



SATRON®

LUMINA™ VET Optical Effluent Transmitter

www.satron.com

#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 wide range of waste water 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.

Measurement accuracy

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

Zero and Span adjustment

Zero elevation: Calibrated span is freely selectable on the specified range depending from the desired option. This can be made by using keyboard (display option)

Damping

- Time constant is continuously adjustable 0.01 to 60 s.

Temperature limits

Ambient: -30 to +80 °C
Process: 0 to + 60 °C
Shipping and storage: -40 to +80 °C.

Output

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

Supply voltage & permissible load

Sensor: 24VDC
Device enclosures option K:
115/230VAC

Humidity limits

0-100 % RH

EMC directive

2014/30/EC - EN 61326-1:2013

CONSTRUCTION

Materials:
Sensing element 1): AISI316L (EN 1.4404), Duplex (EN. 1.4462), Hast. C276 (EN 2.4819), or Titanium Gr2. Sapphire Coupling 1): AISI316L (EN 1.4404), Duplex (EN 1.4462), Hast.C276 (EN 2.4819) or Titanium Gr2

Pressure class:

- PN25

Connection hose between sensing element and housing

PTFE/AISI316 braided hose

Device enclosure, code K:

EN 1.4301 (AISI304)

Calibration

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

Electrical connections

Device enclosures (with display), code K:
- PG13,5 inlet, 3 pcs
- The sensor signal M12 plug connector.

I/O-connections

bout1-3

Relay, grounding contact
Maximum voltage 35 V
Maximum current 50 mA
Maximum leakage current 10 µA

bin1-3

NC (no connection) OFF
0...2 V ON

Minimum values for switch in use

Voltage 16 V
Current 4 mA
Leakage current 1 mA

Current output1

Range 3.5...23 mA
Maximum load 600 Ω
Factory setting 4...20 mA

Current output2

Internal power supply
Current output 2 has same ground as binary IO

Maximum load 400 Ω
Range 3.5...23 mA
Factory setting 4...20 mA

External power supply Current output 2 is galvanically isolated

Maximum supply voltage 35 VDC

Range 3.5...23 mA
Factory setting 4...20 mA

Maximum isolation voltage 100 VDC

Process connections

B1: With G1" connecting thread
H1: fixed mounting tube

Protection class:

See Selection chart.

Weight

Remote sensor (R): 2.9 kg
Device enclosure (K) 6,2 kg

PRODUCT CERTIFICATIONS

European Directive Information:

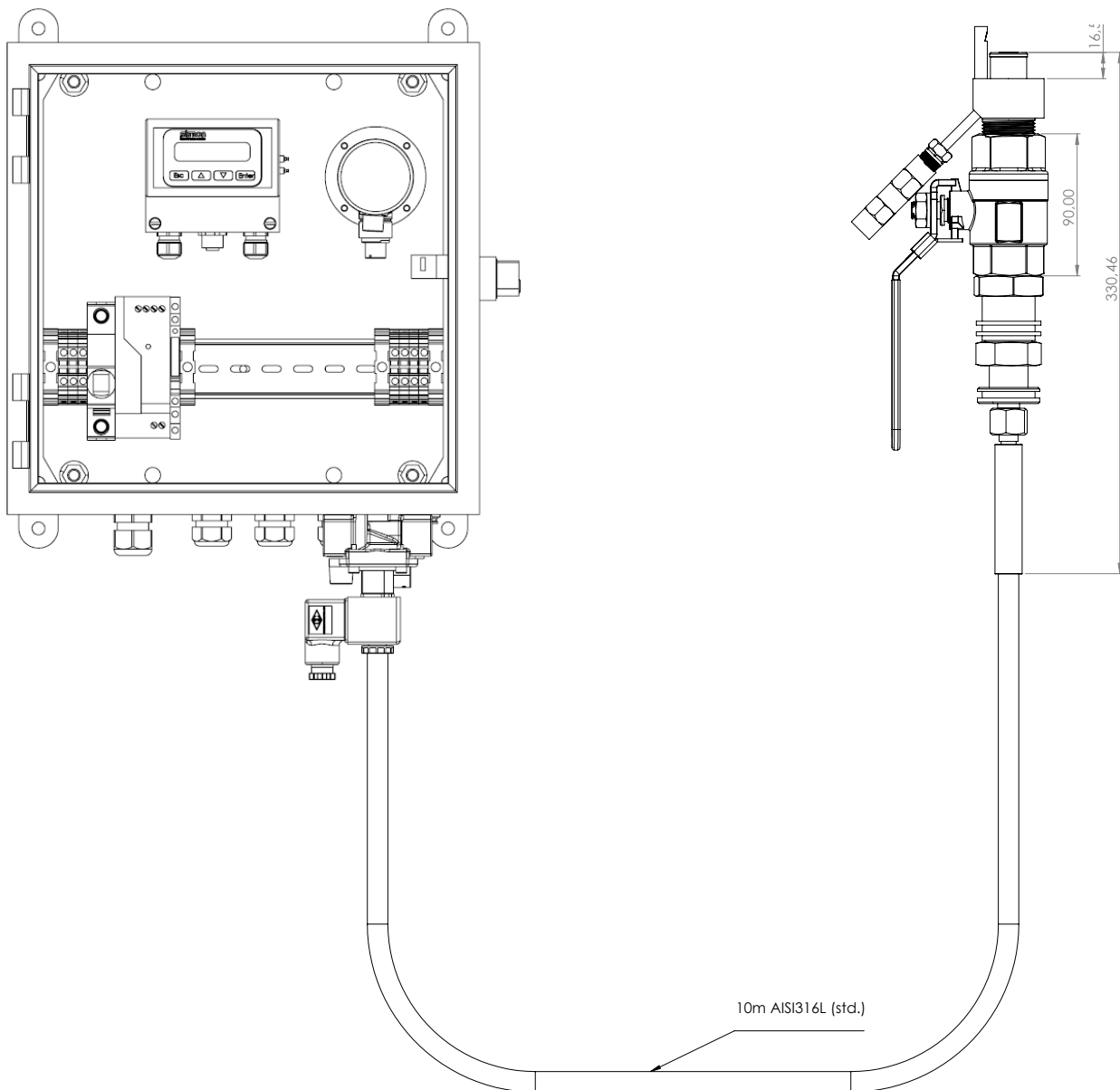
Electro Magnetic Compatibility EMC directive (2014/30/EU) including latest amendments with the application of the harmonized standards:
EN 61326-1:2013

