



JB-151TP, JB-151TP-AN Wireless room thermostat

The product is a component of the JABLOTRON systems and is designed, in combination with the control panel, for zonal temperature and ventilation control by means of built-in temperature and humidity measurement and, in combination with an external sensor, also for floor temperature measurement.

The product combines the features of an alarm system with comfort control in buildings, thus enabling automatic control in response to system events, e.g. switching to economic operation in the absence of occupants.

In order to use all product functions, the system must be registered in the JABLOTRON Cloud (some functions may incur a fee).

The product is compatible with JA-103K and JA-107K.

The product is designed for installation by a trained technician with a valid Jablotron certificate.

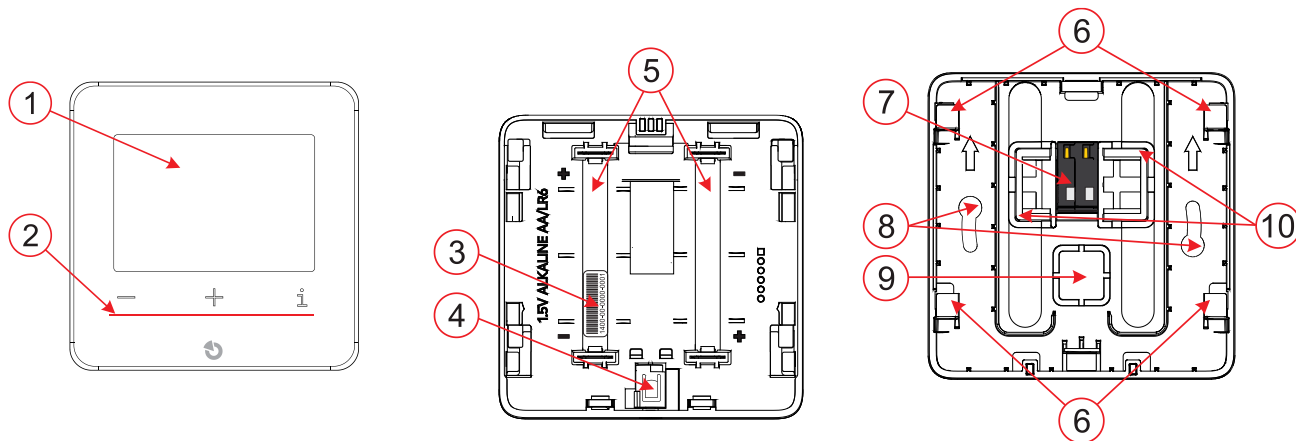


Fig. 1: Description of the internal and external parts of the product

1 – display; 2 – control buttons; 3 – serial number; 4 – locking mechanism; 5 – battery holder; 6 – rear part latches; 7 – terminal block; 8 – screw holes; 9 – break-out square; 10 – side terminal holders

Installation

1. Turn the locking mechanism (4) counterclockwise to open the product.
2. The side terminal brackets (10) need to be broken out at the rear to make space for the batteries.
3. If an external sensor is connected, plug the wires into the terminal block (7) on the rear plastic.
4. Attach the rear piece to the wall using the two screws (8).
5. Then insert the batteries into the back of the front part. Ensure the correct polarity of the batteries. Insert the front part into the latches and move downwards to fasten the product.
6. Secure by turning the locking mechanism clockwise.

In addition, refer to the control panel installation manual.

Basic procedure:

1. In the F-Link program, select the desired position in the Device tab and use the Enroll button to activate the learning mode.
2. Insert the batteries or enter the serial number (3). Enter all digits (serial number format: 1400-00-0000-0001
3. After the thermostat appears in the list of devices, set the properties in the Internal Settings tab.

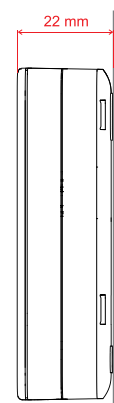


Fig. 2: Surface mounting

Product function diagram

The product allows heating, cooling or ventilation to be controlled by the three PG outputs of the control panel in On/Off mode, see figure below.

