

ModiGlass: Glass keypad with touch commands and backlight

ModiGlass is a “touch” keypad available with 6, 4 and 2 commands, specifically developed for **CONTATTO** bus system. The front panel is made by glass. The available standard colors are white with white backlight and black with blue backlight; under request, version of different colors and with customized icons can be provided.

Each keypad, regardless of the number of buttons, features an array of 6 LEDs; these LEDs are seen as generic output points of the **CONTATTO** bus, therefore the operation of the backlight can be freely defined using the programming functions of the **CONTATTO** system. The keypad can be configured to generate a beep at any touch of the buttons.

The housing of keypad ModiGlass is suitable for the mounting in standard wall boxes (mod. 503 or similar); it is recommended to check the compatibility with boxes for plasterboard walls.

On the rear side of the keypad, a 5-way removable terminal block allows the connection to **CONTATTO** bus; an adapter to connect ModiGlass to FXPRO programmer is available and it is needed to assign the address.

ModiGlass keypad takes 1 input and 1 output address having the same value; each address provides 16 points as will be described in the following. A label on the rear side allows the writing of the assigned address for an immediate visual identification. For more details about the address assigning, refer to the related documentation.

ModiGlass keypad requires, for its operation, MCPXT or MCP4 controllers.

Note: this technical sheet refers to ModiGlass equipped by firmware 3.0 or higher.

Address programming

ModiGlass keypad takes 1 input and 1 output address having the same value; the address must be assigned by FXPRO programmer through the proper cable-adaptor. A label on the rear side allows the writing of the assigned address for an immediate visual identification.

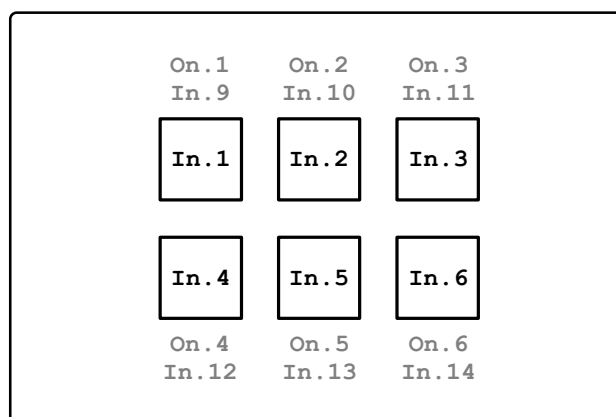
Operation

ModiGlass keypad takes 1 input address and 1 output address having the same value. The input points report the status of the keys (**In. 1 ÷ In. 6**), while the output points control the LEDs (**On. 1 ÷ On. 6**) and some other functions as described later. The status of the 6 LEDs is also reported in the input section by points **In. 9 ÷ In. 14** so that the status of the LEDs can be used by other equations of the **CONTATTO** bus system.

Regarding the output section, in addition to points **On. 1 ÷ On. 6** related to the LEDs, some other points are available as described later.



The following figure shows the relationship between the keys, the LEDs and the related bus points (ModiGlass oriented as shown by the label on the rear side).



The following table resumes all available input and output points:

Point	IN n	OUT n
1	Key 1	Command LED 1
2	Key 2	Command LED 2
3	Key 3	Command LED 3
4	Key 4	Command LED 4
5	Key 5	Command LED 5
6	Key 6	Command LED 6
7	-	-
8	Proximity	-
9	Status of LED 1	Calibration
10	Status of LED 2	-
11	Status of LED 3	Cleaning
12	Status of LED 4	Night backlight
13	Status of LED 5	BL on proximity
14	Status of LED 6	Backlight
15	-	Buzzer enable
16	-	-

In details:

Inputs

- **In. 1 ÷ In. 6** (Keys): reports the status of the related key (1=active)
- **In. 8** (Proximity): activated when detecting proximity (e.g. the hand at about 3cm away from the keypad)
- **In. 9 ÷ In. 14** (Status of LED): reports the status of the related LED (1=ON)

