VPFLOWSCOPE M

Your next step in gas flow measurement
The internet of Things / industry 4.0 is rapidly transforming our world. Production becomes smart, intelligent and autonomous. Production lines will make their own decisions and human intervention will only be needed when things go wrong.
VPFLOWSCOPE M

✓ Three in one flow meter
✓ For compressed air and technical gases
✓ Patented VPSensorCartridge®: no more recalibration required
✓ Ethernet interface: Industry 4.0/ IOT ready
✓ Ultra compact size and low weight

The next step in flow measurement

The VPFlowScope M is a three in one flow meter for compressed air and technical gases. It measures flow, pressure and temperature simultaneously. With the introduction of the VPFlowScope M, re-calibration becomes history.

Unlike traditional flow meters, the VPFlowScope M does not require traditional re-calibration, where you have to ship the unit back. Instead, the VPFlowScope M consists of a transmitter and the patented VPSensorCartridge® which reduces re-calibration to a simple exchange.

Features and benefits:
› Three in one: flow, pressure and temperature simultaneously
› Wide measurement range (1:300)
› 2% reading accuracy on flow
› Optional direction measurement
› Ultra compact size and low weight
Industry 4.0 ready

With its standard internal Ethernet interface, the VPFlowScope M will connect directly to your network and forms seamlessly one of the cornerstones of any real-time energy management platform. But it is also compatible to the traditional world, thanks to the standard 4 ... 20mA signals and RS485 interface.

Features:
› Ethernet (Modbus/ TCP)
› RS485 (Modbus RTU)
› 4 ... 20 mA linearized, pulse mode or alarm output
› USB interface for configuration and downloading of data log files
› Optional TFT color display
› Optional Data logger with more than 6 months @ 1 second interval + cyclic recording

One transmitter. Many possibilities

Thanks to the versatile IO, the VPFlowScope M transmitter can be connected to both the traditional 4 ... 20 mA, RS485 Modbus RTU, and modern Ethernet based systems. The transmitter is available in three versions.

<table>
<thead>
<tr>
<th>Transmitter model</th>
<th>Ethernet</th>
<th>RS485</th>
<th>4 ... 20 Pulse Alarm</th>
<th>Color Display</th>
<th>Data logger</th>
<th>Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>VPM.T001.D000</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>VPVision, BMS, remote monitoring</td>
</tr>
<tr>
<td>VPM.T001.D010</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>Remote monitoring and local readout</td>
</tr>
<tr>
<td>VPM.T001.D011</td>
<td>●</td>
<td>●</td>
<td>□</td>
<td>●</td>
<td>●</td>
<td>Audits</td>
</tr>
</tbody>
</table>
No more recalibration

With the patented VPSensorCartridge® concept, traditional re-calibration is something of the past. From now on, you simply exchange the VPSensorCartridge®, and continue your measurements with nearly zero downtime.

Your benefits:
› Near zero downtime
› Less customs/on-site paperwork
› Less transport costs
› Consistent, reliable measurements

<table>
<thead>
<tr>
<th>VPSensorCartridge® model</th>
<th>Description</th>
<th>Applications</th>
</tr>
</thead>
<tbody>
<tr>
<td>VPM.B150.P351.PN10</td>
<td>Thermabridge™ thermal mass sensor: <strong>bi-directional</strong> flow, Pressure, Temperature, calibration report.</td>
<td>Audits, internal billing and cost allocation, ring networks, multi plant compressor installations, shared compressor facilities.</td>
</tr>
</tbody>
</table>
VPStudio 2.0 takes flow measurement to the next level. Install and configure your flow meter in less time, thanks to the intuitive interface and the advanced data processing. Simply connect your flow meter and get the job done. You can use VPStudio 2.0 for configuration, readout (real time) and processing of data log sessions.

Measure more in less time

Features and benefits

› Fully intuitive interface
› Auto device detection
› For VPFlowScope M® and VPFlowScope®
› Project module
› CSV and XLSX data export
Built in webserver

When the VPFlowScope M is connected to your Ethernet network, you can use your tablet or smartphone to access the built-in Webserver. Features of the webserver are:

Features and benefits
› Real time data view
› Diameter configuration
› Modbus RTU and Ethernet configuration
› Analog, pulse, alarm configuration
The optional data logger is the biggest and most flexible integrated data logger you will find on the market today. It can store multiple log sessions, in total over 6 months of flow, pressure, temperature and totalizer data at a resolution of 1 x per second. But that’s not all. The new cyclic logging mode makes your data logger a limitless ‘black box’. It will run forever. Just enable cyclic logging mode, and you are done!

