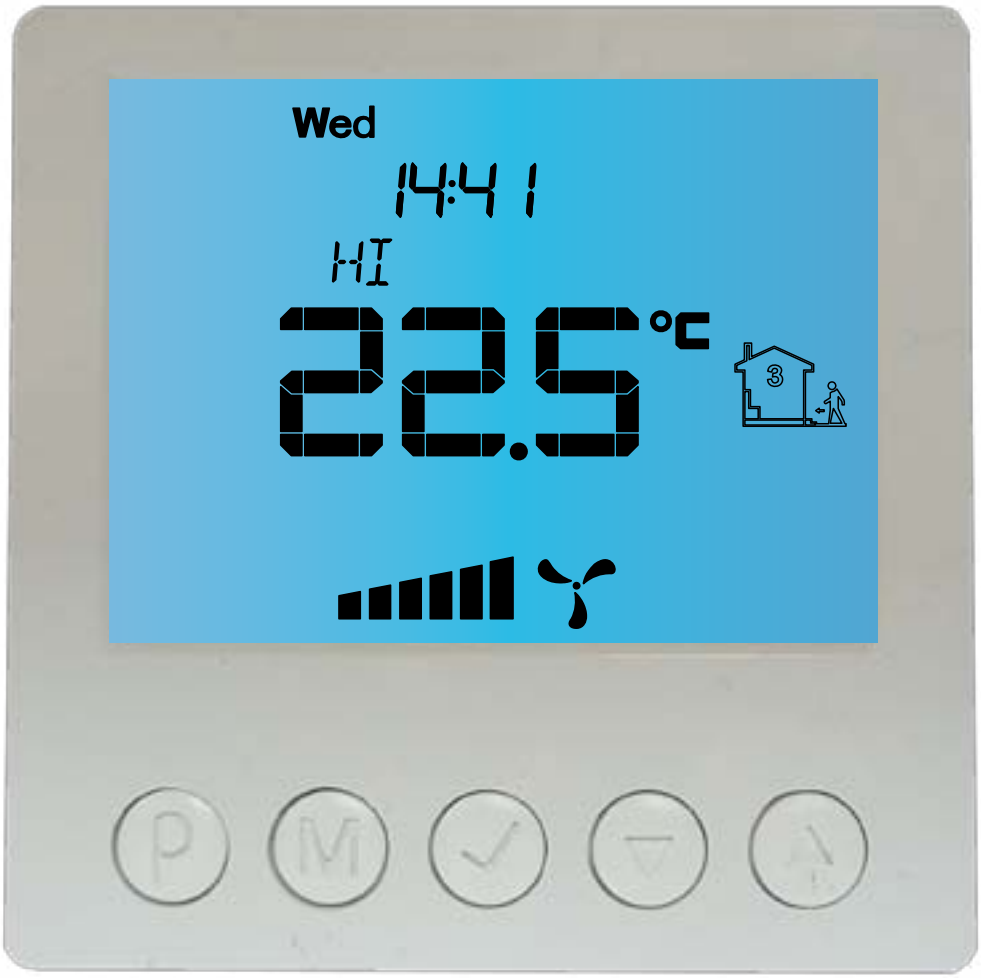


Electronic controller

IB – Tron 3100FAN-BL-12V

to operate ventilation units

Products is CE

marked and was produced in accordance with ISO 9001 standard

„INSBUD”
ul. Niepodległości 16a
32-300 Olkusz
Poland
sales department: +48 (32) 626 18 00
sales department: +48 (32) 626 18 18
technical department: +48 (32) 626 18 07
technical department: +48 (32) 626 18 08
fax: +48 (32) 626 18 19
e-mail: insbud@insbud.net

WWW.INSBUD.NET

v4.1

Contents

IB-TRON 3100FAN

Basic information

IB - Tron 3100FAN controller is independent microprocessor controller with large LCD display, dedicated to operate ventilation units. The controller allows to control 3-speed ventilation units, for which a switching signal of gears is short-circuit of suitable lines to mass or give voltage +12V on these lines.

IB - Tron 3100FAN controller allows to regulate air exchange in the building based on programmed timetable or in the manual mode.

IB - Tron 3100FAN controllers allow to save energy costs by appropriate adjustment of ventilation efficiency, according to needs. Controllers contribute to protect environment and financial savings. Controllers can be commonly used in: hotels, offices, supermarkets, factories, hospitals, houses and other buildings.

Features

- Large, backlit, LCD display which shows current speed of the fan, temperature, settings, a day of the week and other informations.
- **3** speed of the fan (to choose)
- Input to connecting a signal of clogged filter of ventilation unit. At the moment of short-circuit this input to the mass or give voltage +12V (choice of using by jumpers), on the display appears information about clogged filter and you will hear a beep.
- Esthetic and modern design
- Blue backlight (backlight is activated by pressing any button and deactivated after a certain period of inactivity)
- Easy, intuitive operating and programming.
- Power supply: **AC** or **DC** with possibility to power supply directly from the ventilation unit.
- Comprehensive programming process in a weekly cycle with an accuracy of 1 minute and with possibility of programming four time periods each day.
- Manual or automatic work mode.
- Displayed temperature with resolution 0,1 °C
- Support of additional digital input (to choice three work modes).

Features

- Energy consumption: < 2 W
- Number of gears: 3
- Storage temperature: -5 ÷ 50 °C
- Displayed temperature: -20 ÷ 140 °C every 0,1 °C
- Accuracy: 1 °C
- Power supply: 12V - 24V DC 12V - 18V AC
- Active signal: short-circuit to mass or +12V
- Signal of clogged filter: short-circuit to mass or +12V
- Casing: ABS
- Display: LCD (3,2``)
- Control: Electronic
- Protection rating: IP30
- Memory of settings: 36 months

Technical data

- Dimensions: (height x width x depth):
  - » Control Panel: 86 x 86 x 15 mm
  - » Relay module: 62 x 45x 27 mm

General Considerations

During installation of controller, the supply of electricity should be turned off. It's recommended to entrust the installation a specialized institution.

The controller should be powered by constant voltage **12V-24V,** however, it can be powered by alternating voltage **12-18V** (effective value).

