

M-DOT-M18: 18-fields touch panel module with a display

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Technical data

Supply voltage

11 – 16V DC

Idle current consumption

45mA

Maximum current consumption

70mA

Number of sensor fields

18

Technical data cont.

1-Wire

up to 6 sensors

Buzzer

yes

Display size

2"

Dimensions

Width

90mm*

Height

160mm*

Depth

22mm

Environment

Temperature

-20 – 50°C

Humidity

≤95%RH, non-condensing

The image above is for illustration purpose only. The actual module may vary from the one presented here.

* The exact dimensions of the module depend on the variant of the glass edge finish selected when placing an order.

General features

Module M-DOT-M18 is a component of the Ampio system. Required voltage to power the module is 11 – 16V DC. The module is controlled via CAN bus.

The module has eighteen sensor fields, a display supporting the functionality of swipeable screens, and a 1-Wire interface. Due to the layout of the sensor fields, this panel is a perfect fit for functionalities related to alarm systems and access control.

Sensor fields

The touch panel sensor fields are capacitive buttons located behind the glass pane, which is the front of the module. Each sensor field is marked with a symbol engraved on the glass surface.

The condition for triggering an action associated with a given field can be pressing, holding, double-pressing, etc. A single field can initiate multiple actions depending on how it is triggered.

Each sensor field is illuminated by an RGB diode, which allows one to define any backlight colour. The backlight can be constant or change during the system operation, signalling the status of devices associated with the field or any other information available in the building automation system.

There are coloured status LEDs above the sensor fields. As in the case of backlight, they can signal the status of devices associated with the field or any other information available in the building automation system.

The brightness of both, the symbols and the status LEDs, can be modified. The panel has a proximity sensor, thanks to which it is possible to define a weaker backlight when there is no interaction with the panel, and a stronger one, which activates when one brings a hand close to the panel.

Calibration of touch fields

The M-DOT panel calibration process runs automatically each time the power is switched on. To ensure optimum sensitivity and trouble-free operation of the device, it is essential to follow the guidelines below:

Final installation: Calibration must only be carried out after the panel has been fully installed in the mounting box. Testing the module 'in your hand' prior to installation prevents the correct reading of the base electrical capacitance, resulting in unstable operation of the touch panels.

Calibration procedure:

1. Install the panel in its intended location.
2. Reset the power supply (by switching it back on).

Note: Do not touch the front of the device for the first 3 seconds after start-up. During this time, the sensors stabilise in relation to the ambient conditions.

Display with swipeable screens

The module is equipped with a 2" LCD display and supports the functionality of swipeable screens. It allows one to define a number of configurations of symbols presented on the display within individual screens. swipearable between the screens is done using the sensor fields in the middle row of the panel, while the functionality of the upper and lower fields may be different for each screen and is described by the symbol shown on the display located near the field.

The colour of the symbols that define the corner sensor fields can be modified to indicate the status of associated devices or any other information available within the building automation system.

The central part of the screen presents any information available in the building automation system, e.g. date and time, or temperature measurement results. Each swipeable screen can show different information.

If the installation includes an IP integration module from the M-SERV family, it is possible to display on the panel information downloaded from the network, e.g. weather, stock information, etc.

The module can support up to 12 swipeable screens.

Apart from the screens described above, the module also enables the activation of the following types of screens:

- information screen,
- countdown timer screen,
- Ampio alarm control screen,
- numeric keypad screen.

Information screen

The information screen is divided into three sections, which facilitate presenting any information available in the building automation system, e.g. date and time or temperature measurement results. There are no symbols describing the sensor fields on this type of screens.

Countdown timer

The screen implements the countdown timer functionality. When this type of screen is active, the corner panel buttons are used to define the time, stop and start the countdown, and reset it. The end of the countdown is signaled by default with an acoustic signal. It is also possible to perform any action within the devices connected to the building automation system.

In case one chooses to engrave a numeric keypad at the bottom of the panel, the keypad can also be used to set a countdown timer.

