

S430

Pitot Tube Flow Meter for Wet Compressed Air

Insertion



PITOT TUBE MEASUREMENT

High accuracy at wider flow range reliable measurements



WET AIR MEASUREMENT

Directly at the compressor outlet



COMPRESSOR EFFICIENCY

Constant monitoring of the compressor performance



MOBILE APP

For remote configuration and monitoring



EASY INSTALLATION

Under pressure through a ball valve



NO MECHANICAL WEAR PARTS

Stable results in high temperature applications



Benefits

- ✓ Accurate flow measurement even at low flow rates, with a minimum cut-off velocity of 5 m/s.
- ✓ Accurate flow and consumption measurement in wet air or high mass flow and velocity applications using the pitot tube principle.
- ✓ Continuous and stable monitoring of the compressed air flow at the compressor outlet.
- ✓ Various output signals compatible with SUTO displays & data loggers, third party systems and PLCs.
- ✓ Easy installation under pressure using a ball valve.
- ✓ Suitable for high temperature applications up to 120°C.
- ✓ Ideal for most compressor performance measurement applications.

1 Optional Color Display

On-site display for live value readings, total consumption counter and convenient sensor settings. Totalizer with 10 digits (1 999 999 999).

2 Various Outputs

The S430 pitot tube flow meter is perfectly suited to be integrated into process controls or high-level monitoring systems. Various output options are offered for a seamless integration:

- Isolated 4 ... 20 mA output for actual flow readings
- Isolated Pulse output for totalizer
- Modbus/RTU to read all values digitally
- Modbus/TCP
- M-Bus

Configuration and online data through smartphone app

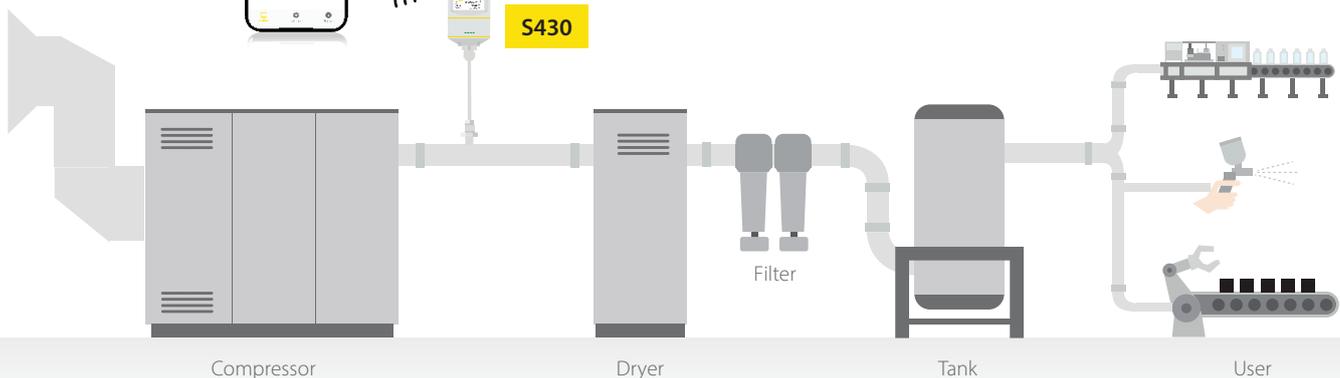


3 Robust Materials

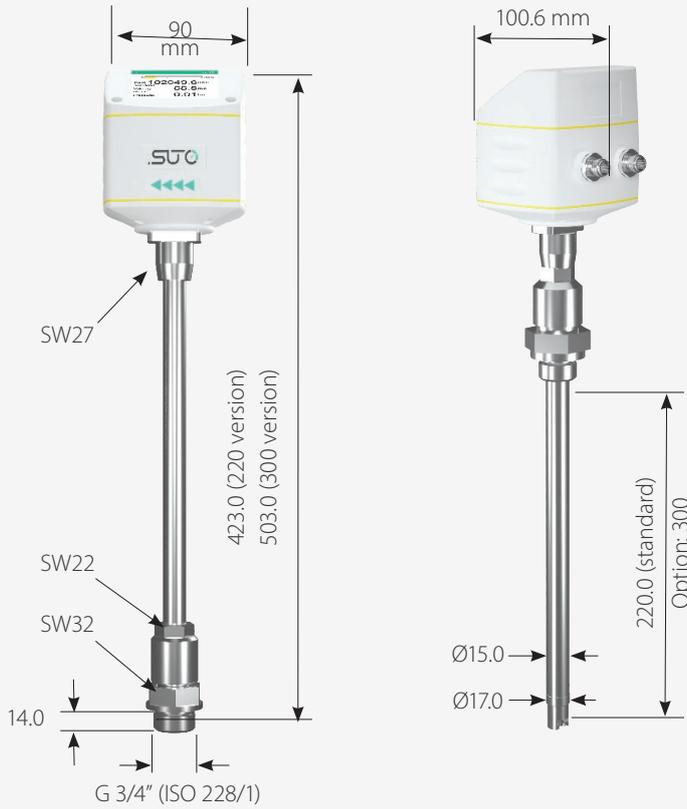
- IP65 casing provides robust protection in rough industrial environment
- All parts which come into contact with the measurement medium are made of stainless steel 316L. This makes the sensors robust and guarantees a reliable measurement.

