

Turbotron // VTH15, VTM15, VTP15, VTI15



VTH15

BEST
SELLER



VTM15

Your advantages

| Series | VTH15 | VTM15 |
|--------|------------------------|-------------------------------------|
| | Cost optimized version | For medium temperature up to 120 °C |

| Type | VTH15 | VTM15 |
|----------------------------------|--|--|
| Material pipe section | Brass Plastic PPO | Brass |
| Flow range | 2...40 l/min | 2...20 l/min |
| Accuracy | ±0.4 l/min | |
| Repeatability | ±0.1 l/min | |
| Signal output | From 0.3 l/min | |
| Medium temperature | Max. 85 °C | Max. 120 °C |
| Pressure rating | PN 10 | |
| Nominal diameter | DN 15 | |
| Process connection | G $\frac{3}{4}$ male thread with union nuts and gaskets | |
| Sensor | Hall effect sensor | |
| Output signal | | |
| → Pulse rate / K-factor | 855 pulses/l | 915 pulses/l |
| → Resolution | 1.2 ml/pulse | 1.1 ml/pulse |
| → Signal shape | Square wave signal NPN open collector | Square wave signal NPN open collector |
| → Signal current | Max. 10 mA | Max. 10 mA |
| Electrical connection | 1.5 m PVC cable, shielded (T _{max} = 70 °C) or 4 pin plug connector M12 x 1 | 1.5 m PVC cable, shielded (T _{max} = 80 °C) |
| Power supply | 4.5...24 VDC | |
| Degree of protection EN 60529 | IP54 | |
| Max. particle size in the medium | 0.5 mm | |



VTP15


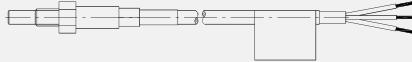



VTI15

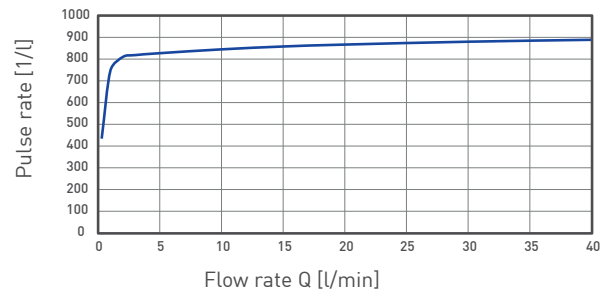
Your advantages

| Series | VTP15 | VTI15 |
|--------|--|--|
| | Pressure rating up to 300 bar For medium temperature up to 150 °C | Magnet-free rotor, for high measurement accuracy and high resolution |

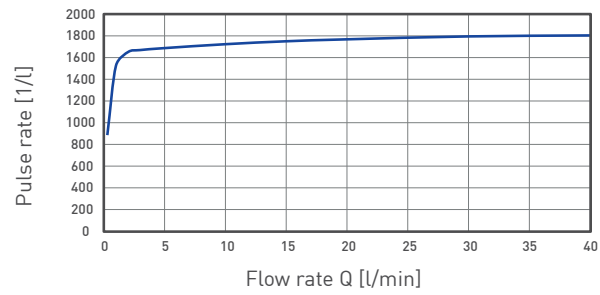
| Type | VTP15 | | VTI15 | |
|----------------------------------|---|--|---|-------|
| Material pipe section | Brass | Stainless steel | Plastic PPO | Brass |
| Flow range | 2...40 l/min | | | |
| Accuracy | ±0.4 l/min of range at 2...20 l/min | | ±0.2 l/min | |
| Repeatability | ±0.1 l/min | | ±0.05 l/min | |
| Signal output | From 0.3 l/min | | | |
| Medium temperature | Max. 150 °C | | Max. 85 °C | |
| Pressure rating | P _{max} = 300 bar | | PN 10 | |
| Nominal diameter | DN 15 | | | |
| Process connection | G $\frac{3}{4}$ male thread incl. union nuts | G $\frac{3}{4}$ male thread or G $\frac{3}{4}$ female thread | G $\frac{3}{4}$ male thread with union nuts and gaskets | |
| Sensor | Hall effect sensor | | Inductive proximity switch | |
| Output signal | 915 pulses/l 1.1 ml/pulse Square wave signal NPN open collector Max. 10 mA | | 1795 pulses/l 0.6 ml/pulse Square wave signal PNP or NPN open collector Max. 50 mA | |
| Electrical connection | 1.5 m silicone cable, shielded (T _{max} = 150 °C) | | 2 m PVC cable, shielded (T _{max} = 70 °C) or 4 pin plug connector M12 x 1 | |
| Power supply | 4.5...24 VDC | | 10...30 VDC | |
| Degree of protection EN 60529 | IP54 | | | |
| Max. particle size in the medium | 0.5 mm | | | |

