
PRODUCT GUIDE

March 2021

easy insight into energy flows™



Index

FLOW METERS

- VPFlowScope selection 06
- VPFlowScope DP 08
- VPFlowScope M 12
- VPFlowScope Probe 18
- VPFlowScope In-line 22
- VPFlowScope In-line 3/8" 26

DEW POINT SENSORS

- VP Dew Point Sensor 28
- Dew Point Sensor - Extreme Dry Air 32

POWER METERS

- 3 Phase Power Meter 34
- VPLog-i 36

ENERGY MONITORING AND DISPLAYS

- VPIvision 38
- VPIRouter 42
- VPFlowTerminal 44

INSTALLATION TOOLS

- Hot tap drill 46

SOFTWARE

- VPStudio 48

SERVICE & EXCHANGE

- VPFlowScope service & exchange 49
- Rental 52

OTHER

- General accessories 53

ICONS EXPLAINED

- DRY AIR
- SATURATED AND HOT AIR
- PIPE DIAMETER ≤ 2"
- PIPE DIAMETER > 2"
- PIPE DIAMETER ≈ 3/8"
- 4..20 MA
- PULSE
- ETHERNET
- RS485 (MODBUS RTU)
- ALARM
- FLOW
- PRESSURE
- TEMPERATURE
- TOTALIZER
- BI-DIRECTIONAL
- DATALOGGER
- THERMAL MASS FLOW
- DIFFERENTIAL PRESSURE
- TEMPERATURE -70..60°C
- TEMPERATURE -94..140°F
- TEMPERATURE -100..20°C
- TEMPERATURE -148..68°F
- WATER RESISTANT
- DIRT RESISTANT
- GAS CORRECTION
- PRESSURE UPGRADE 35 BAR



About VPIstruments

easy insight into energy flows

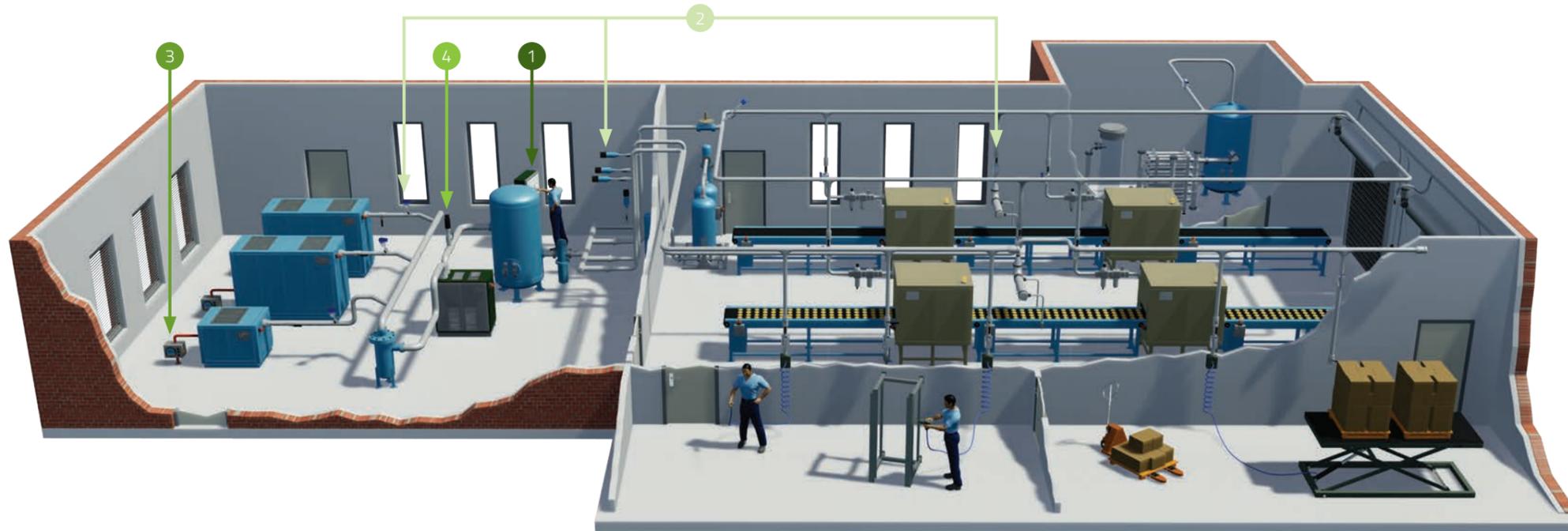
VPIstruments delivers Energy Management Solutions for compressed air and industrial gases, including oxygen, nitrogen, CO₂, helium, and argon. Developed by experienced, involved experts, based in Delft, the Netherlands.

We believe that industrial energy monitoring should be easy and effortless to enable insight, savings and optimization. We show you where, when and how much you can save using our innovative and reliable products. Our solutions

cover both the supply and demand side. We promise fast, reliable and easy to use products. How? We determine the entire process from design to realization and we control the entire production and calibration process.

ENERGY MANAGEMENT SOLUTIONS

For compressed air, oxygen, nitrogen, CO₂, helium, argon, and other industrial gases



Applications

- > Compressed air audits
- > Energy monitoring
- > Leakage management
- > Efficiency monitoring
- > Cost allocation
- > Maintenance management

Benefits

- > From supply to demand side
- > Easy-to-use
- > Innovative and reliable
- > Versatile interfacing   

easy insight into energy flows™



1 Monitoring

Easy and effortless to enable insight, savings and optimization. Real-time energy monitoring for all your utilities. On-premise data storage with a web-based interface, automated reports with e-mail function and alarm messages. Flexible and scalable.



2 VPFlowScope flow meters

For dry and saturated air, from supply side to demand side. 4-in-1 sensors: bi-directional flow, pressure, temperature, totalizer. Solutions for air audits and for permanent installation. Measure compressed air and industrial gases.



3 Power

Easy insight into power consumption. Permanent and mobile solutions. Measure up to all 3 phases. General purpose power measurement; monitor compressor efficiency; measure other large electrical consumers.



4 Dew point

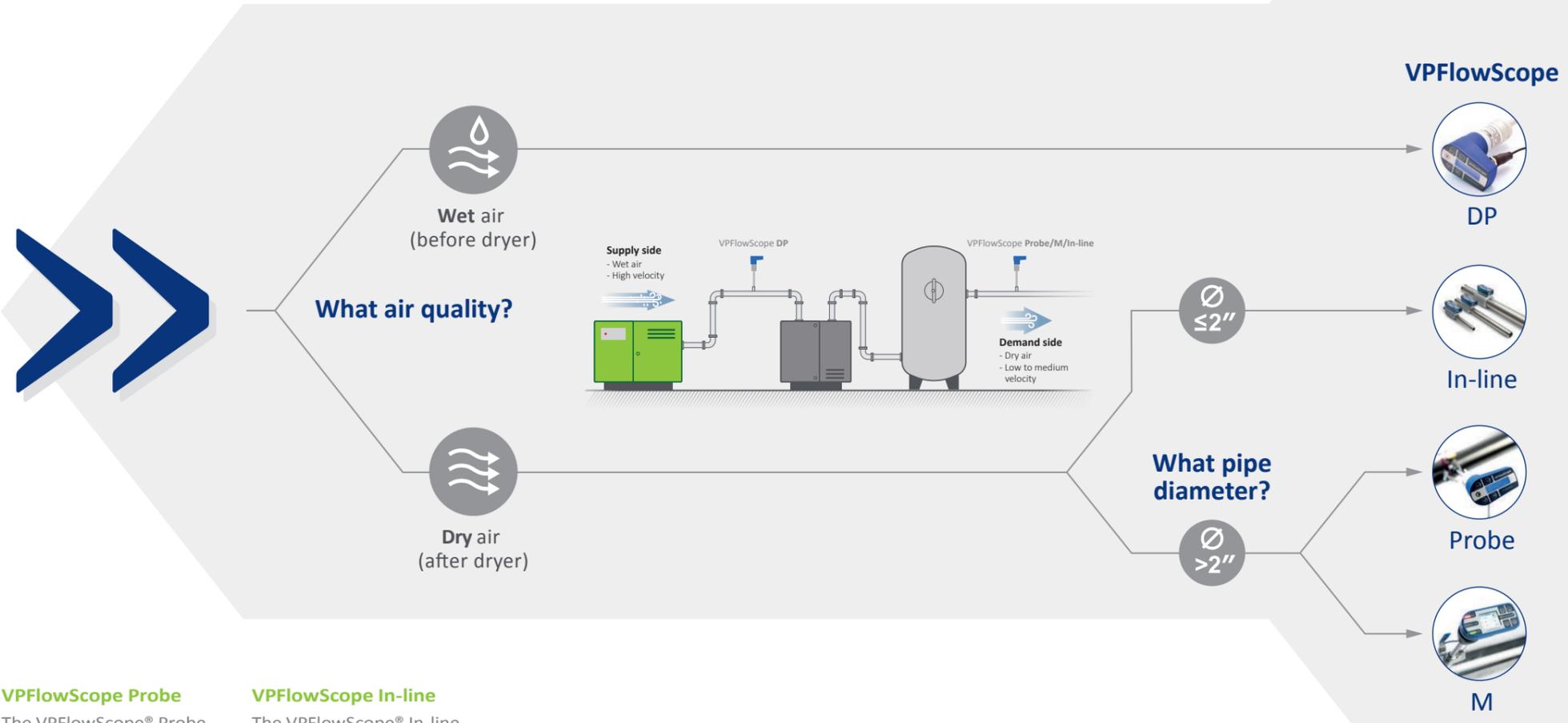
Safeguard your equipment and production process. Monitor the air quality of both refrigerant and desiccant type air dryers. Measure compressed air and industrial gas. Robust, smart and with autocalibration functionality.

