M-AV-AMP-s: Bus receiver module

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Technical data

Supply voltage
11 — 16V DC

Current consumption
50mA

Maximum output power of the power amp
2 x 15W

Supply voltage of the power amp
11 — 16V DC

Maximum current consumption of the power amp
5A

Technical data cont.

Stereo line inputs (2xRCA)
2

Antenna input (75Ω)
1

Stereo line outputs (2xRCA)
1

Speaker outputs
2

Minimum speaker impedance
8Ω

Dimensions

Width
88mm, 5 spaces/modules in DB

Height (incl. plugs)
110mm

Depth
65.5mm

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.

General features

Module M-AV-AMP-s 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.

Adding the module to the Ampio Smart Home installation makes it possible to play music automatically when someone enters the house, or lower the volume after a certain hour. It provides a lot of functionalities that can be customised per user.

The module has a built-in 2 x 15W amplifier, thanks to which we can connect speakers directly to it. The amplifier has a thermal safety feature - if the temperature exceeds a safe limit, the volume will be automatically reduced to avoid damaging the device.

Two line audio inputs allow for connecting various sound sources, e.g.: MP3 player, shelf stereo, Bluetooth transmitter, CD player, etc.

Changing sound sources is possible via the mobile app, or on the touch panels, if they are properly configured. With a built-in FM radio receiver, you can programme 16 different radio stations in the module.

The *line out* audio output makes it possible to connect an external amplifier in order to, e.g. use more powerful speakers, or use an existing audio system.

RDS information such as, e.g. a radio station name can be shown on the touch panels' displays.

The module can be controlled either via the Ampio touch panels, or the mobile app available on iOS and Android devices.

Typical application

- Installing a sound system in places like e.g. living room, bathroom, garden
- remotely changing radio stations, changing the volume, or selecting the sound source
- showing RDS information from the built-in FM radio receiver on the Ampio touch panels' displays

Installation

The module is designed for mounting on a 35mm DIN rail. The module's width is 88mm, 5 spaces/modules in DB. In order to start the module, it must be connected to the CAN bus. The bus of the Ampio Smart Home system consists of four wires - two for power and two for communication between the modules.

If the built-in audio amplifier is to be used, in addition to the standard connection of the M-AV-AMP-s module to the Ampio Smart Home system's CAN bus, it is also required to connect an additional power line with a voltage of 11 — 16V DC and current efficiency of 5A. It is used to power the built-in audio amplifier.

Connecting an FM antenna is a prerequisite to the proper working of the radio receiver.

The module has two pairs of RCA connectors that allow for connection up to two external stereo signal sources, and one pair serving as a stereo line output that allows the audio signal to be passed to an external amplifier.

Device status LEDs

On the front of the module there are signalling LED indicators. The green LED with the label *CAN* indicates the status of communication on 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;

