

ENGLISH
Installation Instructions - Operating Instructions

NEDERLANDS
Installatie Instructies - Gebruiksaanwijzing

DEUTSCH
Installationsanleitung - Betriebsanleitung

FRANÇAIS
Instructions d'installation - Mode d'emploi



IMPORTANT - READ CAREFULLY BEFORE USE
BELANGRIJK - VOOR GEBRUIK ZORGVULDIG LEZEN
WICHTIG - VOR GEBRAUCH SORGFÄLTIG LESEN
IMPORTANT - LIRE ATTENTIVEMENT AVANT UTILISATION

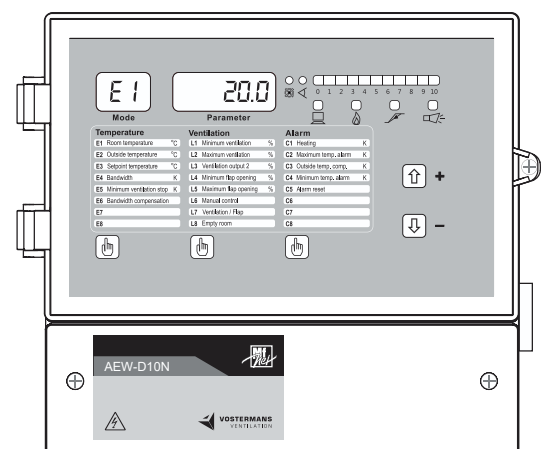


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1 Introduction

NOTICE

This product is for professional use only.

IMPORTANT: READ THESE INSTRUCTIONS CAREFULLY BEFORE USE

KEEP THESE INSTRUCTIONS FOR FUTURE REFERENCE

These instructions are a part of this product and must be passed on to any subsequent owner and/or user.

Contact your supplier if there are parts of these instructions that you do not understand. Compliance with these instructions will ensure a safe and correct use of this product.

Legal notice / Disclaimer

The scope of delivery may vary from product images shown. This document was created with all due care. The information, instructions and parts listed are current on the date this document was issued.

Improper use

No liability is accepted for damages resulting from improper use.

Packaging

If packaging materials are no longer required, dispose of them in accordance with regulations that apply in your area.

Manufacturer:

This product is manufactured for Vostermans Ventilation B.V. by:

es-electronic UG

Brandenburger Straße 7

D-89287 Bellenberg

Germany

es-electronic UG is legally the manufacturer.

2 Safety

Safety messages

Your safety and the safety of others are very important. Important safety messages are provided in these instructions.

READ THESE MESSAGES CAREFULLY

A safety message alerts you to potential hazards that could hurt you or others. Each safety message is preceded by a safety symbol and one of four signal words: DANGER, WARNING, CAUTION or NOTICE.

Explanation of the signal words used in this document







DANGER : You will be killed or seriously hurt if you do not follow instructions.

WARNING : You can be killed or seriously hurt if you do not follow instructions.

CAUTION : You can be hurt if you do not follow instructions.

NOTICE : Is used to address practices not related to physical injury.

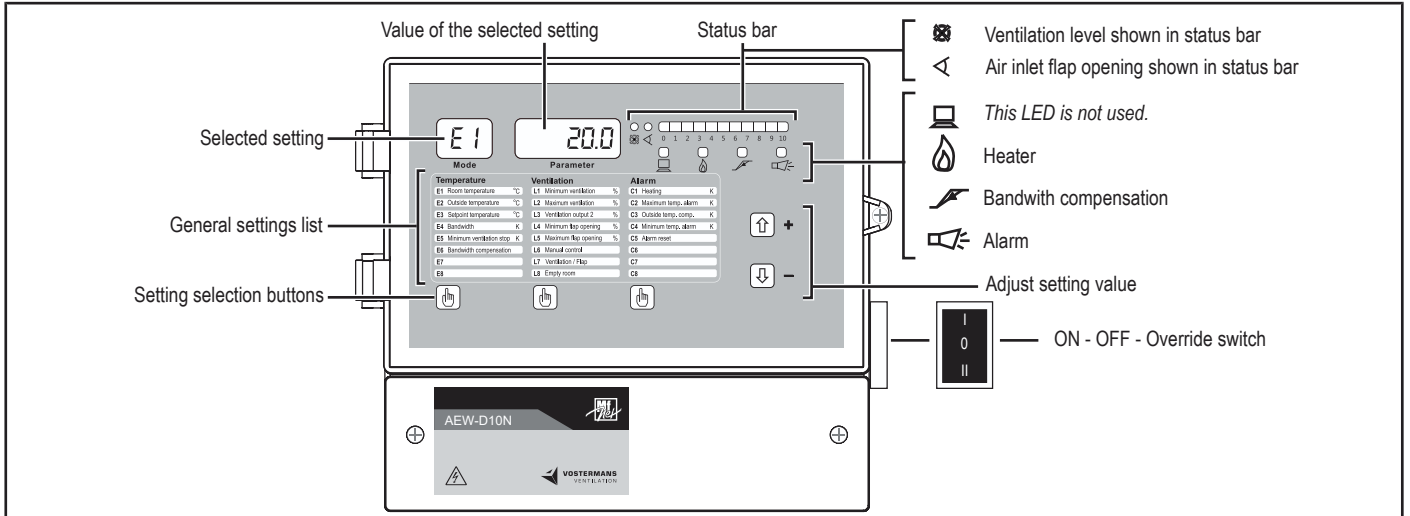
Explanation of the safety symbols used

	General warning symbol
	Warning for electricity
	Warning for hot surfaces
	Warning for automatic activation
	Warning for explosive materials
	General mandatory action sign

Remark: not all of the listed symbols may be used in this document

3 Information

3.1 Overview



The settings list on the controller is default in English. Labels to change the settings list to Dutch, German or French are included with the controller. The controller display language is English and this cannot be changed.

