

SATRON VCA Optical Total Consistency Transmitter + Ash

BCs230
rev. 4
15.12.2017

The SATRON VCA is a multichannel optical transmitter. It is suitable for total & filler (ash %) consistency measurements in majority of the pulp & paper applications.

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

2 current outputs for Cs:
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

HOT: 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

HOS:

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

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

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



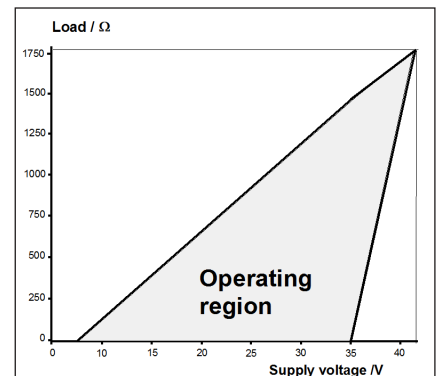
Process connections

- With G1 connecting thread

Protection class: See Selection chart.

Weight

Housing with M12 connector (**HOT**): 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



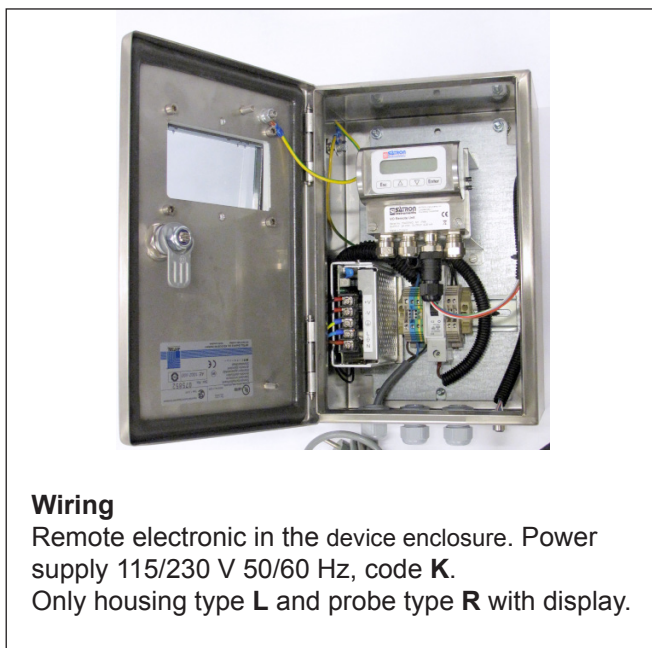
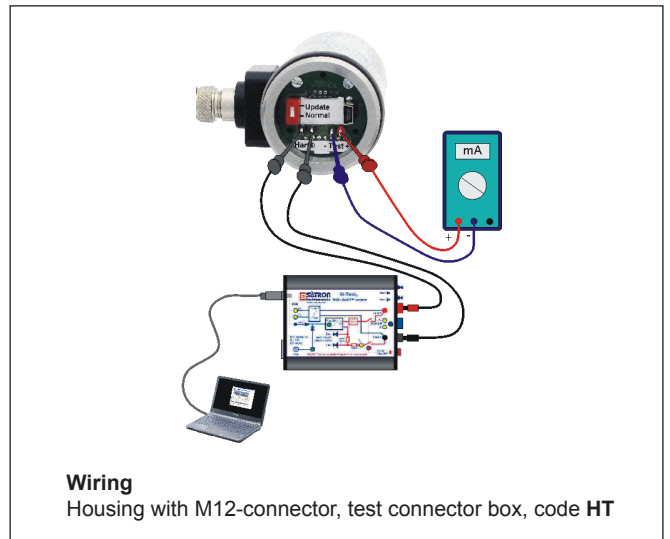
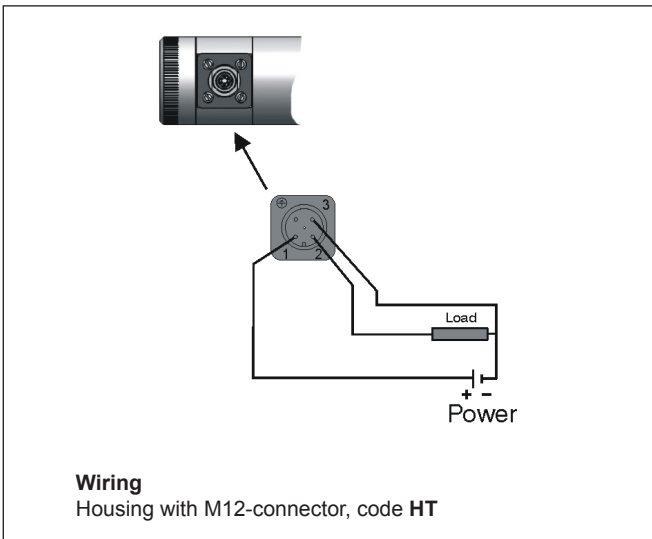
Min. load using HART®-communication 250 W

