

ModIR: infrared receiver, 4 digital inputs and 8 LED outputs mixed module for wall box

ModIR module allows to receive from an infrared remote control up to 255 independent channels and to send them on the **CONTATTO** bus for command execution.

In addition, ModIR module provides 8 LED outputs and 4 inputs for ON-OFF signals derived from pushbuttons, switches, and any other potential-free contact.

The small dimensions of ModIR module allow the placement directly in the standard wall box (503 or similar), on the back of the command switches or pushbutton.

A 4-pole terminal block allows the connection to **CONTATTO** bus; on the other side, the module provides two connectors (OUT and IN) for the connection to the IR detector, switching devices and to the LEDs using the supplied cable assemblies. The PRG connector is needed for the assignment of module address. A green LED on the front panel reports the power-on condition.

The operation of the 8 LED outputs may be freely defined by the standard functions of Contatto system.

Address programming

ModIR module takes 2 consecutive input addresses and 1 output address for the LEDs. For the input section, it is enough to assign a "base" address; for instance, assigning to ModIR module the starting input address 9, then it will automatically take the input addresses 9 and 10. The input base address must be in the range 1 to 126.

The output address can be chosen coincident or less to the input base address. The addresses must be assigned by the FXPRO programmer using the proper programming cable inserted in the connector named PRG. Two white labels on the panel of the module allow to make note of assigned addresses for an immediate visual identification.

Operation

ModIR may be configured, by an external jumper, for direct (11 channels) or binary (255 channels) mode as here bottom described.

Direct mode

The direct mode is selected leaving unconnected the Sel terminal (see schematic diagram). In direct mode, ModIR module allows the acquisition of 11 IR channels; supposing to have assigned the input base address 1, the meaning of the input points is the following:

Point	Meaning
I1.1	IR Channel 1
I1.2	IR Channel 2
....
I1.8	IR Channel 8
I2.1	IR Channel 9
I2.2	IR Channel 10
I2.3	IR Channel 11
I2.4	Correct code receiving
I2.5	Input terminal 5
I2.6	Input terminal 6
I2.7	Input terminal 7
I2.8	Input terminal 8

These input points may be used by MCP exactly as any other input of **CONTATTO** system to execute the required functions.

The input point described as "correct code receiving" (I2.4 in the example) will be activated when ModIR is receiving a correct IR code; this point may be used to switch on a LED (that may be one of the 8 available on ModIR itself) in order to signal that the module is receiving the IR code.

Binary mode

The binary mode is selected connecting the Sel terminal (see schematic diagram) to the common terminal (C). In binary mode, ModIR allows the acquisition of 255 channels; supposing to have assigned the input base address 1, the meaning of the input points is the following:

Point	Meaning
I1.1	IR binary code
I1.2	
....	
I1.8	
I2.1	Not used
I2.2	Not used
I2.3	Not used
I2.4	Correct code receiving
I2.5	Input terminal 5
I2.6	Input terminal 6
I2.7	Input terminal 7
I2.8	Input terminal 8

To decode the binary code received from ModIR, the Threshold function of MCP should be used; supposing to have assigned the input base address 1 to ModIR, the decoding requires one equation for each channel. As example, for 30 channels and MCP MOD or Plus:

$$V1 = A1<1 \ \& \ A1>1$$

$$V2 = A1<2 \ \& \ A1>2$$

$$V3 = A1<3 \ \& \ A1>3$$

$$V4 = A1<4 \ \& \ A1>4$$

.....

$$V27 = A1<27 \ \& \ A1>27$$

$$V28 = A1<28 \ \& \ A1>28$$

$$V29 = A1<29 \ \& \ A1>29$$

$$V30 = A1<30 \ \& \ A1>30$$

Or for MCP XT:

$$V1 = A11==1$$

$$V2 = A11==2$$

$$V3 = A11==3$$

$$V4 = A11==4$$

.....

$$V27 = A11==27$$

$$V28 = A11==28$$

$$V29 = A11==29$$

$$V30 = A11==30$$

Of course, the used virtual points in this example may be freely chosen, and in the same way it is allowed to use real output points instead of the virtual ones.

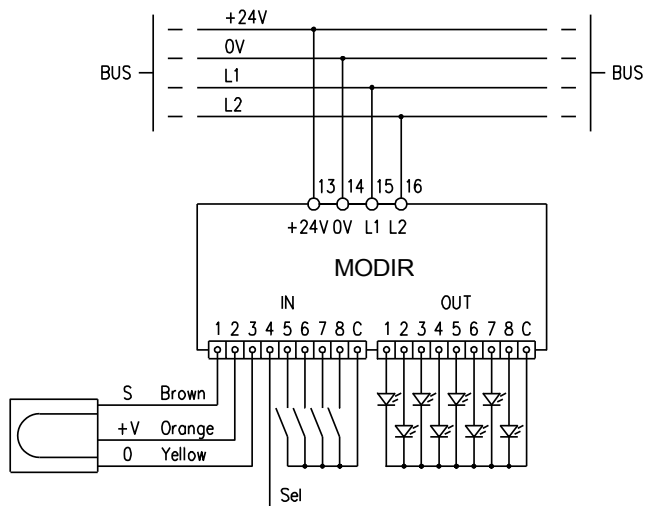
These virtual points may be then used to execute the required commands; as example, to control two lamps by the codes 3 and 4 of the IR handset and by the Toggle function, the required equations may be:

- O1.1 = TV3
- O1.2 = TV4

In the binary mode too, the input point described as “correct code receiving” (I2.4 in the example) will be activated when ModIR is receiving a correct IR code.

Wiring diagram

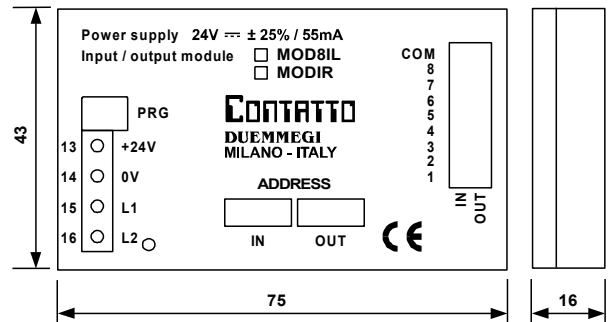
The IR detector and the switching devices (pushbuttons, switches or other) must be connected to the module using one of two provided cable assemblies; the wires may be cut according to the requirements of the application. The other cable assembly must be used to connect the LEDs, taking care of the correct 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.



Accessories

DUEMMEGI provides, under request, an IR handset with 11 buttons that is perfect for use with ModIR in direct mode. 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**.

Outline dimensions



Technical characteristics

Supply voltage	24V \pm 25% SELV
MAX current consumption	55mA
Number of IR channels	Direct mode: 11 Binary mode: 255
Number of physical inputs	4 for potential free contacts
Current for each input (closed contact)	1mA
LED outputs	8
Available current for each LED output	3.5mA internally limited
Max length for IR detector wires	30 cm
Max length for physical input wires	10 meters
Operating temperature	-10 , +50 °C
Storage temperature	-30 , +85 °C
Protection degree	IP20