



SATRON®

LUMINA™ VET Optical Effluent Transmitter

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#LookCloser

The **VE family of sensors** measures process parameters by transmitting strobes of light into the wastewater and measuring the back-scatter characteristics. These measurement values are calibrated by sampling and laboratory analysis of process.

SATRON VET is a single or two channel optical total solids (TS) and chemical oxygen demand (COD) sensor that is suitable for all wastewater in range of 0...200 000ppm in applications located in a wide range of wastewater treatment applications. The Satron VET provides an accurate and reliable TS measurement without need for regular maintenance and is equipped with a retraction mechanism that allows probe change during the process run. COD measurement is calibrated with process specific sample data after the site laboratory analysis. Flexible installation options can be provided. Please consult Satron for sensor specification for your application.



TECHNICAL SPECIFICATIONS

Measuring range and span

See Selection Chart.

Pressure class

PN25

Current

4 mA

Leakage current

1 mA

Measurement accuracy

Measurement accuracy is determined by the accuracy of the laboratory analysis results.

Calibration

Precalibrated at the factory for 0...10 000 mg/L range. Final calibration against laboratory measurements with actual sample after installation is required.

Current output1

Range 3.5...23 mA

Maximum load 600 Ω

Factory setting 4...20 mA

Zero and Span adjustment

Available, can be made by using key-board (display option)

Electrical connections

Remote electronics housing with display code L:

PG9 gland for cable;

Conductor cross section: max 2.5 mm²

Cable OD: 4...8 mm.

Current output2

Internal power supply

Maximum load 400 Ω

Range 3.5...23 mA

Factory setting 4...20 mA

Damping

Time constat is continuously adjustable 0.01 to 60s. Factory setting 0,5s.

External power supply

Current output 2 is galvanically isolated

Max supply voltage 35 VDC

Range 3.5...23 mA

Factory setting 4...20 mA

Max isolation voltage 100 VDC

Repeatability

0.01% Cs.

Device enclosures (with display), code K:

- PG13,5 inlet, 3 pcs

- M12 plug connector for the sensor signal.

Temperature limits

Ambient: -30 to +80 °C

Process: 0 to + 80 °C

Shipping and storage: -40 to +80 °C.

Process connections

B1: With G1" connecting thread

H1: fixed mounting tube

Output

1st mA loop:

2/3-wire (2W/3W), 4-20 mA

2nd mA loop:

2-wire, 4-20 mA

I/O-connections

bout1-3

Relay, grounding contact

Maximum voltage 35 V

Maximum current 50 mA

Max leakage current 10 μ A

Protection class

See Selection chart.

Supply voltage and permissible load

Sensor: 24VDC

Device enclosures option K:

115/230VAC

bin1-3

NC (no connection) OFF

0...2 V ON

Minimum values for switch in use

Voltage 16 V

Weight

Housing with M12

Remote Housing (L): 2.9 kg

Remote sensor (R): 2.9 kg

Device enclosure (K): 6,2 kg

Humidity limits

0-100 % RH

CONSTRUCTION

Materials:

Sensing element: AISI316L (EN 1.4404) or Titanium Gr2.

Sapphire lens.

RDU, Cable gland: AISI304 (EN 1.4301)

Signal/data cable: PVC

Remote measuring probe cable: PVC

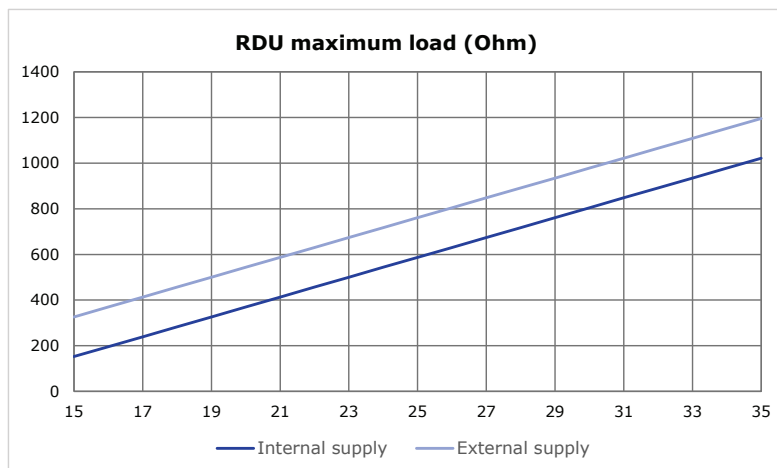
Coupling: AISI316L (EN 1.4404), Duplex

(EN 1.4462), Hast.C276 (EN 2.4819) or

Titanium Gr2.

