



## Design and applications

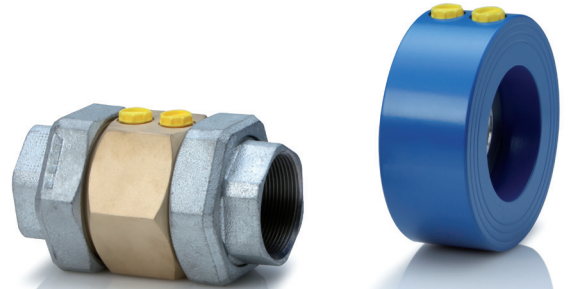
The DDM orifice is designed to measure and control the flow of liquids and gases.

The device works according to the principle of differential pressure. The differential pressure at the orifice is proportional to the square of the volume rate of flow through the pipeline.

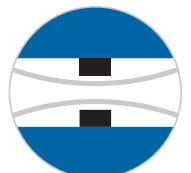
The DDM-DN orifice is fitted between flanges in the pipeline. The DDM-Rp/Gi/Ga orifice is installed in the pipeline using pipe unions or with either internal or external thread. The region of steady flow should be 6 DN upstream of the installation point and 4 DN downstream of the installation point.

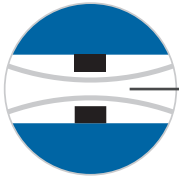
The DDM orifice can be equipped with commercially available electrical or mechanical differential-pressure gauges/switches or transmitters.

DDM



- **installation between flanges as per DIN EN 1092-1**
- **internal and external threads as per DIN EN ISO 228**
- **pipe union as per DIN EN 10226-1 (ISO 7-1)**
- **calibrated to customer specifications for liquids and gases**
- **horizontal or vertical installation**
- **no wear, no moving parts**
- **accuracy 2,5 % of full-scale range**
- **optionally**
  - **limit value switch**
  - **differential pressure gauge/transmitter in various designs**
  - **explosion-proof design**
  - **Connection acc. DIN EN 61518**





# DDM

Differential pressure flow meters

## Type series

|             |  |
|-------------|--|
| DDM-DN      | orifice for in-between flange assembly   |
| DDM-Rp      | orifice with pipe union connection   |
| DDM-Gi      | orifice with internal thread   |
| DDM-Ga      | orifice with external thread   |
| DDM-Kompakt | Orifice with connection for Differential pressure measuring devices acc. to DIN EN 61518 |
| DDM Ex      | explosion proof design   |

## Technical data

|                                       |   |
|---------------------------------------|---|
| Measuring principle                   | differential pressure at the orifice  |
| Differential pressure <sup>1)</sup>   | air: 5 - 1000 mbar<br>H2O: 100 - 1000 mbar  |
| Pressure loss                         | ca. 40 % of differential pressure   |
| Pressure resistance strength DDM      | PN 16 (Please note the pressure resistance of the display unit)                                       |
| Perm. ambient temperature             | -10 ... +70 °C  |
| Perm. media temperature <sup>2)</sup> | standard -10 ... +70 °C max. 130 °C (insulated line)<br>optionally HT design above 130 °C             |
| Between flanges (DN)                  | PN 10 or PN 16 in accordance with DIN EN 1092-1, shape A & B  |
| Pipe union (Rp)                       | two-part pipe fitting:<br>insert with cylindrical internal thread<br>acc. to DIN EN 10226-1 (ISO 7-1) |
| Internal thread (Gi)                  | cyl. internal fastening screw thread in accordance with DIN EN ISO 228                                |
| External thread (Ga)                  | cyl. external fastening screw thread in accordance with DIN EN ISO 228 T1.                            |
| Explosion protection                  | Manufacturer's declaration acc. to 2014/34/EU<br>Category 3, Zone 2, T6 - T1                          |

