

DFPW2: power supply module

DFPW module generates the proper power supply required by the modules connected to **Domino** bus. To ensure proper operation, the input voltage of DFPW2 module must be 230Vac 50Hz.

DFPW2 performs an electronic protection with self-restoring function; the protection breaks off the current at the output terminals when an overload or a short circuit occurs. In this way the traditional glass fuse is no more needed, and all the problems caused by its replacement when an unintentional short circuit occurs are thus avoided.

As additional safety, a protection fuse, connected across L line, is however located under the cover of LN terminal block.

A green LED (ON) and a red LED (FAIL) on the front panel show the operating condition of the module (normal, critical, protection) as described in the following.

DFPW2 can supply up to 50 modules of weight 1 (*) of **Domino** family. If the amount of installed modules overrides this limit, or if the bus is very long, then more DFPW2 modules must be installed in different locations (if possible), in order to distribute them along the bus and minimize the voltage drop.

(*) **Domino** modules have, in large part, a current consumption which is defined as weight 1; some special **Domino** modules have a current consumption of higher weight. For example, if a module has weight 4, then this will absorb a current equal to 4 "standard" modules. The table in the next page resumes the modules having weights different from 1.

DFPW2 housing is a standard DIN 6M module and it provides a 2-pole terminal block for the connection to the input voltage (230Vac) and a pair of 2-pole terminal block (+ and -) for the connection of **Domino** bus; the doubling of the + and - bus terminals (internally parallel connected) allows, in some cases, to simplify the wiring. On the contrary of the majority of other **Domino** modules, DFPW2 module does not require any address.

Protection operation

When the output current of DFPW2 module overrides a first fixed threshold, the green LED on the front panel begins to blink to inform that the module is operating in the critical zone, even if it continues to supply the current on its output. If the current overrides a second threshold, then the electronic protection takes place breaking off the output circuit by means of an internal power relay; in this case the green LED will be switched off and the red LED will be switched on. The protection, after the first overload occurrence, will be restored after 5 seconds, but if the current is higher than the second threshold once more, the protection takes place again and it will be restored after 10 seconds. If the overload condition persists after the second restoring too, then the following restoring attempts will occur every 30 seconds.



The following table resumes the waiting times before the restoring as function of the amount of the consecutive protection occurrences:

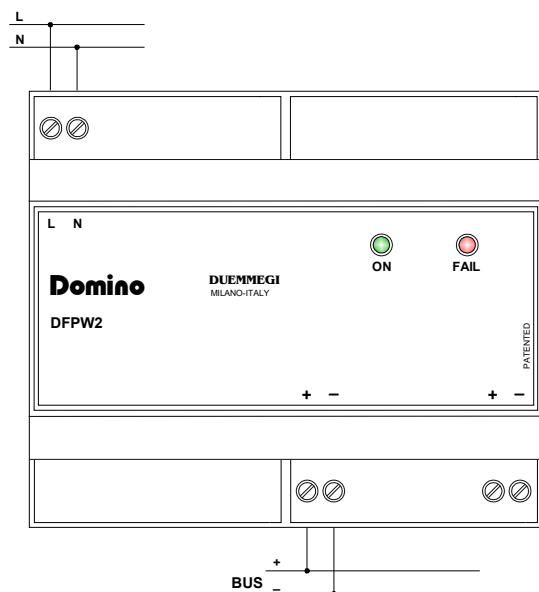
Protection occurrence	Restoring after
After the first occurrence	5 seconds
After the second occurrence	10 seconds
After the third occurrence	30 seconds
After the next attempts	30 seconds

The following table describes the meaning of the signals provided by the two LEDs on the front panel:

Green LED	Red LED	Meaning
Fixed ON	OFF	OK
Blinking	OFF	Critical operation
OFF	Fixed ON	Protection occurrence

Module connection

Following figure shows the proper connections to be made for DFPW2 module.



