

# S606

# Stationary Breathing Air Quality Analyzer



**ALL IN ONE**  
O<sub>2</sub>, CO<sub>2</sub>, CO,  
Dew Point,  
Oil Vapor, Pressure



**RELIABLE  
WARNING**  
Alarms can be  
programmed



**EASY HANDLING**  
Clear and user friendly  
user guidance



**HIGH  
PRECISION**  
Accurate  
measurements



**ROBUST  
DESIGN**  
Suitable for harsh  
industrial condition



**COMMUNICATION  
INTERFACE**  
Modbus TCP/RTU,  
4G-Modem

## Benefits

- ✓ All-in-one Instrument measures O<sub>2</sub>, CO<sub>2</sub>, CO, Dew Point and Oil Vapor simultaneously in the breathing air
- ✓ 24/7 permanent breathing air monitoring with programmable alarm settings
- ✓ Testing quality of breathing air according to national and international standards
- ✓ Compressed air connection via 6 mm tube
- ✓ Only one gas inlet for all parameters
- ✓ Integrated data logger saves data for later analysis

## Constant breathing air quality monitoring

When it comes to breathing air, the health and safety of humans has highest priority. Still fatal accidents have occurred in the past due to the contaminated air.

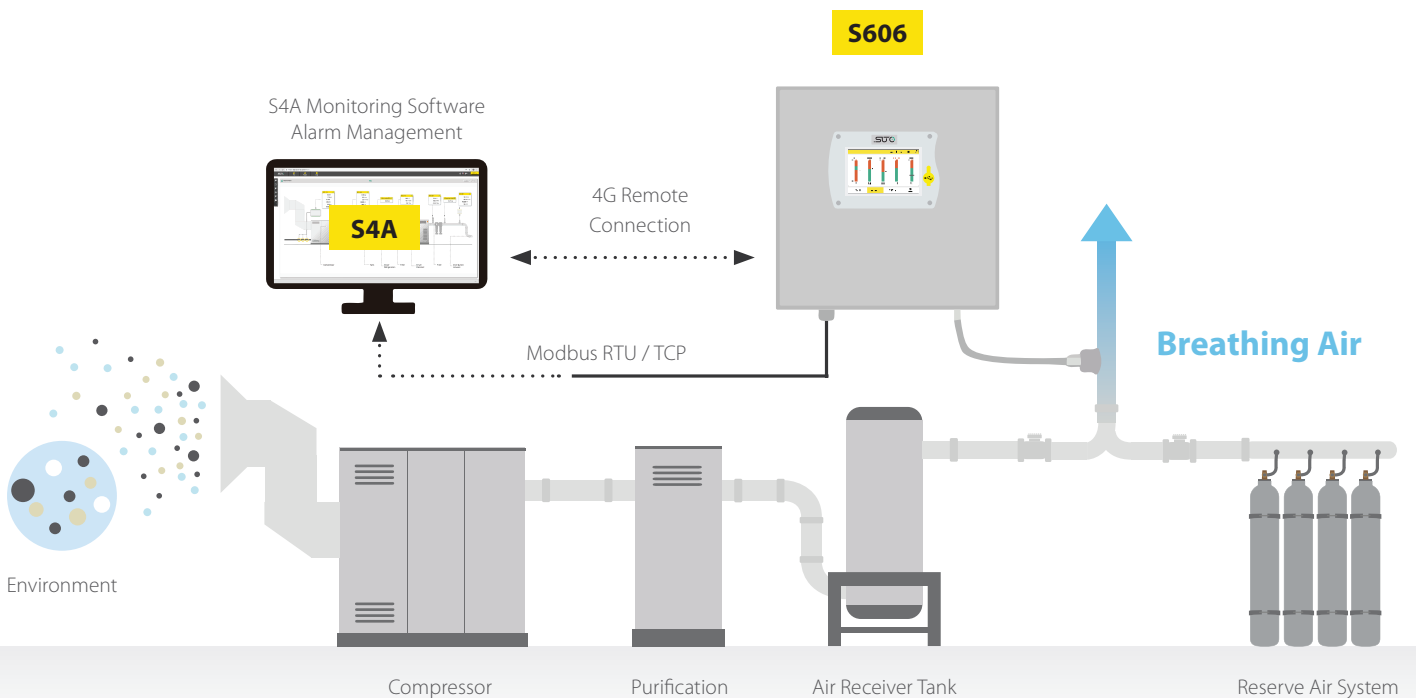
To ensure the highest safety when breathing air is supplied, an online measurement system is required. Traditional breathing air analyzes have been carried out, by taking samples and later analyze them in an external laboratories. Online systems have been rarely available and often did come with very high investments and intense process modifications.

