

PRODUCT DATASHEET

AutroGuard® **V-530** multicriteria protector series

Features

- Certification according to IEC61508 SIL2
- Available in EX ia and EX ic versions
- MultiAngle/MultiWavelength optical smoke sensing technology
- Rate of Rise Heat sensing technology
- 3 certified smoke sensitivity classes
- High sensitivity variants available
- 6 certified Heat Response Categories *
- Integrated sounder (optional)
- Integrated visual alarm device (VAD) (optional)
- Occupies only one address even with visual alarm device and sounder
- 360° visible integrated dual color LED indicator
- 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-530 is SIL2-certified multicriteria protector series. Specific Ex ia or Ex ic versions are available for use in intrinsically safe areas EX zone 0, 1 and 2. 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. The type of operation is configurable to Heat, Optical or Multisensor, covering several applications.

It has a wide range of fire safety features included in one single device, providing s ignificant 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.

DYFI^{3D} technology

AutroGuard® utilizes *DYFI^{3D}* 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.

SelfVerify

AutroGuard® V-530 provides SelfVerify as a standard feature.

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 the fire standards 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.

* Autroprime systems support only Heat Response Category A1S.

Cover Detection

AutroGuard® V-530 provides Cover Detection as a standard feature. 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.

Integrated sounder (optional)

AutroGuard® can be delivered with an integrated EN 54-3 approved sounder (optional). Sound patterns and sound levels are configurable, with a maximum output sound output of 93 dBA at 1 m range. Protector variants with integrated sounders are not certified according to UL-268, UL-464 and ULC-525.

Integrated Visual Alarm Device (VAD) - (optional)

AutroGuard® can be delivered with a high efficiency EN 54-23 compliant integrated Visual Alarm Device (VAD) (optional). The VAD is available in white color, and is configurable to 4 different intensities. The flash rate is configurable (1 or 2 sec.). Protector variants with integrated VADs are not certified according to UL-1638 and ULC-526.

Operation classes

AutroGuard® can be set to three different *Operation Classes*, allowing you to choose the protector's detection method and calculation.

Operation class	Description
Multi	Optical and heat detection (Heat Response Categories EN 54-5 apply)
Heat only	Heat detection only (Heat Response Categories EN 54-5 apply)
Smoke only	Optical detection only

Sensitivity classes

AutroGuard® can be programmed to three different smoke sensitivity classes, with a fourth, extra high sensitivity class for specific variants.

Sensitivity class	Application
High	Clean environments, for example laboratories, data rooms etc.
Medium	Normal environments, for example offices and hospitals etc.
Low	Industrial environments, for example, factories and warehouses etc.
Extra high (Not EN 54 /UL268 compliant)	Only available for High Sensitiviy variants (/HS) Electrical installations, cabinets, server rooms etc. (Available in specific variants)

EN54 Heat response categories

AutroGuard® can be set to six different heat response categories (certified according to 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

UL521 Temperature Ratings

AutroGuard® Heat Response Category A1 is certified according to UL521, fixed alarm temperature 57 °C/135 °F.

* Autroprime systems support only Heat Response Category A1S.

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

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	
Ingress protection		IP44D (IP55 when used with conduit box)	
Current consumption base - Average		60 µA	
Current consumption protector - Average		60 µA	
Current consumption – Normal (base + protector)		120 µA	
Current consumption - alarm indicator (Red LED indicator ON)		1.8 mA	
Quiescent Current Sounder		160 µA (+ 120 µA for protector and base)	
Quiescent Current VAD		320 µA (+ 120 µA for protector and base)	
Quiescent Current Sounder + VAD		360 µA (+ 120 µA for protector and base)	
Minimum and maximum rated operating voltage		10.0 V - 26.0 V for protector base 18.0 V - 26.0 V for protector base when add-on boards (VAD/Sounder) are mounted on protector	
Average current consumption alarm		1.9 mA (the alarm current is the quiescent current + LED indicator current)	
Remote LED output (V-110)		5 mA (non-supervised)	
Sensitivity, Extra High Sensitivity Class		nom. 0.5%/m obscuration	
Protector base	With AutroSafe	• V-110 standard base with remote LED output, revision 3 or newer • V-120 EX base without remote LED output, revision 3 or newer	
	With Autroprime	• V-120/AP EX base without remote LED output	
System compatibility	With AutroSafe	• AutroSafe system version 4.11 or newer • For variants with integrated alarm devices: 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	• V-530-EXIA only: Autroprime system version 2.1.9 or newer	
Operating temperature		-30 to +70 °C (+80 °C when configured to heat detection only)	
Operating temperature for V-530/EXIA		-30 to +70 °C	
Storage temperature		Maximum 85 °C	
Operating humidity		10 % - 95 % RH (non-condensing)	
Cable requirements		Minimum 0.14 mm^2 / AWG26 Maximum 2.5 mm^2 / AWG14	
Country of origin		Norway	
EN 54 approval		Heat	EN 54-5:2017
		Optical smoke	EN 54-7:2018
		Multisensor	EN 54-29:2015
		Short circuit isolator (Base)	EN 54-17:2005
UL approval		Smoke and Multi: UL 268, ULCS529 Heat (only Heat Response Category A1 is UL approved): UL 521, ULC S530	
UL certified operating temperature		0 to +38 °C	
UL rated operating voltage		24.0 V for protector	
UL certified sensitivity range		2.16% ± 0.54% /ft obscuration, 6.91% ± 1.76 %/m obscuration	
UL heat detector spacing		30 x 30 ft / 9 x 9 m	
Intrinsic safety parameters for V-530/EXIA (For reference only; see the certificate on Autronica’s product web for official information.)		Ui: 15.75 V / Ii: 63.5 mA / Pi: 0.44 W / Ci: 4.4 nF / Li: Negligible	
For details on certifications, see Autronica’s product web.			

