



## OPERATION AND INSTALLATION INSTRUCTIONS

** ELEMENTAIR**  
**B-MARK I**

## CONTENS

<b>1. General information</b> .....	3
<b>1.1. Introduction</b> .....	3
<b>1.2. Control of delivery and storage</b> .....	3
<b>1.3. Contents of the package</b> .....	3
<b>1.4. Before start of installation</b> .....	3
<b>2. Dimensions of the regulator</b> .....	3
<b>3. Regulator installation</b> .....	4
<b>3.1. Regulator location</b> .....	4
<b>3.2. Installation</b> .....	4
<b>3.3. Installation in the working position</b> .....	5
<b>3.4. Electrical installation and electrical connection</b> .....	5
<b>4. Technical parameters</b> .....	5
<b>5. Description of regulator</b> .....	6
<b>5.1. Description of connecting terminals</b> .....	6
<b>6. Recommended electrical wiring</b> .....	7
<b>7. Regulator maintenance</b> .....	8
<b>8. Service</b> .....	8
<b>9. Decommissioning and recycling</b> .....	8
<b>10. Warranty</b> .....	8
<b>11. Conclusion</b> .....	9

## 1. General information

### 1.1. Introduction

- This document "Installation and Operating Manual" is intended for the Elementair-B-M1 regulator (hereinafter referred to as "the regulator") to continuously control the speed of the EC-motors for the fans. Detailed familiarisation with this document is important for the correct and safe installation and operation of the regulator.
- Failure to comply with the conditions specified in this document may result in the regulator not working.
- The regulator may only be mounted and connected by a trained person with the appropriate authorization to connect electrical equipment with suitable tools and means. During the assembly, it is necessary to observe all the instructions and recommendations in this manual.
- For the correct operation and long-term service life of the regulator, it is necessary to prevent access of unauthorized persons and to train the regulator operators according to this document and applicable legislative regulations.
- Documentation must always be available at the location of the controller installation. It is forbidden to intervene in any way in the controller's internal wiring, which does not correspond to the instructions given in this manual.
- Due to the continuous development of our products, we reserve the right to change this manual without prior notice.

### 1.2. Control of delivery and storage

- Before starting the installation and before unpacking the regulator from the box, it is necessary to check for any traces of damage on the packaging. In case of damage to the packaging, please contact your carrier.
- Check if the product ordered by you is in agreement. After unpacking, check that the regulator and other components are in order.
- Please report any non-conformity with the order to the supplier immediately. If an order complaint is not made immediately after delivery, it will not be taken into account later.
- If the regulator is not installed immediately after purchase, it must be stored in an internal, non-condensing environment at temperatures in the range 0 to 40°C.
- If the product has been transported at temperatures lower than 0°C, it must be stored after unpacking for at least 2 hours in the working environment where it will be installed.

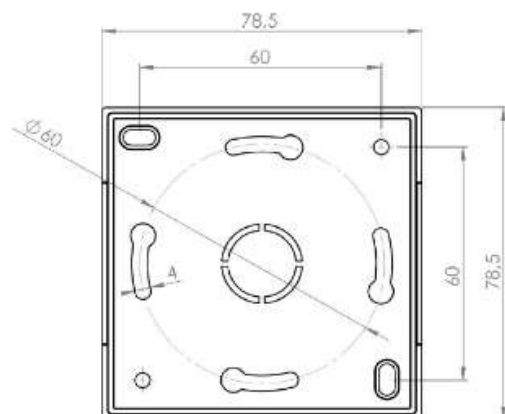
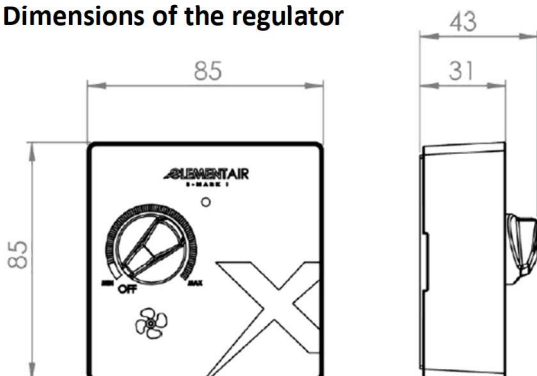
### 1.3. Contents of the package

- |                                    |    |
|------------------------------------|----|
| - Regulator Elementair-B-M1        | 1x |
| - Quick manual + Safety Data Sheet | 1x |
| - Name plate                       | 1x |

### 1.4. Before start of installation

- Before commencing the installation, we recommend to stick the serial plate (normally delivered in the package) to the operating documentation (Quick manual, operating book of the equipment, etc.), which is subsequently stored for possible later servicing.
- Before starting all installation or maintenance work, it is necessary to switch off the power supply and secure the switch against switching it on again.

