



# reventon

## Technical documentation

Energy Recovery Unit INSPIRO

**MODELS:**

INSPIRO 150  
INSPIRO 250  
INSPIRO 350  
INSPIRO 500  
INSPIRO 650  
INSPIRO 800  
INSPIRO 1000  
INSPIRO 1300



EN

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## 1. INTRODUCTION

Thank you very much for purchasing energy recovery unit INSPIRO. We would like to congratulate you on excellent choice. Please read and keep this manual.

### 1.1 PRECAUTIONS

The buyer and the user of the device Reventon Group brand should read carefully the following instructions and proceed to the content recommendations. Proceeding due to the following instruction guarantees the correct usage and safety. In case of any doubts please contact directly Reventon Group sp. z o.o. [Ltd.]. The supplier reserves the rights to make changes to the technical documentation without previous notice. Reventon Group sp. z o.o. [Ltd.] is not responsible for the damages which occur due to improper installation, not keeping the device in repair or using the device out of line. The installation should be carried out by the professional installers, who possess the qualifications to install these types of devices. The installers are responsible for making the installation as instructed in the technical data. In case of unserviceable please plug out the device and contact with the authorized repair person or the supplier. During the installation, use, service and periodical inspections all regulations and safety rules must be followed.

### 1.2 TRANSPORT

During the acceptance of goods, it is needed to check the device to exclude any damages. During the transport, it is needed to use the proper equipment, it is necessary to carry the device by two people. In case of any damages please fill in the damage report in presence of the supplier.

### 1.3 PACKAGE CONTENT

- energy recovery unit
- instruction and warranty card
- intelligent controller STANDARD or PRESTIGE (option)
- silicon hose of differential pressure switch

### 1.4 USE

Energy recovery units Reventon Group INSPIRO series are designed for ventilation systems as an important element enabling energy recovery (heat and moisture). These devices enable ventilation of the building. They are designed for ventilation of residential buildings as well as halls, warehouses, shops, services or workshops. Energy recovery allows for a significant reduction of the building's operating costs.

## 2. DEVICE CHARACTERISTICS

### 2.1 CONSTRUCTION AND PRINCIPLE OF OPERATION

**Casing:** made of steel, additionally covered with insulating material which improves acoustic and thermal properties of the unit. It has handles for easy assembly of the device. The connectors are made of plastic and have diameters enabling installation of the most popular sizes of ventilation ducts. The housing has an inspection door that allows for easy access to filters and exchanger.

**Enthalpy heat exchanger:** made of the special material enabling efficient recovery of heat and moisture from room exhaust air (**enthalpy efficiency above 70%!**). Thanks to the recovery of moisture in many cases there is no need for using additional humidifier.

**Filters:** the unit has two sets of filters - prefilter G3 and filter F9, which properly maintained (see point 5) guarantee appropriate purity of the air supplied to the rooms.

**Differential pressure switch:** measuring and comparing the pressure after and before the F9 filter informs about the need of replacement the filter, triggering filter alarm. Before mounting the energy recovery unit, connect the differential pressure switch with the connectors in the inspection door using transparent pipes in the way shown on picture below.



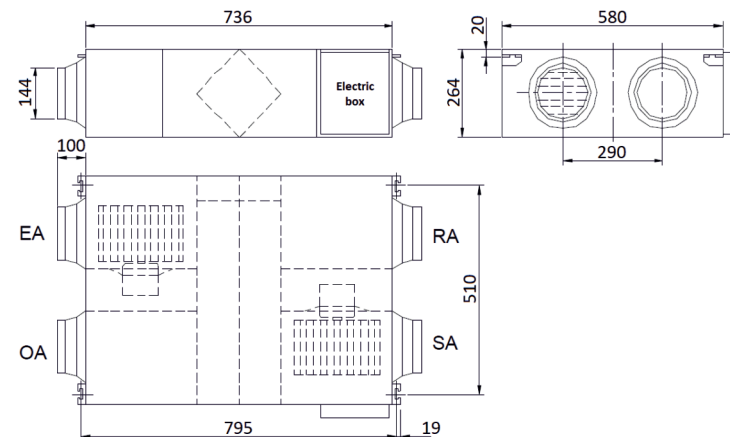
There is a possibility to change the differential pressure switch setpoint (i.e. the pressure difference behind and before the filter at which the device will trigger the filter alarm). To do this, unscrew the upper plastic housing and use a flat screwdriver to change this pressure. The value recommended by the supplier is 80-100 Pa.



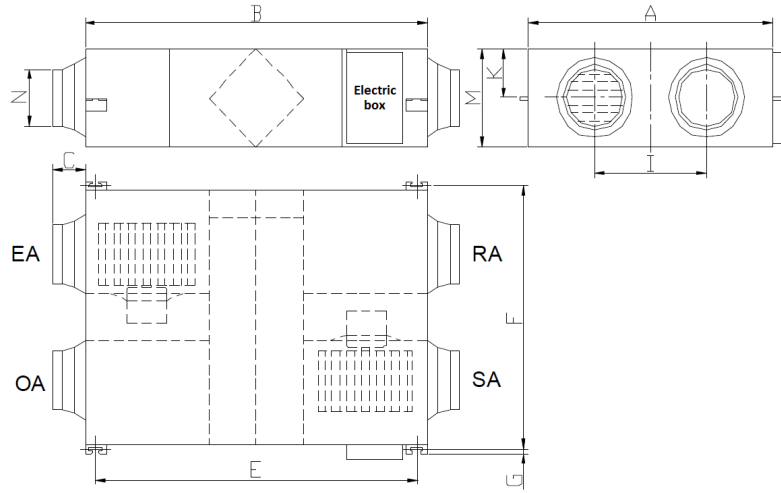
**Supply and exhaust fan:** energy-efficient DC fans which ensure airflow through the exchanger and ventilation ducts. They have 10 predefined rotational speeds, enabling to adjust the device performance for the current needs. Detailed performance characteristics of the whole units can be found in section 2.4.

### 2.2 DEVICE DIMENSIONS

#### INSPIRO 150



## INSPIRO 250 - INSPIRO 1300



Model	A	B	C	E	F	G	I	K	M	N
INSPIRO 250	599	814	100	745	657	19	315	111	270	Ø 144
INSPIRO 350	804	814	100	745	862	19	480	111	270	Ø 144
INSPIRO 500	904	894	107	824	960	19	500	111	270	Ø 194
INSPIRO 650	884	1186	85	1115	940	19	428	170	388	Ø 242
INSPIRO 800	1134	1186	85	1115	1190	19	678	170	388	Ø 242
INSPIRO 1000	1216	1199	85	1130	1273	19	621	171	388	Ø 242
INSPIRO 1300	1216	1199	85	1130	1273	19	621	171	388	Ø 242