3.2 Intended use

The AEW is a room temperature controller. The AEW controls room temperature by controlling ventilation, heating and air inlet flaps. The AEW controls ventilation by controlling the speed of a single phase fan directly via an electronic voltage control output (TRIAC).



DANGER

Do not use this product in explosive or potentially explosive atmospheres .



DANGER

Where the health and well-being of humans and/or animals is dependent on the functioning of this controller, an appropriate backup system must be provided such that in the event of failure of the controller, sufficient air renewal is guaranteed to preserve the health and well-being of the humans and/or animals.

3.3 Technical Information

General

Power supply	230 VAC 50/60 Hz
Power consumption	25 VA no load
Fuse	T 315 mA
Ambient operating temperature range	-10 °C < x < 40 °C
Ambient relative humidity	≤ 95% non-condensing
Degree of Ingress Protection	IP54
Weight / Dimensions	2.0 kg / 267 x 225 x 104 mm

Inputs

Temperature sensors KTY81/110 PTC (1KΩ @ 25°C)

TRIAC output

TRIAC VL output voltage	55 – 230 V
TRIAC VL output current	0 – 10 A
TRIAC VL output fuse	T 10 A

Relay outputs

Alarm relay contact (SPDT)	Max. 2 A - 250 VAC / Min. 12 V - 10 mA
Ventilation output 2 relay contact (SPDT)	Max. 2 A - 250 VAC / Min. 12 V - 10 mA
Heating relay contact (SPDT)	Max. 2 A - 250 VAC / Min. 12 V - 10 mA

Analogue outputs

Ventilation output 1	0-10 V / 10-0 V Max. 10 mA
Ventilation output 2	0-10 V / 10-0 V Max. 10 mA
Air inlet flap output	0-10 V / 10-0 V Max. 10 mA
Heating output	0-10 V / 10-0 V Max. 10 mA

4 Installation

► Before commencing installation

1. Check the product after you have received it and make sure it has not been damaged during transport.
2. Check all the information on the rating plate and verify that this product is suitable for the intended application.

4.1 Mechanical

NOTICE

This product must be installed on a non-flammable surface

NOTICE

This product must be installed vertically with the cable entry openings pointing downwards

NOTICE

To ensure adequate cooling of the controller, make sure there is at least 100mm clearance around the controller.

NOTICE

Do not install this product inside an electrical enclosure.

NOTICE

To avoid damage by corrosive gasses: When used in livestock buildings, do not install this product directly inside the rooms where animals and/or manure are present.

4.2 Electrical

NOTICE

Electrical connection must be carried out by a qualified electrician. Electrical connections must be made in accordance with local regulations.

Check the rating plate and verify that this product is suitable for the available power supply.

Use the cable grommets supplied with this product.

Isolator

This product is supplied without an electrical isolator. An electrical isolator must be provided to facilitate safe maintenance and troubleshooting.

WARNING

Even when the controller itself is isolated from the power supply, there can still be power on the terminals where the external equipment is connected.

Grounding



This product must be grounded.



4.3 Wiring diagram

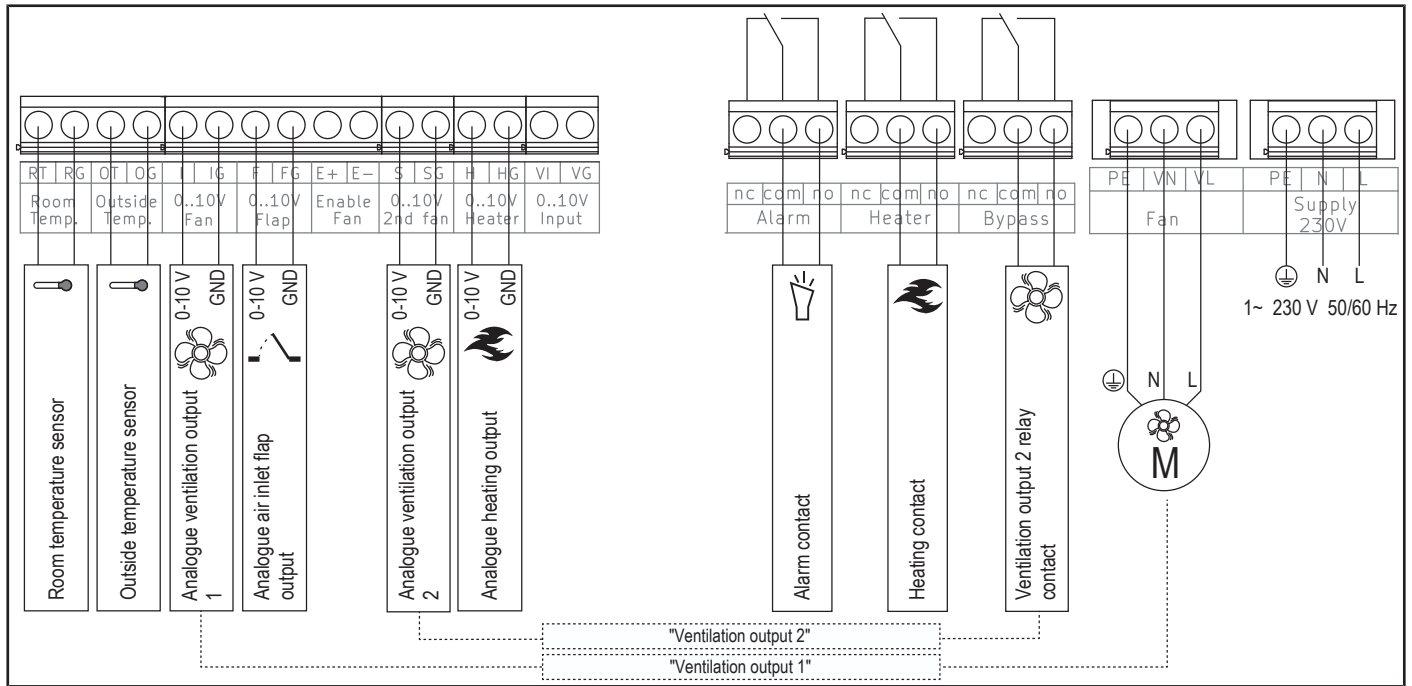


Illustration 1: Wiring Diagram

The TRIAC output and analogue ventilation output 1 are together referred to as “ventilation output 1”. The analogue ventilation output 2 and ventilation output 2 relay contact, are together referred to as ‘ventilation output 2’.

