

**S120**

# Oil Vapor Monitor



**Opt. 1**

Without Display

**Opt. 2**

With Display



**ACCURATE RESULTS**  
Latest PID sensor technology



**TOUCH SCREEN**  
For easy operation



**EASY INSTALLATION**  
Plug and Play Solution



**COMPACT DESIGN**  
Fits into your application



**DATA LOGGER**  
Integrated as option



**DEW POINT SENSOR**  
Option:  
-100 ... +20 °C Td

## Benefits

- ✓ Plug & Play setup with quick connections. Can be used in portable and stationary applications.
- ✓ Oil vapor measurement in a range of 0.001 to 5.000 mg/m<sup>3</sup>
- ✓ Various output signals to connect the unit to building management systems
- ✓ PID sensor technology for fast response time and online monitoring
- ✓ Optional with integrated 5" touch screen display with data logger function
- ✓ Optional with integrated dew point measurement
- ✓ LED indications for status and alarms

## Simple Installation – Outstanding Performance

The S120 is designed to offer users an efficient way of measuring residual oil contents in a compressed air system.

The integrated automatic calibration compensates temperature and humidity drifts in the supplied air, resulting in most accurate, reliable and long term stable measurement results.

The simple plug & play installation, as well as its outstanding performance, makes the S120 the ideal choice when oil vapor needs to be measured and monitored.

## Applications

Oil free compressed air is not an easy task to be achieved. Monitoring is a must in many industries and applications to avoid contamination in products and risks for health of humans.

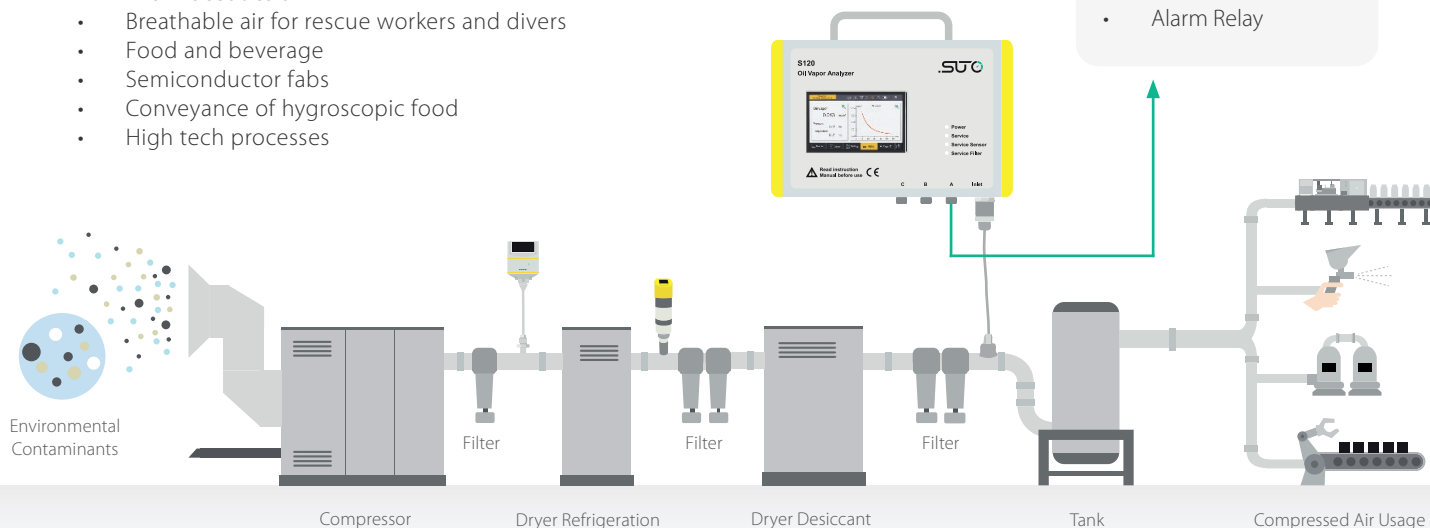
- Medical air
- Pharmaceuticals
- Breathable air for rescue workers and divers
- Food and beverage
- Semiconductor fabs
- Conveyance of hygroscopic food
- High tech processes

## Optional Integrated Dew Point Sensor

To ensure compressed air quality and purity, dew point measurement is an essential key parameter. Therefore, we offer an optional integrated Dew Point Sensor, -100 ... +20 °C Td, to measure both parameters in one compact device with an excellent price performance ratio.

