## DFAPP: Ethernet Gateway for Domino bus

DFAPP module is a gateway between the Ethernet network and the **Domino** bus; through BDTools and BDWizard support programs, it is possible to perform all usual operations such as the assignment of module addresses, the programming of the system functions, reading and editing of operating programs, updating firmware of modules and more yet through the Ethernet network, both locally and remotely. The same operations can be also performed in wireless mode connecting directly to DFAPP module through WiFi or through an acces point properly configured.

DFAPP module also allows to control the home automation system through applications iCasaMia and ACasaMia available for free on the related stores; thanks to this last possibility, DFAPP module is a user-friendly solution for the control and management, both locally and remotely, of lighting, automation, air conditioning, scheduled operations, loads control, energy consumption, and more again.

Scarica su **App Store**          DISPONIBILE SU **Google play**

DFAPP module allows to manage most of the variables of the **Domino** bus, specifically:

- digital inputs status
- status and command of real outputs
- value of analog inputs (eg. temperature)
- setting of analogue outputs (eg. dimmer)
- status and command of virtual points
- management of scheduled times

DFAPP module features a rel time clock with backup battery capable of retaining the time in case of main power supply failure.
As said above, through DFAPP module it is possible to program **Domino** modules, both locally and remotely, as well as update their firmware. DFAPP module is open to future developments, being itself completely upgradable.

Some LEDs visible from the panel provides an indication of the operating status of the module as described in the following table:

| LED | Color | Function |
|---|---|---|
| POLL | Green | It flashes one time per second to indicate that the module is active |
| VAR | Green | It flashes in case of change of state of a **Domino** digital input module |
| BUS F. | Red | Fixed On when **Domino** bus failure occurs (if DFAPP is separately powered) |
| MOD F. | Red | On for 5s when a module does not answer to a message |
| TX | Yellow | It flashes when the communication is active |
| RX | Red | It flashes when the communication is active |



DFAPP module features a terminal block for the connection to the **Domino** bus and to an auxiliary power supply.

If the application does not require the connection of peripherals needing to be powered by the DFAPP USB ports, the auxiliary power supply can be avoided and the supply can be derived from the **Domino** bus. Otherwise, an auxiliary power supply is needed.
No more connections are required, except the Ethernet connection to a hub/router. DFAPP module is housed in a DIN 4M box for rail mounting.

## Module connection

The following schematic diagram shows the connections required by DFAPP module.
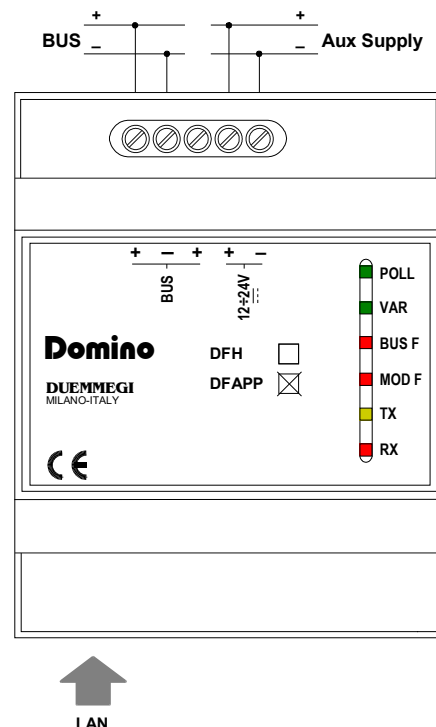
As shown in this schematic diagram, DFAPP module must be connected to a dc power supply in the range 12 to 24V, to the **Domino** bus and to the Ethernet network.

If no peripheral devices that need to be powered by the DFAPP USB ports have to be connected, the auxiliary power supply can be avoided and power can be derived from the bus. The possibility to use this last method essentially depends on:

- the number of DFPW2 power supplies installed in the system
- the number of modules installed in the system
- the bus extension

As known, a single DFPW2 module, in a **Domino** system, can supply up to 50 "generic" modules about (in other words the classics input and output modules of the **Domino** family).

DFAPP module has a "weight", from the point of view of the current consumption, equal to 20 "generic" modules. For instance, in a plant with a DFAPP and a single DFPW2 power supply, it will be possible to install as maximum:

50 modules – 20 modules = 30 generic **Domino** modules

If more modules have to be installed, then more DFPW2 modules are required.