Multiple fans can be connected to the TRIAC output as long as the total current draw does not exceed the maximum current of the TRIAC output.

NOTICE! The relay contacts have no over current protection.

Alarm relay contact

The alarm relay contact is active during normal operation (COM-NO closed). When there is an alarm or a power failure to the controller, the relay contact is inactive (COM-NC closed).

5 Settings

There are two groups of settings, general settings and advanced settings. The general settings are for regular use. **NOTICE! The advanced settings are not for regular use, but are usually only needed during the installation of the controller.**

General settings

The general settings are grouped in three subgroups and are listed on the control panel:

- E - Temperature Settings
- L - Ventilation settings
- C – Heating and alarm settings

► **Selecting and modifying a general setting:**

1. Press the HAND button underneath the group until the required setting is shown in the MODE display.
2. Change the value of the setting which is shown in the PARAMETER display, by using the ARROW UP and ARROW DOWN buttons.

Advanced settings

The advanced settings are grouped in two subgroups:

- H – Settings related to sensors and heating
- P – Settings related to fans and air inlet flaps

► **Selecting and modifying an advanced setting of group H:**

1. Press and hold the HAND button underneath the temperature group.
2. Press the HAND button underneath the alarm group until the required setting is shown in the MODE display.
3. Change the value of the setting which is shown in the PARAMETER display, by using the ARROW UP and ARROW DOWN buttons.

► **Selecting and modifying an advanced setting of group P:**

1. Press and hold the HAND button underneath the temperature group.
2. Press the HAND button underneath the ventilation group until the required setting is shown in the MODE display.
3. Change the value of the setting which is shown in the PARAMETER display, by using the ARROW UP and ARROW DOWN buttons.

Display

When there has been no user interaction for one minute, the displays return to the default view showing the room temperature.

If there is an alarm, the displays show the alarm code instead of the room temperature.

5.1 General settings list

Setting	Description	Selection range	Default value
E1	Room temperature		
E2	Outside temperature		
E3	Setpoint temperature	0 – 40°C	20.0°C
E4	Bandwidth	2 – 12 K	5 K
E5	“Minimum ventilation stop” temperature	OFF / -25 – 0 K	OFF
E6	Bandwidth compensation	ON / OFF	OFF
L1	Minimum ventilation level	0 – 50%	0%
L2	Maximum ventilation level	50 – 100%	100%
L3	Ventilation output 2	OFF / 20 – 80% / ON	OFF
L4	Air inlet flap minimum opening	0 – 50%	0%
L5	Air inlet flap maximum opening	50 – 100%	100%
L6	Automatic or manual control	Auto / Hand 0 – 100%	Auto
L7	Select if ventilation level or air inlet flap opening is shown in the status bar		Ventilation level
L8	Empty room function	Auto / OFF	Auto
C1	Heating	OFF / -15 – 0 K	OFF
C2	High temperature alarm	OFF / 0 – 25 K	OFF
C3	Outside temperature alarm compensation	OFF / 0 – 20 K	OFF
C4	Low temperature alarm	OFF / -20 – 0 K	OFF
C5	Alarm reset	OFF / ALARM CODE	OFF

5.2 Advanced settings list

Setting	Description	Selection range	Default value
H1	Correction to the measured value of the room temperature sensor	±10 K	0 K
H2	Correction to the measured value of the outside temperature sensor	± 10 K	0 K
H3	Hysteresis of the ON-OFF heating contact	0.5 – 10.0 K	1.0 K
H4	Minimum output level of the analogue heating output	0 – 50% (=0 – 5 V or 5 – 0 V)	0%
H5	Maximum output level of the analogue heating output	50 – 100% (=5 – 10 V or 10 – 5 V)	100%
H6	Bandwidth of the analogue heating output	0.5 K – 6.0 K	2.0 K
H7	Inverting the analogue heating output	0 – 10 V 10 – 0 V	0 - 10 V
H8	<i>This setting is not used.</i>		
H9	<i>This setting is not used.</i>		
P1	Minimum level of ventilation output 1 and 2	0 – 30%	15% For the analogue ventilation output this is 1,5 V or 8,5 V (inverted)
P2	Maximum level of ventilation output 1 and 2	70 – 100%	100%
P3	Minimum output level of the air inlet flap analogue output	0 – 30% (= 0 – 3 V)	0%
P4	Maximum output level of the air inlet flap analogue output	70 – 100% (= 7 – 10 V)	100%
P5	<i>This setting is not used.</i>		

Setting	Description	Selection range	Default value
P6	Inverting the analogue ventilation output 1	0 – 10 V 10 – 0 V	0 – 10 V
P7	Inverting the analogue ventilation output 2	0 – 10 V 10 – 0 V	0 – 10 V
P8	Inverting the analogue air inlet flap output	0 – 10 V 10 – 0 V	0 – 10 V
P9	Offset between ventilation level and air inlet flap control	-99 – 99% of bandwidth E4	0%

P1 - Minimum TRIAC output voltage

With setting P1 the minimum output voltage of the TRIAC output is also set. When using electronic speed control (TRIAC), fans manufactured by Vostermans Ventilation B.V. must not be run at voltages lower than 40% of their rated voltage. Adjust P1 so that fans manufactured by Vostermans Ventilation B.V. will operate at least at 40% of their rated voltage (92 Vrms at 230 V).

► **To adjust P1 and set the required minimum output voltage, ventilation level must be temporarily set to minimum ventilation level:**

► **Note the values of settings L1, E5 and E3.**

1. Set L1 to 0%
2. Set E5 to OFF
3. Set E3 > E1

⇒ Ventilation level is now at minimum ventilation level.

