

# M-DOT-9: 9-fields touch panel module

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## Technical data

**Supply voltage**  
11 – 16V DC

**Idle current consumption**  
25mA

**Maximum current consumption**  
30mA

## Technical data cont.

**Number of sensor fields**  
9

**1-Wire**  
up to 6 sensors

**Buzzer**  
yes

## Dimensions

**Width**  
90mm\*

**Height**  
90mm\*

**Depth**  
22mm

## Environment

**Temperature**  
-40 – 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-9 is a component of the Ampio Smart Home system. Required voltage to power the module is 11 – 16V DC. The module is controlled via CAN bus.

The module has nine sensor fields and a 1-Wire interface.

## 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.

## 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.

## 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.

## Module with RFID reader



The M-DOT-9 touch panel module is also available with a built-in RFID card reader. This module is perfectly suited for handling access control functionalities.

**It is not possible to connect Dallas DS18B20 digital temperature sensors to the M-DOT-9 module with an RFID reader.** The 1-Wire connector is present on the body of the device, however, its functionality is not supported. Other functionalities of the module are identical to the functionalities of the regular M-DOT-9.

The module's RFID reader enables the reading of RFID cards in the ISO/IEC14443-3-A standard. The card can be verified in two ways.

## Internal verification

At the configuration stage, it is possible to save up to 64 RFID card identifiers that will be recognised by the M-DOT-9 module with an RFID card reader. If the card tapped to the device is recognised, information about this event will be sent to the CAN bus. This information can be used by other devices of the building automation installation.

## External verification

When any RFID card is tapped to the device, its identifier is sent to the CAN bus. Such information can be received by the IP integration module from the M-SERV family. After receiving the message, the module can take actions to verify the identifier and take further actions, if it is recognised. In this way, it is possible, for example, to create integrations with external access control systems that provide API over IP protocol.

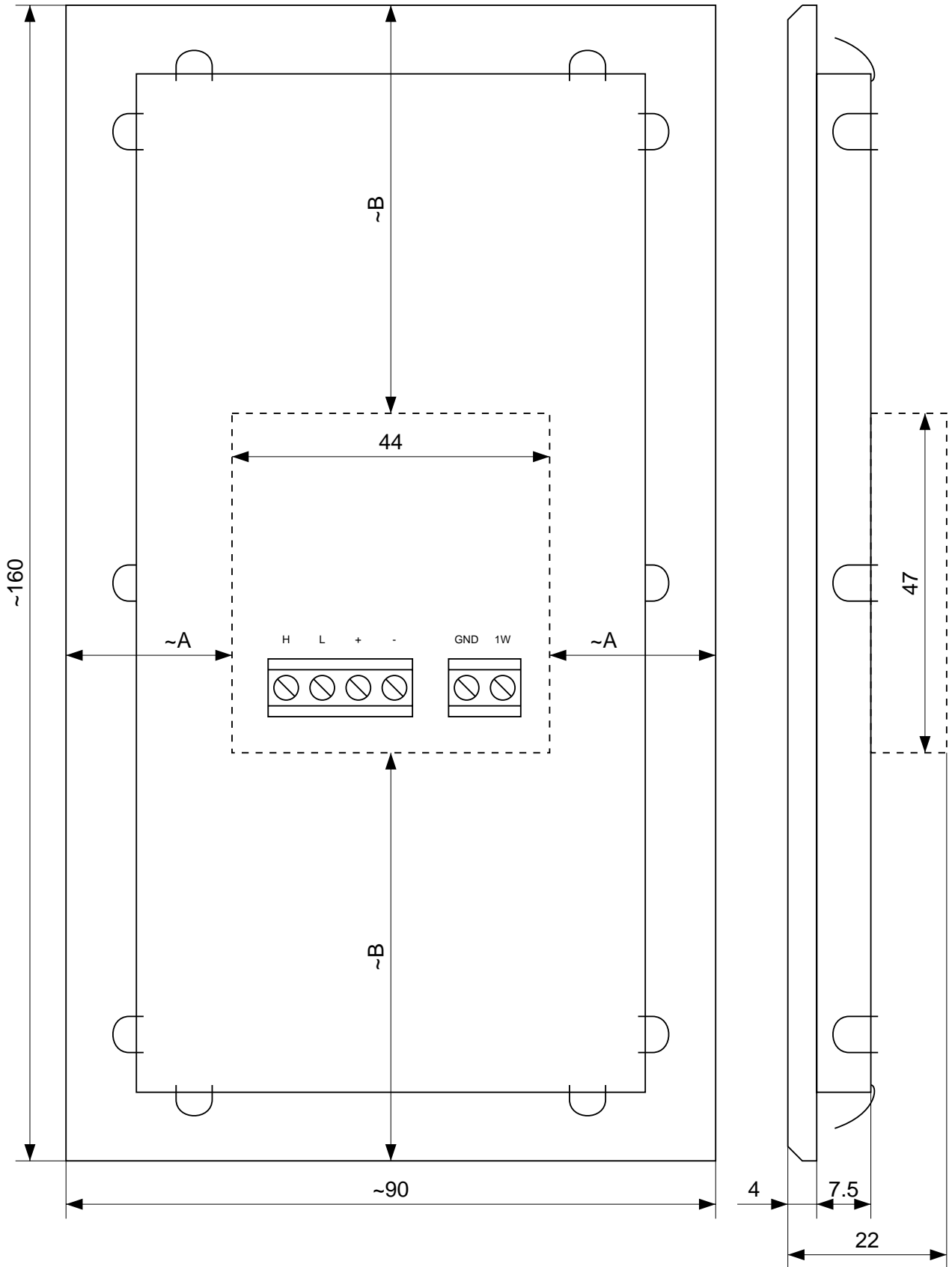
## Dimensions of the module with an RFID reader

