S600

Portable Compressed Air Purity Analyzer

ISO 8573-1 ALL IN ONE
Particle concentration, Dew Point, Oil vapor

GUIDED MEASUREMENT
Software guided air quality audits

PORTABLE MULTI-TOOL
Can be carried with one hand

HIGH PRECISION
Accurate measurements

COMPACT DESIGN
Makes it unique

PDF REPORTING
Create ISO 8573-1 reports on the device

Benefits

- All-in-one device measures Particle concentration, dew point and oil vapor
- Measures additionally the temperature and pressure
- Software guided measurement makes it easy to generate reliable results
- Report generator creates PDFs for ISO 8573-1 audits
- Ultra portable and compact design

Plug & Play Measurement — Save Precious Time

ISO 8573 compliant purity quantifications of compressed air systems are bound to time-consuming installations and long-lasting test runs ... It's time for a revolution: The S600 is unlike its competition.

It combines the latest sensor technology, software-guided measurements and a time-saving setup into a handy, touchscreen controlled multi-tool. With our S600 you will finish measurement runs in much less time than with your traditional method, after that you don't ever want to leave your new comfort zone again. Trust us.

Remote connection

By connecting a LTE/4G modem to the designated USB port, S600 can be monitored remotely through S4A software

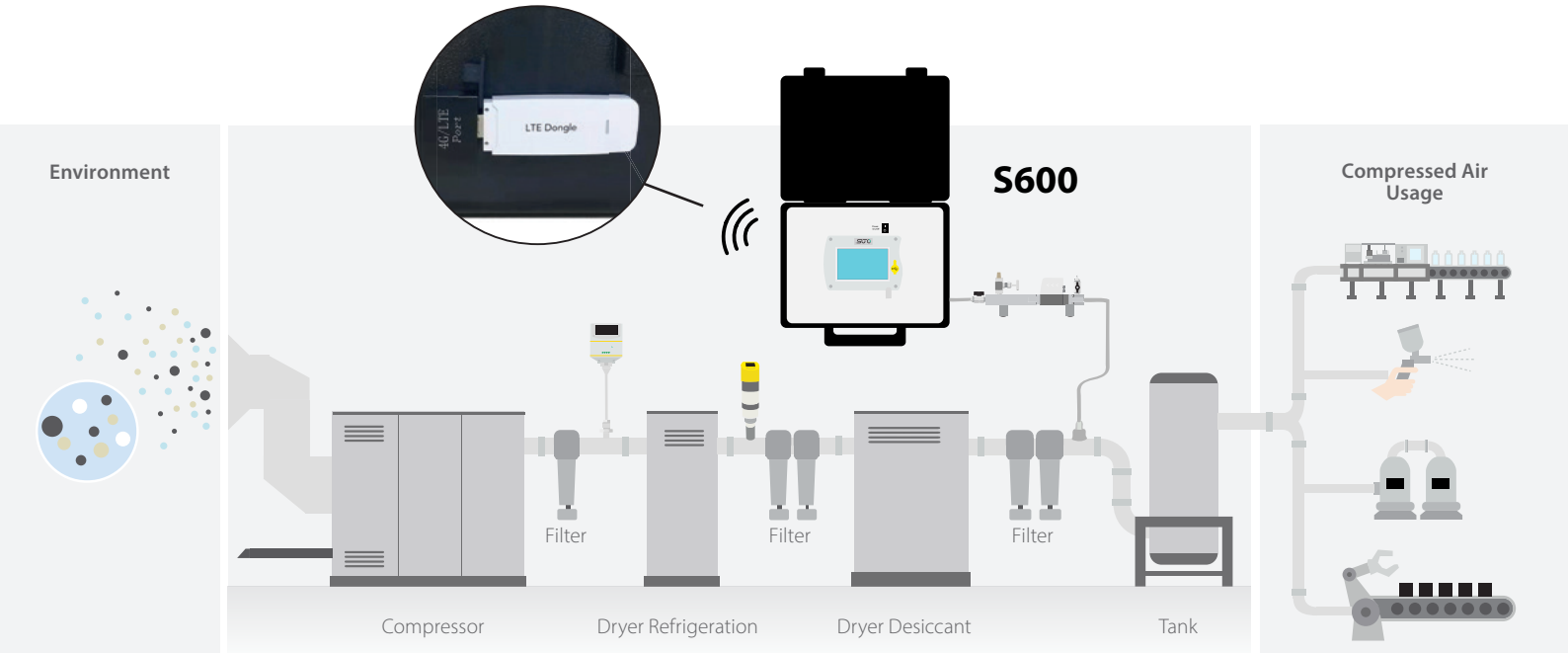
Monitoring of All Relevant Contaminants

Particle Concentration Measurement
0.1 < d ≤ 0.5 µm / 0.5 < d ≤ 1.0 µm / 1.0 < d ≤ 5.0 µm / 5.0 µm < d