4. Adjust P1 until the required minimum output voltage is reached. **NOTICE! Check the output voltage of the TRIAC output under load (with a fan connected to the TRIAC output) and using a True-RMS multimeter.**
5. Restore L1, E5 and E3 to their original values.

P2 – Maximum TRIAC output voltage

With setting P2 the maximum output voltage of the TRIAC output is also set.

► **To adjust P2 and set the required maximum output voltage, ventilation level must be temporarily set to maximum ventilation level:**

► **Note the values of settings L2 and E3.**

1. Set L2 to 100%
2. Set E3 < (E1 - E4)

⇒ Ventilation level is now at maximum ventilation level.

3. Adjust P2 until the required maximum output voltage is reached.
4. Restore L2 and E3 to their original values.

5.3 Ventilation level

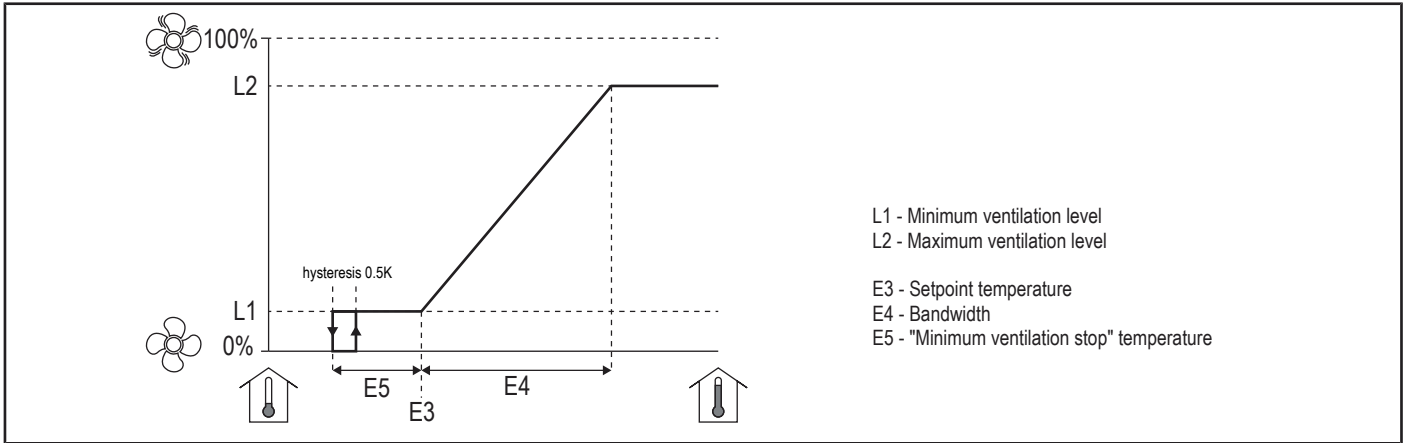


Illustration 2: Ventilation level

Ventilation is based on the room temperature. With settings L1 and L2 minimum and maximum ventilation level are set. Setting E4 is the bandwidth over which the ventilation increases from minimum L1 to maximum L2.

Fans are controlled via a TRIAC output and/or an analogue 0 - 10 V output.

E5 – Minimum ventilation stop

Using setting E5, ventilation can be stopped completely if the room temperature drops too far below the setpoint temperature. E5 sets the negative offset to the setpoint temperature at which ventilation must stop completely.