Technical specifications, integrated visual alarm device (VAD) and sounder

VAD color	VAD intensity	Current consumption VAD only 0.5 Hz *	Current consumption VAD only 1 Hz *	Current consumption VAD + sounder 0.5 Hz *		Current consumption VAD + sounder 1 Hz *	
				Sound pressure level		Sound pressure level	
				Low	High	Low	High
White	High Intensity: **C-3-12**	21.0 mA	-	23.3 mA	26.9 mA	-	-
	Medium Intensity: **C-3-9**	13.8 mA	-	16.1 mA	19.7 mA	-	-
	Low Intensity: **C-3-6**	10.6 mA	20.8 mA	12.9 mA	16.4 mA	23.1 mA	26.7 mA
	Open Class **O-2.5-4** (specified at 2.5 m height)	4.8 mA	8.9 mA	7.1 mA	10.6 mA	11.2 mA	14.8 mA

- The table specifies the current consumption for use with AutroSafe systems. Autroprime systems support only V-530-EXIA, which does not include a VAD.
- At a given mounting height, the *Coverage Volume* of a VAD is defined by the diameter of the coverage, given in meters. For example: C-3-12 corresponds to a ceiling-mounted device giving a coverage cylindrical volume of 12 m at 3 m height. For a white VAD, high intensity is to be configured.
- The sound pressure level can be configured separately for each sounder.

Technical specifications, integrated sounder

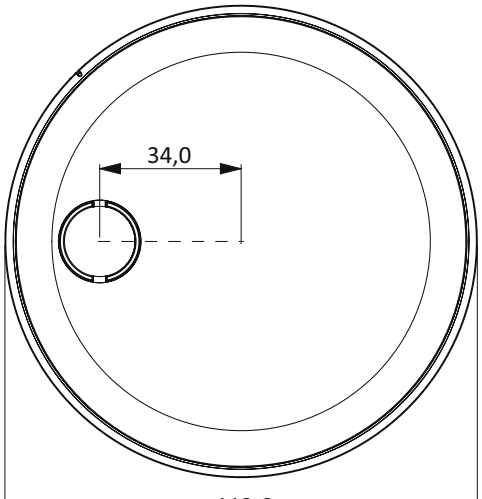
Sound pressure (dB @ 1m)	High volume	93 dBA @ 1 m range (Tone 1 - Dutch Slow Whoop) **
	Low volume	85 dBA @ 1 m range (Tone 1 - Dutch Slow Whoop) **
Current consumption, sounder	High volume	6.25 mA (incl. 120 µA for protector and base)
	Low volume	2.63 mA (incl. 120 µA for protector and base)
Quiescent Current	160 µA (+ 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.	

* The LED indicator is not included in the specified current consumption.

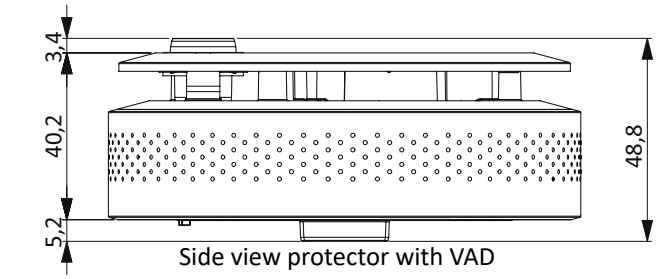
** For detailed information on sound levels for all tones, see the AutroGuard Technical Handbook.

