

S431 OEM

Pitot Tube Compressor Flow Meter

Inline



SMARTPHONE ANDROID APP

For remote
configuration



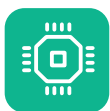
ACCURATE RESULTS

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



Benefits

- ✓ Measures the air flow directly inside or at the outlet of the compressor
- ✓ The robust design makes it withstand high temperatures and vibrations
- ✓ Built in Auto-Calibration removes any temperature or aging drifts and provides long term stable measurements
- ✓ Convenient setup and maintenance through the wireless connected smartphone app
- ✓ Easy installation on a welding nipple

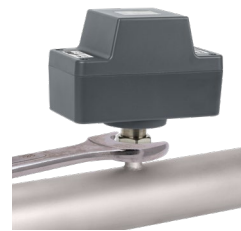
Features at a glance

- Flow, pressure, temperature measurement at compressor discharge
- Measures wet and high temperature air
- Calculates total consumption
- No straight pipe requirements
- Easy installation on welding nipple
- Robust design for harsh environment: ambient temperatures up to 90 °C, vibration proofed
- No mechanical wear parts
- One sensor for DN50 ... DN900
- Auto-calibration: sensor adjust itself regularly
- User calibration through mobile app at compressor test stand
- Analogue and pulse output or Modbus/RTU

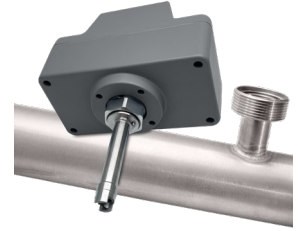
Easy Sensor Exchange

Sensor installation and removal on a welding nipple.

Installation



Removal

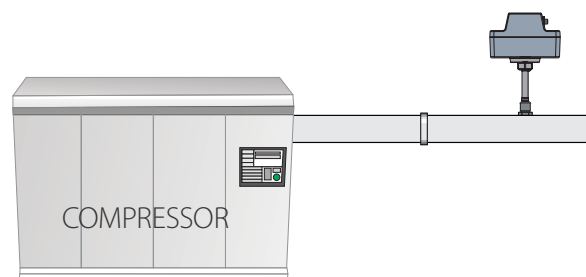


Installation Options

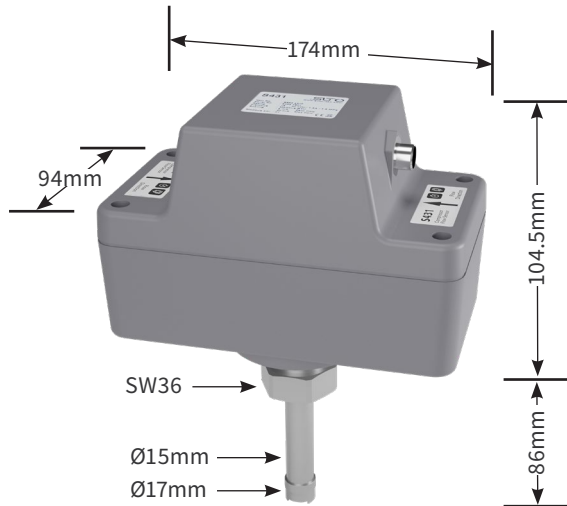
1 Sensor Installation inside the compressor



2 Sensor Installation outside of the compressor

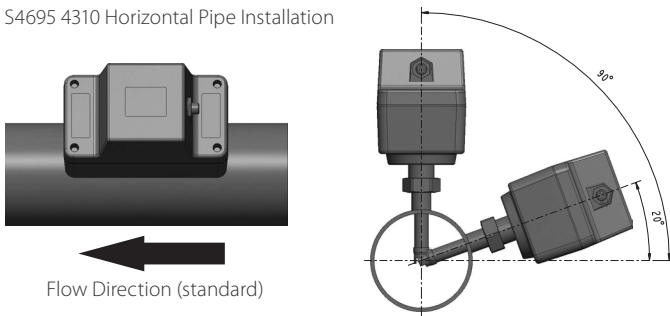


Dimensions



Horizontal Pipe Installation - S695 4310

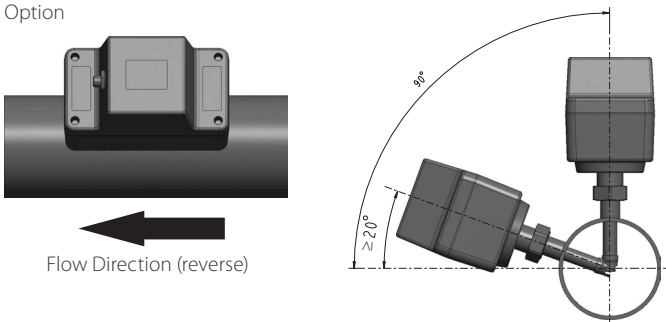
S4695 4310 Horizontal Pipe Installation



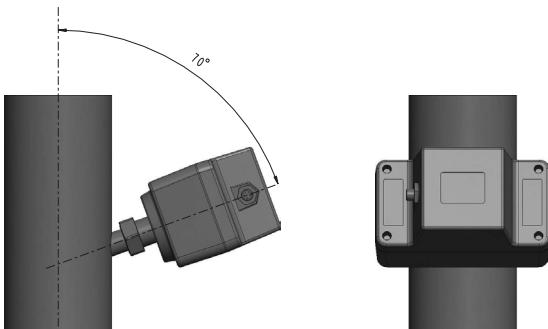
Horizontal Pipe Installation - A4319

A4319 Horizontal Pipe Installation Option

Valid installation angle from 20 ... 90 °



Vertical Pipe Installation - S695 4311

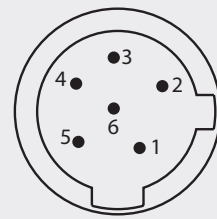


Mobile App

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



Connection



6-pole M12 cable with open ends included

Output Version	Analog Version	Modbus Version	Wire colour
Pin 1	-I _{isolated}	GND _M	blue
Pin 2	-VB	-VB	white
Pin 3	+VB	+VB	red
Pin 4	SW	D+	yellow
Pin 5	SW	D-	green
Pin 6	+I _{isolated}	N/A	black

Welding nipples for all pipe sizes



Technical Data

Measurement

Flow

Accuracy	1.5 % o.RDG ±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	Piezoe 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, isolated
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	21 ... 27 VDC
Current consumption	150 mA (1.5 A peak for 3 sec)

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 (6 pole)
Protection class	IP65
Approvals	CE, RoHS, FCC
Process connection	M32 x 1.5 welding nipple
Weight	1.4 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	>=DN50

Flow Ranges

Tube	Volumetric Flow						
	Inch	mm	m ³ /h		cfm		
			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. For other gas and condition please download Flow Range software from www.suto-itec.com

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 4310	S431-OEM, Pitot Tube Compressor Flow Meter for horizontal pipe installation, flow direction standard
A4319	Horizontal pipe installation, flow direction reverse
S695 4311	S431-OEM, Pitot Tube Compressor Flow Meter for vertical pipe installation, flow direction down to up

Output Options

A4314	Analogue/Pulse output
A4315	Modbus/RTU

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
R200 4310	Re-calibration S431 (in batches of 5 units, price per unit)
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.



www.suto-itec.com



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