L3 - Ventilation output 2

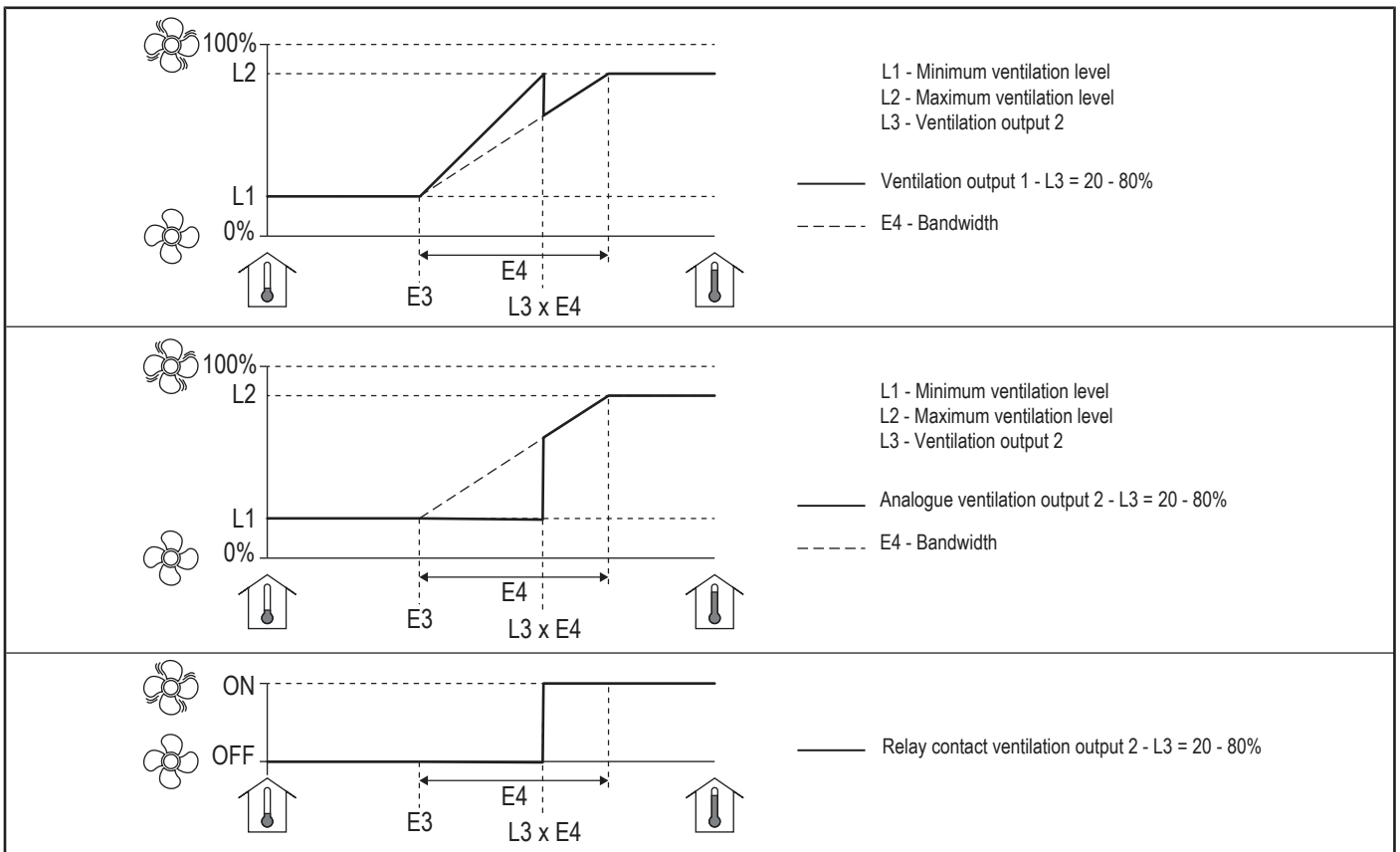


Illustration 3: Ventilation output 2 - [20 - 80%]

An additional analogue output and relay contact for ventilation are present. Setting L3 can be set to ON, OFF or a percentage of the bandwidth E4 from 20 - 80%.

When setting L3 is set to OFF the relay contact will always be inactive. When setting L3 is set to ON, the relay contact will be active when the required ventilation level is 0% or higher. Ventilation output 1 and 2 will follow the bandwidth E4.

When a percentage of the bandwidth E4 from 20 - 80% is set, ventilation will be according to the graph above.

5.4 Bandwidth compensation

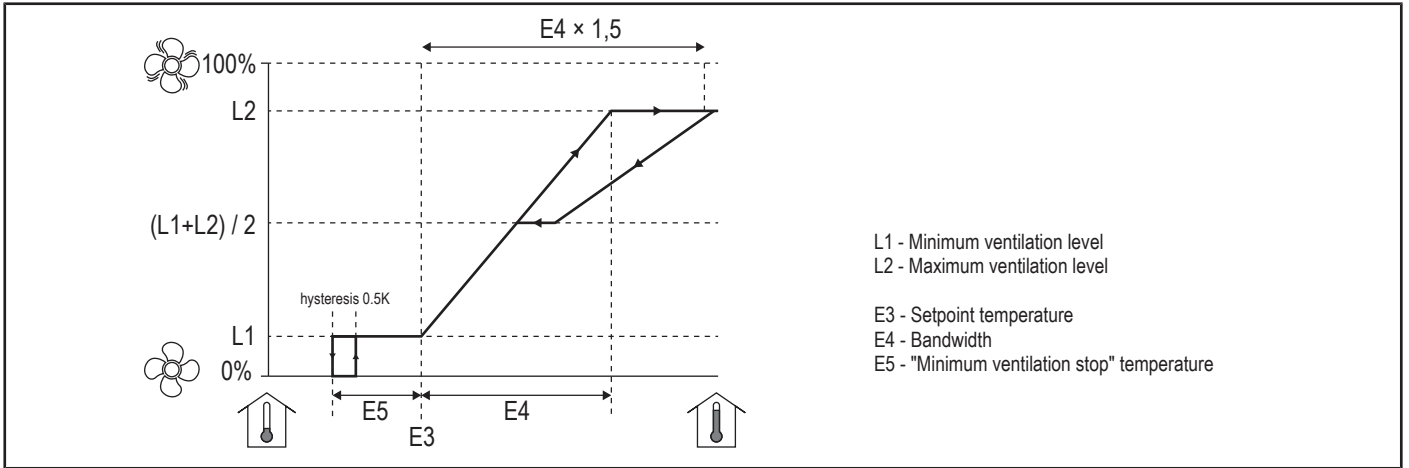


Illustration 4: Bandwidth compensation

With setting E6 bandwidth compensation can be enabled or disabled. Bandwidth compensation prevents a too rapid decrease of the room temperature in situations where the outside temperature drops rapidly for example during a thunderstorm.

When the room temperature rises above the bandwidth $E4 \times 1.5$, bandwidth compensation will become active if enabled in setting E6. When bandwidth compensation is active, ventilation level will be according to the graph above. The bandwidth compensation LED is ON when bandwidth compensation is active. Bandwidth compensation will be deactivated when the room temperature drops below $E4 \times 0.5$.