VPFlowScope flow meters for compressed air and industrial gases

We designed our flow meters to be easy to use, affordable and complete. You can use our flow meters for measurement of compressed air, nitrogen, oxygen, helium, argon and other industrial gases. The VPFlowScopes incorporate the 4-in-1 measurement principle: flow, pressure, temperature and total flow. Moreover, these flow meters can measure bi-directional flow, which is optional on our thermal mass flow meters with our proprietary Thermabridge sensors, and standard on our differential pressure flow meters. The VPFlowScope In-line 3/8" is a simpler device, which measures flow, temperature and total flow of compressed air and oxygen.

Let's start by selecting a flow meter!

For the complete VPFlowScope selection tool, please go to www.vpinstruments.com



VPFlowScope DP

The patented VPFlowScope® DP enables you to take measurements in the discharge pipe of a compressor under 100% saturated conditions. Combine the VPFlowScope DP with a power meter and measure compressor efficiency.

VPFlowScope M

The VPFlowScope® M is the next step in gas measurement. Unlike traditional flow meters, the VPFlowScope M consists of a Transmitter and the patented VPSensorCartridge® which reduces recalibration to a simple exchange.

VPFlowScope Probe

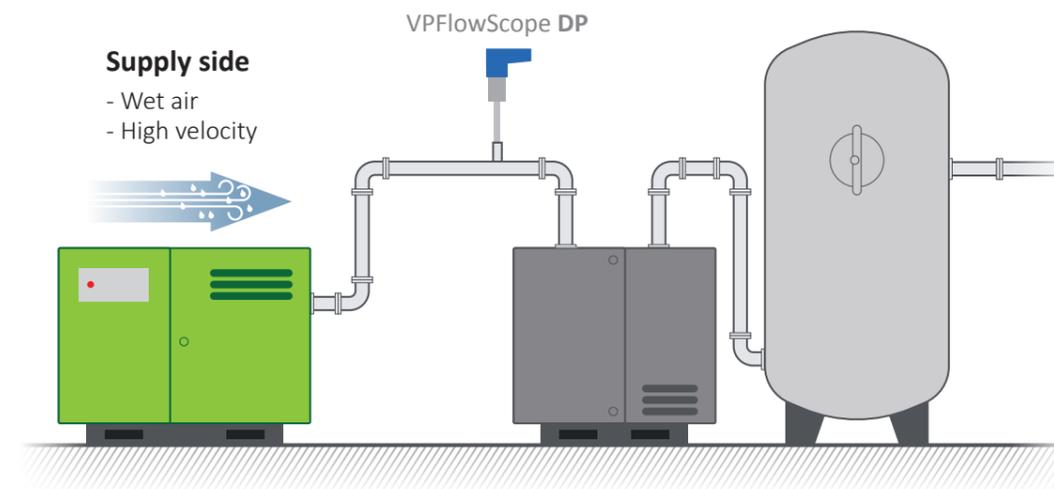
The VPFlowScope® Probe is the measurement tool for dry compressed air and other technical gases like nitrogen, carbon dioxide and argon. The VPFlowScope Probe measures thermal mass flow, pressure, temperature and total flow simultaneously.

VPFlowScope In-line

The VPFlowScope® In-line is the ideal flow meter for point of use consumption measurement. It is perfect for smaller diameters where it produces all the data you need to optimize your compressed air consumption.

VPFlowScope DP

The ultimate tool for saturated and hot compressed air measurement



The patented VPFlowScope® DP is the ultimate measurement tool for saturated compressed air flow measurements. This differential pressure flow sensor measures bi-directional flow, pressure, temperature and total flow simultaneously. Its unique design enables you to take measurements in the discharge pipe of any compressor under 100% saturated conditions. With the VPFlowScope DP you can measure the performance or efficiency of your compressor. Furthermore, you can measure compressor contribution of the total compressed air supply.

The VPFlowScope DP is an insertion type flow meter, so you can use one device for various pipe diameters. The bright blue LCD display provides real-time information and with the built-in data logger, you can record for certain periods of time. Combine this with our VPStudio software on your PC and you can use this information to process data, print reports and analyze where and how exactly you can save.

Highlights

- > For saturated compressed air measurements, can handle droplets of condensate
- > 4-in-1 sensor: Bi-directional flow, pressure, temperature and total flow
- > Differential pressure flow measurement
- > Standard RS485 (Modbus RTU), 4..20mA and pulse output
- > 3-line display (optional) with real-time information and configuration keys
- > Built-in data logger with 2 million points (optional)

Applications

- > Supply side audits
- > Compressor performance measurement
- > Compressor efficiency monitoring (in combination with power measurement)
- > High velocities (up to 200 m_n/sec | 650 sfps)
- > High temperatures (up to 150°C | 302°F)
- > Demand side flow measurement when dryers are not in use
- > Input/ output monitoring of desiccant dryers/air treatment equipment

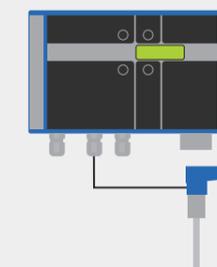
Installation examples

1. RS485 (Modbus RTU) connection to Energy Management System or PLC



VPVision or other Energy Management System/Modbus TCP converter

2. Connected to local wall mount display



3. Mobile use with build-in datalogger



Connection with VPStudio
RS485 (Modbus RTU)
JB5 interface kit

VPS.R200.P4DP.x 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 ³ /hr)	Max flow (m ³ /hr)	ID (inch)	ID (mm)	Min flow (scfm)	Max flow (scfm)	Min flow (m ³ /hr)	Max flow (m ³ /hr)
2	50	2.1	52.5	92	917	156	1559	2.2	54.8	100	1000	170	1698
3	80	3.1	77.9	202	2020	343	3432	3.3	82.8	228	2282	388	3877
4	100	4.0	102.3	348	3483	592	5918	4.3	108.2	390	3897	662	6620
6	150	6.1	154.1	790	7904	1343	13429	6.4	161.5	868	8681	1475	14749
8	200	8.0	202.7	1368	13675	2323	23234	8.3	211.6	1490	14902	2532	25319
10	250	10.2	259.1	2234	22344	3796	37963	10.4	264.7	2332	23320	3962	39621
12	300	11.9	303.2	3060	30597	5199	51985	12.4	314.7	3296	32962	5600	56004
16	400	15.0	381.0	4831	48314	8209	82087	15.6	396.8	5240	52405	8904	89036
20	500	18.8	477.8	7598	75983	12910	129097	19.6	496.9	8218	82180	13962	139624

The ranges only apply to compressed air, oxygen and nitrogen. Contact us for other gases. The field accuracy of an insertion probe is typically +/- 5% due to installation conditions.

Specifications

FLOW SENSOR	
Measuring principle	Differential pressure
Flow range	20 .. 200 m ₃ /sec 65 .. 650 sfps Bi-directional measurement (standard)
Accuracy	2% of reading over 1:10 range, under calibration conditions: please refer to the user manual for details. Recommended pipe diameter: 50 mm (2 inch) and up.
Reference conditions	0 °C, 1013.25 mbar 32 °F, 14.65 psi - DIN 1343
Gases	Wet* and dry compressed air, nitrogen and inert gases

PRESSURE SENSOR	
Pressure sensor range, standard	0 .. 16 bar 0 .. 250 psi gage
Accuracy	+/- 3% full scale (-45 .. 125 °C -49 .. 257 °F)

TEMPERATURE SENSOR	
Temperature sensor range	-40 .. 150 °C -40 .. 302 °F. Icing should be avoided
Accuracy	+/- 1 °C 1.8 °F

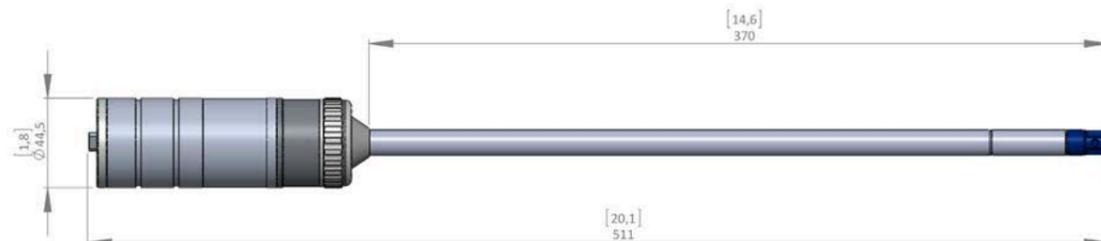
DATA OUTPUTS	
Digital	RS485, MODBUS RTU protocol
Analog	4 .. 20 mA single analog / pulse output, selectable via VPStudio software

