DFIR: infrared receiver module

DFIR module allows to receive from an infrared remote control up to 124 independent channels and to send them on the bus **Domino** for command execution.
In addition, DFIR module provides 2 inputs for ON-OFF signals to be connected to pushbuttons, switches, and any other free-potential contact.
DFIR module can be set, by BDTools, according to the amount of channels required by the application.

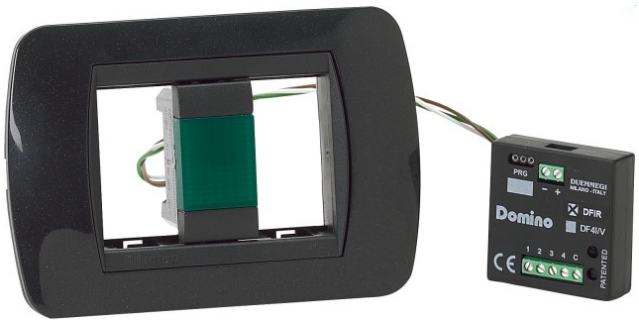
Standard configuration
The factory configuration of DFIR module allows the handling of 11 channels and it requires 4 consecutive addresses; however, a "starting address" only has to be assigned to the module.
For example, assigning to a DFIR module the starting address 9, the same module will automatically take the addresses from 9 to 12 included. The starting address must be in the range 1 to 252 and it can be freely assigned without any other restriction.
DFIR module provides 4 points for 4 addresses = 16 input points; the points 3 and 4 of the starting address are related to the "physical" inputs (terminals 3 and 4). The other consecutive addresses are assigned to the I.R. channels.
Supposing to have assigned the starting address 1 to a DFIR module, the meaning of the input points will be the following:

I1.1 = correct code receiving
I1.2 = not used
I1.3 = input from terminal 3
I1.4 = input from terminal 4
I2.1 = I.R. channel 1
I2.2 = I.R. channel 2
……
I4.1 = I.R. channel 9
I4.2 = I.R. channel 10
I4.3 = I.R. channel 11
I4.4 = not used

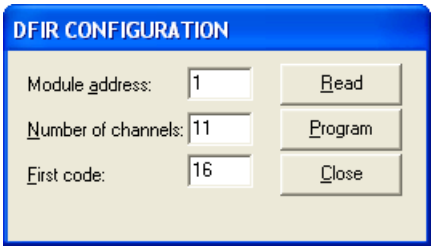
The input point described as "correct code receiving" (I1.1 in the example) will be activated when DFIR is receiving a correct IR code; this point may be used to switch on a LED (or other) in order to signal that the module is receiving the I.R. code.

Custom configuration
DFIR module can be configured in order to exactly define the amount of required channels, up to a maximum of 124 channels.
In the custom configuration, the module requires 1 input address for each group of 4 channels, in addition to the address of the physical inputs (terminals 3 and 4).
The points 3 and 4 of the starting address are related to the "physical" inputs (terminals 3 and 4) and the other consecutive addresses are assigned to the I.R. channels.
In the custom configuration too, the point 1 of the starting address is the "correct code receiving" and it will be activated when DFIR is receiving a correct I.R. code.

Creating a custom configuration
To customize DFIR module the support program BDTools has to be used.

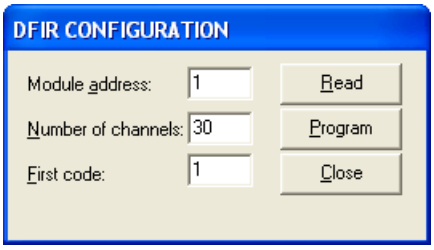


From menu "Programming" of BDTools select "DFIR Configuration"; the following window will appear:



Enter in the first text box the starting address that was assigned to the module (e.g. 1) and then press the Read button. The window will show the current configuration of the module in the other two text boxes; in the case of factory configuration, the boxes will show "Number of channels = 11" and "First code = 16" as in the previous figure.