5.5 Air inlet flap

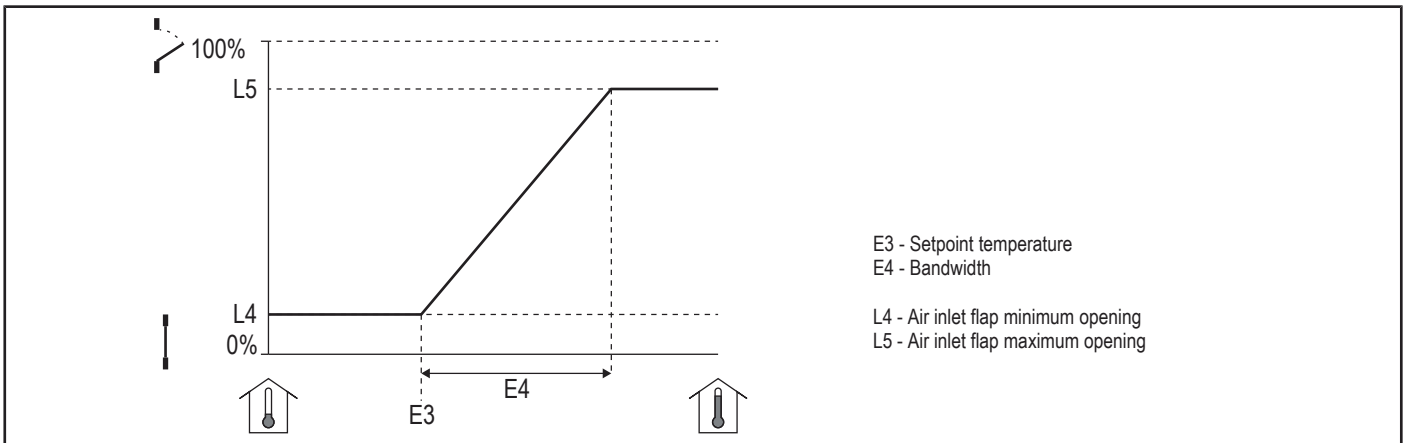


Illustration 5: Air inlet flap opening [0 - 10 V]

Air inlet flap opening is controlled via an analogue 0 - 10 V output. Air inlet flap opening is based on the room temperature. With settings L4 and L5, minimum and maximum air inlet flap opening are set.

P9 – Ventilation level and air inlet flap offset

Ventilation level and air inlet flap opening are parallel by default (they use the same setpoint temperature and bandwidth).

Setting P9 can be used to offset the ventilation level from the air inlet flap opening. This setting P9 can be used to open the air inlet flap ahead of the increase of the ventilation level.

5.6 Heating

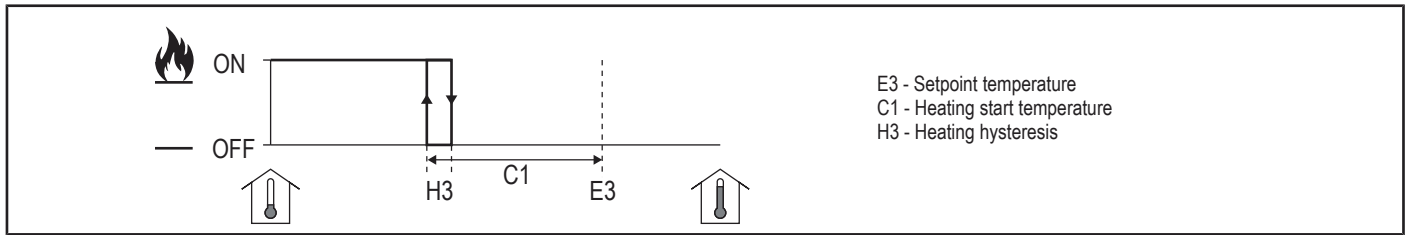


Illustration 6: Heating [ON / OFF]

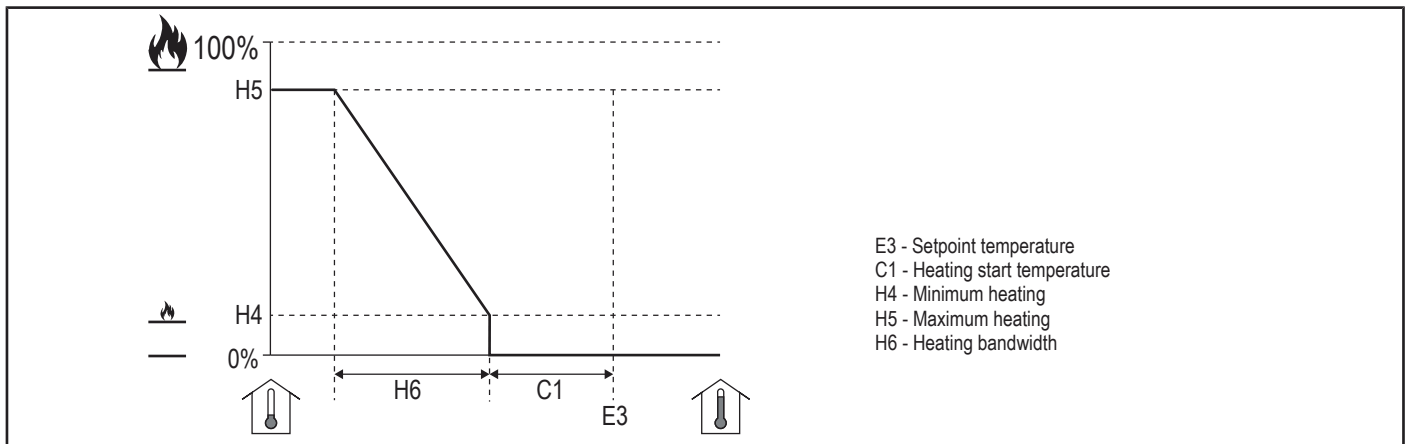


Illustration 7: Heating [0 - 10 V]

Heating can be controlled via a relay contact and/or an analogue 0 - 10 V output. Setting C1 sets the negative offset to the setpoint temperature at which the heating must switch on. Setting H6 is the heating bandwidth.

5.7 Manual control

With setting L6 ventilation level and air inlet flap opening can be controlled manually.

When manual control is active, ventilation level and air inlet opening can be set from 0 - 100%. Ventilation level and air inlet flap opening are linked and cannot be adjusted separately. Settings L1, L2, L4, L5 are ignored during manual control.

Exiting setting L6 automatically switches control back to automatic mode.

5.8 Empty room

With setting L8 the empty room function can be enabled. The empty room function can be used when the room is not in use and no ventilation or heating is required. All outputs excluding the heating outputs are disabled when the empty room function is enabled. All alarms are suppressed.

For frost protection, the heating function stays enabled and the heating outputs are activated if the room temperature drops below 3 °C. (The analogue heating output will output 100% when the temperature drops below 3 °C, there is no proportional heating control when the empty room function is active.)