The controller is adapted to work with devices, for which active signal (speed control, sensor of filter) is short-circuit of suitable lines to mass or give voltage **+12V** (independent choice of a signal of control speed and clogged filter).

Scope of delivery

- 1x Controller (the main panel)
- 1 x Relay module
- 1 x Operating manual

Operating principle

At work in automatic mode, controller at the beginning of each time period turns on programmed gear of central for this period. You can programme four time periods during the day and each of them assign one of three available speeds value.

In manual mode, user sets gear of central by himself. The central works on this gear all the time, until it is set another gear or controller is turned off.

Some of centrals allow to turn off the fan through an additional controller - for these centrals, in the **IB-Tron 3100FAN** controller is available the fourth state of working- turning off the fan.

The output of controller is enabled when it is shorted to mass or when voltage **+12V** is given on this output (depending on **J3** jumper settings). When the controller is turned off all outputs which controll gears are inactive.

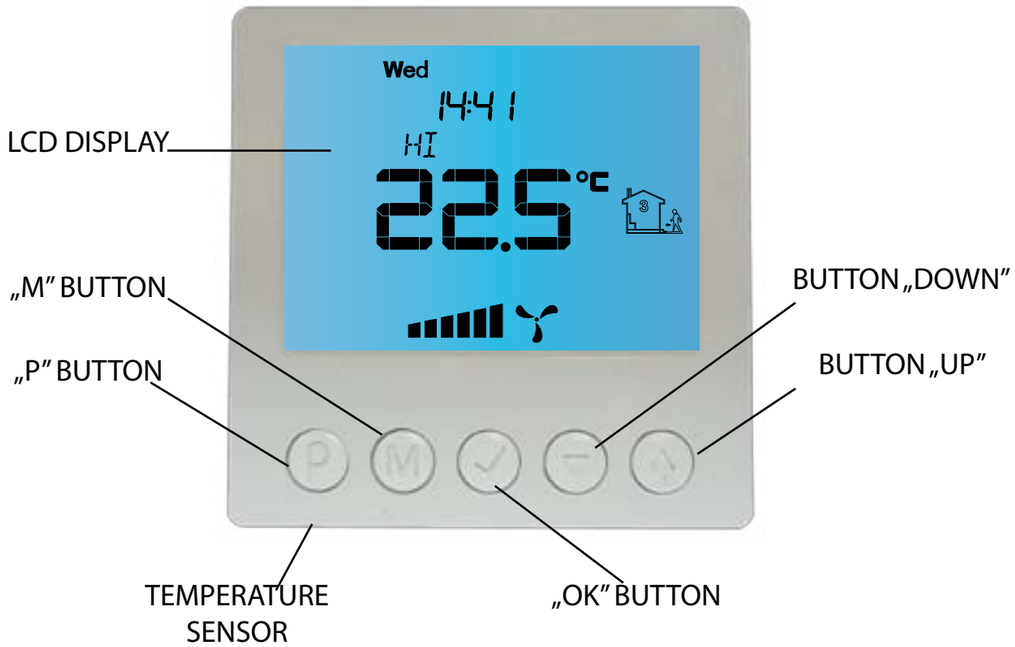
Structure

IB-Tron 3100FAN controller consists of two parts: main panel with LCD display, keyboard and relay module, with RJ-12 connector to connect ventilation unit and digital input to connect additional buttons/panels.

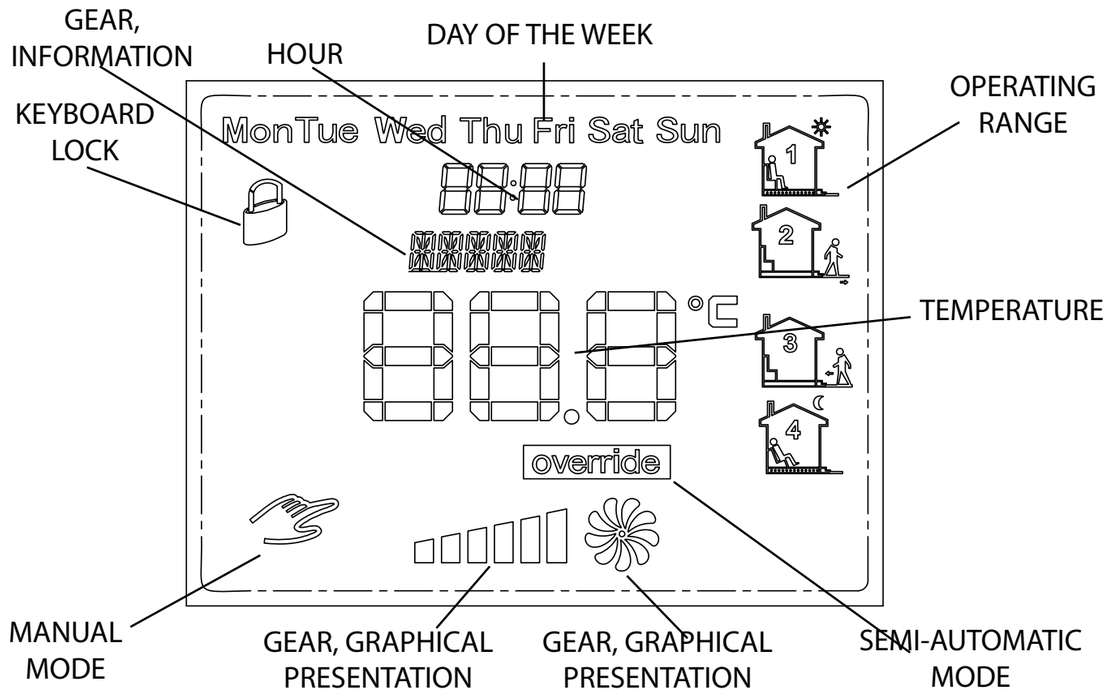
Control Panel is adapted to surface-mounting or to mounting on a standard wiring box (spacing of holes- about 60mm, box- about 75x75mm). Relay module is predicted to be placed inside this box.

Both of modules are connected with each other by seven wire cable with a length of several centimeters.