Dew Point Measurement
-100 ... +20 °C Td

Oil Vapor Measurement
0.001 ... 5.000 mg/m³

ISO 8573-1 Classification



5 in 1 Measuring Device

The S600 is the portable multi-tool for ISO 8573-1 compressed air purity measurements. It measures, records and validates quality parameters like particle concentration, dew point, oil vapor contents, temperature and the pressure of compressed air systems.

Particle Concentration Measurement

- Measurement methods according to ISO 8573-4 standards (together with isokinetic sampling device)
- Latest laser detection technology
- Smallest particle size 30 ... 70 %, next bigger sizes 90 ... 110 % per ISO 21501-4

Dew Point Measurement

- Large ranges due to the unique multiple sensor technology
- Long-term stable and well-proven measurement methods
- High precision with an accuracy of ±2 °C Td

Oil Vapor Measurement

- Latest photoionisation detector (PID) with self-calibration
- Measuring range according to ISO 8573-1 Class 1 to Class 5
- High precision with 5 % of reading ± 0.003 mg/m^3 accuracy

Pressure Measurement

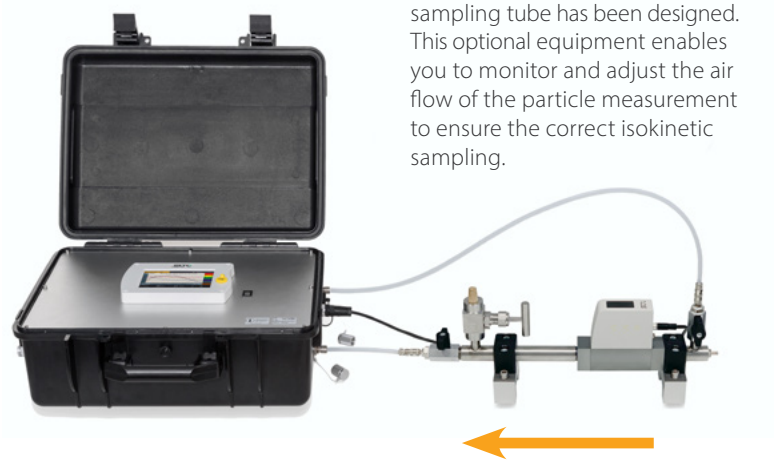
- State of the art sensor technology
- Additional quality data about the compressed air system

Integrated Data Logger

- Integrated data logger records all channels in parallel for later analysis
- 5" touchscreen allows you to interact with the device on site. There is no need for a PC to manage the device.

ISO 8573-4 Isokinetic Sampling Device

For particle measurements according to ISO 8573 an isokinetic sampling tube has been designed. This optional equipment enables you to monitor and adjust the air flow of the particle measurement to ensure the correct isokinetic sampling.



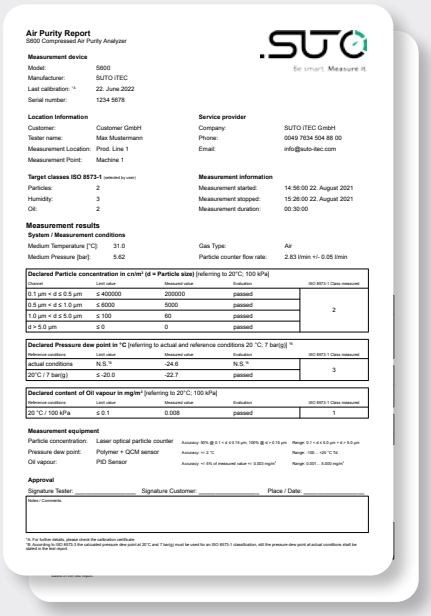
Applications

- Air quality measurements in medical, pharmaceutical, food and beverage applications
- Compressed air quality audits in regards to the ISO 8573-1
- Point-of-use measurements to ensure process safety and quality in all applications
- Monitoring of high tech applications with strict air purity requirements

Create Compressed Air Quality Reports

The S600 enables users to create powerful PDF reports directly on site. The reports are following the recommendations stated in the ISO 8573, additionally customer related data as well as service provider details can be entered on-screen, making it even easier to perform audits and to create meaningful reports.