5.9 Temperature alarms

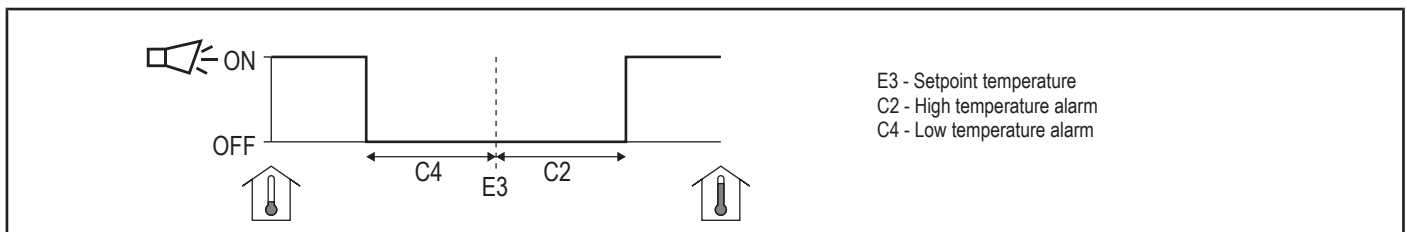


Illustration 8: Temperature alarms

With setting C2 and C4 high and low temperature alarm thresholds are set.

C3 - Outside high temperature alarm compensation

If the outside temperature is above the high temperature alarm threshold for prolonged periods of time, the room temperature can increase above the high temperature alarm setting C2.

With setting C3, the high temperature alarm threshold can be set to change from $E3 + C2$ to outside temperature $E2 + C3$, if the outside temperature rises above the high temperature alarm C2.

6 Operation



WARNING

The controller starts operating as soon as the controller is switched on.

Connected equipment such as fans can therefore also start automatically as soon as the controller is switched on.

ON – OFF – Override switch

Switch position

- I The controller is ON.
- 0 The controller is OFF.
- II The controller is OFF. The TRIAC output is bridged and connected directly to the power supply. Fans connected to the TRIAC output will run at 100%.

6.1 Alarm

Alarm codes

Alarm code	Description	Controller operation during alarm
A-Lo	Low temperature alarm	normal
A-Hi	High temperature alarm	normal
A-10	Room temperature sensor short circuit	Ventilation level 70% / Air inlet flap 70% / Heating OFF
A-13	Room temperature sensor disconnected or circuit interrupted	Ventilation level 100% / Air inlet flap 100% / Heating OFF
A-15	Outside temperature sensor short circuit	Outside temperature correction C3 is OFF
A-17	Outside temperature sensor disconnected or circuit interrupted	Outside temperature correction C3 is OFF
A-78	Internal controller error	Limited or no control

Alarm reset

When a temperature alarm has occurred, the alarm can be reset in setting C5. Alarms are reset using the ARROW DOWN button. If the alarm is reset but the cause is not resolved, the alarm will become active again after 20 seconds.

When multiple alarms have occurred, the most recent alarm code is shown first in setting C5. When this alarm code is reset, the preceding alarm codes will appear. A maximum of five alarm codes are stored in setting C5.

NOTICE! Temperature sensor alarms can only be reset by powering the controller off and on.

7 Maintenance

► Maintenance tasks – TO BE CARRIED OUT EVERY 3 MONTHS

1. Check the controller for defects and remove any dirt that has accumulated.

Cleaning

Clean the controller preferably using a soft brush.

8 Troubleshooting



WARNING

Troubleshooting and repairs must be performed by skilled persons only!

Fault	Possible cause	Possible remedy
Controller is not functioning	No power to the controller	Restore power
	Fuse has blown	Replace fuse
	Alarm code A-78	Contact service
Fans connected to TRIAC output not working	TRIAC output fuse has blown (TRIAC output was overloaded)	Replace fuse

9 End of life

Disposal

At the end of the life of this product, dispose of it properly in accordance with regulations that apply in your area.

10 EU Declaration of Conformity

EU Declaration of Conformity

Glossary

Explosive atmosphere

A mixture of air, under atmospheric conditions, with flammable substances in the form of gases, vapours, mists or dusts in which, after ignition has occurred, combustion spreads to the entire unburned mixture.

Skilled person

Individual with relevant technical education, training or experience to enable perceiving risks and avoiding hazards occurring during use of a product.

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1 Introductie



LET OP

Dit product is uitsluitend bestemd voor professioneel gebruik.

BELANGRIJK: LEES DEZE INSTRUCTIES ZORGVULDIG VOOR GEBRUIK

BEWAAR DEZE INSTRUCTIES VOOR TOEKOMSTIG GEBRUIK

Deze instructies maken deel uit van dit product en moeten worden doorgegeven aan iedere volgende eigenaar en/of gebruiker.

Neem contact op met uw leverancier als er delen van deze instructies zijn die u niet begrijpt. Naleving van deze instructies garandeert een veilig en correct gebruik van dit product.

Wettelijke kennisgeving / Afwijzing van aansprakelijkheid

De leveringsomvang kan afwijken van getoonde productafbeeldingen. Dit document is met de grootst mogelijke zorgvuldigheid opgesteld. De opgesomde informatie, instructies en onderdelen zijn actueel op de datum van uitgifte van dit document.

Oneigenlijk gebruik

Voor schade die het gevolg is van oneigenlijk gebruik wordt geen aansprakelijkheid aanvaard.

Verpakking

Als het verpakkingsmateriaal niet langer benodigd is, voer het dan af in overeenstemming met plaatselijk geldende voorschriften.

Fabrikant:

Dit product wordt geproduceerd voor Vostermans Ventilation B.V. door:

es-electronic UG

Brandenburger Straße 7

D-89287 Bellenberg

Duitsland

es-electronic UG is wettelijk de fabrikant.

2 Veiligheid

Veiligheidsmededelingen

Uw veiligheid en de veiligheid van anderen is erg belangrijk. Belangrijke veiligheidsmededelingen worden in deze instructies gegeven.