Outputs

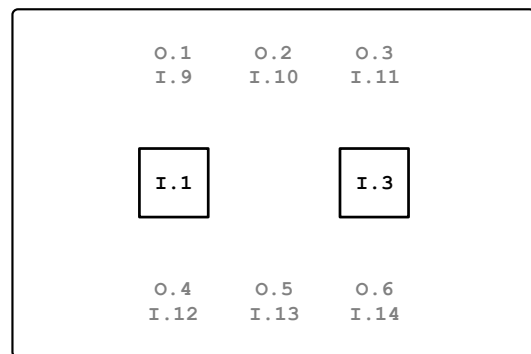
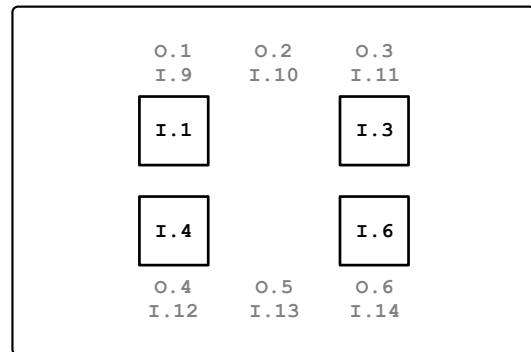
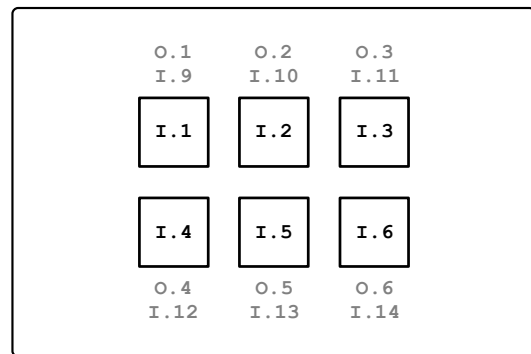
- **On. 1 ÷ On. 6** (LED): LED control (1=ON); these output points can be programmed by equations as a common **CONTACTTO** output module
- **On. 9** (Calibration): force the calibration of the keys; normally this recalibration is not necessary, anyway this point must not be left active
- **On. 11** (Cleaning): force the “Cleaning” mode, allowing to clean the glass without the risk of unintentional detection of the keys, resulting in possible switching of outputs. The “Cleaning” function is indicated by the flashing of the backlight. This point can be controlled by equations in MCP
- **On. 12** (Night backlight): the configuration panel allows to define two different levels of backlight which, to simplify, we call Day and Night; **On. 12**, when active, forces the Night backlight. This point can be controlled by equations in MCP
- **On. 13** (BL on proximity): when activated, it enables the switching ON of backlight when detecting a proximity (regardless of backlight setting in the configuration panel). This point can be controlled by equations in MCP
- **On. 14** (Backlight): when active, backlighting is switched ON. This point can be controlled by equations in MCP
- **On. 15** (Buzzer enable): when activated, the buzzer will be enabled. This point can be controlled by equations in MCP

Resuming, all output points, related to LEDs or to point for control/settings (Cleaning, Night Backlight, etc.), can be controlled by equations in MCP or directly controlled by the bus (e.g. by a supervisor).

The following figures show the assignment of the input and output points for the different available versions in 6, 4 and 2 keys arrangement; for all versions, the number of LEDs is always 6.

As said before, the operation of the 6 LED outputs can be freely defined by equations using the functions of **CONTACTTO** system.

The following paragraphs provide more details about the configuration and operation of ModiGlass.

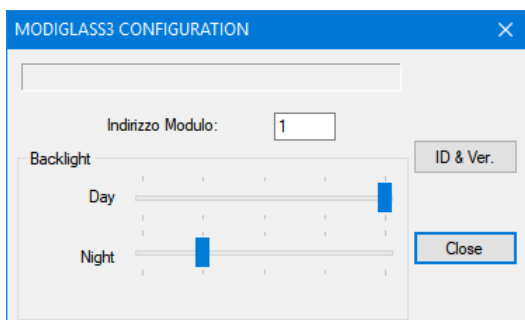


Backlight and Buzzer

Each key of ModiGlass can be lighted by a LED (or two LEDs in the case of 2 keys version). There are 2 levels of backlight, one very low and common to all 6 LEDs and one of highest level independent for each one of the 6 LEDs.

The “common” backlight keeps illuminated all the keys so that, for example, they can be easily identified in the darkness; this type of backlight can be controlled (ON/OFF) acting on the output point 14: when activated, the low level backlight will be always ON, otherwise it will be OFF or it lights when a proximity has been detected (if the related point 13 has been enabled).