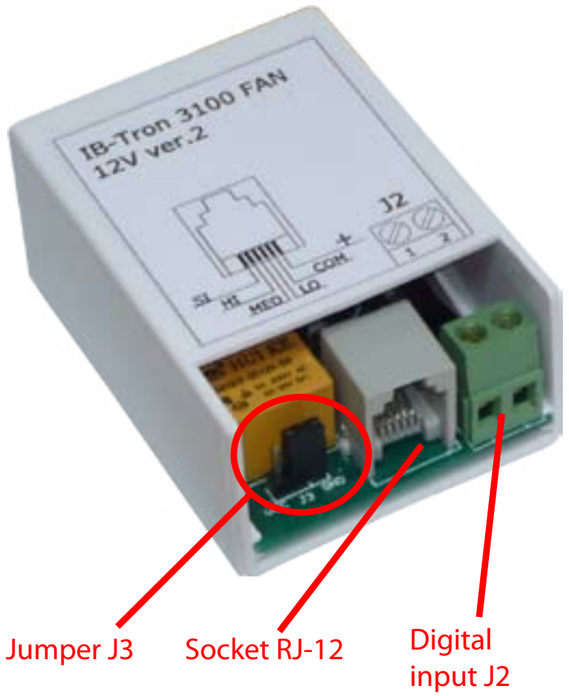
Control Panel of Controller



LCD Display



Relay module



Identification of contacts in the **RJ-12** socket:

„**SI**" - Input of clogged filter signal. Short-circuit this input to mass or give voltage +12V (choice of using jumpers) causes turning on an alarm.

„**HI**" - output of gear 3. This output is enabled, when controller wants to turn on gear 3 of ventilation unit.

„**MED**" - output of gear 2. This output is enabled, when controller wants to turn on gear 2 of ventilation unit.

„**LO**" - output of gear 1. This output is enabled, when controller wants to turn on gear 1 of ventilation unit or turn off the ventilation unit (depending on your type of central).

„**COM**" - mass of power supply (minus)

„**+**" - plus of power supply.

The controller can be alternatively powered by **AC** voltage. To do this, you have to give alternating voltage with a range from 12V to 18V between contacts: **„+"** and **„COM".**

Digital Input

The controller is equipped with additional digital inputs **J2.** Active signal for this input is short-circuit of its both contacts. To this input is typical connected monostable button (so-called ‚a bell button'), short-circuited while it's pressing and returning to the gaping position after releasing the button (for example: used for doorbell). Altirnatively, one of the modes of support the input **J2** predicts a connection of bistable switch (conventional, ‚switch on/ switch off', e.g. to lighting).

Depending on the selected function (description later in this manual), the controller respectively changes a fan gear after the short-circuit digital input (pressing a button).

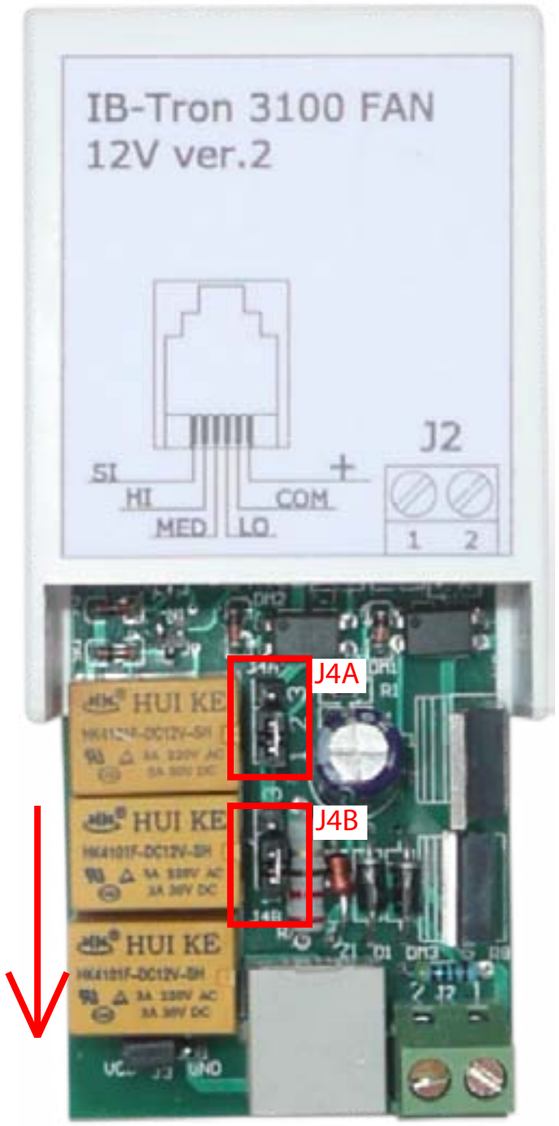
Signal of switching gear

Changing jumper position (**J3 jumper**) we can choose, whether signal of turning on the fan gear has to be short-circuit corresponding output to the mass or give voltage +12V. **J3 jumper** is available without removing plate from casing.

Active signal will be short-circuit to mass, if jumper is set in **GND** position:

Active signal will be voltage +12, if jumper is set in **Vcc** position:

Signal of Clogged Filter



Controller allows to choice, whether signal of clogged filter is short-circuit input ‚SI' to mass or give voltage +12V on this input. Changing position of jumpers **J4A** and **J4B**, a type of signal is changing.

Access to the jumpers is possible when the relay plate is ejected from plastic casing, towards arrow marked in the picture.