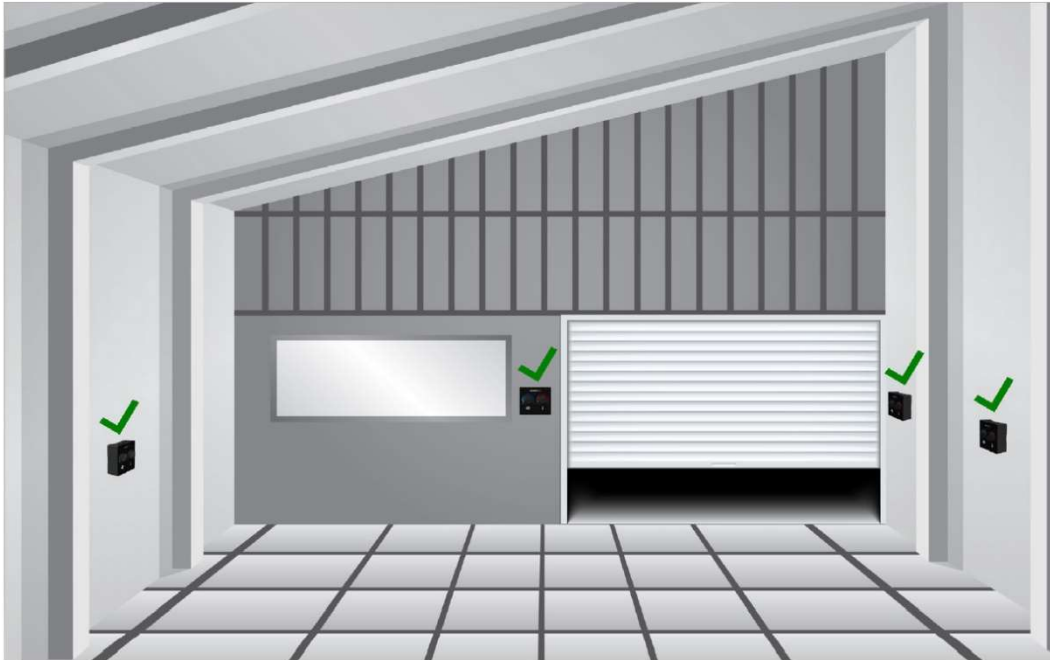
## 2. Dimensions of the regulator



### 3. Regulator installation

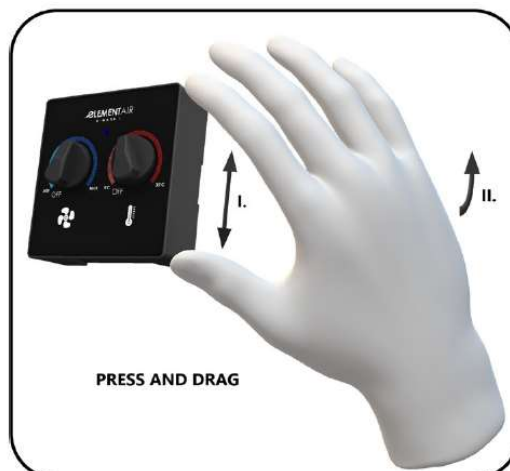
#### 3.1. Regulator location

- The regulator is designed for wall installation in the interior environment of buildings. For proper functioning, the regulator must be located at the reference point – in the residence zone about 1.5 m above the floor; it must not be close to the door or window openings in the area where is a natural air movement (draft), direct sun light or any sources radiant heat.
- The maximum recommended distance of the regulator from the regulated EC-motor is 100 m at the conductor cross-section of 1 mm<sup>2</sup>.
- Ambient working temperature 0 to 40°C, humidity 0-90% non-condensing.

