



G015548

Gas detector

ST650 CO₂

Part no. 5150143-5150150

System: CGD50/500, SW2020

General description

- Carbon dioxide (CO₂) gas detector
- ATEX / IECEx approved
- Graphic display
- Touch screen experience, control without additional tools
- Self-diagnostics
- Reliable sensor technology
- Splashguard included

The ST650 CO₂ is an all-round gas detector which is suitable for a large number of applications where carbon dioxide forms a risk. The measuring principle consists of an infrared sensor (NDIR) with a high durability. The sensor offers a long term stability and has a long life-span, which achieves an optimal cost of ownership.

The ST650 CO₂ is available with or without a graphic display. The graphic display shows the measured value and status notifications locally. The capacitive key control gives you an experience similar to a touchscreen and does not require any additional tools, such as magnetic wands for instance. 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. 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.



Remote applications

A remote application allows the user to mount the sensor separately from the transmitter. Remote sensors are ideal for applications where the gases present ascend, i.e. gases lighter than air. Detection areas located high above ground makes it difficult to reach the detector for maintenance etc. When using a remote sensor, the sensor itself will be mounted in the high location and the transmitter will be mounted within close reach. This makes maintenance quick and easy and therefore cost effective. Cable lengths up to 150 meters are supported between the transmitter and the sensor (depending on the type).

Applications

- Chemical industry
- Refineries
- Wastewater plants
- Boiler rooms
- Marine
- Storage of packed dangerous substances
- Food industry

Data

Gas type	Carbon dioxide (CO ₂)	Relative humidity	15-95% RH (non-condensing)
Sensor type	Infrared (NDIR)	Pressure range	700 to 1300 hPa
Range	0-5 Vol.%	Enclosure	Aluminium with coating, optional SS
Display (optional)	Digital graphic display with backlight	Dimensions (H × W × D)	179 × 189 × 107 mm
Status LED	Green: OK Red: Alarm Yellow: System failure	Weight	1.5 kg ± 5% (Al) 2.6 kg ± 5% (SS)
Power supply	17.5-24 V DC (max. 120 mA)	Enclosure gas sensor	SS 316
Outputs	4-20 mA, RS485 Modbus RTU (half-duplex) 2 mA system failure, >20 mA over range	Certification	ATEX (Directive 2014/34/EU)  Electromagnetic Compatibility (Directive 2014/30/EU)
Signal cable	3-wire shielded, 0.75 - 2.5 mm ²	ATEX approvals	Compact/remote: II 2G Ex d IIC T6 Gb II 2D Ex tb IIIC T85°C Db
Cable gland	Aluminium housing: Brass / SS housing SS (thread M20×1.5)	IECEx approvals	Compact/remote: Ex d IIC T6 Gb Ex tb IIIC T85°C Db
Load impedance	Max. 400 Ω at 24 V DC	 NOTE! More information can be found in the sensor datasheets.	
Operating temperature	IR versions: -20 °C to +50 °C		
Ingress protection	Enclosure: IP66 ¹ Sensor: IP6X		

Ordering Information

Gas detector				
Type	Part no.			
	Standard	LCD	Remote	LCD + Remote
Aluminium	5150143-00A	5150145-00A	5150147-00A	5150149-00A
Stainless Steel	5150144-00A	5150146-00A	5150148-00A	5150150-00A

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 2×6mm, SS
Protective hood	5150226-00A	Protective hood, 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
ST650 CO ₂ , Sensor	5150244-00A	0-5 Vol.% CO ₂	Infrared sensor (NDIR), Carbon dioxide

