

FXPRO2: Programmer - Tester for

CONTATTO bus

FXPRO2 is a portable instrument for the address assignment to **CONTATTO** modules; also, it allows to perform diagnostic functions and in particular the test of the **CONTATTO** bus line in order to check for its correct operation.

The main characteristics of FXPRO2 are the following:

- Ergonomic housing
- Powered by a common 9V battery
- Internal circuit to step-up the battery voltage to a proper value for modules supplying
- Auto power off
- LCD display (with timed back-lighting), alphanumeric type with 20 characters x 4 lines
- 23-button keyboard
- Address assignment to **CONTATTO** modules
- Address verifying of **CONTATTO** modules
- Measurement of the bus power supply voltage
- Measurement of the bus levels (L1 and L2)
- Upgrading of the firmware

The cable for the address assignment to the modules is provided together to FXPRO2; also, an adapter cable for the bus line test is provided. The cable for the firmware upgrade is an optional item.

Auto power off

When FXPRO2 is not connected to a supplied bus, it automatically switches off after the timeout, calculated from the last pushing of any button, set during the setting up (see related paragraph). If FXPRO2 is instead connected to a supplied bus, then it will be kept always on.

Retroilluminazione

If FXPRO2 is not connected to a supplied bus, then the back lighting remains on for the time set during the setting up (see related paragraph).

If the back lighting switches off, it can be switched on again pushing the ON button. Take in account that the back lighting discharge quickly the battery, so it is recommended to use it only in case real necessity.

If FXPRO2 is instead connected to a supplied bus, then the back lighting will be always on.

Inserimento batteria

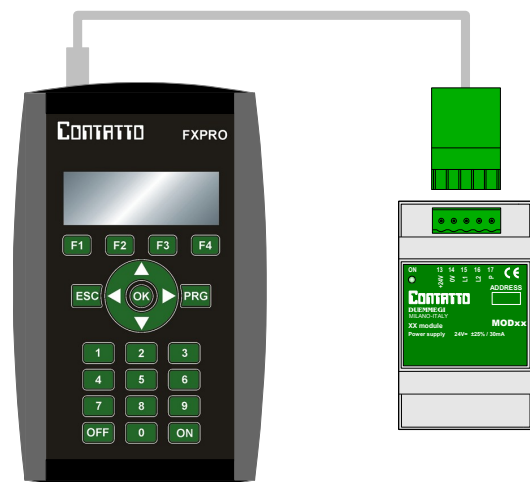
Remove the cover on the rear side of FXPRO2 sliding it toward the outside.

Connect an alkaline 9V battery (shape 6LR61) to the clip, taking attention to the correct polarity. Insert the battery inside the holder and place again the cover sliding it toward the internal side, taking attention to arrange the battery wires in order to have a correct closing.

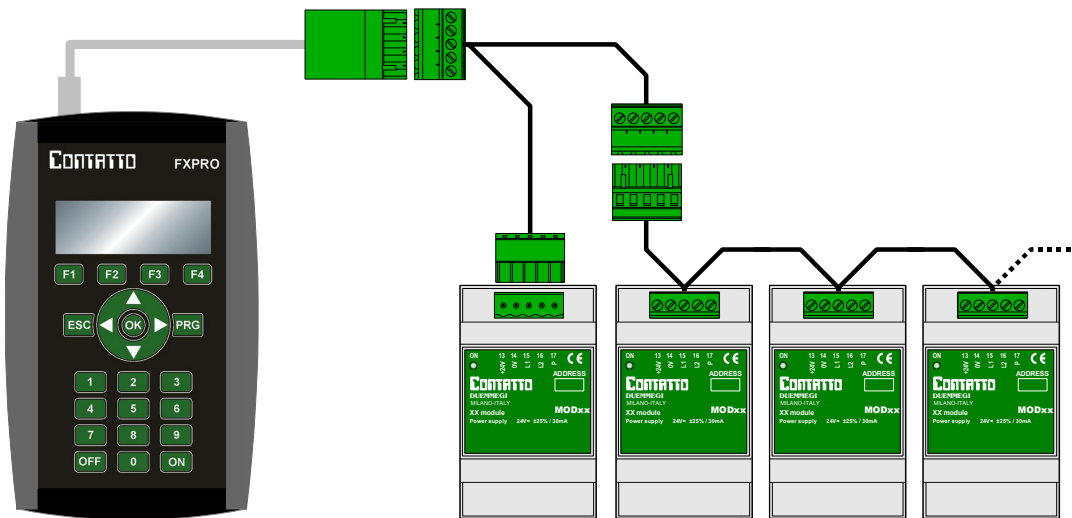


Connessioni

When used to assign or verify or read the address, FXPRO2 must be connected directly to the bus terminal of the modules or to the connector in the case of some particular modules, as shown the following figure.