Device enclosure, code K, KF:

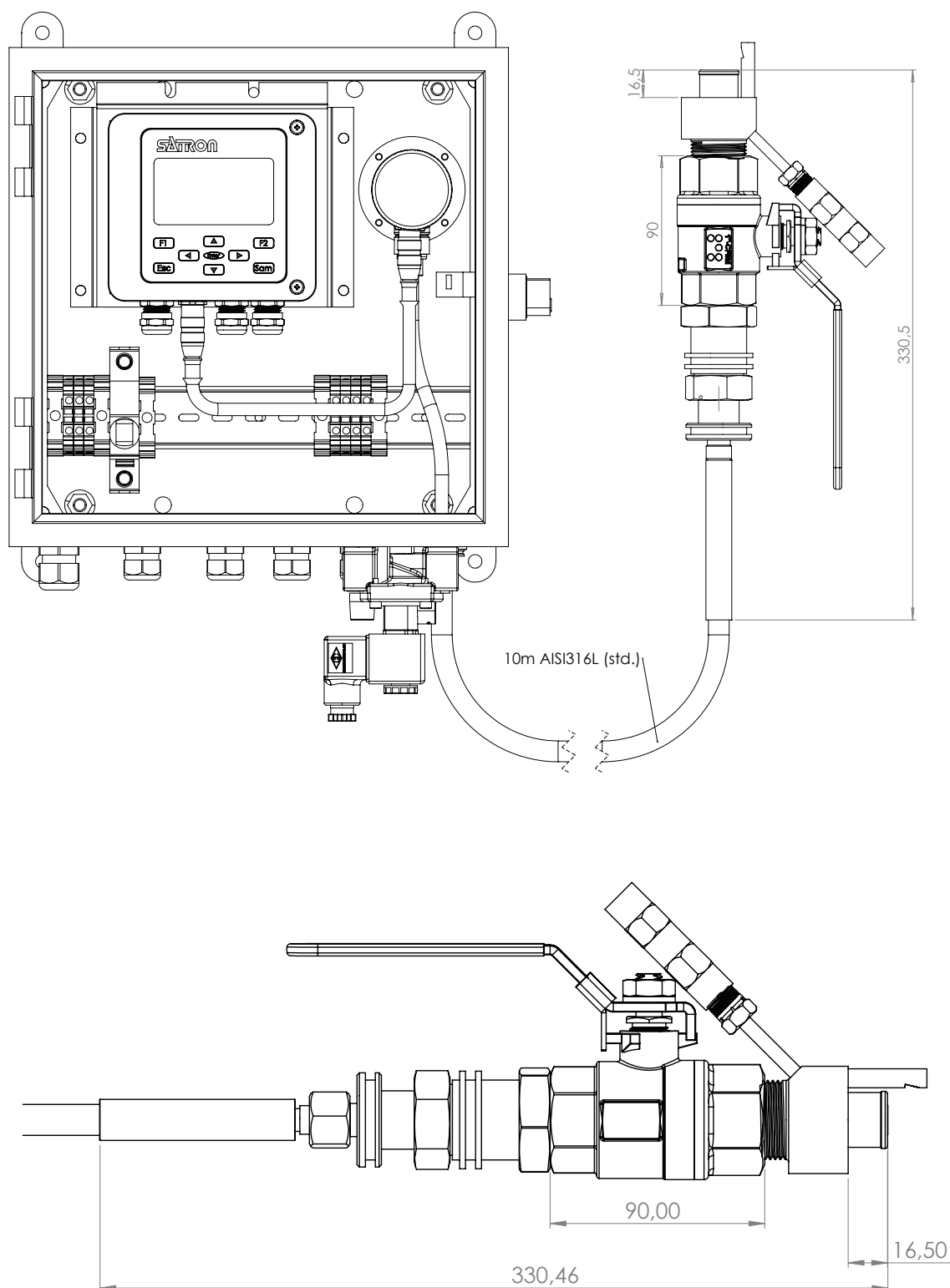
AISI304 (EN 1.4301)



Connection Box (KF)