4 Flexible and Easy Installation

- Tube diameters of 1.25" to 10" through center installation, bigger diameters through non-center installation
- Thanks to the insertion through a 3/4" ball valve, the S430 can be installed under pressure and is perfectly suited for installations where shutdowns are not acceptable.



Dimensions



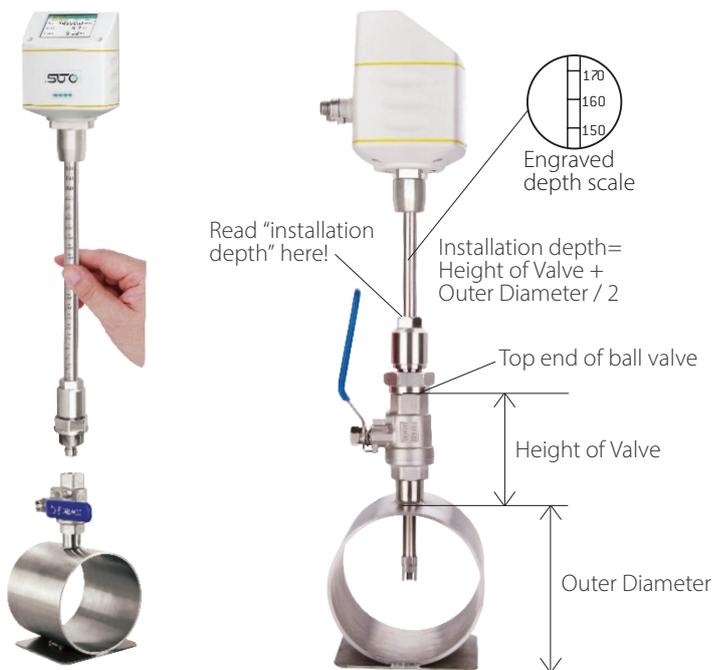
Mobile App

Mobile Phone app for configuration and online readings. The app enable users to completely get rid of the inconvenience caused by cables, bulky PCs and hard-to-reach places.



