



## 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
- > Measures mass flow and direction

### Applications

- > Air audits
- > Demand side monitoring, sub metering of compressed air
- > Ring networks (bi-directional)
- > Air, Nitrogen, Carbon Dioxide, Argon: Any dry and non-corrosive gas.

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



# Specifications - Thermal

## 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's 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	0 ... 16 bar   0 ... 145 psi gage
Accuracy	+/- 1.5% FSS Temperature compensated

### 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	500,000 points

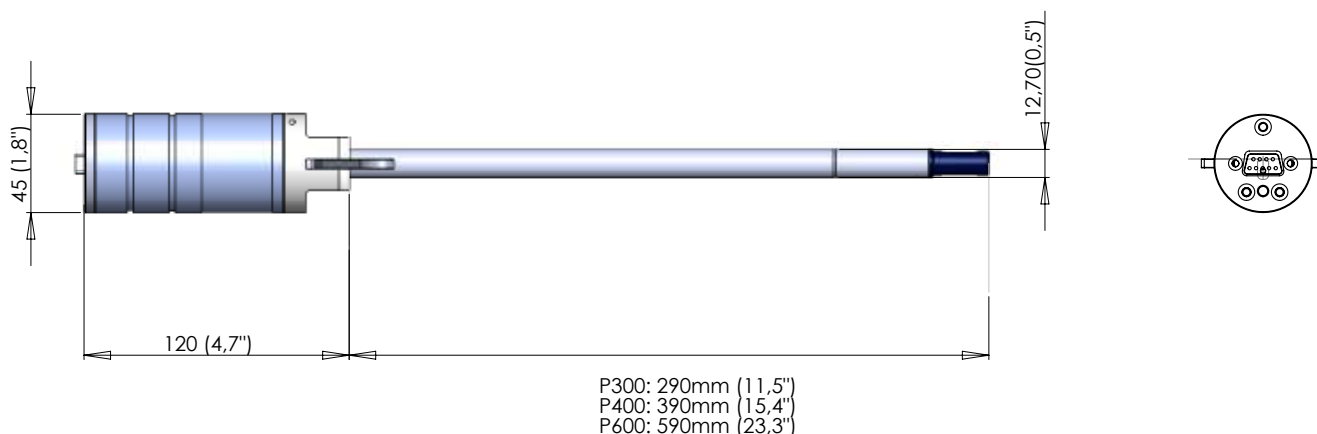
### Mechanical & environmental

Probe lengths	400 mm   15 inch (other lengths on request)
Process connection	Compression fitting, 0,5 inch
Pressure rating	PN20, higher pressure on request
Protection grade	IP52   NEMA 5 when mated to display module IP63   NEMA 3 when mated to connector cap
Ambient temperature range	-10 ... +50 °C   14 ... 122 °F
Wetted materials	Anodized Aluminum, Stainless steel, Silicon (glass coated), Epoxy

### 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

VPFlowScope start kit, for audits, complete with software

VPS.R150.P400.D1

VPFlowScope with data logger display module, for auditors and permanent installation (stand alone)