Apart from the communication bus status LED, there are 4 red LEDs on the front of the device:
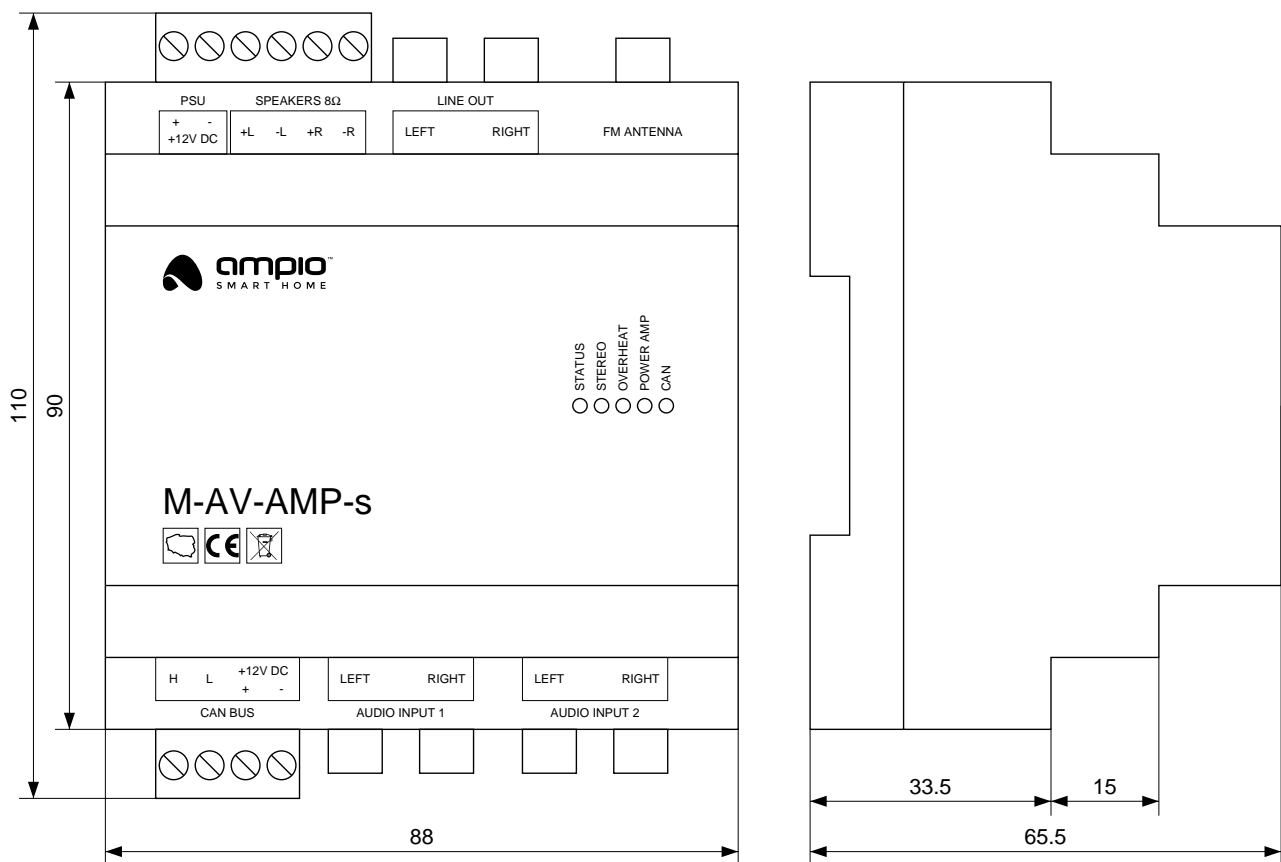
- *power amp* - LED indicating the presence of a power supply to the power amplifier;
- *overheat* - LED indicating overheating of the power amplifier;
- *stereo* - a diode signaling the receipt of a stereo radio signal;
- *status* - the LED is on when the device is active, i.e. it provides the audio signal on the line output and speaker outputs (as long as the power amplifier is powered).

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.

Connection diagram

L 230V AC
N

Audio amplifier
AUX IN

75Ω

75Ω

N L

PSU SPEAKERS 8Ω LINE OUT
+ -
+12V DC +L -L +R -R LEFT RIGHT FM ANTENNA

PSU SPEAKERS 8Ω LINE OUT
+ -
+12V DC +L -L +R -R LEFT RIGHT FM ANTENNA

AUDIO OUT

12V DC PSU

ampio
SMART HOME

STATUS
STEREO
OVERHEAT
POWER AMP
CAN

M-AV-AMP-s

ampio
SMART HOME

STATUS
STEREO
OVERHEAT
POWER AMP
CAN

M-AV-AMP-s

ampio
SMART HOME

STATUS
PLAY
CAN

M-AV-MP3-s

GND +12V

H L +12V DC
+ -
CAN BUS LEFT RIGHT LEFT RIGHT
AUDIO INPUT 1 AUDIO INPUT 2

H L +12V DC
+ -
CAN BUS LEFT RIGHT LEFT RIGHT
AUDIO INPUT 1 AUDIO INPUT 2

H L +12V DC
+ -
CAN BUS

CAN H
CAN L
+12V
GND