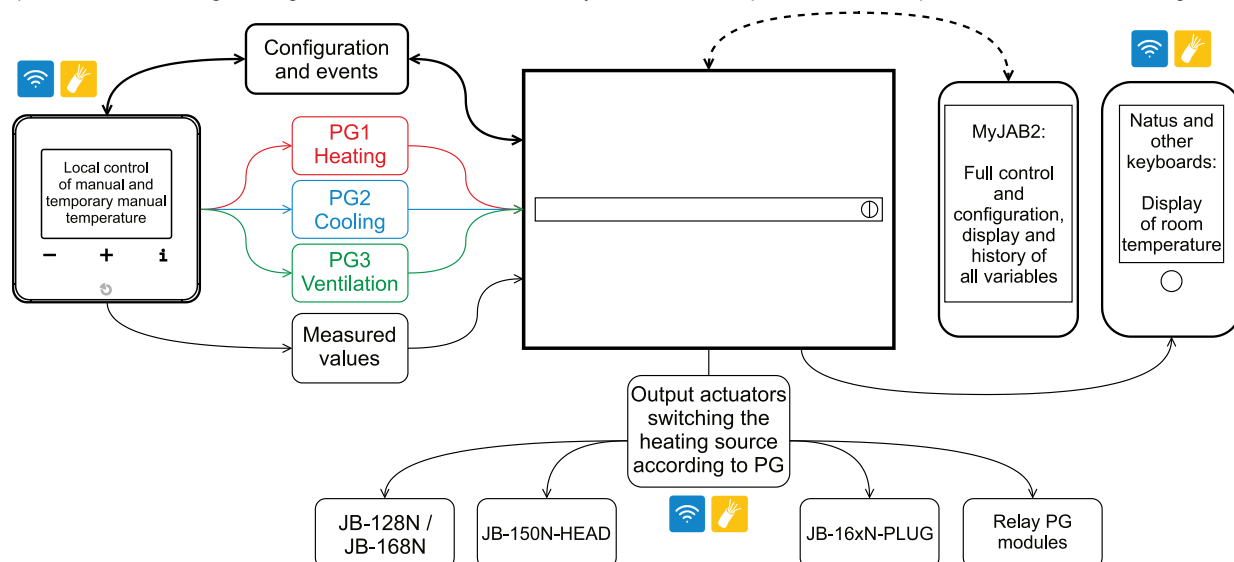


Fig. 3: General configuration of heating, air conditioning and ventilation control



JB-151TP, JB-151TP-AN Wireless room thermostat

The thermostat settings are divided into 2 blocks:

- **Installation:** basic thermostat settings performed by the F-Link installer during installation. This setting is essential for the proper operation of the product and limits user settings and functions. Once the installation settings have been made, the product can be handed over to the customer for use.
- **User:** The operating settings contain parameters for normal use of the product, such as desired temperatures for individual modes, hysteresis, calendar functions, etc. The settings are primarily intended for the user and are made in MyJABLOTRON. For cases where the user needs to be given a detailed product setup, the user part is accessible to the installation partner in MyCOMPANY.

Internal settings in F-Link - basic thermostat functions

In the internal settings of the thermostat, the basic functions necessary to put the product into operation can be set. After leaving the service mode, the thermostat is switched to heating mode with manual temperature setting. It thus maintains a constant temperature (default 20 °C), which can be changed using the buttons, see local control below (Fig. 5). In this mode, the thermostat can simply maintain the desired temperature in the building, for example until the system is fully completed and later registered on Cloud JABLOTRON. All other functions and controls are part of the user settings in MyJABLOTRON / MyCOMPANY, see below.