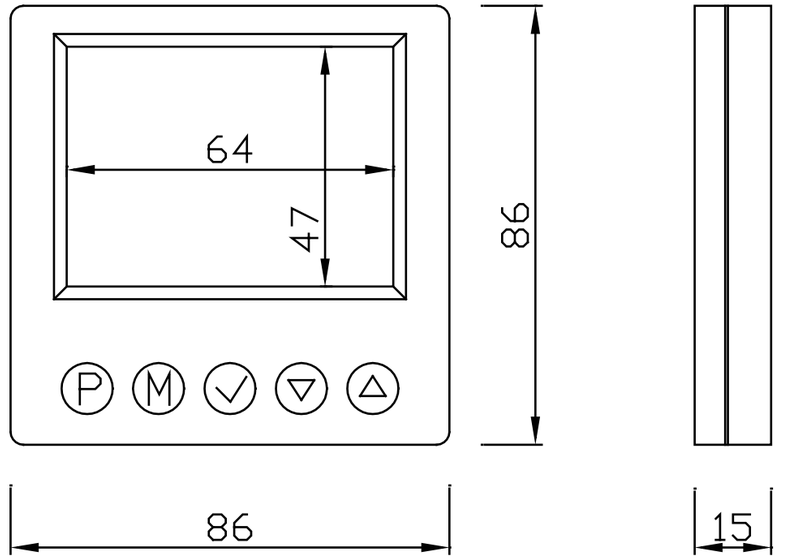
Active signal will be short-circuit input **‚SI'** to mass, if both of jumpers are set in **2-3** position (to short pins 2 and 3):

Active signal will be voltage +12V on the input **‚SI'**, if both of jumpers are set in the **1-2** position (to short pins 1 and 2):

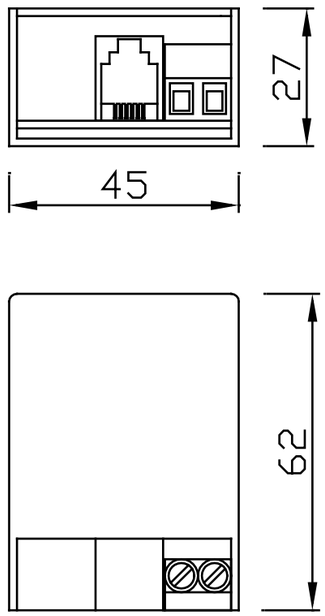
Setting jumpers **J4A** and **J4B** in different positions isn't dangerous for system, but it causes its incorrect work.

Dimensions

Main panel



Relay module



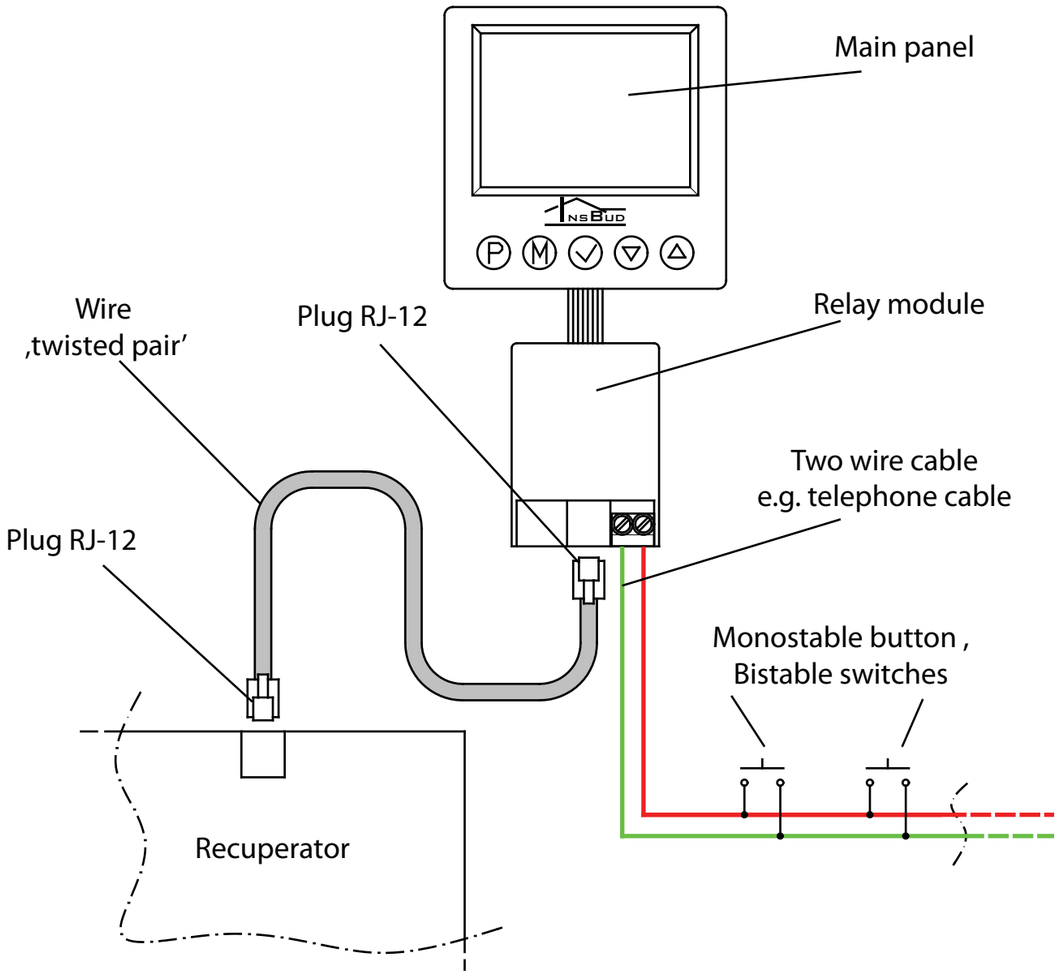
Connection

Depending on your type of ventilation unit, outputs for connecting external controller may vary among themselves. Using manual, you have to connect suitable inputs of ventilation unit with the corresponding outputs of **IB-Tron 3100 FAN** controller.

Some of available recuperators in trade has **RJ-12** socket to connecting external controller - identical socket as in the **IB-Tron 3100 FAN** controller. Some models can be connected directly to the controller, by ordinary network cable (wire ‚twisted pair'), made in a simple way i.e. with the same sequence of lines in plugs on both sides of twisted pair.

Before you buy this controller, make sure that your ventilation unit will cooperate with **IB--Tron 3100FAN** controller. To do this, please contact with technical department of Insbud company.

Below is presented exemplary connection of controller **IB-Tron 3100FAN**:



Comments Related to Mounting

Main panel with relay module is usually mounted in generally available room, e.g. in the sitting room or living room. Controller is connected with ventilation unit by multicore cable (wire ‚twisted pair').

Controller can be powered directly from recuperator, if the recuperator has output to power these type of devices.

Length of twisted pair can be to several meters, depending on the level of electromagnetic interferences in the building.

Besides, to the relay module we can parallel connect from one to several buttons/switches, which are used to remote change the fan speed.