SUTO is here to change that. The S606 Breathing Air Quality Analyzer combines latest sensor technology into a single Plug & Play measurement solution.

S606 constantly measures O<sub>2</sub>, CO<sub>2</sub>, CO, Dew Point, Oil Vapor and Pressure as defined in the breathing air purity standards and notifies users in real-time when the purity is not within the defined limits.

## Monitoring of all breathing air parameters

<b>O<sub>2</sub></b>	<b>Oxygen</b>	<b>CO</b>	<b>Carbon Monoxide</b>
<b>CO<sub>2</sub></b>	<b>Carbon Dioxide</b>	<b>H<sub>2</sub>O</b>	<b>Humidity</b>
<b>According to all relevant national and international standards</b>		<b>OIL</b>	<b>Oil Residues</b>





## Applications

The S606 is a compact wall-mounted breathing air quality analyzer which measures all crucial breathing air parameters, to ensure that the breathing air is safe for health and the process.

Crucial Industries and Sectors rely on a reliable breathing air supply, e.g. fire fighting, diving, spray painting, chemical industry, offshore and high tech applications.

## 7 in 1 Measurement Device

O<sub>2</sub>

### Oxygen Measurement

For safety reasons, it is recommended to measure the oxygen level in the breathing air. The optical oxygen sensor monitors the O<sub>2</sub> content and indicates deviations from the standard concentration.

CO

### Carbon Monoxide Measurement

The compressor intake air may be contaminated with CO due to nearby combustion engines or heating systems. Carbon monoxide is a toxic and life-threatening gas which will be monitored accurately by an electrochemical sensor.

OIL

### Oil Vapor Measurement

Atmospheric oil vapor contained in industrial air environment can get into the system through the compressor intake. Compressed into the breathing air, the oil contaminants can cause health issues. The state-of-the-art sensor technology detects the oil contaminants immediately.



### Pressure Measurement

The pressure sensor provides additional pressure data about the compressed air system using state of the art sensor technology.



### Integrated Data Logger

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

CO<sub>2</sub>

### Carbon Dioxide Measurement

The intake air may also be exposed to increased concentration of carbon dioxide. Filter material used in compressed air can adsorb, but also release CO<sub>2</sub>. The gas is measured by the NDIR sensor to avoid extreme concentrations above 1000 ppm.

H<sub>2</sub>O

### Humidity Measurement

High humidity can cause corrosion and in severe cases lead to bursting air containers. In cold environment, it can freeze and block the air supply. The integrated dew point sensor is crucial to check the proper water removal of the dryers and filters.

## Remote Connection

By connecting a 4G/LTE modem to the designated M12 port, S606 can be monitored remotely through S4A software.



