

SATRON VCT Optical Consistency Transmitter

SATRON VCT is an optical total consistency transmitter. It is suitable for all pulps, in consistency range of 0...12%Cs in application located in the mechanical pulp processes (SWG, TMP, PWG and CTMP) as well as in wide range of other paper machine and pulp mill applications. The Satron VC can provide an accurate and reliable consistency measurement without need for regular maintenance and is equipped with a retraction mechanism.

TECHNICAL SPECIFICATIONS

Measuring range and span

See Selection Chart.

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.

Damping

- Time constant is continuously adjustable 0.01 to 60 s.

Repeatability

- 0.01% Cs.

Temperature limits

Ambient: -30 to +80 °C
Process: 0 to + 140 °C
Shipping and storage: -40 to +80 °C.

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)

Humidity limits 0-100 % RH

EMC directive 2004/108/EC

- EN 61326-1:2005

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

Pressure class:

- PN25

Housing with display,

codes **NOS & NOT**:

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

Housing with M12 connector, code

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

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)

Calibration

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

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.

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

M12 plug connector

Housing with display, code **NOS**:

Connector type DIN 43650 model AF; Pg9 gland for cable; wire cross-section 0.5 to 1.5 mm².

Housing with display, code **NOT**:

M12 plug connector

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 load, See picture below
Maximum isolation voltage 100 VDC

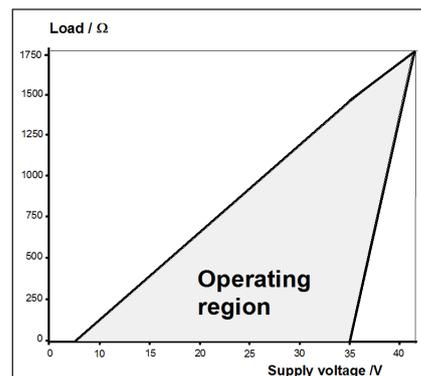
Process connections

- With G1 connecting thread

Protection class: See Selection chart.

Weight

Housing with M12 connector (**H0T**): 1.3 kg
Housing with display (**NOS & NOT**): 1.7 kg
Remote Housing (**L**): 2.9 kg
Remote sensor (**R**): 2.9 kg
Device enclosure (**K**): 6,2 kg



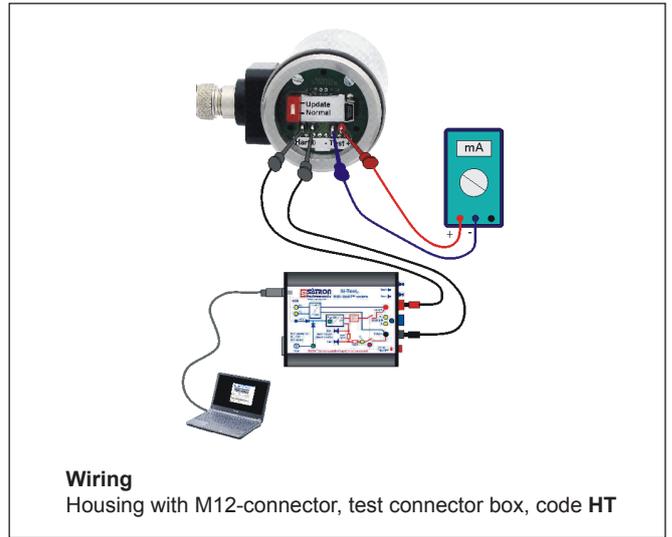
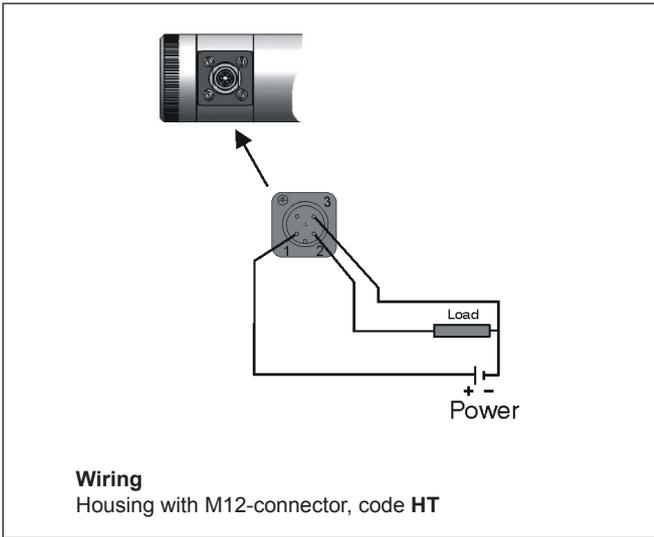
Min. load using HART®-communication 250 W