Functional modes heating / cooling / ventilation - All three modes can be activated using the check buttons. If activated, each mode will expand to select the individual PG that will switch the respective appliance. The activation of each mode also affects the availability of user settings in MyJABLOTRON / MyCOMPANY. Heating and cooling modes do not work together. The user must manually switch between heating/cooling season in MyJABLOTRON. Accordingly, the thermostat switches either heating or cooling PG. The ventilation mode, on the other hand, works in parallel, independently of heating and cooling. The ventilation PG switches when the threshold humidity is reached until it drops by the set hysteresis. Both parameters are part of the user settings. **User-adjustable upper and lower temperature limits** - the limits (0° - 40°C) determine the range within which the user can set the desired temperature using the buttons or MyJABLOTRON.

Switch to economy temperature – when the thermostat is in program mode, if the section to which it is assigned is selected as the provisioning method, it will automatically shorten the comfort section of the calendar and continue to maintain only the economy temperature. This is maintained until the comfort temperature is again required by the calendar. Floor sensor - If a JB-TS-NTC10K floor sensor is connected, a limit can be set for the floor temperature that the thermostat will not exceed during heating (5° - 40°C). In residential buildings, we recommend not to increase the default temperature of 29 °C, which is recommended by the hygiene standards for living rooms. An exception may be in rooms with short stays (e.g. bathroom) where the maximum floor temperature of 33°C is permissible. When the limit temperature is reached, the thermostat will stop heating until the temperature drops by 1°C. The function of the floor sensor is limit only, the thermostat uses the air temperature for normal control.

Display – Option to choose what temperature will be displayed on the display by default. Current - room/ Current - floor/ Desired.

Declaring an error event based on a critical temperature measurement – The thermostat can declare a selected event (fault/alarm) when a set critical low or high temperature is reached from the selected temperature measurement source:

- Air and Floor (the first source to reach the set temperature).
- Air (floor temperature is ignored).
- Floor (air temperature is ignored, only the external sensor is evaluated).

The event is reported by the system to the user or to the PCO. The function is suitable for preventing damage in the event of a heating system failure, or for monitoring the temperature in areas where this value is critically monitored. Dynamic monitoring of the critical temperature (-5°C from off mode or +10°C to comfort mode) can be activated to control the heating of common objects. The values at which the thermostat will declare an error event are then calculated automatically according to the user's temperature setting for the off/comfort temperature for the heating mode.

PG output settings

The PG outputs that the thermostat controls are automatically assigned and locked by the F-Link to the on/off function. In zone heating control, each thermostat controls its own PG output that controls the switching of the heating source in the room where the thermostat is installed (e.g., a head in a floor heating manifold, a radiator head, a relay switching the electric floor heating in the room, etc.). If the system is equipped with a central heat source (boiler, heat pump), the heat source should be switched by a common PG output that copies with the OR logic the PG of the individual thermostats (if at least one thermostat requests heating, the common PG copies the request, if none of the thermostats heats, the common PG is disabled).

PG output blocking

PG outputs controlled by thermostats can be blocked by various events, for example by activating a device (open window), by securing a section, or by custom set logic (blocking by another PG output). If the PG is blocked, the thermostat does not heat until the temperature drops to the value set for off mode. When this is reached, the thermostat overrides the lockout and continues to maintain the temperature in the off mode until the lockout ends, at which point it returns to the default state.

Control buttons on the product:

The 3 capacitive buttons (-), (+) and (i) are used for local control. When any button is pressed, the display lights up smoothly at first. The next press of the button already performs the desired action. The display goes off after 5s of inactivity. Only basic control is available to display the respective temperature or to change the current temperature (temporary manual or manual). All other controls and settings are only available in MyJABLOTRON/ MyCOMPANY.