Installation and Sensor Removal

Installation through a ball valve



Based on the pitot tube principle

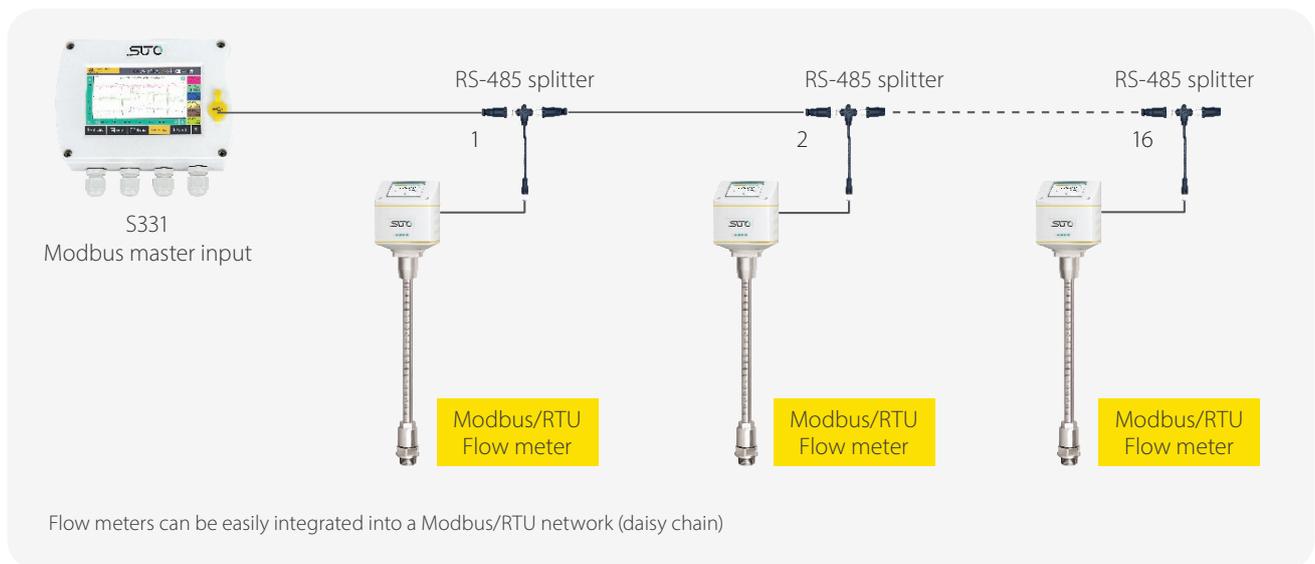
The S430 is based on the pitot tube principle to measure flow. Properly installed (refer to instruction manual for details) the sensor can measure in wet and dirty gases as occurring, for example, at the discharge of a compressor.

Optional Color Display

Color graphic display for online values and sensor settings



Connect several Flow Meters to Modbus Master



Volumetric Flow Ranges

Tube		Inner diameter (mm)	Volumetric Flow			
			Standard		High-speed	
Inch	DN		Min	Max	Min	Max
			Sm ³ /h		Sm ³ /h	
1¼"	DN32	36	12	508	12	660
1½"	DN40	41.9	18	757	18	984
2"	DN50	53.1	31	1,298	31	1,687
2½"	DN65	68.9	56	2,311	56	3,005
3"	DN80	80.9	80	3,270	98	5,201
4"	DN100	100	125	5,095	125	6,623
5"	DN125	125	196	8,006	196	10,408
6"	DN150	150	283	11,548	283	15,012
8"	DN200	200	507	20,690	507	26,897
10"	DN250	250	793	32,339	793	42,040
12"	DN300	300	114,2	46,568	1,142	60,538

Stated measuring ranges under following conditions:

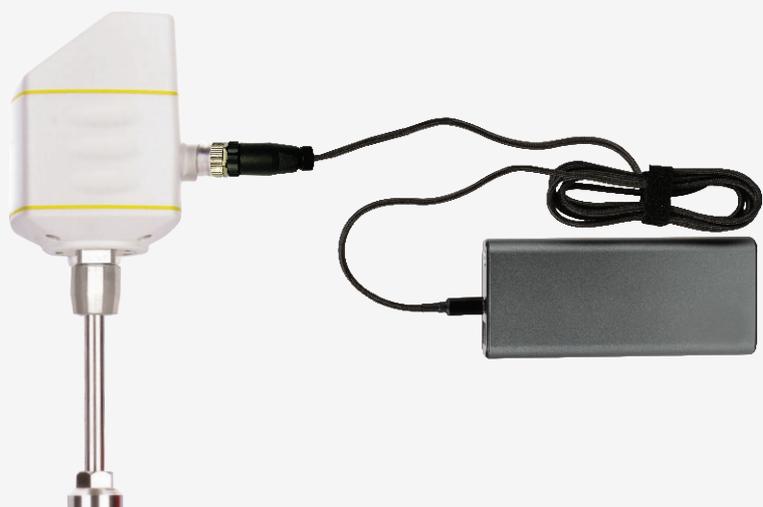
- Standard flow in air
- Reference pressure: 1000 hPa
- Reference Temperature: +20 °C

Flow range is calculated for Air at 6 bar(g), 50 °C and 90 % humidity.
Cut-off velocity: 5 m/s

Mobile Power

S430 powered by power bank with connection cable A553 0154.