### 2.3 DEVICE TECHNICAL DATA

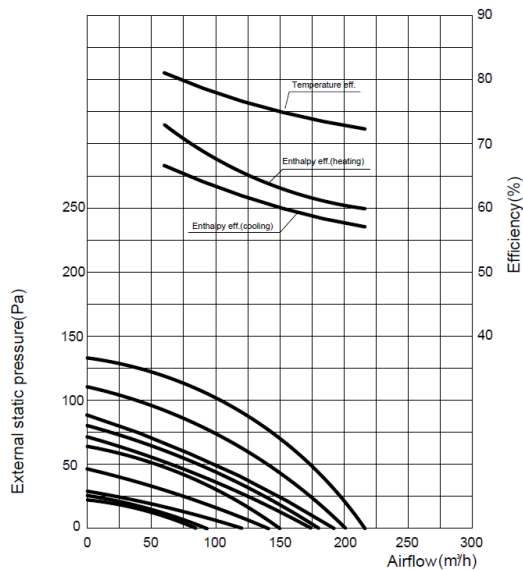
TECHNICAL DATA Product code	INSPIRO 150 INSPIRO150-1972	INSPIRO 250 INSPIRO250-1973	INSPIRO 350 INSPIRO350-1974	INSPIRO 500 INSPIRO500-1975	INSPIRO 650 INSPIRO650-1976	INSPIRO 800 INSPIRO800-1977	INSPIRO 1000 INSPIRO1000-2026	INSPIRO 1300 INSPIRO1300-2027
Nominal airflow [m³/h]	150	250	350	500	650	800	1000	1300
Maximum enthalpy efficiency [%]	70	73	73	75	71	73	72	75
Maximum temperature efficiency [%]	80	81	82	84	82	82	82	82
Supply voltage [V] / Supply frequency [Hz]	220-240 / 50	220-240 / 50	220-240 / 50	220-240 / 50	220-240 / 50	220-240 / 50	220-240 / 50	220-240 / 50
Motor power [W]	45	98	107	105	275	285	425	436
Protection degree IP [-]	X2	X2	X2	X2	X2	X2	X2	X2
Net weight [kg]	25	27	33	38	62	72	81	81
Noise [dB(A)]	31,5	34,5	37,5	39	41	42	43	43
Energy Efficiency Class [-]*	A	A	A	A	A	A	A	A

\* according to EU no. 1254/2014

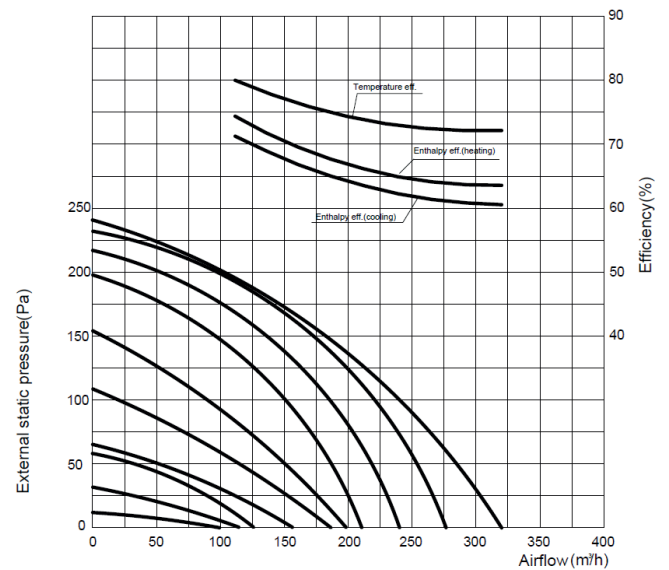
### 2.4 WORKING CHARACTERISTICS

The below characteristics are made for  $T_{OA} = 5^{\circ}\text{C}$ ,  $\phi_{OA} = 58,5\%$ ,  $T_{RA} = 21^{\circ}\text{C}$ ,  $\phi_{RA} = 39,2\%$  and the airflows of supply and exhaust streams.

