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 **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.

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 mm^2.

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 mm^2.

Housing with display, code **N0T**:
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

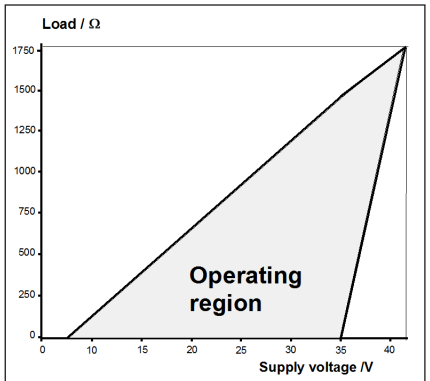
Range	3.5...23 mA
Factory setting	4...20 mA
Maximum load,	See picture below
Maximum isolation voltage	100 VDC

Process connections
- With G1 connecting thread

Protection class: See Selection chart.

Weight

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



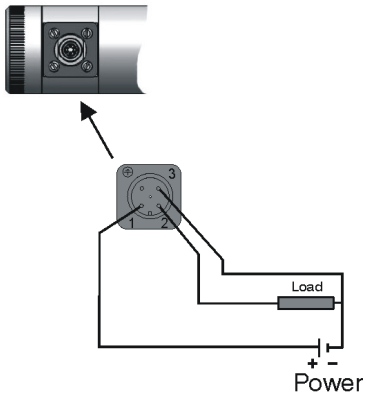
Min. load using HART®-communication 250 W

R max = Supply voltage -5 V / I max

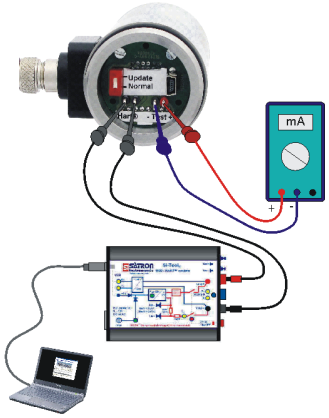
I max = 20,5 mA
I max = 22,5 mA
(when the alarm current 22,5 mA is on)

Current output 2
External power supply

[1] Parts in contact with process medium

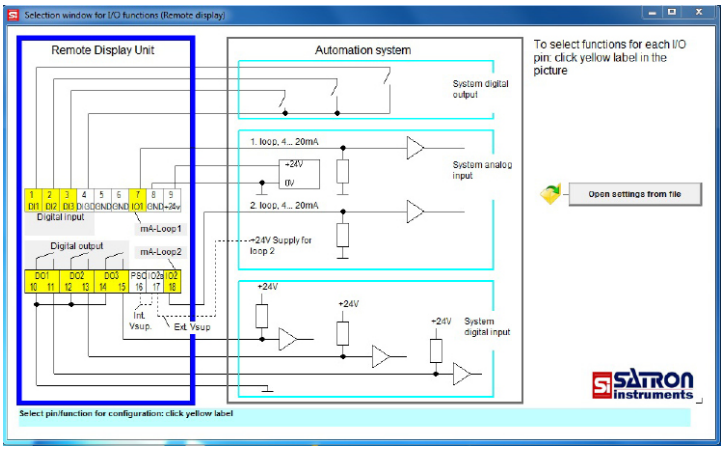


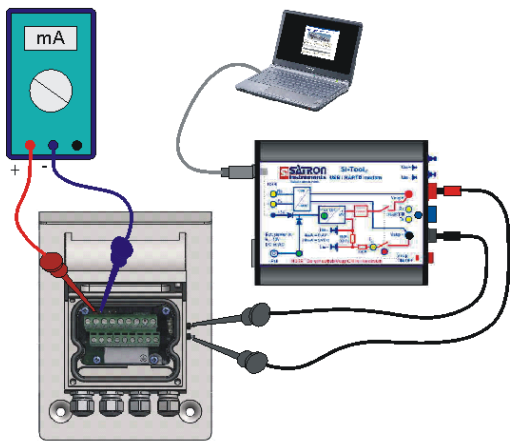
Wiring
Housing with M12-connector, code **HT**



