PRODUCT DATASHEET

AutroGuard® Multicriteria Protector with integrated CO sensor V-430-S-CO

Features

- MultiAngle/MultiWavelength optical smoke sensing technology
- Integrated CO sensor
- CO sensor lifetime of 10 years
- Integrated sounder
- Rate of Rise Heat sensing technology
- 3 certified smoke sensitivity classes
- 6 certified Heat Response Categories *
- Occupies only one address
- 360° visible dual color LED indicator (red/yellow)
- Ultra-low current consumption
- Automatic addressing in the base
- Patented rotatable bayonet ring for easy and reliable mounting
- Integrated short circuit isolator in the base
- Integrated tag holder on the base

Application/Description

AutroGuard® V-430-S-CO is a fire detector with integrated carbon monoxide sensor and sounder. The CO sensor is used as a support for fire detection, making the detector immune to nuisance sources like dust, artificial smoke, cooking fumes, steam etc. It is also possible to configure the detector to use the presence of CO to speed up fire detection, since CO can be detected earlier in some types of fires. The detector is certified according to EN 54 part 5 and 7 as a smoke and heat detector.

It provides a new generation technology that simplifies installation and commissioning, and increases fire safety.

Extreme sensor dynamics provide reliable detection that has greatly reduced detection time and nuisance alarms, and expanded the use to cover even more application areas.

It has a wide range of fire safety features included in one single device, providing significant reduction of wiring and installation costs - and a cleaner look.

The SelfVerify technology ensures that the protector is as reliable as when it left the factory for its entire life cycle.

DYFI³ᴰ technology

AutroGuard® utilizes *DYFI³ᴰ* technology; MultiAngle/MultiWavelength detection with advanced algorithms analyze the unique signatures for each type of fire and nuisance source in a 3D space, enabling the protector to accurately distinguish between real fires and nuisance alarm sources. The level of CO is used to eliminate nuisance alarms and to speed up fire detection.

SelfVerify®

The SelfVerify® system function provides a calibrated and automatic self-test every 24 hours. It tests the signal path to the system panel, alarm devices and output units. In this way, the self-test ensures that the protector is able to initiate an alarm when it should, and at the correct sensitivity level according to EN 54 part 5 and 7 throughout its lifetime.

Additionally, an advanced Pulse Response Signal analysis is run every other second, verifying 100 % of the components in the signal chain and 99% of the components in the protector.

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* Autroprime systems support only Heat Response Category A1S.

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Cover Detection

AutroGuard® provides Cover Detection. Infrared light is used to detect if the protector is covered by a dust cap or any other object, and a fault message will appear. The feature can be turned off during maintenance.

Cover Detection is not available with Autroprime.

Integrated sounder

AutroGuard® V-430-S-CO is delivered with an integrated EN 54-3 approved sounder. Sound patterns and sound levels are configurable, with a maximum sound output of 93 dBA at 1 m range.

EN54 Heat response categories

AutroGuard® can be set to six different heat response categories (EN 54-5). [*]

Category	Typical application temperature °C	Maximum application temperature °C	Minimum static response temperature °C	Maximum static response temperature °C
A1	25	50	54	65
A1S	25	50	54	65
A1R	25	50	54	65
A2S	25	50	54	70
B	40	65	69	85
C [**]	55	80	84	100

Substances to avoid

Some substances might destroy the CO sensor. Therefore, do not expose the protector to any of the following substances:

- Test gas Solo A10 or Solo A5
- Alkaline metals or salt water spray
- High concentrations of basic (non-acidic) gases such as ammonia
- (Cleaning) alcohols or acetone
- Silicone vapors
- Water spray or severe dew condensation on the protector/CO sensor element
- High concentrations of dust and oil mist

The surrounding atmosphere might impact the performance of the CO sensor. Therefore, take the following requirements into account when installing the protector:

- The CO sensor requires the existence of oxygen in the operating environment to function properly.

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[*]   Autroprime systems support only Heat Response Category A1S.

[**]   For category C, smoke detection is not possible.

Operation classes for AutroSafe

AutroGuard® with integrated CO sensor can be set to four different *Operation Classes*, allowing you to choose the protector's detection method and calculation.

Operation class	Description
Smoke	Smoke detection only.
Heat	Heat detection only.
Multi	Smoke and heat detection. Heat sensors are also used in the smoke detection algorithms.
Multi + CO-sensor	Smoke, heat and CO detection.

Sensitivity classes for AutroSafe

AutroGuard® can be programmed to four different sensitivity classes.

Sensitivity class	Application
Extra High	Where early warning is crucial (higher sensitivity than EN54 allows). Clean rooms, server rooms, data cabinets etc. Not immune to nuisance sources.
High	Protecting people when sleeping. Bedrooms / hotel rooms / accomodation. Not immune to nuisance sources.
Medium	Default setting for general use. Not immune to temperature bursts.
Low	Bakeries, theatres, kitchens, etc. Immunity to theatre smoke and other nuisance sources.

