Operating Manual EC-1000

1 Introduction

The pressure and flow rate Controller controls the speed of the fan by means of a 0–10 V output signal. It does not need a separate electrical connection, as it is powered by the voltage of the fan. The device can operate in three modes: Controller (in which case it maintains a constant set differential pressure), Constant flow and Disabled.

1.1 Technical parameters

PARAMETER	VALUE
Supply voltage	10 V DC
Current consumption	typ. 3 mA, I_{MAX} < 10 mA
Battery	CR2032
Communication	NFC
Operating temperature	from -25°C to +50°C
Storage temperature	from -25°C to +70°C
Humidity	<90% RH, non-condensing
Environmental class	2
Differential pressure setting	from -500.0 to 500.0 Pa
Output signal	0 - 10 V DC
Case protection class	IP54
Dimensions	120 × 122 × 46 mm
Weight	200 g
Altitude above sea level	<2000 above sea level

1.2 General description

The device is supplied with an integrated power cable. The supply voltage of the device is 10 V DC. The voltage is provided by the 0–10 V input of the fan. An NFC interface and an mobile app are used to set and read the status of the device. The Controller has a built-in differential pressure sensor and is available in single or dual port versions. A calendar allows the user to set periods of output limitation, output increase or fan stop.

2 First commissioning

Before connecting the device, make sure that it has no visible damage and the installation has been carried out in accordance with the recommendations of this manual.

2.1 Installation recommendations

Mount the device with the pneumatic port downwards (see Figure 1). For mounting to the wall, use two screws/bolts with a diameter of no more than 4 mm, selected according to the substrate on which the Controller will be mounted.

The length of the electrical cable supplied with the device is 70 cm. The cable can be extended, but its total length must not exceed 3 m.

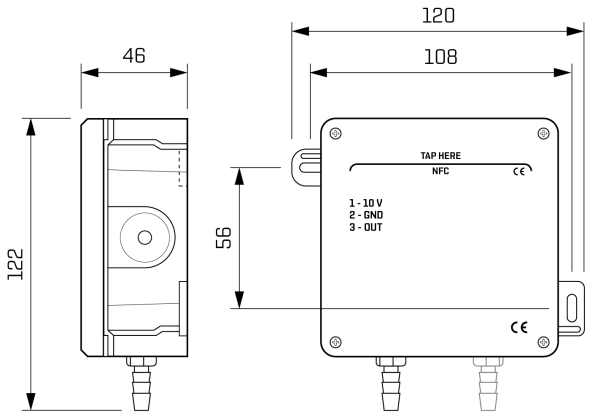

Fig. 1: Dimensions of the device without the cable in mm

Notes on safety!

- Before the first commissioning, read this operating manual carefully.
- Negligence in observing the warnings and recommendations may cause electric shock, serious injury and fire.
- All connections and their changes should be made with the power supply disconnected.
- Ensure proper operating conditions in accordance with the technical requirements of the device. First of all, check the supply voltage, the current capacity of the power source and the ambient temperature.
- Failure to connect the device properly can result in its damage.
- The device may detach from its mounting location and cause a risk of injury/pain.
- Only qualified persons (after reading this manual) are allowed to connect the device and perform wiring.
- Responsibility for proper installation rests with the installer. Make sure that all country-specific guidelines and standards are met.
- The Controller may be installed in a place where only adults are present.
- Any attempt to make any unauthorised changes to the device and repairs carried out by the user will void the warranty.

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2.2 Connecting the device

2.2.1 Electrical connection

Caution!

The connection of the device must be carried out by authorised persons. Any installation must be carried out with the power off. The device must be connected directly to the fan controlled by the Controller. The fan must have sufficient current capacity to ensure stable operation.

The electrical connection should be made as shown in Figure 2. The device has one three-conductor cable with an external diameter of 5,6 mm and a conductor area of 0,75 mm^2.