| Options | | VTH | VTM | VTP | VTI |
|---|--|-----|-----|-----|-----|
| See order code | | | | | |
| Integrated temperature sensor with plug connection M8 → Pt100, class B, 3-wire → Pt1000, class B, 3-wire Immersion tube → Brass → Stainless steel |  | ✓ | | | ✓ |
| Integrated temperature sensor with fixed cable (T_{max} = 80 °C) → Pt100, class B, 3-wire → Pt1000, class B, 2-wire Immersion tube → Brass → Stainless steel |  | ✓ | ✓ | | ✓ |
| Screen filter in the inlet, hat shape mesh size 0.5 mm T_{max} = 60 °C (continuous operation) T_{max} = 85 °C (max. 1 h) |  | ✓ | | | ✓ |
| Turbine flow transmitter, analogue output 4...20 mA (T_{max} = 80 °C) | see options Turbotron | ✓ | | | |
| Turbine flow switch, switching output (contact) (T_{max} = 80 °C) | see options Turbotron | ✓ | | | |
| On request | | | | | |
| Optional seal materials → FKM → EPDM | | ✓ | | | ✓ |
| Integrated temperature sensor with fixed cable → NTC → PTC | | ✓ | | | ✓ |

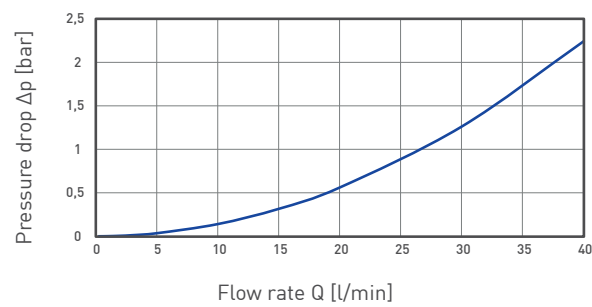
Characteristic curve VTH



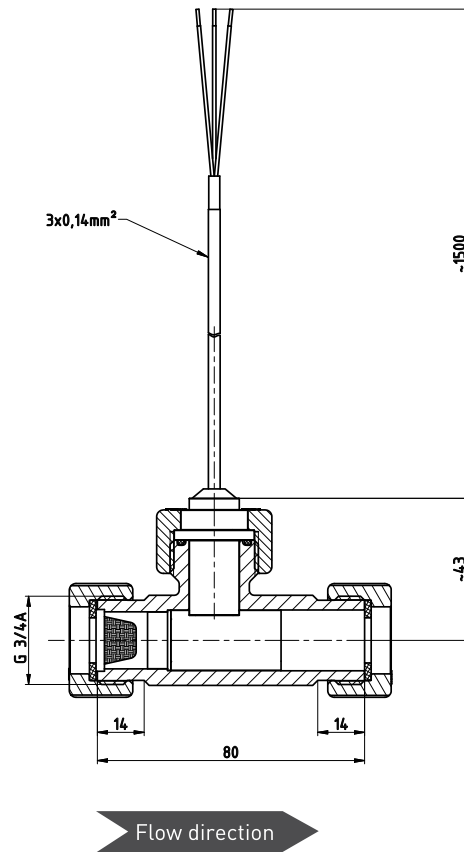
Characteristic curve VTI



Typical pressure drop VTH / VTM / VTP / VTI



VTH15 / VT115



Materials in contact with fluid

| | VTH15 plastic PPO | VTH15 brass | VTM15 brass | VTP15 brass | VTP15 stainless steel | VTI15 plastic PPO | VTI15 brass |
|--------------------------------------|--|----------------|----------------|----------------|------------------------------------|--|----------------|
| Pipe section | PPE+PS Noryl™ 30 % glass fibre reinforced | Brass | | | Stainless steel 1.4571 | PPE+PS Noryl™ 30 % glass fibre reinforced | Brass |
| Sensor housing | PPE+PS Noryl™ 30 % glass fibre reinforced | | Brass | | Stainless steel 1.4571 | PPE+PS Noryl™ 30 % glass fibre reinforced | |
| Turbine system / rotor | PEI ULTEM™ | | PEEK Victrex™ | | | PEI ULTEM™ | |
| O-ring / gasket | NBR | | FKM | | | NBR | |
| Bearing system / shaft | Shaft Arcap AP1D with hard metal pins in sapphire bearings | | | | | | |
| Bearings support | Arcap AP1D | | | | | | |