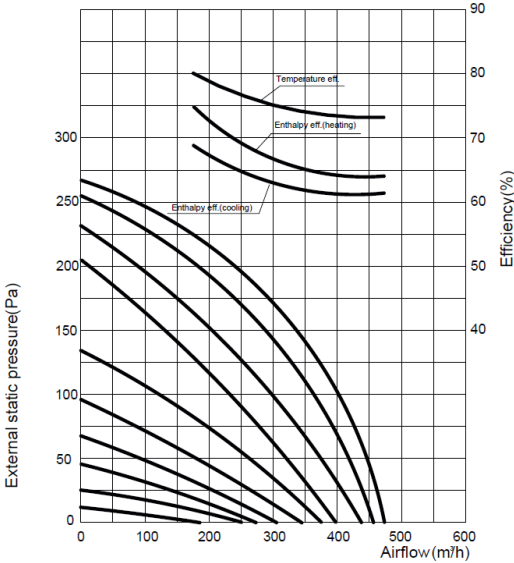
#### INSPIRO 150



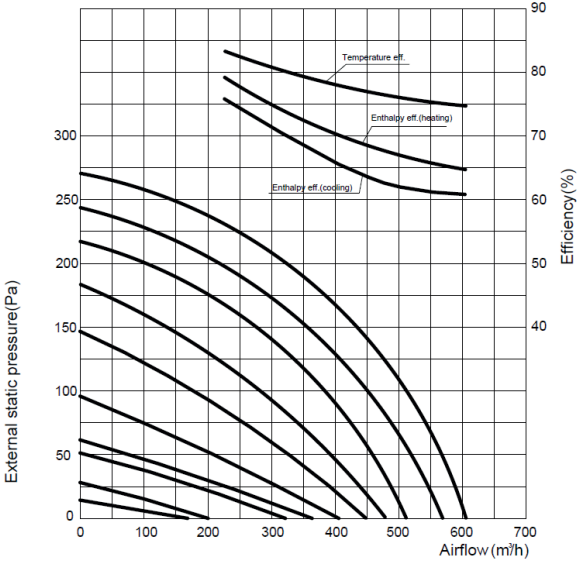
#### INSPIRO 250



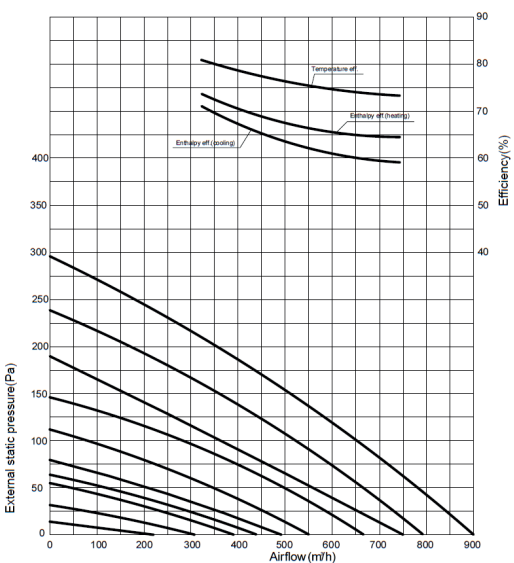
INSPIRO 350



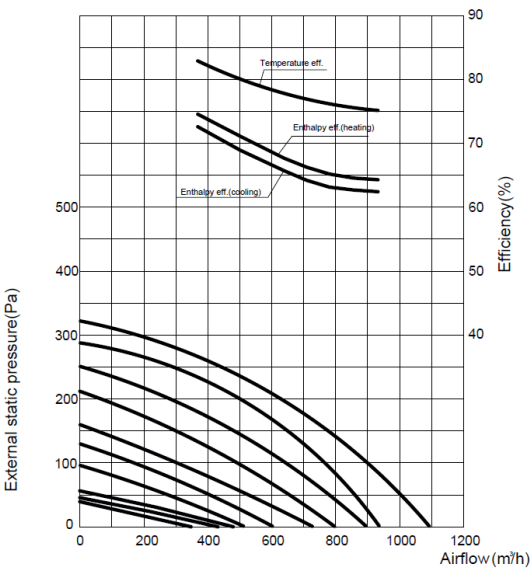
INSPIRO 500



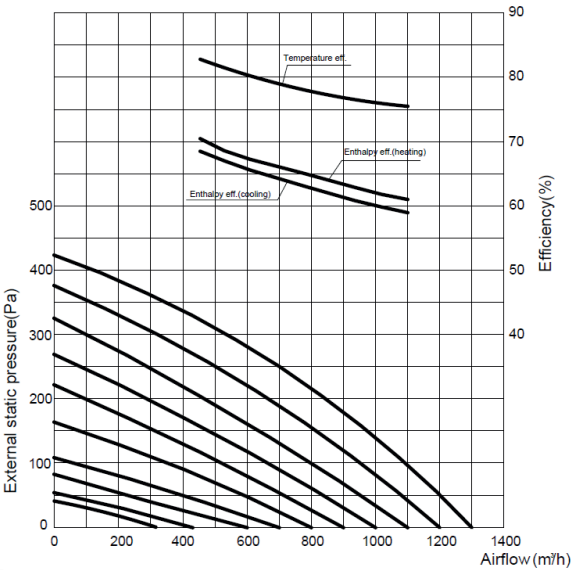
INSPIRO 650



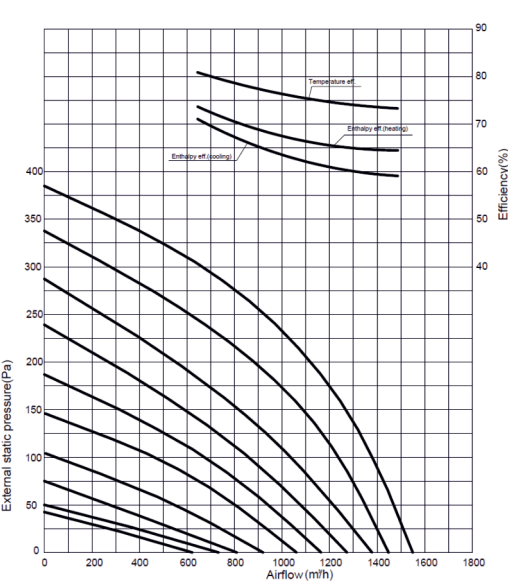
INSPIRO 800



INSPIRO 1000



INSPIRO 1300

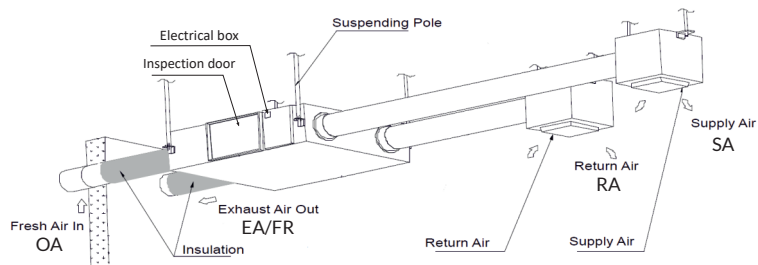




### 3. ASSEMBLY

#### 3.1. GENERAL PRINCIPLES

- device is designed for hanging mounting
- mounting elements not included in the kit, you should buy them yourself and make sure they are suitable for this type of installation
- abbreviations OA/EA/SA/RA mean subsequently outdoor fresh air, exhaust air, supply air and return air
- it is not recommended to install the unit in a position where the inspection door would be pointed up or down
- protect the openings of the unit against the ingress of dust during installation
- the minimum gap in which the device will be installed is at least 320 mm (for INSPIRO 150 - INSPIRO 500 devices) or 450 mm (for INSPIRO 650 - INSPIRO 1300)
- the device should be installed in a way that allows easy access to the inspection door and the electrical box - the recommended distance of inspection door from the nearest building partition depends on the model and should be equal or higher than the F dimension in section 2.2.
- exemplary installation with energy recovery unit is shown in the figure below



#### 3.2 DUCTING

- connection between ducts and the openings of the device must be secured with tape or sealed in accordance with domestic or local norms
- outside ducts (i. e. fresh and exhaust air) should be thermally insulated and carried out with a drop of 1 - 2% toward the outside in order to prevent water entering into the unit
- the energy recovery unit and ducts cannot run close of flues (e.g. from boiler)
- it is not allowed to make ducts in the way shown below:



Excessive bending angle



Reduce the diameter of the junction part



Too many bending parts

- fire dampers must be installed in accordance with domestic or local fire regulations
- the device must not be exposed to an ambient temperature above 40°C
- outside ducts should be ended by intake and exhaust outlets, located in accordance with domestic or local norms
- before start up ensure there are no obstructions to or in the ducts
- operation of heater should be synchronous with the unit
- duct silencers can be used to minimize noise in the room

#### 4. INSTALLATION INSTRUCTIONS

##### 4.1. CONNECTION OF THE DEVICE TO THE ELECTRICAL SYSTEM

- all works concerning electrical installation should be made by the qualified personnel (who possess required authorizations to install electrical equipment), based on wiring schematic diagram (see point 7)
- the recommended cross sectional area of the supply wires is 1.5 mm<sup>2</sup>
- as the control cable the shielded one should be used with cross-sectional area of wires at least 0,5 mm<sup>2</sup> and maximal length 7 m (i. e. the distance between the PCB and the control panel should not be bigger)
- the electrical installation of the building shall have a residual current device
- it is recommended to check the electric installation and controls before the first start

#### 5. PRECAUTIONS & WARNINGS

The precautions mentioned below must be strictly followed during operation of the device:

- all works concerning electrical installation (disassembly, repair etc.) should be made by the qualified staff, who possess the qualifications due to the domestic and local norms, regarding electrical installations
- do not use the unit for direct exhaustion of kitchen vapors - this may result in clogging of the exchanger and filters by fats and greases

- the unit should be protected against the influence of frost / water (i. e. appropriate insulation, preventing lowering the temperature in the room below 0°C, pre-heater, etc.)
- the unit should not be used for long-term supplying/exhausting air with relative humidity exceeding 80% and air temperature above 40°C
- the unit should not work without installed G3 and F9 filters - this can lead to dirt and clogging of the enthalpy exchanger
- before service or exchange of the device it is obligatory to cut off the current supply
- do not limit or cover the inlet and outlet of the device
- do not install, service the device with wet hands or barefoot
- the device should be kept out of reach of children and animals
- after operating time of the device, please utilize it concerning the local norms and regulations
- it is recommended to clean the device periodically:
- unit's casing clean from dirt (at least once per year)
- G3 filter blow with compressed air to remove dirt and dust (at least once per quarter)
- enthalpy heat exchanger clean from dirt (at least once per two year)
- for installation of the device in a place where is high dust concentration, the periodic cleaning of filter and exchanger should be performed much more often, not allowing the items to 'clog'
- failure to comply with cleaning obligations may have a negative effect on technical parameters of the device and lead to loss of warranty
- F9 filter should be replaced with the new one when filter alarm appears
- if the device is not used for a longer time and lead to loss of warranty disconnect the power supply

#### 6. CONTROLS

##### 6.1 CHARACTERISTIC

Energy recovery unit INSPIRO series has technologically advanced controller, which optimise the unit operation. Communication with the controller is possible with control panel, available in two versions - STANDARD and PREMIUM. The latter besides attractive new design and touch screen enables operation of the unit according to connected humidity sensor. Detailed description of both control panels operation can be found in point 6.4 and 6.5.