DISPLAY/DATA LOGGER	
Technology	Liquid Crystal (LCD)
Back light	Blue, with auto power save
Data logger	2 million points memory

MECHANICAL & ENVIRONMENTAL	
Probe lengths	386 mm 15"
Process connection	Compression fitting, 0.5" NPT thread
Pressure rating	PN16
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	0 .. 60 °C 32 .. 140 °F. Avoid direct sunlight or radiant heat
Wetted materials	Anodized aluminum, stainless steel 316, glass and 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	3.6 Watt +/- 10% 150 mA +/- 10% @24VDC, constant over the entire flow range
UL/ CUL	14 AZ, Industrial Control Equipment
CE	EN 61325-1 (2006), Class AEN 61000-6-1 (2007)

*Note: The VPFlowScope DP is a flow meter for compressed air measurements, NOT for water measurements. Water drops are allowed. Excessive oil & water carryover conditions should be avoided.



Order codes

VPFlowScope DP

Our VPFlowScope DP products will be supplied with bi-directional measurement, ISO calibration report and compression fitting with integrated safety cable.

DESCRIPTION	ORDER CODE
 VPFlowScope DP probe 400mm/15.4" with display no datalogger	VPS.R200.P4DP .D10
 VPFlowScope DP probe 400mm/15.4" with display and datalogger	VPS.R200.P4DP .D11
 VPFlowScope DP probe 400mm/15.4" with connector cap	VPS.R200.P4DP .D0
 VPFlowScope DP probe 400mm/15.4" with connector cap For Modbus networks.	VPS.R200.P4DP .D2

Start kits

Includes VPFlowScope DP probe 400mm/15.4", display with datalogger (2m datapoints), JB5 interface kit, RS485 to USB cable, 24V power supply, compression fitting with integrated safety cable, documentation and ISO calibration report.

DESCRIPTION	ORDER CODE
 VPFlowScope DP set in a carry case Including rugged explorer case with pre-cut foam.	VPS.R200.P4DP .KIT
 VPFlowScope DP set in a box Items only, no carry case	VPS.R200.P4DP .BOX
 VPFlowTerminal with DP probe 400mm/15.4" combination kit Including 10m cable, 8 pin M12 connector cap and mini USB cable.	VPS.R200.P4DP .VPT.KIT

Accessories

When you are installing multiple products, please see the additional accessories on page 53.

DESCRIPTION	ORDER CODE
 VPFlowScope display with datalogger	VPS.D110.000
 VPFlowScope display without datalogger	VPS.D100.000
 VPFlowScope connector cap with 5 pin M12 connector	VPA.5001.900
 Cable 5m/16.4 ft. with 5 pin M12 on one side The other side has open wires for 0V, 24V, RS485 A, RS485 B and Analog output. For permanent connection.	VPA.5000.005
 Cable 10m/32.8 ft. with 5 pin M12 on one side The other side has open wires for 0V, 24V, RS485 A, RS485 B and Analog output. For permanent connection.	VPA.5000.010
 5-pin M12 MALE connector (connector with screw terminal) Without cable. (No IP/NEMA rating). Used for flow meter connection or to female connector of extension cable.	VPA.5000.000
 5-pin M12 FEMALE connector (connector with screw terminal) Without cable. (No IP/NEMA rating). To create extension cable and connect to male connector.	VPA.5000.001
 VPFlowScope JB5 interface KIT incl. USB to RS485 converter and power supply for JB5 For connecting your VPFlowScope to VPStudio.	VPA.5001.205
 Power supply adapter with 5 pin connector Useful for air audits.	VPA.0000.200
 Power supply module in IP65 enclosure (230-110VAC to 24VDC) For permanent installation. This power supply module can power max 2 VPFlowScopes.	VPA.0030.100
 Modbus junction box (IP65) For easy connection of multiple flow meters in a daisy chain.	VPA.5030.020
 Explorer case for 2x VPFlowScope probe 400mm/15.4" With pre-cut foam inside.	VPA.5014.000
 VPFlowScope DP set of 10 membrane filters and 10 o-rings Replacement part including tweezers (for VPFlowScope DP probes starting from Serial no. 5103651).	VPA.5100.004
 VPFlowScope DP set of 24 membrane filters and 24 o-rings Replacement part including tweezers (for VPFlowScope DP probes up to Serial no. 5103650).	VPA.5100.003
 Adjustable safety cable with integrated compression fitting for VPFlowScope DP probe	VPA.0003.006
 Compression fitting 0,5" NPT for VPFlowScope Probe with teflon ferrule	VPA.0001.000
 Set of 5 Teflon ferrules for compression fitting	VPA.0001.001

VPFlowScope M

Your next step in gas flow measurement



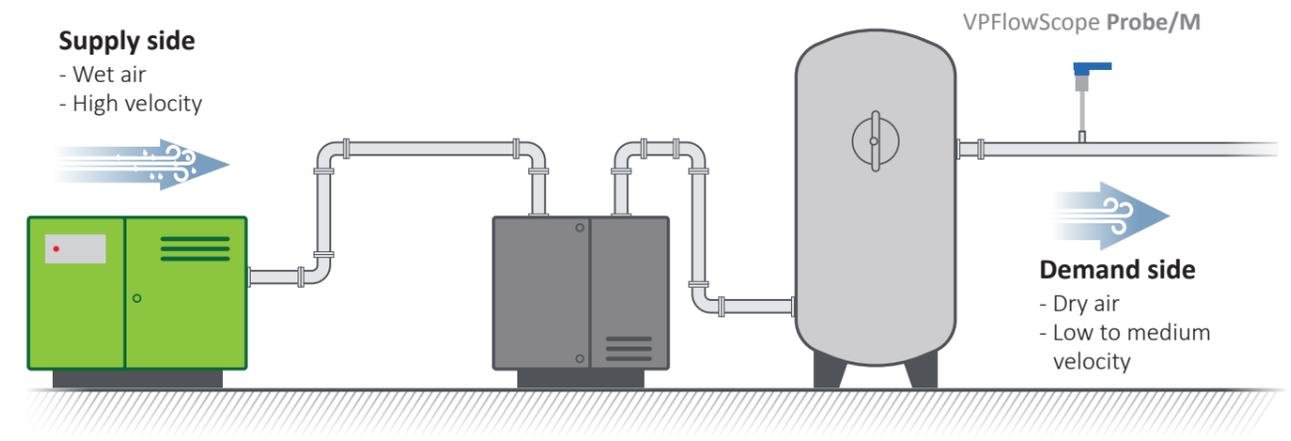
The VPFlowScope® M is a four-in-one insertion flow meter for compressed air and technical gases. It can be installed under pressure and measures thermal mass flow, pressure, temperature and total flow simultaneously. With the introduction of the VPFlowScope M, recalibration becomes history. Unlike traditional flow meters, the VPFlowScope M does not require traditional recalibration, where you have to ship the unit back. Instead, the VPFlowScope M consists of a Transmitter and the patented VPSensorCartridge® which reduces recalibration to a simple exchange.

Highlights

- > 4-in-1 sensor: flow, pressure, temperature and totalized flow
- > Patented Thermabridge™ technology
- > Standard Ethernet (Modbus/TCP), RS485 (Modbus RTU), 4..20mA and pulse output
- > Optional display with real-time information and configuration keys
- > Optional data logger with 1-year automated retention policy
- > Bi-directional flow measurements (optional)
- > For dry, clean gas measurements
- > Patented VPSensorCartridge®: no more recalibration required

Applications

- > Demand side compressed air monitoring
- > Air audits
- > Submetering of compressed air
- > Ring networks (bi-directional)
- > Industrial gas monitoring (air, nitrogen, carbon dioxide, argon and other dry, noncorrosive industrial gases)
- > Cost allocation
- > Leak detection