- **Pressing the (+) and (-) buttons** switches the display to the desired air temperature, which flashes (editing prompt):
 - Another press sets the desired air temperature in 0.5 degree increments.
 - After 2s of inactivity, the editing stops and the selected temperature is set as the desired air temperature.
- **A short press of the button (i)** cycles through the display:
 - Press 1: The main segment displays the current air temperature (default).
 - Press 2: The main segment displays the current floor temperature (only when the floor sensor is enabled).
 - Press 3: Main segment displays the desired air temperature
- **A long (3 s) press of the (i) key** can be used to set which of the above temperatures is displayed by default. In this mode, only the symbol of the temperature type in question flashes, everything else goes out. With a short press (i), you can switch between the temperatures, after 3s of inactivity the settings are saved and the overall display is restored.
- **Pressing (i) and (+) together** activates the child lock (push-button lock). Pressing (i) and (-) deactivates the lock. If the lock is active, any press of the button will not make any change, the display will only show the lock symbol for 2 seconds.

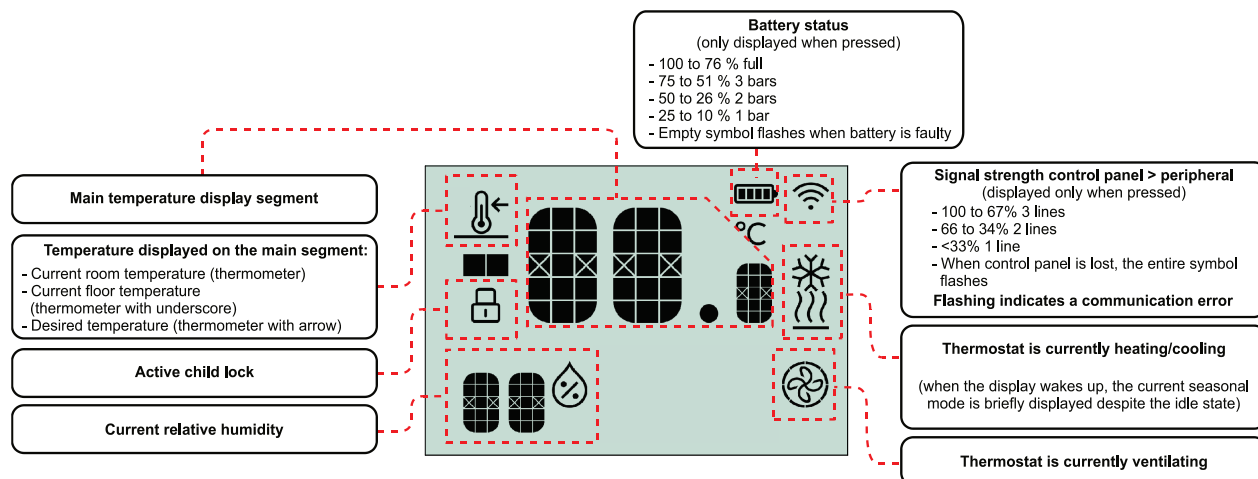


Fig. 4: Description of display icons on the screen

User settings of the thermostat in MyJABLOTRON / MyCOMPANY:

In order to use all product functions, the system must be registered in the JABLOTRON Cloud. The settings in the applications respect the installation settings in F-Link, only the parameters for the enabled functional modes are available, the range of adjustable temperatures in the application is limited to the range enabled in the installation settings. The user settings are made separately for the heating, cooling and ventilation function modes.

Heating function settings:

Automatic switch to economy temperature: when the thermostat is in program mode, if the provisioning method of the section to which it is assigned is selected, it automatically shortens the comfort section of the calendar and continues to maintain only the economy temperature. This is maintained until the comfort temperature is again required by the calendar. By default, the thermostat automatically switches to the economy temperature when the section is fully provisioned.

Hysteresis: Determines how much the temperature must drop again after the desired temperature is reached for the thermostat to start heating again. Proper hysteresis setting prevents the heating source from switching too often. By default, the hysteresis for heating is set to 0.5°C.

Temperature correction: allows you to manually calibrate the air temperature measured by the thermostat for cases where the thermostat is affected by an external source, such as airflow.

The floor temperature will not exceed: Displays the floor temperature limit set in the installation settings. Default 29°C.