Sensitivity and alarm sources for AutroSafe

CO present

Smoke present

Temperature increase 3 °C/min

Heat according to Heat Response class, unless "Heat Response" is disabled

The table above shows the behavior of the detector in different sensitivity settings. As an example, in Medium sensitivity, the detector will give alarm in any of the following conditions:

- A combination of CO and smoke
- A combination of CO and a temperature increase of 3 °C/min
- A combination of smoke and a temperature increase of 3 °C/min
- Heat alarm according to Heat Response class A1S if operation class with heat

Operation classes for Autroprime

AutroGuard® with integrated CO sensor can be set to five different *Operation Classes*, allowing you to choose the protector's detection method and calculation.

Operation class	Description
Heat only *	Heat detection only (A1S).
MultiSensor **	Smoke with heat support.
MultiSensor with heat *	Smoke and heat detection (Heat Response Category A1S). Heat sensors are also used in the smoke detection algorithms.
MultiSensor with CO sensor	Smoke and CO detection.
MultiSensor with heat and CO sensor *	Smoke, heat and CO detection.

Performance classes for Autroprime

AutroGuard® can be programmed to the following different performance classes:

Performance class	Application
Clean	Protecting people when sleeping. Bedrooms / hotel rooms / accomodation. Not immune to nuisance sources.
Normal 1 or 2 ***	Default setting for general use. Not immune to temperature bursts.
Industrial	Bakeries, theatres, kitchens, etc. Immunity to theatre smoke and other nuisance sources.

Sensitivity and alarm sources for Autroprime

Performance class	Alarm sources				
Clean	CO	Smoke	Heat*		
Normal 1 or 2	CO Smoke	CO Temp↑	Smoke Temp↑	Heat*	
Industrial	CO Smoke	Heat*			

CO — CO present

Smoke — Smoke present

Temp↑ — Temperature increase 3 °C/min

Heat* — Heat according to Heat Response class, unless "Heat Response" is disabled

The table above shows the behavior of the detector in different sensitivity settings. As an example, in Normal 1 or 2 sensitivity, the detector will give alarm in any of the following conditions:

- A combination of CO and smoke
- A combination of CO and a temperature increase of 3 °C/min
- A combination of smoke and a temperature increase of 3 °C/min
- Heat alarm according to Heat Response class A1S if operation class with heat

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*   Classes that will always give alarm from heat.

** MultiSensor: Heat will always make a contribution.

***Both Normal 1 and 2 corresponds to AutroSafe Sensitivity Class Medium.

Technical specifications

Technical specifications			
Dimensions		See "Dimensions and outlines"	
Weight		127 g (172 g including base)	
Housing material		PC ABS, flammability classification UL94 V-0	
Color		White: RAL9010 Customized colors available on request.	
Ingress protection		IP44D (IP55 when used with conduit box)	
Current consumption - alarm indicator (Red LED indicator ON)		1.8 mA	
Current consumption - fault indicator (Yellow LED indicator ON)		2.3 mA	
Average current consumption alarm		1.9 mA (the alarm current is the quiescent current + LED indicator current)	
Average current consumption with external LED		5.40 mA	
Quiescent Current consumption with sounder and CO (including base)		300 µA	
Minimum and maximum rated operating voltage		18.0 V - 26.0 V for protector base	
Rated operating voltage		24.0 V for protector	
Protector base	With AutroSafe	• V-100 standard base: version 1.23.31 or newer	
	With Autroprime	• V-100/AP standard base: version 1.23.31 or newer	
System compatibility	With AutroSafe	• AutroSafe system version 4.11.3 or newer • AutroSafe loop panels BU-110, BV-110, BU-111 version 1.6 or newer • Loop Driver Module BSD-310/BSD-311 revision 7 or newer	
	With Autroprime	• Autroprime system version 2.1.11 or newer	
Operating temperature for EN54 variants		-10 to +50 °C	
Storage temperature		-10 to +50 °C	
Operating humidity		10 % - 95 % RH (non-condensing)	
Cable requirements		Minimum 0.14 mm² / AWG26 Maximum 2.5 mm² / AWG14	
CO sensor lifetime		10 years	
Country of origin		Norway	
EN 54 approval		Heat	EN 54-5:2017
		Optical smoke	EN 54-7:2018
		Sounder	EN 54-3:2001
		Short circuit isolator (Base)	EN 54-17:2005
Designed in accordance and fulfilling all requirements		Multisensor	EN54-29:2015
		Multisensor with CO	EN54-31:2014 + A1:2016
For details on certifications, see Autronica's product web.			