Installation examples

1. Connection to Energy Management System or PLC via RS485 (Modbus RTU) and/or via Ethernet (Modbus/TCP)



VPVision or other Energy Management System/ Modbus TCP converter

2. Stand-alone use with build-in datalogger With power supply adapter 12V



Connection with VPStudio

With mini USB cable
For real time data:
connect power supply adapter 12V

VPM.R150.P35x.PN10 flow range table

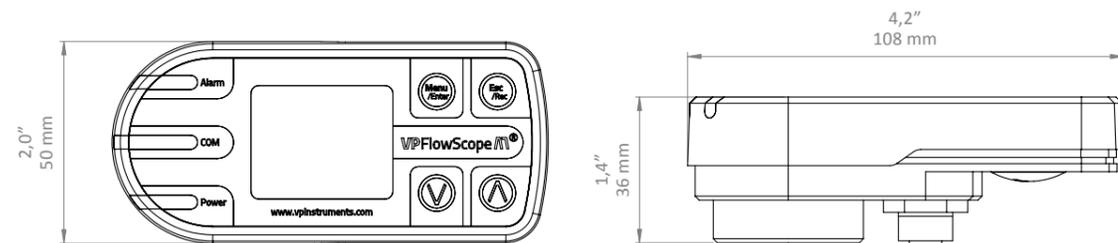
SCHEDULE 40 STANDARD SEAMLESS CARBON STEEL PIPE							
Size (inch)	DN	ID (inch)	ID (mm)	Min flow (scfm)	Max flow (scfm)	Min flow (m³ _n /hr)	Max flow (m³ _n /hr)
2	50	2.1	52.5	2	688	4	1,169
3	80	3.1	77.9	5	1,516	9	2,576
4	100	4.0	102.3	9	2,610	15	4,435
6	150	6.1	154.1	20	5,924	34	10,065
8	200	8.0	202.7	34	10,259	58	17,429
10	250	10.2	259.1	56	16,756	95	28,468
12	300	11.9	303.2	77	22,953	130	38,995
16	400	15.0	381.0	121	36,237	205	61,565

SCHEDULE 10 STANDARD SEAMLESS CARBON STEEL PIPE					
ID (inch)	ID (mm)	Min flow (scfm)	Max flow (scfm)	Min flow (m³ _n /hr)	Max flow (m³ _n /hr)
2.2	54.8	2.5	749	4.2	1,273
3.3	82.8	5.7	1,712	10	2,908
4.3	108.2	9.7	2,923	17	4,966
6.4	161.5	22	6,508	37	11,057
8.3	211.6	37	11,173	63	18,982
10.4	264.7	58	17,487	99	29,709
12.4	314.7	82	24,724	140	42,004
15.6	396.8	131	39,315	223	66,794

Specifications – Transmitter

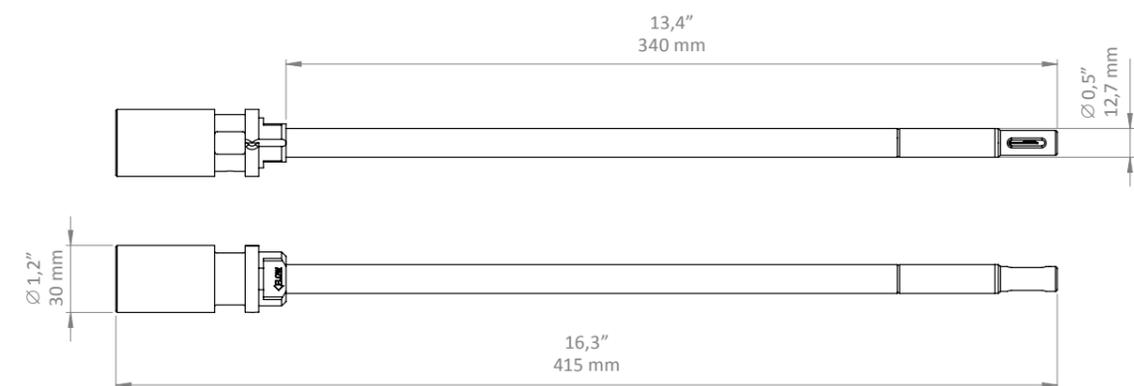
SENSOR INTERFACE	
VP SensorCartridge®	Proprietary interface, rotational 360 degrees
DISPLAY	
Display type (D010 and D011)	1,8" TFT with auto power save
LED status (All models)	LED indicators on all models for power, communication and alarm
DATA LOGGER (D011 ONLY)	
Memory	One-year circular memory, 1 x per second logging interval for all parameters
Logging mode	Cyclic
OUPUTS	
RS485	Modbus RTU
Analog / digital	Configurable: 4 .. 20mA, pulse, alarm
USB	Mini USB, behind sealed cap (for configuration)
Ethernet	Modbus / TCP
MECHANICAL & ENVIRONMENTAL	
Dimensions	50 x 108 x 36 mm 1.97 x 4.25 x 1.42 inch
Weight	220 grams 7.76 ounces including locking ring
Material	Aluminum, anodized body with polycarbonate cover
O-ring seals	NBR
Protection grade	IP65 NEMA 4 when mated to VPSensorCartridge® and USB cap tightened
ELECTRICAL	
Power supply	14 VDC(1) .. 24 VDC +10% CLASS 2 (UL)
Power / RS485 / 4 .. 20 mA	M12, 5 pin
Ethernet	M12, 4 pin d-coded
Power consumption	1 Watt (no flow) 3.5 Watt (full flow) +/- 10% Varies per VPSensorCartridge® type and transmitter type
CE	EN 60950-1, EN 61326-1, EN 61000-3-2, EN 61000-3-3, EN 61326-1
UL	UL 508

(1) 12 Volt should be available at the input terminal under all flow conditions and all environmental conditions. Cable resistance and power supply impedance, which are temperature dependent, will cause permanent and transient voltage drops. These voltage drops have to be taken into account when designing and implementing the electrical installation. The VPFlowScope M continuously monitors available input voltage and will automatically turn into power save mode when the supply voltage drops below 11 Volt. For startup, a minimum voltage of 11.9 Volt is required. For maximum power reliability under all circumstances, we recommend to use 24 VDC.



Specifications – VPSensorCartridge®

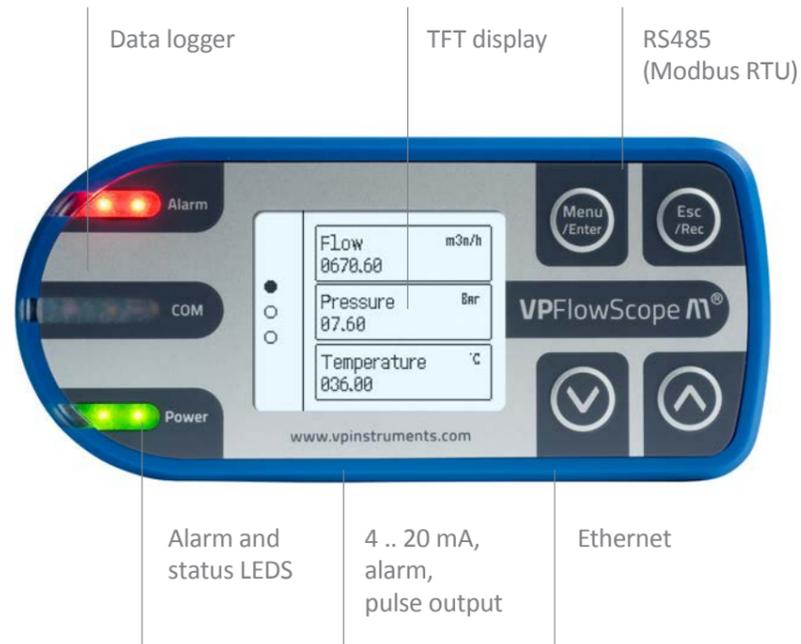
FLOW SENSOR	
Measuring principle	Thermabridge™ Thermal Mass Flow sensor
Flow range	0 (0.5) .. 150 m ₃ /sec 0 .. 500 sfps
Bi-directional flow	Model VPM.R150.351.PN10 only
Accuracy	2% of reading under calibration conditions; Please refer to the user manual for details. Recommended pipe diameter: 25 mm (1") 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 .. 10 bar 0 .. 145 psi gage
Accuracy	+/- 1% FSS (total error band) Temperature compensated
TEMPERATURE SENSOR	
Temperature sensor range	0 .. +60 °C 32 .. +140 °F
Accuracy	> 10 m/sec: +/- 1 °C 1.8 °F < 10 m/sec: + 5 °C 9 °F
MECHANICAL & ENVIRONMENTAL	
Probe lengths	340 mm 13.4"
Weight	200 grams 7.05 ounces
Process connection	Compression fitting, 1/2" NPT, Tapered
Pressure rating	PN10
Protection grade	IP65 NEMA 4 when mated to Transmitter
Ambient temperature range	0 .. +60 °C 32 .. 140 °F. Avoid direct sunlight or radiant heat
Wetted materials	Anodized Aluminum, Stainless steel 316, Glass, Epoxy
Corrosion resistance	Highly corrosive or acid environments should be avoided
ELECTRICAL	
Connection type	VPSensorCartridge® proprietary
Power consumption	See Transmitter specifications for combined power consumption
CE	See Transmitter
UL	See Transmitter



Transmitter models



TRANSMITTER MODEL	ETHERNET	RS485	4 .. 20 ALARM PULSE	DISPLAY	DATA LOGGER	APPLICATION
VPM.T001.D000	.	.	.			VPVision, BMS, remote monitoring
VPM.T001.D010		Remote monitoring and local read-out
VPM.T001.D011	Audits



Order codes

VPFlowScope M

Our VPFlowScope M products will be supplied including mini USB cable, adjustable safety cable with integrated compression fitting for VPFlowScope M and ISO calibration certificate.