Take in account that this rule does not consider the length of the bus, the section of the cable used for the bus and the location of DFPW2 modules. Remember that DFPW2 module features a LED reporting the overload condition; for details refer to the technical sheet of DFPW2 module.

To supply DFAPP module by the bus, execute the connections shown in the following schematic diagram.
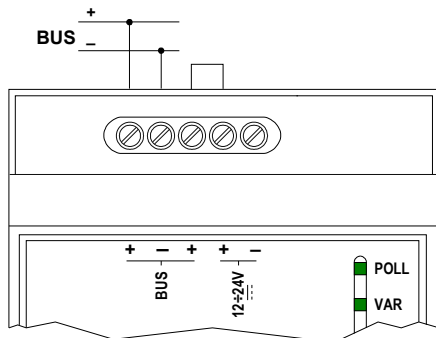
## Setting up

The DFAPP module features two factory-set IP addresses, one for wired connection (LAN) and one for WiFi connection (default SSID: Duemmegi-DFAPP, WiFi password: dfappsever); these addresses are:

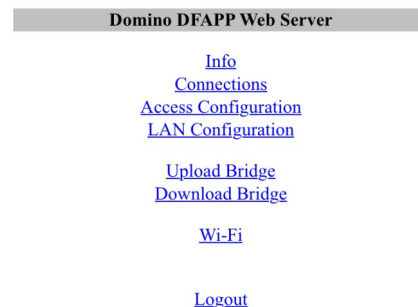| | IP address | Port |
|---|---|---|
| **LAN** | 192.168.1.251 | 1002 |
| **WiFi** | 172.24.1.1 | 1002 |

DFAPP module features a simple WEB server allowing to set the operating parameters. To access to this WEB server, use a web browser (also on a mobile device) by entering one of the two IP addresses listed before, depending on whether the connection takes place via LAN or WiFi.

Therefore, enter the IP address in the browser bar; you will be prompted for a username and password that are factory set to:

Username:        dfapp
Password:        dfappsever
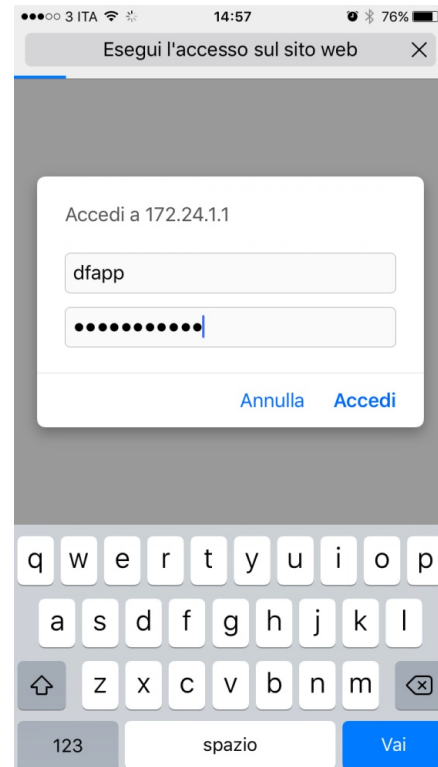
The web server will be then accessed like in the following screenshot:

**Domino DFAPP Web Server**

Info
Connections
Access Configuration
LAN Configuration

Upload Bridge
Download Bridge

Wi-Fi

Logout

To change username and password select Access Configuration; the following page will be shown:

**Domino DFAPP Web Server**

Access Configuration

| Username | dfapp |
|----------|-------|
| Password | •••••••••• |
| Confirm  | |

◯ Show ◉ Hide

( Save )

Menu

Enter the desired username and password and the select Save; Show and Hide options allow to show or hide the password during its entering.

To change the communication parameters, select LAN Configuration; the following page will be shown:

**Domino DFAPP Web Server**

LAN Configuration

| IP Address | 192.168.1.135 |
|------------|---------------|
| Gateway | 192.168.1.1 |
| Subnet Mask | 255.255.255.0 |
| Port | 1002 |

( Save )

Menu

Enter the desired parameters and then select Save.

The two menu items Upload Bridge and Download Bridge allow to upload/read the management software of DFAPP; these features, in particular Upload Bridge, allow to update the module to the latest available version.