The parameters shown in the previous window are needed for the standard 11-buttons I.R. remote control provided by **DUEMMEGI** (upon request).
It is possible to change the settings entering the required parameter in the text boxes. For example, to configure the module as 30 channels, starting from code 1, the following parameters have to be entered:



Press then the Program button to send the new configuration to the module. This one, for the configuration shown in this example, will take one address for the two physical inputs (terminal 3 and 4) in addition to an amount of addresses given by the greater integer of:

(number of channels) / 4

In the previous example (30 channels) the formula gives 30/4 = 7.5, therefore the greater integer is 8 and the module will take 1+8 = 9 consecutive input addresses.

I.R. remote controls to be used

DUEMMEGI provides, upon request, an I.R. handset with 11 buttons that is perfect for use with DFIR in its standard configuration. If more channels are required, it is possible to use other I.R. remote controls available on the market, and particularly "touch screen" types; for more information about compatible remote controls, contact **DUEMMEGI**.

Multiple I.R. receiver

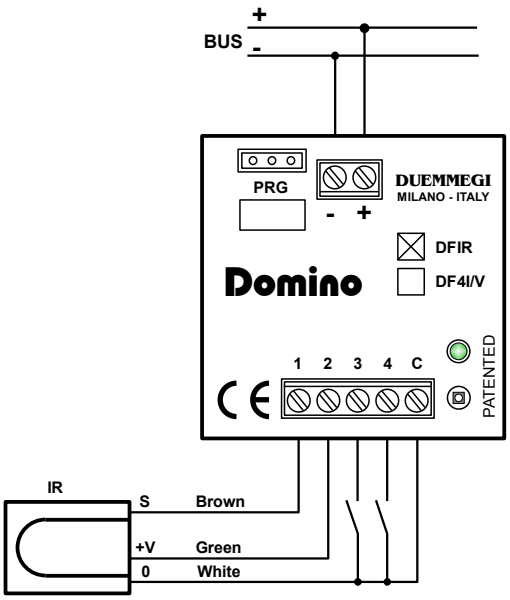
More DFIR modules can be installed in the same bus system, assigning to them different starting addresses and taking care to not superimpose them (remember that the amount of addresses taken by each DFIR module is more than one and it depend on the chosen configuration).

General characteristics

A 2-pole terminal block allows the connection of the module to the bus; as all modules of **Domino** family, the bus itself carries the power supply for the module operation.
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. During the receiving of a valid code from the I.R. remote control, the LED lights. A small connector (PRG) allows the connection to the optional tester/programmer.
A 5-pole terminal block allows to connect the I.R. sensor and the 2 input contacts. A white label on the top panel allows to write the programmed starting address for an immediate visual identification. The small dimensions of DFIR module allow the housing directly in the standard wall box.

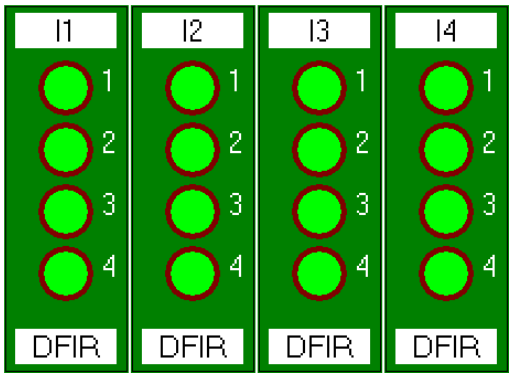
Module connection

DFIR module must be connected to the provided I.R. sensor; the length of the wires connecting the module and the sensor must be lower than 30 centimeters. Two free-potential contacts supplied by the common terminal of the module (terminal C) can be connected to the module as shown in the following schematic diagram.



Mapping DFIR

DFIR module is shown on the map of BDTools as group of more input modules, which amount depends on the configured IR channels. The following figure shows a DFIR module with base address 10 and standard configuration (11 IR channels).
As for all **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 point.



Technical characteristics

Power supply (bus side)	By specific centralized power supply mod. DFPW2
Number of I.R. channels	Up to 124 (user setting)
Number of inputs	4, potential-free contacts only
Current for each input contact	1mA (closed contact), 0mA (open contact)
Input voltage	5Vdc
MAX allowed length for I.R sensor	30 centimetres
MAX allowed length for input wires	10 meters
Operating temperature	-5 ÷ +50 °C
Storage temperature	-20 ÷ +70 °C
Protection degree	IP20

Outline dimensions