The main functions of the unit:

- **speed selection** – independent regulation of supply and exhaust fans airflows in wide range (10 different speeds)
- **weekly schedule** – it is possible to set a weekly work schedule of the unit
- **automatic bypass** – the function allows to supply outside air directly (i. e. without energy recovery) if there is no heating / cooling demand
- **electrical heater control (optional)** – the controller can cooperate with external electrical heater to supply air at required temperature
- **defrosting with return air** – the process is activated automatically when the temperature of exhaust air drops below the set value
- **defrosting with preheater (optional)** – the process is activated automatically when the temperature of exhaust air drops below the set value (see point 6.6)
- **defrosting with preheater (optional)** – the process is activated automatically when the temperature of exhaust air drops below the set value (see point 6.6)
- **CO<sub>2</sub> sensor (optional)** – if the set value of permissible CO<sub>2</sub> concentration is exceeded, the unit automatically starts to work at its highest speed
- **relative humidity sensor (optional; only for control panel PREMIUM)** – if the set value of permissible relative humidity is exceeded, the unit automatically starts to work at its highest speed
- **filter alarm** – the alarm appears if the pressure drop on the F9 filter exceeds the value set at the differential pressure switch, indicating the need of filter replacement
- **error code** – if there is an error, you can check on the panel an error code, what making easier to diagnose the problem
- **data memory** – the controller "remembers" the settings in a case of power supply break
- **free cooling** – the function enables direct supply of cold outside air by activating bypass at any time, using 'By-pass' terminals (see wiring diagram in point 7)
- **working condition monitor** – there is a possibility of signalling status of the unit (operation or failure) by light or sound signalisation, using 'Operation signal' and 'Failure signal' terminals (see wiring diagram in point 7)
- **fire switch** – emergency shutdown using 'Fire alarm signal input' terminals (see wiring diagram in point 7)

- **external ON / OFF switch** – the unit can be turned on / off at the highest speed according to the external switch, using 'External switch' terminals (see wiring diagram in point 7)

- **BMS communication** – the unit can be integrated with the BMS building controls system

## 6.2 COMMISSIONING

The procedure described below is identical for both versions of the control panels. In case of doubts what are the functions of particular buttons, please read the point 6.4 or 6.5 (depending on the model of your control panel).

After checking all wires and connections, switch on the device with POWER ON/OFF button and then:

1) Set up your INSPIRO model in the controller parameters – in order to do that the followings should be done:

- press and hold the MODE button for 6 seconds to enter the controller parameters
- using SET button go to parameter no. 21 (i. e. "Model INSPIRO", see point 6.3) and press MODE button to change the value of this parameter
- using UP and DOWN arrows, change its value to the appropriate for the given model (according to the table below, in dependance to the control panel)


Model	Value STANDARD	Value STANDARD
INSPIRO 150	15	0F
INSPIRO 250	14	0E
INSPIRO 350	13	0d
INSPIRO 500	13	0d
INSPIRO 650	11	0b
INSPIRO 800	12	0c
INSPIRO 1000	12	0c
INSPIRO 1300	11	0b

2) Check the fans and temperature sensors operation – in order to do that the followings should be done:

- pressing MODE button verify that the given temperatures are correct values, corresponding to the real ones
- changing the supply fan speed (in SA or OA mode) and exhaust fan (in RA mode) using FAN button, check that the supply and exhaust air flows are felt and different for various fan speeds

3) Check the bypass operation – in order to do that the followings should be done: ensure that the value of OA temperature is within the range specified by parameters no. 2 and 3 (default 19 - 21°C, see parameter table in point 6.3)

→ if the OA temperature read by the unit is outside this range, you need to adjust the range accordingly, in a manner analogous to point 1 (for parameter no. 2 and 3)

- check if the bypass has been opened → it should be indicated by the icon  and also the OA and SA temperatures should be the same (after some time)
- after carrying out the test, remember to adjust the values of parameters no. 2 and 3 according to user's requirements

## 6.3 CONTROLLER'S PARAMETER

To edit the controller parameters, press MODE button for at least 6 seconds. SET button allows you to "move" between individual numbers (corresponding parameters) and pressing MODE button again, enables you to enter to the edition mode of a parameter. Adjustment of parameter value can be done with UP and DOWN arrows. Then the set value must be confirmed with SET button. The controller has the following editable parameters:

Number	Parameter	Range	Default	Unit
00	Auto restart	0-1	1	-
01	Electrical heater	0-1	0	-
02	Automatic bypass temperature 'X'	5-30	19	°C
03	Automatic bypass temperature 'Y'	2-15	3	°C
04	Defrosting interval	15-99	30	Minute
05	Defrosting entering temperature	-9-5	-1	°C
06	Defrosting duration time	2-20	10	Minute
07	Permissible CO <sub>2</sub> concentration value	00-250	00 (off)	x 10 ppm
08	ModBus address	1-16	1	-
21	INSPIRO model	according to the table in point 6.2	0	-
23	Fan speed control	0: 2 speeds 1: 3 speeds 2: 10 speeds	2	-
24	Multifunction setting	0: Reserved 1: Sweep filter alarm 2: Sweep weekly timer	0	-
25	Filter alarm setting	0: 45 days 1: 60 days 2: 90 days 3: 180 days	0	-

**00** - refers to an automatic restart after a power supply break

0: Invalid 1: Valid

**01** - applies to electric heater of supply air

0: Invalid 1: Valid

If the unit is equipped with an electric heater on the supply side, the parameter should be changed to 1. Then in the TA mode, the supply air temperature can be adjusted within the range of 10-25°C.

**02 i 03** - refers to an automatic bypass function

Bypass opens under the condition that the outside temperature is higher than X (parameter 02) and lower than X + Y (parameter 03). In other cases, the bypass remains closed.