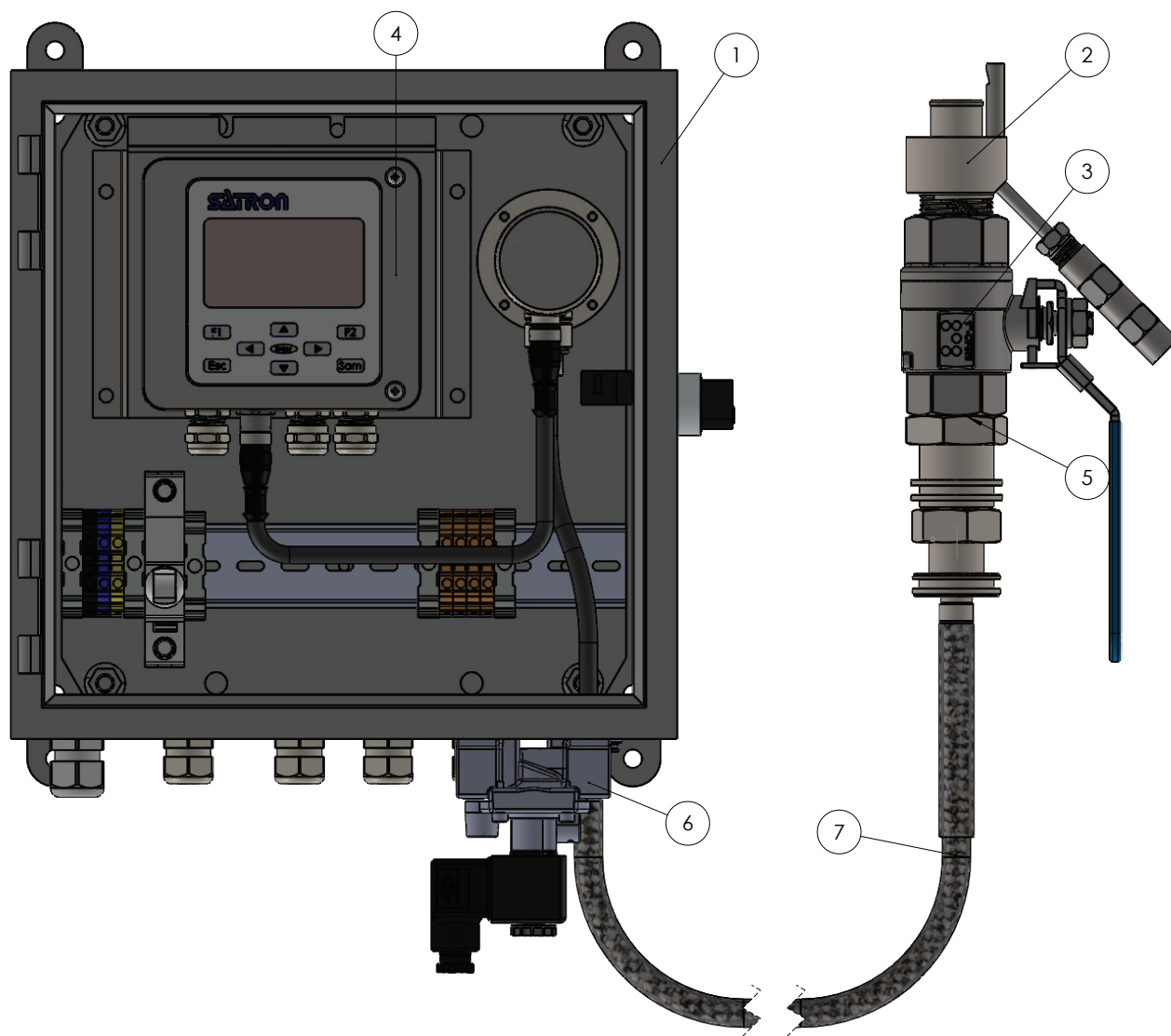
Remote electronic in the device enclosure with flushing valve. Flushing valve installed under the cabinet. External sample switch mounted on the right face of the cabinet. Power supply 115/230 V 50/60 Hz, code K.

The Remote Display provides a local display of the measured values and serves also as a simple menu-driven calibration and troubleshooting interface. It includes two analog 4–20 mA outputs, 3 dry contact binary inputs and 3 contact outputs.



Standard VET sensor. Dimensions of the picture are in millimeters.

SPARE-PARTS



No	Part name	Order code
1.	Enclosure without sensor	M1050194-RT
2.	Flushing coupling for B1	M1050102
3.	Ball Valve	82500003
4.	Sensor with display	EVETNS224NRT227B1
5.	ORING- EPDM	80033426
6.	Solenoid Valve	75000020
7.	VET transmitter sensor	For sensor only change order code E to U, example: EVETNS224NRT227B1 -> UVETNS224NRT227B1

SELECTION CHART

Adjustability VET	Span, min 0...100 ppm (mg/L)	Measurement Range 0...200 000 ppm (mg/L)	
Process temperature limits N		Normal version 0...+80 °C	
Output S		4-20 mA DC	
Material of wetted parts	Body	Lens	Seals
224	AISI316L (EN 1.4404)	Sapphire	PFA+EPDM
623	Titanium Gr2 (EN 3.7035)	Sapphire	PFA+FFPM
Housing type N		Housing with display	
Probe type R		Remote measuring probe, IP69	
Connection type T		M12, IP67	
Cable material 2		AISI316 braided PTFE hose	
Cable length		1	5 meters
		2	10 meters (std.)
		3	15 meters
Lightsource		1	Dual wavelength
		4	Multi wavelength
		7	Single wavelength
Process connections			
B1 G1A ball valve insertion. Probe diameter Ø 24mm			
G1 G1A thread + oring. PASVE® Compatible			
H1 Submersible Ø 24mm measuringhead			
Device enclosure			
KF Remote electronics in the device enclosure with flushing valve. Power supply 115/230V, IP66.			

Example code

VET N S 224 N R T 2 2 7 B1 KF

Optional items – order separately

Documentation

Material certificates

- MC1** Raw material certificate without appendices, in accordance with SFS-EN 10204-2.1 (DIN 50049-2.1) standard
- MC2** Raw material certificate for wetted parts, in accordance with SFS-EN 10204-2.2 (DIN 50049-2.2) standard
- MC3** Raw material certificate for wetted parts, in accordance with SFS-EN 10204-3.1 B (DIN 50049-3.1 B) standard

European Directive Information:

Electromagnetic Compatibility EMC directive (2014/30/EU) including latest amendments with the application of the harmonized standards: EN 61326-1:2021

Low Voltage Directive (2014/35/EU) including latest amendments with the application of harmonized standards: EN 61010-1:2011



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