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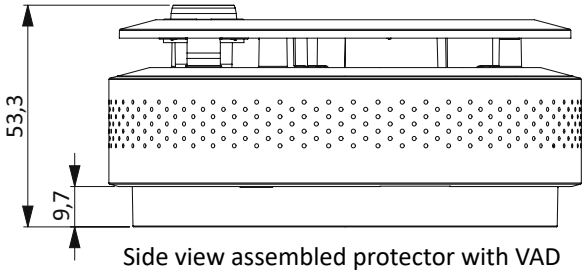
Dimensions and outlines (in mm)



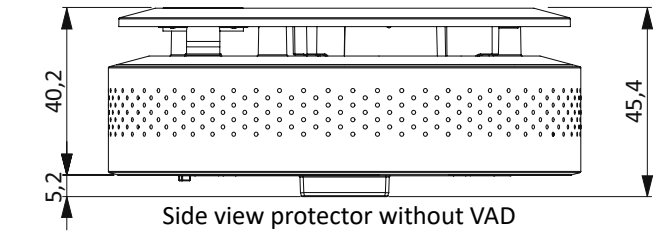
Front view protector



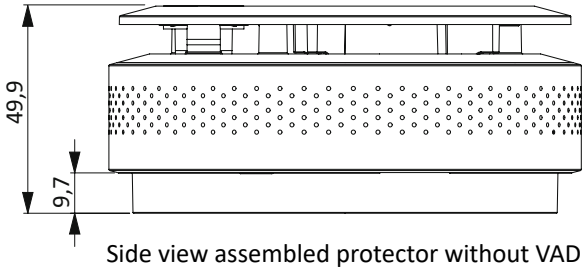
Side view protector with VAD



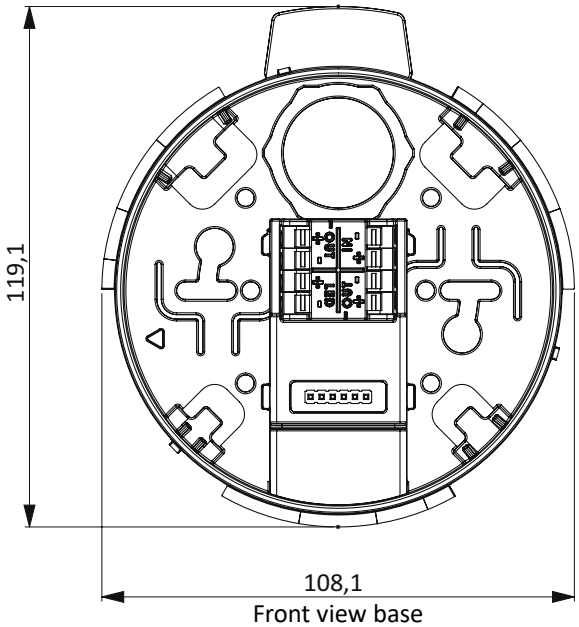
Side view assembled protector with VAD



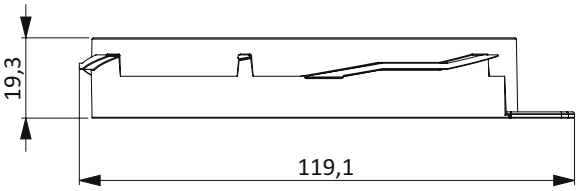
Side view protector without VAD



Side view assembled protector without VAD



Front view base



Side view base

Ordering information

Use the matrix to find the correct part number. The example below shows the type key for an intrinsically safe V-530 for zones 0, 1 and 2.

Model	Description
V-530	AutroGuard® multicriteria protector with SIL2 and marine approval, SelfVerify and Cover Detection. Certified to EN54, UL 268, UL 521, ULC S529 and ULC S530.

Type	Additional functions/alarm types
Blank	No additional functions/output
EXIA	Intrinsically safe for zone 0, 1 and 2. ATEX / IECEX (requires EX Barrier BZ-500)
EXIC	Intrinsically safe for zone 2. ATEX / IECEX (requires Loop Driver Module BSD-310N)
S-VADW	Sounder and white VAD *

Type	Color
Blank	White RAL9010

Type	Extra features
Blank	No extra features
HS	Extra high sensitivity **

116- V-530 — EXIA — [ ] / [ ]

Example
Part number: 116-V-530-EXIA

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
116-WBJ-5/07	Test gas
116-WBJ-20	Testifire XTR2 smoke and heat sensor test tool

* SIL2 certification is for detection only, not for sounder and white VAD functions.
Sounder is not UL certified.

** The extra high sensitivity feature is not available for S-VADW variants.