PDF reports can be created from any recordings on the device and are copied on the fly to a connected USB drive for direct print-outs.



Air Purity Report
S600 Compressed Air Purity Analyzer

SUTO
Be smart. Measure it.

Measurement device
Model: S600
Manufacturer: SUTO iTEC
Last calibration: *A 22. June 2022
Serial number: 1234 5678

Location Information
Customer: Customer GmbH
Tester name: Max Mustermann
Measurement Location: Prod. Line 1
Measurement Point: Machine 1

Service provider
Company: SUTO iTEC GmbH
Phone: 0049 7634 504 88 00
Email: info@suto-itec.com

Target classes ISO 8573-1 (selected by user)
Particles: 2
Humidity: 3
Oil: 2

Measurement information
Measurement started: 14:56:00 22. August 2021
Measurement stopped: 15:26:00 22. August 2021
Measurement duration: 00:30:00

Measurement results
System / Measurement conditions
Medium Temperature [°C]: 31.0
Medium Pressure [bar]: 5.62
Gas Type: Air
Particle counter flow rate: 2.83 l/min +/- 0.05 l/min

Declared Particle concentration in cn/m³ (d = Particle size) [referring to 20°C; 100 kPa]

Channel	Limit value	Measured value	Evaluation	ISO 8573-1 Class measured
0.1 µm < d ≤ 0.5 µm	≤ 400000	200000	passed	2
0.5 µm < d ≤ 1.0 µm	≤ 6000	5000	passed	
1.0 µm < d ≤ 5.0 µm	≤ 100	60	passed	
d > 5.0 µm	≤ 0	0	passed	

Declared Pressure dew point in °C [referring to actual and reference conditions 20 °C; 7 bar(g)] *B

Reference conditions	Limit value	Measured value	Evaluation	ISO 8573-1 Class measured
actual conditions	N.S. *B	-24.6	N.S. *B	3
20°C / 7 bar(g)	≤ -20.0	-22.7	passed	

Declared content of Oil vapour in mg/m³ [referring to 20°C; 100 kPa]

Reference conditions	Limit value	Measured value	Evaluation	ISO 8573-1 Class measured
20 °C / 100 kPa	≤ 0.1	0.008	passed	1

Measurement equipment
Particle concentration: Laser optical particle counter — Accuracy: 30% @ 0.1 < d ≤ 0.15 µm; 100% @ d > 0.15 µm — Range: 0.1 < d ≤ 0.5 µm / d > 5.0 µm
Pressure dew point: Polymer + QCM sensor — Accuracy: +/- 2 °C — Range: -100 ... +20 °C Td
Oil vapour: PID Sensor — Accuracy: +/- 5% of measured value +/- 0.003 mg/m³ — Range: 0.001 ... 5.000 mg/m³

Approval
Signature Tester: _____ Signature Customer: _____ Place / Date: _____
Notes / Comments:

*A: For further details, please check the calibration certificate.
*B: According to ISO 8573-3 the saturated pressure dew point at 20°C and 7 bar(g) must be used for an ISO 8573-1 classification, still the pressure dew point at actual conditions shall be stated in the test report.

ISO 8573-1 Compressed Air Classes

ISO 8573-1:2010 is the main publication of the ISO 8573 series of standards, because it contains the permissible amount of contaminants per cubic meter of compressed air is fixed.

Class	Particle Concentration			Pressure Dew Point	Oil Concentration
	cn/m³			°C (°F)	mg/m³
	0.1 < d ≤ 0.5 µm	0.5 < d ≤ 1.0 µm	1.0 < d ≤ 5.0 µm		
0	As specified by the equipment user or supplier and more stringent than class 1				
1	≤ 20,000	≤ 400	≤ 10	≤ -70 (94.0)	≤ 0.01
2	≤ 400,000	≤ 6,000	≤ 100	≤ -40 (-40.0)	≤ 0.1
3	not specified	≤ 90,000	≤ 1,000	≤ -20 (-4.0)	≤ 1
4	not specified	not specified	≤ 10,000	≤ +3 (+37.4)	≤ 5
5	not specified	not specified	≤ 100,000	≤ +7 (+45.6)	> 5
6	x	x	x	≤ +10 (+50.0)	x

Why should you focus on your ISO 8573-1 specifications?

Certain industries like the pharmaceutical and food industry requires high-quality compressed air. By meeting the ISO 8573-1 standard requirements you can:

- **Ensure Process and Product Safety:**

  Potential incidents, like contaminants meeting food via water and oil, can create safety concerns and unreliable processes.