When using FXPRO2 for the test of a bus line, it must be connected to the bus itself through the supplied adapter as shown in the figure below.



To perform the test of the line, the bus must be powered and is not necessary to disconnect the system controller (MCP XT or other).

FXPRO2 can also be connected to a PC, using the proper optional cable, to execute the firmware update or for any future functions, as shown in the following figure.



Use of the menus

The menus of FXPRO2, allowing the execution of the several allowed functions, will be described in the following.

As general rule, the arrow keys and allow to scroll the options, while the key confirms the currently selected option and displays the next menu.

The key cancels an operation and/or causes the return to the previous menu.

Switching ON

To switch ON FXPRO2 push the key . The display will show for 2 seconds a screen containing the firmware version (1.0 in this example).

```
*****
*  CONTATTO FXPRO  *
*   VER. 1.0      *
*****
```

Low battery warning

When the battery level goes under a critical value, the following message will be displayed:

```
BATTERY LOW
Press OK
to continue
anyway
```

Press to continue anyway, or replace the battery, or connect FXPRO2 to a supplied bus if a test of the bus line must be performed.

Short circuit on the bus warning

If a short circuit occurs on the power supply outgoing from FXPRO2, the following message will be displayed:

```
! WARNING! !
! SHORT CIRCUIT !
! PRESS ON AFTER !
! REMOVING SHORT !
```

This message will be displayed also in overload conditions, for instance when connecting fxpro2 to a bus not powered.

Remove the short circuit or the overload and push **ON** to continue.

Setting up FXPRO2

Pushing the key **OK** while the screen shown in the "Switching ON" paragraph is displayed, the configuration menu will be entered; this is made by 2 screens. Select the parameter to be changed by the arrow keys **▲** and **▼**.

```
> Language English
  Baudrate 115200
  Contrast 055%
  Stand-by 060s

> Backlight 010s
```

Language is that which will be used in the several menus of FXPRO2. Push **OK** to change it. Options: Italian and English.

Baudrate is the RS232 serial communication speed between FXPRO2 and a PC. Push **OK** to change it. Options: 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200.

Contrast allows to adjust the sharpness of the display. Enter the desired value, made by 3 digits, by the numerical keys 0 to 9. Allowed values: 10÷100.

Stand-by and **Backlight** are the delays, from the last pushing of a key, after which FXPRO2 will be completely switched off or after which its back lighting will be switched off. Enter the desired value, made by 3 digits, by the numerical keys 0 to 9. To switch on again the back lighting push the key **ON**. Allowed values: 10÷255 for stand-by and 0÷255 for back lighting (0 means always OFF).
If FXPRO2 is connected to a powered bus, the back lighting will be always ON and the automatic power OFF will be disabled.

Push **ESC** to save the settings and to quit the configuration menu.

Main Menu

At power on, after the screen showing the version number, the main menu will be entered.

```
> Address Management
  Tester
```

Choose the desired option and push **OK**.

Address Management allows assigning, editing and checking of the address of **CONTATTO** modules.

Tester allows to perform the test of the bus line and of the power supply in a **CONTATTO** plant.

Address Management

```
> Prg/Ver Indirizzo
```

Push **OK** to access to the Address Management section.

To assign the input address be sure that the first line shows Input Module as follows:


```
Input Module
Address      = 001
PRG VER     I/O
```

If not, push **F4** (corresponding to the item I/O on the display). Enter the desired address (using 3 digits) through the numerical keys, connect FXPRO2 to the module and press **PRG** or **F1** (corresponding to the PRG item on the display).

i After having assigned the address, it is NOT necessary to verify it because this is done automatically by FXPRO2.

i If the module is not connected, or if its not well operating or if it is not compatible, then the display will show:

```
! ERROR! !
! NO ACKNOWLEDGE !
! OR MODULE !
! NOT COMPATIBLE !
```

 **To verify or read the address** press **F2** (corresponds to the item PRG on the display). FXPRO2 will execute a scan until the address of the connected module will be found (or one of the addresses if the module has more than one address). The display will show the found address and its type (input or output):

```
Output Module
Address      = 001
PRG  VER    I/O
```


Push again the key **F2** if the module has more than one address. If no address will be detected, push **ESC** to stop the scan.