DESCRIPTION	ORDER CODE	
VPFlowScope M Transmitter without display	VPM.T001	.D000
VPFlowScope M Transmitter with display	VPM.T001	.D010
VPFlowScope M Transmitter with display and datalogger	VPM.T001	.D011
VPSensorCartridge For flow, pressure, temperature, total flow.	VPM.R150	.P350.PN10
VPSensorCartridge bi-directional For bi-directional flow, pressure, temperature, total flow.	VPM.R150	.P351.PN10

Start kits

Includes VPFlowScope M Transmitter with display + datalogger, bi-directional VPSensorCartridge, calibration certificate, mini USB cable, power supply, adjustable safety cable with integrated compression fitting for VPFlowScope M, ethernet cable, Explorer transport case.

DESCRIPTION	ORDER CODE	
VPFlowScope M Auditor Start Kit	VPM.T001.D011	.KIT

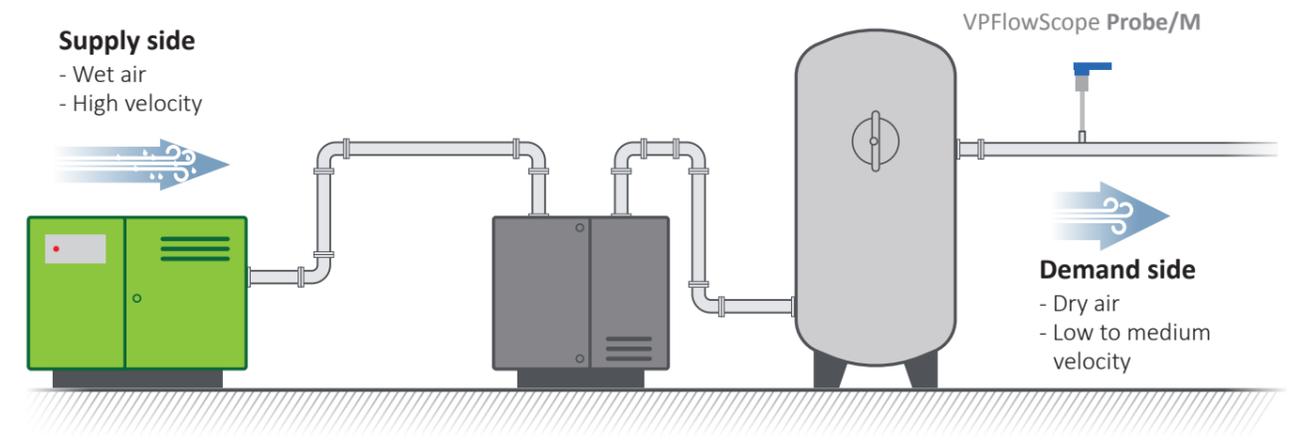
Accessories

When you are installing multiple products, please see the additional accessories on page 53.

DESCRIPTION	ORDER CODE	
Cable, 5m / 16.4 ft. with M12 5pin connector on one side The other side has open wires for 0V, 24V, RS485 A, RS485 B and Analog output. For permanent connection.	VPA.5000.005	
Cable, 10m / 32.9 ft. with M12 5pin connector on one side The other side has open wires for 0V, 24V, RS485 A, RS485 B and Analog output. For permanent connection.	VPA.5000.010	
5-pin M12 MALE connector (connector with screw terminal) Without cable. (No IP/NEMA rating). Used for flow meter connection or to female connector of extension cable.	VPA.5000.000	
5-pin M12 FEMALE connector (connector with screw terminal) Without cable. (No IP/NEMA rating). To create extension cable and connect to male connector.	VPA.5000.001	
Ethernet cable 5m/16.4 ft. for Modbus TCP communication M12 4-pins on one side, RJ45 connector on other side.	VPA.5004.0005	
Extension cable 5m/16.4 ft. for ethernet with RJ45 connectors	VPA.5004.0006	
Power supply adapter 12V 90 .. 240 VAC to 12 Volt DC, with 5 pin M12 connector.	VPA.0000.200	
Power supply module in IP65 enclosure (230-110VAC to 24VDC) For permanent installation. This power supply module can power max 2 VPFlowScopes.	VPA.0030.100	
Modbus junction box (IP65) For easy connection of multiple flow meters in a daisy chain.	VPA.5030.020	
Explorer® Case for VPFlowScope M Transport case for the VPFlowScope M with pre-cut foam inside. For a full assembled VPFlowScope M probe, one additional VPFlowScope M Transmitter, two additional VPFlowScope M VPSensorCartridges and accessories.	VPA.5014.003	
Adjustable safety cable with integrated compression fitting for VPFlowScope M	VPA.5004.0001	
Set of 5 Teflon ferrules for compression fitting Spare part for the compression fitting.	VPA.0001.001	
VPSensorCartridge® locking ring Spare part for the VPFlowScope M Transmitter.	VPA.5004.1001	

VPFlowScope Probe

The flow meter for all your compressed air and gas measurements



The VPFlowScope® Probe is the measurement tool for dry compressed air and other industrial gases, including oxygen, nitrogen, CO₂, helium, and argon. The VPFlowScope Probe measures thermal mass flow, pressure, temperature and total flow simultaneously.

The VPFlowScope Probe can be used in various pipe diameters, which makes it the perfect solution for measuring of both the supply side and demand side of compressed air systems. The flow meter shows you where, when and how much air is used in order to allocate cost and subsequently to save money and energy.

The bright blue LCD display provides real-time information and with the built-in data logger, you can record for certain periods of time. Combine this with our VPStudio software on your PC and you can use this information to process data, print reports and analyze where and how exactly you can save.

Highlights

- > 4-in-1 sensor: flow, pressure, temperature and total flow
- > Bi-directional flow measurement (optional)
- > Patented Thermabridge™ technology for dry, clean gas measurements
- > Standard RS485 (Modbus RTU), 4..20mA and pulse output
- > 3-line LCD display (optional) with real-time information and configuration keys
- > Built-in data logger with 2 million points (optional)

Applications

- > Demand side compressed air monitoring
- > Air audits
- > Submetering of compressed air
- > Ring networks (bi-directional)
- > Industrial gas monitoring (air, nitrogen, carbon dioxide, argon and other dry, non-corrosive industrial gases)
- > Cost allocation
- > Leak detection
- > 16 bar (250 psi) and 35 bar (500 psi) versions available for compressed air

Installation examples

1. RS485 (Modbus RTU) connection to Energy Management System or PLC

VPVision or other Energy Management System/Modbus TCP converter

2. Connected to local wall mount display

3. Stand-alone use with build-in datalogger

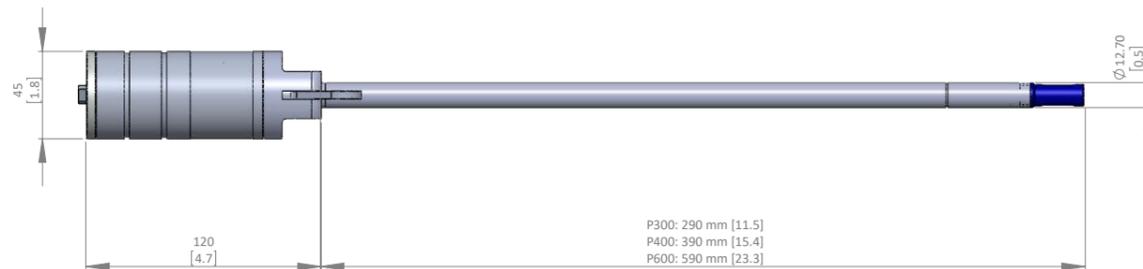
Connection with VPStudio
RS485 (Modbus RTU)
JB5 interface kit

VPS.R150.Pxxx 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 ³ /hr)	Max flow (m ³ /hr)	ID (inch)	ID (mm)	Min flow (scfm)	Max flow (scfm)	Min flow (m ³ /hr)	Max flow (m ³ /hr)
2	50	2.1	52.5	2.3	688	3.9	1169	2.2	54.8	2.5	749	4.2	1273
3	80	3.1	77.9	5.1	1516	9	2576	3.3	82.8	5.7	1712	10	2908
4	100	4.0	102.3	8.7	2610	15	4435	4.3	108.2	9.7	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