**04, 05 i 06** - applies to automatic defrosting function

If the FR temperature decreases below the defrosting entering temperature (parameter 05) and last at least 1 minute and the time which elapsed since the previous defrosting operation is longer than the defrosting interval (parameter 04), then the device will go into defrosting mode, i. e. fan of supply air automatically stops and the exhaust air fan operates at the highest speed in order to defrost the exchanger. The defrosting process will end when the exhaust temperature FR is 15 degrees higher than the defrosting entering temperature (parameter 05) for 1 minute or the specified defrosting duration time expires (parameter 06).

**07** - refers to function of CO<sub>2</sub> concentration control (optional)

If the concentration of CO<sub>2</sub> in the air read by the sensor exceeds the maximum allowable value, the unit starts to work automatically at the highest speed. The device will return to the previous stage when the CO<sub>2</sub> concentration falls below this limit value.

**08** - designate address of the unit for BMS system

**21** - refers to the performance characteristics of particular INSPIRO model

This value should be specified during commissioning (see point 6.2).

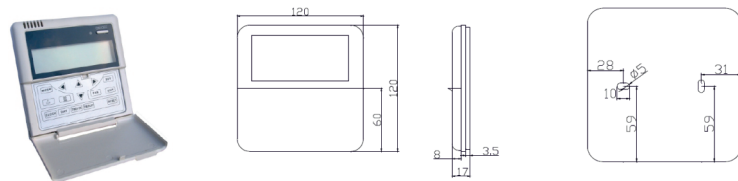
**23** - applies to the possibility of regulation the supply and exhaust fans operation

**24** - function enables to deactivate weekly schedule or filter alarm after its replacement

**25** - applies to filter alarm frequency

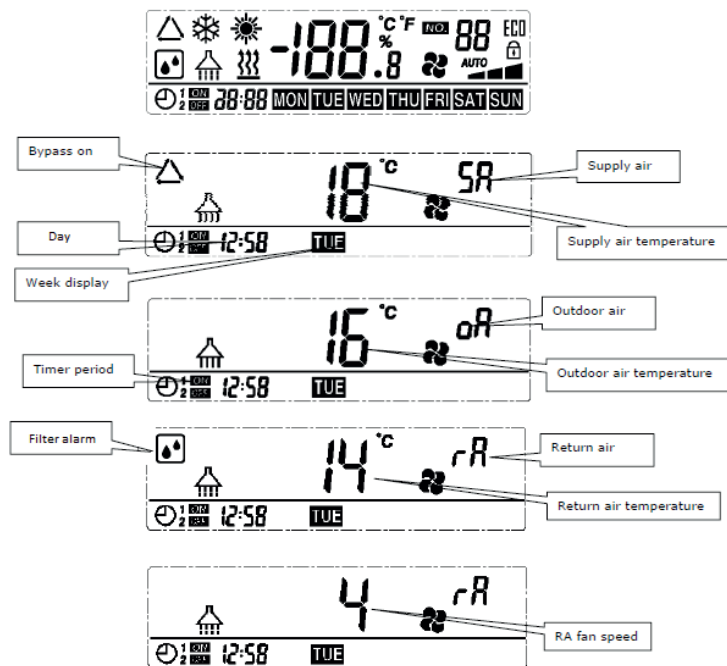
It determines how often filter alarm appears, reminding you to clean or replace filters.

## 6.4 INTELIGENTNY PANEL STERUJĄCY STANDARD

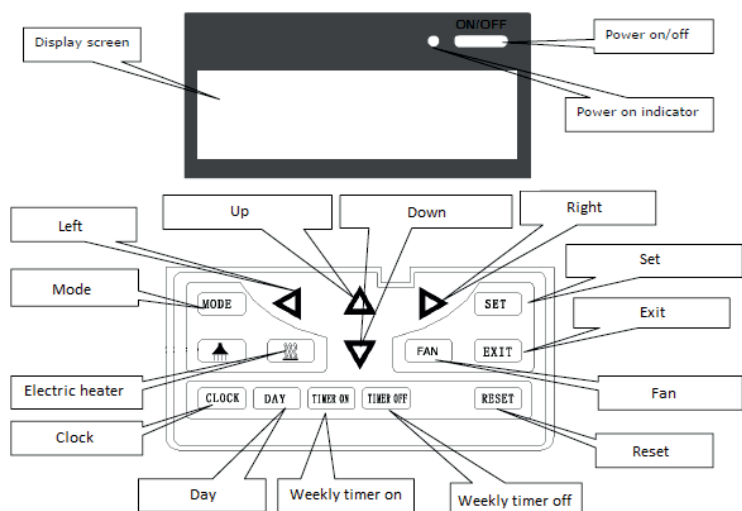


The STANDARD control panel has a liquid crystal LCD screen. The controller is supplied with 5 m cable, which can be extended if necessary (up to 7 m).

### LCD display



### Buttons



- **POWER ON / OFF** – press this button to turn the device on / off. Work in the ON state is indicated by the operating diode.

- **MODE** - press this button to display status of OA / RA / SA / FR mode (outside air, return air, supply air and exhaust air).

- **FAN** - press this button to adjust the fan speed. Depending on the mode, the speed of the supply air fan (in OA or SA mode) or exhaust fan (in RA mode) is changed. It is possible to set 10 different speeds for each fan.

### Controlling

**Clock settings** – press CLOCK button and when the colon of the clock stops flashing, press the button again. Then set the time using RIGHT and LEFT arrows and press CLOCK one more time to set the minutes in a similar way. In order to confirm the set time press SET button and to exit without saving the entered data press EXIT button.

**Day settings** - press DAY button and when the day symbol starts to flash, select the desired day with RIGHT and LEFT arrows. In order to confirm the set day press SET button and to exit without saving the entered data press the EXIT button.

**Schedule** – weekly schedule allows you to define periods (two per day) in which the unit will work. It is realised by functions weekly timer on to determine beginnings of these periods) and weekly timer off (to determine ends of these periods):

- **Weekly timer on** - press WEEKLY TIMER ON button - all days of the week will display. Then use DAY button to select a specific day of the week. Subsequent presses WEEKLY TIMER ON will switch between: hour -> minute -> deactivation the schedule. The appearance of the symbol "-: -" means that the start time of the period for a given day is not set. In order to confirm the set time press SET button and to exit without saving the entered data press EXIT button. The numbers '1' and '2' indicate the beginning of the first and second schedule period. The user can select a period of time by pressing MODE button.

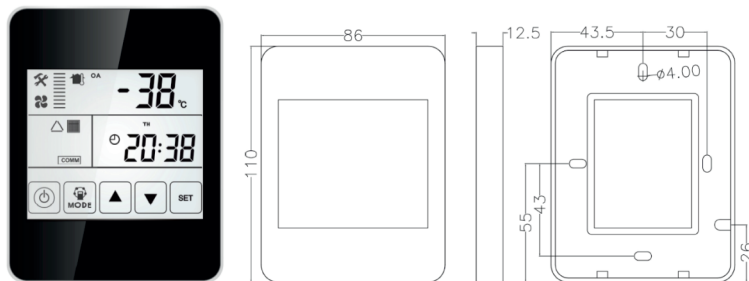
- **Weekly timer off** - press WEEKLY TIMER OFF button - all days of the week will display. Then use DAY button to select a specific day of the week. Subsequent presses WEEKLY TIMER OFF will switch between: hour -> minute -> deactivation the schedule. The appearance of the symbol "-: -" means that the end time of the period for a given day is not set. In order to confirm the set time press SET button and to exit without saving the entered data press EXIT button. The numbers '1' and '2' indicate the end of the first and second schedule period. The user can select a period of time by pressing MODE button.