Tester

The following functions have meaning only if FXPRO2 is connected to a powered bus.

```
> Check Bus Line
```

Push  to access to the Check Bus Line section.

 **To perform the test of the bus** connect FXPRO2 to the line using the provided adapter cable. The line must be powered by its own power supply system, otherwise FXPRO2 will report a short circuit message.

The presence or absence of a controller (MCP XT) on the bus does not disturb the verification, indeed it is recommended to keep it connected.

FXPRO2 will show on the display 3 lines similar to that ones shown for instance here bottom:


```
L1 22.1 2.8 OK
L2 18.9 1.1 OK
SupplyVoltage 23.2V
```

The first line shows the high and low levels of L1 (22.8 and 2.8 in the example), the second the levels of L2 (18.9 and 1.1 in the example) and the third line the value of voltage of the system (24V nominal) measured at the point of the line where FXPRO2 has been connected (23.2 in the example).

At the end of the first and second line the label OK will be shown if the detected levels are normal, otherwise the label FAIL will be shown as in the following:

```
L1 22.1 1.2 OK
L2 0.5 0.3 FAIL
SupplyVoltage 23.2V
```

In this case the line L2 has a problem, probably a short circuit between L2 and 0V, the bus line will then inspected, dissecting the various sections of the bus to find out which of them has the problem. The most common problems are connection errors, short circuits between the wires of the bus or a faulty module.

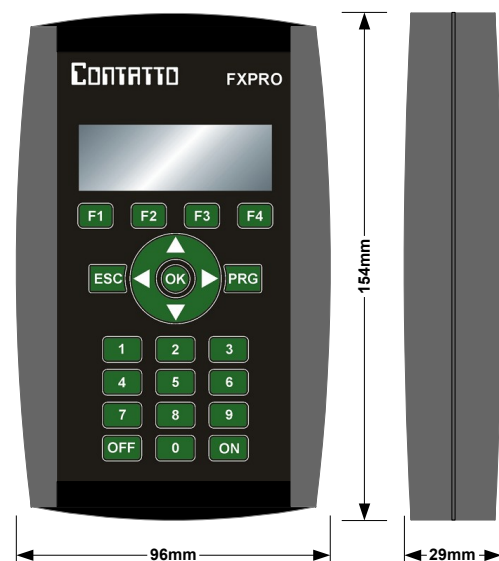
 If the bus line is not powered, FXPRO2 will show:

```
WARNING!
SHORT CIRCUIT
PRESS ON AFTER
REMOVING SHORT
```

Technical characteristics

Tensione di alimentazione	- By 9Valkaline battery, shape 6LR61 - by CONTATTO bus supplied at 24V --- ± 25% SELV
Display	LCD, alphanumeric, 20 characters x 4 lines, automatic timed back lighting with programmable timeout, adjustable contrast
Keyboard	23 keys
Protections	Over-current on the bus supply output
Serial interface	RS232 by optional cable
Provided cables	Cable for address assignment and cable for the connection to the bus line
Operating temperature	-5 ÷ +50 °C
Storage temperature	-20 ÷ +70 °C
Protection degree	IP20

Outline dimensions



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 **CONTATTO** 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.

Setting up

The physical address must be assigned with the specific programmer and the setting of parameters (if any) must be performed by the specific configuration softwares; for more details refer to the specific data sheet of the product. For the first installation of the device, generally and unless otherwise specified on the specific data sheet of the product, 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

The devices belonging to **CONTATTO** line comply with the essential requirements of the following directives:

2004/108/CE (EMC)

2006/95/CE (Low Voltage)

2002/95/CE (RoHS)

Correct disposal of the 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 documentation indicates that the product and its electronic accessories 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. Business users should contact their supplier and check the terms and conditions of the purchase contract. Adequate disposal of the decommissioned equipment for recycling, treatment and environmentally compatible disposal contributes in preventing potentially negative effects on the environment and health and promotes the reuse and/or recycling of equipment materials. Abusive product disposal by the user is punishable by law with administrative sanctions.

Note

Technical characteristics and this data sheet are subject to change without notice.