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



Standard



With LCD

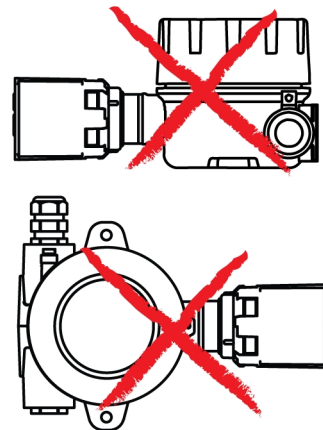
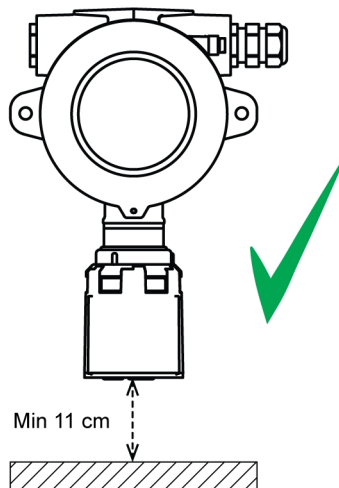


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Remote with LCD

Mounting

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



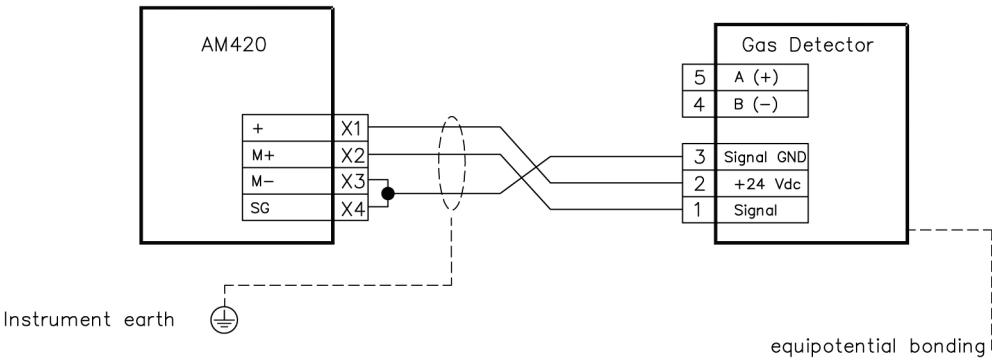
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NOTE!

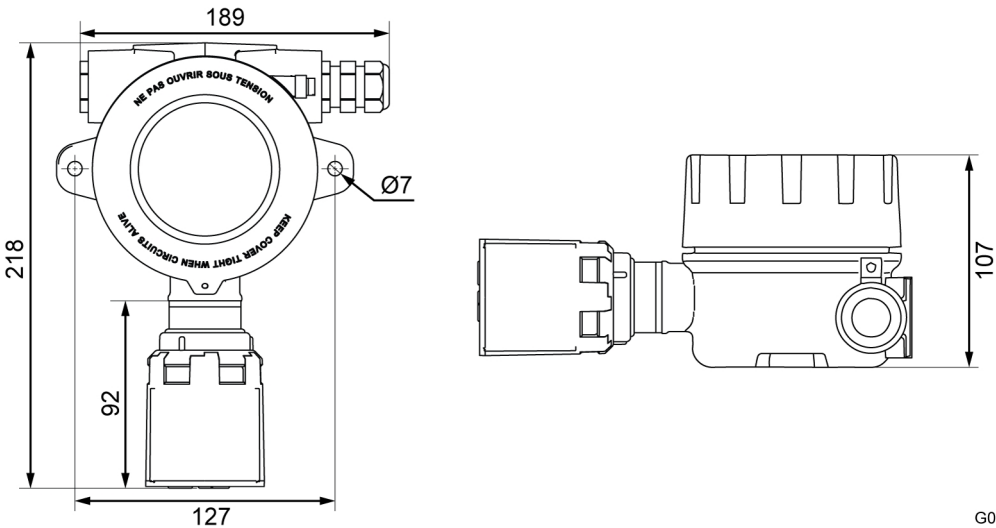
Leave at least 11 cm free space below the sensor head to ensure that the splashguard can be removed during sensor exchange. This also allows connection of a hose for bump tests.

Connections



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Dimensions (mm)



G015530