

Orifice Plate Flow Meter

Model: Turbo Lux 2

Product Description

The Turbo-Lux 2 orifice flow meter is used to measure the flow of clear liquids in closed pipelines. The installation position and direction of flow are flexible. The areas of application focus on measuring flow quantities in stationary water-based extinguishing systems for use in water supply test pipes. The Turbo Lux 2 is VdS Approved.

Features

- Nominal sizes from DN 80 to DN 250
- Measuring ranges from 420 to 18000 L/min
- Measurement accuracy $\pm 2.5\%$ from the measuring range limit value
- Any installation location, installation position and flow direction possible
- Strong vibration resistance
- Display in %
- Centring kit (optional)
- Calibration certificate (optional)

Operation

The orifice plate flowmeter Turbo-Lux 2 consists of a Differential Pressure Transmitter (1) for installation on the pipe (between flanges) and a portable Bypass Meter (2). The Bypass Meter contains a conical Measuring Glass Tube (3) with a Float (4). The fluid flows from the pipe, through the inlet, into the measuring tube. Top edge of the Float indicates current flow of the fluid. A filter at the inlet prevents the foreign bodies from getting inside the Bypass Meter. Inlet and outlet ports of the bypass are arranged concentrically for easy attachment to the stationary transmitter.

Installation

At least $10 \times D$ (D =pipe diameter) straight section of the pipe must be maintained before and $5 \times D$ after the orifice plate. The flow meter can be installed in any orientation, horizontal to vertical. However, it is important to ensure that the flow direction is in line with the arrow on the flow meter. Mounting the flow switch central between the flanges is important for correct readings. Offset must not exceed 0.5mm. Centring assembly kit is available on order.

Bypass Meter Tube Installation

During installation sufficient clearance must be provided for attachment of the bypass meter tube. The same bypass tube can be used for all sizes listed. Before loosening the cap, pipeline must be emptied to prevent escape of the fluid. The Bypass meter should always be mounted vertically so that the float can move freely in the tube. The bypass meter is screwed in with a nut. No tools are required for tightening the nut.



Technical Data

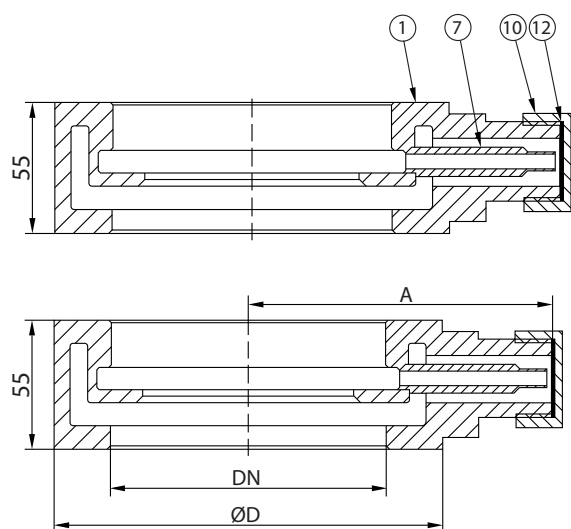
Measuring Principle	Orifice plate as differential pressure sensor with variable areas meter in by-pass.
Nominal Size	DN80 PN10/PN16 DN100 PN10/PN16 DN150 PN10/PN16 DN200 PN10/PN16 DN250 PN10
Max. Working Pressure	16 bar (232 psi)
Measuring Accuracy	$\pm 2.5\%$ of full scale value (VdS)
Temperature Range	+4°C to +50°C (+39°F to +122°F)
Medium	Water

Start up

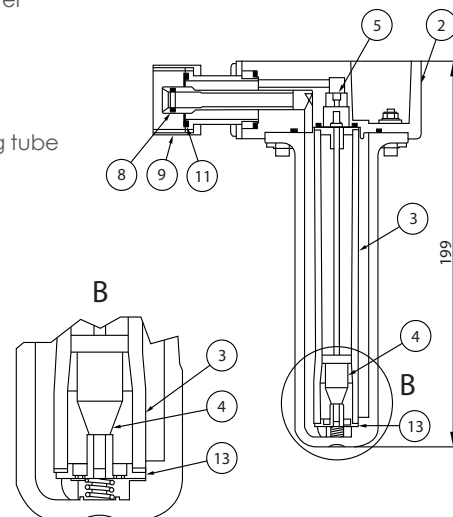
To take a reading a constant flow of fluid must be maintained. Pipe should always be full of water during taking a reading. The top edge of the float is the reference edge for taking flow reading. When commissioning the bypass meter, air bubbles will usually appear in the upper part of the meter. To remove the bubbles, slightly loosen the nut and rotate the bypass meter 360° so that the air bubbles can escape in to the pipe. After removing the air, rotate the bypass meter back in the original position and retighten the nut.

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1. Differential pressure transmitter
2. Bypass Meter
3. Measuring glass tube
4. Float
5. Bypass orifice
6. Differential pressure sampling tube
7. O-ring
8. Screw cap
9. Union nut
10. O-ring
11. Gasket
12. Filter



Materials Specifications

Description	Material
Differential Pressure Transducer	Aluminium
Differential Pressure Tube	Brass
Float	Stainless Steel
Orifice Bypass	Stainless Steel
Mech Filter	Stainless Steel
Gasket	Perbunan

Dimensions

Connections Size	A	ØD	Weights (kg)
DN80 - PN10/16	130 ± 0.5	138 ± 0.5	1.3
DN100 - PN10/16	140 ± 0.5	158 ± 0.5	1.6
DN150 - PN10/16	165 ± 0.5	212 ± 0.5	2.1
DN200 - PN10/16	190 ± 0.5	268 ± 0.5	3.0
DN250 - PN10	215 ± 0.5	320 ± 0.5	4.0
Display part	-	-	0.7

