

DF4IL: 4 input – 4 voltage output module for LED driving

DF4IL module allows, through the **Domino** bus, the acquisition of 4 ON-OFF signals and the driving of 4 voltage outputs, typically for the driving of the LEDs or the small lamps inside the luminous pushbuttons. The small dimensions of DF4IL module allow the positioning directly in the standard wall box (503 or similar), on the back of the command switches or pushbutton; thanks to this feature, it is possible to use the switching devices of the preferred manufacturer.

As for almost all modules of **Domino** family, the bus itself carries the power supply for the module operation. The loads connected to the outputs must be instead supplied by an external dc power supply.

Near to the input/output connector, the module features a small pushbutton for the address programming and a green LED that flashes every 2 seconds about to signal that the module is properly supplied and operating. A 3-way small connector (PRG) allows the connection to the optional tester/programmer.

DF4IL module takes, inside the **Domino** bus, *one input address and one output address with the same value* (base address); in other words, assigning address n to the module, it will fill both input address n and output address n.

A white label on the top panel allows the writing of the programmed module base address for an immediate visual identification.

For more details about the programming, refer to the related documentation.

Operation

As said before, DF4IL module takes one input and one output address with same value. Assuming to have assigned the base address 1 to DF4IL module, the meaning of the input/output points will be the following:

Inputs	Outputs
I1.1 = input 1	O1.1 = output 1
I1.2 = input 2	O1.2 = output 2
I1.3 = input 3	O1.3 = output 3
I1.4 = input 4	O1.4 = output 4

The operation of the LED outputs can be freely defined using the functions of the **Domino** system and then these outputs can depends on any real or virtual point.



Module connections

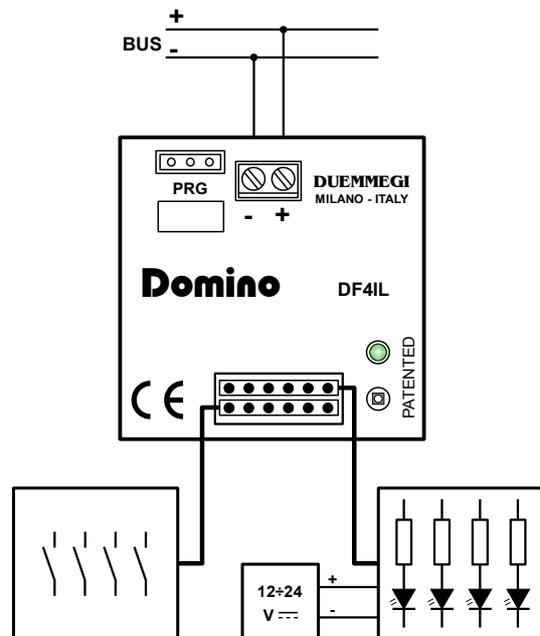
The switching devices (pushbuttons, switches or other) and the LEDs (or lamps) must be connected to the module using the provided cable; the wires may be cut as required by the specific situation.

As said before, DF4IL module allows the driving of LEDs or small lamps, and for this feature an auxiliary 12 to 24 Vdc power supply is required.

Pay attention to the polarities shown in the following schematic diagrams; a wrong connection may result in a damage to the module.

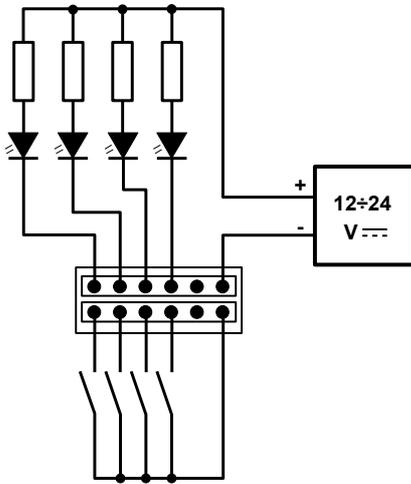
When driving LEDs, check that each of these ones have a series resistor limiting the flowing current, on the contrary, install these limiting resistors; the absence of these resistors may break the LEDs and damage the module.

The following block diagram shows the proper connections to be made.



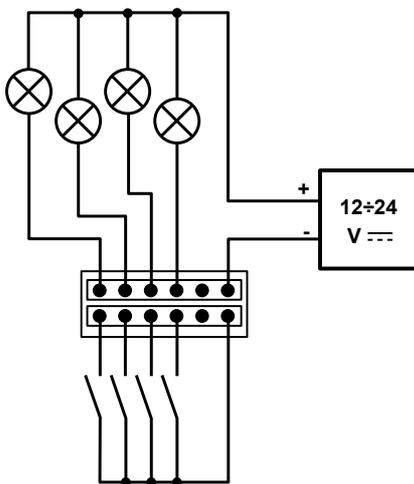
DF4IL

The following schematic diagram shows the detail of the connection from the module connector to the inputs and to 4 LEDs; note the limiting resistors.



The external power supply for the LEDs or the small lamps must be exclusively of dc type, with value inside the range 12 to 24Vdc. The limiting resistors placed in series connection to the LEDs, when not already built in the luminous pushbuttons, must be 1KΩ or 2.2KΩ depending on the value of the external power supply (12 or 24Vdc respectively).

The following schematic diagram shows the detail of the connection from the module connector to the inputs and to 4 small lamps.

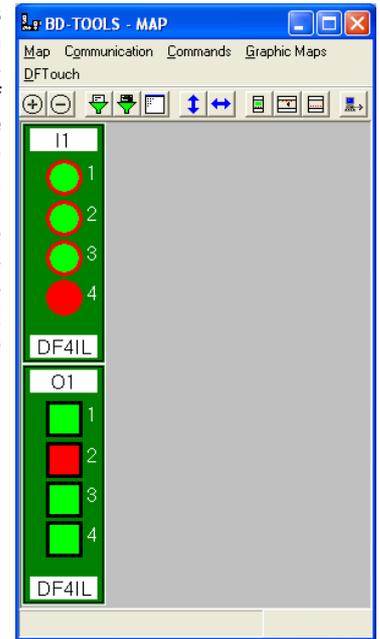


Mapping

Since DF4IL module is a mixed input/output module, it will be displayed on the BDTools map (*version 7.0.0 or higher*) as two symbols like in the following picture.

As for all other **Domino** modules, the background of the module is in green color if the module is connected and properly working, otherwise the background is in red color.

As usual, each input is shown on the map in red or green color depending on the status of the related input. The current status of the 4 outputs is shown in a similar way. The example in figure shows a DF4IL addressed 1: point 4 of the input section and point 2 of the output section are activated.



Technical characteristics

Power supply (bus side)	By specific centralized power supply mod. DFPW2
Number of inputs	4, potential-free contacts only
Current for each input contact	1mA (closed contact), 0mA (open contact)
Number of outputs	4, NPN voltage type
Available current for each output	200mA on resistive load (small incandescent lamps or LEDs)
Voltage of external power supply	12 to 24Vdc
MAX allowed length for input wires	10 meters
Operating temperature	-5 ÷ +50 °C
Storage temperature	-20 ÷ +70 °C
Protection degree	IP20

Outline dimensions

