

TESTING AND CALIBRATION



SUTO provides calibration service for all its sensors as well as on-site testing. Please contact our service for inquiries. Dew point and flow calibration service is performed in the SUTO Test & Calibration Labs in Germany and China (Asia market). For other physical units we have contract partners in Germany. All references are traceable to national standards and are re-calibrated in regular intervals.

Dew point calibration service

- Accuracy: 0.1 °Ctd
- Calibration range: -75 °Ctd ... +15 °Ctd
- Reference: Dew point mirror MBW 373



Calibration certificate		SUTO				
Instrument:	6300					
Serial number:	5050 0000					
Item number:	5050 0000					
Test conditions:						
Test medium:	Ar	Ambient humidity:	30 - 60 % RH			
Volume flow:	2 - 4 l/min	Ambient pressure:	980 - 1050 mBar			
Ambient temperature:	18 - 20 °C	Testing method:	Calibrated by comparison			
Reference used:						
Model:	UMS 275	Uncertainty:	0.1 K			
Equipment:	MBW 373		14.07.18			
Dew point mirror:	P-20		8 Jul 2018			
Pressure sensor:	P100	+ 0.01 bar	20.10.2018			
Temperature sensor:	P100	+ 0.1 °C	20.10.2018			
Calibration test results:						
Description	Units	Nominal value	Permissible uncertainty	Actual value	Direction	Evaluation
Dew point	°C	50	+ 0.1	50.0	same	passed
Dew point	°C	50	+ 0.1	50.0	same	passed
Dew point	°C	50	+ 0.1	50.0	same	passed
Temperature	°C	50	+ 0.1	50.0	same	passed
Pressure	bar	10	+ 0.05	10.0	same	passed
We hereby certify, that the above-mentioned measuring system was calibrated according to GUM/IEC working document and traceability chain. The measuring location used for calibration are capacity calibrated and are based on international and national standards. We recommend that the measuring instrument should be calibrated annually.						
Factory settings:						
Measurement	Parameter	Setting	Parameter	Setting		
Dew point	Temperature	50.00	Humidity	30.00		
	Pressure	10.00	Flow	2.00		
	Volume	2.00	Flow	2.00		
Pressure	Pressure	10.00	Flow	2.00		
	Volume	2.00	Flow	2.00		
Temperature	Temperature	50.00	Flow	2.00		
	Volume	2.00	Flow	2.00		
Calibration date: 14 Jul 2018 operator: m.w. Signature: _____						
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Flow calibration service

- Accuracy: 0.5% of reading
- Pressure: 0 ... 0.6 MPa
- Medium: Air
- Calibration range: 0 ... 4000 sm³/h
- Pipe diameter: DN25 ... DN100
- Reference: Turbine flow sensors



