



## VD 500 – Flow meter for FAD measurement

For measuring downstream of the compressor in wet air up to +200 °C

### FIELD OF APPLICATION:

- Measurement downstream of the compressor
- Measurement at high temperatures
- Measurement of fast processes



### Benefits at a glance:

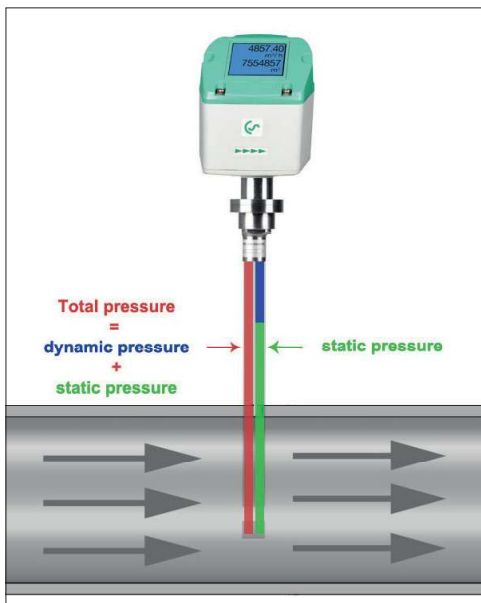
- Particularly suitable for extremely high flow rates
- Extremely fast response time: 100 ms
- Flow, total consumption, temperature and pressure
- Measurement at high temperatures, max. temperature 200 °C
- Measurement in various gases by selecting gas type, on request
- Can be used in pipes from DN 20 to DN 500
- Installation via 1/2" ball valve under pressure
- RS 485 interface (Modbus-RTU), 4...20 mA, pulse output as standard

### Typical applications:

- FAD measurement of compressors
- Compressed air audits
- Efficiency measurement of compressed air systems

### Installation conditions:

- Behind proper working water separator
- In horizontal pipes (recommended) or in vertical pipes



The integrated, precise differential pressure sensor measures the differential pressure/dynamic pressure at the sensor tip. The pressure depends on the respective gas velocity. The flow is therefore easy to determine by means of the pipe diameter.

The additional measurement of temperature and absolute pressure and calculation of the relevant density means that measuring can be carried out for various gases, a wide variety of temperatures and pressures.

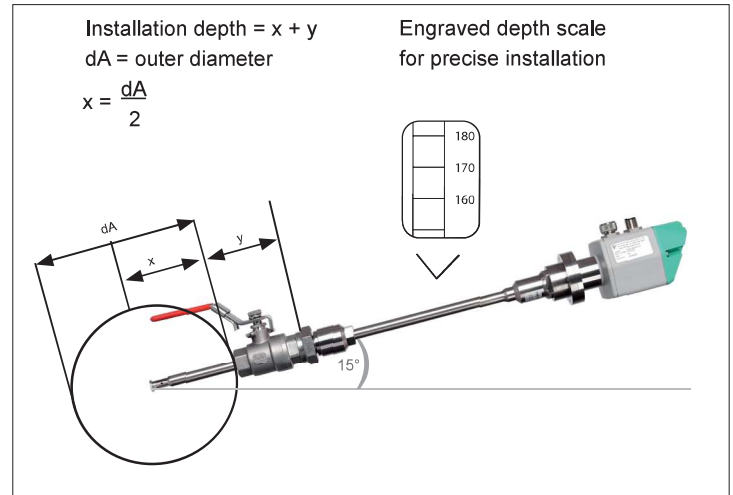
TECHNICAL DATA VD 500	
Measurement range:	Up to 224 Nm/s
Measured medium:	Air, non-aggressive gases
Accuracy: (of m.v. = of measured value) (of f.s. = of full scale)	± 1.5 % of m.v., ± 0.3 % of f.s.
Measuring principle:	Differential pressure
Measuring span:	1:10
Response time:	t 99: < 1 sec.
Temperature of the medium:	-30°...+200° C
Operating pressure:	Max. 20 bar
Ambient temperature:	-40°...+70 °C
Screw-in thread:	G 1/2", ISO 228
Power supply:	18...36 VDC, 5 W
Signal outputs:	As standard: RS 485 (Modbus-RTU), 4...20 mA, pulse Optional: Ethernet Interface (PoE), M-Bus

Example order code VD 500:

0690 5001\_A1\_B1\_C1\_D1\_E1\_F1\_G1\_K1

Measurement range	
A1	224 m/s
A2	higher measuring ranges on request
Screw-in thread	
B1	G 1/2"
Installation length / shaft length	
C1	220 mm
C2	400 mm
Display option	
D1	with integrated display
Signal outputs / bus connection option	
E1	1x 4...20 mA analogue output (not galvanically isolated), pulse output, RS 485 (Modbus-RTU)
E2	Ethernet interface (Modbus/TCP), 1 x 4...20 mA analogue output (not galvanically isolated), RS 485 (Modbus-RTU)
E3	Ethernet interface PoE (Power of Ethernet) (Modbus/TCP), 1 x 4...20 mA analogue output (not galvanically isolated), RS 485 (Modbus-RTU)
E4	M-Bus, 1x 4...20 mA analogue output (not galvanically isolated), RS 485 (Modbus-RTU)
Reference standard	
G1	20 °C, 1000 mbar
G2	0 °C, 1013.25 mbar
G3	15 °C, 981 mbar
G4	15 °C, 1013.25 mbar
Gas type	
K1	Compressed air
K90	Additional gas on request

### Simple installation and removal under pressure



Recommended installation position

DESCRIPTION	ORDER NO.
VD 500 Flow meter for FAD measurement	0690 5001 + Order code A_...K_
<b>Accessories:</b>	
ISO calibration certificate	3200 0001
High-pressure protection	On request

For additional accessories see pages 88 to 92

Flow measurement ranges VD 500 for compressed air at typical 7 bar (abs) and 50 °C (ISO 1217:1000 mbar, 20 °C)				
Inside diameter of pipe			VD 500 20 ... 224 m/s	
Inch	mm	DN	Measuring range initial values and full scale	
			m³/h	(cfm)
3/4"	21.7	DN 20	19 ... 215	11 ... 127
1"	27.3	DN 25	32 ... 357	19 ... 210
1 1/4"	36.0	DN 32	57 ... 644	34 ... 379
1 1/2"	41.9	DN 40	79 ... 886	47 ... 522
2"	53.1	DN 50	130 ... 1450	76 ... 853
2 1/2"	68.9	DN 65	222 ... 2484	131 ... 1462
3"	80.9	DN 80	307 ... 3440	181 ... 2025
4"	110.0	DN 100	571 ... 6391	336 ... 3762
5"	133.7	DN 125	844 ... 9453	497 ... 5564
6"	159.3	DN 150	1200 ... 13436	706 ... 7908
8"	200.0	DN 200	1896 ... 21230	1116 ... 12495
10"	250.0	DN 250	2966 ... 33211	1746 ... 19547
12"	300.0	DN 300	4276 ... 47881	2517 ... 28182

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