SERIES T7C

T7C series includes electronic pulp consistency transmitters with 4 ÷ 20 mA output and HART® digital communication protocol.

The operation principle consist by detecting the shear force caused by the interaction between blade sensor and fibers \ fillers contained into the pulp.

According to the type of pulp flowing into the pipe (waste paper, short or long fiber cellulose), fillers types and content, the output signal, proportional to shear force, will change and the results will set the measuring span.

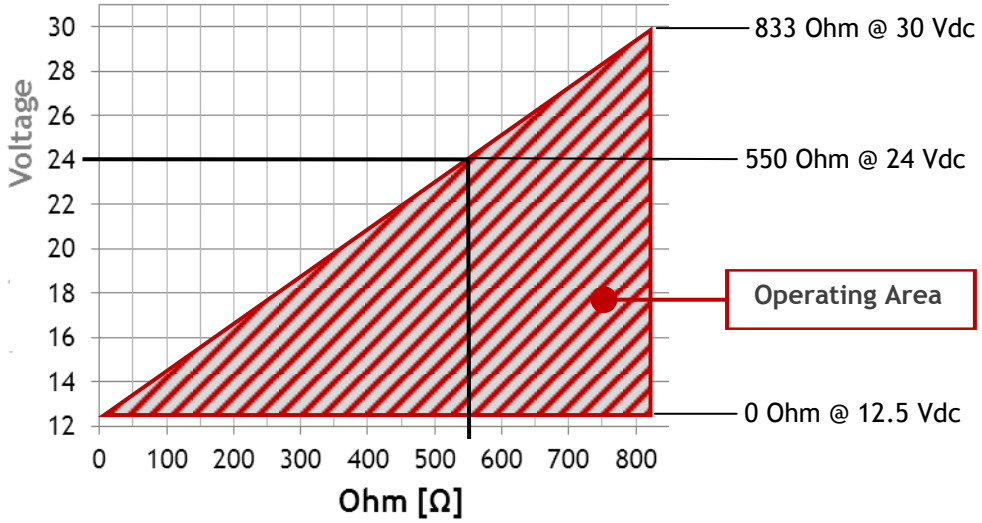
Configurations and adjustments can be made by means of push buttons and display or remotely using HART® protocol compatible communicators.

The transmitters are intended for direct mounting on pipe.

TECHNICAL FEATURES

Electrical parameters

Supply:	12.5 ÷ 30 Vdc
Output signal:	4 ÷ 20 mA + Hart® Rev6
Alarm values:	3.85 mA \ 21 mA
Maximum load:	As per chart 220 Ω < R_L < 600 Ω (Hart®)



Measurement performance

Measured value update frequency:	4 - 20 mA + Hart®: ≈ 1 s Hart®: ≈ 500 ms (On request)
Polling time:	4 - 20 mA + Hart®: ≈ 800 ms Hart®: ≈ 500 ms (On request)
Response time:	< 256 ms (Standard Hart®)
Measuring Range:	1.50 ÷ 12 % CS
Force range:	0 ÷ 20 N
Linearity of force measurement:	< ± 0.5 % FS
Hysteresis:	< ± 0.02 N
Repeatability:	< ± 0.02 N
Temperature error:	< ± 0.5 % of reading / 10°C
Static pressure error:	< ± 0.02 N / bar

TECHNICAL FEATURES

Measurement performance	
Flow velocity range:	0.5 ÷ 3 m / s **Recommended:** 1 ÷ 2 m / s
Damping:	0 ÷ 60 s
Long term stability:	< 0.1 % FS for year

