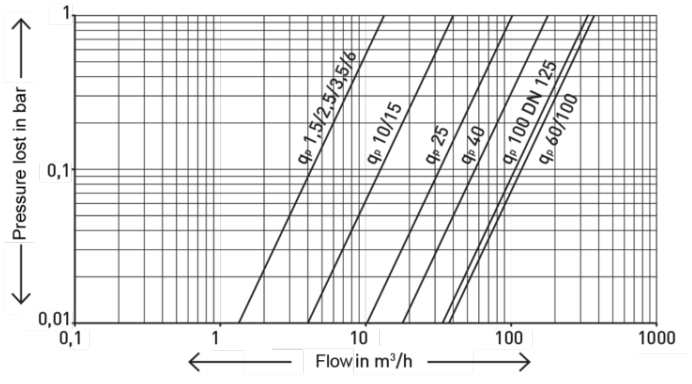



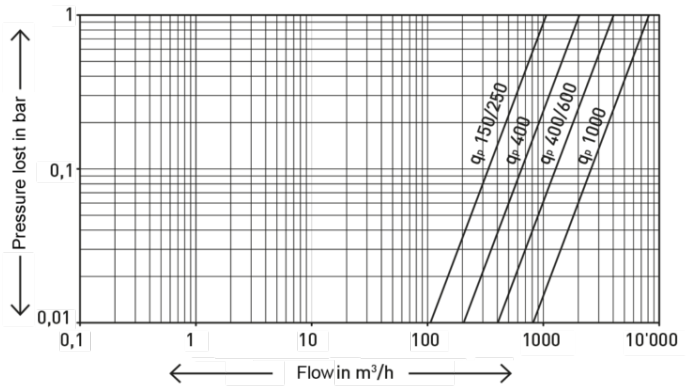


# Pressure drop curve

ULTRAFLOW® 54, DN 20 – DN 125




ULTRAFLOW® 54, DN 150 – DN 300



## Installation positions

| | | |
|---|---|---|
| **Pipe:** | horizontal |  |
| | vertical |  |
| | inclined |  |
| **Head of the meter ULTRAFLOW® 54:** | to the side |  |
| **DN 20 – DN 125** | ± 45° |  |
| **ULTRAFLOW® 54:** | to the side |  |
| **DN 150 – DN 300** | | |

## Electrical connections

| | | |
|---|---|---|
| ULTRAFLOW® 54 | → | MULTICAL® |
| Blue (Masse) / 11 A | → | 11 |
| Red (Supply) / 9 A | → | 9 |
| Yellow (Signal) / 10 A | → | 10 |

## Installation note

For ULTRAFLOW® 54 ⩽DN 125 (100 m³/h), the black electronics housing must be installed on the side (for horizontal installation). ULTRAFLOW® 54 can be rotated up to ± 45° in relation to the pipe axis. ULTRAFLOW® 54 does not require a straight inlet or outlet section. ULTRAFLOW® 54 must not be exposed to pressure lower than the ambient pressure (vacuum).

For ULTRAFLOW® 54 DN 150 (150 m3/h), it is recommended that the black electronics housing be installed on the side (for horizontal installation) in order to better measure any layer flows. However, ULTRAFLOW® 54 may also be rotated up to ±90° in relation to the pipe axis. ULTRAFLOW® 54 does not require a straight inlet or outlet section. ULTRAFLOW® 54 must not be exposed to pressure lower than the ambient pressure (vacuum).

| Minimum recommended distances | Ultrasonic volume measuring device DN 20 - 80 | Ultrasonic volume measuring device DN 100 - 300 |
|---|---|---|
| If valves are not fully open | 20 x DN | 40 x DN |
| On the pressure side of pumps | 20 x DN | 20 x DN |
| For multiple arches | 5 x DN | 5 x D |

# Materials

**Parts in contact with medium**

**ULTRAFLOW® 54 $q_p$ 1.5**

**Housing with flange connection:** Stainless steel, W. No. 1.4308

**Sensor:** Stainless steel, W. No. 1.4401

**Seals:** EPDM

**Reflector:** Thermoplastic, PES 30% GF and stainless steel, W. No. 1.4301

**Measuring tube:** Thermoplastic, PES 30% GF

**ULTRAFLOW® 54 $q_p$ 2.5 to $q_p$ 100**

**Housing with threaded connection:** Dezincification-resistant brass

**Housing with flange connection:** Stainless steel, W. No. 1.4308

**Sensor:** Stainless steel, W. No. 1.4401

**Seals:** EPDM

**Reflector:** Stainless steel, W. No. 1.4301

**Measuring tube:** Thermoplastic, PES 30% GF

**ULTRAFLOW® 54 $q_p$ 150 to $q_p$ 1000**

**Housing with flange connection:** Stainless steel, W. No. 1.4307

**Electronics housing**

**Base:** Thermoplastic, PBT 30% GF

**Cover:** Thermoplastic, PC 10% GF Connection cable: Silicone (3x0.5 mm2 )