Low Voltage Directive (2014/35/EU) including latest amendments with the application of harmonized standards:
EN 61010-1:2010

Connection Box (KF)

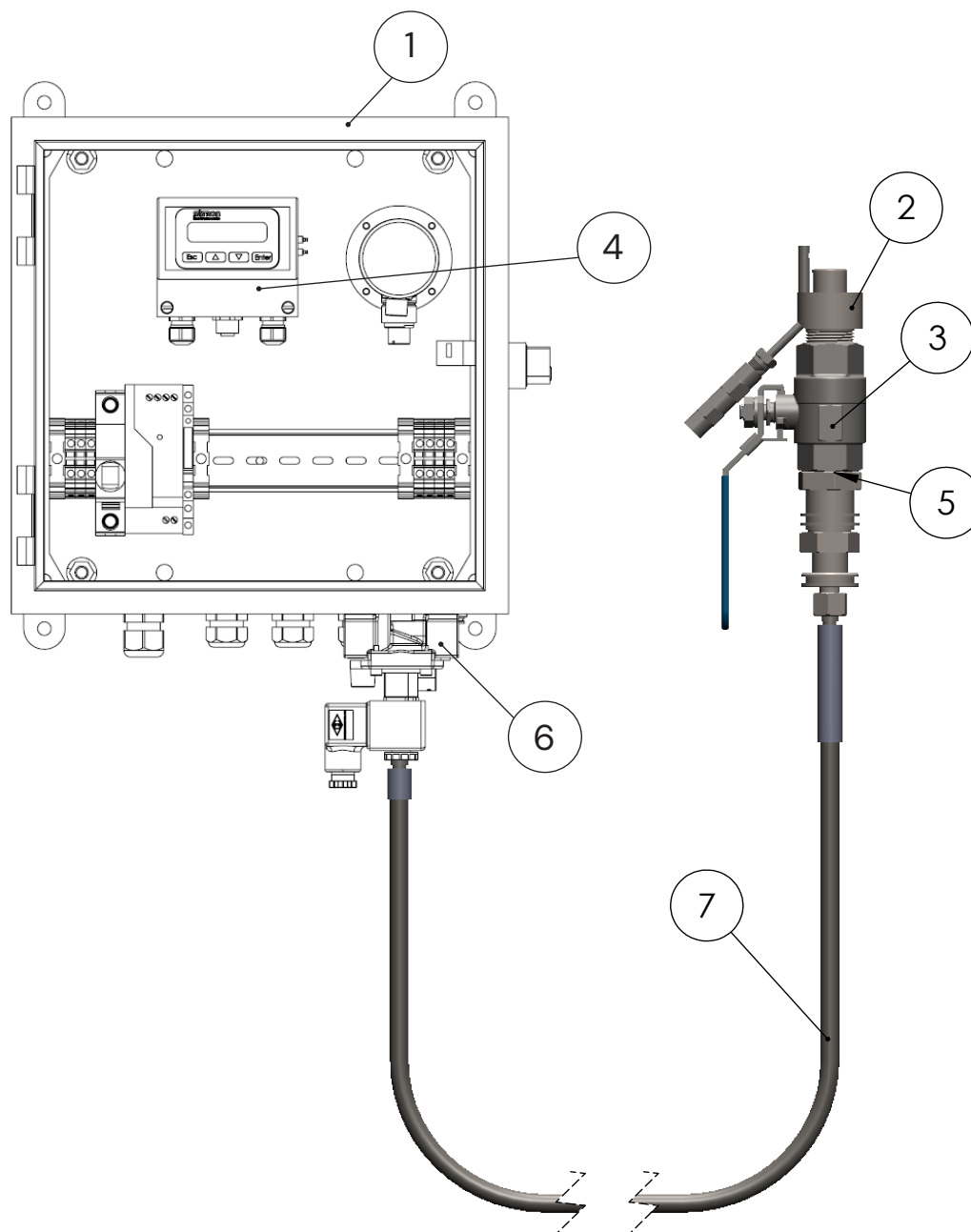
Remote electronic in the device enclosure with flushing valve. Flushing valve installed under the cabinet. External sample switch mounted on the right face of the cabinet. Power supply 115/230 V 50/60 Hz, code K.