Specifications

FLOW SENSOR	
Measuring principle	Thermabridge™ Thermal Mass flow sensor
Flow range	0.5 .. 150 m ³ /sec 1.7 .. 490 sfps Bi-directional measurement (option)
Accuracy	2% of reading under calibration conditions. Recommended pipe diameter: 40 mm (1.5") and up
Reference conditions	0 °C, 1013.25 mbar 32 °F, 14.65 psi - DIN 1343
Gases	Compressed air, nitrogen and inert, non-condensing gases, 95% non-condensing gases
Gas temperature range	0 .. 60 °C 0 .. 140 °F
PRESSURE SENSOR	
Pressure sensor range, standard	0 .. 16 bar 0 .. 250 psi gage
Accuracy	+/- 1.5% FSS (0 .. 60 °C) (32 .. 140 °F) Temperature compensated
TEMPERATURE SENSOR	
Temperature sensor range	0 .. 60 °C 32 .. 140 °F
Accuracy	+/- 2% full scale (-18 .. 63 °C -0.4 .. 145.4 °F)
DATA OUTPUTS	
Digital	RS485, MODBUS RTU protocol
Analog	4 .. 20 mA single analog / pulse output, selectable via VPStudio software
DISPLAY/DATA LOGGER	
Technology	Liquid Crystal (LCD)
Back light	Blue, with auto power save
Data logger (option)	2 million points memory
MECHANICAL & ENVIRONMENTAL	
Probe lengths	400 mm 15" (300 mm or 600 mm on request)
Process connection	Compression fitting, 0.5" NPT thread
Pressure rating	PN16 (PN35 on request)
Ingress Protection (IP) 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	0 .. 60 °C 32 .. 140 °F. Avoid direct sunlight or radiant heat
Wetted materials	Anodized aluminum, stainless steel 316, glass and 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	3.6 Watt (no flow) 4.8 Watt (full flow) +/- 10% 150 mA (no flow) 200 mA (full flow) +/- 10% @24VDC
UL/ CUL	14 AZ, Industrial Control Equipment
CE	EN 61325-1 (2006), Class AEN 61000-6-1 (2007)



Order codes

VPFlowScope Probe

Our VPFlowScope products will be supplied including ISO calibration certificate and adjustable safety cable with integrated compression fitting.

DESCRIPTION	ORDER CODE
VPFlowScope Probe 400mm/15.4"	VPS.R150.P400 .D0
VPFlowScope Probe 400mm/15.4" with connector cap For Modbus networks.	VPS.R150.P400 .D2
VPFlowScope Probe 400mm/15.4" with display no datalogger	VPS.R150.P400 .D10
VPFlowScope Probe 400mm/15.4" with display and datalogger	VPS.R150.P400 .D11
VPFlowScope Probe 600mm/23.3"	VPS.R150.P600 .D0
VPFlowScope Probe 600mm/23.3" with connector cap For Modbus networks.	VPS.R150.P600 .D2
VPFlowScope Probe 600mm/23.3" with display no datalogger	VPS.R150.P600 .D10
VPFlowScope Probe 600mm/23.3" with display and datalogger	VPS.R150.P600 .D11

Start kits

Includes VPFlowScope Probe 400mm/15.4" (thermal mass), display with datalogger (2m datapoints), JB5 interface box, RS485 to USB cable, 24V power supply, adjustable safety cable with integrated compression fitting and calibration certificate.

DESCRIPTION	ORDER CODE
VPFlowScope Probe 400mm/15.4" set in an explorer case with pre-cut foam inside	VPS.R150.P400 .KIT
VPFlowScope Probe 400mm/15.4" set in a box Items only, no carry case	VPS.R150.P400 .BOX
VPFlowTerminal with 400mm/15.4" VPFlowScope Probe Including 10m cable, 8 pin M12 connector cap and mini USB cable.	VPS.R150.P400 .VPT.KIT

Accessories

When you are installing multiple products, please see the additional accessories on page 53.

DESCRIPTION	ORDER CODE
VPFlowScope display with datalogger	VPS.D110.000
VPFlowScope display without datalogger	VPS.D100.000
VPFlowScope connector cap with 5 pin M12 connector	VPA.5001.900
Power supply adapter with 5 pin connector Useful for air audits. Only for D0 models - without display.	VPA.0000.200
Cable 5m/16.4 ft. with 5 pin M12 on one side The other side has open wires for 0V, 24V, RS485 A, RS485 B and Analog output. For permanent connection.	VPA.5000.005
Cable 10m/32.8 ft. with 5 pin M12 on one side The other side has open wires for 0V, 24V, RS485 A, RS485 B and Analog output. For permanent connection.	VPA.5000.010
5-pin M12 MALE connector (connector with screw terminal) Without cable. (No IP/NEMA rating). Used for flow meter connection or to female connector of extension cable.	VPA.5000.000
5-pin M12 FEMALE connector (connector with screw terminal) Without cable. (No IP/NEMA rating). To create extension cable and connect to male connector.	VPA.5000.001
VPFlowScope JB5 interface KIT incl. USB to RS485 converter and power supply for JB5 For connecting your VPFlowScope to VPStudio. Only for D0 models - without display.	VPA.5001.205
Bi-directional option for VPFlowScope Probe	VPA.5000.911
VPFlowScope Probe pressure upgrade to 35 bar 500 psi Including double set of safety cables.	VPA.0001.092
Compression fitting 0,5" NPT for VPFlowScope Probe - SS With stainless steel ferrule. Recommended for VPFlowScope Probe with pressure upgrade to 35 bar.	VPA.0001.003
Power supply module in IP65 enclosure (230-110VAC to 24VDC) For permanent installation. This power supply module can power max 2 VPFlowScopes.	VPA.0030.100
Modbus junction box (IP65) For easy connection of multiple flow meters in a daisy chain.	VPA.5030.020
Explorer case for 2x VPFlowScope probe 400mm/15.4" With pre-cut foam inside.	VPA.5014.000
Adjustable safety cable with integrated compression fitting for VPFlowScope Probe	VPA.0003.005
Compression fitting 0,5" NPT for VPFlowScope Probe with teflon ferrule	VPA.0001.000
Set of 5 Teflon ferrules for compression fitting Spare part for the compression fitting.	VPA.0001.001

VPFlowScope In-line

The flow meter for point of use measurements



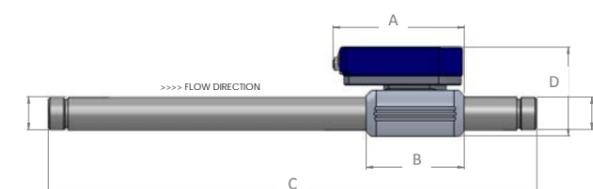
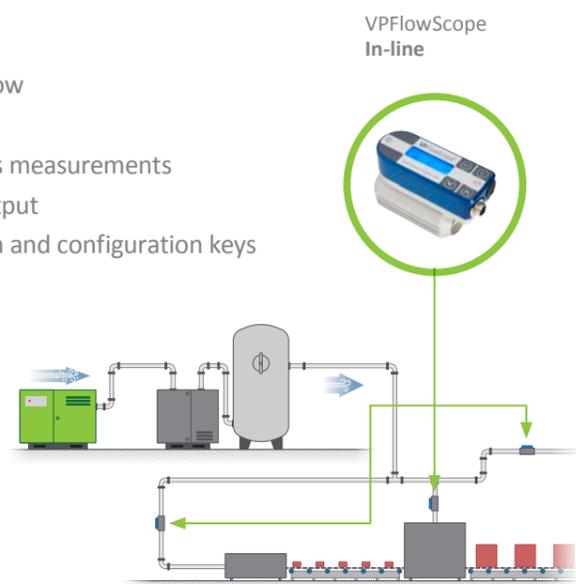
The VPFlowScope® In-line is the ideal flow meter for point-of-use consumption measurement of compressed air and other industrial gases, including oxygen, nitrogen, CO₂, helium, and argon. This thermal mass flow sensor measures bi-directional flow, pressure, temperature and totalized flow simultaneously. The VPFlowScope In-line is perfect for smaller diameters where it provides all the data you need to optimize your compressed air consumption. Because of the modular design, the VPFlowScope In-line can be fitted for all your applications; from mobile to permanent measurements, from stand alone to integration into an energy management system like VPVision.