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

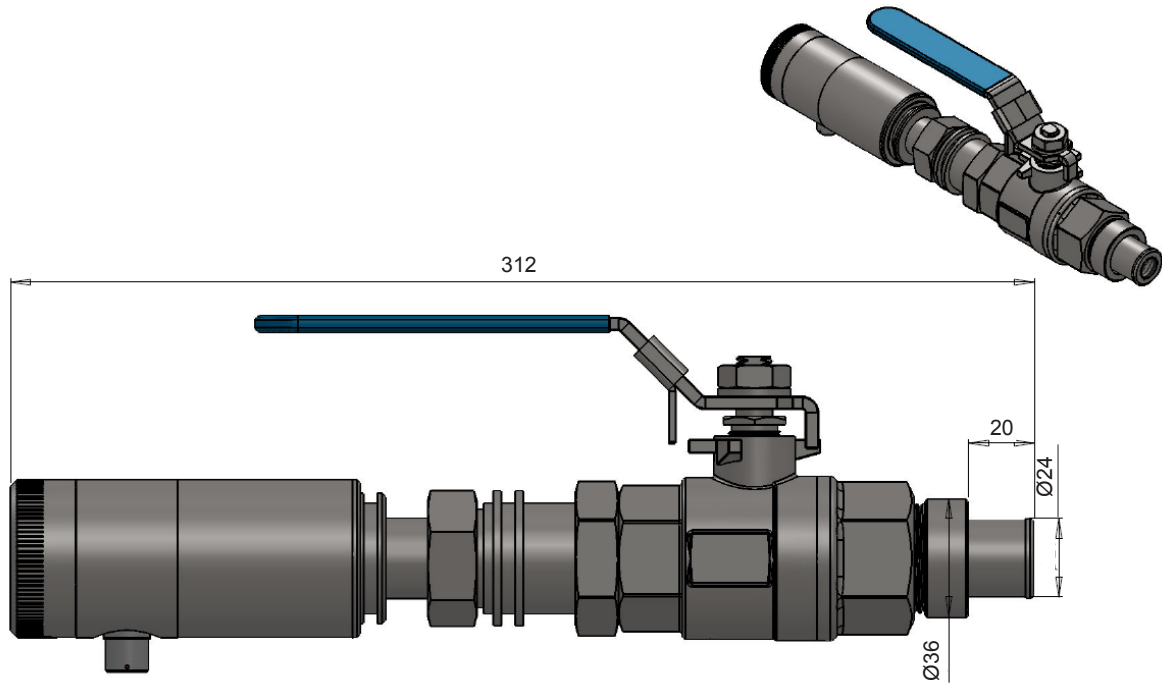
$I_{max} = 20,5 \text{ mA}$
 $I_{max} = 22,5 \text{ mA}$
(when the alarm current 22,5 mA is on)

Current output 2
External power supply

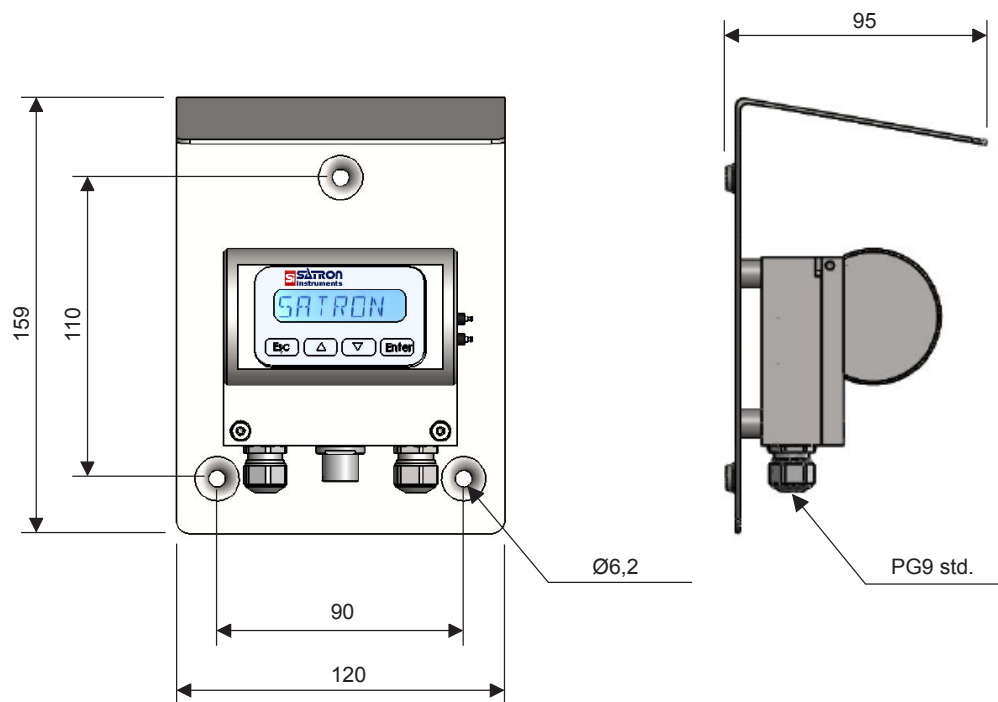
¹⁾ Parts in contact with process medium



Wiring
Remote electronics housing with display, code L



Dimensions Satron VCA



Satron VCA with L-housing

Selection Chart

Adjustability VCA	Span, min 1% Cs	Total Consistency Range 0...12% Cs	Filler consistency 0 ... 10% 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)			
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		0 880nm / High IR	
		4 880nm / 640 nm / 530 nm	
		7 880nm / 640 nm / 465 nm	
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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