<sup>1)</sup> other differential pressure on request

<sup>2)</sup> media must not freeze

## Materials

| DDM-DN               |   |
|----------------------|---|
| Ring                 | S355, optionally 1.4571                                 |
| Corrosion protection | Epoxy powder coating,<br>traffic blue (RAL 5017) glossy |
| Corrosion class      | C3  |
| Orifice              | 1.4571  |
| DDM-Rp, -Gi, -Ga     |   |
| Pipe union           | malleable cast iron, zinc plated (Rp only)              |
| Orifice              | brass   |
| Seals                | NBR, others on request                                  |

other materials on request

## Dimensions DDM-DN

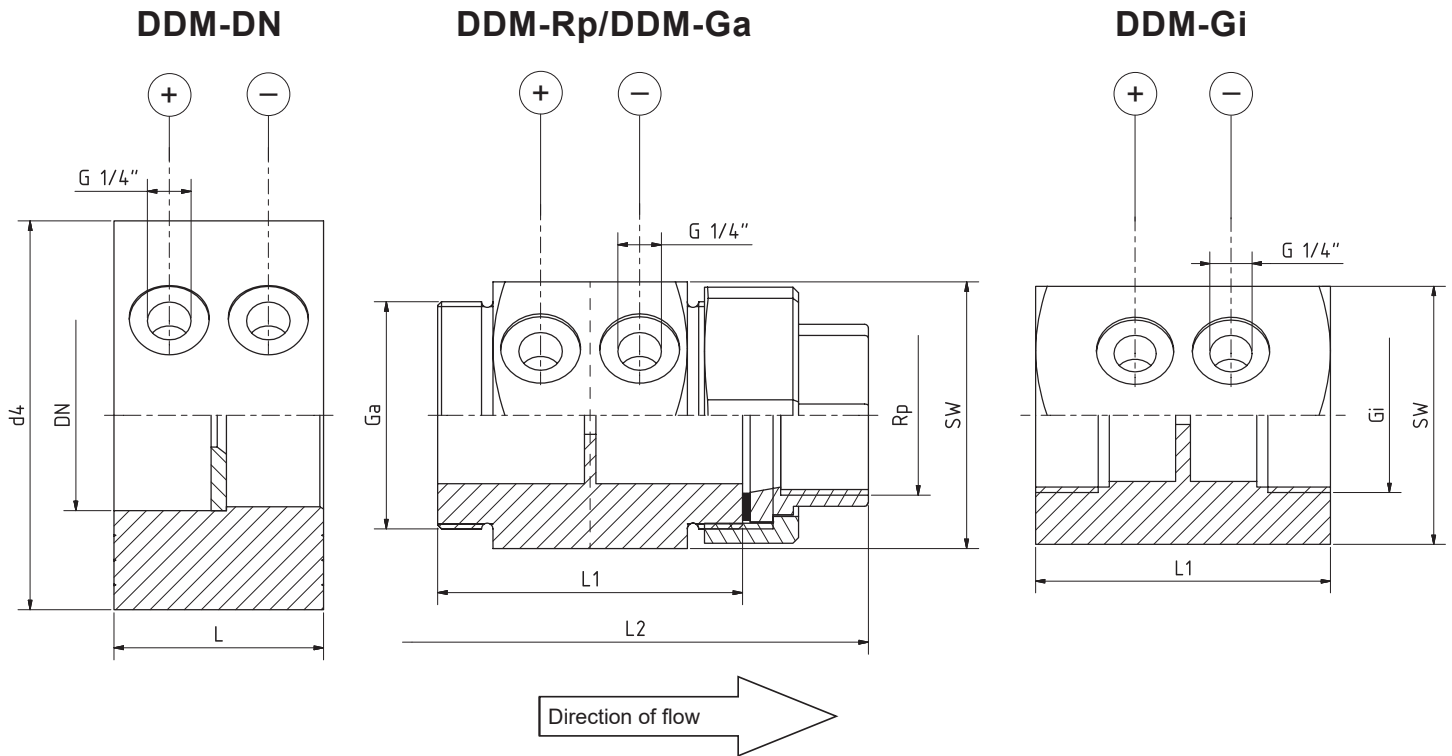
| DN  | d <sub>4</sub> | L  |
|-----|----------------|----|
| 40  | 88             | 55 |
| 50  | 102            | 55 |
| 65  | 122            | 55 |
| 80  | 138            | 55 |
| 100 | 158            | 55 |
| 125 | 188            | 55 |
| 150 | 212            | 55 |
| 200 | 268            | 55 |