In addition, the backlight level, both the common one and that one related to each single key, can be set on two different levels; these two levels can be set in the ModiGlass configuration panel in MCP IDE using the two Day and Night sliders: from the main menu of MCP IDE select Configuration, Input Modules and MODIGLASS3; the following window will be shown:



Module's Address is the address of ModiGlass to be configured; acting on the two sliders Day and Night, the backlight can be set to the two desired levels. As described in the previous paragraph, the switching between the two level is controlled by point 12 of the output section (Night backlight).

The buzzer, if enabled by output point 15, plays a beep when touching a key.

The button ID & Ver. allows to read the firmware version of ModiGlass.

Proximity mode

In some applications, for instance in bedrooms, the backlight always ON is not appreciated, even if at very low level; on the other hand, acting on the keys in the darkness may be a problem.

To answer to this need, the proximity mode can be activated by the point 13 of the output section; the approaching of the hand to the keypad will switch ON the backlight without any key activation, thus allowing to see the keys in the darkness. The backlight of the keypad will remain ON for 2 seconds after the hand removing.

Cleaning mode

The "cleaning" mode allows to clean the glass avoiding the risk to cause a unwanted detection of the keys, and thus a consequent possible actuation of some outputs. To enter the cleaning mode, press at the same time the keys 1-2-3 or 4-5-6 for 2.5 seconds, or activate point 11 of the output section. For keypad versions without middle key (2 and 4 keys), the same rule applies, therefore the "blank" area between the two outside buttons has to be touched. When the cleaning function is activated, the backlight blinks (0.5s ON and 0.5s OFF).

To exit the "cleaning" mode, the same operation must be performed (pressing three points for 2.5 seconds at the same time or disabling the point 11 of the output section).

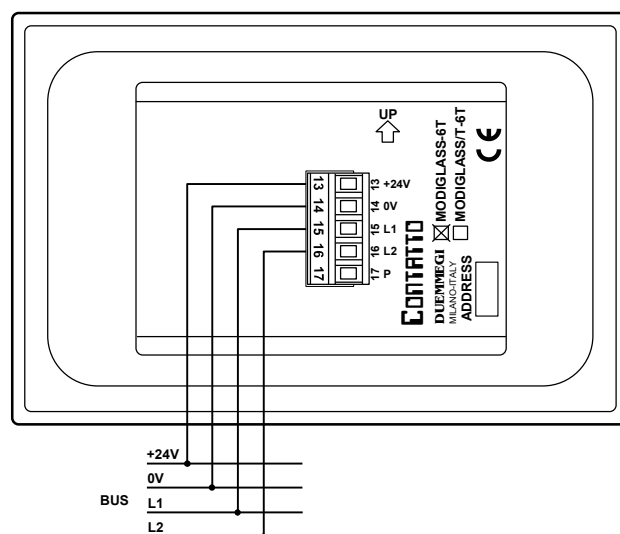
If the cleaning mode has been activated by this procedure, it will be however automatically deactivated after 2 minutes.

If instead the cleaning mode has been activated forcing to 1 the output point 11, the mode will remain activated until the same point will be set to zero.

Note: the output point 11 does not report the condition of the cleaning mode if this one has been locally activated by the keys.

Module connection

ModiGlass keypad requires only the connection to the **CONTATTO** bus as shown in the following schematic diagram.



Programming examples

Each ModiGlass which has been installed in the plant must be declared; supposing to have assigned the address 1 to a ModiGlass keypad, the declaration will be:

```
MODIGLASS3 = ( I1, O1 ) //ModiGlass
```

Suppose now that you want to control two lamps together (connected for example to the outputs O42.1 and O57.3) from the key 1 of ModiGlass according to a step-by-step logic (toggle) and also that the LED of the key 1 lights up when lights are ON. To avoid misalignments between the lamps and the LED, it is good idea to use a virtual point; a possible program for MCP is then the following:

```
V1 = TI1.1 // Toggle on V1
O1.1 = V1 // V1 -> LED
O42.1 = V1 // V1 -> Lamp 1
O57.3 = V1 // V1 -> Lamp 2
```

The key **I1.1** of ModiGlass changes, at each touch, the status of the virtual point **V1**; the status of **V1** will be then copied to the output related to the LED1 of the same ModiGlass and to the outputs connected to the lamps.