Highlights

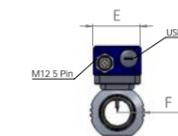
- > 4-in-1 sensor: flow, pressure, temperature and total flow
- > Bi-directional flow measurement (optional)
- > Patented Thermabridge™ technology for dry, clean gas measurements
- > Standard RS485 (Modbus RTU), 4..20mA and pulse output
- > 3-line LCD display (optional) with real-time information and configuration keys
- > Built-in data logger with 2 million points (optional)
- > Reversible display text

Applications

- > Sub-metering of compressed air
- > Leakage management
- > Energy monitoring
- > Cost allocation
- > Industrial gas flow monitoring and submetering (N₂, O₂, He, Ar, CO₂, and other dry, non-corrosive industrial gases)
- > 16 bar (250 psi) and 35 bar (500 psi) versions available for compressed air



	0.5"	1"	2"
A	133.7 mm 5.3"	134 mm 5.3"	148.7 mm 5.9"
B	100 mm 3.9"	100 mm 3.9"	130 mm 5.1"
C	300 mm 11.8"	498 mm 19.6"	750 mm 29.5"
D	84.4 mm 3.3"	90 mm 3.6"	123.4 mm 4.9"
E	48 mm 1.9"	48 mm 1.9"	48 mm 1.9"
F	24.75 mm 1.0"	27.25 mm 1.1"	44.5 mm 1.8"



weight	0.5"	1"	2"
kg	0.7	0.7	1.6
lbs	1.54	1.54	3.58

Installation examples

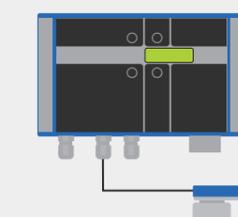
1. RS485 (Modbus RTU) connection to Energy Management System or PLC



- 1. VPA.5030.020
- 2. VPA.5000.005/010

VPVision or other Energy Management System/Modbus TCP converter

2. Connected to local wall mount display



3. Stand-alone use with build-in datalogger



Connection with VPStudio

For D0: RS485 (Modbus RTU) JB5 interface kit

For D10, D11: USB + 24VDC power supply

Configuration and readout

DESCRIPTION	D0	D10	D11
VPStudio (via VPFlowScope JB5 interface kit)	VPStudio (via USB cable + power via power supply adapter with 5 pin connector)	Display	VPStudio (via USB cable + power via power supply adapter with 5 pin connector)
Modbus settings	*	*	*
Analog settings (4 .. 20mA and pulse)	*	*	*
Real-time data	*	*	*
DAQ settings and readout	*	*	*

Display options

DISPLAY	MODEL	RS485	4 .. 20 MA/ PULSE	3 LINE DISPLAY	2M POINT DATA LOGGER	APPLICATIONS
No display	D0	*	*	*	*	BMS, Remote monitoring, OEM Order D8 model for VPFlowTerminal
Display	D10	*	*	*	*	BMS, Point of use measurement
Display with data logger	D11	*	*	*	*	Auditing, machine testing, portable use

Specifications

FLOW SENSOR		
Measuring principle	Thermabridge™ Thermal Mass flow sensor	
Flow range 0.5 inch	0.23 .. 80 m ³ /hr 0.13 .. 50 SCFM	
Flow range 1 inch	0.91 .. 250 m ³ /hr 0.54 .. 150 SCFM	
Flow range 2 inch	3.55 .. 1000 m ³ /hr 2.15 .. 600 SCFM	
Accuracy	0.5% FSS with calibration report under calibration conditions with air	
Reference conditions	0 °C, 1013.25 mbar 32 °F, 14.695 psi	
Gases	Compressed air, nitrogen, oxygen and inert, non-condensing gases, 95% non-condensing gases	
Gas temperature range	0 .. 60 °C 32 .. 140 °F	
PRESSURE SENSOR		
Pressure sensor range	0 .. 16 bar 0 .. 250 psi gauge (35 bar 500 psi on request)	
Accuracy	+/- 2% full scale (-18 .. 63 °C -0.4 .. 145.4 °F)	
TEMPERATURE SENSOR		
Temperature sensor range	0 .. 60 °C 32 .. 140 °F	
Accuracy	> 10 m _v /sec: +/- 1 °C 1.8 °F < 10 m _v /sec: + 5 °C 9 °F due to self-heating of the flow sensor	
DATA OUTPUTS		
Analog	4 .. 20 mA or pulse, selectable via installation software	
Serial IO	RS485 (Modbus RTU)	
USB	Mini USB interface for configuration (display version only)	
DISPLAY/DATA LOGGER		
Technology	Liquid Crystal (LCD)	
Back light	Blue, with auto power save	
Data logger (option)	2 million points memory	
DIMENSIONS & WEIGHT		
0.5 inch	135 mm x 50 mm x 85 mm 5.31" x 1.97" x 3.35"	0.7 Kg 1.54 lbs
1 inch	135 mm x 55 mm x 91 mm 5.31" x 1.97" x 3.58"	0.7 Kg 1.54 lbs
2 inch	155 mm x 90 mm x 125 mm 6.10" x 3.54" x 4.92"	1.6 Kg 3.58 lbs
MECHANICAL & ENVIRONMENTAL		
Ingress Protection (IP) grade	IP65 when mated to connector, at room temperature; direct rain and sunlight should be avoided. Extreme temperature fluctuations may affect the IP grade over time.	
Ambient temperature range	0 .. 60 °C 32 .. 140 °F	
Wetted materials	Body: Anodized aluminum Sensor: Silicon, epoxy, glass Sealing: FTM 60, Polyurethane	
ELECTRICAL		
Connection type	M12, 5-pin connector, female and optional USB mini connector	
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(2006) Class A, EN61000-6-1 (2007)	

Order codes

VPFlowScope In-line

Our VPFlowScope In-line products will be supplied including ISO calibration certificate (all models) and mini USB cable (display models).

DESCRIPTION	ORDER CODE
 0.5" without display, without datalogger	VPS.R080.M050 .D0
 0.5" with display, without datalogger	VPS.R080.M050 .D10
 0.5" with display and datalogger	VPS.R080.M050 .D11
 1" without display, without datalogger	VPS.R250.M100 .D0
 1" with display, without datalogger	VPS.R250.M100 .D10
 1" with display and datalogger	VPS.R250.M100 .D11
 2" without display, without datalogger	VPS.R01K.M200 .D0
 2" with display, without datalogger	VPS.R01K.M200 .D10
 2" with display and datalogger	VPS.R01K.M200 .D11

VPFlowTerminal kits



Includes 1 x VPFlowScope In-line D0 with the VPFlowTerminal remote display, ISO calibration certificate, mini USB cable, in- and outlet tubes and 10m/32.8 ft. cable with 8 pin M12 on one side.

DESCRIPTION	ORDER CODE
With 0.5" In-line and BSP tubes	VPS.R080.M050.VPT.KIT.BSP
With 1" In-line and BSP tubes	VPS.R250.M100.VPT.KIT.BSP
With 2" In-line and BSP tubes	VPS.R01K.M200.VPT.KIT.BSP
With 0.5" In-line and NPT tubes	VPS.R080.M050.VPT.KIT.NPT
With 1" In-line and NPT tubes	VPS.R250.M100.VPT.KIT.NPT
With 2" In-line and NPT tubes	VPS.R01K.M200.VPT.KIT.NPT

VPFlowScope In-line tubing kits



In- and outlet tubes in one kit. Integrate VPFlowScope In-line easier and more accurate. 0.5" and 1" tubing kit features: 20 x D length before and 5 x D length after the flow sensor. For 2" tubing kit this is 15 x D before and 5 x D after.

DESCRIPTION	ORDER CODE
0.5" tubing kit BSP	VPA.1200 .005
1" tubing kit BSP	VPA.1200 .010
2" tubing kit BSP	VPA.1200 .020
0.5" tubing kit NPT	VPA.1200 .105
1" tubing kit NPT	VPA.1200 .110
2" tubing kit NPT	VPA.1200 .120

Accessories

When you are installing multiple products, please see the additional accessories on page 53.

DESCRIPTION	ORDER CODE
 Cable, 5m / 16.4 ft. with M12 5pin connector on one side The other side has open wires for 0V, 24V, RS485 A, RS485 B and Analog output. For permanent connection.	VPA.5000.005
 Cable, 10m / 32.9 ft. with M12 5pin connector on one side The other side has open wires for 0V, 24V, RS485 A, RS485 B and Analog output. For permanent connection.	VPA.5000.010
 5-pin M12 MALE connector (connector with screw terminal) Without cable. (No IP/NEMA rating). Used for flow meter connection or to female connector of extension cable.	VPA.5000.000
 5-pin M12 FEMALE connector (connector with screw terminal) Without cable. (No IP/NEMA rating). To create extension cable and connect to male connector.	VPA.5000.001
 VPFlowScope JB5 interface kit For connecting your VPFlowScope In-line to VPStudio. Incl. USB to RS485 converter and power supply for JB5. Only for D0 models - without display.	VPA.5001.205
 Power supply adapter with 5 pin connector Useful for air audits.	VPA.0000.200
 VPFlowScope bi-directional option for In-line	VPA.5000.912
 Helium gas calibration for In-line flow meters Including calibration certificate.	VPA.0001.912
 Special gas calibration for In-line flow meters Other gases than Helium calibration. Including calibration certificate.	VPA.0001.915
 Extra costs for additional units special gas calibration Additional units, when processed in the same order for the same gas. Including calibration certificate.	VPA.0001.913
 VPFlowScope In-line pressure upgrade to 35 bar 500 psi	VPA.0001.093
 Power supply module in IP65 enclosure (230-110VAC to 24VDC) For permanent installation. This power supply module can power max 2 VPFlowScopes.	VPA.0030.100
 Modbus junction box (IP65) For easy connection of multiple flow meters in a daisy chain.	VPA.5030.020

VPFlowScope In-line 3/8"

The perfect solution for low flows of compressed air or oxygen



The VPFlowScope In-line 3/8" is the perfect solution to measure low flows of compressed air and oxygen. Getting insight results in: reduction of consumption, allocation of costs and optimization of your air/oxygen system.