These buttons are typically mounted in the rooms, which from time to time require temporary increase of ventilation intensity e.g. in the toilet or in the kitchen.

Additional buttons you have to connect by two wire cable. Ideally, if it was twisted pair cables but it isn't an absolute requirement. We can use a telephone cable or two wire cable type **‚cord'**.

Installation of additional buttons is optional. If buttons are not mounted, **J2** input has to be unconnected.

Main panel is adapted to mounting on a standard wiring box with width about 75mm and spacing of holes about 60mm. Relay module is predicted to be placed inside this box. Both of modules are connected with each other by seven wire cable with a length of several centimeters.

System Expansion

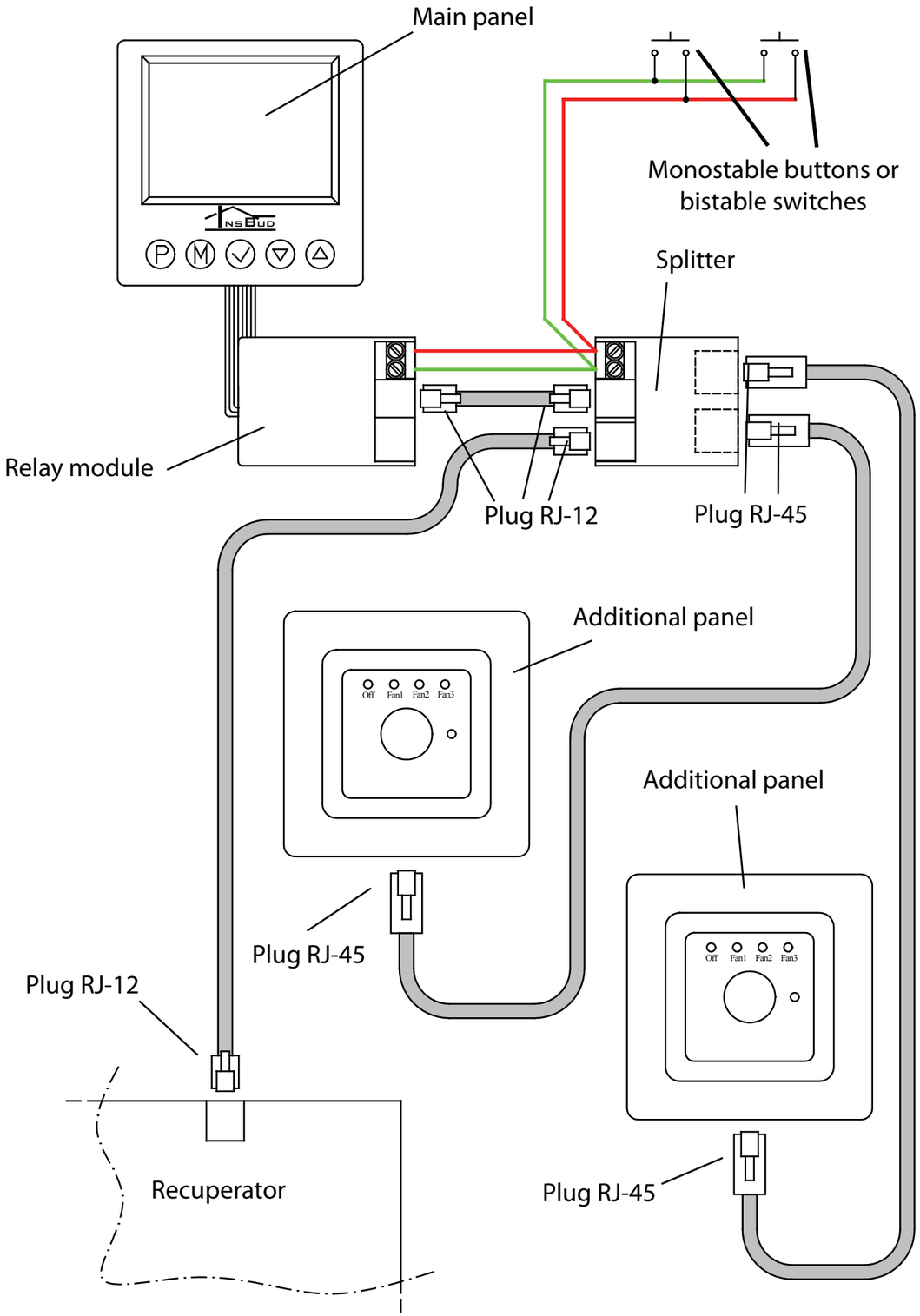
System can be expanded with additional buttons in the simplest way, according to description. Using these buttons we can change the fan speed, but we can't check on which gear the ventilation unit currently works or control state of filter.

Therefore, instead of usual buttons the user can install an additional panel **IB-Tron 100AP** with LEDs, which inform about current fan speed and state of filter. The panel has also monostable button fulfilling exactly the same function as buttons connected to the digital input **J2**, which is used to change speed.

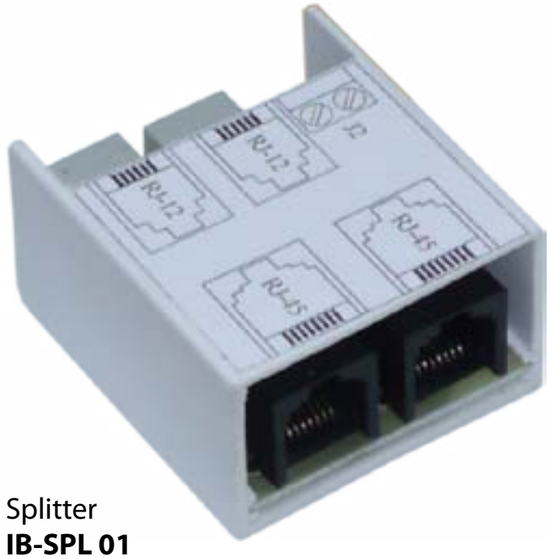
Additional panel has an eight-pin socket RJ-45 and therefore it has to be connected with system by special splitter **IB-SPL 01**.

Additional panel **IB-Tron 100AP**.

System Expansion



System Expansion



Splitter
IB-SPL 01

For one divider you can connect two additional panels.

