



GAS DETECTOR ST450EC

PART.NO. 1228000-1228006

DETECTION OF TOXIC GASES AND OXYGEN

GENERAL DESCRIPTION

- Detection of toxic gases and Oxygen
- All-round industrial gas detector!
- ATEX / IECEx approved
- Touch screen experience, control without additional tools
- Self-diagnostics
- Reliable sensor technology

The **ST450EC** is an all-round gas detector which functions well under the most difficult circumstances. The heart of the detector is a replaceable gas sensor, which is available for Oxygen, Toxic gases and Hydrogen. The measuring principle is based on an electrochemical sensor, which is developed to meet the highest standards. The sensor has an outstanding stability, which achieves long-term reliability. The high selectivity of the sensors minimalizes "false" readings.

The **ST450EC** comes standard with a graphic display. The display shows the measured value and various status notifications locally. The capacitive key control gives you an experience similar to a touchscreen and enables easy navigation through the user/calibration menu.

The user menu is secured with a password, unauthorized users cannot access the gas detector. The control of the user/calibration menu *does not* require additional tools (for example magnets). Simple, easy and user friendly! The user menu provides different features, such as a zero and span calibration, adjusting alarm set points (local alarm indication through notifications on the display and bright colored LED), showing set points, diagnostic information and simulation of the output signal (4-20mA) for loop testing.

The **ST450EC** is **Ex d** and **Ex t** approved (ATEX and IECEx).

This makes the sensor an all-round gas detector and useful in GAS and DUST zones. The gas detector can be used in Ex applications (zone 1/2 and 21/22). Without having a zener barrier. This reduces investment costs directly.

APPLICATIONS:

- + Water Industry
- + Refineries
- + Oil & Gas Industry
- + Food Industry
- + Pharmaceutical Industry
- + Steel Industry
- + Laboratory / Universities









WE OFFER MORE THAN A PRODUCT!

- + Tailored advice
- + Project advice
- + Technical support
- + Training and education
- + Commissioning
- + Onsite service / maintenance / calibration

ORDERING INFORMATION

GAS DETECTOR					
TYPE	RANGE	PART NO.		OPERATING TEMPERATURE	RELATIVE HUMIDITY (N.C.)
		ALUMINUM	STAINLESS STEEL		
ST450EC-O ₂	0-25 Vol.%	I228000	I228000/SS	-20 to +55 °C*	5-95%
ST450EC-H ₂ S	0-30 ppm	I228001	I228001/SS	-20 to +50 °C	15-90%
ST450EC-H ₂ S	0-50 ppm	I228002	I228002/SS	-20 to +50 °C	15-90%
ST450EC-H ₂ S	0-100 ppm	I228003	I228003/SS	-20 to +50 °C	15-90%
ST450EC-CO	0-500 ppm	I228004	I228004/SS	-20 to +50 °C	15-90%
ST450EC-H ₂	0-1000 ppm	I228005	I228005/SS	-20 to +40 °C	15-95%
ST450EC-H ₂	0-100 %LEL	I228006	I228006/SS	-20 to +40 °C	15-95%

* Acc. EN 50104 -10 to +50°C / 15 to 95 rH.N.C

ACCESSORIES			
TYPE	IMAGE	PART NO.	DESCRIPTION
Signal cable		4002426	2 core shielded cable, 2x0,75 mm ² (flexible cores), per meter
Duct mounting set		4002723	Duct mounting set for mounting in ventilation ducts
Splash guard		4002716	Environmental sensor protection, incl. splash water
Inline flow adapter		4002720	Inline flow adapter for sample applications, connection 2x6mm, SS
Protective hood		4002714	Protective hood SS, for optimal protection in "wet" production areas, dim. 315x300x138 mm
Isolation set EMC/RFI		4002440	Isolation plate EMC/RFI, 160x160 mm
Protective bracket		4002713	SS bracket, extra protection for use in e.g. warehouses
Conical collector hood		4000657	Conical hood for ascending gases