Environmental Conditions	
Ambient temperature:	-40 ÷ +85°C ATEX T6, T85°C: -40°C ≤ Tamb ≤ 60°C ATEX T5, T100°C: -40°C ≤ Tamb ≤ 75°C
Maximum working pressure:	16 bar (40 bar on request)
Process temperature:	+5 ÷ +90°C
LCD working temperature:	-10 ÷ +65°C
Storage temperature:	-40 ÷ +90°C
Ingress protection degree:	AISI 316 Housing: IP67 Aluminum Housing: IP66
Vibration Test:	in accordance with IEC 60068-2-6
Relative Humidity:	< 98% RH not condensing

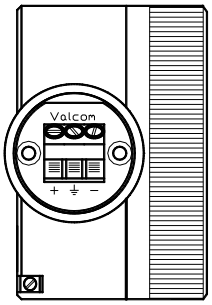
Notes

Possibility to save up to 4 pulp consistency profiles for direct reading through “Freeze” setup.

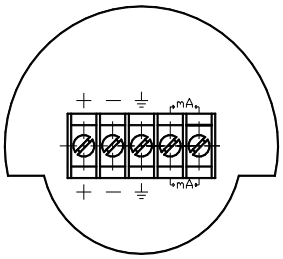
APPROVALS

Type approvals	
Directive 2014/34/EU (ATEX)	Ⓔx II 1G Ex ia IIC T6, T5 Ga and Ⓔx II 1D Ex ia IIIC T85°C, T100°C Da or Ⓔx II 1/2G Ex ia IIC T6, T5 Ga/
Directive 2014/68/EU (PED)	Up to Category II, for fluids in Group 1
Directive 2014/30/EU (EMC)	Adequate level of electromagnetic compatibility

ELECTRICAL WIRING

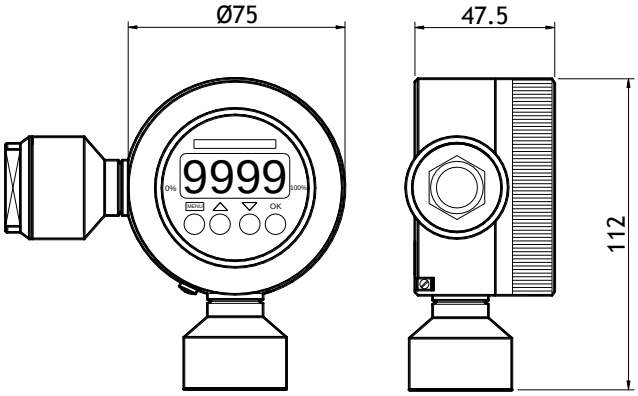


AISI 316 Housing 1 cover



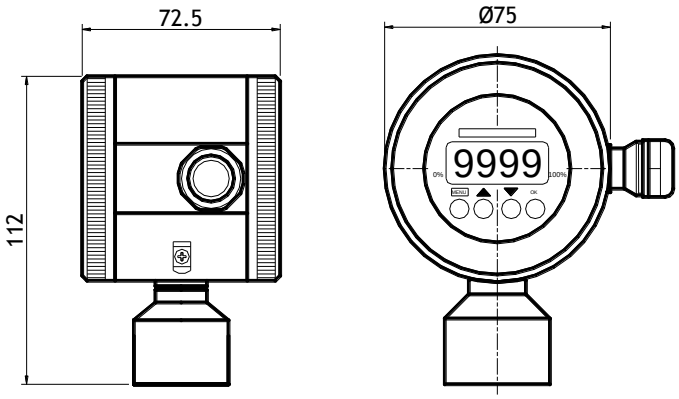
AISI 316 Housing 2 covers

HOUSING MATERIAL AND TYPE



- **Material:** AISI 316 \ AISI 316
- **Zone:** Ex II 1GD
- **Protection Degree:** IP67
- **2 Covers**

A11 – AISI 316 Ø 75 mm bottom connection
A15 – AISI 316 Ø 75 mm bottom + ref. Gore IP65



- **Material:** AISI 316
- **Zone:** Ex II 1GD
- **Protection Degree:** IP67
- **1 Cover**