| Rotor assembly | Hard ferrite magnet | | | | | Stainless steel pins | |
| Temperature sensor (optional) | Brass or stainless steel 1.4571 | | Brass | | Brass or stainless steel 1.4571 | | |
| Screen filter | POM / Stainless steel | | | | | POM / Stainless steel | |

| Order code | | | | | | | | |
|---|---------------------------------|-----------------|-----------|-----------|----------|------------|----------|----------|
| Type | | VT1541 | | | | | | |
| VTH15 / VTI15 | | | | | | | | |
| Material of pipe section | | | | | | | | |
| Noryl PPO | | K5 | | | | | | |
| Brass | | MS | | | | | | |
| Version, output signal | | | | | | | | |
| VTI15, PNP | | | | IP | | | | |
| VTI15, NPN | | | | IN | | | | |
| VTH15, NPN | | | | HN | | | | |
| Electrical connection | | | | | | | | |
| Cable | | | | | P | | | |
| 4 pin plug connector M12 x 1 | | | | | S | | | |
| Supplementary temperature sensor | | | | | | | | |
| None | None | | | | | 0A4 | | |
| Pt100 | 3 pin plug connector M8, 3-wire | brass | | | | BA4 | | |
| | | stainless steel | | | | CA4 | | |
| Pt1000 | 3 pin plug connector M8, 3-wire | brass | | | | 2A4 | | |
| | | stainless steel | | | | 9A4 | | |
| Pt1000 | 3 pin plug connector M8, 3-wire | brass | | | | DA4 | | |
| | | stainless steel | | | | EA4 | | |
| Pt1000 | Fixed cable, 3-wire | brass | | | | 7A4 | | |
| | | stainless steel | | | | AA4 | | |
| Options* | | | | | | | | |
| Filter | | | | | | | | |
| Screen filter | | | | | | | H | |
| None | | | | | | | 0 | |
| Electronics | | | | | | | | |
| Including transducer 4...20 mA** | | | | | | | | |
| → Corresponds 0...5 l/min | | | | | | | A | |
| → Corresponds 0...10 l/min | | | | | | | B | |
| → Corresponds 0...20 l/min | | | | | | | C | |
| → Corresponds 0...40 l/min | | | | | | | D | |
| Switching output VE** | | | | | | | 6 | |
| Switching output VE with pulse output** | | | | | | | 7 | |
| Example order number | | VT1541 | K5 | IP | P | 0A4 | H | A |

* If you do not require any of the options, digits of the order code do not apply.















