

SATRON VC Optical Consistency Transmitter

SATRON VC is an optical consistency transmitter. It is suitable for all pulps consisting of a single grade, in consistency range of 0...7%Cs located mainly within the mechanical pulp processes (SWG, TMP, PWG and CTMP). Typical applications are measurements to screens, outlet from latency removal chest, screen rejects and many others. The **Satron VC** can provide an accurate and reliable consistency measurement without need for regular maintenance.

TECHNICAL SPECIFICATIONS

Measuring range and span
See Selection Chart.

Silicone rubber seal, AISI316 retaining screw.

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) or HART®275/375 communicator.

Connection hose between sensing element and housing

Codes **L** and **R** :
PUR signal cable or hose protected with PTFE/AISI316 braiding

Device enclosure, code K:
EN 1.4301 (AISI304)

Damping

- Time constant is continuously adjustable 0.01 to 60 s.

Calibration

For customer-specified range with minimum damping. (If range is not specified, transmitter is calibrated for maximum range.)

Repeatability

- 0.01% Cs.

Temperature limits

Ambient: -30 to +80 °C
Process: -30 to + 140 °C
Shipping and storage: -40 to +80 °C.

Electrical connections

Housing with PLUG connector, code **H0S**:
Connector type DIN 43650 model AF; Pg9 gland for cable; wire cross-section 0.5 to 1.5 mm².

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

Supply voltage and permissible load

- 24 VDC, -10 %, + 15 %, 100 mA
- 115/230 VAC, -15% ... +10% (device enclosure)

Housing with M12 connector, code **H0T**:
M12 plug connector

Housing with display, code **N0S**:
Connector type DIN 43650 model AF; Pg9 gland for cable; wire cross-section 0.5 to 1.5 mm².

Humidity limits 0-100 % RH

EMC directive 2004/108/EC

- EN 61326-1:2005

Housing with display, code **N0T**:
M12 plug connector

CONSTRUCTION

Materials:

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

Device enclosure (with display), code **K**:

- PG13,5 inlet, 3 pcs
- The sensor signal M12 plug connector.

Pressure class:

- PN25

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

Housing with display,

codes **N0S** & **N0T**:

Housing: AISI303/316, Seals: Nitrile-rubber and Viton®, Nameplates: Polyester

Housing with M12 connector, code

H0T: Housing: AISI303/316, Seals: Viton® and NBR.

Housing with PLUG DIN 43650 connector, code

H0S: Housing: AISI303/316, Seals: Viton® and NBR.

PLUG connector: PA6-GF30 jacket,

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 load, See picture below
Maximum isolation voltage 100 VDC

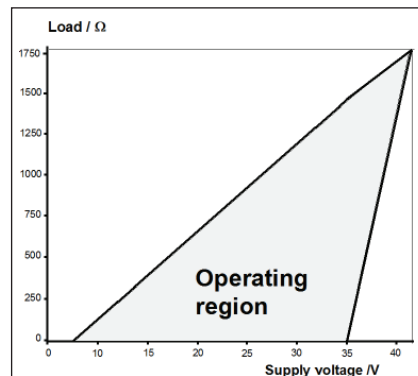
Process connections

- With G1 connecting thread

Protection class: See Selection chart.

Weight

Housing with PLUG DIN43650 connector (**H0T**): 1.3 kg
Housing with M12 connector (**H0S**): 1.3 kg
Housing with display (**N0S** & **N0T**): 1.7 kg
Remote Housing (**L**): 2.9 kg
Remote sensor (**R**): 2.9 kg
Device enclosure (**K**): 6,2 kg