A16 – Fixed head
A20 – With Gore reference IP65

BLADES

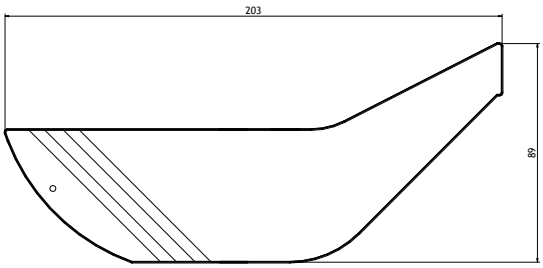


Figure 1: Blade type L1
Minimum pipe Ø 125 mm

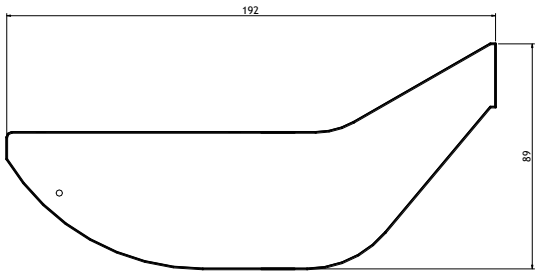


Figure 1: Blade type M1
Minimum pipe Ø 100 mm

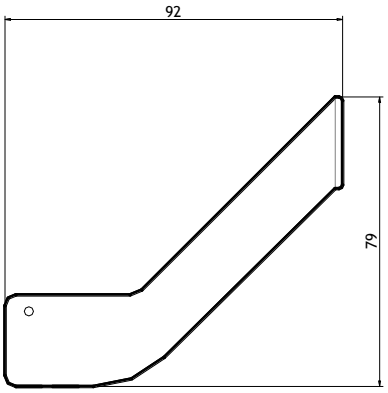


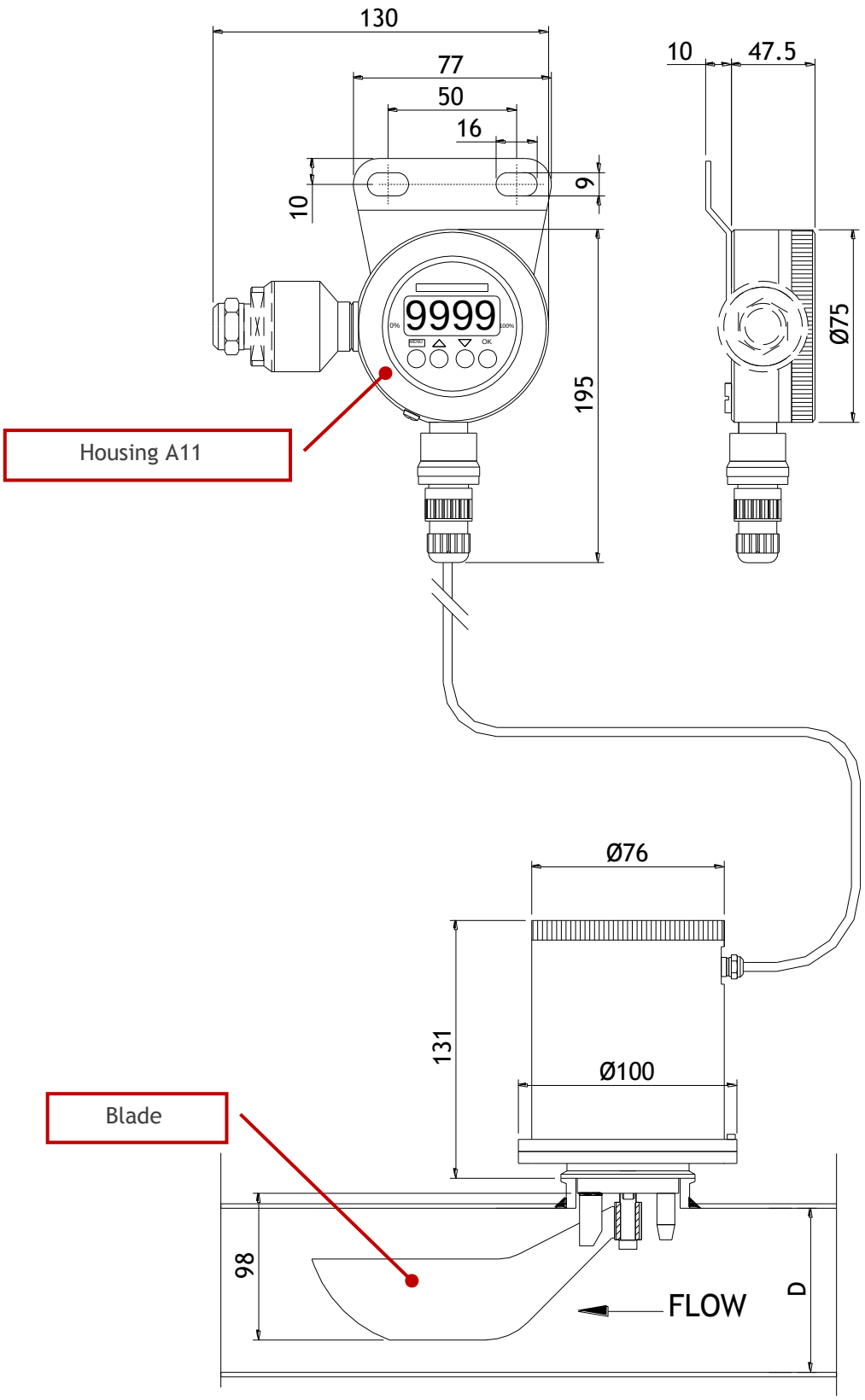
Figure 1: Blade type H1
Minimum pipe Ø 100 mm