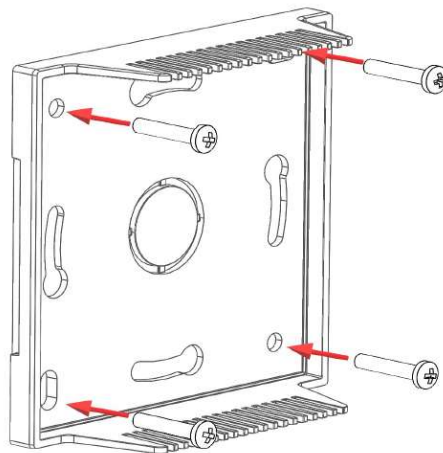


#### 3.2. Installation

- The regulator can be mounted on a wall:
  - o In an under-plaster electrical junction box (hereinafter referred to as the boxes) with the central opening for the supply cable. The supply cable must be prepared in the wall. Connect the cable according to the relevant wiring diagram. Complete the assembly with mounting the front cover - by snapping in.
  - o In an under-plaster electrical junction box (hereinafter referred to as the boxes) with the side opening for the supply cable. The supply cable is routed along the wall surface, e.g. on a wiring bar. Attach the regulator to the box with self-tapping screws with a half-round head 3 x 13 mm (not included in the delivery) into the prepared holes in the box. Connect the cable according to the relevant wiring diagram. Complete the assembly with mounting the front cover - by snapping in.

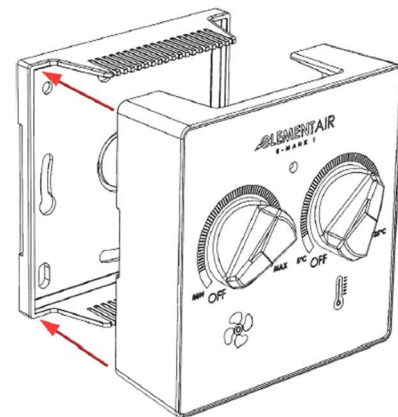
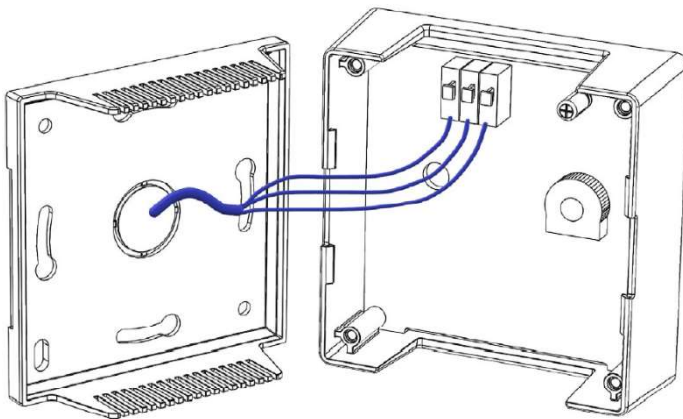


INSTALLATION ON UNDER-PLASTER OR SURFACE-MOUNTED ELECTRICAL JUNCTION BOX



CONNECTING POWER SUPPLY AND CONTROL CABLES

COMPLETING THE CONTROL PANEL AFTER CONNECTING (ALIGN THE CABLES TO AVOID DAMAGE)



**3.3. Installation in the working position**

- The regulator is mounted on the wall in the vertical position – the side vents are facing down and up.
  - The regulator shall be installed in such a way that air can flow around and the overheating is avoided.
- The regulator installation must be carried out in a place where sufficient and safe access will be provided in the event of control, maintenance, servicing.



The regulator must be mounted in such a way that the minimum spacing distances of 100 mm from all constructional structures and flammable substances or the distances based on local regulations are respected.

**3.4. Electrical installation and electrical connection**

- **The regulator may be connected only by persons qualified to handle electrical devices up to 1000V. The regulator mounting shall be in accordance with the relevant standards. The regulator must be connected to the EC-motor using an insulated cable in accordance with the diameter and corresponding regulations.**
- **In the event of fire, the regulator must be extinguished with CO2 or a powder-type fire extinguisher.**

**4. Technical parameters**

- Input voltage 10VDC
- Input current 10mA
- Max.ambient temperature 5-35°C
- Protection IP20
- Weight 0,12Kg

## 5. Description of regulator

- The regulator is used to continuously control the speed of the EC-motors with the control input 0-10VDC without connection to the mains power supply.
- The motor speed is controlled continuously by the control element (a knob) on the front panel of the regulator.
- For information on the operation of the connected equipment, the operating signal diode is located in the upper part of the front panel.
- The regulator is supplied with direct voltage of 10 VDC from the EC-motor. T
- he regulator is designed for wall installation.