In order to check the existing schedule, press DAY button and use RIGHT and LEFT buttons to select day.

**Error code** – press SET button to display the error code.

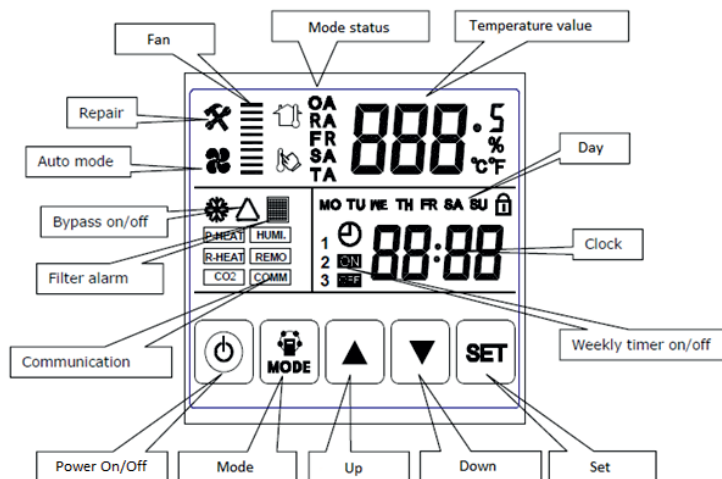
Kod	Error
E1	fresh air temperature sensor (OA) error
E2	EEPROM memory error
E3	return air temperature sensor (RA) error
E4	exhaust air temperature sensor (FR) error
E5	communication error
E6	supply air temperature sensor (SA) error
E7	exhaust fan error
E8	supply fan error

## 6.5 INTELLIGENT CONTROL PANEL PREMIUM



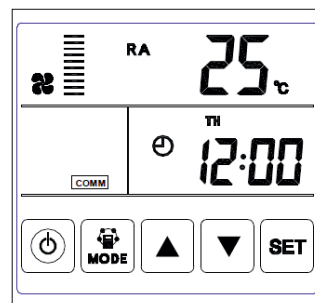
The PREMIUM control panel has a liquid crystal LCD screen with touch buttons. The controller is supplied with 5 m cable, which can be extended if necessary (up to 7 m).

### LCD display and buttons

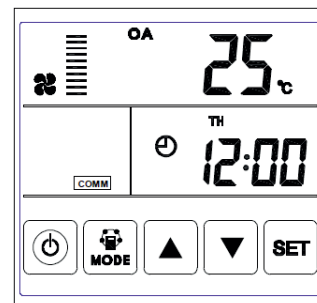


- **POWER ON/OFF** – press this button to turn the device on / off. Hold the button for 6 seconds to lock / unlock the control panel.

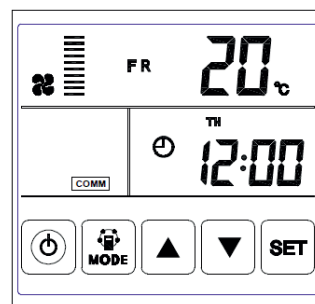
- **MODE** – press this button to display status of RA / OA / FR / SA / TA / CO<sub>2</sub> sensor or humidity sensor mode (return air, outside air, exhaust air, supply air, SA temperature setting, CO<sub>2</sub> or humidity sensor)\*.



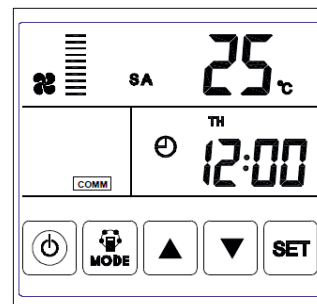
RA MODE



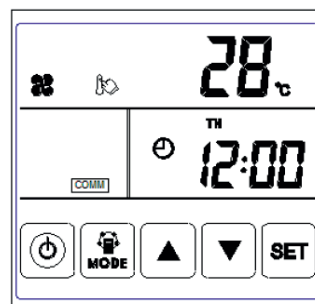
OA MODE



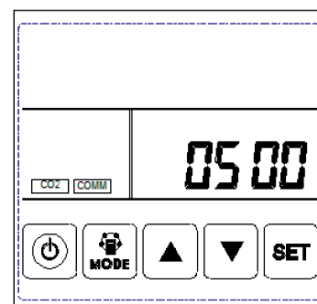
FR MODE



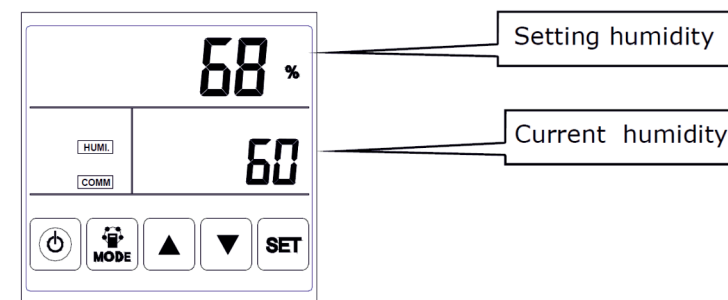
SA MODE



TA MODE



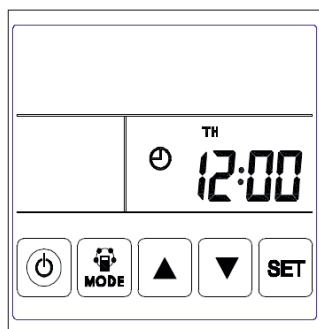
CO<sub>2</sub> SENSOR MODE



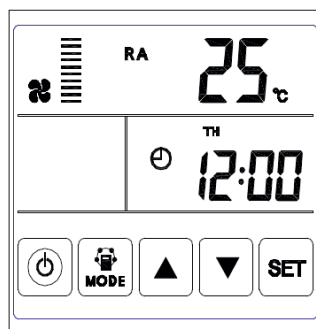
HUMIDITY SENSOR MODE

\* CO<sub>2</sub> sensor and humidity status are available only if they are connected

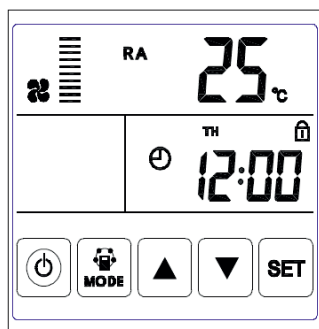
- **UP / DOWN** – use the arrows to adjust the fan speed. Depending on the mode, the speed of the supply air fan (in OA or SA mode) or exhaust fan (in RA mode) is changed. It is possible to set 10 different speeds for each fan.