Additional panels are connected with divider by twisted pair, made in a simple way i.e. according to the same standard on both sides.

Apart from panels with LEDs to the system you can simultaneously connect usual monostable buttons, which are used to change the fan speed without the possibility of reading speed.

Turning on controller

P To turn on or turn off controller, you have to press button **‚P'**.

When the controller is turned off, on display is shown only current temperature. No output, which controls gears of ventilation unit is not active. When the controller is turned off, the function of detection clogged filter is still active.

Configurational menu

In configurational menu are set parameters of controller work. To enter to the configurational menu, please:

P If controller is turned on, please turn it off by pressing button **‚P'**.

M When the controller is turned off, press and hold for about 3 seconds button **‚M'**.

Controller is in configurational mode. Displayed are: inscription ‚Menu', setting number (from **01** to **11**), code shortcut of setting (e.g. **‚CFG'**), value and unit of setting.

▽ To change value of indicated setting, press button **‚DOWN'** or **‚UP'**.

△

M To move to the next setting, press button **‚M'**. After reaching the last (11) setting, pressing the button **‚M'** again causes return to the first setting.

Controller comes out of the configurational menu after a set time of inactivity or after pressing one of the buttons: **‚P'** or **‚OK'**. Pressing button **‚OK'** or after time of inactivity causes save changes and exit the configurational menu. Pressing button **‚P'** causes cancel changes and exit the configurational menu.

Outputs configuration

For different ventilation units, which are available on market individual gears can be switched according to different standards. For example, for a large part of ventilation units absence of any signal from controller means switching on ventilation unit on the first gear. For another type, to switch on first gear you have to give signal on suitable input. Besides, some of ventilation units allow to turn off the fan through the included controller but others not allow this.

IB-Tron 3100FAN can control different types of ventilation units.User has ability to choose suitable signal's standard for his ventilation unit. **CFG** parameter in configurational menu is used to this.

4 types of ventilation units were defined, for which outputs: **LO**, **MED** and **HI** are switched for each gears as in table:

CFG	OFF	Gear 1	Gear 2	Gear 3
1	n.d.	LO	MED	HI
2	n.d.	x	MED	HI
3	LO	x	MED	HI
4	x	LO	MED	HI

n.d. - turning off the fan is not available;

x - all outputs (LO, MED, HI) are turned off;

For recuperators, which allow turning off the fan from the level of additional controller, **CFG** value should be 3 or 4. For recuperators without possibility of turning off the fan from the level of additional controller, **CFG** value should be 1 or 2.

Outputs configuration

To select appropriate standard of output signals, please:

Enter to the configurational menu. Press button **‚M'** until you see on display setting number 01, marked as **‚CFG'**.

Select a value from range from 1 to 4, according to description. Exit the configurational menu or move to other setting.

Support of digital input

User has ability to choose one of three modes of additional digital input support (**J2**). Mode 1 and 2 allows using the monostable button and mode 3 - bistable switch.

1. Ventilation. After a short pressing the additional button connected to the input **J2**, follows temporary change of fan speed (instantaneous ventilation). User sets gear, which has to be switched and time of switching gear.

For example: If the button is located in the kitchen, the user has possibility to instantaneous fan setting on the highest gear by one pressing a button e.g. when something starts to scorch. After the end of ventilation time, the controller switches gear again, on which the ventilation unit was before pressing button.

To exit the ventilation mode before the set time of ventilation, press additional button for about **3** seconds.

2. Increasing speed. Short pressing button of each time causes increase fan speed. If ventilation unit is on the highest

Support of digital input

gear, pressing button causes switching of first gear (for recuperators without possibility of turning off the fan) or turning off the fan (for recuperators with possibility of turning off the fan). Sequence repeats over and over.

If controller is in manual mode (**MANUAL**), pressing the additional button causes lasting change of speed.

If controller is in automatic mode (**AUTO**), pressing the additional button causes transition to semi-automatic mode (**OVERRIDE**) - change of speed to the end of time segment. To go back to the automatic mode, press additional button for about **3** seconds.

3. Force speed. This mode allows you connect additional bistable switch to the input **J2**. Switch can be placed for example close to the range hood. After additional switch is turned on, previous set of fan gear is activated until additional switch is turned off. After that controller is back in normal mode, and gear is set back to previous.

To choose how digital input should work please:

Obsługa Wejścia Cyfrowego

Enter to the configurational menu. Press button **‚M'** until you see on display setting number 02, marked as **‚INMOD'**.

Select value 1 to set ventilation function. Select value 2 to set function of increasing speed. Select 3 to set force speed function. Exit the configurational menu or move to other setting.

Temporary Speed

When the ventilation function (**INMOD parameter = 1**) or force speed function (**INMOD parameter = 3**) has been assigned to the additional digital input **J2**, user should define, what fan speed will be run after pressing additional button (in ventilation function) or switching on (force speed function). To set speed of ventilation, please:

Enter to the configurational menu. Press button **‚M'** until you see on display setting number **03**, marked as **‚IB_SPD'**.

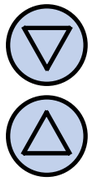
Select gear, which will be run after pressing additional button. Exit the configurational menu or move to other setting.

Parameters **B_SPD** are shown only when function of digital input is ventilation or force speed (when **INMOD = 1 or 3**).

Time of Ventilation

When the ventilation function (**INMOD parameter = 1**) has been assigned to the additional digital input **J2**, user should define, how long after pressing additional button has to be ventilation. To set time of ventilation, please:

Enter to the configurational menu. Press button **‚M'** until you see on display setting number **04**, marked as **‚BTIME'**.



Select time of ventilation in minutes (in range from **1** to **30**). Exit the configurational menu or move to other setting.

Parameters **BTIME** are shown only when function of digital input is ventilation (when **INMOD = 1**).

Calibration

If temperature indicated on the controller is different than real temperature of the room, you have to calibrate sensor. To do this, please:

Enter to the configurational menu. Press button **‚M'** until you see on display setting number **05**, marked as **‚CALIB'**.

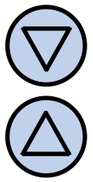
Set value, by which you have to change current indication of temperature to get correct indication. For example: If the indicated value is 20 °C and real temperature is 18 °C, you have to set value -2°C. Exit the configurational menu or move to other setting.