**Signalling diode** – signals the operation of the entire regulator. If the diode is lit, the regulator is active. If the regulator is not on, it is switched off.

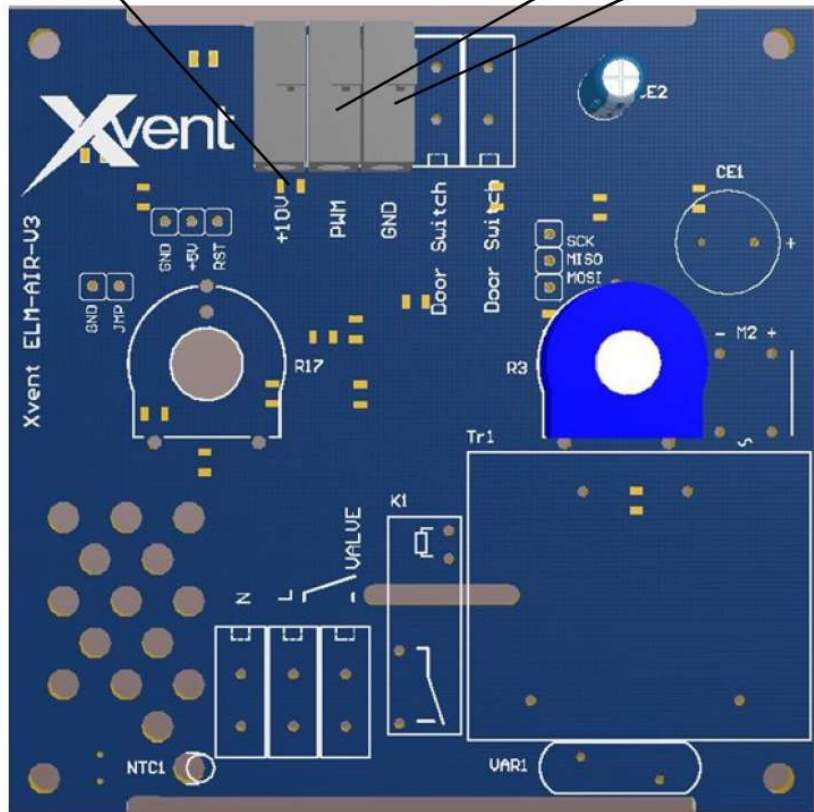
**Continuous fan speed regulator** – allows smooth fan speed setting in any position from minimum to maximum fan speed as required by the user. The "OFF" position allows the entire regulator to be switched off. The "OFF" position does not provide disconnection of the controlled equipment from the supply voltage – it must be performed separately on the supply

### 5.1. Description of connecting terminals

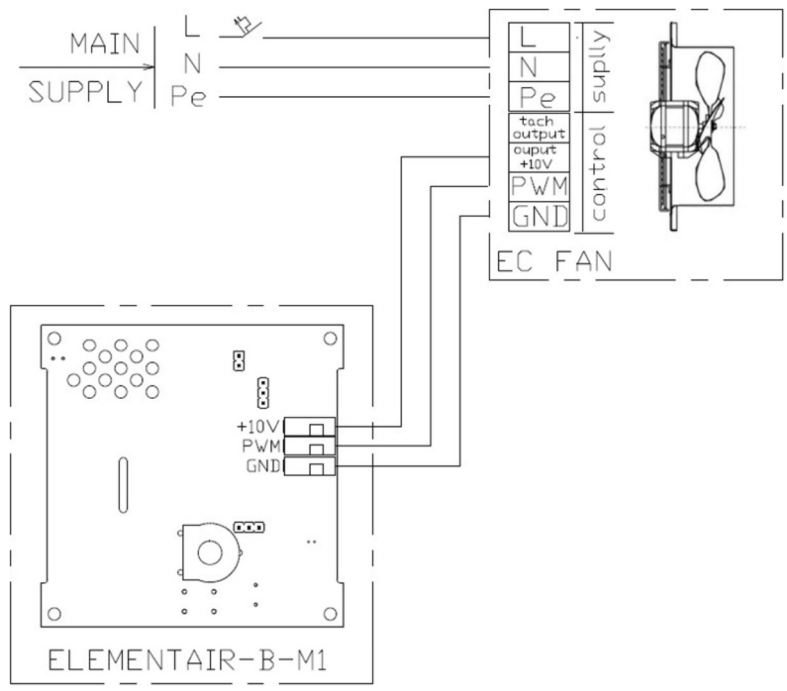
- Spring terminals with manual locking are used to connect the wires. A strand-type conductor (cable) and a solid conductor (wire) in the cross-section range from 0.5 to 1.5 mm<sup>2</sup> can be installed in the terminals.
- Before inserting the wire into the terminals, first press the locking orange button. Then slip in the wire, release the lock and slightly pull it out of the terminal to verify that the wire is properly secured. If the wire needs to be removed from the terminal, the procedure is the same.
- The optimum cross-section of the conductor must be selected according to the actual length of the conductor route; however, the cross-section of the conductor may be 1.5 mm<sup>2</sup>.
- All wires shall be connected to terminals with adequate force to prevent damage to them or damage to the electrical board. Stripping of cables to individual conductors should be 10mm. In the case of strand-type conductors, an end piece must be pressed on (tube).

