

# Calibration and Certification

**.SUTO**

**Calibration certificate**

**Instrument:** S401  
**Serial number:** 1234 5768  
**Item number:** 5695 8371

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**Test conditions:**

Test medium:	Air	Ambient temperature:	18...26°C
Test temperature:	23°C	Ambient humidity:	30...60% RH
Test humidity:	<30 %RH	Ambient pressure:	990...1050 mbar
Test pressure:	6 bar	Calibration range:	High speed
Testing tube D:	53.1 mm	Testing method:	Calibration by comparison

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**References used:**

Type	Model	Uncertainty	S/N	Last Calibration
Turbine Flow Meter	FT-32	± 0.50%	141119E39096	10.2021
Laminar Flow Elements	LFE0	± 0.50%	1836000032	10.2021
Sonic Nozzels	N0-N4	± 0.50%	831K033-37	10.2021

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**Calibration test results:**

Description	Units	Nominal value	Permissible uncertainty	Actual value	Evaluation
Flow	m3/h	142.2	±(1.5 % + 0.3% FS)	143.1	passed
Flow	m3/h	285.4	±(1.5 % + 0.3% FS)	286.1	passed
Flow	m3/h	611.2	±(1.5 % + 0.3% FS)	611.2	passed

*The above-mentioned calibration was performed according to SUTO ITEC working standards. Furthermore the calibration was performed by comparison with instruments, which have been calibrated at an ISO 17025 accredited calibration laboratory and is traceable to national standards. It represents the physical units according to the International System of units (SI). The reference measurement system used for this calibration has a total uncertainty of 0.65% (at confidence level: 95%)*

*We commend that this measuring instrument should be calibrated annually.*

The product has been calibrated by:

**SUTO ITEC GmbH**  
 Gölthelmer Weg 21  
 79423 Halternheim  
 Tel: +49 (0) 7634 50488-00  
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 Web: www.suto-itec.com

**Calibration date:** 28.09.2022  
**SUTO Inspector:** F. Gleissner  
**Signature:**



Page 1 of 2

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Signature:   
 Date: 28.09.2022



**FLOW CALIBRATION**



**PARTICLE CALIBRATION**



**OIL VAPOR CALIBRATION**



**EXCHANGE CALIBRATION**



**DEW POINT CALIBRATION**



**PRESSURE CALIBRATION**



**TEMPERATURE CALIBRATION**



## Benefits

- ✔ SUTO owned high tech calibration facilities for Dew Point, Compressed Air Flow, Oil vapor, Pressure, Temperature in Germany, Hong Kong and China
- ✔ Flow calibration under pressure and a wide range for highest accuracy
- ✔ Real gas calibration system for technical gases
- ✔ SUTO Exchange Calibration Service to minimize downtimes
- ✔ References and certificates are traceable to national standards

### Flow Calibration Service

- Accuracy: < 0.5 % o. RDG
- Range: 0 ... 260 m/s (20°C 1000 mbar)
- Pressure: 0 ... 0.7 MPa
- Pipe sizes: DN8 ... DN100
- Medium: Compressed Air and technical Gasses
- References: Sonic Nozzles, Laminar Flow Elements, Turbine Meter, Coriolis Meter

Calibration certificate		.SUTO	
Instrument:	8441	Serial number:	10000000000000000000
Serial number:	10000000000000000000	Calibration date:	2023-01-10
Calibration range:	0 ... 260 m/s	Reference:	ISO 17025
Accuracy:	< 0.5 % o. RDG	Medium:	Compressed Air
Pressure:	0 ... 0.7 MPa	Pipe size:	DN8 ... DN100
Medium:	Compressed Air and technical Gasses	References:	Sonic Nozzles, Laminar Flow Elements, Turbine Meter, Coriolis Meter



### Dew Point Calibration Service

- Accuracy Frost/Dew point:  $\leq \pm 0.1 \text{ }^\circ\text{C}$
- Accuracy Temperature:  $\leq \pm 0.07 \text{ }^\circ\text{C}$
- Calibration Range:  $-85 \dots +15 \text{ }^\circ\text{C Td}$
- Reference: MBW 373 Dew Point Hygrometer / Dew Point Mirror

