

S431 OEM

Pitot Tube Compressor Flow Meter

Inline



SMARTPHONE APP

For remote configuration



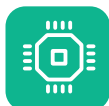
ACCURATE RESULTS

Very fast response time



NO MECHANICAL WEAR PARTS

Withstands high temperatures and vibrations



EASY PROCESS MONITORING

Effective and inexpensive measurements



TOTAL FLOW

High accuracy and reliable measurements



EASY AND FLEXIBLE INSTALLATION

Fits pipe sizes from DN50 up to DN900



PITOT TUBE

Measurement in wet and dirty air

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Benefits

- ✓ Measures the air delivery of compressors at the compressor outlet
- ✓ Installation either inside or immediately after the compressor
- ✓ Rugged design withstands high temperatures and vibration
- ✓ Wirelessly connected smartphone app for convenient setup and maintenance
- ✓ Easy to install on to a welding nipple

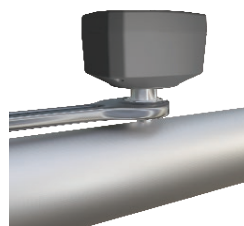
Features at a glance

- Measurement of flow, pressure and temperature at the compressor outlet
- Measures wet air and air at high temperatures
- Calculates total consumption
- No straight piping required
- Easy to install on welding nipples
- Rugged design for harsh environments: ambient temperatures up to 90°C, vibration proof
- No mechanical wear parts
- One sensor for DN50 ... DN900
- User calibration via mobile app on compressor test bench
- Analogue and pulse output or Modbus/RTU

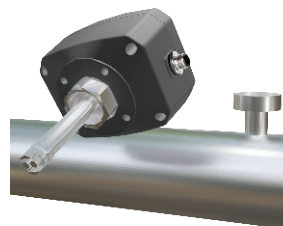
Easy Sensor Exchange

Installation and removal of the sensor on a welding nipple.

Installation



Removal



Installation Options

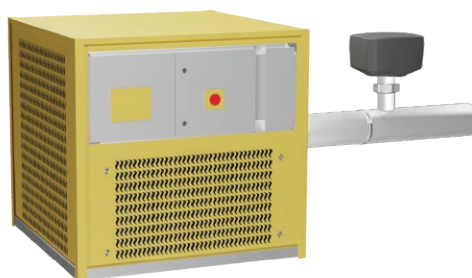
1

Sensor Installation inside the compressor

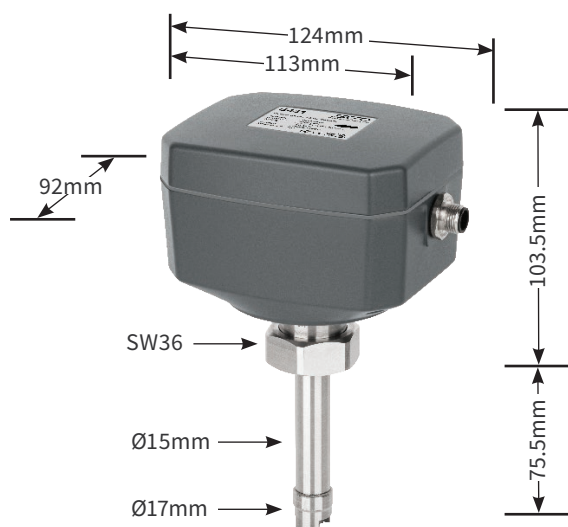


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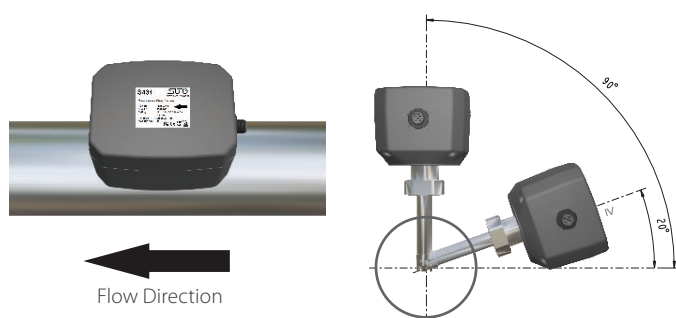
Sensor Installation outside the compressor



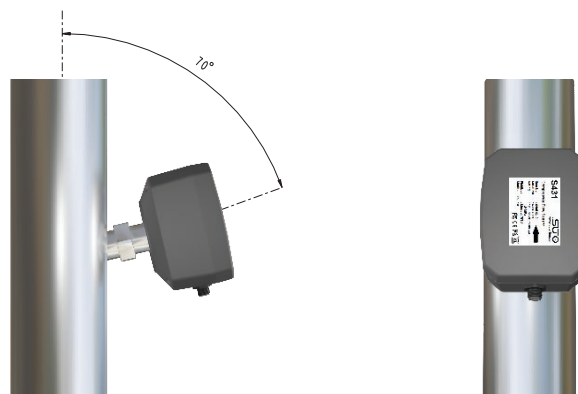
Dimensions



Horizontal Pipe Installation



Vertical Pipe Installation

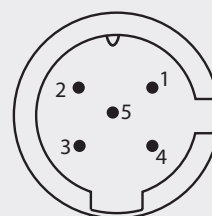


Mobile App

Mobile phone app for settings, in-system calibration and online readings.