ORDERING INFORMATION

SPARE PARTS / CONSUMABLES

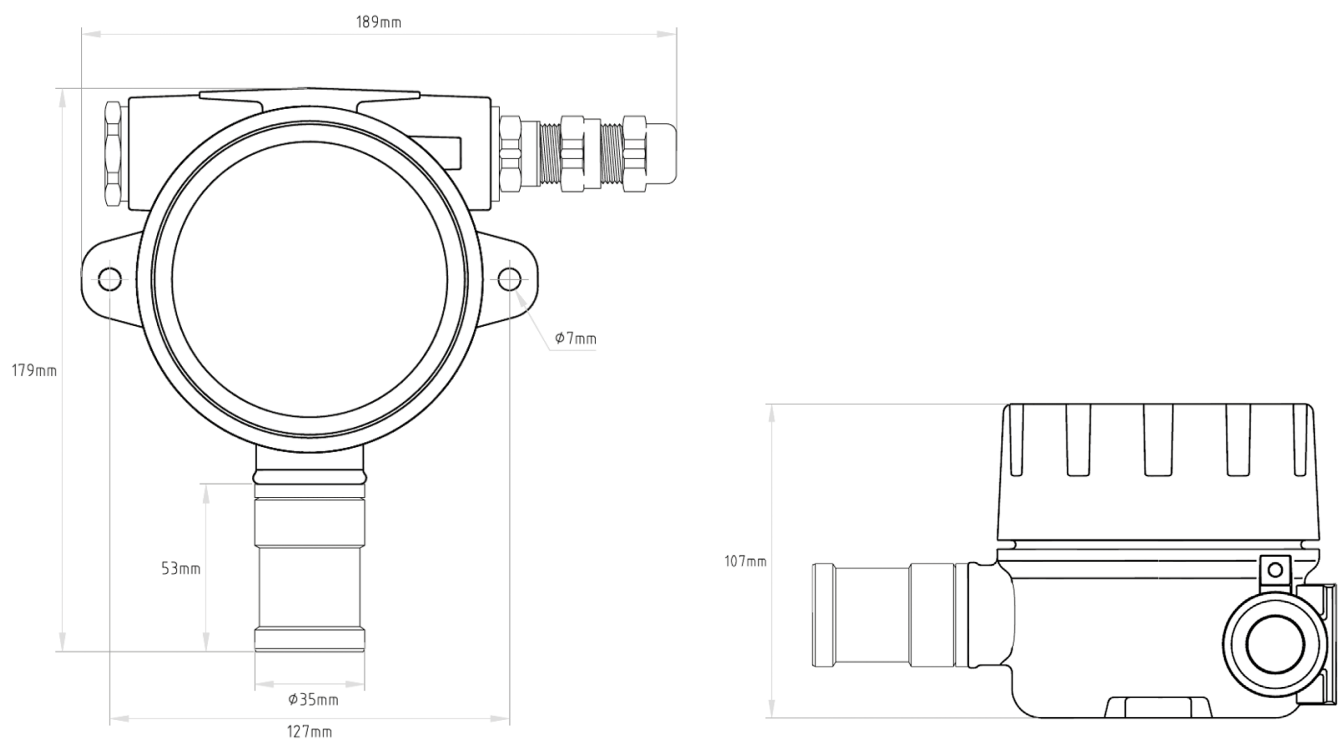
SPARE GAS SENSOR	PART NO.	RANGE	DESCRIPTION
Type O ₂	1228600	0-25 Vol.% O ₂	Oxygen sensor
Type H ₂ S	1228602	30 / 50 / 100 ppm H ₂ S	Hydrogen sulfide sensor
Type CO	1228604	0-500 ppm CO	Carbon monoxide sensor
Type H ₂	1228605	0-1000 ppm H ₂	Hydrogen ppm sensor
Type H ₂	1228606	0-100 %LEL H ₂	Hydrogen LEL sensor