Time of Inactivity

Time of inactivity this is a time, after which the controller comes out of parameters settings mode to default mode, counted from the last press of a button. Higher value gives the user more time to make settings.

To set time of inactivity, please:

Enter to the configurational menu. Press button **‚M'** until you see on display setting number **06**, marked as **‚PTD'**.



Set desired value. Value may be from the range 5÷30s with step 5s.. Exit the configurational menu or move to other setting.

Time of Backlight

This is a time, after which is fading of LCD backlight, counted from the last press of a button. To set time of backlight, please:

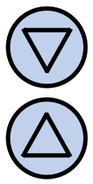
Enter to the configurational menu. Press button **‚M'** until you see on display setting number **07**, marked as **‚LIGHT'**.

Set desired value. Value may be from the range 10÷60s with step 10s.. You can choose value ‚**OFF**'- backlight is always turned off, or value ‚**On**' - backlight is always turned on. Exit the configurational menu or move to other setting.

Turning off Backlight

IB-Tron 3100FAN controller is programmed to automatically turn off the backlight after time of backlight. Backlight is default turned off. However, you can set the controller so that don't completely turn off backlight, but only reduce the intensity of backlight. To do this, please:

Enter to the configurational menu. Press button **‚M'** until you see on display setting number 08, marked as **‚LTOFF'**.



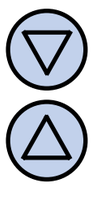
Set the intensity of backlight (in percent), which will be after time of backlight (instead of its total turning off).

Temperature Units

User has ability to choose if the temperature must be in °C or °F.

To change temperature unit, please:

Enter to the configurational menu. Press button **‚M'** until you see on display setting number **09**, marked as **‚UNIT'**.

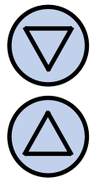


Select temperature unit. Exit the configurational menu or move to other setting.

Time Format

User has ability to choose if the time must be displayed in 12-hour format or 24-hour. To change time format, please:

Enter to the configurational menu. Press button **‚M'** until you see on display setting number **10**, marked as **‚CLOCK'**.



Select format 12-hour or 24-hour. Exit the configurational menu or move to other setting.

Software version

To check software version, please:

Enter to the configurational menu. Press button **‚M'** until you see on display setting number **11**, marked as **‚VER'**.

InsBud company supports policy of development. Thats why rights to making changes and improvements in products and manuals without prior notice reserved!

Our company is open to all suggestions to improve our controllers.

If you have an idea for new function or you need unusual solution of problem pleas contact us.

This manual is appropriate for controller with software version: 03

Here ends description of configurational menu settings.

An Hour and A Day of the Week

To set current hour and a day of the week, please:

P — Turn on controller.

Press and hold for about 3 seconds button **‚OK'**. Displayed time starts flashing.

Set current time.

Press button **‚OK'** again. a day of the week starts flashing.

Set a day of the week.

Mon - Monday
Tue - Tuesday
Wed - Wednesday
Thu - Thursday
Fri - Friday
Sat - Saturday
Sun - Sunday

Confirm settings.

Factory Settings

To reset controller and go back to factory settings, please:

P — Turn off controller.

M — Press and hold for about 3 seconds both buttons: **‚M'** and **‚OK'** simultaneously. On display will show for about 5 seconds inscription **‚RESET'**.

Keyboard lock

To protect controller from unwanted change settings, you can lock controller keyboard.

When keyboard lock is activated, on display is visible a padlock symbol and keyboard doesn't respond to pressing keys.

To activate/deactivate keyboard lock, please:

Press and hold for about 3 seconds both buttons: **‚DOWN'** and **‚UP'** simultaneously.

Work Timetable - AUTO mode

In the automatic mode you can set work timetable. It means automatic setting of programmed unit speed at concrete hour.

With timetable you can set lower intensity of ventilation in periods when e.g. building is not used or in nocturnal periods, and higher intensity when building is used.

You can program four time segments each day of the week, which were symbolically presented on display:

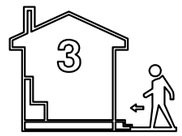
Segment No 1

e.g. 7:00 a.m. - reveille

Segment No 2

e.g. 9:00 a.m. - outgo the house

Work Timetable - AUTO mode



Segment No 3

e.g. 3:00 p.m. - return to house

Segment No 4

e.g. 9:00 p.m. - sleep

To make your own work timetable, please:

P — Turn on controller. Make sure that controller is set in automatic work mode (visible are symbols of time segments and inscription **AUTO**).

M — If instead symbols of time segments, on display is hand symbol (manual mode), press button **‚M'**. Pressing this button when controller is turned on causes switching between manual and automatic mode.

P — Press and hold for about 3 seconds button **‚P'**. On display will show inscription **‚PROG'** and current day of the week starts flashing.

Select a day of the week by buttons **‚DOWN'** and **‚UP'**, which concerns setting. Holding down the button **‚UP'** will select whole week. Holding down this button again will select days from Monday to Friday. Holding down button **‚UP'** one more time will select only Saturday and Sunday.

P — Confirm choice with the button **‚P'.**

Work Timetable - AUTO mode

⚠ The following steps describe programming one of time segments. You have to repeat these steps for all four time segments. On the right on display is shown segment symbol, which concerns the setting.

On display starts flashing an hour, about which work segment will start. Set the hour.

P — Confirm choice with the button **‚P'**.

On display starts flashing symbol of the set speed for the segment. Select appropriate speed, where:

OFF - fan is turned off. Available for some types of units;

LO - first gear, low speed;

MED - second gear, medium speed;

HI -third gear, high speed;

P — Confirm choice with the button **‚P'**.

⚠ You have to repeat these steps for all four time segments

⚠ After programming all four time segments the controller returns to standard displaying mode.

⚠ The fourth time segment lasts until the beginning of the first time segment the next day (e.g. from 9:00 p.m. on Monday to 7:00 a.m. on Tuesday).

Manual Mode

In manual mode the controller constantly keeps desired speed of ventilation (without work timetable).

⚠ If controller works in manual mode, on display is visible hand symbol and time segment symbol is not visible.