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

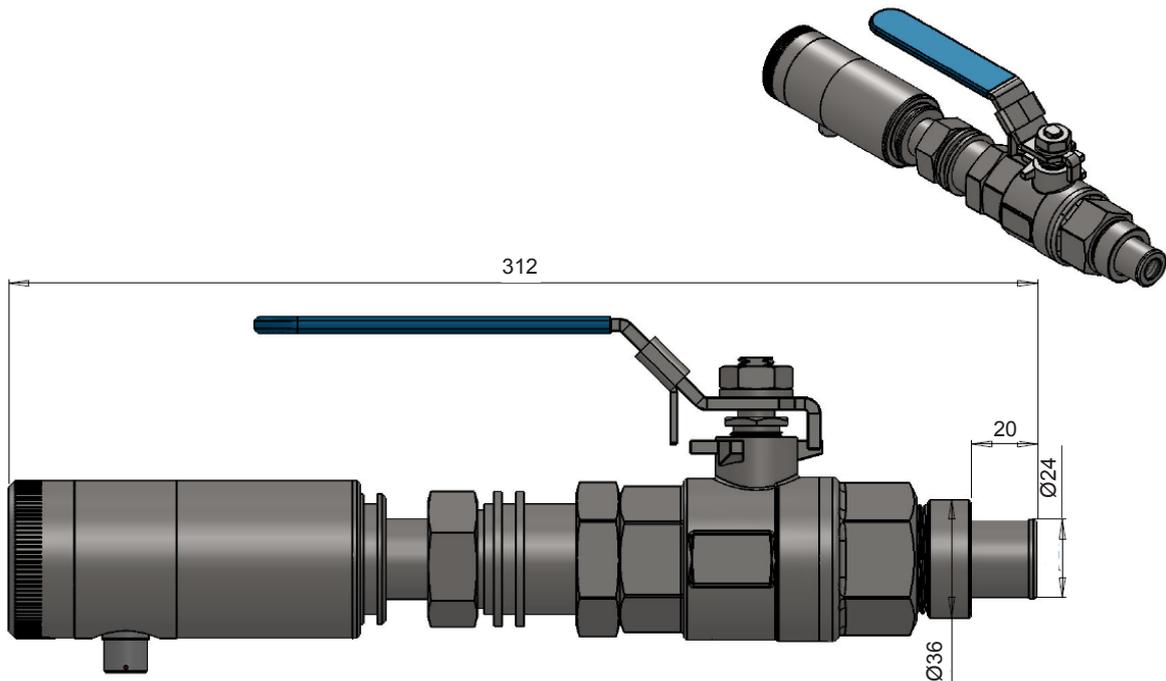
$I_{max} = 20,5 \text{ mA}$
 $I_{max} = 22,5 \text{ mA}$
(when the alarm current 22,5 mA is on)

Current output 2
External power supply

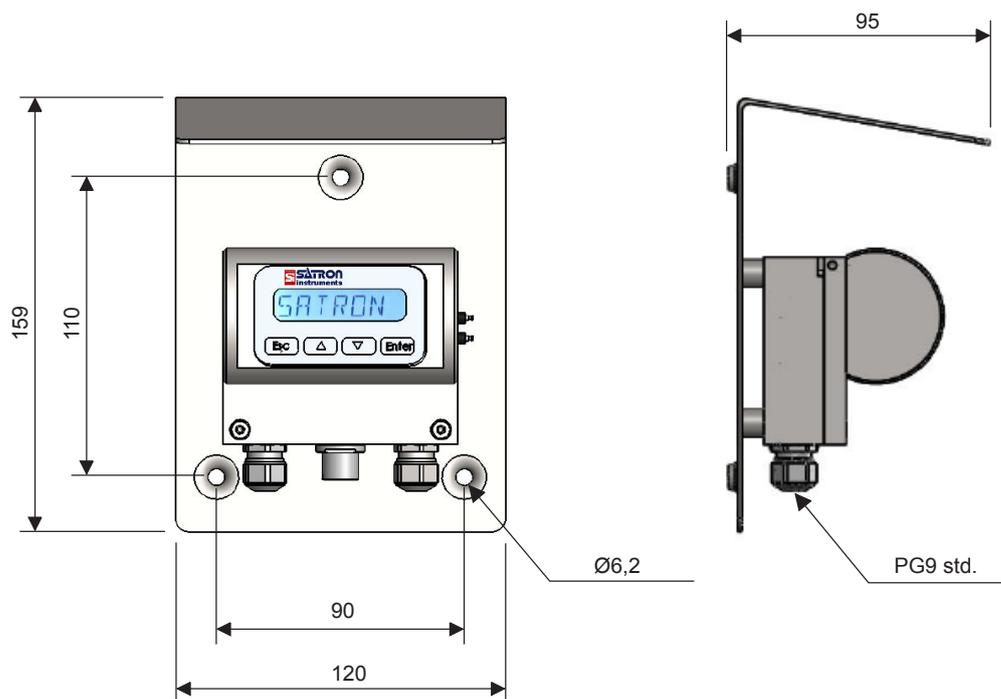
¹⁾ Parts in contact with process medium



Wiring
Remote electronics housing with display, code L

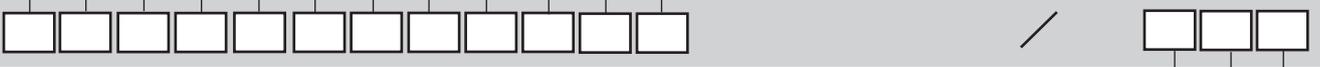


Dimensions Satron VCT



Satron VCT L-housing

Selection Chart

Adjustability	Span, min	Consistency Range			
VCT	1% Cs	0...12% Cs			
Process temperature limits		N	Normal version 0 ...+140 °C		
Output		S	4-20mA DC/HART®		
Material of wetted parts	Body	2	AISI316L (EN 1.4404)		Lens
	3	Hast. C 276 (EN 2.4819)		2	Sapphire glass
	6	Titanium Gr2 (EN 3.7035)		Lens seal	1
	8	Duplex (EN 1.4462)		2	EPDM
		3	FFPM (Kalrez®)		3
		4	PTFE		4
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, IP68		
Connection type		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		
		2	15 meter		
Light source		7	880nm	9	High IR
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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