



# VADTel Sens

Smart pressure and temperature sensor  
EU product passport

## Document scope

This passport applies to configuration-specific VADTel Sens units intended for utility and industrial pressure / temperature monitoring in the EU market.

The effective parameters for the delivered unit are the values shown on the product marking, order sheet and accompanying conformity documents, where applicable.

## Document code

VTS-PP-EU-EN

## Revision

1.0

## Language

English

## Document status

Controlled copy

## Product family

Autonomous cellular pressure and temperature sensor

## Delivered unit identification

Serial number	
IMEI / modem ID	
Configuration code	
Firmware version	
Pressure type	
Pressure range	
Accuracy class	
Battery capacity	
Communication module	
Date of manufacture	
Commissioning date	
Installed location / project	

## Primary characteristics

- Gauge or absolute pressure measurement with integrated temperature acquisition.
- Configurable local sampling, heartbeat reporting and min./max. alarm thresholds.
- Cellular data transfer via GSM/GPRS or NB-IoT, according to configuration.
- Rechargeable 3.7 V LiPo battery for long autonomous operation.

## Important document note

This passport supplements the delivered unit. It does not replace the product label, supplied declaration(s) of conformity, hazardous-area certificate set (if applicable) or purchase-order-specific technical definition.



## 1. Intended use

VADTel Sens is intended for autonomous monitoring of pressure and temperature in utility and industrial networks. The device measures gauge or absolute pressure, determines process temperature and transmits telemetry data over a cellular channel to a supervisory backend.

Typical applications include gas distribution and pressure-reduction stations, water-supply networks, pumping stations, water-treatment systems, heat-supply systems, boiler rooms, district-heating substations and selected hydraulic or pneumatic systems.

## 2. Construction and operating principle

The device integrates a protective field housing, a sensor module with a tensoresistive measuring element, a microprocessor telemetry module, a rechargeable battery supply and a cellular antenna connection. Pressure and temperature values are evaluated locally against configured thresholds.

During normal conditions the device follows the heartbeat schedule and remains in a low-power state between measurements. When configured pressure or temperature limits are exceeded, the unit switches to event-driven reporting until the alarm condition clears.

## 3. Technical data

Measurement parameter	Value
<b>Pressure type</b>	Gauge or absolute, according to configuration
<b>Available pressure ranges</b>	Gauge: low-pressure gas-network version and 0...40 kPa. Absolute: 0...160 kPa, 0...400 kPa, 0...600 kPa, 0...1.0 MPa, 0...1.6 MPa, 0...2.5 MPa, 0...4.0 MPa. Custom ranges up to 60 MPa on request. Exact delivered range: see unit marking / order sheet.
<b>Pressure accuracy</b>	+/-1.0 / +/-1.5 / +/-2.0 / +/-2.5 %FS, according to configuration
<b>Permissible overload</b>	1.5 x full scale
<b>Process temperature range</b>	-40 to +85 °C
<b>Temperature accuracy</b>	+/-1.0 °C standard; +/-0.1 °C option

Telemetry / control parameter	Value
<b>Cellular communications</b>	GSM/GPRS or NB-IoT, according to configuration
<b>Measurement interval</b>	5...600 s
<b>Heartbeat / health report interval</b>	30 min...24 h
<b>Alarm-state reporting interval</b>	5...60 min
<b>Alarm thresholds</b>	Server-configurable min. / max. pressure and temperature limits
<b>System integration</b>	Secure supervisory backend; IIoT / OPC UA / SCADA integration
<b>Remote setup functions</b>	Measurement cadence, reporting schedule and alarm thresholds



### 3. Technical data (continued)

Power parameter	Value
<b>Power supply</b>	Built-in rechargeable LiPo battery, nominal 3.7 V
<b>Battery capacity options</b>	2000 / 4000 / 6000 mAh
<b>Guaranteed telemetry sessions</b>	5,000 / 7,500 / 10,000 server sessions
<b>Autonomous operation</b>	Up to 5 years typical; application-dependent
<b>Battery service</b>	Charging / replacement by authorized service personnel only

Environmental / mechanical parameter	Value
<b>Ambient operating temperature</b>	-40 to +60 °C
<b>Storage / transport conditions</b>	-50 to +60 °C; up to 95% RH at +35 °C
<b>Ingress protection</b>	IP65
<b>Process connection</b>	M20 x 1.5
<b>Wetted media compatibility</b>	Media compatible with stainless steel AISI 316L / AISI 304
<b>Housing / installation form</b>	Field-mount sensor; install similarly to a pressure gauge
<b>Dimensions</b>	Approx. 125 x 210 x 90 mm
<b>Weight</b>	Approx. 1.0-1.2 kg, depending on configuration
<b>Recommended recalibration interval</b>	36 months

