

# S430

## Pitot Tube Flow Meter for Wet Compressed Air

Insertion



### PROCESS MONITORING

High accuracy and 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 and consumption measurement in wet air or high mass flow and velocity applications based on the pitot tube principle
- ✓ Consistent and temperature stable compressed air flow monitoring at the outlet of the compressor
- ✓ Various output signals with connection to SUTO displays and/or third-party displays and PLCs
- ✓ Easy installation under pressure through ball valve
- ✓ High temperature applications up to 230 °C

### 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:

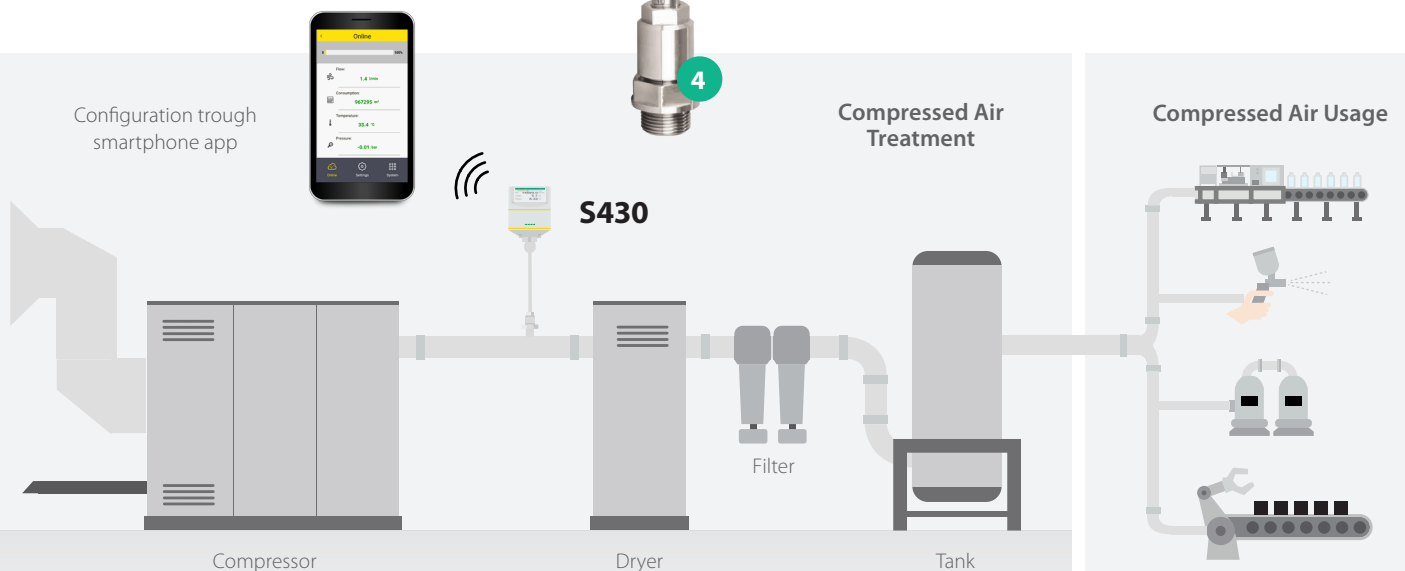
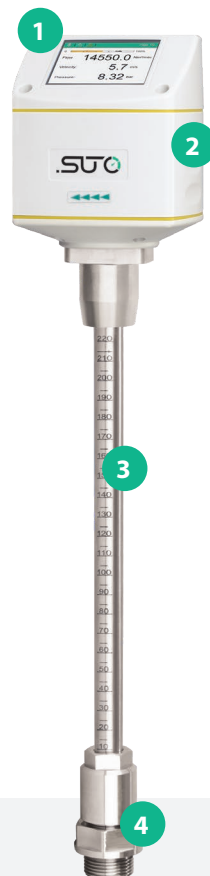
- Isolated 4... 20 mA output for actual flow readings
- Isolated Pulse output for totalizer
- Modbus/RTU to read all values digitally
- Modbus/TCP
- M-BUs