TEST GASES AND ACCESSORIES

TYPE	PART NO.	DESCRIPTION
BUGAS, 100 Vol.% N ₂	9990524	Nitrogen, 100 Vol.%, 110 gas liters
BUGAS, 20,9% O ₂ / N ₂	9990537	Synthetic air, 20,9% O ₂ / 79% N ₂ , 110 gas liters
BUGAS, 10 ppm H ₂ S	9990540	Hydrogen sulfide, 10 ppm in air, 58 gas liters
BUGAS, 25 ppm H ₂ S	9990507	Hydrogen sulfide, 25 ppm in air, 58 gas liters
BUGAS, 50 ppm CO	9990505	Carbon monoxide, 50 ppm in air, 110 gas liters
BUGAS, 100 ppm CO	9990522	Carbon monoxide, 100 ppm in air, 110 gas liters
BUGAS, 500 ppm CO	9990534	Carbon monoxide, 500 ppm in air, 110 gas liters
BUGAS, 200 ppm H ₂	9990542	Hydrogen, 200 ppm in air, 110 gas liters
BUGAS, 2 Vol.% H ₂	9990506	Hydrogen, 2 Vol.% in air, 110 gas liters
Calibration adapter	4002715	Stainless Steel / calibration flow adapter
Gas hose	1225819	Flexible tubing, Ø 6mm, per meter
Flow regulator brass	9990600	Flow regulator Chrome / brass nickleplated (applicable for 58/110 gas liters), fixed flow 0,5 l/min
Flow regulator SS	9990601	Fixed Flow regulator SS (applicable for 58/110 gas liters), fixed flow 0,5 l/min

Consilium offers a wide range of test gases, if the required test gas is not listed, please contact us.

DIMENSIONS

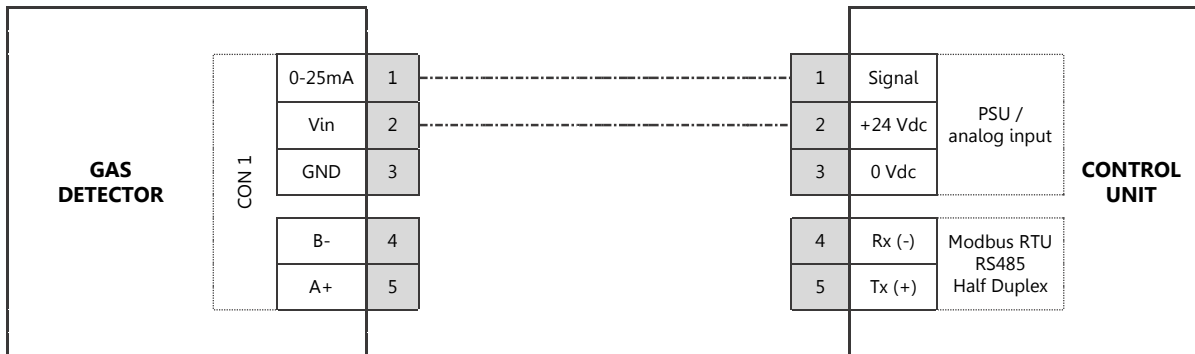


The specifications described herein are subject to change without notice.

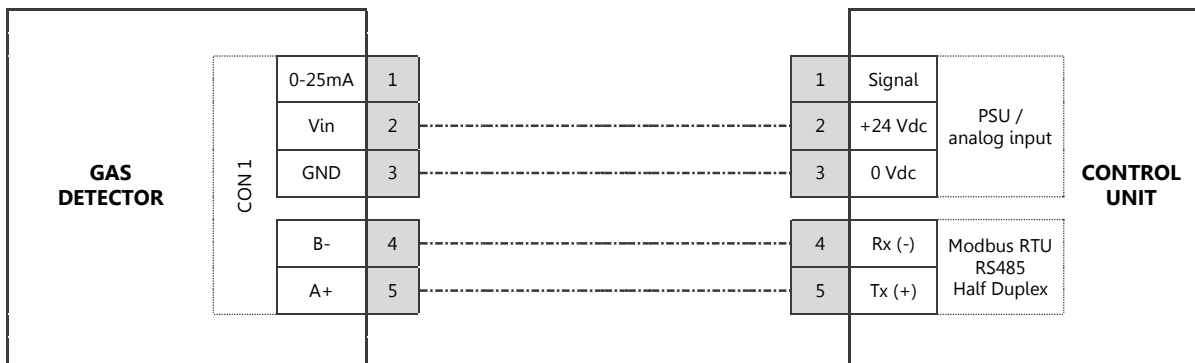
DATA SHEET ST450EC no. 1228000-1228006_EN_2021_v2.06