### Output Signals

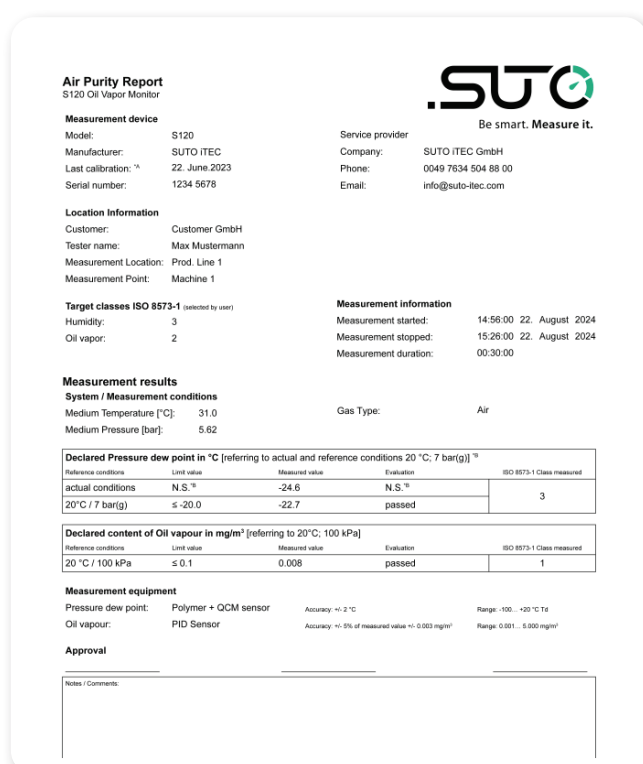
- 4 ... 20 mA analog output
- Modbus/RTU and Modbus/TCP (TCP only with Display version)
- Alarm Relay



These measures successfully reduced oil vapor levels, ensuring compliance with regulations and maintaining product quality



With the S120, maintaining air quality standards is efficient, accurate and straightforward.



The oil vapor monitoring system is equipped with the latest photoionization detector (PID) with automatic zero point calibration and offers a measuring range in accordance with ISO 8573-1 Class 1 to Class 4 with high precision and an accuracy of 5% of the reading  $\pm 0.003 \text{ mg/m}^3$ .



Advanced multiple sensor technology enables large measurement ranges, ensuring long-term stability with well-proven methods, and delivers high precision with an accuracy of  $\pm 2^{\circ}\text{C}$  Td.



The pressure measurement system utilizes state-of-the-art sensor technology to provide additional quality data about the compressed air system.



The integrated data logger records all channels in parallel for later analysis, enabling guided measurements and comprehensive data assessment.

## Technical Data

### Measurement

#### Oil Vapor

|                  |                                                                                              |
|------------------|----------------------------------------------------------------------------------------------|
| Measuring range  | 0.001 ... 5.000 mg/m <sup>3</sup><br>(Based on 1000 hPa(a), 20 °C,<br>0 % relative humidity) |
| Accuracy         | 5 % of reading ± 0.003 mg/m <sup>3</sup>                                                     |
| Resolution       | 0.001 mg/m <sup>3</sup>                                                                      |
| Selectable units | mg/m <sup>3</sup> / ppm                                                                      |
| Sensor principle | Photo ionization detector                                                                    |

#### Pressure

|                  |                                            |
|------------------|--------------------------------------------|
| Measuring range  | 0 ... 16 bar(g)                            |
| Accuracy         | 0.5 % FS                                   |
| Resolution       | 0.01 bar(g) / 0.001 MPa / 0.1 psi          |
| Selectable units | bar(g) (default), MPa and psi (on request) |
| Sensor principle | Piezo resistive pressure sensor            |