- **Avoid Production Failures and Poor Quality Finishes:**

  Contaminants mixing with applications effect product results.

- **Prevent production downtime:**

  Processes and machines are stopped to find and eliminate the contamination issues.

Dimensions

Technical Data

Measurement

Particle concentration	
Accuracy	Counting Efficiency according ISO 21501-4 30 ... 70 % of d > 0.1 µm 90 ... 110 % of d ≥ 0.3 µm
Selectable units	cn/m³, cn/ft³
Measuring range	0.1 < d ≤ 0.5 µm 0.5 < d ≤ 1.0 µm 1.0 < d ≤ 5.0 µm 5.0 µm < d
Sensor	Laser optical particle counter
Sampling rate	1 min.
Flow rate	2.83 l/min
Pressure Dew Point	
Accuracy	± 1 °C Td (0 ... 20 °C Td) ± 2 °C Td (-70 ... 0 °C Td) ± 3 °C (-100 ... -70 °C Td)
Selectable units	°C, °F
Measuring range	-100 ... +20 °C Td
Sensor	QCM + Polymer
Response time (t90)	-20 °C Td -> -60 °C Td = < 240 sec -60 °C Td -> -20 °C Td = < 30 sec @ 4 l/min
Oil vapor	
Accuracy	5 % of value +/- 0.003 mg/m³
Detection limit	0.003 mg/m³
Resolution	0.001 mg/m³
Selectable units	mg/m³
Measuring range	0.001 ... 5.000 mg/m³
Sensor	PID (Photoionisation detector)
UV lamp lifetime	1 year or 6000 working hours, whichever comes first
Sampling rate	1 sec.
Pressure	
Accuracy	0.5 % FS
Measuring range	0.1 ... 1.6 MPa(g)
Sensor	Piezo resistive sensor
Temperature	
Accuracy	± 0.3 °C
Measuring range	-30 ... +70 °C
Sensor	Pt100
Reference conditions	
Selectable conditions	ISO1217 20 °C 1000 mbar

Signal / Interface & Supply

Fieldbus	
Protocol	Modbus/TCP
Update rate	1 / sec.
Power Supply	
Voltage supply	Mains supply adapter (AC/DC) Input: 100 ... 240 VAC, 50/60 Hz, 1.4 A Output: 24 VDC, 2.5 A, 60 W max.
Current consumption	1.4 A
Interface	
USB	USB Micro with OTG support
LTE/4G USB	USB Port for 4G/LTE Modem

General data

Configuration	
Others	Device comes pre-configured Configuration can be done via on-screen touch
Display	
Integrated	Touchscreen, Size: 5", Resolution: 800 x 480 px
Data Logger	
Storage	100 mio. values
Report	Integrated report generator for PDF export
Material	
Process connection	Brass nickel-plated, FKM
Housing	PC + ABS, Al alloy
Miscellaneous	
Electrical connection	2-Pin, push-pull socket
Protection class	IP54 (cover lid closed)
Approvals	CE
Process connection	Micro quick connector, full passthrough, male (1.5 m hose with coupling included)
Weight	9.8 kg
Operating conditions	
Medium	Compressed Air, Nitrogen N_2, Carbon dioxide CO_2 (software setting)
Medium quality	ISO 8573-1: 4.4.4 or better
Medium temperature	0 ... + 40 °C
Medium humidity	Medium humidity < 40 % rH, no condensation
Operating pressure	0.3 ... 1.5 MPa(g)
Ambient temperature	0 ... +50 °C
Ambient humidity	0 ... 90 % rH
Storage temperature	-10 ... + 70 °C
Transport temperature	-10 ... + 70 °C

Technical Data

Isokinetic Sampling Device

Measurement

Isokinetic Sampling Device	
Measuring unit	Measuring unit Sampling pipe with integrated isokinetic sampling tube, flow regulation and control by integrated flow sensor, to be used for particle measurements according to ISO 8573-4
Flow meter unit	Thermal mass flow meter (only for isokinetic flow setup, no system flow measurement)
Sensor	Thermal mass flow sensor
Accuracy	3 % o. RDG

