



G015547

# Gas detector

## **ST450 EC**

Part no. 5150129-5150142

System: CGD50/500, CGS50/500

### General description

- The ultimate gas detector that ensures safety
- ATEX / IECEx approved
- Cost saving, no zener barrier required for Ex applications
- Allowed in Ex zones 1 and 21
- Touch screen experience, control without additional tools
- Self-diagnostics
- Reliable sensor technology
- Splashguard included

The ST450 EC 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 and toxic gases. 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 minimizes "false" readings.

The ST450 EC comes as standard with a graphic display. The display shows the measured value and various status notifications locally. The display is also equipped with backlight allowing easy and simple control in dark areas. 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 (4-20 mA) for loop testing.

The ST450 EC 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

- Wastewater plants
- Refineries
- Confined spaces
- Food industry
- Marine
- Silo storage
- Steel industry

**Data**

Gas type	Oxygen, Hydrogen sulfide, Carbon monoxide, Hydrogen, Nitric oxide, Nitrogen dioxide	Pressure range	Toxic: Atmospheric $\pm$ 10% Oxygen: 80 to 120 kPa
Sensor type	Electrochemical sensor (2 or 3 electrodes)	Enclosure	Aluminium with coating, optional SS
Range	Oxygen (O <sub>2</sub> ), 0-25 Vol.% Hydrogen sulfide (H <sub>2</sub> S), 0-30 / 50 / 100 ppm Carbon monoxide (CO), 0-100/500 ppm Hydrogen (H <sub>2</sub> ), 0-1000 ppm / 0-100 %LEL Nitric oxide (NO), 0-100 ppm Nitrogen dioxide (NO <sub>2</sub> ), 0-20 ppm	Dimensions (H × W × D)	179 × 189 × 107 mm
Display	Digital graphic display with backlight	Weight	1.5 kg $\pm$ 5% (Al) 2.6 kg $\pm$ 5% (SS)
Status LED	Green: OK Red: Alarm Yellow: System failure	Enclosure gas sensor	SS 316
Power supply	18-30 V DC	Certification	ATEX -  (Directive 2014/34/EU) Electromagnetic Compatibility (Directive 2014/30/EU)
Power consumption	< 2.4 mA = system error 4-20 mA = normal operation > 22 mA = overload	ATEX approvals	II 2G Ex db IIC T6 Gb II 2D Ex tb IIIC T85°C Db
Note!	Maximum 120 mA according to certification	ATEX Certificate No	KIWA 16ATEX0008 X
Outputs	4-20 mA, RS485 Modbus RTU (half-duplex) 2 mA system failure, >20 mA over range	IECEX approvals	Ex db IIC T6 Gb Ex tb IIIC T85°C Db
Signal cable	2-wire shielded, 0.75 - 2.5 mm <sup>2</sup>	IECEX Certificate No	IECEX KIWA 16.0003X
Cable gland	Aluminium housing: Brass / SS housing SS (thread M20x1.5)	 <b>NOTE!</b> More information can be found in the sensor datasheets.	
Load impedance	Max. 300 $\Omega$ at 24 V DC	 <b>NOTE!</b> For use in hazardous areas see Consilium ST450 Manual.	
Operating temperature	See table in the <a href="#">Ordering Information</a> section of this data sheet.	Consilium Salsmästaregatan 21, SE-422 46 Gothenburg spares.se@consiliumssafety.com	
Ingress protection	Enclosure: IP66 <sup>1</sup> Sensor: IP6X	Manufacturer: Buveco Gasdetection BV Zuidpool 9, 2801 RW Gouda The Netherlands	
Relative humidity	See table in the <a href="#">Ordering Information</a> section of this data sheet.		

1) IP ratings do not imply that the equipment will detect gas during and after exposure to those conditions.