ACCESSORIES

Clamp ferrule with gasket always included

Welding piece ISO 28352 always included

DIMENSIONAL DRAWINGS



ORDERING CODE

01 Type of measure

	K	Consistency

02 Sensor type (Blade)

	L1	Type L1 (cs 1.5 ... 6 % - Ø pipe min. 125 mm)
	M1	Type M1 (cs 2 ... 8 % - Ø pipe min. 100 mm)
	H1	Type H1 (cs 5 ... 12 % - Ø pipe min. 100 mm)

03 Measuring range

	E01	0 ... 100 %

04 Filling oil

	8	Siliconic Oil -40/+200°C

05 Process temperature limits

	Z	Speciale

06 Housing material and type

	A11	AISI 316 Ø 75 mm 1 cover bottom connection
	A15	AISI 316 Ø 75 mm 1 cover bottom connection + Ref.
	D04	Aluminum housing

07 Process connection

	Z10	Terminal blocks ISO 2852 3B
	Z99	Special

08 Extension length

	E05	C. PUR 7 wires ref. sh. Ø 7 (-30 / +80°C) L = 5 mt
	Z99	Special

09 Sensor material (blade)

	A	AISI 316
	Q	Titanium

10 Process gasket material

	D	FKM Viton
	Z	Special

11 Wetted parts material

	A	AISI 316

12 Electrical connection

	20	AISI 316 Cable Gland PG13 IP67 for cable ø 8 ÷ 12 mm
	37	Nipple AISI 316 1/2" NPT-F
	39	Nipple AISI 316 M20 x 1.5 F

13 Electrical output

	A	Current output 4÷20 mA 2 wires + HART

14 Ex type approval

	A1	Ⓔx II 1G Ex ia IIC T6, T5 Ga and Ⓔx II 1D Ex ia IIIC T85°C, T100°C Da
	N0	No Ex certification

15 Options and accessories

	22	PED Certificate
	10	Calibration report on 5 points
	01	Test and material report according to EN 10204
	NN	No options
	Z9	Special