Ampio alarm control screen

The M-DOT-M18 module can be used as a keypad for alarm control panels from the M-ALARM family. When the alarm handling screen is active, corner panel buttons are used to signal the status of zones and can be used for their selection. The sensor fields at the bottom of the panel are used as a numeric keypad that allows arming and disarming zones with the use of PIN codes.

Numeric keypad screen

Within the numeric keypad screen, at the device configuration stage, it is possible to define a series of numerical codes. When this type of screen is active, the sensor fields at the bottom of the panel are used as a numeric keypad. Entering a predefined code there can trigger any action in the building automation system.

Personalisation

The symbols of the module's sensor fields are engraved in accordance with the client's design. The colour of the module's front glass and the chamfer's width of the glass edge are also subject to personalisation.

At the stage of creating the panel project, a choice should be made whether the functionality of the swipeable screens will be utilised in the module, or not. Depending on the decision, one should use a template that allows for personalisation of all eighteen sensor fields, or a template with predefined fields, which support the functionality of scrollable screens. In the second of the aforementioned templates, the sensor fields on the sides of the screen have no status LEDs.

Buzzer

The module is equipped with a buzzer that enables generating sound signals. By default, each press of the sensor field triggers a short buzzer sound. However, this behaviour can be modified.

In addition to confirming that the sensor field has been pressed, the buzzer can be used to signal any other events observable by the building automation system. The sound volume and type are defined at the device configuration stage.

Temperature sensors

The module is equipped with a 1-Wire interface connector that allows to connect up to 6 digital Dallas DS18B20 temperature sensors. The temperature measurement result is available for all devices operating within the building automation bus. It may turn out to be particularly useful for purposes related to temperature regulation, or to present the measurement result on touch panels and in a mobile application.

The total length of the 1-Wire bus cable to which the temperature sensors are connected cannot exceed 15m.

Typical application

- Implementing access control mechanisms;
- alarm arming and disarming;
- turning on lighting or any other devices connected to the building automation system;
- informing about the state of lighting or other devices;
- generating sound notifications informing about events observed by the system;
- measuring temperature in rooms;
- presenting information on the screen, e.g.:
 - date and time,
 - values of readings of sensors installed in the building automation system,
 - RDS radio station name of the M-AV-AMP-s module,
 - information downloaded from external APIs by a module from the M-SERV family, such as the weather, commuting time, stock quotes, etc.

Installation

The panel can be mounted on a surface or it can be flush with the wall surface. Depending on the expected effect, a flush mounting plate or surface mounting frame is used. The frames are available in two variants - for panels with glass with and without chamfered edges.

Both in the case of flush and surface mounting, a standard junction box must be located behind the panel, inside which there will be connectors for the CAN bus and the 1-Wire interface. In the case of flush mounting, the box must be embedded in the wall at a greater than standard depth.

A detailed description of the installation of panels in both variants is available in the appropriate installer guides published on the [Ampio knowledge base](#) website.

Device status LEDs

On the back of the device, there is one red LED indicating the communication status within the CAN bus:

- one regular flash every 1 sec. – CAN bus communication is working properly,
- two regular flashes every 1 sec. – the module is not receiving information from other smart modules,
- three regular flashes every 1 sec. – the module cannot send information to the CAN bus;

After the device is embedded in the mounting plate or frame, the LED is hidden.

Programming

The module is programmed with the use of the [Ampio Designer](#) software. It allows you to modify the parameters of the module and define its behaviour in response to signals directly available to the module as well as general information coming from all devices present in the home automation bus.