CONNECTION DIAGRAM GAS DETECTOR

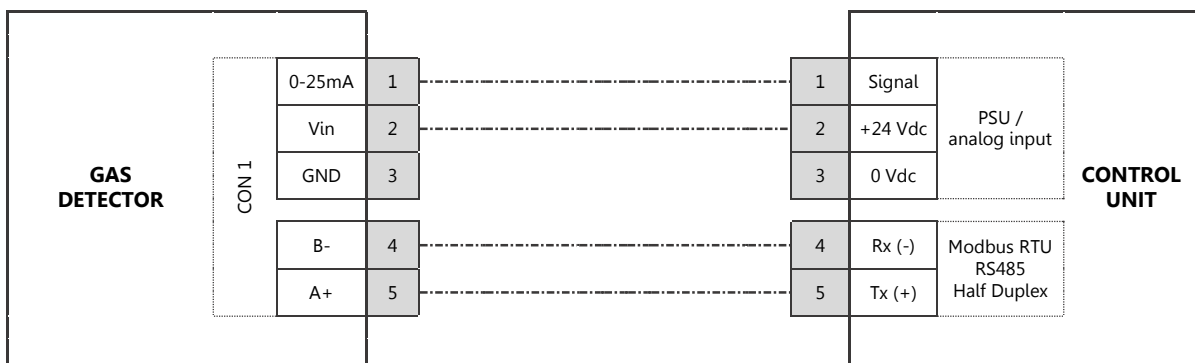
ST450EC used as 4-20mA transmitter (2 wires):



ST450EC used as MODBUS slave device:



ST450EC used as MODBUS slave device and 2 wire 4-20 mA transmitter:



SPECIFICATIONS

PRODUCT	ST450EC
Gas type	Oxygen, Hydrogen and Toxic gases (O ₂ , H ₂ S, CO, H ₂)
Sensor type	Electrochemical sensor (2 or 3 electrodes)
Range	Oxygen (O ₂), 0-25 Vol.% Hydrogen sulfide (H ₂ S), 0-30 / 50 / 100 ppm Carbon monoxide (CO), 0-500 ppm Hydrogen (H ₂), 0-1000 ppm / 0-100 %LEL
Display	Digital graphic display with backlight
Status LED display	Green: OK, Red: Alarm, Yellow: SF (System Failure), Blue: User menu active
Power supply	17.5-24VDC (max. 120 mA)
Outputs	Analogue: 4-20 mA (2 mA system failure, >20 mA overrange) Digital: RS485 Modbus RTU (half-duplex)
Signal cable	2-wire shielded, 0.75 ... 2.5 mm ² (excluding earth connection and Modbus)
Cable gland	Standard Brass, optional SS (thread M20x1.5)
Load impedance	max. 300 Ω at 24VDC
Operating temperature	See table "Order information"
Relative humidity	See table "Order information"
Pressure range	Toxic: Atmospheric ± 10%, Oxygen: 80 to 120 kPa
Enclosure	Aluminum with coating, optional SS
Dimensions	179 x 189 x 107 mm (HxWxD)
Weight	1.8 kg (Alu), 3.15 kg (SS)
Ingress Protection	IP 66 (Sensor IP 6x)
Enclosure gas sensor	SS 316
CE marking	ATEX (Directive 2014/34/EU) Electromagnetic Compatibility (Directive 2014/30/EU)
Approvals	ATEX II 2G Ex db IICT6 Gb II 2D Ex tb IIIC T85°C Db IECEX Ex db IICT6 Gb Ex tb IIIC T85°C Db
Type examination	Oxygen: EN 50104:2010, EN 50271:2010 H ₂ S: EN 45544-1:2015, EN 45544-3:2015, EN 50270:2015, EN 50271:2010
Manufacturer	BUVECO Gasdetection BV, a Consilium Group Company