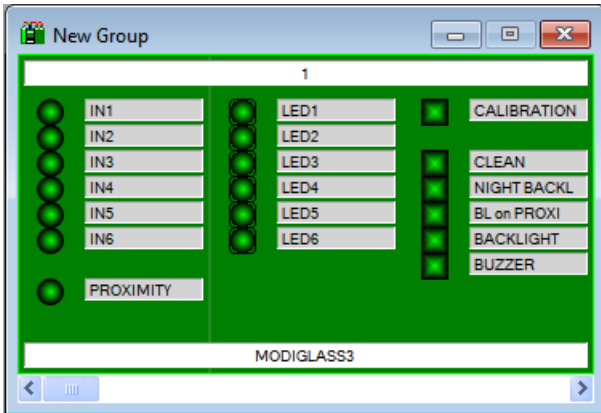
In this way there is the assurance that the lamp and the LED are always aligned.

If the application requires instead to switch ON the LED when the light is OFF (for example, to locate the key in the darkness), simply modify the previous program as follows:

```
V1 = TI1.1 // Toggle on V1
O1.1 = !V1 // V1 -> LED
O42.1 = V1 // V1 -> Lampada 1
O57.3 = V1 // V1 -> Lampada 2
```

Mapping

ModiGlass keypad is shown in the map of MCP IDE as in the following figure.

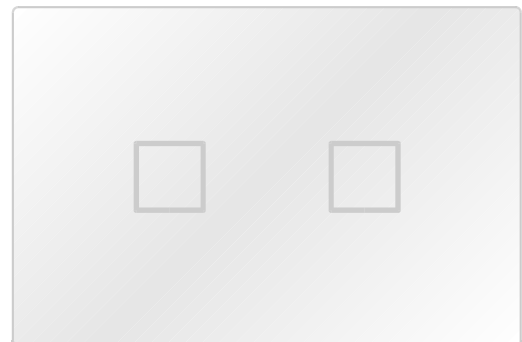
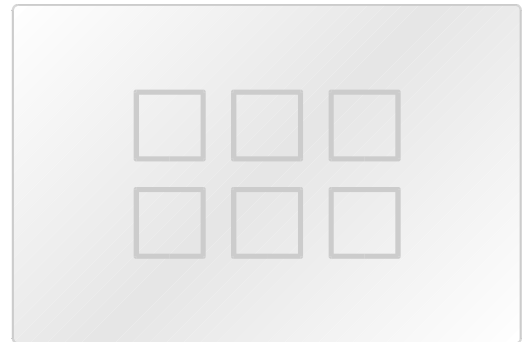


As for all **CONTATTO** modules, the background is in green color if the module is connected and properly working, otherwise the background is in red color. The status of input and output points is shown on the map in red or green color depending on the status ON or OFF respectively.

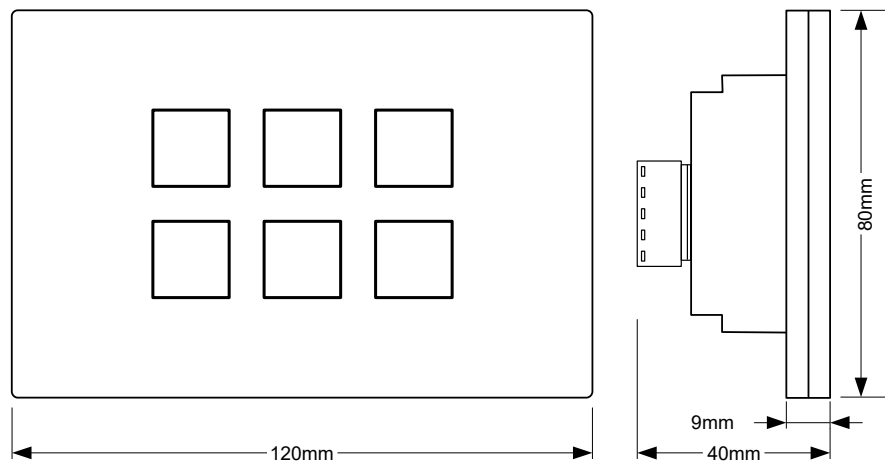
Technical characteristics

Power supply	24V \pm 25% SELV
MAX current consumption	20mA @ 24V
Number of keys	6, 4 and 2 with LED backlight
Number of LED	6, with adjustable brightness
Buzzer	Internal, can be disabled
Colors	Black with blue LEDs White with white LEDs Custom versions on request
Operating temperature	-10 ÷ +50 °C
Storage temperature	-30 ÷ +85 °C
Protection degree	IP20

Versioni disponibili



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:

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