** Only for VTH15

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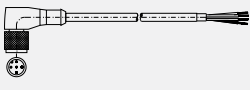

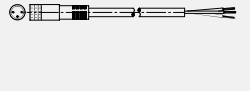
| Type | Order number |
|---|---|
| VTH15 Material of pipe section: PPO Noryl Output signal: NPN Electrical connection: Cable, without supplementary temperature sensor Screen filter, transducer 4...20 mA corresponds 0...5 l/min | VT1541 K5 HN P 0A4 H A |

| Order code | | |
|---|--------------------|------------|
| Type | | |
| VTM15 | VT1531MSMNP | |
| Supplementary temperature sensor | | |
| None | | 0A4 |
| Pt100 | | 2A4 |
| Pt1000 | | 7A4 |
| Example order number | VT1531MSMNP | 0A4 |

| Order code | | |
|---|---------------|-----------------|
| Type | | |
| VTP15 | VT1541 | |
| Material of pipe section, process connection | | |
| Brass, G $\frac{3}{4}$ male | | MSDNP0A4 |
| Stainless steel, G $\frac{3}{4}$ male | | VADNP0A4 |
| Stainless steel, G $\frac{3}{4}$ female | | VADNP0I4 |
| Example order number | VT1541 | MSDNP04A |

| Order code | | | | |
|------------|---|---|---|---------------------------------|
| Series | Connection adapters* | | | Order number |
| VT15 |  | Hose barb Ø 10 mm, PA 6.6 | T _{max} = 20 °C, PN 10 T _{max} = 60 °C, PN 2.5 | VT1317 |
| |  | Hose barb Ø 12 mm, PP | | XVT1069 |
| |  | Hose barb Ø 15 mm, PP | | VT1338 |
| |  | Hose barb Ø 19 mm, HDPE | | VT1323 |
| |  | Hose barb, angleshape Ø 13 mm, HDPE | T _{max} = 60 °C, PN 10 | VT1318 |
| |  | Hose barb, Ø 13 mm, Brass | T _{max} = 80 °C, PN 10 | XVT1005 |
| |  | Bonding socket, Ø 22 mm, PVC, for pipes outer diameter 16 mm | T _{max} = 20 °C, PN 10 T _{max} = 60 °C, PN 2,5 | VT1316 |
| |  | Welding adapter Ø 20 mm, PP | T _{max} = 20 °C, PN 6 T _{max} = 60 °C, PN 2,5 | VT1319 |
| |  | Screw coupling G ³ / ₈ -ISO 228 male, Brass | T _{max} = 110 °C, PN 16 | VT1320 |
| |  | Screw coupling G ¹ / ₂ -ISO 228 male, Brass | | VT1324 |
| |  | Screw coupling G ³ / ₈ -ISO 228 female, brass galvanized | | VT1321 |
| |  | Screw coupling G ¹ / ₂ -ISO 228 female, Brass | | VT1325 |
| |  | Clamping ring coupling, brass for copper tube Ø 18 mm for copper tube Ø 22 mm | | VT1326 VT1327 |
| |  | Soldering coupling, brass for copper tube Ø 15 mm for copper tube Ø 18 mm | | T _{max} = 90 °C, PN 16 |

* The use of connection adapters may result in deviations in accuracy. Supplied piecewise

| Order code | | | | |
|------------|---|---|--------|--------------|
| Series | Connection cables | | Length | Order number |
| VT15 |  | Connection cable for turbine flow sensor with cable socket M12 x 1 moulded lead, 4-pin, shielded, sheathing material PUR (T _{max} = 70 °C) UL-approval | 3 m | XVT2053 |
| | | | 5 m | XVT2009 |
| | | | 10 m | XVT2070 |
| |  | 4 pin cable socket M12 x 1 angle type unassembled | | VT1331 |
| |  | Connection cable for temperature sensor with cable socket M8 moulded lead, 3 pin, sheathing material PUR (T _{max} = 90 °C) UL-approval | 2 m | XVT2190 |
| | | | 5 m | XVT2191 |
| | | | 10 m | XVT2192 |