Connection



5-pole M12 cable with open ends included

Output Version	Analog Version	Modbus Version	Wire colour
Pin 1	I+	GND _M	brown
Pin 2	-VB	-VB	white
Pin 3	+VB	+VB	blue
Pin 4	SW	D+	black
Pin 5	SW	D-	grey

Welding nipples for all pipe sizes



DN50...DN80
for horizontal
pipes



DN100...DN900
for horizontal
pipes



DN50...DN80
for vertical
pipes



DN100...DN900
for vertical
pipes

Technical Data

Measurement

Flow

Accuracy	1.5 % o.RDG $\pm$ 0.3 % FS
Selectable units	
Volumetric Flow:	m ³ /h, m ³ /min, l/min, l/s, cfm
Mass Flow:	kg/h, kg/min, kg/s, t/h, lb/h
Actual Velocity:	m/s, ft/min
Measuring range	see table below
Repeatability	0.5 % o.RDG
Sensor	Differential pressure sensor with pitot tube
Sampling rate	3/sec
Turndown ratio	10:1
Response time (t90)	2 sec

Consumption

Selectable units	m ³ , ft ³ , t, lb, l, kg
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Pressure

Accuracy	0.5 % FS
Selectable units	bar, psi, kPa, MPa
Measuring range	0 ... 1.6 MPa(g)
Sensor	Piezzo resistive sensor

Temperature

Accuracy	0.5 °C
Selectable units	°C, °F
Measuring range	-40 ... +120 °C
Sensor	Pt1000

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
Scaling	0 ... max flow
Load	250R
Update rate	1/sec

Pulse output

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

Fieldbus

Protocol	Modbus/RTU
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Supply

Voltage supply	12 ... 36 VDC
Current consumption	60 mA, 1.5 W

General data

Configuration

Wireless	S4C-FS App for mobile phones
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Material

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

Miscellaneous

Electrical connection	1 x M12 (5 pole)
Protection class	IP65
Approvals	CE, RoHS, FCC
Process connection	M32 x 1.5 welding nipple
Weight	1.7 kg

Operating conditions

Medium	Wet/dry air, other gases
Medium quality	non corrosive
Medium temperature	-20 ... +120 °C
Medium humidity	no requirements
Operating pressure	0 ... 1.6 MPa(g)
Ambient temperature	-20 ... +85 °C
Ambient humidity	< 95 % rH
Storage temperature	-30 ... 70 °C
Transport temperature	-30 ... 70 °C
Pipe sizes	$\geq$ DN50

Flow Ranges

Tube		Volumetric Flow					
Inch	mm	m³/h		m³/min		cfm	
		Min	Max	Min	Max	Min	Max
2"	53.1	121	1,298	2.0	21.6	71	764
2½"	68.9	206	2,218	3.4	37	121	1,305
3"	80.9	287	3,084	4.8	51	169	1,815
4"	100	443	4,760	7.4	79	261	2,802
5"	125	697	7,500	11.6	125	410	4,414
6"	150	1,009	10,853	16.8	181	594	6,387
8"	200	1,812	19,482	30.2	325	1,066	11,465
10"	250	2,833	30,465	47.2	508	1,667	17,929
12"	300	4,079	43,870	68	731	2,401	25,818

The flow is calculated based on medium conditions of air, 6 bar(g), 70 °C, and 90% humidity.

Stated measuring ranges under following conditions:

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

Ordering

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

S431 OEM Pitot Tube Compressor Flow Meter

Order No.	Description
S695 4312	S431 OEM, Pitot Tube Compressor Flow Meter
Output Options	
A4315	Modbus/RTU
A4314	4 ... 20 mA + Pulse output

S431 OEM Accessories

Order No.	Description
A4310	Welding nipple DN50 ... DN80 for horizontal pipe installation
A4311	Welding nipple DN100 ... DN900 for horizontal pipe installation
A4312	Welding nipple DN50 ... DN80 for vertical pipe installation
A4313	Welding nipple DN100 ... DN900 for vertical pipe installation
A695 4310	Welding fixture DN50 ... DN80 for horizontal pipe installation
A695 4311	Welding fixture DN100 ... DN900 for horizontal pipe installation
A695 4312	Welding fixture DN50 ... DN80 for vertical pipe installation
A695 4313	Welding fixture DN100 ... DN900 for vertical pipe installation

Welding Fixtures



For welding the installation nipple on the pipe, we offer a welding fixture to ensure a proper positioning.

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