VPS.R150.P400.D2

VPFlowScope with connector cap. For modbus networks

### Other probe lengths

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

### Accessories

VPA.5000.005

Cable, M12, 5 pole, for permanent connection

VPA.5001.105

Interface box JB5 with 5m/ 16.4 ft cable + 12 VDC power supply

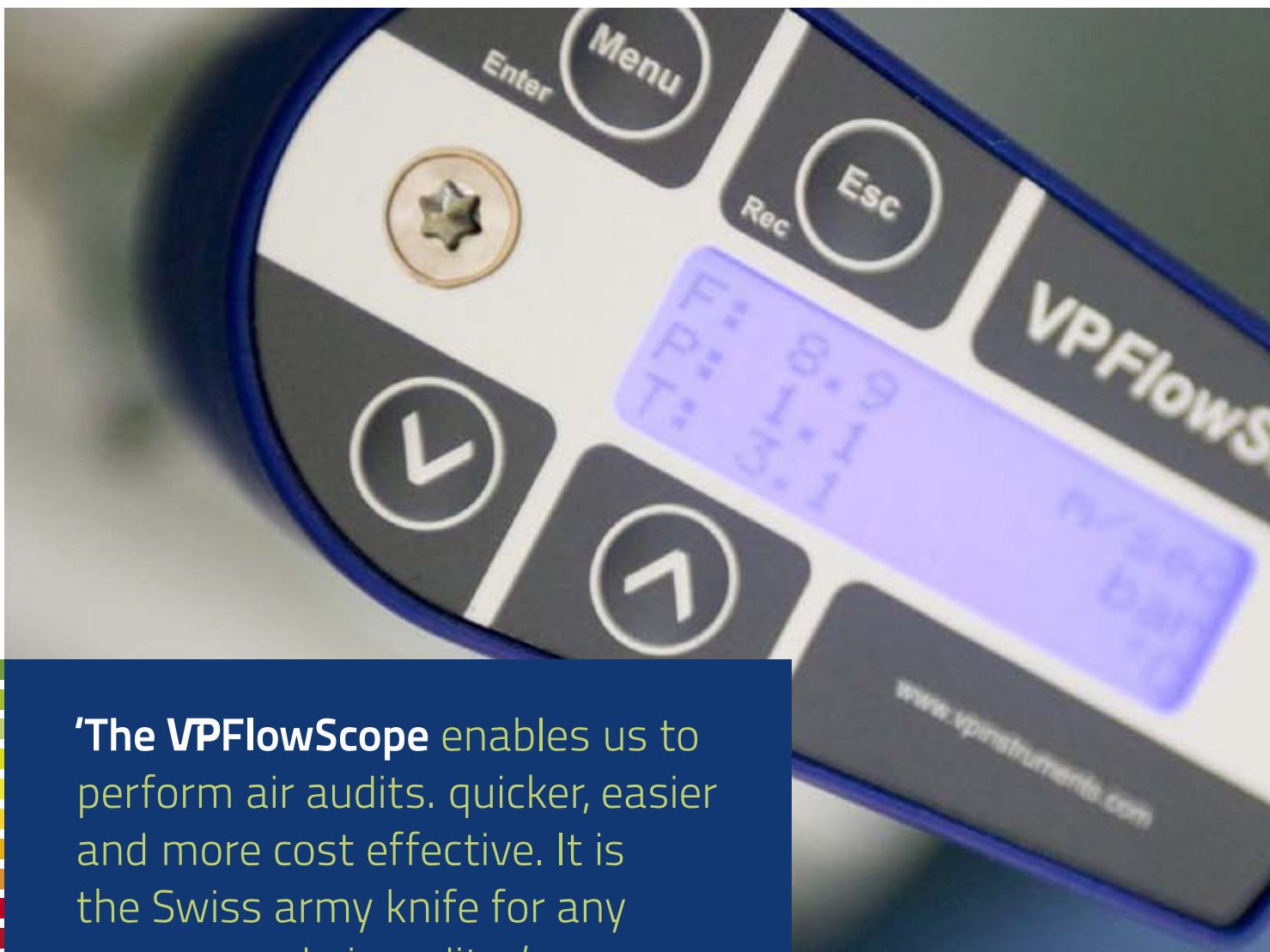
VPA.5001.900

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	1169	2.2	54.8	2	749	4	1273
3	80	3.1	77.9	5	1516	9	2576	3.3	82.8	6	1712	10	2908
4	100	4.0	102.3	9	2610	15	4435	4.3	108.2	10	2923	17	4966
6	150	6.1	154.1	20	5924	34	10065	6.4	161.5	22	6508	37	11057
8	200	8.0	202.7	34	10259	58	17429	8.3	211.6	37	11173	63	18982
10	250	10.2	259.1	56	16756	95	28468	10.4	264.7	58	17487	99	29709
12	300	11.9	303.2	77	22953	130	38995	12.4	314.7	82	24724	140	42004
16	400	15.0	381.0	121	36237	205	61565	15.6	396.8	131	39315	223	66794
20	500	18.8	477.8	190	56996	323	96832	19.6	496.9	205	61643	349	104729

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