#### Dew Point (optional)

|                  |                                                                                          |
|------------------|------------------------------------------------------------------------------------------|
| Measuring range  | -100 ... +20 °C Td                                                                       |
| Accuracy         | ±1 °C Td (0 ... 20 °C Td)<br>±2 °C Td (-70 ... 0 °C Td)<br>±3 °C Td (-100 ... -70 °C Td) |
| Resolution       | 0.1 °C Td                                                                                |
| Selectable units | °C Td / °F Td                                                                            |
| Sensor principle | QCM + Polymer                                                                            |

#### Temperature

|                  |             |
|------------------|-------------|
| Measuring range  | 0 ... 50 °C |
| Accuracy         | 0.5 °C      |
| Resolution       | 0.1 °C      |
| Selectable units | °C / °F     |
| Sensor principle | NTC         |

### Signal / Interface & Supply

#### Outputs / Interface

|                    |                                                                                           |
|--------------------|-------------------------------------------------------------------------------------------|
| Analog output      | 4 ... 20 mA, isolated                                                                     |
| Alarm output       | Relay, NO, 40 VDC, 0.2A                                                                   |
| Digital interface  | Modbus/RTU (RS485)<br>Modbus/TCP (Ethernet) & USB<br>(only available for display version) |
| Display (optional) | 5" color touch screen with a data logger<br>of 30 million measurement values              |

#### Supply

|              |                    |
|--------------|--------------------|
| Power supply | 24 VDC ± 5 %, 10 W |
|--------------|--------------------|

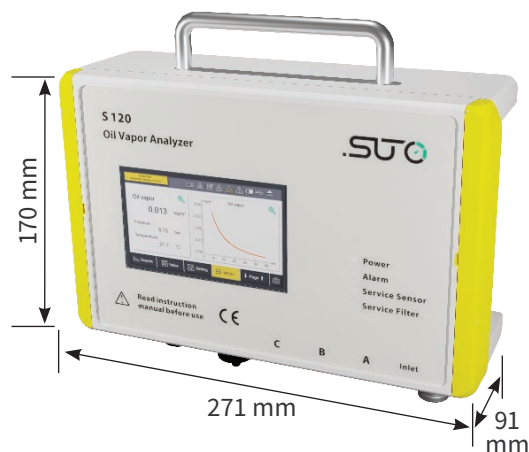
- Power
- Alarm
- Service Sensor
- Service Filter

LEDs indicate if pre-set alarms are reached, or if filters and sensors need to be serviced. The service indications start blinking 4 weeks before expiring and turn on permanently when a service is immediately required.

### General Data

|                             |                                                                                                                |
|-----------------------------|----------------------------------------------------------------------------------------------------------------|
| Measuring medium            | Compressed air, N <sub>2</sub> , CO <sub>2</sub><br>(for other gases please contact us)                        |
| Sample flow rate            | < 2 l/min, measuring gas is released to ambient                                                                |
| Sample rate                 | 1/sec                                                                                                          |
| Gas / Operating temperature | 0 ... + 50 °C                                                                                                  |
| Transport temperature       | -10 ... + 50 °C                                                                                                |
| Operating pressure          | 3 ... 15 bar(g)<br>0.5 ... 3 bar(g) (low pressure version only)<br>0.60 ... 1.07 bar(a) (ambient version only) |
| Gas humidity                | < 40 % rel. humidity, no condensation                                                                          |
| Gas connection              | 6 mm quick connect                                                                                             |
| UV lamp lifetime            | 6,000 working hours or 1 year, whichever comes first                                                           |
| Electrical connection       | M12, USB, RJ45                                                                                                 |
| Settings                    | Various sensor settings can be performed through SUTO display units or through the related service software    |
| Housing material            | PC, Al alloy                                                                                                   |
| Protection class            | IP65                                                                                                           |
| Dimensions                  | 271 x 231 x 91 mm                                                                                              |
| Weight                      | 2.4 kg                                                                                                         |
| Approval                    | CE                                                                                                             |