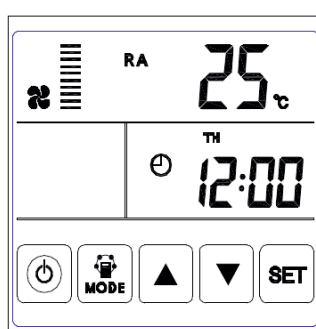
OFF STATE



ON STATE



LOCK STATE



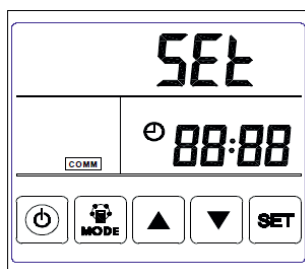
UNLOCK STATE



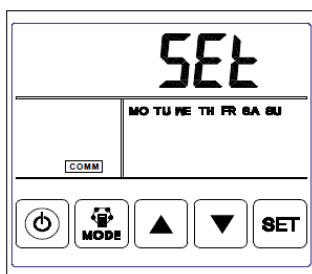
## Controlling

**Settings** - press SET button for 6 seconds to enter the edition mode and then use MODE button to go to the next positions:

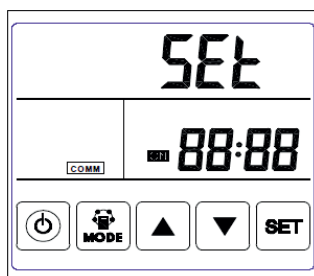
• Clock - while in the clock setting mode, press SET button and use UP and DOWN arrows to set the hour. Then press again MODE button to set the minutes in a similar way. To confirm the set time press SET button.



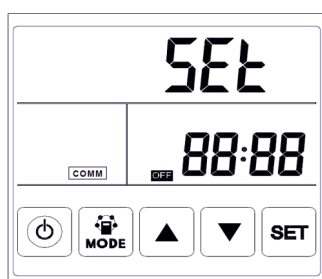
• Day - while in the day of the week mode, press SET button and use UP and DOWN arrows to set the correct one. To confirm the set day press SET button.



• Weekly timer on - while in the weekly switch settings mode, press SET button and then by pressing SET key select correct day of the week and period 1 or 2 (two periods per day can be programmed). After selecting the day, press POWER ON / OFF button to activate / deactivate the start time of the period for the day. If the period is active, press MODE button to move to the start time of the period (using UP and DOWN arrows and MODE button to go from hour to minute or vice versa). To confirm the set start time of the period press SET button. Repeat the above steps until the start times for all required periods are set. Then press SET key again to save the set schedule.



• Weekly timer off - while in the weekly switch settings mode, press SET button and then by pressing SET key select correct day of the week and period 1 or 2 (two periods per day can be programmed). After selecting the day, press POWER ON / OFF button to activate / deactivate the end time of the period for the day. If the period is active, press MODE button to move to the end time of the period (using UP and DOWN arrows and MODE button to go from hour to minute or vice versa). To confirm the set end time of the period press SET button. Repeat the above steps until the end times for all required periods are set. Then press SET key again to save the set schedule.



Error code - press SET button to display the error code.

Code	Error
E1	fresh air temperature sensor (OA) error
E2	EEPROM memory error
E3	return air temperature sensor (RA) error
E4	exhaust air temperature sensor (FR) error
E5	communication error
E6	supply air temperature sensor (SA) error
E7	exhaust fan error
E8	supply fan error

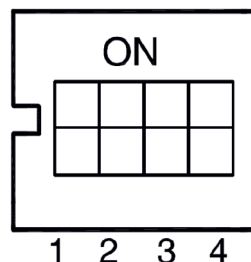
**Setting humidity sensor (available only if humidity sensor is connected)** - in the humidity sensor mode, use UP / DOWN arrows to set the maximum permissible relative humidity (within the range of 45 - 90%), after which the unit starts to work automatically at the highest speed. The device will return to previous settings when the humidity level falls below the permissible value.

**ATTENTION!** If humidity sensor is connected, remember to change the switching circuit 3 to ON position (see point 6.6).

**Setting supply air temperature (available only if electric heater is connected in the supply air side)** - in the TA mode, use UP / DOWN arrows to set the required supply air temperature from the range 10 - 25°C.

**ATTENTION!** If heater is connected, remember to change parameter no. 1 to value 1 (see point 6.3).

## 6.6 DIAL SWITCH



The dial switch is located on the controller (see wiring diagram in point 7) and allows the controller to adapt to the user's requirements. It consists of four two-state switching circuit, which correspond to:

**Switching circuit 1** - allows you to change the defrosting mode. It is set to OFF by default, i. e. defrosting by using return air. Changing the position to ON is a signal for the controller, a preheater on the outside air side has been connected and the possible defrosting process will be carried out using it:

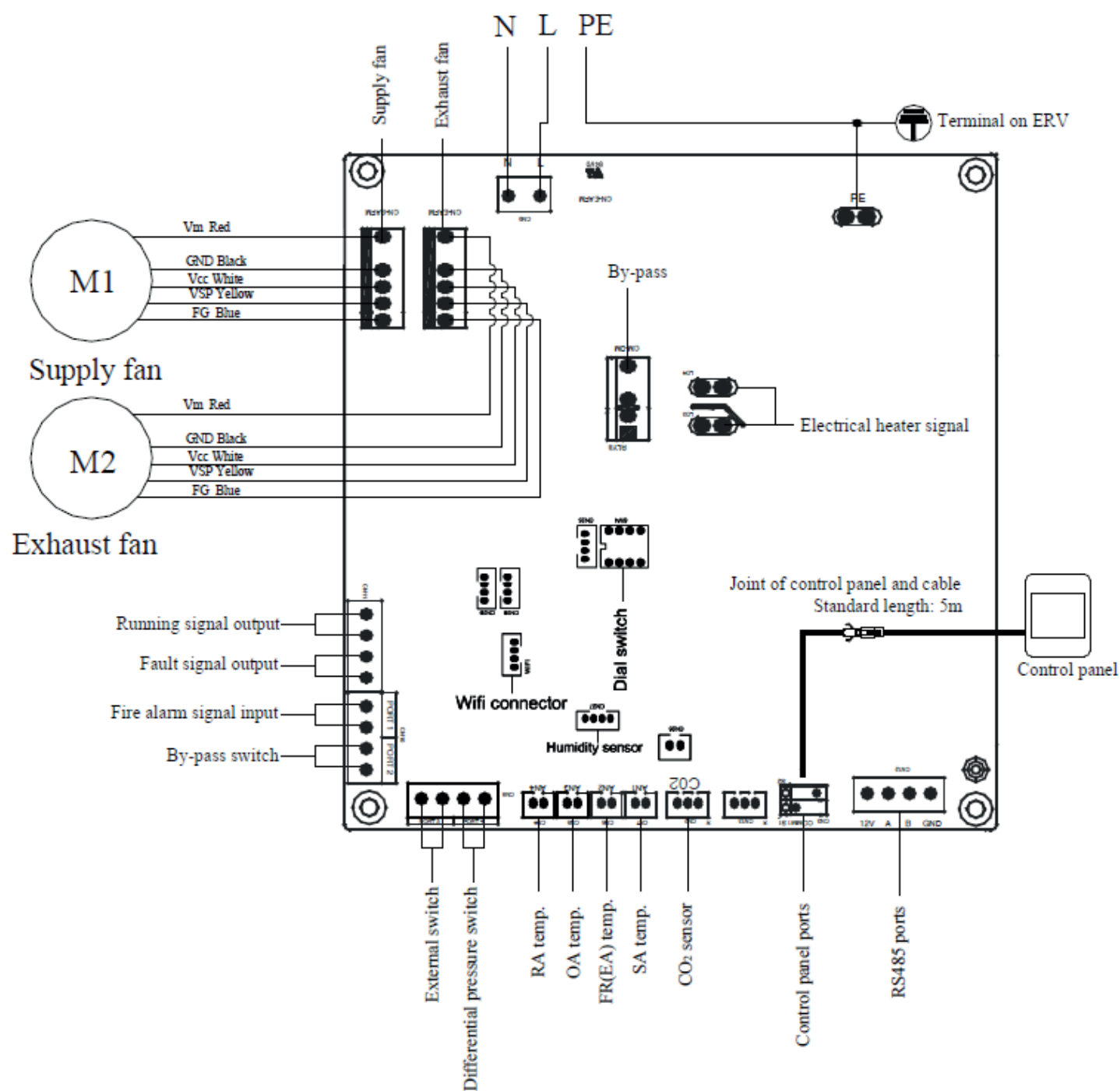
- If OA temperature is < -15°C the preheater turns on for 50 minutes and the fans turn off for 10 minutes (after this time they turn on again)
- If the preheater is turned on and FR temperature is still < -1°C, the fans turn off for 50 minutes
- If OA temperature is > -15°C, but FR temperature is < -1°C, preheater turns on for 10 minutes
- If the preheater is turned on and OA temperature is > 25°C, the preheater turns off for 5 minutes; if such situation repeats 3 times in a row, the preheater turns off

