

## DF8IL: 8 digital inputs - 8 LED outputs module for wall box

DF8IL module allows, through the **Domino** bus, the acquisition of 8 ON-OFF signals and the driving of 8 LEDs. The small dimensions of DF8IL 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 option, an integrated keyboard made by 8 pushbuttons and 8 LEDs, with dimensions suitable for mod. 503 wall boxes, is also available.

As for all modules of **Domino** family, the bus itself carries the power supply for the module operation. Two connectors (IN and OUT) on a side of the module allow the connection to the switching devices and to the LEDs using the supplied cable assemblies.

On the top of module, a small pushbutton allows the address programming directly by the bus and a green LED shows when the module is ready to receive the address itself; the same LED normally flashes every 2 seconds about to signal that the module is properly operating. A small connector (PRG) allows the connection to the optional tester/programmer.

DF8IL module takes 4 consecutive input and output addresses, thus a "starting address" has to be assigned to it. A white label on the top panel of the box allows the writing of the programmed starting address for an immediate visual identification. For more details about the address assigning, refer to the related documentation.

### Operation

As said above, DF8IL module takes 4 consecutive input addresses and 4 consecutive output addresses, but to set up the module a "starting address" only has to be assigned to it. For example, assigning to DF8IL module the starting address 9, the same module will automatically take the addresses from 9 to 12 included, both for input and output section. **Warning: the starting address must be multiple of 4 plus 1 (e.g. 1, 5, 9, 13, 17, etc.).** Supposing to have assigned the starting address 1 to DF8IL module, the meaning of the points will be the following:

Inputs	Outputs
I1.1 = input 1	O1.1 = reserved
I1.2 = input 2	O1.2 = reserved
I1.3 = input 3	O1.3 = reserved
I1.4 = input 4	O1.4 = reserved
I2.1 = input 5	O2.1 = reserved
I2.2 = input 6	O2.2 = reserved
I2.3 = input 7	O2.3 = reserved
I2.4 = input 8	O2.4 = reserved
I3.1 = LED 1 status	O3.1 = LED 1 command
I3.2 = LED 2 status	O3.2 = LED 2 command
I3.3 = LED 3 status	O3.3 = LED 3 command
I3.4 = LED 4 status	O3.4 = LED 4 command
I4.1 = LED 5 status	O4.1 = LED 5 command
I4.2 = LED 6 status	O4.2 = LED 6 command
I4.3 = LED 7 status	O4.3 = LED 7 command
I4.4 = LED 8 status	O4.4 = LED 8 command

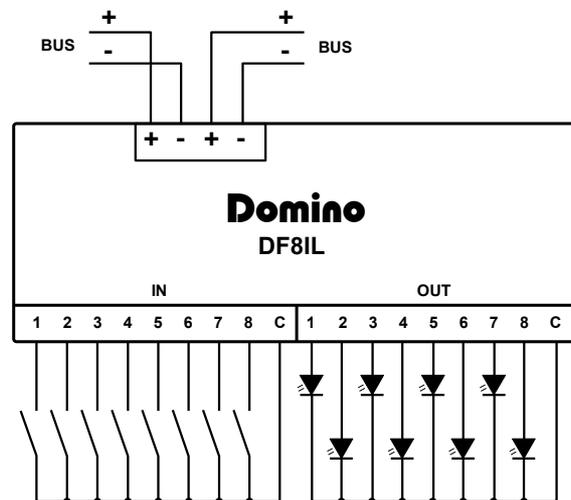


In other words, the points belonging to addresses 3 and 4 (in this example), behave in a way similar to that of virtual points, because these ones are both inputs and outputs at the same time. The operation of the LED outputs can be freely defined using the **Domino** programming functions as for any other standard output point.

### Module connection

The switching devices (pushbuttons, switches or other) must be connected to the module using one of two provided cable assemblies; the wires may be cut according to the requirements of the application.

The other cable assembly must be used to connect the LEDs, taking care of the correct polarity as shown in the schematic; the current limiting resistors for the LEDs are included in the module, therefore no additional external components are needed.



### Programming examples

As said above, the points belonging to the two last addresses behave in a way similar to that of virtual points, but in this case the status of these points is reported on the LEDs. The first two input addresses are related to the "physical" inputs to which the pushbuttons or the switches are connected, while the last two input addresses report the status of the LEDs.

**DF8IL**

The first two output addresses are reserved and cannot be used for any other module in the same **Domino** system, while the next two addresses let to control the LEDs. This arrangement allow to implement in an easy way the commands for lighting as shown in the following example.

Suppose to have assigned the starting address 1 to DF8IL module; a lamp connected to output O42.1 has to be controlled by a pushbutton connected to the first input of DF8IL module and the first LED of the same module must follow the lamp status. The program will be:

```
V3.1 = TI1.1 // toggle LED 1
O42.1 = V3.1 // lamp command
```

In other words, the pushbutton switch on/off LED 1 of DF8IL module and the LED status will be reported to the lamp output. In this way, the lamp and the LED will be always synchronized because the LED status will be always copied to the lamp output.

To switch on the LED when the lamp is off (e.g. to find the pushbutton in the darkness), the previous program may be easily modified as follows:

```
V3.1 = TI1.1 // toggle LED 1
O42.1 = !V3.1 // lamp command
```

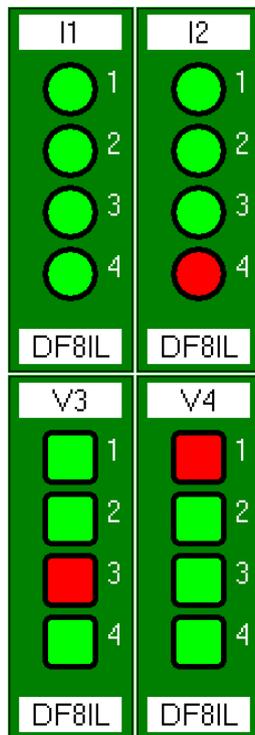
**Warning:** writing a program that uses the LED outputs of DF8IL module, it is mandatory to use the form **Vx.y**. If the form **Ox.y** is instead used, then BDTools will report an error during the upload of the program to the module.

**Mapping**

Since DF8IL module is a mixed input/output module, it will be displayed on the BDTools map as group of two input and two output module as in the picture on this right side.

As for all other **Domino** modules, the background 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 DF8IL with base address 1.



**Accessories**

Under request, a polycarbonate panel with 8 membrane pushbuttons and 8 integrated LED can be provided; this assembly allows to set-up, in a quick and simple way, a complete control panel that may be easily installed in the standard wall box (503 or similar). This panel also allows an easier customizing by inserting a paper label with the desired texts or symbols.

**Technical characteristics**

Power supply (bus side)	By specific centralized power supply mod. DFPW2
Number of inputs	8, potential free contacts only
Current for each input contact	1mA (closed contact), 0mA (open contact)
Input voltage	5Vdc
Number of LED outputs	8
Available current for each LED output	3.5mA internally limited
Max length for the input wires	10 meters
Operating temperature	-5 ÷ +50 °C
Storage temperature	-20 ÷ +70 °C
Protection degree	IP20

**Outline dimensions**