The VPFlowScope In-line 3/8" measures flow, total flow and temperature. Thanks to the patented Thermabridge™ technology, the VPFlowScope In-line can perform bi-directional flow measurements. The built-in display will show the actual and total flow, and the Modbus and analog 4..20 mA outputs enable you to interface with VPVision or other monitoring systems.

Highlights

- > Measures flow, total flow and temperature simultaneously
- > Patented Thermabridge™ technology for dry, clean gas measurements
- > RS485 (Modbus RTU) + 4..20 mA output
- > TFT display with real-time information and configuration keys
- > Power and communication LEDs
- > Easy to install and compact size

Applications

- > Point of use in compressed air systems
- > Output of oxygen generators
- > Consumption measurement
- > Leakage measurement
- > Cost allocation and measuring your distribution network

Specifications

Measuring principle	Thermabridge™ thermal mass flow sensor
Flow range	2.15..50 l/min 0.09..1.77 CFM
Accuracy	5% of full scale under calibration conditions
Temperature sensitivity	< 1% of measured value per °C
Reference conditions	20 °C, 1000 mbar 68 °F, 14.50 psi
Gases	Oxygen and compressed air
Gas temperature range	20 .. 32 °C 68 .. 89.6 °F
Display type	1.8" TFT color with auto power save
LED status	LED indicators on all models for power and communication
Outputs	RS485 (Modbus RTU), 4 .. 20mA
Material	Brass, polycarbonate
Wetted materials	Brass, Ceramic, Polyurethane, Viton
Protection grade	IP54 NEMA 3
Ambient temperature	0 .. 50 °C 32 .. 122 °F
Ambient humidity	0 .. 95 %. Avoid condensation at all times
Pressure rating	10 bar 150 psi gage
Electrical supply	14 VDC .. 24 VDC +10% CLASS 2 (UL)
Power consumption	1 Watt (no flow) 3.5 Watt (full flow) +/- 10%
Certification CE	EN 60950-1, EN 61326-1, EN 61000-3-2, EN 61000-3-3, EN 61326-1
Electrical connection	M8 5-pin female connector
Mounting connection	Mount between pipe ends using Hylok SICMC-6-6G

- Avoid direct sunlight or radiant heat.
- Highly corrosive or acid environments should be avoided.

Order codes

VPFlowScope In-line 3-8"

DESCRIPTION	ORDER CODE
 VPFlowScope In-line 3-8" with display without datalogger Measures flow, total flow and temperature. Outputs: Modbus RS485 and 4..20mA Does not include calibration certificate, cable or tubing kit.	VPS.R003.M038.D10

Accessories

DESCRIPTION	ORDER CODE
Oil and grease-free product cleaning Labeled and packed in double-sealed bags	VPX.070.000

VPFlowTerminal

Plug & play wall mount display



The VPFlowTerminal is a plug & play wall mount display with built-in power supply and 2 million point data logger. The VPFlowTerminal has 5 sensor inputs: 1 input for a VPFlowScope In-line, Probe or DP, and 4 generic analog inputs. It can record up to 8 channels. This makes the collection and analysis of your compressed air data easier and quicker!

Highlights

- > Wall mount display
- > Built-in data logger with 2 million point data logger
- > 1 x VPFlowScope input (Probe, DP, In-line)
- > 4 Analog input channels
- > 3-line display with real-time information and configuration keys
- > Built-in power supply
- > Easy data retrieval via USB and VPStudio software to .CSV file

Specifications

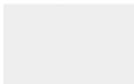
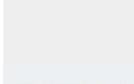
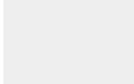
VPFLOWTERMINAL	
Input voltage	100 .. 240 Vac mains (pre-wired)
Housing type	Painted Aluminum IP65 NEMA 4
Display	LCD, 3 lines
Back light	Blue with auto power save
Data logger	Two million point data logger
Signal inputs	VPFlowScope + 4 optional 4 .. 20 mA sensors (non - isolated, loop powered)
Sensor power supply	24 VDC
Maximum sensor current	4 x 25 mA for analog sensors, 1 x 150 mA for VPFlowScope
Data outputs	USB for configuration and data retrieval
Ethernet interface	Modbus / TCP port
Basic configuration	Via key pad
Flow meter connection	M12, 8 pin
Additional connections	Cable glands for analog inputs, Ethernet connection
Dimensions	l x b x h = 230 x 130 x 75 mm, 9.1 x 5.1 x 2.95"
Weight	1.6 kG 3.53 Lbs

Order codes

VPFlowTerminal*

DESCRIPTION	ORDER CODE
 VPFlowTerminal with connector cap 8 pin M12	VPT.5110.000

Start kits*

DESCRIPTION	ORDER CODE
 VPFlowTerminal with VPFlowScope Probe 400mm/15.4"	VPS.R150.P400.VPT.KIT
 VPFlowTerminal with VPFlowScope Probe 600mm/23.3"	VPS.R150.P600.VPT.KIT
 VPFlowTerminal with VPFlowScope DP probe 400mm/15.4"	VPS.R200.P4DP.VPT.KIT
 VPFlowTerminal with In-line 0.5" combination kit With in- and outlet BSP tubes	VPS.R080.M050.VPT.KIT.BSP
 VPFlowTerminal with In-line 0.5" combination kit With in- and outlet NPT tubes	VPS.R080.M050.VPT.KIT.NPT
 VPFlowTerminal with In-line 1" combination kit With in- and outlet BSP tubes	VPS.R250.M100.VPT.KIT.BSP
 VPFlowTerminal with In-line 1" combination kit With in- and outlet NPT tubes	VPS.R250.M100.VPT.KIT.NPT
 VPFlowTerminal with In-line 2" combination kit With in- and outlet BSP tubes	VPS.R01K.M200.VPT.KIT.BSP
 VPFlowTerminal with In-line 2" combination kit With in- and outlet NPT tubes	VPS.R01K.M200.VPT.KIT.NPT

Accessories

DESCRIPTION	ORDER CODE
 VPFlowScope connector cap with 8 pin M12 For the use in combination with the VPFlowTerminal only	VPA.5001.901
 110 .. 240 VAC EU style Power cable, 1,9m/6.3 ft. Can be used for VPFlowTerminal	VPA.2000.000
 110 .. 240 VAC US style Power cable, 1,9m/6.3 ft. Can be used for VPFlowTerminal	VPA.2000.001

* Including 10m cable, 8 pin M12 connector cap and mini USB cable. The VPFlowTerminal will be supplied without power cable, due to different styles. Please select the correct style power cable for your use.

Hot tap drill

The safe and easy way to drill your installation point under pressure



The hot tap drill is the universal tool to install your insertion flow meter in any compressed air system. In only 30 minutes you can drill a hole and install your flow meter. Using a hot tap saddle and a hot tap drill, you can create a new installation point without depressurizing your installation. The VPInstruments hot tap drill can be used for drilling through a hot tap saddle with a 1" fitting.

Highlights

- > Make an installation point without depressurizing your system
- > Hand operated: no power tool needed on-site
- > Safe and easy operation
- > Versatile
- > For applications up to 10 bar
- > 1" Hot tap drill size
- > All accessories included
- > Explorer® transport case included



Hot tap drill - Exclusive model



Hot tap drill - Economy model

VPInstruments hot tap drill models

With VPInstruments hot tap drill kits you have all you need to drill your installation point. We offer the economy model and the exclusive model.

CASE CONTENTS	EXCLUSIVE MODEL	ECONOMY MODEL
Rugged yellow carry and storage case	•	
Grey toolbox for the hot tap tool		•
Unidrill hot tap drill	•	•
PU-handcap	•	•
Standard drill 21mm 0.83". L = 70mm		•
Standard drill 21mm 0.83". L = 70mm. HHS CO material	•	
Wrench 14/17	•	•
Hook wrench 52/55	•	•
Ratchet wrench	•	•
Center point	•	
High flow air relief adapter AC 1/2"	•	

Specifications

VPA.8001.1002	
Max pressure	10 bar 145 psi
Higher pressure ratings on request	
Drill shaft diameter	16 mm 0.6 inch
Drill shaft length	345 mm 14 inch
Drill diameter	17 mm x M10 0.7 inch x M10
Pipe materials	steel, stainless steel

Order codes

Hot tap drill

DESCRIPTION	ORDER CODE
 Hot tap drill economy model, BSP pipe thread in grey tool box and with standard 22mm 7/8" drill	VPA.8000.1012
 Hot tap drill exclusive model, BSP pipe thread in rugged yellow carry case with extra hardened 22mm 7/8" drill	VPA.8001.1002

Accessories

DESCRIPTION	ORDER CODE
 Spare drill bit 21mm, length 70mm	VPA.8001.1003
Adapter 1" from BSP (female) to NPT (male) For use in combination with the hot tap drill and NPT saddles.	VPA.0004.100
Adapter 1" from NPT (female) to BSP (male) For use in combination with the Hot tap drill and NPT saddles	VPA.0004.101
Reducer 1" M BSPT - 0,5" F BSPP	VPA.0002.002

easy insight into energy flows

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