LEES DEZE MEDEDELINGEN ZORGVULDIG

Een veiligheidsmededeling waarschuwt u voor potentiële gevaren die u of anderen kunnen kwetsen. Elke veiligheidsmededeling wordt voorafgegaan door een veiligheidssymbool en één van de vier signaalwoorden: GEVAAR, WAARSCHUWING, VOORZICHTIG of LET OP.

Uitleg van de signaalwoorden gebruikt in deze instructies

GEVAAR : U loopt dodelijk of ernstig letsel op als u instructies niet opvolgt.

WAARSCHUWING : U loopt mogelijk dodelijk of ernstig letsel op als u instructies niet opvolgt.

VOORZICHTIG : U kunt letsel oplopen als u instructies niet opvolgt.

LET OP : Wordt gebruikt voor mededelingen die niet gerelateerd zijn aan het oplopen van letsel.

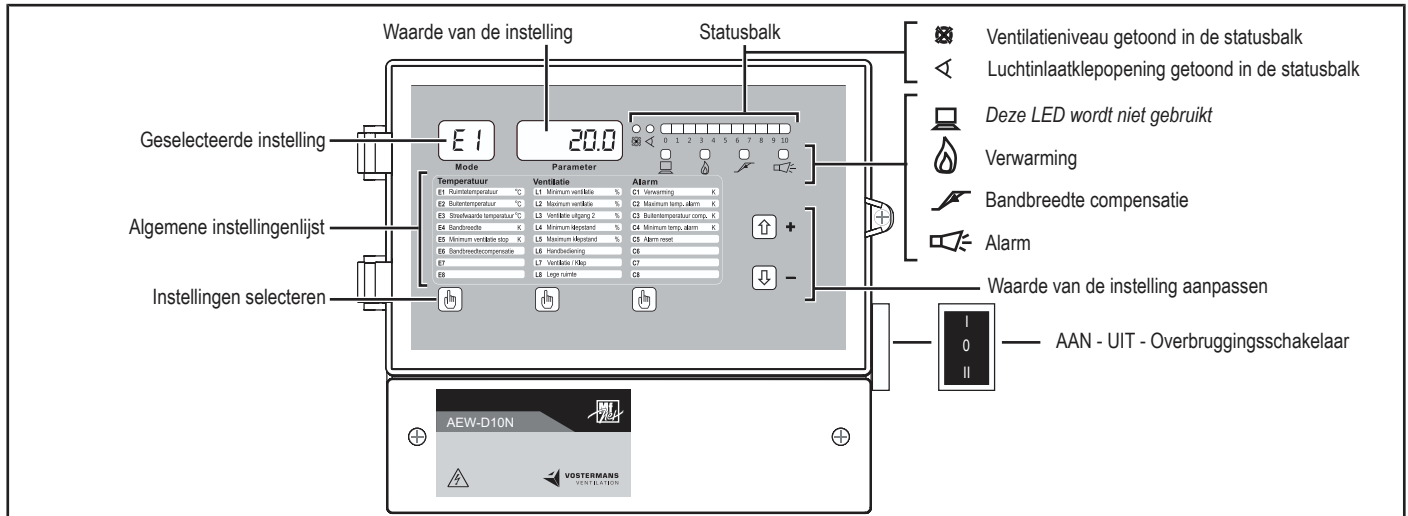
Uitleg van de gebruikte veiligheidssymbolen

	Algemeen waarschuwingssymbool
	Waarschuwing voor elektriciteit
	Waarschuwing voor hete oppervlakken
	Waarschuwing voor automatisch inschakelen
	Waarschuwing voor explosieve materialen
	Algemeen verplicht uit te voeren actie

Opmerking: mogelijk worden niet alle vermelde symbolen in deze instructies gebruikt.

3 Informatie

3.1 Overzicht



De instellingenlijst op de regelaar is standaard in het Engels. Etiketten om de instellingenlijst in het Nederlands, Duits of Frans te veranderen worden bij de regelaar meegeleverd. De schermtaal van de regelaar is Engels en deze kan niet veranderd worden.

3.2 Bedoeld gebruik

De AEW is een ruimtetemperatuurregelaar. De AEW regelt de ruimtetemperatuur door ventilatie, verwarming en luchtinlaatkleppen te regelen. De AEW regelt de ventilatie door de snelheid van een éénfase ventilator rechtstreeks te regelen via een elektronische spanningsregeluittgang (TRIAC).

GEVAAR

Gebruik dit product niet in **explosieve of potentieel explosieve atmosferen**.

GEVAAR

Wanneer de gezondheid en het welzijn van mensen en/of dieren afhankelijk zijn van de werking van deze regelaar, moet worden voorzien in een passend reservesysteem zodat, wanneer deze regelaar uitvalt, voldoende luchtverversing wordt gegarandeerd om de gezondheid en het welzijn van de mensen en/of dieren in stand te houden.

3.3 Technische informatie

Algemeen

Stroomvoorziening	230 VAC 50/60 Hz
Opgenomen vermogen	25 VA onbelast
Zekering	T 315 mA
Omgevingstemperatuurbereik	-10 °C < x < 40 °C
Relatieve omgevingsvochtigheid	≤ 95% niet-condenserend
Beschermingsgraad	IP54
Gewicht / Afmetingen	2,0 kg / 267 x 225 x 104 mm

Ingangen

Temperatuursensoren	KTY81/110 PTC (1KΩ @ 25°C)
---------------------	----------------------------

TRIAC uitgang

TRIAC VL uitgangsspanning	55 – 230 V
TRIAC VL uitgangsstroom	0 – 10 A
TRIAC VL uitgang zekering	T 10 A

Relaisuitgangen

Alarm relaiscontact (SPDT)	Max. 2 A - 250 VAC / Min. 12 V - 10 mA
Ventilatie uitgang 2 relaiscontact (SPDT)	Max. 2 A - 250 VAC / Min. 12 V - 10 mA
Verwarming relaiscontact (SPDT)	Max. 2 A - 250 VAC / Min. 12 V - 10 mA

Analoge uitgangen