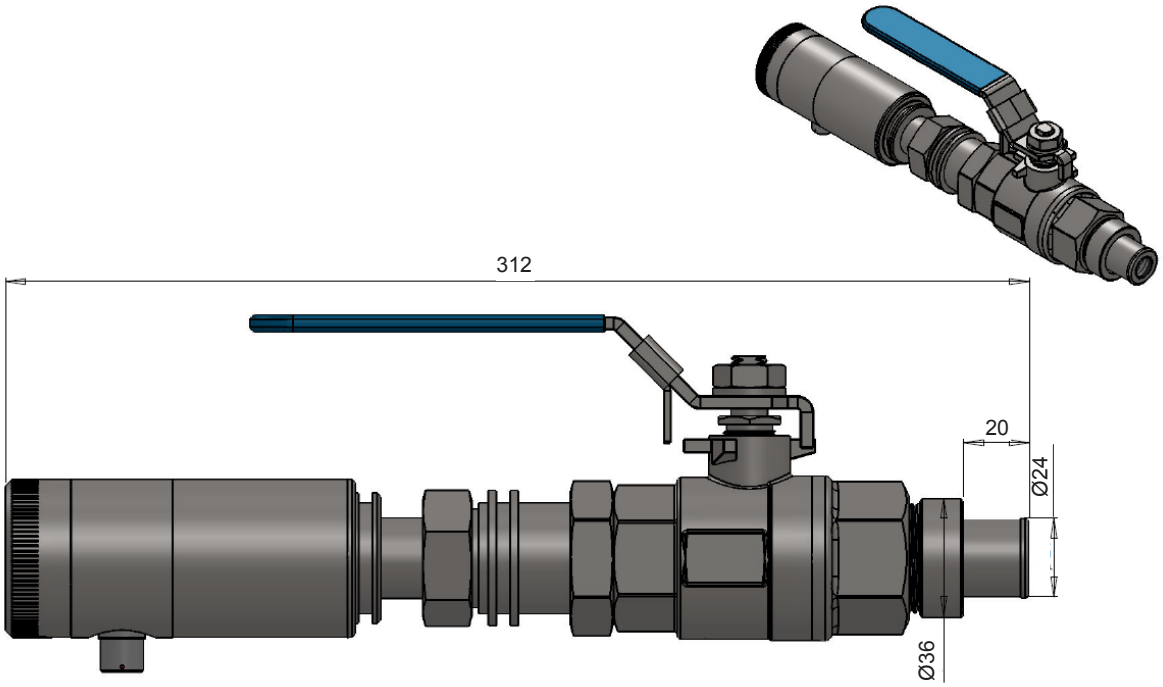
Wiring
Housing with M12-connector, test connector box, code **HT**

Wiring
Remote electronic in the device enclosure. Power supply 115/230 V 50/60 Hz, code **K**.
Only housing type **L** and probe type **R** with display.

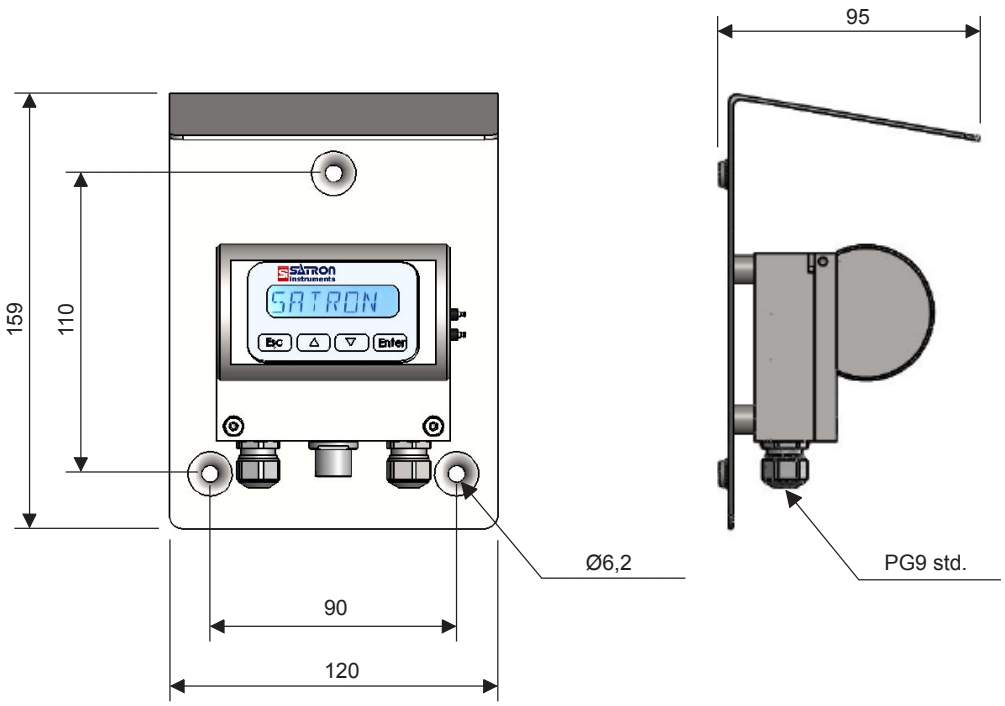




Wiring
Remote electronics housing with display, code **L**



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		Lens		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)			**4**	PTFE

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

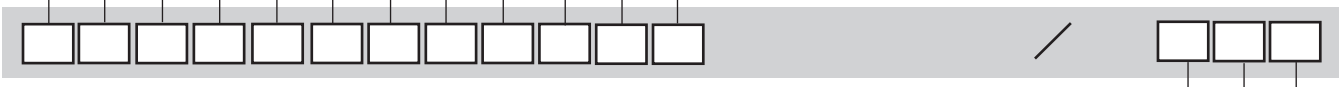
Cable length
- **0** No L or R option selected
- **2** 15 meter

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.