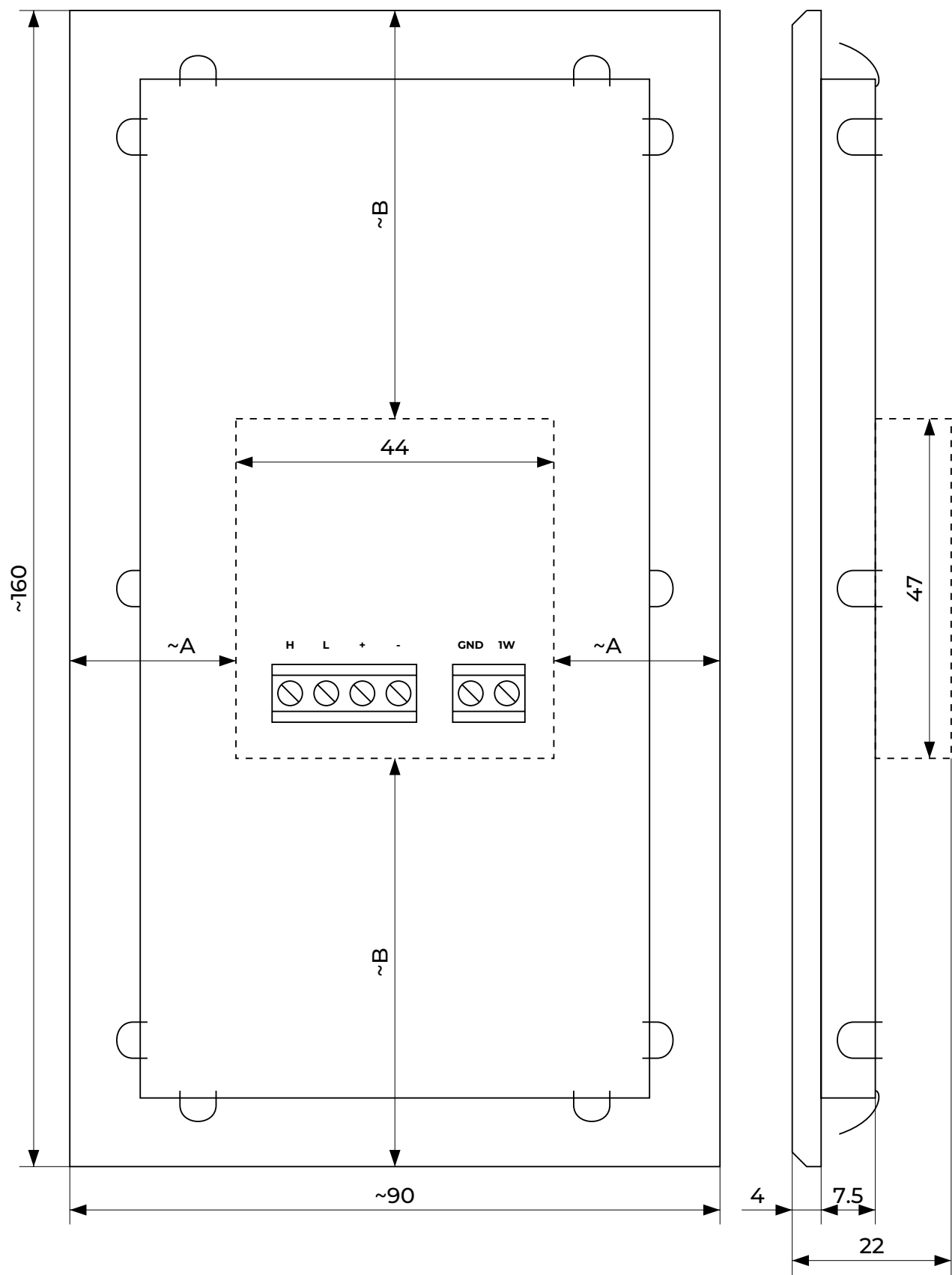
Module dimensions

Dimensions expressed in millimeters.

The panel consist of a glass front and a body with connectors and mechanical interfaces meant for mounting with the use of mounting plates or surface frames. The body is mounted in the center of the rear surface of the glass front with a margin of error appropriate for the production process.

The exact dimensions of the module front depend on the variant of the glass edge finish selected when placing an order.

In the dimensions diagram, the dashed line marks the area where the connectors of the device and its other elements protruding from the body are located. The outline of this area corresponds to the central opening in mounting plates and frames for panels. In the actual module, the CAN bus and 1-Wire interface connectors may be located in a different place than in the figure below, but within the marked area.



Connection diagram

The location of the device connectors on the connection diagram is indicative - in the physical module their location may be different.