## Relevant standards for breathing air

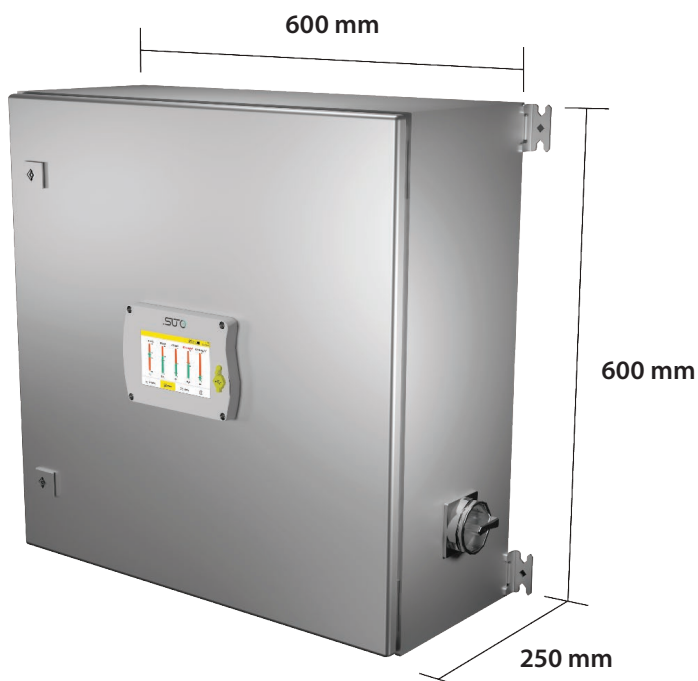
Relevant standards including BS EN 12021, DEF STAN 68-284, OSHA, CSA and BS 8478 require adherence to specific limits of constituents in breathing air. Here some examples of the required for industrial breathing air:

Contaminant	Europe	China	USA	Canada
<b>Standard</b>	EN 12021	GB/T 31975-2015	CFR	CSA
<b>O<sub>2</sub></b>	20 - 22 %	19.5 - 23.5 %	19.5 - 23.5 %	20 - 22 %
<b>CO<sub>2</sub></b>	500 ppm	≤ 1000 mL/m <sup>3</sup>	1,000 ppm	500 ml/m <sup>3</sup>
<b>CO</b>	5 ppm	≤ 10 mL/m <sup>3</sup>	10 ppm	5 ml/m <sup>3</sup>
<b>H<sub>2</sub>O</b>	PDP: < -11 °C 1) H <sub>2</sub> O: <35 mg/m <sup>3</sup> 2) H <sub>2</sub> O: <25 mg/m <sup>3</sup>	ADP: ≤ -45.6 °C	---	---
<b>VOC (Oil Vapor)</b>	0.5 mg/m <sup>3</sup>	≤ 5.0 mg/m <sup>3</sup> (Oil mist and particle)	5 mg/m <sup>3</sup>	1 mg/m <sup>3</sup>
<b>Odor</b>	No	No	No	No

## Why is breathing air quality testing and monitoring important?

- ✓ It protects the health, safety and well-being of your employees and people who are on your premises.
- ✓ It ensures that your compressor, products and personnel are protected from airborne volatile organic compounds (VOCs) as well
- ✓ It ensures that your business complies with national and international regulatory standards for breathing air quality.
- ✓ It ensures that your compressed air and work environment have safe levels of oxygen, lubricants, oil, odor, taste, carbon dioxide, carbon monoxide and water.

## Dimensions



# Technical Data

## Measurement

### Oxygen O<sub>2</sub>

Accuracy	± 0.25 % @25 °C
Measuring range	0 ... 25 %
Resolution	0.1 %
Sensor	Optical oxygen sensor
Sensor lifetime	> 5 years

### Carbon Dioxide CO<sub>2</sub>

Accuracy	± 1 % of reading ± 25 ppm
Measuring range	0 ... 1000 ppm
Resolution	1 ppm
Sensor	NDIR sensor
Sensor lifetime	> 5 years

### Carbon Monoxide CO

Accuracy	± 5 % of reading ± 1 ppm
Measuring range	0 ... 20 ppm
Resolution	0.1 ppm
Sensor	Electrochemical sensor
Sensor lifetime	2 years

### Humidity H<sub>2</sub>O

Accuracy	± 1 °C Td (0 ... 20 °C Td) ± 2 °C Td (-70 ... 0 °C Td) ± 3 °C Td (-100 ... -70 °C Td)
Measuring range	-100 ... +20 °C Td / 0 ... 17458.6 mg/m <sup>3</sup>
Resolution	0.1 °C Td
Sensor	QCM + Polymer
Sensor lifetime	> 10 years

### Oil Vapor (only for D500 0606)

Accuracy	5 % of reading ± 0.003 mg/m <sup>3</sup>
Measuring range	0.001 ... 5.000 mg/m <sup>3</sup> (Based on 1000 hPa(a), 20 °C, 0 % relative humidity)
Resolution	0.001 mg/m <sup>3</sup>
Sensor	Photo ionization detector
UV lamp lifetime	6,000 working hours or 1 year, whichever comes first