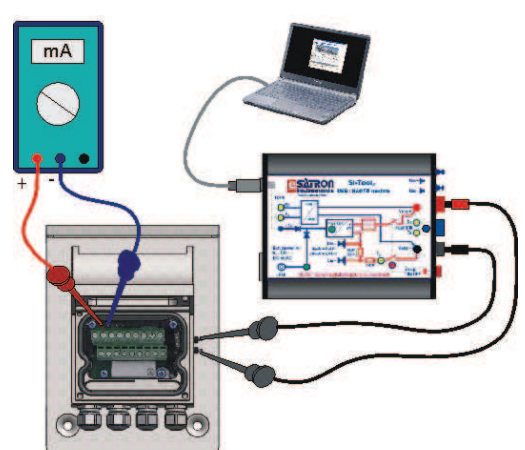
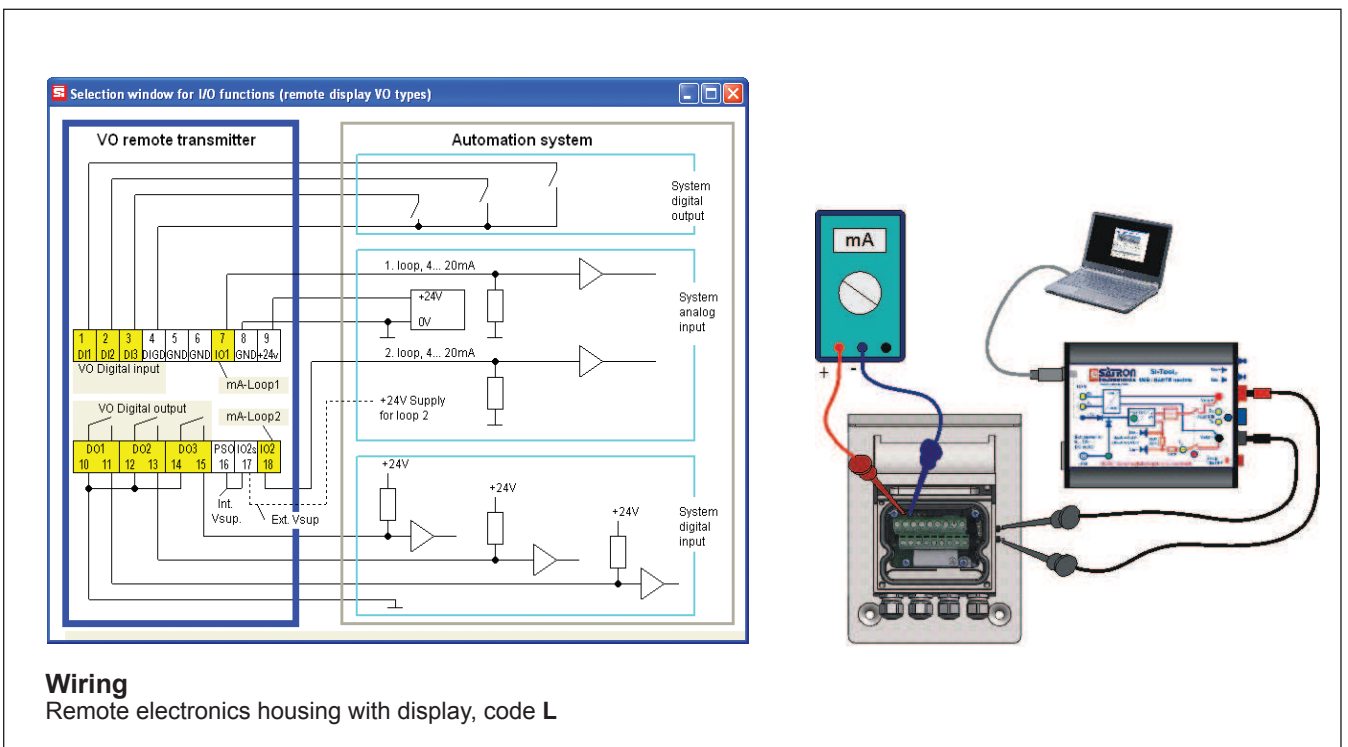
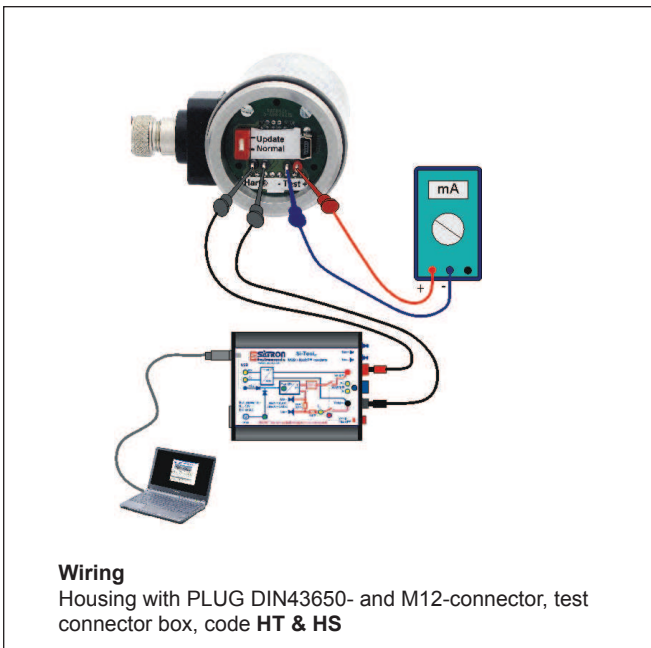
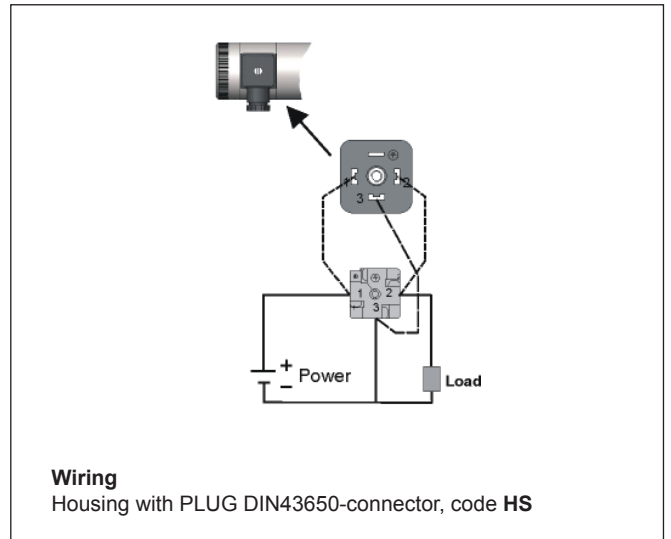
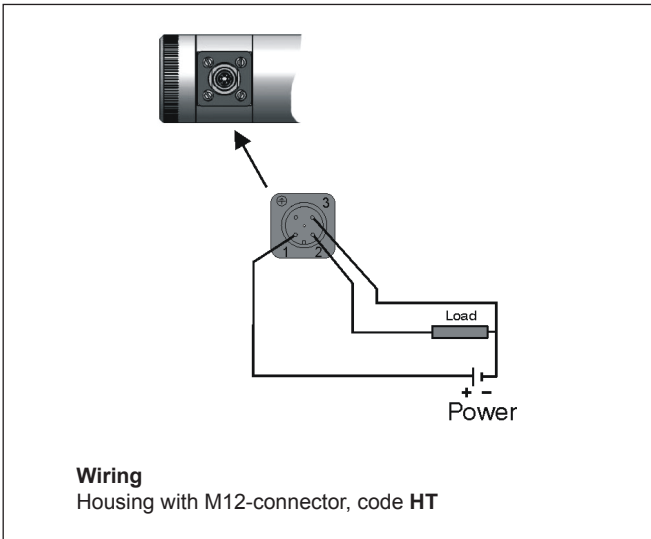
Min. load using HART®-communication 250 W