Calibration certificate		.SUTO	
Instrument:	8441	Serial number:	10000000000000000000
Serial number:	10000000000000000000	Calibration date:	2023-01-10
Calibration range:	$-85 \dots +15 \text{ }^\circ\text{C Td}$	Reference:	ISO 17025
Accuracy:	$\leq \pm 0.1 \text{ }^\circ\text{C}$	Medium:	Compressed Air
Pressure:	0 ... 0.7 MPa	Pipe size:	DN8 ... DN100
Medium:	Compressed Air and technical Gasses	References:	Sonic Nozzles, Laminar Flow Elements, Turbine Meter, Coriolis Meter

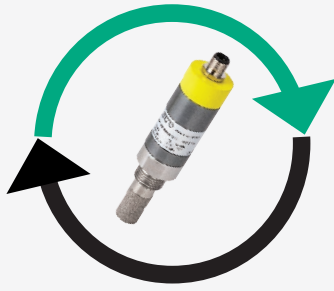


### Oli Vapor Calibration Service

- Accuracy:  $\leq \pm 3 \%$  o. RDG
- Gas: Isobutylene in synthetic air
- Reference: Traceable and certified gas
- Range: 0.000 ... 10.000 mg/m<sup>3</sup>
- Multiple activated carbon filtration system for accurate zero-point calibration

Calibration certificate		.SUTO	
Instrument:	8441	Serial number:	10000000000000000000
Serial number:	10000000000000000000	Calibration date:	2023-01-10
Calibration range:	0.000 ... 10.000 mg/m <sup>3</sup>	Reference:	ISO 17025
Accuracy:	$\leq \pm 3 \%$ o. RDG	Medium:	Compressed Air
Pressure:	0 ... 0.7 MPa	Pipe size:	DN8 ... DN100
Medium:	Compressed Air and technical Gasses	References:	Sonic Nozzles, Laminar Flow Elements, Turbine Meter, Coriolis Meter





## Exchange Service

### No Downtime anymore!

The exchange calibration service eliminates down time and enables users to have a seamless record of their dew point measurements.

The user receives in advance a calibrated instrument with calibration certificate and the same instrument settings. The on-site instrument is then switched against the calibrated one and returned to the supplier.

## Ordering

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

### Calibration and Certification

Order No.	Description
<b>Send-in calibrations - Adjustment with outgoing calibration (As left)</b>	
R200 0001	Flow Meter (Air/Gas) - Adjustment with outgoing calibration (As left) with Service: - General inspection of the unit - Cleaning of components
R200 0020	Flow Meter (Gas) - Adjustment with outgoing calibration (As left), Calibration in Real Gas: O <sub>2</sub> , Ar, CO <sub>2</sub> , H <sub>2</sub> (for H <sub>2</sub> please contact manufacturer in advance)
R200 0021	Flow Meter (Gas) - Adjustment with outgoing calibration (As left), Calibration in Real Gas: CH <sub>4</sub> , Natural Gas, N <sub>2</sub> O
R200 0022	Flow Meter (Gas) - Adjustment with outgoing calibration (As left), Calibration in Real Gas: Helium
R200 0030	Pressure Transmitter (0... 1.6 MPa) - Adjustment with outgoing calibration (As left) with Service: - General inspection of the unit - Cleaning of components
R200 0040	Re-calibration ultrasonic flow meter S460
R200 0060	O <sub>2</sub> Sensor- Adjustment with outgoing calibration (As left) with Service: General inspection of the unit
R200 0061	CO Sensor- Adjustment with outgoing calibration (As left) with Service: General inspection of the unit
R200 0062	CO <sub>2</sub> Sensor- Adjustment with outgoing calibration (As left) with Service: General inspection of the unit
R200 0063	Oil mist and particle sensor - Adjustment with outgoing calibration (As left) with Service: - General inspection of the unit - Cleaning of components
R200 0070	Leak Detector S531 - Adjustment with outgoing calibration (As left) with Service: - General inspection of the unit - Cleaning of components
R200 0080	Power Meter S110 - Adjustment with outgoing calibration (As left) with Service: - General inspection of the unit - Cleaning of components
R200 0090	Rogowski Coil - Adjustment with outgoing calibration (As left) with Service: - General inspection of the unit - Cleaning of components
R200 0120	Oil Vapor sensor - Adjustment with outgoing calibration (As left) with Service: - General inspection of the unit - Cleaning of components - UV lamp replacement - General inspection of the unit - Cleaning of components - UV lamp replacement
R200 0121	Oil Vapor sensor with Dew point sensor option - Adjustment with outgoing calibration (As left) with Service: - General inspection of the unit - Cleaning of components - UV lamp replacement



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