



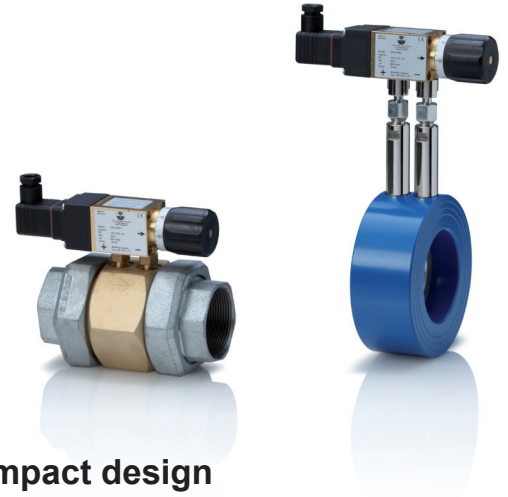
Design and applications

The DDW-DS31 flow monitor is used for monitoring the flow of water, oils, and neutral liquids.

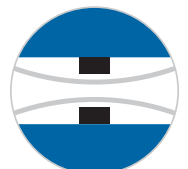
The device works according to the principle of differential pressure. The differential pressure at the orifice is proportional to the square of the volume rate of flow through the pipeline. The user mounts the orifice between flanges or with Rp pipe unions into the conduit. The unimpeded, straight tube length has to be 6 DN before and 4 DN behind the mounting position.

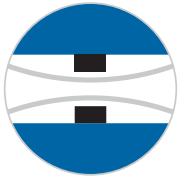
The DS31 flow monitor contains a rugged and uncomplicated diaphragm system. The differential pressure generates a unilateral force at the membrane which moves the diaphragm system against the measuring range springs. The resulting displacement activates a micro switch. The user sets the switch locally by a hand wheel in the range of 30 - 100 % of the flow span.

DDW-DS31



- **compact design**
- **simple operation**
- **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)**
- **monitoring span 1:3**
- **micro switch (N/O)**
- **high overload withstand capability**





DDW-DS31

Flow monitor

Type series

DDW-DS31-Rp	flow monitor with pipe union connection
DDW-DS31-Gi	flow monitor with internal thread
DDW-DS31-Ga	flow monitor with external thread
DDW-DS31-DN	flow monitor for installation between flanges

Technical data

Readable setting range	30 - 100 %
Monitoring span	1:3
Perm. process temperature	0... + 80 °C/100 °C ¹⁾
Perm. ambient temperature	0... + 80 °C
Max. working pressure	16 bar
Differential pressure	600 mbar
Reproducibility	3 % FS
Hysteresis	5 % at Q_{max} 10 % at Q_{min}
In-between flange (DN)	for PN 10/PN 16 flanges acc. to DIN EN 1092-1 shape A & B
Pipe union (Rp)	two-part pipe fitting: insert with cylindrical internal thread acc. to DIN EN 10226-1 (ISO 7-1)
External thread (Ga)	cyl. external thread acc. to DIN EN ISO 228
Internal thread (Gi)	cyl. internal thread acc. to DIN EN ISO 228

other connection geometry on request

¹⁾ extended differential pressure lines (see page 3 DDW-DS31-DN)

Dimensions

DDW-DS31-Rp/Gi/Ga				
Rp / Gi	Ga	L ₁	L ₂	SW ¹⁾
¼	¾	80	124	41
⅜	¾	80	128	46
½	1 ⅛	80	128	46
¾	1 ¼	80	128	50
1	1 ½	80	136	60
1 ¼	2	80	146	70
1 ½	2 ¼	80	149	70
2	2 ¾	90	164	85