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.



*see selection chart on last page

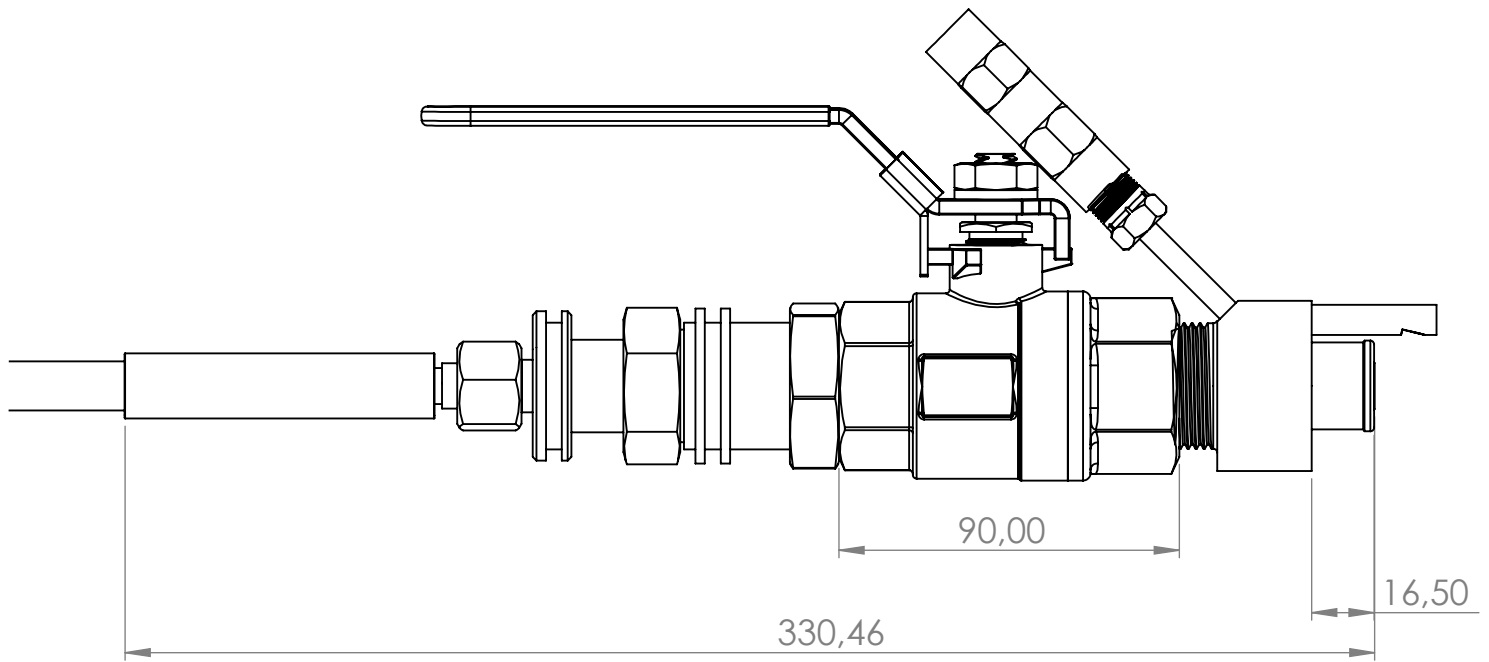
SPARE-PARTS



No	Part name	Order code
1.	Enclosure without sensor	M1050194-RT
2.	Flushing coupling for B1	M1050102
3.	Ball Valve	82500003VOF
4.	Sensor with display	VETNS224NRT2x7G1
5.	ORING- EPDM	80033426 34.2x2.62 EPDM
6.	Solenoid Valve	75000020
7.	VET transmitter sensor	For sensor only change order code M to S, example: MVETNS224NRT227B1 -> SVETNS224NRT227B1

Standard model: VCA with process connection G1A ball valve insertion, G1 15° coupling, wetted parts material AISI316L, PG9 connection. Dimensions in millimeters. Selection code option B1. Coupling not included.

DIMENSIONS



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

SELECTION CHART

Adjustability	Span, min	Measurement Range		
VET	0...100 ppm (mg/L)	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	224	Body	Lens	Seals
	623	AISI316L (EN 1.4404) Titanium Gr2 (EN 3.7035)	Sapphire Sapphire	PTFE+EPDM PTFE+FFPM (Karlez®)
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 meter	
		2	10 meter (std.)	
		3	15 meter	
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				

Example code

VET N S 224 N R T 2 2 7 B1

Optional items - order separately

Device enclosure

KF Remote electronic in the device enclosure with flushing valve.
Power supply 115/230V, IP66.

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