### 4. Safety and installation instructions

- Use the device only within the rated pressure range of the delivered configuration.
- Do not use with media incompatible with the wetted stainless-steel parts.
- For liquid service, ensure the measuring system is properly filled and vented.
- Mount so that pressure is preferably introduced from below.
- Avoid severe vibration, impacts and pressure pulsation above approximately 10% of nominal range.
- If process temperature may exceed the permissible device limit, use an impulse line, siphon or cooling element.
- Protect the housing against condensation or icing; during installation / removal, apply mechanical load only to the process connection, not to the housing.
- The standard version is intended for non-hazardous areas unless the delivered unit is specifically marked and documented for hazardous-area use; battery service shall be performed by authorized personnel only.



### 5. Maintenance, storage and transport

**Maintenance.** No special routine maintenance is required beyond visual inspection and functional checks. Inspect housing integrity, process connection, antenna, sealing surfaces and battery status.

**Recalibration.** Recalibrate at intervals not exceeding 36 months or according to site requirements.

**Storage.** Store in original packaging, protected against mechanical damage, contamination and aggressive atmospheres. Recommended storage period before commissioning: up to 12 months.

**Transport.** Storage and transport conditions: -50 to +60 °C and up to 95% RH at +35 °C.

### 6. Scope of supply

Item	Qty.
Sensor unit	1
External cellular antenna	1
Product passport	1
Operating manual	On request
Calibration / verification method	On request

### 7. Conformity and disposal notes

This passport supports the delivered EU product version. The product label and any accompanying declaration(s) / certificate(s), where applicable, are authoritative for the supplied unit. End-of-life electronics and batteries shall be disposed of in accordance with local WEEE and battery-waste rules.

## 8. Configured telemetry and alarm parameters

Measurement interval	
Heartbeat / health report interval	
Alarm-state report interval	
Pressure low alarm	
Pressure high alarm	
Temperature low alarm	
Temperature high alarm	
Remote temperature probe / cooler	
Special version / area classification	
Installer notes	



## 9. Delivery acceptance and commissioning record

Serial number	
IMEI / modem ID	
Pressure type	
Pressure range	
Accuracy class	
Battery capacity	
Communication module	
Commissioning date	
Site / asset reference	
Accepted by (name)	
Signature / date	

Acceptance / commissioning check	Status / note
Package completeness verified	
No transport damage observed	
Process connection visually inspected	
Antenna / modem connectivity checked	
Required thresholds and reporting profile loaded	

## 10. Service and recalibration record

Date	Action / record	Result	Next due	Organization / technician	Signature

### Document retention note

Keep this passport with the device throughout storage, installation, operation and service life. Update the acceptance and recalibration sections after each relevant action.



## 11. Explosion protection and hazardous-area data

Complete this section for any Ex-certified delivered unit intended for use in potentially explosive atmospheres. Enter the final marking and certificate data from the delivered product label before commissioning.

Explosion-protection parameter	Declared value
<b>Explosion-protection status</b>	Ex-certified variant for hazardous-area use; exact classification per delivered unit.
<b>Applicable EU legislation</b>	Directive 2014/34/EU (ATEX)
<b>Delivered explosion-protection marking</b>	
<b>Equipment group / category / EPL</b>	
<b>Type of protection</b>	
<b>Gas / dust group</b>	
<b>Temperature class / max. surface temperature</b>	
<b>Approved ambient range for Ex service</b>	
<b>Certificate No. / notified body reference</b>	
<b>Special conditions of use (if marked X)</b>	
<b>Permitted service operations in hazardous area</b>	No enclosure opening and no battery charging / replacement in hazardous area unless explicitly permitted by the delivered certification set.
<b>Required accessories / enclosure entries</b>	Use only the cable entries, stopping plugs, seals and accessories approved for the certified delivered configuration.
<b>Zone / application notes</b>	

### Hazardous-area commissioning and service rules

- Use in a hazardous area only when the delivered unit bears valid explosion-protection marking and is accompanied by the applicable certificate set.
- Verify the final marking, zone suitability, gas / dust group, temperature class and approved ambient range before energizing.
- Record the delivered marking and certificate number in this passport before commissioning.