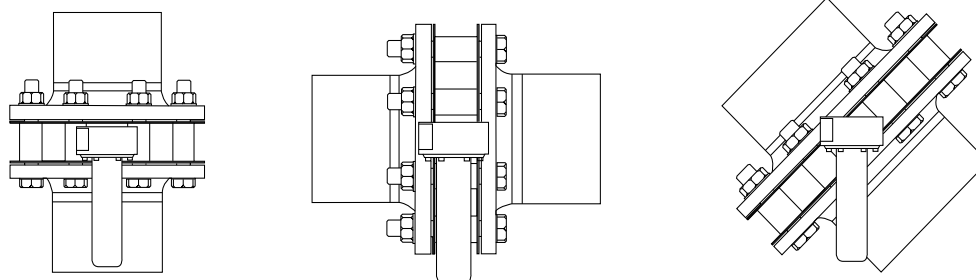
Ordering Codes

Orifice Plate	Ordering Codes
Orifice Plate DN80	RDT2OPFMDN80
Orifice Plate DN100	RDT2OPFMDN100
Orifice Plate DN150	RDT2OPFMDN150
Orifice Plate DN200	RDT2OPFMDN200
Orifice Plate DN250	RDT2OPFMDN250
Bypass Flowmeter	Ordering Codes
Bypass Flowmeter	RDBYPASSFLWM
Bypass Flowmeter with Calibration Certificate	RDBYPASSFLWMCC
Centring Kit*	Ordering Codes
Centring Assembly DN80	RDT2CAFMDN80
Centring Assembly DN100	RDT2CAFMDN100
Centring Assembly DN150	RDT2CAFMDN150
Centring Assembly DN200	RDT2CAFMDN200
Centring Assembly DN250	RDT2CAFMDN250
Replacement Cap*	Ordering Code
Replacement Cap	RDT2REPCAP

Bypass Flowmeter is same for all sizes. Bypass Flowmeter is required for each unit

*Optional Centring Kit and Replacement Cap

Installation Orientation



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Data Sheet 6.22

Issue A



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Flow Chart

Flow Rate - Water										
Display	DN80		DN100		DN150		DN200		DN250	
	L/min	m3/min	L/min	m3/min	L/min	m3/min	L/min	m3/min	L/min	m3/min
100 %	2100	2.10	3000	3.00	6000	6.00	12000	12.00	18000	18.00
98 %	2058	2.06	2940	2.94	5880	5.88	11760	11.76	17640	17.64
96 %	2016	2.02	2880	2.88	5760	5.76	11520	11.52	17280	17.28
94 %	1974	1.97	2820	2.82	5640	5.64	11280	11.28	16920	16.92
92 %	1932	1.93	2760	2.76	5520	5.52	11040	11.04	16560	16.56
90 %	1890	1.89	2700	2.70	5400	5.40	10800	10.80	16200	16.20
88 %	1848	1.85	2640	2.64	5280	5.28	10560	10.56	15840	15.84
86 %	1806	1.81	2580	2.58	5160	5.16	10320	10.32	15480	15.48
84 %	1764	1.76	2520	2.52	5040	5.04	10080	10.08	15120	15.12
82 %	1722	1.72	2460	2.46	4920	4.92	9840	9.84	14760	14.76
80 %	1680	1.68	2400	2.4	4800	4.80	9600	9.60	14400	14.40
78 %	1638	1.64	2340	2.34	4680	4.68	9360	9.36	14040	14.04
76 %	1596	1.60	2280	2.28	4560	4.56	9120	9.12	13680	13.68
74 %	1554	1.55	2220	2.22	4440	4.44	8880	8.88	13320	13.32
72 %	1512	1.51	2160	2.16	4320	4.32	8640	8.64	12960	12.96
70 %	1470	1.47	2100	2.10	4200	4.20	8400	8.40	12600	12.60
68 %	1428	1.43	2040	2.04	4080	4.08	8160	8.16	12240	12.24
66 %	1386	1.39	1980	1.98	3960	3.96	7920	7.92	11880	11.88
64 %	1344	1.34	1920	1.92	3840	3.84	7680	7.68	11520	11.52
62 %	1302	1.30	1860	1.86	3720	3.72	7440	7.44	11160	11.16
60 %	1260	1.26	1800	1.80	3600	3.60	7200	7.20	10800	10.80
58 %	1218	1.22	1740	1.74	3480	3.48	6960	6.96	10440	10.44
56 %	1176	1.18	1680	1.68	3360	3.36	6720	6.72	10080	10.08
54 %	1134	1.13	1620	1.62	3240	3.24	6480	6.48	9720	9.72
52 %	1092	1.09	1560	1.56	3120	3.12	6240	6.24	9360	9.36
50 %	1050	1.05	1500	1.50	3000	3.00	6000	6.00	9000	9.00
48 %	1008	1.01	1400	1.44	2880	2.88	5760	5.76	8640	8.64
46 %	966	0.97	1380	1.38	2760	2.76	5520	5.52	8280	8.28
44 %	924	0.92	1320	1.32	2640	2.64	5280	5.28	7920	7.92
42 %	882	0.88	1260	1.26	2520	2.52	5040	5.04	7560	7.56
40 %	840	0.84	1200	1.20	2400	2.40	4800	4.80	7200	7.20
35 %	735	0.74	1050	1.05	2100	2.10	4200	4.20	6300	6.30
30 %	630	0.63	900	0.90	1800	1.80	3600	3.60	5400	5.40
25%	525	0.53	750	0.75	1500	1.50	3000	3.00	4500	4.50
20%	420	0.42	600	0.60	1200	1.20	2400	2.40	3600	3.60

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DS: 6.22
Issue A
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