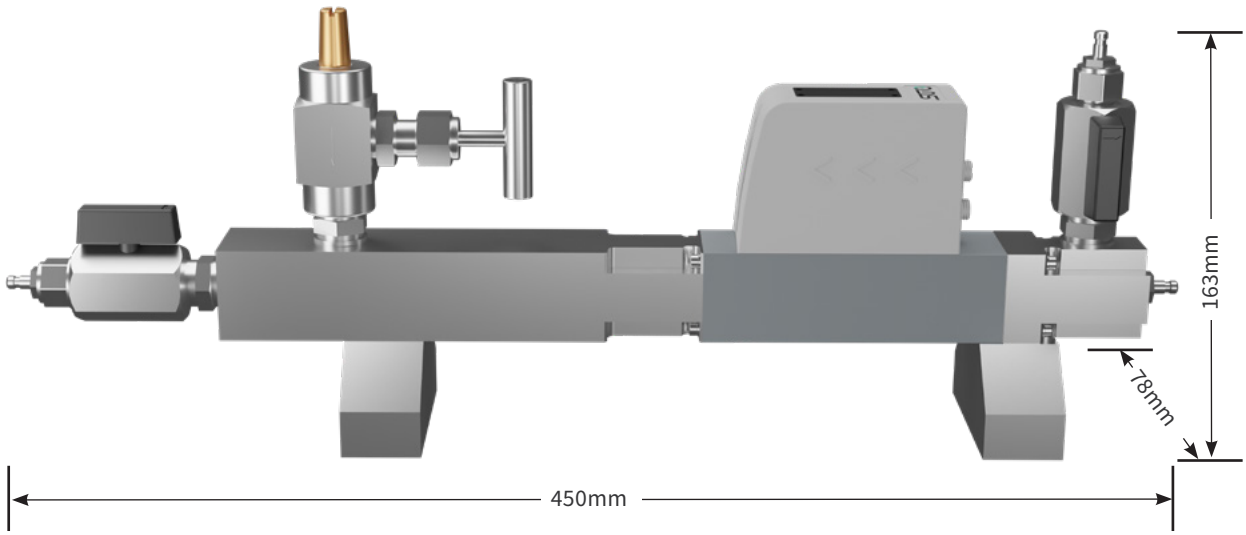
Signal Interface & Supply

Connection	Communication to S600 (cable included)
Update rate	1 / sec.

General data

Material	
Process connection	Brass nickel-plated, FKM
Housing	PC + ABS, Al alloy
Main unit	Al alloy
Isokinetic tube	Stainless steel1.4404 (SUS 316L)
Miscellaneous	
Electrical connection	M8
Protection class	IP54 IEC 61326-1
Process connection	Micro quick connector, full passthrough, male (1.5 m hose with coupling included)
Operating conditions	
Medium	Compressed Air, Nitrogen N_2, Carbon dioxide CO_2 (software setting)
Medium quality	ISO 8573-1: 4.4.4 or better
Medium temperature	0 ... + 40 °C
Medium humidity	Medium humidity < 40 % rH, no condensation
Operating pressure	0.3 ... 1.5 MPa(g)
Ambient temperature	0 ... +50 °C
Ambient humidity	0 ... 90 % rH
Storage temperature	-10 ... + 70 °C
Transport temperature	-10 ... + 70 °C

Dimensions Isokinetic Sampling Device



Ordering

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

S600 Portable Compressed Air Purity Analyzer (Portable Version)

Order No.	Description
KA66P5600600	Touch screen interface, data logger, guided measurement, PDF report generator, USB port and Ethernet port with Modbus/TCP Particle d: 0.1 < d <= 0.5, µm 0.5 < d <= 1.0 µm, 1.0 < d <= 5.0 µm, d > 5.0 µm Dew point: -100 ... +20 °C Td Oil vapor: 0.001 ... 5.000 mg/m^3 Including: • Portable Compressed Air Purity Analyzer in a hand carry case with handle and shoulder belt • USB OTG memory stick • Purge filter for pre-measurement (test kit) • Power supply, 230 VAC / 24 VDC 50/60 Hz • 2 x Connection hose 1.5 m, one end quick coupling, one end compressed air coupling • Certificate of calibration • Operation and instruction manual
KA66000A1670	USB 4G dongle for S551/S600, including S4A software

Isokinetic Sampling Device

Order No.	Description
KA66A5540600	Isokinetic sampling device for particle measurement according to ISO 8573 Including: • Isokinetic sampling pipe • Flow sensor mounted on pipe • Certificate of calibration • Connection cable to S600 • Connection hose 150 mm, both ends quick coupling • Connection hose 700 mm, both ends quick coupling • Connection hose 1.5 m, one end quick coupling, one end compressed air coupling • Transport case to carry the device, hoses and cables