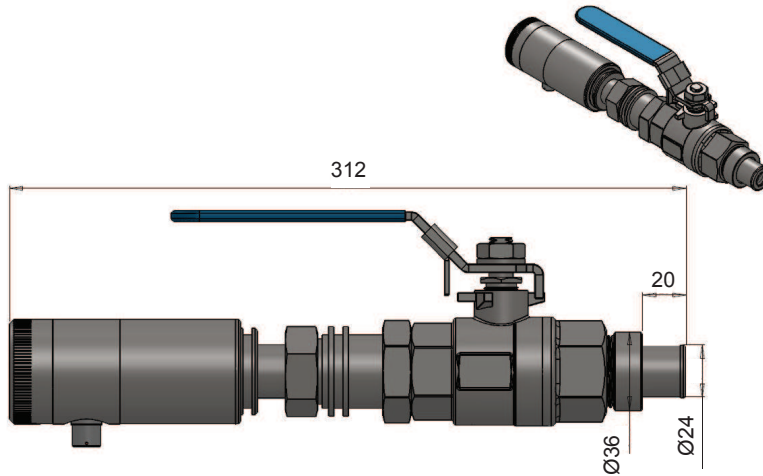
$R_{max} = \frac{\text{Supply voltage} - 5 V}{I_{max}}$

$I_{max} = 20,5 \text{ mA}$
 $I_{max} = 22,5 \text{ mA}$
(when the alarm current 22,5 mA is on)