⚠ Controller is in the manual mode until user doesn't change it to automatic mode.

To change mode to manual/automatic, please:

Ⓜ When controller is turned on, press button **‚M'**.

To set speed in manual mode, which the fan has to keep, please:

▽ Press button **‚DOWN'** or **‚UP'**. On display will appear current speed setting. Enter a new setting.

△

✓ Confirm choice with the button **‚OK'**.

Additionally, if the external button (or buttons) is connected to the digital input **J2** and **INMOD** parameter is set on value 2, pressing external button of each time causes increase fan speed.

If ventilation unit is on the highest gear, pressing external button causes switching of first gear (for recuperators without possibility of turning off the fan) or turning off the fan (for

Manual Mode

recuperators with possibility of turning off the fan). Sequence repeats over and over.

Individual gears correspond graphical representation of a bar chart at the bottom on the display:

- » ventilation unit is turned off - no bars
- » first gear - two bars;
- » second gear - four bars;
- » third gear - six bars;

Besides, fan symbol at the bottom on the display is animated faster or slower.

Semi-automatic Mode

In semi-automatic mode is manual speed correction in current time segment. It means setting other speed for current time segment than in the timetable. After the end of the current time segment, controller returns to the automatic mode and works with the timetable.

⚠ You can move to semi-automatic mode only from automatic mode.

To enter manual speed correction for current time segment, please:

▽ When controller is in the automatic mode, press button **‚DOWN'** or **‚UP'**. On display will appear current speed setting. Enter a new setting.

△

✓ Confirm choice with the button,**‚OK'**.

Semi-automatic Mode

⚠ When controller is in the semi-automatic mode, on display is inscription **‚override'**. Symbol of current time segment disappears.

To cancel speed correction before the end of current time segment and return to the timetable, please:

✓ Press button **‚OK'**.

Additionally, if the external button (or buttons) is connected to the digital input **J2** and **INMOD** parameter is set on value 2, and controller works in automatic mode, pressing external button of each time causes increase fan speed and entrance to semi-automatic mode.

You can come out from semi-automatic mode by pressing button **‚OK'** or pressing and hold for about 3 seconds the external button.

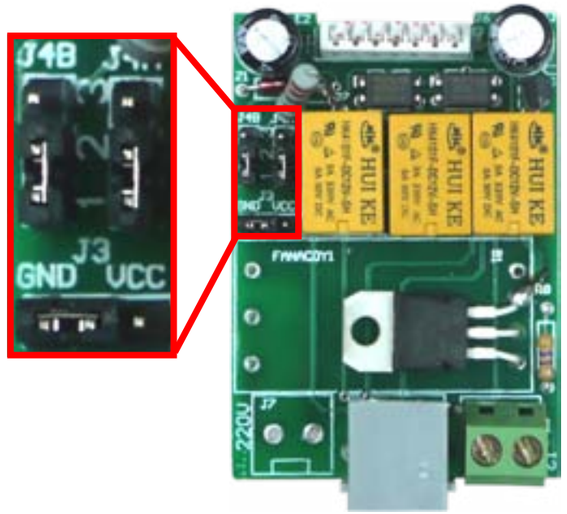
Errors

When ventilation unit gives a signal of clogged filter, on display is inscription **‚FILTER'** and you will hear a beep (also when the controller is turned off). After cleaning or changing filter, signaling should disappear.

Supplement

Placement of configurational jumpers: **J3, J4A** and **J4B** may be differ than placement shown in previous chapters of this manual, depending on the current batch production of the controller.

One of the batch production has following placement of elements:



Both versions are identical as regards electrical diagram and functionality.

Configuration rules are constant:

Jumper **J3** in the **GND** position - switching signal of gear is short-circuit lines to mass.

Jumper **J3** in the **Vcc** position - switching signal of gear is voltage +12V.

Jumpers **J4A** and **J4B** in the position **1-2 -** signal of clogged filter is voltage +12V on the input „SI".

Jumpers **J4A** and **J4B** in the position **2-3** - signal of clogged filter is short-circuit input **„SI"** to mass (**„COM"**).

WARRANTY

- Warranty is granted on 24 months from the date of purchase of goods.
- Any defect disclosed during the warranty period will be removed within 21 working days, from the date of adoption of goods for service.
- In case of necessity of import goods or components from abroad, repair time is extended by the time needed to bring them.
- Customer provides product to service at his own cost. If the product is shipped at the expense of the service, it won't be received.
- At time repair service has no obligation to provide substitute product.
- Warranty repair will be made upon presentation of properly and legibly filled your warranty card, signed by guarantor and with sales document.
- Warranty covers only defects arising from causes inherent in goods. Damage resulting from external causes such as: mechanical damade, pollution, flooding, weather, improper installation or improper wiring and operations. Warranty does not apply in case unauthorized repair by customer, changes in software (firmware) and device formatting.
- Due to the natural consumption of consumables, some of them are not covered by warranty (for example: cables, battery, loader, micro contacts, buttons).
- In the event of unjustified claim for warranty repair, all additional cost are on customer's side.

WARRANTY

- Service has right to refuse to perform warranty repairs for following: differences between documents and goods marks, make repairs on their own by customer, changes in product construction without authorization.
- Warranty repair refusal is equivalent to loss your warranty.
- If it is not possible to test product before its purchase (distance selling), it is possible to return goods within 10 days. Returned goods cannot bear signs of exploitation, it must contain all elements with which it was delivered.
- In the case of return of purchased goods all shipping costs are on buyer side. For shipment please enclose purchase document and give precise details of the buyer with account number on which will be refunded an amount equal to the value of the returned goods, no later than 21 days from the date of delivery of the goods. This amount is reduced by shipping costs if these costs were incurred by the seller. Delivery of copy of document correction is necessary to a refund. Before return of goods please contact with seller.

„INSBUD"
ul. Niepodległości 16a
32-300 Olkusz
Poland
dział sprzedaży: +48 (32) 626 18 00
dział sprzedaży: +48 (32) 626 18 18
dział techniczny: +48 (32) 626 18 07
dział techniczny: +48 (32) 626 18 08
fax: +48 (32) 626 18 19
e-mail: insbud@insbud.net

WWW.INSBUD.NET

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