Calibration Certificate		SUTO				
Instrument:	S 601					
Serial number:	1217 3069					
Item number:	6050 6100					
Test conditions:						
Test medium:	Ar	Ambient temperature:	18 - 20 °C			
Test temperature:	23 °C	Ambient humidity:	30 - 60 % RH			
Test humidity:	+30 - 60%	Ambient pressure:	980 - 1050 mBar			
Test pressure:	0 - 0.6 MPa	Calibration range:	air flow			
Testing tube inner diameter:	16.0 mm	Testing method:	Calibration by comparison			
Reference used:						
Model:	FT1-00011	Uncertainty:	0.5%			
Equipment:	FT1-00011		19 Oct 2018			
Flow meter:	FT1-00011	0.5%	19 Oct 2018			
Flow meter:	FT1-00011	0.5%	19 Oct 2018			
Flow meter:	FT1-00011	0.5%	19 Oct 2018			
Pressure meter:	P-20	+ 0.05%	13 Nov 2018			
Pressure meter:	P-20	+ 0.05%	13 Nov 2018			
Temperature sensor:	P100	+ 0.2 °C	20.10.2018			
Temperature sensor:	P100	+ 0.2 °C	20.10.2018			
Calibration test results:						
Description	Units	Nominal value	Permissible uncertainty	Actual value	Direction	Evaluation
air flow	m ³ /h	100.0	+ 0.5%	100.0	Standard	passed
air flow	m ³ /h	200.0	+ 0.5%	200.0	Standard	passed
air flow	m ³ /h	300.0	+ 0.5%	300.0	Standard	passed
air flow	m ³ /h	400.0	+ 0.5%	400.0	Standard	passed
air flow	m ³ /h	500.0	+ 0.5%	500.0	Standard	passed
air flow	m ³ /h	600.0	+ 0.5%	600.0	Standard	passed
air flow	m ³ /h	700.0	+ 0.5%	700.0	Standard	passed
air flow	m ³ /h	800.0	+ 0.5%	800.0	Standard	passed
air flow	m ³ /h	900.0	+ 0.5%	900.0	Standard	passed
air flow	m ³ /h	1000.0	+ 0.5%	1000.0	Standard	passed
air flow	m ³ /h	1100.0	+ 0.5%	1100.0	Standard	passed
air flow	m ³ /h	1200.0	+ 0.5%	1200.0	Standard	passed
air flow	m ³ /h	1300.0	+ 0.5%	1300.0	Standard	passed
air flow	m ³ /h	1400.0	+ 0.5%	1400.0	Standard	passed
air flow	m ³ /h	1500.0	+ 0.5%	1500.0	Standard	passed
air flow	m ³ /h	1600.0	+ 0.5%	1600.0	Standard	passed
air flow	m ³ /h	1700.0	+ 0.5%	1700.0	Standard	passed
air flow	m ³ /h	1800.0	+ 0.5%	1800.0	Standard	passed
air flow	m ³ /h	1900.0	+ 0.5%	1900.0	Standard	passed
air flow	m ³ /h	2000.0	+ 0.5%	2000.0	Standard	passed
air flow	m ³ /h	2100.0	+ 0.5%	2100.0	Standard	passed
air flow	m ³ /h	2200.0	+ 0.5%	2200.0	Standard	passed
air flow	m ³ /h	2300.0	+ 0.5%	2300.0	Standard	passed
air flow	m ³ /h	2400.0	+ 0.5%	2400.0	Standard	passed
air flow	m ³ /h	2500.0	+ 0.5%	2500.0	Standard	passed
air flow	m ³ /h	2600.0	+ 0.5%	2600.0	Standard	passed
air flow	m ³ /h	2700.0	+ 0.5%	2700.0	Standard	passed
air flow	m ³ /h	2800.0	+ 0.5%	2800.0	Standard	passed
air flow	m ³ /h	2900.0	+ 0.5%	2900.0	Standard	passed
air flow	m ³ /h	3000.0	+ 0.5%	3000.0	Standard	passed
air flow	m ³ /h	3100.0	+ 0.5%	3100.0	Standard	passed
air flow	m ³ /h	3200.0	+ 0.5%	3200.0	Standard	passed
air flow	m ³ /h	3300.0	+ 0.5%	3300.0	Standard	passed
air flow	m ³ /h	3400.0	+ 0.5%	3400.0	Standard	passed
air flow	m ³ /h	3500.0	+ 0.5%	3500.0	Standard	passed
air flow	m ³ /h	3600.0	+ 0.5%	3600.0	Standard	passed
air flow	m ³ /h	3700.0	+ 0.5%	3700.0	Standard	passed
air flow	m ³ /h	3800.0	+ 0.5%	3800.0	Standard	passed
air flow	m ³ /h	3900.0	+ 0.5%	3900.0	Standard	passed
air flow	m ³ /h	4000.0	+ 0.5%	4000.0	Standard	passed
We hereby certify, that the above-mentioned measuring system was calibrated according to GUM/IEC working document and traceability chain. The measuring location used for calibration are capacity calibrated and are based on international and national standards. We recommend that the measuring instrument should be calibrated annually.						
The product has been calibrated by:						
Calibration date: 15 Dec 2017 operator: m.w. Signature: _____						
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On-Site testing

For on-site testing we can offer:

- Dew point measurement
- Flow /consumption measurement
- Pressure measurement
- Temperature measurement
- Leak detection
- Data logging over days and weeks

SUTO	
DEW POINT MEASUREMENT REPORT	
Customer details:	Company: GERMANY LIGHTING CO. LTD
Address:	11 Bridge Road, Pines, Singapore
Product details:	Instrument: 6050 6100
Serial number:	6050 6100
Calibration date:	15 Dec 2017
Certificate of compliance: Calibration certificate (attachment)	
Field measurements:	
1. Dew point mirror: MBW 373	
Model:	MBW 373
Manufacturer:	MBW 373
Material:	MBW 373
Weight:	MBW 373
Volume:	MBW 373
Dimensions:	MBW 373
Color:	MBW 373
Finish:	MBW 373
Condition:	MBW 373
Location:	MBW 373
Operator:	MBW 373
Test results:	
Model:	MBW 373
Manufacturer:	MBW 373
Material:	MBW 373
Weight:	MBW 373
Volume:	MBW 373
Dimensions:	MBW 373
Color:	MBW 373
Finish:	MBW 373
Condition:	MBW 373
Location:	MBW 373
Operator:	MBW 373
Remarks:	
This instrument is not to be used for any other purpose than the one specified in the certificate. Any use for other purposes is at the user's own risk. The user must ensure that the instrument is used in accordance with the instructions for use. The user must ensure that the instrument is used in accordance with the instructions for use. The user must ensure that the instrument is used in accordance with the instructions for use.	
Signature:	
Signature: _____	
Date: 15 Dec 2017	
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Order no.	Description
R200 0001	Flow calibration with certificate
R200 0005	Oil & grease free cleaned option for flow sensors (for Oxygen it is already included in A1009)
R200 0020	Real gas calibration in selected gas to ensure best accuracy
R200 0030	Pressure sensor calibration 16 bar(g) type, at 3 points
R200 0120	General service and re-calibration S 120
R200 0130-A	Calibration particle counter S 130-A
R200 0130-B	Calibration particle counter S 130-B
R200 0130-C	Calibration particle counter S 130-C
R200 0130-D	Calibration particle counter S 130-D
R200 0130-E	Calibration particle counter S 130-E
R200 0131	Calibration particle counter S 131
R200 0600	S 600 calibration and service
R699 3396	Dew point sensor calibration