Note: power bank must be sourced locally due to shipping restrictions [USB-C, 20 V, min. 100 mA]



Technical Data

Measurement

Flow

Accuracy	1.5 % o.r. ± 0.3 % FS Volumetric Flow: Sm ³ /h, Sm ³ /min, SL/min, Sl/s, Scfm Mass Flow: kg/h, kg/min, kg/s, t/h, lb/h
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Selectable units	Actual Velocity: m/s, ft/min
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Measuring range	See table on the previous page
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Repeatability	0.5 % o.r.
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Sensor	Differential pressure sensor
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Sampling rate	3/sec
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Turn-down ratio	40 : 1
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Response time (t90)	2 sec
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Consumption

Selectable units	Sm ³ , Sft, t, lb, Sl, kg
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Reference conditions

Selectable conditions	20 °C 1000 mbar (ISO1217) 0 °C 1013 mbar (DIN1343) freely adjustable
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Signal / Interface & Supply

Analog output

Signal	4 ... 20 mA, isolated
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Scaling	0 ... max flow
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Load	250R
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Update rate	1/sec
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Pulse output

Signal	Max 30 V, 200 mA
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Scaling	1 pulse per consumption unit
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Fieldbus

Protocol	Modbus/RTU, Modbus/TCP
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Update rate

Supply

Voltage supply	24 VDC 48 VDC (PoE)
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Current consumption	150 mA 100 mA (PoE)
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General data

Configuration

Wireless	S4C-FS App for mobile phones
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Others	Display with 3 touch buttons (Option)
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Display

Integrated	2.4" color graphic display with 3 touch buttons (option)
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Material

Process connection	Stainless steel 1.4404 (SUS 316L)
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Housing	PC + ABS
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Sensor	Stainless steel 1.4404 (SUS 316L)
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Metal parts	Stainless steel 1.4404 (SUS 316L)
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Miscellaneous

Electrical connection	2 x M12 (5 pole) 1 x M12 (8-pole x-coded) for TCP
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Protection class	IP65
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Approvals	CE, RoHS, FCC
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Process connection	G 3/4" (ISO 228/1)
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Weight	1.12 kg
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Operating conditions

Medium	Wet/dry air, other gases
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Medium quality	Non corrosive
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Medium temperature	-20 ... +120 °C
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Medium humidity	No requirements
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Operating pressure	0 ... 1.6 MPa -30 ... +70 °C housing 0 ... +50 °C display (Optional)
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Ambient temperature	-10 ... +40 °C PoE (Optional)
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Ambient humidity	< 95 % rH
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Storage temperature	-30 ... 70 °C
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Transport temperature	-30 ... 70 °C
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Pipe sizes	\geq DN32
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Ordering

Please use the following tables to assist in placing your order with our sales staff.

S430 Pitot Tube Flow Sensor (Insertion Type)

Order No.	Description
S695 4300	S430, Pitot Tube Flow Meter, insertion type, 220 mm shaft
S695 4302	S430, Pitot Tube Flow Meter, insertion type, 300 mm shaft

Flow Medium

A1007	Option, flow medium Air
A1008	Option, flow medium CO ₂
A1009	Option, flow medium O ₂ (cleaning for oil and grease-free)
A1010	Option, flow medium N ₂
A1011	Option, flow medium N ₂ O
A1012	Option, flow medium Argon
A1013	Option, flow medium Natural Gas
A1014	Option, flow medium H ₂ (For real gas calibration. Please consult manufacturer for this option in advance)
A1015	Other gas (specify gas or gas mix)
A1016	Option, flow medium He (real gas calibration)

Range / Calibration

A1065	S430: Standard Range Calibration
A1066	S430: Bi-directional standard range
A1067	S430: High speed: Max flow increased by 30 %

Output

A1410	Isolated 4 ... 20 mA + Pulse output
A1411	Modbus/RTU output
A1424	Modbus/TCP output with PoE support
A1063	M-Bus

Display

A1425	No display
A1420	Color graphics display, 2.4" with keypad

S430 Accessories

Order No. Description

A695 0010	NPT ¾" thread adapter (former A1069)
A695 0011	PT ¾" thread adapter (former A1068)
A553 0104	Sensor cable, 5 m with M12 connector, open wires, AWG 24 (0.2 mm ²)
A553 0105	Sensor cable, 10 m with M12 connector, open wires, AWG 24 (0.2 mm ²)
A553 0154	Cable to connect power bank, 1.8 m, USB-C connector for power bank, M12 connector

Ordering Example

Example S430, 220 mm shaft, Air, Standard range calibration, Modbus/RTU, Display

Order Code S695 4300.A1007.A1065.A1411.A1420