Comfort Temperature: The temperature that the thermostat maintains during the program operating mode during set time periods when a higher temperature is desired (typically morning and evening). By default, the comfort temperature is set to 22°C. If automatic switchover to economy temperature is active, the thermostat will automatically shorten the comfort period when the section is secured.

Economy Temperature: the temperature that the thermostat maintains during program operation outside the set comfort sections (typically at night or during periods when no one is in the building). The default economy temperature is 18°C.

Off: The temperature that the thermostat maintains when it is switched to the heating function and the operating mode is off. For normal interiors, it is recommended that the temperature does not fall below the default setting of 12°C. At lower temperatures, mould and other undesirable phenomena may occur. The thermostat maintains the temperature in the off mode even when the PG is blocked for heating, for example by an open window or a longer securing of a section (long term departure from the building), etc.

Setting the cooling function:

Automatic switchover to economy temperature: when the thermostat is in program mode, if the section to which it is assigned has been selected, it automatically shortens the comfort period of the calendar and continues to maintain only the economy temperature. This is maintained until the comfort temperature is again required by the calendar. By default, the thermostat automatically switches to the economy temperature when the section is fully provisioned.

Hysteresis: Determines how much the temperature must rise again after the desired temperature is reached for the thermostat to start cooling again. Proper hysteresis setting prevents the cooling from switching too often. The hysteresis setting for cooling is individual and is typically higher than for heating, 1°C by default.

Comfort temperature: The temperature that the thermostat maintains during program operation at set times when a lower temperature is desired (typically afternoon and for sleep). By default, the comfort cooling temperature is set to 23°C. If automatic changeover to comfort temperature is active, the thermostat will automatically shorten the comfort section when the section is armed.

Economy Temperature: the temperature that the thermostat maintains during program operation outside the set comfort sections, typically when no one is in the building, but it is desirable to avoid overheating the interior to quickly return to the comfort temperature. The default economical cooling temperature is 25°C.

Ventilation function setting:

Ventilation switches on when relative humidity is reached: the thermostat simply switches on the associated appliance when the set humidity threshold is reached, default 50%. The threshold can be set from 0% (ventilation is permanently switched on) to 100% (ventilation does not switch on at all). The function is active permanently, regardless of the current thermostat settings. The function is suitable, for example, for automatic switching of the bathroom fan, etc.

Humidity Hysteresis: Determines by how much the humidity must drop after the ventilation is switched on for the ventilation to open again. The default hysteresis is 5% (when humidity reaches 50%, the thermostat will turn the ventilation on and turn it off when humidity drops to 45%).

Calendar settings:

Multiple comfort periods can be set in the calendar for each day during which the thermostat maintains the set comfort temperature. At the beginning of a comfort period, the thermostat begins heating to the desired temperature. Achieving this depends on the thermal inertia of the space and the performance of the heating system, so the start of the comfort period must be set well in advance to ensure that the desired temperature is reached in the required time. The calendar settings are made separately for the heating and cooling functions.

Operation of the thermostat

Apart from the simple change of the desired temperature in calendar or manual operation, all control is carried out in the MyJABLOTRON app under the thermostats and thermometers tab.

Seasonal function: if both functions are enabled in the installation settings, the thermostat allows switching between heating and cooling functions. Switching is done manually in the application when switching between seasons, joint operation of both modes is not possible.
Note: If the thermostat is switched to cooling, heating is completely disabled, even if the temperature drops to the off mode. It is recommended to leave the error event annunciation active at critically low temperature (installation setting) to alert the user in time if the heating function is not activated.

Thermostat operating modes:

- **Calendar** – the thermostat automatically switches between comfort and economy temperature, according to the schedule set in the calendar. This mode is most suitable for economical operation of the heating system in the building. Outside of exposed times, the thermostat heats at a lower temperature, reducing the building's operating costs.