The WiFi menu item will open the page shown in the following figure and it allows to enable or disable the WiFi section of DFAPP; the IP address and Subnet Mask cannot be changed. Instead, selecting WiFi Access Configuration, it is possible to change the Network Name (SSID) and the WiFi login password (which by default is dfappserver).

**Domino DFAPP Web Server**

Wi-Fi

◉ Enable ◯ Disable

( Save )

| IP Address | 172.24.1.1 |
|------------|------------|
| Subnet Mask | 255.255.255.0 |

Wi-Fi Access Configuration
Menu

## Technical characteristics

| Power supply | 12 ÷ 24V ⎓ SELV or by Domino bus if USB ports not used (weight: 20 standard modules) |
|--------------|----------------------------------------------------------------------------------|
| MAX current consumption | 160mA @ 12V ⎓ 90mA @ 24V ⎓ |
| CPU | Raspberry Pi 3 con CPU quad-core Cortex-A53 Broadcom BCM2837 1.2GHz |
| WiFi | BCM43438 WiFi on board |
| RAM | 1GB |
| SSD | Micro SD industrial-grade SLC 8GB |
| Available interfaces | 4 USB 1 Ethernet 10/100Mbps |
| Real time clock | Yes, with internal backup battery |
| Housing | DIN standard 4M for rail mounting |
| Operating temperature | 0 ÷ +50 °C |
| Storage temperature | -20 ÷ +70 °C |
| Protection degree | IP20 |

## Outline dimensions
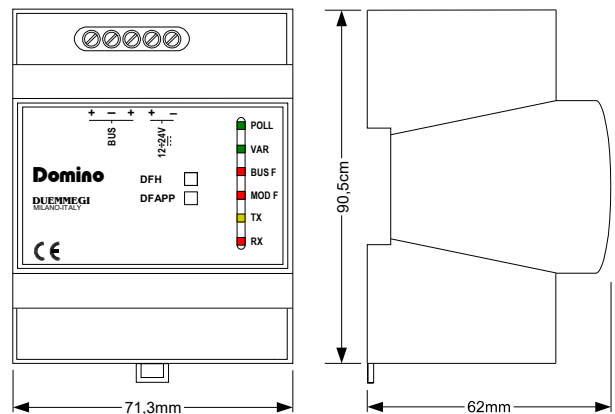
## Correct disposal of this product

(Waste Electrical & Electronic Equipment)
(Applicable in the European Union and other European countries with separate collection systems). This marking on the product, accessories or literature indicates that the product should not be disposed of with other household waste at the end of their working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate these items from other types of waste and recycle them responsibly to promote the sustainable reuse of material resources. Household users should contact either the retailer where they purchased this product, or their local government office, for details of where and how they can take these items for environmentally safe recycling. This product and its electronic accessories should not be mixed with other commercial wastes for disposal.

## Installation and use restrictions

### Standards and regulations

The design and the setting up of electrical systems must be performed according to the relevant standards, guidelines, specifications and regulations of the relevant country. The installation, configuration and programming of the devices must be carried out by trained personnel.

The installation and the wiring of the bus line and the related devices must be performed according to the recommendations of the manufacturers (reported on the specific data sheet of the product) and according to the applicable standards.

All the relevant safety regulations, e.g. accident prevention regulations, law on technical work equipment, must also be observed.

### Safety instructions

Protect the unit against moisture, dirt and any kind of damage during transport, storage and operation. Do not operate the unit outside the specified technical data.

Never open the housing. If not otherwise specified, install in closed housing (e.g. distribution cabinet). Earth the unit at the terminals provided, if existing, for this purpose. Do not obstruct cooling of the units. Keep out of the reach of children.

### Setting up

The physical address assignment and the setting of parameters (if any) must be performed by the specific softwares provided together the device or by the specific programmer. For the first installation of the device proceed according to the following guidelines:

- Check that any voltage supplying the plant has been removed
- Assign the address to module (if any)
- Install and wire the device according to the schematic diagrams on the specific data sheet of the product
- Only then switch on the 230Vac supplying the bus power supply and the other related circuits

## Applied standards

This device complies with the essential requirements of the following directives:
2014/30/UE (EMC)
2014/35/UE (Low Voltage)
2011/65/UE (RoHS)

## Note

Technical characteristics and this data sheet are subject to change without notice.