



## VPFlowScope

The VPFlowScope measures mass flow, temperature and pressure simultaneously. It's the ultimate compressed air audit tool, used by leading auditors worldwide. The bright blue display provides real-time information, and with the built-in data logger, recording is as easy as taking a picture.

VPStudio software can be used for real-time measurements on your PC, to process data and to print reports. The VPFlowScope product family consists of a wet and a dry air flow meter, which are fully interchangeable and compatible with the VPFlowScope display modules.

## VPFlowScope

- > Mass Flow, Pressure & Temperature
- > Display/data logger module for easy recording of data
- > Bi-directional measurements (optional)

### Applications

- > Air audits
- > Demand side monitoring, sub metering of compressed air
- > Ring networks (bi-directional)
- > Air, Nitrogen, Carbon Dioxide, Argon, and any other dry and non-corrosive gases

We offer the VPFlowScope for both wet and dry compressed air. You can combine either sensor module with the same display module. That's why the VPFlowScope is such an exceptional instrument for air auditors. With the VPFlowScope you can measure virtually any compressed air system using a single instrument.



# Specifications

## VPFlowScope

### Flow sensor

Measuring principle	Thermabridge™ Thermal Mass Flow sensor
Flow range	0 (0.5) ... 150 m <sub>n</sub> /sec   0 ... 500 sfps Bi-directional option (calibrated in positive direction only).
Accuracy	2% of reading under calibration conditions; Please refer to the user manual for details. Recommended pipe diameter: 25 mm (1 inch) and up.
Reference conditions	0 °C, 1013.25 mbar   32 °F, 14.65 psi
Gases	Compressed air, Nitrogen and inert, non condensing gases
Gas temperature range	0 ... +60 °C   0 ... +140 °F

### Pressure sensor

Pressure sensor range PN16	0 ... 16 bar   0 ... 250 psi gauge
Accuracy	+/- 1.5% FSS Temperature compensated
Pressure sensor range PN35 (optional)	0 ... 35 bar   0 ... 500 psi gauge

### Temperature sensor

Temperature sensor range	0 ... +60 °C   0 ... +140 °F
Accuracy	> 10 m/sec: +/- 1 °C   1.8 °F < 10 m/sec: + 5 °C   1.8 °F

### Data outputs

Digital	RS485, MODBUS RTU protocol
Analog	4 ... 20 mA output, selectable via software to indicate flow, pressure or temperature

### Display/data logger

Technology	Liquid Crystal (LCD)
Back light	Blue, with auto power save
Data logger	2 million points

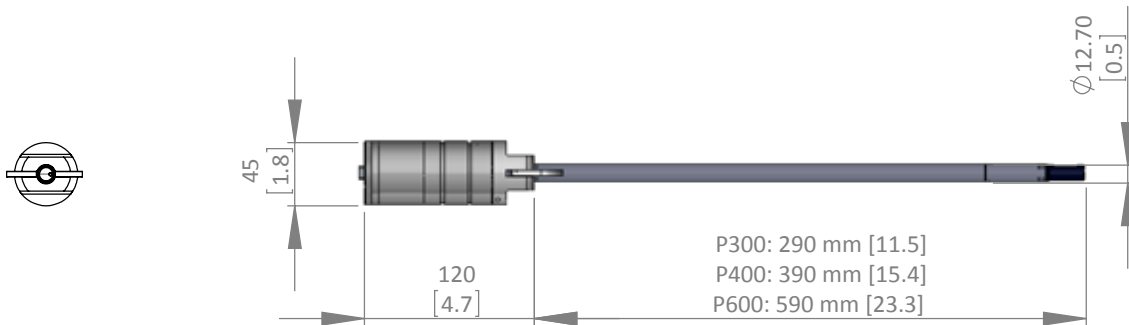
### Mechanical & environmental

Probe lengths	400 mm   15 inch (other lengths on request)
Process connection	Compression fitting, 0,5 inch
Pressure rating	PN16   PN35
Protection grade	IP52   NEMA 12 when mated to display module, avoid upside down installation IP63   NEMA 4 when mated to connector cap, avoid upside down installation
Ambient temperature range	-10 ... +50 °C   14 ... 122 °F. Avoid direct sunlight or radiant heat Higher ambient temperatures: consult factory
Wetted materials	Anodized Aluminum, Stainless steel 316, Glass, Epoxy
Corrosion resistance	Highly corrosive or acid environments should be avoided

### Electrical

Connection type	M12, 5 pin connector, female
Power supply	12 ... 24 VDC +/- 10 % Class 2 (UL)
Power consumption	2,4 Watt (no flow) 4,8 Watt (full flow) +/- 10% 100 mA (no flow). 200 mA (full flow) +/- 10% @24VDC
UL/ CUL	14 AZ, Industrial Control Equipment
CE	EN 61326-1, EN 50082-1

# Technical drawings



## Order codes

### Flow meters

VPS.R150.P400.KIT  
VPS.R150.P400.D11

VPFlowScope start kit, for air audits, complete with software  
VPFlowScope with 2 million point data logger display module, for auditors and permanent installation (stand alone)

VPS.R150.P400.D10  
VPS.R150.P400.D2

VPFlowScope with three row display  
VPFlowScope with connector cap. For modbus networks

### Other probe lengths

The standard P400 probe is acceptable for most air audits and installations.  
We offer P300 and P600 probes on request.

### Accessories

VPA.5000.005  
VPA.5001.105  
VPA.5001.900

Cable, M12, 5 pole, for permanent connection  
Interface box JB5 with 5m/ 16.4 ft cable + 12 VDC power supply  
Connector cap with M12 socket for VPFlowScope sensor module

## VPFlowScope P400 flow range table

SCHEDULE 40 STANDARD SEAMLESS CARBON STEEL PIPE								SCHEDULE 10 STANDARD SEAMLESS CARBON STEEL PIPE					
Size (inch)	DN	ID (inch)	ID (mm)	Min flow (scfm)	Max flow (scfm)	Min flow (m <sup>3</sup> <sub>n</sub> /hr)	Max flow (m <sup>3</sup> <sub>n</sub> /hr)	ID (inch)	ID (mm)	Min flow (scfm)	Max flow (scfm)	Min flow (m <sup>3</sup> <sub>n</sub> /hr)	Max flow (m <sup>3</sup> <sub>n</sub> /hr)
2	50	2.1	52.5	2	688	4	1,169	2.2	54.8	2	749	4	1,273
3	80	3.1	77.9	5	1,516	9	2,576	3.3	82.8	6	1,712	10	2,908
4	100	4.0	102.3	9	2,610	15	4,435	4.3	108.2	10	2,923	17	4,966
6	150	6.1	154.1	20	5,924	34	10,065	6.4	161.5	22	6,508	37	11,057
8	200	8.0	202.7	34	10,259	58	17,429	8.3	211.6	37	11,173	63	18,982
10	250	10.2	259.1	56	16,756	95	28,468	10.4	264.7	58	17,487	99	29,709
12	300	11.9	303.2	77	22,953	130	38,995	12.4	314.7	82	24,724	140	42,004
16	400	15.0	381.0	121	36,237	205	61,565	15.6	396.8	131	39,315	223	66,794
20	500	18.8	477.8	190	56,996	323	96,832	19.6	496.9	205	61,643	349	104,729

The ranges apply only to compressed air and nitrogen. Contact us for other gases. The field accuracy of an insertion probe is typically +/- 5% due to installation conditions. Insertion probes may not be used for official compressor testing.



'The **VPFlowScope** enables us to perform air audits quicker, easier and more cost effective. It is the Swiss army knife for any compressed air auditor'

- Air Energy Management, UK