## Dimensions DDM-Rp

| Rp  | L <sub>1</sub> | L <sub>2</sub> | SW |
|-----|----------------|----------------|----|
| ¼   | 80             | 124            | 41 |
| ⅜   | 80             | 128            | 46 |
| ½   | 80             | 128            | 46 |
| ¾   | 80             | 128            | 50 |
| 1   | 80             | 136            | 60 |
| 1 ¼ | 80             | 146            | 70 |
| 1 ½ | 80             | 149            | 70 |
| 2   | 90             | 164            | 85 |

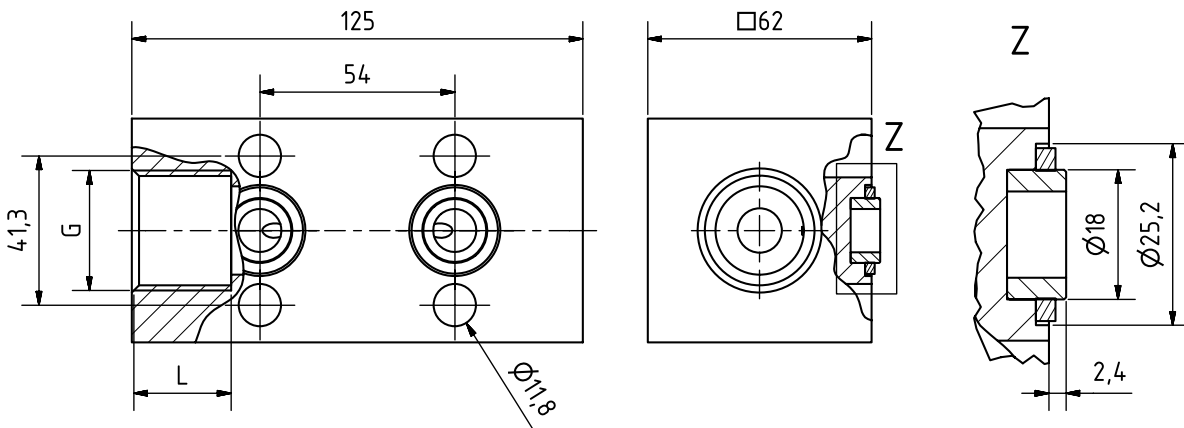
## Dimensions DDM-Gi/DDM-Ga

| Gi  | Ga  | L <sub>1</sub> | SW |
|-----|-----|----------------|----|
| ¼   | ⅝   | 80             | 41 |
| ⅜   | ¾   | 80             | 46 |
| ½   | 1 ⅝ | 80             | 46 |
| ¾   | 1 ¼ | 80             | 50 |
| 1   | 1 ½ | 80             | 60 |
| 1 ¼ | 2   | 80             | 70 |
| 1 ½ | 2 ¼ | 80             | 70 |
| 2   | 2 ¾ | 90             | 85 |



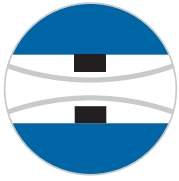
### DDM-Kompakt

Connection acc. DIN EN 61518



| G   | L    |
|-----|------|
| 1/4 | 15   |
| 3/8 | 18   |
| 1/2 | 20   |
| 3/4 | 23   |
| 1   | 27,5 |

For direct connection of differential pressure gauges according to DIN EN 61518.  
 Compact and made of **stainless steel 1.4571**.  
 Ideal for confined spaces.