**Switching circuit 2** - allows to inactivate the bypass function (both automatic and manual bypass using dedicated circuit) - to do this, switch the system from OFF (default) to ON position.

**Switching circuit 3** - in the OFF mode, the unit works according to the CO<sub>2</sub> sensor (if connected) and in the ON mode it reacts on the CO<sub>2</sub> sensor signal and / or the relative humidity (if connected).

**ATTENTION!** In the ON mode standard RA temperature sensor is deactivated because its function is taken over by the humidity sensor. For this reason if the circuit 3 is in ON position without a humidity sensor connected, an error code E3 will be displayed.

**Switching circuit 4** - in the OFF mode value of baud rate is 4800, while in the ON mode it is 9600





## 8. WARRANTY TERMS

I. The supplier Reventon Group Sp. z o. o. [Ltd.] provides to the owner 24-month warranty protection period for the following devices:

- energy recovery unit INSPIRO 150
- energy recovery unit INSPIRO 250
- energy recovery unit INSPIRO 350
- energy recovery unit INSPIRO 500
- energy recovery unit INSPIRO 650
- energy recovery unit INSPIRO 800
- energy recovery unit INSPIRO 1000
- energy recovery unit INSPIRO 1300

II. The warranty protection is valid from the purchasing date (i.e. the issue date of invoice) but not longer than 30 months from leaving the supplier's warehouse.

III. The complaint should be sent by the complaint form on the website (<https://reventongroup.eu/reklamacje/>). The scan or the photo of the fulfilled warranty card (the card is not required in case of accessories) and the purchase invoice must be attached to the form. The Warranty Card is not required in case of accessories.

IV. The supplier is committed to consider the claim within 14 working days since the date of reporting (i. e. the day of receipt of the correctly fulfilled warranty form).

V. In exceptional cases, the supplier reserves the right to extend the time for consideration of the request, especially if the defect is not permanent one and its determination requires a deeper analysis. The extension must be notified by the supplier before the end of the 14th working day.

VI. Under the guarantee protection, the supplier provides a repairment, replacement (the device or its component) or refund for the defective item within a specified time.

VII. In the case of replacement of a device component, the warranty protection of the whole unit is not prolonged.

VIII. The supplier does not cover the costs of disassembly and eventual reassembly of the complaint device.

IX. The supplier may decide to bring the defective device or its component to the Reventon's service. In such case the transport of the item is organised and paid by the supplier. The responsibility of the device's owner is to prepare the item for the shipment - the device must be packed in a way which protects it against transport damages and the dimensions and weight of the package must not exceed 660 x 650 x 400 mm and 30 kg respectively. In the case of elements which cannot be packed in this way, the method of shipment must be agreed and approved by Reventon Group Sp. z o. o. [Ltd.]. In the case of sending a nonstandard package without agreement of the supplier, the supplier reserves the right to charge the owner of device with all additional transport costs.

X. In the case of arrival of the authorized service of the supplier or an installer to fix the complaint item, the customer must ensure them seamless access to the device and all required media like electricity, water, lighting etc. free of charge.

XI. The warranty protection does not cover the parts of the device subject to the normal usage and the following cases:

- a) mechanical damage of the product
- b) defects and damages through:
  - improper storage or transport
  - improper or non-compliant use and maintenance (i. e. inconsistent with the manual)
  - using the device in the improper conditions (too high humidity, too high or too low temperature, impact of the surrounding, sun etc.)
  - unauthorized (i. e. by the user or other unauthorized persons) repairs, modifications or construction changes
  - connecting equipment inconsistent with the technical documentation
  - connecting additional equipment, which is not recommended by the supplier
  - improper power supply
- c) elements which wear and tear such as discolour of the housing

If there is any of the above, the claimant will be charged for transport and/or repairs.

XII. During collection of the device, the item must be checked exactly by the receiver to exclude transport damages. If any of them is observed, the damage report in presence of the supplier have to be filled - such report is the basement for transport complaint. The damage report must be provide by the carrier.

XIII. The supplier does not take the responsibility for potential losses and damages related to the downtime of the device during its failure and the complaint considering.

XIV. Any changes in the Warranty Terms, improper use of the product as well as traces of self repairing (beyond the supplier service) or alterations cause, the warranty become invalid.

XV. These supplier Warranty Terms do not exclude or limit any rights arising from the pledge.

XVI. Not following to any of the warranty regulations makes the protection invalid.

XVII. All correspondence should be send to the following address: Reventon Group Sp. z o.o. [Ltd.], 556 Wyzwolenia Street, 43 340 Kozy, Poland or email address: [serwis@reventongroup.eu](mailto:serwis@reventongroup.eu).

## Warranty Card

1 - Model and serial number* or product code	2 - Address and place of assembly
3 - Date of connection to:	4 - Stamp and signature of installer:
Heating/cooling installation (if applicable)	
Ventilation installation (if applicable)	
Electrical installation (if applicable)	

\* serial numer is required only for water heaters HC-3S, HC-EC and FARMER HCF series and recovery units INSPIRO, INSPIRO BASIC and VERTIC series



**reventon**

Reventon Group Sp. z o.o. [Ltd.], 556 Wyzwolenia Street, 43-340 Kozy, Poland, [www.reventongroup.eu](http://www.reventongroup.eu)