## Ordering Information

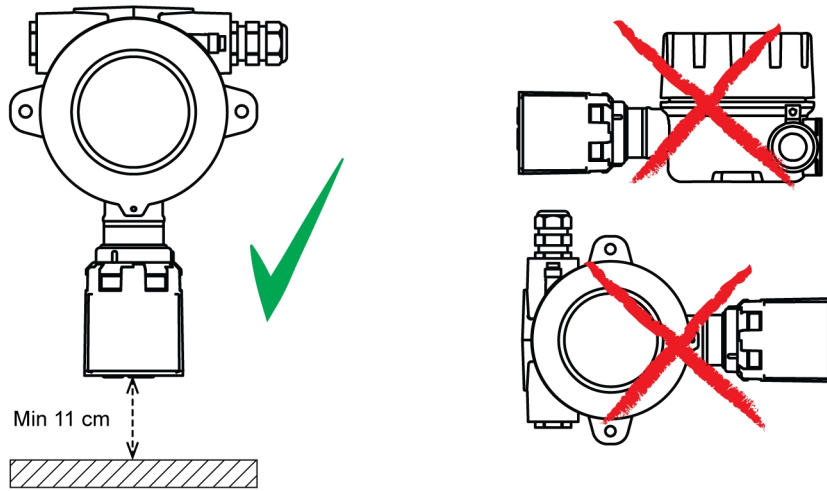
Gas detector					
Type	Range	Part no.		Operating temperature	Relative humidity
		Aluminium	Stainless Steel		
ST450 EC-O <sub>2</sub>	0-25 Vol.%	5150129-00A	5150130-00A	-20 °C to +55 °C	5-95% RH (n.c.)
ST450 EC-H <sub>2</sub> S	0-30 ppm	5150131-00A	5150132-00A	-20 °C to +50 °C	5-90% RH (n.c.)
ST450 EC-H <sub>2</sub> S	0-50 ppm	5150133-00A	5150134-00A	-20 °C to +50 °C	15-90% RH (n.c.)
ST450 EC-H <sub>2</sub> S	0-100 ppm	5150135-00A	5150136-00A	-20 °C to +50 °C	15-90% RH (n.c.)
ST450 EC-CO	0-500 ppm	5150137-00A	5150138-00A	-20 °C to +50 °C	15-90% RH (n.c.)
ST450 EC-H <sub>2</sub>	0-1000 ppm	5150139-00A	5150140-00A	-20 °C to +40 °C	15-95% RH (n.c.)
ST450 EC-H <sub>2</sub>	0-100 %LEL	5150141-00A	5150142-00A	-20 °C to +40 °C	15-95% RH (n.c.)
ST450 EC-NO	0-100 ppm	5101160-00A	–	-20 °C to +40 °C	15-95% RH (n.c.)
ST450 EC-NO <sub>2</sub>	0-20 ppm	5101161-00A	–	-20 °C to +40 °C	15-95% RH (n.c.)
ST450 EC-CO	0-100 ppm	5101162-00A	–	-20 °C to +50 °C	15-90% RH (n.c.)

Accessories		
Type	Part no.	Description
Splash guard	5150227-00A	Sensor protection against splash water
Inline flow adapter	5150228-00A	Inline flow adapter for sample applications, connection 2×6 mm, SS
Protective hood	5150226-00A	Protective hood SS, for optimal protection in "wet" protection areas, dim. 315×300×138 mm
Isolation set EMC/RFI	5150231-00A	Isolation board, 160×160 mm
Protective bracket	5150225-00A	SS bracket, extra protection for use in warehouses

Spare parts / consumables			
Spare gas sensor	Part no.	Range	Description
BUSENS D, type O <sub>2</sub>	5150234-00A	0-25 Vol.% O <sub>2</sub>	Oxygen sensor
BUSENS D, type H <sub>2</sub> S	5150235-00A	0-30 ppm H <sub>2</sub> S	Hydrogen sulfide sensor
BUSENS D, type H <sub>2</sub> S	5150236-00A	0-50 / 100 ppm H <sub>2</sub> S	Hydrogen sulfide sensor
BUSENS D, type CO	5150237-00A	0-100 / 0-500 ppm CO	Carbon monoxide sensor
BUSENS D, type H <sub>2</sub>	5150238-00A	0-1000 ppm H <sub>2</sub>	Hydrogen ppm sensor
BUSENS D, type H <sub>2</sub>	5150239-00A	0-100 %LEL H <sub>2</sub>	Hydrogen LEL sensor
BUSENS D, type NO	5101163-00A	0-100 ppm NO	Nitric oxide sensor
BUSENS D, type NO <sub>2</sub>	5101164-00A	0-20 ppm NO <sub>2</sub>	Nitrogen dioxide sensor