### 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.

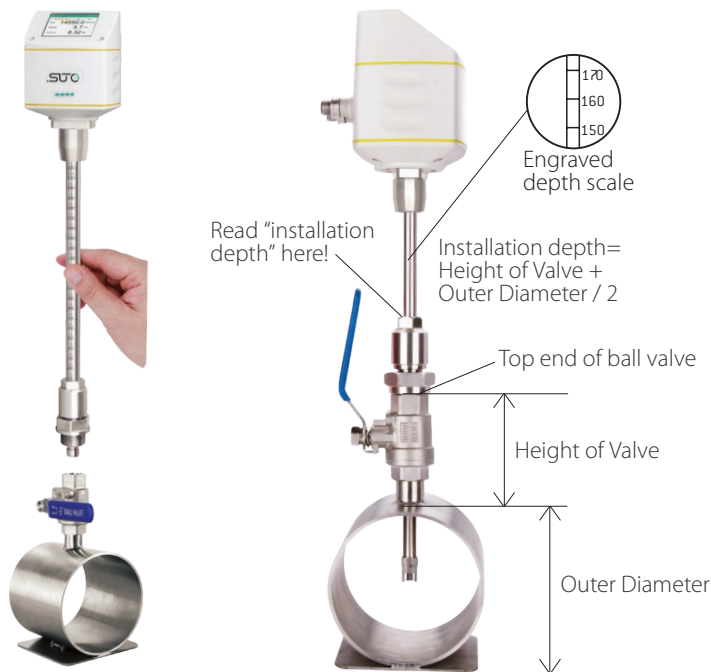
### 4 Flexible and Easy Installation

- 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 and under pressure and is perfectly suited for installations where shutdowns are not acceptable.

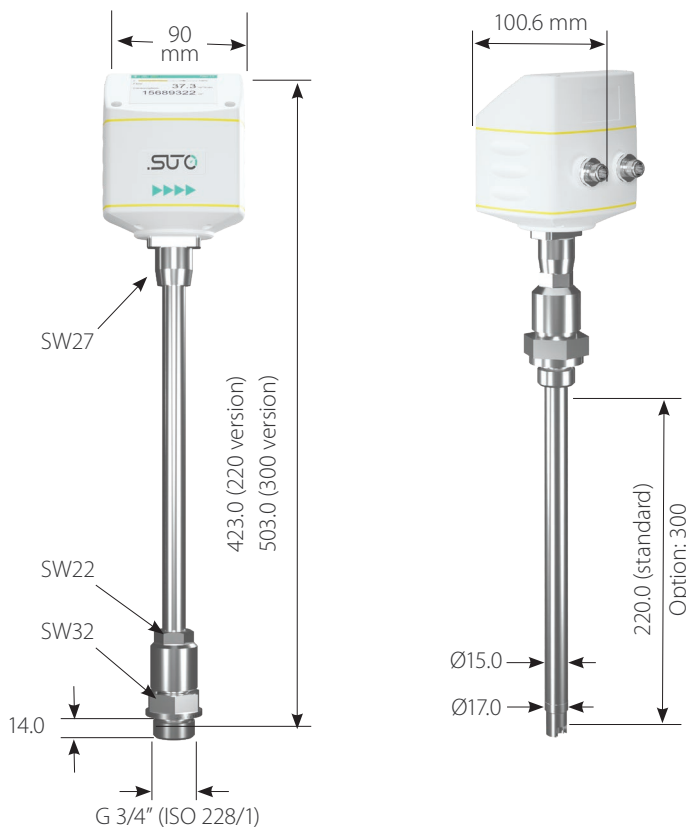


## S430 Installation and Sensor Removal

Installation through a ball valve



## S430 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.



## Based on the pitot tube principle

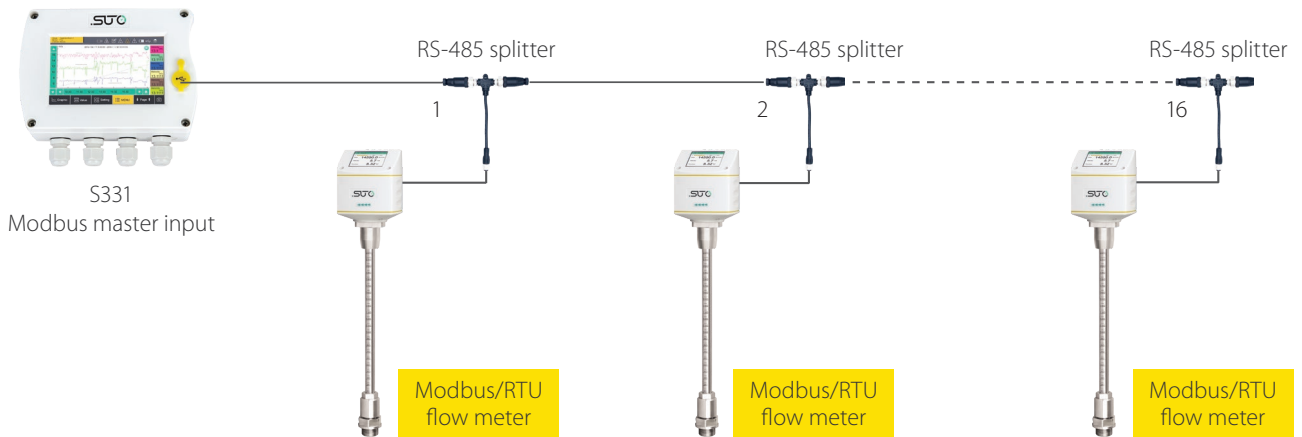
The S430 is based on the pitot tube principle to measure flow. Properly installed (refer to instruction manual for details) the sensor can measure in wet and dirty gases as occurring, for example, at the discharge of a compressor.