### Measuring ranges for water

Connection: screwed pipe union /  
internal thread / for external thread

| Rp<br>Ga | Ga  | smallest measuring range<br>[m <sup>3</sup> /h] H <sub>2</sub> O |       | largest measuring range<br>[m <sup>3</sup> /h] H <sub>2</sub> O |        |
|----------|-----|--|-------|---|--------|
| ¼        | ⅝   | 0,05   | - 0,3 | 0,2   | - 1,2  |
| ⅜        | ¾   | 0,05   | - 0,4 | 0,4   | - 2,3  |
| ½        | 1 ⅛ | 0,1  | - 0,7 | 0,75  | - 4,5  |
| ¾        | 1 ¼ | 0,2  | - 1,3 | 1,4   | - 8,5  |
| 1        | 1 ½ | 0,35   | - 2   | 2,25  | - 13,5 |
| 1 ¼      | 2   | 0,6  | - 3,5 | 4   | - 24   |
| 1 ½      | 2 ¼ | 0,85   | - 5   | 5,35  | - 32   |
| 2        | 2 ¾ | 1,25   | - 7,5 | 8,65  | - 52   |

other measuring ranges on request

Connection for in-between flange assembly

| DN  | smallest measuring range<br>[m <sup>3</sup> /h] H <sub>2</sub> O |       | largest measuring range<br>[m <sup>3</sup> /h] H <sub>2</sub> O |       |
|-----|--|-------|---|-------|
| 40  | 0,85   | - 5   | 5,35  | - 32  |
| 50  | 1,2  | - 7   | 8,7   | - 52  |
| 65  | 2  | - 12  | 13  | - 78  |
| 80  | 3  | - 18  | 19,7  | - 118 |
| 100 | 4,7  | - 28  | 30,7  | - 184 |
| 125 | 7,3  | - 44  | 48  | - 288 |
| 150 | 10,7   | - 64  | 68,8  | - 413 |
| 200 | 18,8   | - 113 | 122,5   | - 735 |

other measuring ranges on request

### Measuring ranges for air

Connection: screwed pipe union /  
internal thread / for external thread

| Rp<br>Ga | Ga  | smallest measuring range<br>[m <sup>3</sup> /h] air <sup>1)</sup> |      | largest measuring range<br>[m <sup>3</sup> /h] air <sup>1)</sup> |       |
|----------|-----|---|------|--|-------|
| ¼        | ⅝   | 0,5   | - 3  | 1,3  | - 8   |
| ⅜        | ¾   | 0,8   | - 5  | 2,3  | - 14  |
| ½        | 1 ⅛ | 1,0   | - 6  | 3,5  | - 21  |
| ¾        | 1 ¼ | 1,3   | - 8  | 7,5  | - 45  |
| 1        | 1 ½ | 2,0   | - 12 | 9  | - 54  |
| 1 ¼      | 2   | 4,0   | - 24 | 18   | - 108 |
| 1 ½      | 2 ¼ | 5,8   | - 35 | 25   | - 150 |
| 2        | 2 ¾ | 8,3   | - 50 | 45   | - 270 |

<sup>1)</sup> at STP (0 °C and 1013 mbar) in-between ranges possible

Connection for in-between flange assembly

| DN  | smallest measuring range<br>[m <sup>3</sup> /h] air <sup>1)</sup> |       | largest measuring range<br>[m <sup>3</sup> /h] air <sup>1)</sup> |        |
|-----|---|-------|--|--------|
| 40  | 5,8   | - 35  | 25   | - 150  |
| 50  | 9   | - 54  | 45   | - 270  |
| 65  | 13,5  | - 81  | 83   | - 500  |
| 80  | 20  | - 120 | 125  | - 750  |
| 100 | 35  | - 210 | 142  | - 850  |
| 125 | 60  | - 360 | 292  | - 1750 |
| 150 | 75  | - 450 | 433  | - 2600 |
| 200 | 125   | - 750 | 667  | - 4000 |

<sup>1)</sup> at STP (0 °C and 1013 mbar) in-between ranges possible

### Proper use

The user is responsible for assessing the suitability of the flow meters for his case of application, for use as prescribed, and for material compatibility regarding the fluid product used in his process.

The manufacturer shall not be liable for any damage arising from incorrect or improper use of the devices.

The equipment from **Kirchner und Tochter** has been tested in compliance with applicable CE-regulations of the European Community. The respective declaration of conformity is available on request. Subject to change without notice. The current valid version of our documents can be found at [www.kt-flow.de](http://www.kt-flow.de)

The **Kirchner und Tochter** QM-System is certified in accordance with DIN EN ISO 9001:2015. The quality is systematically adapted to the continuously increasing demands.