**Features and benefits**
- More than 6 months @ 1x per second memory capacity
- Optimized data structure enables fast downloading
- Multi-session logging
- Cyclic mode for permanent logging of data
- Project based data filing in VPStudio 2.0
## Specifications – Transmitter

### Sensor interface
- VPSensorCartridge®: Proprietary interface, rotational 360 degrees

### Display
- **Display type (D010 and D011)**: 1,8” TFT color with auto power save
- **LED status (All models)**: LED indicators on all models for power, fault and communication

### Data logger (D011 only)
- **Memory**: 6 months @ 1 x per second logging interval for all parameters
- **Logging mode**: Cyclic and traditional start/stop

### Outputs
- **RS485**: Modbus RTU
- **Analog / digital output**: 4 ... 20 mA output or pulse or alarm. Software selectable.
- **USB**: Mini USB, behind sealed cap (for configuration)
- **Ethernet**: Modbus / TCP and built in webserver

### Mechanical & Environmental
- **Dimensions**: 50 x 108 x 36 mm | 1.97 x 4.25 x 1.42 inch
- **Weight**: 220 grams | 7.76 ounces
- **Material**: Aluminum, anodized body with polycarbonate cover
- **O-ring seals**: NBR
- **Protection grade**: IP65 | NEMA 4 when mated to VPSensorCartridge®

### Electrical
- **Power supply**: 12 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 11.8 Volt. For maximum power reliability under all circumstances, we recommend to use 24 VDC.
Specifications – VPSensorCartridge®

VPM.R150.350.PN10  VPM.R150.351.PN10

**Flow sensor**
- Measuring principle: Thermabridge™ Thermal Mass Flow sensor
- Flow range: 0 (0.5) ... 150 mn/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 psigage
- 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 | 1.8 °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
## Accessories

Complete your VPFlowScope M with the following accessories and spare parts.

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>VPA.0000.200</td>
<td>Power supply adapter 12V</td>
<td>90 … 240 VAC to 12 Volt DC, with 5 pin M12 connector</td>
</tr>
<tr>
<td>VPA.5003.010</td>
<td>Mini USB cable</td>
<td>For use with VPStudio software</td>
</tr>
<tr>
<td>VPA.5000.005</td>
<td>Cable 5m/16.4ft. with 5 pin M12 on one side</td>
<td>Shielded cable, unstripped wires at the other side</td>
</tr>
<tr>
<td>VPA.5000.010</td>
<td>Cable 10m/32.8ft. with 5 pin M12 on one side</td>
<td>Shielded cable, unstripped wires at the other side</td>
</tr>
<tr>
<td>VPA.5030.020</td>
<td>Modbus junction box (IP65)</td>
<td>For connecting multiple sensors in a Modbus RS485 network</td>
</tr>
<tr>
<td>VPA.5004.0005</td>
<td>Ethernet cable 5m/16.4ft.</td>
<td>With 4 pin M12 on one side and RJ45 connector on other side</td>
</tr>
<tr>
<td>VPA.5004.0001</td>
<td>Compression fitting for VPFlowScope M</td>
<td>Compression fitting with integrated safety cable for 340 mm VPSensorCartridge®</td>
</tr>
<tr>
<td>VPA.0001.001</td>
<td>Set of 5 Teflon ferrules for compression fitting</td>
<td>Spare part for the compression fitting</td>
</tr>
<tr>
<td>VPA.5004.1001</td>
<td>VPSensorCartridge® locking ring</td>
<td>Spare part for the VPFlowScope M transmitter</td>
</tr>
<tr>
<td>SFT.5003.500</td>
<td>VPStudio 2.0 software, free edition</td>
<td>For configuration and downloading data log sessions</td>
</tr>
<tr>
<td>VPA.5014.003</td>
<td>Explorer® Case for VPFlowScope M</td>
<td>Ruggedized transport case for the VPFlowScope M</td>
</tr>
<tr>
<td>VPM.0002.1003</td>
<td>VPFlowScope M Auditor Start Kit</td>
<td>Items included:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Transmitter with Ethernet (Modbus/TCP), RS485 (Modbus RTU), 4 ... 20 mA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• VPSensorCartridge®, 0 ... 150 mn/sec, 0 ... 10 bar, 0 ... 60 °C</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Mini USB cable</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Installation kit: Compression fitting for VPFlowScope M + integrated safety cable (separate box)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• VPStudio software</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Ethernet cable 5m/16.4ft., with 4 pin M12 on one side and RJ45 connector on other side</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Explorer® transport case</td>
</tr>
</tbody>
</table>
Order today!
Please contact your local distributor for the various options and possibilities or contact us at www.vpinstruments.com