**Terminal clamp for regulator power supply**  
**Description:** +10V terminal designed to supply the regulator at 10VDC  
**Max. current capacity of regulator:** 10 mA  
**Recommended cross-section of conductors:** between 0.5 mm<sup>2</sup> and 1.5 mm<sup>2</sup>.  
 Select the cross-section according to the length of the conductor route.

**EC fan connection terminals**  
**Description:** terminals for connecting the control voltage from the EC fan PWM/0-10VDC (+); GND (-) with resistance 10kΩ. Regulator control range 2-10VDC. The minimum control voltage under 2V does not guarantee the correct functionality of the EC fan.  
**Contact load:** max 0,3mA  
**Recommended cross-section of conductors:** from 0.5 mm<sup>2</sup> to 1.5 mm<sup>2</sup> Select the cross-section according to the length of the conductor route



**6. Recommended electrical wiring**





## 7. Regulator maintenance

- The regulator's maintenance consists in cleaning as needed, but at least once a year. Clean the regulator with a vacuum cleaner or fine dry cloth.

## 8. Service

- Observe the generally applicable country-specific provisions. In case of any service activity, the regulator must be disconnected from the mains. Any electrical service work must be carried out by a person with professional qualifications.
- Complete the electrical connection precisely according to the supplied electrical documentation. Always assess the suitability of the use of recommended cable connections with respect to the fire zones of the construction, protective distances, protection and condition of the electrical installation of the construction.
- Connect the prepared cables to the terminals according to the attached electrical documentation, then check the connection before switching on the power supply.

## 9. Decommissioning and recycling



All unused or not operable products and packaging should be returned to the appropriate recycling locations where they will dispose of them in a professional manner. Please dispose the unusable parts of the product in a controlled landfill. Only like this the recycled product can be reused and bring a new benefit.



## 10. Warranty

- We do not guarantee the suitability of using the regulator for special purposes, determination of suitability is fully within the competence of the customer and the designer.
- The regulator warranty is valid according to legal regulations.
- The warranty only applies if all installation and maintenance instructions are followed.
- The warranty covers manufacturing defects, defects in material or defects in the operation of the instrument.
- The warranty does not apply to defects caused by:
  - o improper use or project
  - o incorrect handling
  - o during transport (damage caused by transport and its financial compensation must be resolved with the carrier)
  - o incorrect assembly
  - o incorrect electrical connection or protection
  - o incorrect operation
  - o by unprofessional intervention in the regulator
  - o wear and tear in a normal manner
  - o as a result of a natural disaster
- When applying the warranty, it is necessary to submit a report (part of this document) containing:
  - o details of the complaining person/company
  - o date and number of the sales document
  - o detail defect description
  - o wiring diagram and protection data
  - o photo of the product's manufacturing label and, where appropriate, serial number
  - o photo from the place of product installation
  - o product measured values: air temperature, voltage, current



- The method of handling warranty repairs is carried out at the company service centre or at the place of installation. The method of resolving warranty repairs is exclusively at the discretion of the company's service centre. The complaining party shall receive a written statement on the result of the complaint – warranty repairs. In the event of an unjustified complaint, all costs associated with this shall be borne by the complaining Party.

## 11. Conclusion

- If you have any doubts about this product, please do not hesitate to contact us.

### Contact address:

Xvent s.r.o.  
Poděbradská 289  
53009 Pardubice-Trnová  
Czech Republic [www.xvent.cz](http://www.xvent.cz)