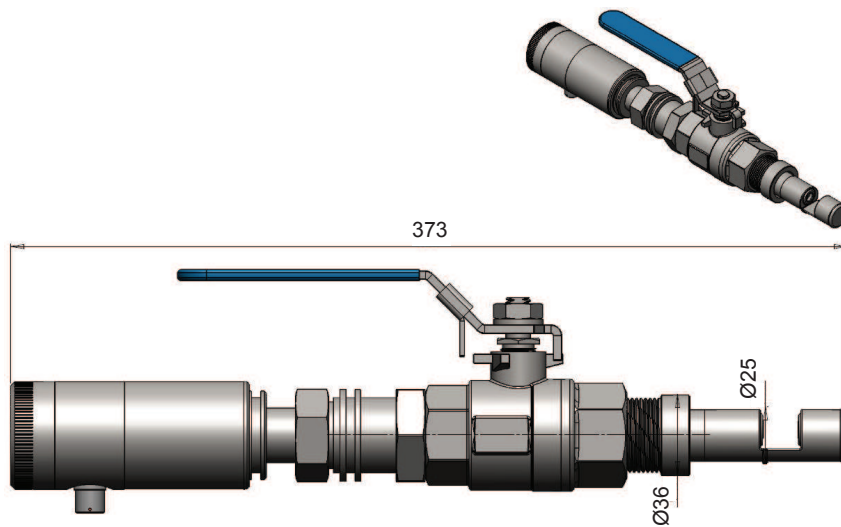
Current output 2
External power supply

¹⁾ Parts in contact with process medium

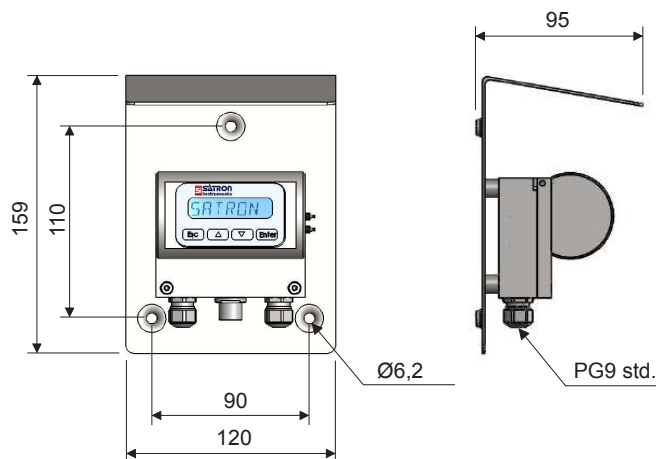
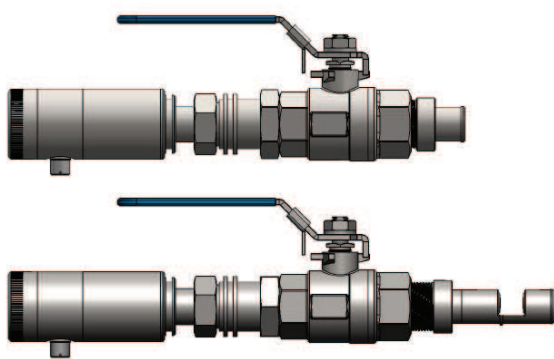




Dimensions Satron VCT



Dimensions Satron VCF



Satron VC with L-housing

Selection Chart

Adjustability	Span, min	Consistency Range	
VCT	1% Cs	0...7% Cs	
VCF	0,5% Cs	0...0,5 Cs	
Process temperature limits		N	Normal version -30...+140 °C
Output		S	4-20mA DC/HART®
Material of wetted parts	Body	Lens	Seal
	2 AISI316L (EN 1.4404)	2 Sapphire glass	1 EPDM
	3 Hast. C 276 (EN 2.4819)		2 FPM (Viton®)
	6 Titanium Gr2 (EN 3.7035)		3 FFPM (Kalrez®)
	8 Duplex (EN 1.4462)		
Housing type		N	Housing with display and pushbuttons (only with remote probe "R")
		H	Housing with, no display, (only one mA output)
		L	Remote electronics housing with display
Probe type		0	No remote probe
		R	Remote measuring probe (not available with L housing), IP68
Connection type		S	DIN43650 with PG9, IP66
		T	M12, IP67
		U	M12 & USB (only with N housing), IP67
		V	PG9 (always with L housing), IP66
Cable Material		0	No, L or R selected
		1	PUR cable.
		2	AISI316L braided PTFE hose.
		3	Steel reinforced PUR hose.
		4	PVC cable
Cable length		0	No L or R option selected
		1	5 meter
		2	10 meter
Light source		7	880nm
Process connections			
		B1	G1A ball valve insertion. Extension diameter ø 24mm
Device enclosure			
		K	Remote electronic in the device enclosure. Power supply 115/230 V, IP66. Only housing type L and probe type R with display.
Documentation			
Calibration certificate		AE	English
Installation and operating instructions		IE	English
		IF	Finnish
		FR	French
Material certificates			
0		No material certificate	
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	

We reserve the right for technical modifications without prior notice.



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