### Oil Mist and Particle (only for D500 1606)

Accuracy	15 % of reading ± 0.1 mg/m <sup>3</sup>
Measuring range	0.0 ... 10.0 mg/m <sup>3</sup> (Based on 1000 hPa(a), 20 °C, 0 % relative humidity)
Resolution	0.1 mg/m <sup>3</sup>
Sensor	Oil mist and particle sensor
Sensor lifetime	> 5 years

### Pressure

Accuracy	0.5 % FS
Measuring range	0 ... 16 bar(g)
Resolution	0.01 bar
Sensor	Piezo resistive pressure sensor

## Signal / Interface & Supply

### Fieldbus

Protocol	Modbus/RTU (RS485) Modbus/TCP (Ethernet)
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### Power supply

Voltage supply	100 ... 240 VAC, 50/60 Hz, 50 VA
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### Interface

USB	USB Micro with OTG support
M12	4G/LTE Modem

## General data

### Configuration

Others	Device comes pre-configured Configuration can be done via on-screen touch
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### Display

Integrated	5" color touch screen
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### Data Logger

Storage	Up to 3 million recorded data sets
Report	Integrated report generator for PDF export

### Material

Process connection	6 mm quick connector
Housing	Sheet steel, powder-coated on the outside (Stainless steel on request)

### Miscellaneous

Electrical connection	M12, PG plug, RJ45
Protection class	IP55
Water Inlet	G1 connector
Water Outlet	G1/8 connector
Dimensions	600 x 600 x 250 mm
Weight	34 kg

### Approvals

EMC	FCC, CE
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### Operating conditions

Measuring Medium	Compressed breathing air
Sample Flow Rate	6 LPM@0.4 MPa(g), depends on input pressure
Sample rate	1 sample/sec
Medium temperature	0 ... + 50 °C
Medium humidity	Medium humidity < 40 % rH, no condensation
Inlet Pressure	0.4 ... 1.5 MPa(g), External pressure reducer allow up to 35 MPa process pressure
Ambient temperature	0 ... + 50 °C
Ambient humidity	0 ... 90 % rH
Storage temperature	-10 ... +50 °C
Transport temperature	-10 ... +50 °C

# Ordering

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

## S606 Stationary Breathing Air Quality Analyzer

Order No.	Description
D500 0606	S606-I Stationary Breathing Air Quality Analyzer, touch screen interface, data logger, metal cabinet for wall mounting (with oil vapor sensor refer to Europe, USA, Canada standards)*
D500 1606	S606-C Stationary Breathing Air Quality Analyzer, touch screen interface, data logger, metal cabinet for wall mounting (with oil mist and particle sensor refer to China standards)*

\* Including:

- USB OTG memory stick
- Purge filter for pre-measurement (test kit)
- Connection hose 1.5 m, one end quick coupling, one end compressed air coupling
- M12 connector
- Certificate of calibration
- Operation and instruction manual

## S606 Accessories

Order No.	Description
A604 0001	Zero filter for oil vapor/oil mist and dew point sensor
A604 0004	Pressure reducer, inlet pressure 0 ... 30 MPa, outlet pressure 0.6 Mpa, incl. transport case
A1670	USB 4G dongle, including S4A software
A554 0131	4G USB Dongle protection case, with extension cable 2 m and M12 Connector
A1510	Relay module for S606, 8-ch Relay Output

## S606 Service and Calibration

Order No.	Description
R205 0606	S606 Exchange - Complete Rack with O <sub>2</sub> sensor, CO sensor, CO <sub>2</sub> sensor, Dew Point, Oil vapor
<b>Exchange units</b>	
R205 0620	CO exchange sensor unit S605/S606
R205 0621	CO <sub>2</sub> exchange sensor unit S605/S606
R205 0622	O <sub>2</sub> exchange sensor unit S605/S606
R205 0623	Oil mist and particle sensor exchange unit S605/S606
R205 0624	Oil vapor sensor exchange unit S605/S606
R205 0625	Dew Point sensor exchange unit S605/S606