### Dimensions



# Ordering

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

## S120 Oil Vapor Monitor

| Order No. | Description                                                                                                                                                                                                                                                                                                                      |
|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| S604 1201 | S120 Oil Vapor Monitor, 0.001... 5.000 mg/m <sup>3</sup> , Modbus/RTU, 4...20 mA, Alarm Relay, Supply 24 VDC, incl.: Power Supply, 3 x M12 Plug, 1.5 m Teflon Hose with Quick Connector                                                                                                                                          |
| S604 1202 | S120 Oil Vapor Monitor for S551, 0.001... 5.000 mg/m <sup>3</sup> , Modbus/RTU, 4...20 mA, Alarm Relay, Supply 24 VDC, incl.: Power Supply, 3 x M12 Plug, 1.5 m Teflon Hose with Quick Connector, Transport Case, S551 5m connection cable                                                                                       |
| S604 1203 | S120 Oil Vapor Monitor, 0.001... 5.000 mg/m <sup>3</sup> , with integrated Touch-Screen Display and Data Logger, Modbus/RTU, Modbus/TCP, 4...20 mA, Alarm Relay, Supply 24 VDC, incl.: Power Supply, 3 x M12 Plug, 1.5 m Teflon Hose with Quick Connector                                                                        |
| S604 1204 | S120 Oil Vapor Monitor, 0.001... 5.000 mg/m <sup>3</sup> , Low Pressure Version 0.5... 3.0 bar(g), with integrated Touch-Screen Display and Data Logger, Modbus/RTU, Modbus/TCP, 4...20 mA, Alarm Relay, Supply 24 VDC, incl.: Power Supply, 3 x M12 Plug, 1.5 m Teflon Hose with Quick Connector                                |
| P604 1205 | S120 Portable Oil Vapor Monitor, 0.001... 5.000 mg/m <sup>3</sup> , with integrated Touch-Screen Display and Data Logger, Modbus/RTU, Modbus/TCP, 4...20 mA, Alarm Relay, Supply 24 VDC, incl.: Power Supply, 3 x M12 Plug, 1.5 m Teflon Hose with Quick Connector, Transport Case                                               |
| P604 1215 | S120 Ambient Portable Oil Vapor Monitor, 0.001... 5.000 mg/m <sup>3</sup> , internal Vacuum Pump for Ambient Air, with integrated Touch-Screen Display and Data Logger, Modbus/RTU, Modbus/TCP, 4...20 mA, Alarm Relay, Supply 24 VDC, incl.: Power Supply, 3 x M12 Plug, 1.5 m Teflon Hose with Quick Connector, Transport Case |
| A1250     | S120 Option with integrated Dew Point Sensor, -100... +20 °C Td (only for S604 1203, S604 1204 and P604 1205)                                                                                                                                                                                                                    |

## S120 Calibration

| Order No. | Description                                                                                                                                                                                                                                                                                                                                                 |
|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| R200 0120 | S120 General service and re-calibration (for all models without Dew Point Sensor option A1250):<br>- General inspection of the unit<br>- Replacement of tubes and fittings<br>- Cleaning of lamp and sensor<br>- Assembly and test of unit<br>- Calibration of oil sensor<br>- Calibration Certificate                                                      |
| R200 0121 | S120 General service and re-calibration with dew point sensor option (for S604 1203 and P604 1205 with Dew Point Sensor Option A1250):<br>- General inspection of the unit<br>- Replacement of tubes and fittings<br>- Cleaning of lamp and sensor<br>- Assembly and test of unit<br>- Calibration of oil sensor / Accessories<br>- Calibration Certificate |

## S120 Accessories

| Order No. | Description                                                                                                                                                |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A554 1203 | Oil vapor zero filter for checking purpose, 1.5 MPa max, quick connectors at in- and outlet, creates 0.001 mg/m <sup>3</sup> to check the S120 performance |
| A554 1207 | Replacement kit, zero filter material for A554 1203                                                                                                        |
| A554 0120 | Transport Casing S120/S130, custom fit for the device and accessories                                                                                      |



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