## Mounting

Mount the detector in a vertical position, with the sensor pointing downwards.



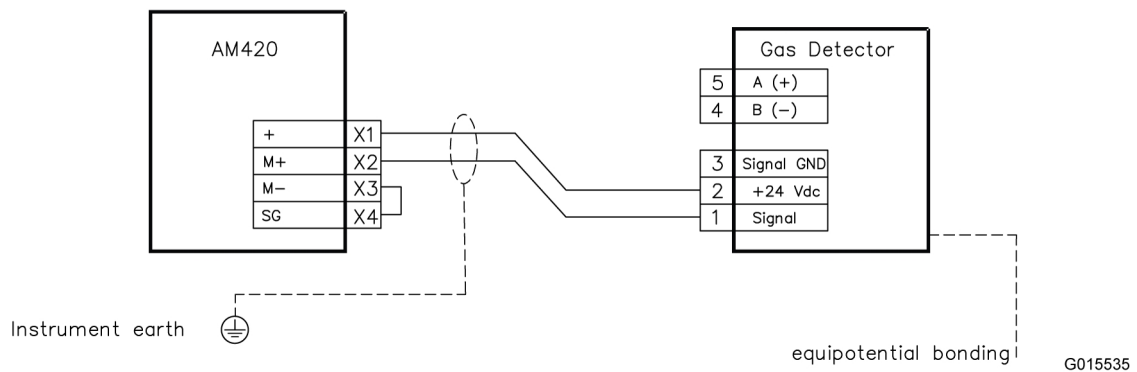
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### NOTE!

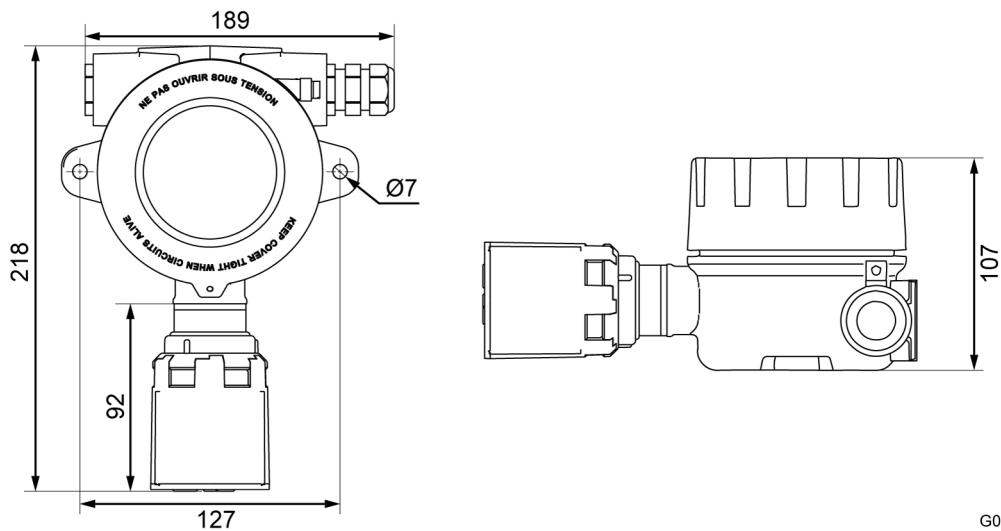
Leave at least 11 cm free space below the sensor head to ensure that the splashguard can be removed during sensor exchange. This also allows connection of a hose for bump tests.

## Connections



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## Dimensions (mm)



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