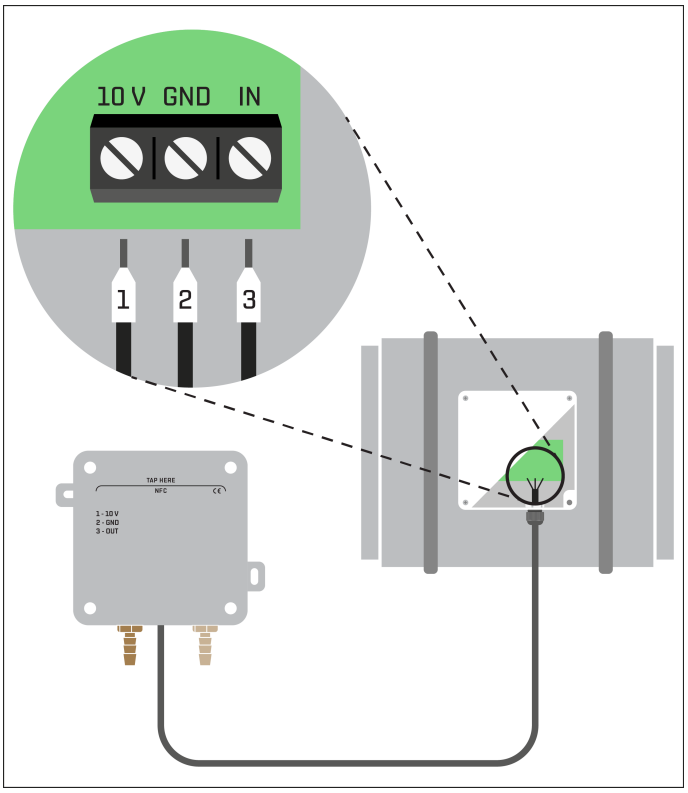

Fig. 2: Electrical connection of the device

2.2.2 Pneumatic connection

The device connection (see Figure 3) should be made using the hose supplied. The pneumatic hoses should be routed without kinks. Kinks could reduce the internal diameter of the hose. Also, avoid routing the pneumatic hoses in such a way that they form a siphon. This could result in clogging of the hose with condensed water.

The pressure measuring point should be made using the supplied measuring port mounted at 90° to the direction of air flow.

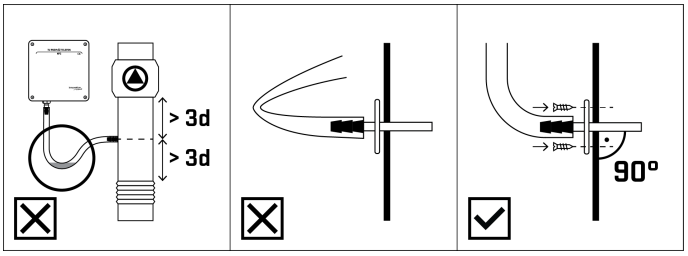

Fig. 3: Installation recommendations

3 Operating modes

The device has three operating modes:

- controller mode,
- constant flow mode,
- disabled mode.

3.1 Controller operating mode

A device operating in Controller mode maintains a constant set pressure. The device will automatically detect abnormalities that prevent the setpoint from being reached (e.g. it will detect the removal of ventilation grilles or clogged measuring hoses). It will then switch to a safe mode, which will ensure that the ventilation quality is as high as possible and will not interrupt operation despite installation errors. It is also possible to limit the maximum and minimum output voltage of the Controller. The voltage level will then not be exceeded during operation, regardless of the current pressure.

3.2 Constant flow operating mode

A device operating in Constant flow mode maintains a fixed user-set 0–10 V output signal.

3.3 Disabled operating mode

A device operating in Disabled mode sets the output signal to 0 V.

Caution!

Disconnect the fan from the mains supply before servicing.

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4 Functions

4.1 Night setpoint

The night setpoint can be used to temporarily change the fan output and the operating mode of the device. It is possible to configure the night setpoint separately for Monday-Friday and Saturday-Sunday.

4.2 Safe mode

Safe mode will only be activated in Controller mode. If the fan does not provide the set value for 4 minutes, the device will switch to safe mode. The Controller will then set the fan operation according to the data stored in the **Control signal setpoint in safe mode** parameter. Safe mode is switched off automatically every second Wednesday at 12:00 a.m. It can also be switched off: a. by means of the application while performing a write operation; b. by restarting the device; c. by the night setpoint (if the device in the night setpoint operates in a different mode than the one selected in the **Work mode set** field). If, after deactivating the safe mode, it is still not possible to reach the setpoint, the device will again switch to safe mode. It is possible to completely disable safe mode detection by changing the value of the **Safe mode detection** parameter.

4.3 Maximum control signal

Maximum control signal set allows you to limit the fan speed – this can only be done when the device is operating in Controller mode.

4.4 Minimum control signal

Minimum control signal set allows you to limit the fan speed. The value of the minimum control signal overrides all other settings. In Controller mode, it is possible to set the device so that, regardless of reaching the setpoint value, the fan is never controlled by a voltage lower than the minimum or the fan is stopped if the setpoint value is reached at a voltage lower than the minimum.

4.5 Buttons

The device has built-in button. This is used to change the setpoint in an emergency, e.g. when the telephone is discharged or missing. Button 1 is used to change the setpoint (see Figure 4). A single click increases the setpoint by 5 Pa for Controller mode or 5% for Constant flow mode. A double click decreases the setpoint by 5 Pa or 5%. Holding down button 1 for more than 2 seconds resets the device.

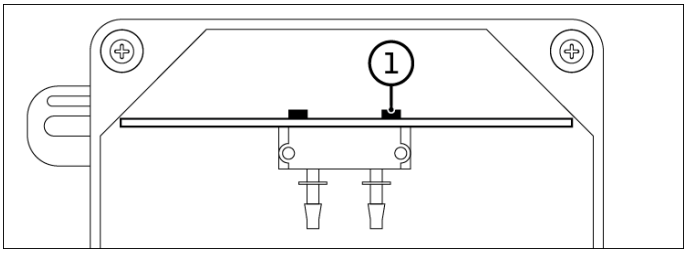

Fig. 4: Buttons

5 Configuration application

5.1 General description

The **Innovation Vent** mobile app is used to read and change the device settings. To use the app, all you need is an NFC-enabled iOS or Android phone. The app is divided into two tabs: **READ** and **WRITE**.