all dimensions in mm

¹⁾ wrench width of hexagonal orifice body

DDW-DS31-DN	
DN	d4
50	102
65	122
80	138
100	158
125	188
150	212
200	268

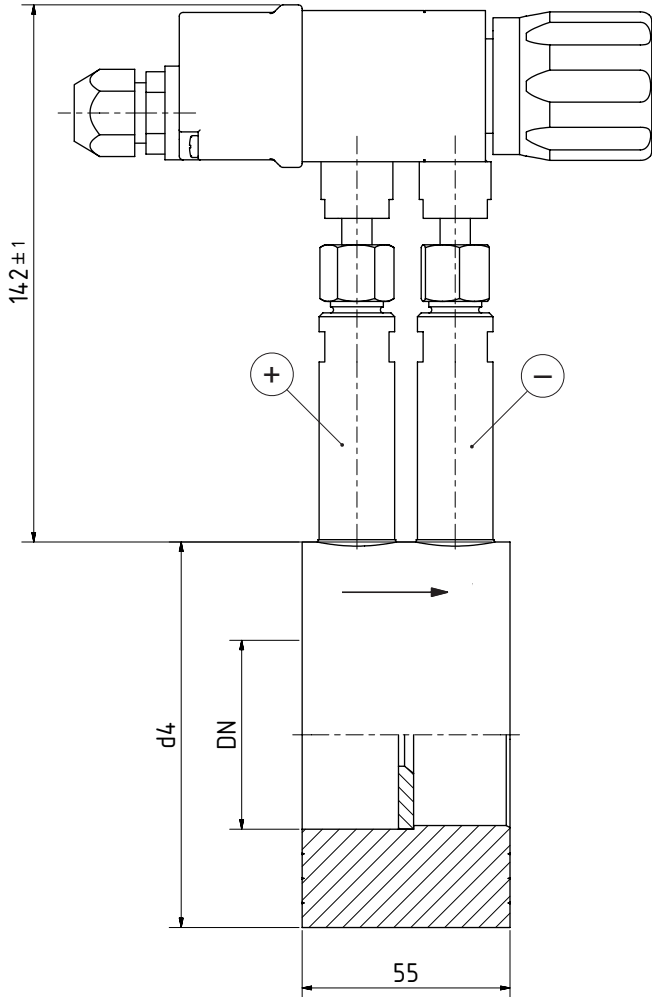
all dimensions in mm

Materials

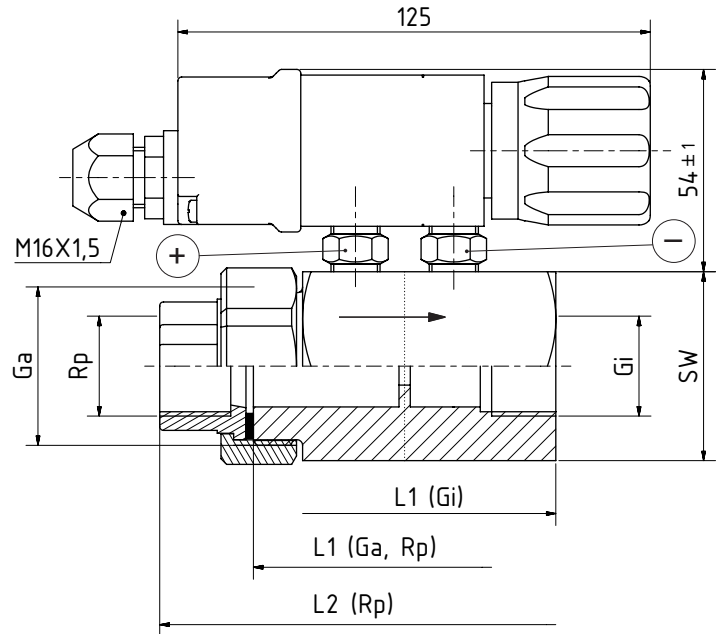
DDW-DS31 DN	
Ring	S355, optionally 1.4571
Corrosion protection	Epoxy powder coating, traffic blue (RAL 5017) glossy
Corrosion class	C3
Orifice	1.4571
DDW-DS31 Rp, Gi, Ga	
Pipe union (Rp)	malleable cast iron, zinc plated (Rp only)
Orifice and ring	brass, aluminium hard coated
Gaskets	NBR
Connection between orifice and indicator (DDW-DS31-DN)	
Straight screw-in fitting ¼"	brass, nickel plated, 1.4571 on request
Screw fitting G ¼" dia. Ø 8	brass, nickel plated, 1.4571 on request
Cutting ring, union nuts	steel, zinc plated, 1.4571 on request
Steel sealing	steel, zinc plated, with NBR seal
Flow monitor DS31	
Pressure chamber	brass
Measuring diaphragm	FKM
Connection to orifice	brass

other materials on request

DDW-DS31-DN



DDW-DS31-Rp/Gi/Ga



Measuring range

DDW-DS31-DN

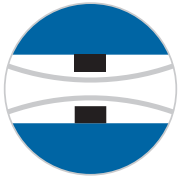
DN	smallest range [m³/h] H₂O	biggest range [m³/h] H₂O
50	1,2 - 7	8,7 - 52
65	2 - 12	13 - 78
80	3 - 18	19,7 - 118
100	4,7 - 28	30,7 - 184
125	7,3 - 44	48 - 288
150	10,7 - 64	68,8 - 413
200	18,8 - 113	122,5 - 735

other measuring ranges on request

DDW-DS31-Rp/Gi/Ga

Rp / Gi	Ga	smallest range [m³/h] H₂O	biggest range [m³/h] H₂O
¼	¾	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



DDW-DS31

Flow monitor

Technical data of microswitch

Switching range	infinitely adjustable in the range 30 - 100 % of flow rate	
Switching function	CO change-over	
Type of protection	IP54	
Dielectric strength	250 V AC ^{*)}	30 V DC
Max. switching current	3 A	0,4 A
Max. switchrating	500 VA	10 W
Electrical connection	permanently installed cable 2,5 m, Rectangular connector as per DIN EN 175 301-803-A 3-pole +PE (with or without LED for switching status display)	
Connection without LED		
Connection with LED		

^{*)} Above 50 V AC/ 75 V DC, electrical components are subjected to the EU Low Voltage Directive 2014/35/EU. The user is required to verify their use accordingly.

Low Voltage Directive

Above 50 V AC/75 V DC, electrical components are subjected to the EU Low Voltage Directive (LVD). The user is required to verify their use accordingly.

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 liquid 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

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.