Technical specifications, integraded sounder (FAD)	
Sound pressure (dB @ 1m)	High volume - maximum: 93 dBA @ 1 m range
Current consumption, sounder	HIGH VOLUME: 6,25 mA (incl. 120 µA for protector and base)
Quiescent Current	LOW VOLUME: 2,63 mA (incl. 120 µA for protector and base)
Sound patterns	16 (AutroSafe) / 3 (Autroprime) standard tone types/frequencies and corresponding ringing patterns are available. In addition, ringing patterns for the standard tone types/frequencies can be configured to meet other user requirements.

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Dimensions and outlines (in mm)

Front view protector

Front view base

Side view base

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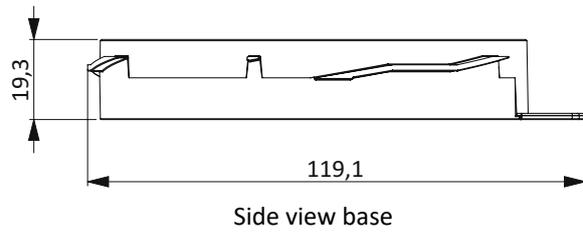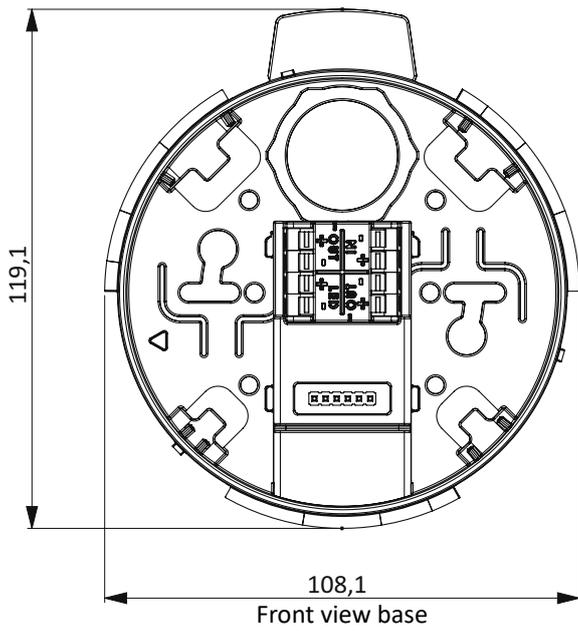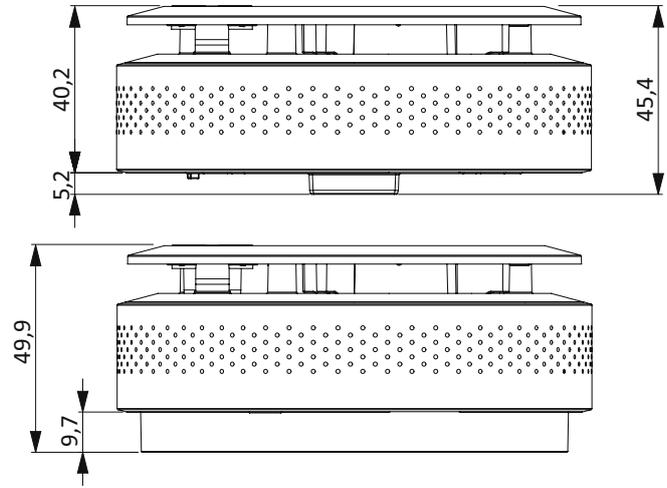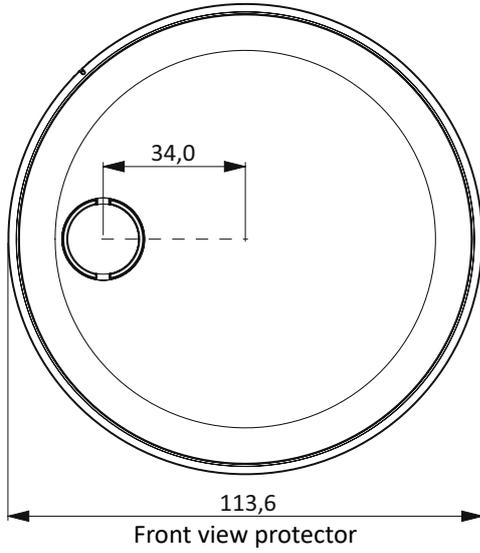
Ordering information

Variants

Part number	Description
116-V-430-S-CO/CD	AutroGuard Multicriteria Protector with SelfVerify, integrated CO sensor, Sounder and Cover Detection
116-V-430-S-CO-CC	AutroGuard Multicriteria Protector in Customized Color with SelfVerify, integrated CO sensor and Sounder

Accessories

Part number	Description
116-WAS-2000	AS2000 loop diagnostic tool
116-BWP-143A/AG	Air duct sampling unit
116-BWP-143A-SS/AG	Air duct sampling unit in stainless steel
116-BWP-100/20/AG	Conduit box 20 mm
116-BWP-100/25/AG	Conduit box 25 mm
116-WBJ-220	AutroGuard removal tool