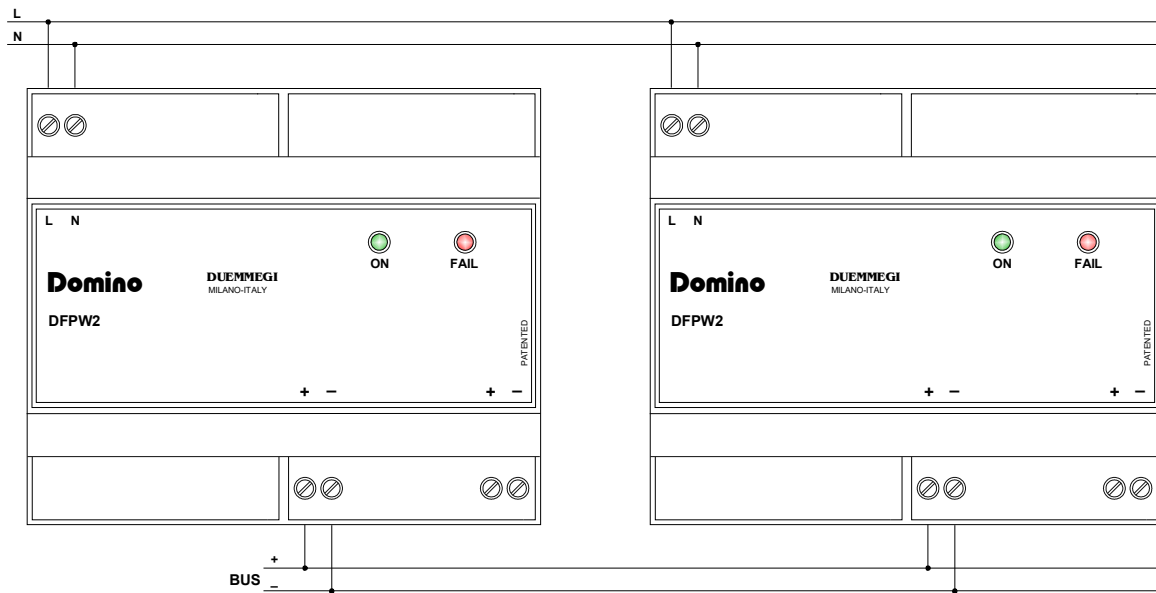


Figure 1: Connection of more DFPW2 modules

If more than 50 input/output **Domino** modules have been installed, or if the bus length causes incorrect operation of some modules (especially output modules) due to the voltage drop across the bus cable, then more DFPW2 power supply modules have to be installed. If the bus cable is very long, each DFPW2 module must be located, according to the system topology, in such a way to minimize the voltage drop on the modules.

If more DFPW2 modules are required, connect according to the schematic shown in Figure 1, taking attention to the correct 230Vac phases.

Note: When connecting more DFPW2 supply modules, it is mandatory to meet the shown polarities for the connections L/N and +/- between a DFPW2 module and the next one, otherwise the system cannot operate.

In three phases electrical networks, it is not possible to supply more DFPW2 (belonging to the same bus system) from different phases.

Protection fuse

DFPW2 module features a protection fuse connected across L line, located under the cover of LN terminal block; this fuse may burn in case of high over voltage on the a.c. supply or if a failure on the primary winding of the transformer occurs.

To replace a fault fuse, first of all check the connections and verify that no short circuit occurred. To remove the terminal cover, disconnect all power supplies and lever by a small screwdriver inserted between the cover itself and the housing side, pulling it out. The fuse value must be 1A 230V~ time-delay.

Current consumption of Domino modules

As said before, **Domino** modules have, in large part, a current consumption which is defined as weight 1. The following table lists the modules having a greater weight that must be taken in account to evaluate how many DFPW2 modules have to be installed in the plant.

Module	Consumption weight
DF4DV	2+10 (1)
DF8IL	3
DF8RIT	2
DFANA	2
DFAPP	20 (2)
DFCC	3
DFCC2	5
DFDALI	2
DFDMX	4
DFDV	2
DFH	20 (2)
DFGLASS	3
DFLS	3
DFMETEO	4
DFRHT	2
DFTOUCH	8
DFTOUCH2	18
DFTP/I	2
DFTZ	2
DFWEB	15
DFWRX	2

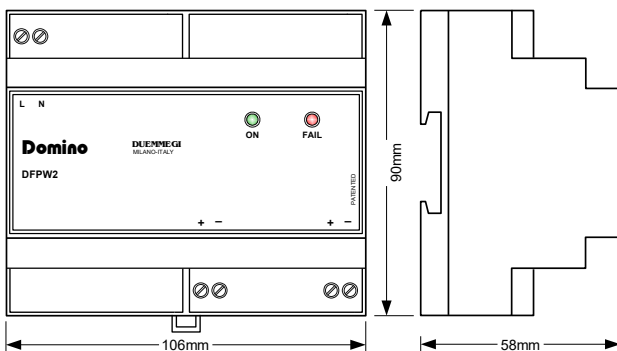
(1) This weight depends on the load applied to outputs; when connected to dimmable ballasts or similar device, consider a weight 2 (since the output current is sinked from the ballast instead to be sourced by the Domino module).

(2) If it is not supplied by an aux power supply.

Technical characteristics

Input power supply	230V~ ±10% 50Hz, 20VA
Nominal output voltage (bus)	25V peak, pulsed waveform, SELV
Overload and short circuit protection	Electronic
Output current threshold for critical zone signaling	1.9A peak
Output current threshold for protection occurrence	2.5A peak
Allowable number of Domino modules for each DFPW	50
Protection fuse	1A / 230V~ time-delay, included (under the cover of LN terminal block)
Housing	Standard DIN 6M for DIN rail
Operating temperature	-5 ÷ +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:

- I. Check that any voltage supplying the plant has been removed
- II. Assign the address to module (if any)
- III. Install and wire the device according to the schematic diagrams on the specific data sheet of the product
- IV. 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.