## Optional Color Display



Colour graphic display for online values and sensor settings

## Connect several Flow Meters to Modbus Master



Flow meters can be easily integrated into a Modbus/RTU network (daisy chain)

## Volumetric Flow Ranges

Tube		Volumetric Flow					
Inch	mm	m <sup>3</sup> /h		m <sup>3</sup> /min		cfm	
		Min	Max	Min	Max	Min	Max
1¼"	36	49	507	0.8	8.5	29	298
1½"	41.9	73	757	1.2	12.6	43	446
2"	53.1	124	1298	2.1	21.6	73	764
2½"	68.9	221	2311	3.7	38.5	130	1360
3"	80.9	313	3270	5.2	54.5	184	1925
4"	100	488	5094	8.1	84.9	287	2998
5"	125	767	8006	12.8	133	451	4712
6"	150	1107	11547	18.5	192	652	6796
8"	200	1983	20689	33.1	345	1167	12177
10"	250	3099	32338	51.7	539	1824	19034
12"	300	4462	46567	74.4	776	2626	27408

Stated measuring ranges under following conditions:

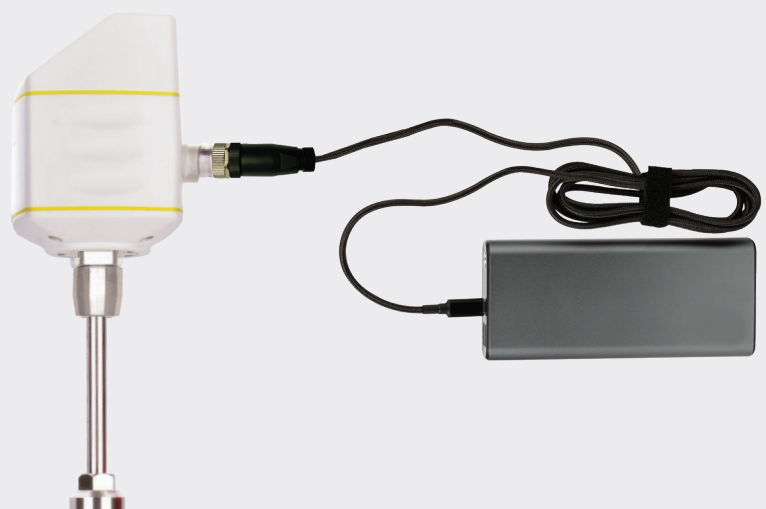
- Standard flow in air
- Reference pressure: 1000 hPa
- Reference Temperature: +20 °C

Flow range is calculated for Air at 6 bar(g), 50 °C and 90 % humidity.

## 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. $\pm 0.3$ % FS Volumetric Flow: m <sup>3</sup> /h, m <sup>3</sup> /min, L/min, l/s, cfm 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 below
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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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Turndown ratio	10:1
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Response time (t90)	2 sec
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### Consumption

Selectable units	m <sup>3</sup> , ft <sup>3</sup> , t, lb, l, 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	-40 ... +230 °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 <sub>2</sub>
A1009	Option, flow medium O <sub>2</sub> (cleaning for oil and grease-free )
A1010	Option, flow medium N <sub>2</sub>
A1011	Option, flow medium N <sub>2</sub> O
A1012	Option, flow medium Argon
A1013	Option, flow medium Natural Gas
A1014	Option, flow medium H <sub>2</sub> (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

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

### Output

A1061	S430: Modbus/RTU
A1062	S430: Analog, Pulse
A1063	S430: M-Bus
A1064	S430: Modbus/TCP + PoE support (incl. 5 m M12 cable with RJ45 plug)

### Display

A1060	S430: With Display
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## Accessories

A695 0010	S430: NPT ¼" thread adapter (former A1069)
A695 0011	S430: PT ¼" thread adapter (former A1068)
A553 0104	Sensor cable, 5 m with M12 connector, open wires, AWG 24 (0.2 mm <sup>2</sup> )
A553 0105	Sensor cable, 10 m with M12 connector, open wires, AWG 24 (0.2 mm <sup>2</sup> )
A553 0154	Cable to connect power bank, 1.8 m, USB-C connector for power bank, M12 connector

Example: S430, 300 mm shaft, Air, bi-directional calibration, Modbus/RTU, display

Order Code: S695 4302.A1007.A1066.A1061.A1060