5.2 NFC communication

To connect to the device, place your phone against it so that its top edge lies on the line printed on the lid of the Controller. The line is marked as: **TAP HERE**. It should touch the lid of the device. If the recommended positioning of the phone does not provide a good connection with the Controller, apply the phone to the device several times, changing the position each time, until the best position is found. If the phone is placed in a case, check that it is not blocking the signal. If there is no connection at all, disable and enable NFC on the phone.

5.3 First reading

If you have not previously read your device's data using the app, you will see the screen shown in Figure 5. To read information from the device, place the phone against it.

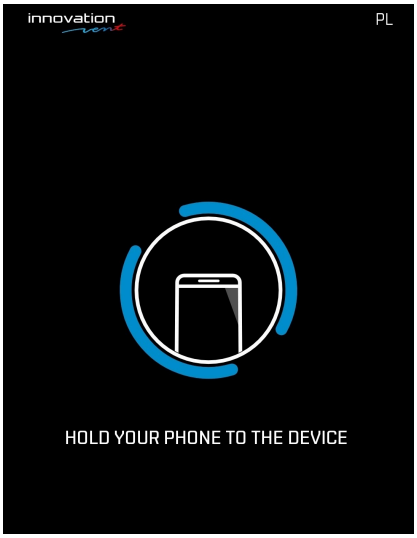

Fig. 5: Initial screen

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5.4 Parameter reading and saving

The app allows you to read and change the current operating parameters of the device.

To read data from the device, follow the steps below:

1. select the **Read** tab;
2. place the phone close to the device;
3. wait for the data to be downloaded.

To make changes, you must first read the existing device data. If data was previously read with the same software version, another reading is not necessary. To save new information, follow the steps below:

1. select the **Write** tab;
2. make the necessary changes;
3. place the phone on the device and wait for the confirmation of data saving.

The view of the **READ** and **WRITE** tabs is shown in Figure 6.

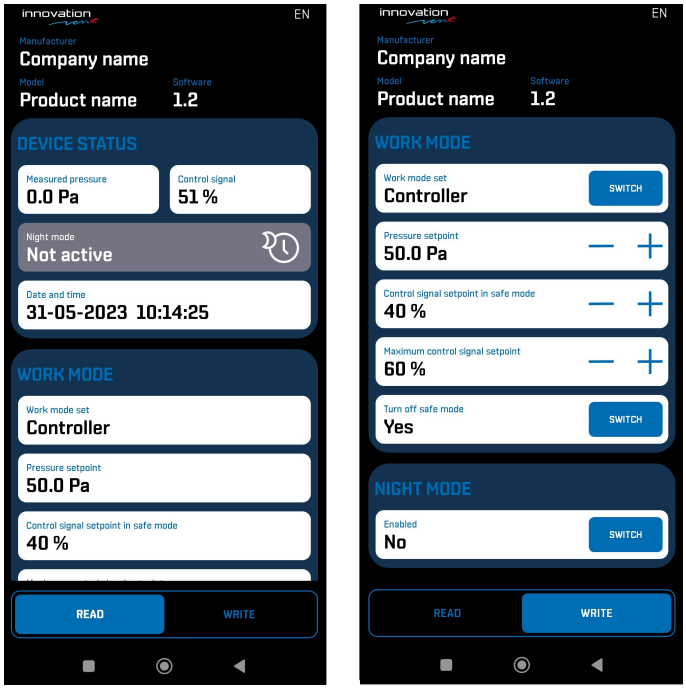

Fig. 6: 'Read' and 'Write' tabs

Scan to download Innovation Vent app.

Pobierz w App Store

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The user manual applies to the device with software version 1.2.

5.5 Writing parameters to an incorrect device model

When attempting to write settings from the device to a device of a different type or with a different software version, the screen will display the message shown in Figure 7. To save the new data, the current settings must first be read.

Fig. 7: Incorrect device model or version

5.6 Battery

There is a CR2032 battery in the device. No other type of battery can be used. When replacing the battery, pay attention to the polarity marked on the battery holder. After replacing the battery, save the settings to update the time on the device.

Caution!

Battery replacement must only be carried out by qualified and authorised persons after reading the operating manual. Turn off the power to the device before proceeding.

5.7 Updating the real-time clock

The application saves the current time read from the phone to the device each time configuration is write. The device automatically makes the summer/winter time change. The automatic time change can be disabled via the **Automatic time change** parameter.

5.8 Language selection

The application allows you to select the language by clicking on the icon in the top right corner of the application window.

Technical Issues?
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518 330 202

Innovation Vent, Główna 26
83-021 Przejazdowo, Poland