S606

Stationary Breathing Air Quality Analyzer

ALL IN ONE
O_2, CO_2, CO,
Dew Point,
Oil Vapor, Pressure

RELIABLE WARING
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 O₂, CO₂, 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

Contant 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_2, CO_2, 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.

It is smarter, faster and more convenient than the traditional methods.

Monitoring of all breathing air parameters

O₂	Oxygen	**CO**	Carbon Monoxide
CO₂	Carbon Dioxide	**H₂O**	Humidity
According to all relevant national and international standards		**OIL**	Oil Residues

4G Remote Connection to S4A Monitoring Software

S606

Modbus RTU / TCP
S4A Monitoring Software
Alarm Management

Breathing Air

Environment

Compressor

Purification

Air Receiver Tank

Reserve Air System

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

O₂

Oxygen Measurement
For safety reasons, it is recommended to measure the oxygen level in the breathing air. The optical oxygen sensor monitors the O_2 content and indicates deviations from the standard concentration.

CO₂

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_2. The gas is measured by the NDIR sensor to avoid extreme concentrations above 1000 ppm.

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.

H₂O

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.

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.

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
Standard	EN 12021	GB/T 31975-2015	CFSR	CSA
O_2	>20 %	19.5 - 23.5 %	19.5 - 23.5 %	20 – 22 %
CO_2	500 ppm	≤ 1000 mL/m³	1,000 ppm	500 ml/m³
CO	5 ppm	≤ 10 mL/m³	10 ppm	5 ml/m³
H_2O	PDP: < -11 °C 1) H_2O: <35 mg/m³ 2) H_2O: <25 mg/m³	ADP: ≤ -45.6 °C	---	---
VOC (Oil Vapor)	0.5 mg/m³	≤ 5.0 mg/m³ (Oil mist and particle)	5 mg/m³	1 mg/m³
Odor	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

600 mm
600 mm
250 mm
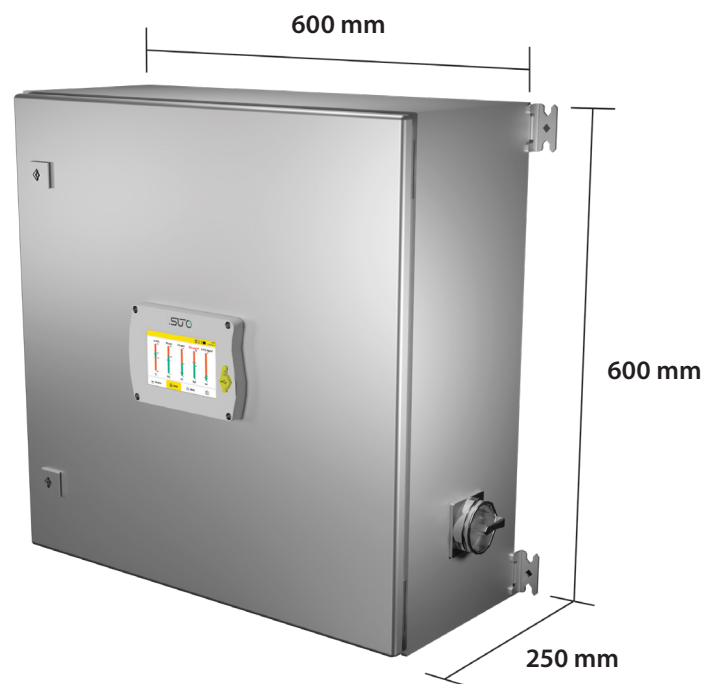
Technical Data

Measurement

Oxygen O_2

Accuracy	±(0.05 % O_2 + 1 % o.R.)
Measuring range	0 ... 25 %
Resolution	0.01 %
Sensor	Optical oxygen sensor

Carbon Dioxide CO_2

Accuracy	±(25 ppm CO_2 + 1 % o.R.)
Measuring range	0 ... 1000 ppm
Resolution	1 ppm
Sensor	NDIR sensor

Carbon Monoxide CO

Accuracy	±(1 ppm CO + 5 % o.R.)
Measuring range	0 ... 20 ppm
Resolution	0.1 ppm
Sensor	Electrochemical sensor

Humidity H_2O

Accuracy	±2 °C Td
Measuring range	-100 ... +20 °C Td / 0 ... 17458.6 mg/m³
Resolution	0.1 mg/m³
Sensor	QCM + Polymer

Oil Vapor

Accuracy	5 % of reading ± 0.003 mg/m³
Measuring range	0.001 ... 5.000 mg/m³ (Based on 1000 hPa(a), 20 °C, 0 % relative humidity)
Resolution	0.001 mg/m³
Sensor	Photo ionization detector

Oil Mist and Particle

Accuracy	15 % of reading ± 0.1 mg/m³
Measuring range	0.0 ... 5.0 mg/m³ (Based on 1000 hPa(a), 20 °C, 0 % relative humidity)
Resolution	0.1 mg/m³
Sensor	Oil mist and particle sensor

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)

Power supply

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

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

Display

Integrated	5" color touch screen

Data Logger

Storage	100 million measurement values
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	IP54
Water Inlet	G1 connector
Water Outlet	G1/8 connector
Dimensions	600 x 600 x 250 mm
Weight	34 kg

Approvals

EMC	FCC, CE

Operating conditions

Measuring Medium	Compressed breathing air
Sample Flow Rate	6 LPM@4 MPa(g), depends on input pressure
Sample rate	1 sample/sec
Medium temperature	0 ... +45 °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

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

S606 Stationary Breathing Air Quality Analyzer

Order No.	Description
KA66D5000606	S606 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)*
KA66D5001606	S606 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)*
KA66000A1670	USB 4G dongle, including S4A software
KA66A5540131	4G USB Dongle protection case, with extension cable 2 m and M12 Connector
KA66000A1510	Relay module for S606, 8-ch Relay Output

* 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

Accessories

Order No.	Description
KA66A5540602	Purity test kit consisting of zero filters for oil vapor, particles, and a desiccant cartridge for low dew point creation
KA66A5541203	Oil vapor zero filter, 1.5 MPa max, with quick connectors at both ends
KA66A5541204	Particle zero filter, 1.5 MPa max, with quick connectors at both ends
KA66A5541205	Dew point test kit for low dew point generation, with quick connectors at both sides
KA66A6040004	Pressure reducer, inlet pressure 0-30 MPa, outlet pressure 0.6 Mpa
KA66A6040005	Pressure reducer, inlet pressure 0-40 MPa, outlet pressure 0.6 Mpa

Service and Calibration

Order No.	Description
KA66R2000605	S606 General service and re-calibration • General inspection of the unit • Replacement of tubes and fittings • Cleaning of components • Calibration O_2, CO_2, CO, dew point sensor and oil vapor • Assembly and test of unit • Calibration Certificate

Exchange sensors

KA66R2000620	CO exchange sensor unit S605/S606
KA66R2000621	CO_2 exchange sensor unit S605/S606
KA66R2000622	O_2 exchange sensor unit S605/S606
KA66R2000623	Oil mist and particle sensor exchange unit S605/S606
KA66R2000624	Oil vapor sensor exchange unit S605/S606
KA66R2000625	Dew Point sensor exchange unit S605/S606