If automatic switchover to the economy temperature is active, the thermostat will shorten any ongoing comfort section and thus switch to the economy temperature immediately upon securing the section. The following comfort section is started according to the calendar setting despite any locked condition.

In calendar mode, the current desired temperature can be manually changed manually using the plus and minus buttons on the product or in the app in case of a sudden user need. The thermostat then maintains the newly set temperature until the next change in the calendar (switching from economy to comfort temperature or vice versa). Then the temperature is set again according to the schedule in the calendar.

Calendar mode is available for both heating and cooling, the settings are individual for each function.

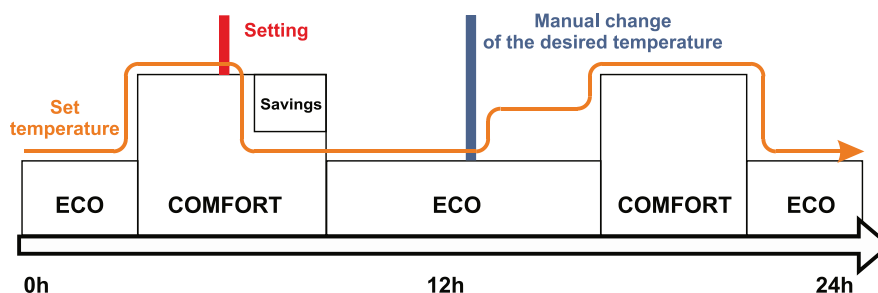


Fig. 5: Temperature trend for individual actions in the system

- **Manual temperature** – the thermostat maintains a constant temperature set by the user. The desired temperature can be changed using the plus and minus buttons on the product and in the app. The system setting has no effect on the thermostat behavior in this mode. Manual mode is available for both cooling and heating.
- **Off** – When in heating mode, the thermostat maintains a constant temperature set for Off mode. In cooling mode, the thermostat does not maintain any temperature in the off mode. Off mode is activated automatically if the appropriate PG for heating or cooling is blocked by the system.

Display of current values: The thermostat reports the current temperature and humidity values to the application at 5-minute intervals. MyJABLOTRON displays the last known values. The application creates a graph from the room temperature values, allowing the temperature history to be monitored.

Technical parameters

Temperature measuring range with external sensor	-40 to+ 125 °C (± 0.2 °C)
Operating temperature range	-20 to +40 °C
Humidity measuring range	0–100 %
*Temperature controller class	I. (according to Regulation (EU) No 813/2013)
*Contribution of controllers to seasonal efficiency	$\eta_s = 1 \%$ (according to Regulation (EU) No 813/2013) *for both parameters in the control panel configuration
Power supply	2x alkaline 1.5 V AA type LR6 (BAT-1V5-AA recommended) Batteries are not included.
Typical battery lifetime	2.5 years / 3.5 years (active / inactive button lock)
Low battery voltage detection	2.2 V
Quiescent current consumption	110 µA
Maximum current consumption	100 mA
IP resistance	IP 31
Communication frequency	868.1 MHz Jablotron protocol
Communication range	500 m
Max. radio frequency power ERP	<25 mW
Dimensions	82 x 82 x 22 mm
Weight (without batteries)	99.7 g
Operating humidity	75 % (non-condensation)
Environment	indoor general
Also comply with	EN 60730-1, EN IEC 62368-1, EN 50130-4, EN 55032, ETSI EN 300 220-2, EN IEC 63000
Recommended screws	2x  ø 3.5 mm (half-round head)



JABLOTRON a.s. declares that the products JB-151TP and JB-151TP-AN are designed and manufactured in compliance with the harmonisation legislation of the European Union: directives No: 2014/30/EU, 2014/35/EU, 2014/53/EU, 2009/125/EC, 2011/65/EU when used as intended. Original declaration of the Declaration of Conformity is available at www.jablotron.com in the Downloads section.



Note: Although the product does not contain any harmful materials, do not dispose of it in the garbage but take it to an e-waste collection point. More detailed information at www.jablotron.com in the Downloads section.