The dimensions of the module with an RFID reader are different from the standard version of the module and correspond to the tall Ampio touch panels. The exact dimensions of the module's front depend on the variant of the glass edge finish selected when placing the 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 touch 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.

Dimensions expressed in millimeters.

The following dimension diagram is for the M-DOT-9 module with an RFID reader. The drawing of the module dimensions in the regular variant can be found further in the document.



## Typical application

- 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;
- room temperature measurement.

## 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 Home 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 a special programmer, available for authorised technicians, and the Ampio Smart Home CAN configurator 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.

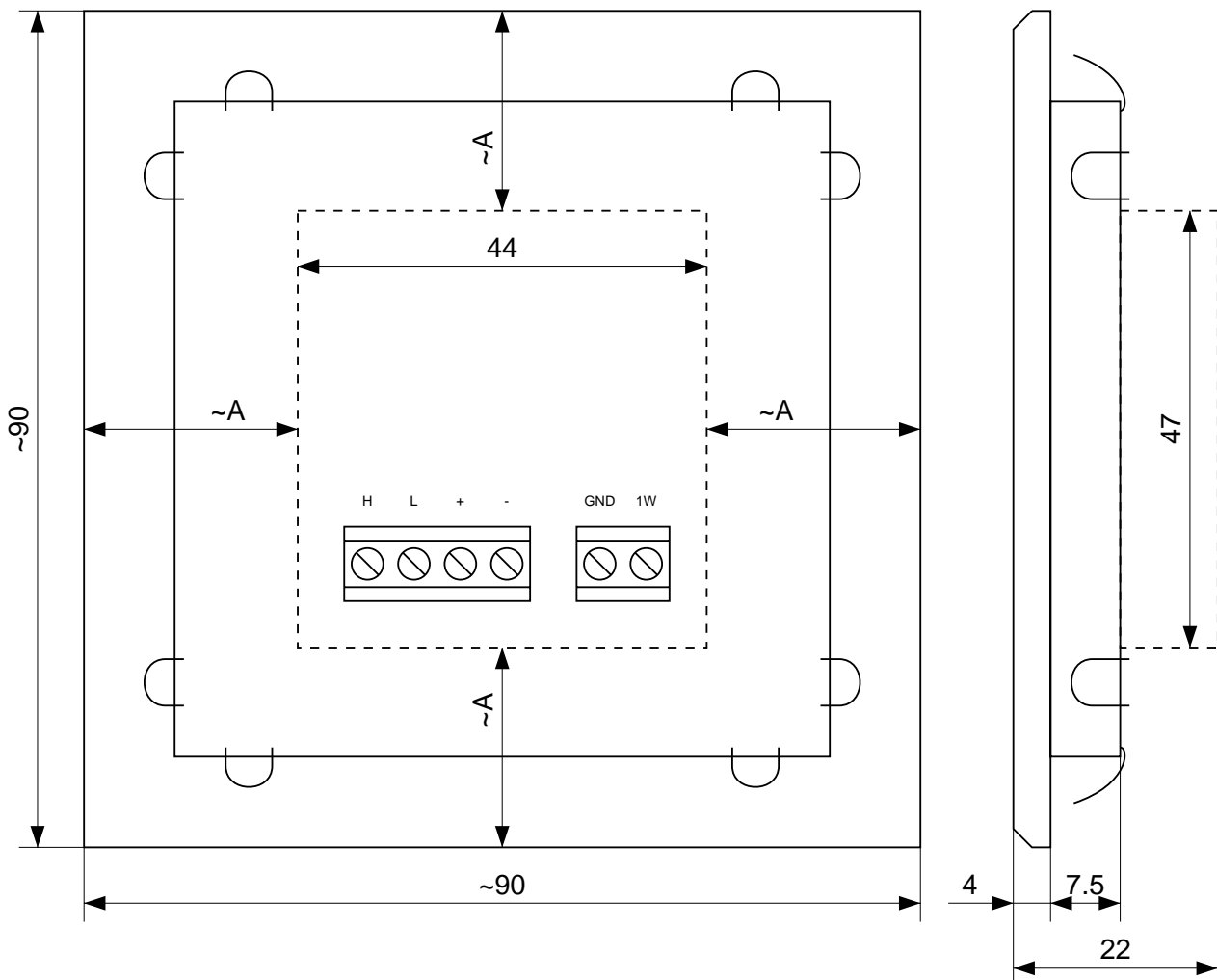
## Module dimensions

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.

