

Nemo SX - Mini-configurator & on site display

Cat. N°: SXV01



Contents	Pages
1. Description - Use	1
2. Range.....	1
3. Overall dimensions	1
4. Preparation - Connection.....	1
5. General characteristics	3
6. System architectures	7
6.1 Stand Alone.....	7
6.1.1 with local addressing	7
6.1.2 with remote addressing	8
6.2 Supervised	9
6.2.1 with local addressing	9
6.2.2 with remote addressing	11
7. Compliance and approvals	13

1. DESCRIPTION - USE

- . Module dedicated to Nemo SX System.
- . On site, in stand-alone (without any computer or IP) allows to display data (measure, status, command and alarms) and to make several configurations of Nemo SX devices.

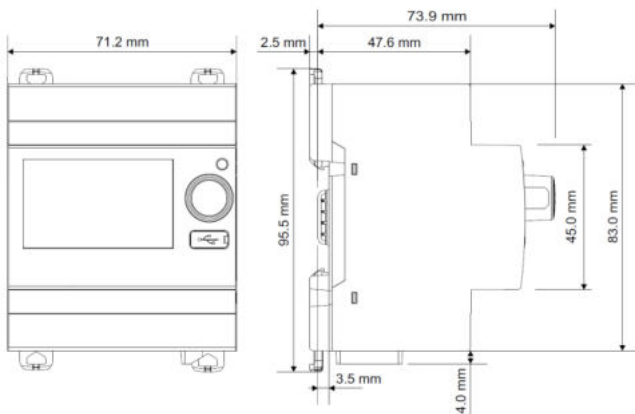
2. RANGE

- . Cat. n° SXV01: Mini configurator display with English, French, Italian, Flemish, polish, Spanish, German, Portuguese and Turkish languages.

Width:

- . 4 modules. 71,2 mm width.

3. OVERALL DIMENSIONS



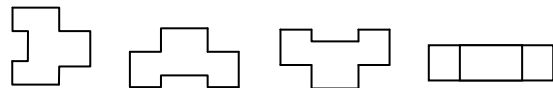
4. PREPARATION -CONNECTION

Fixing:

- . On symmetric rail EN/IEC 60715 or DIN 35 rail

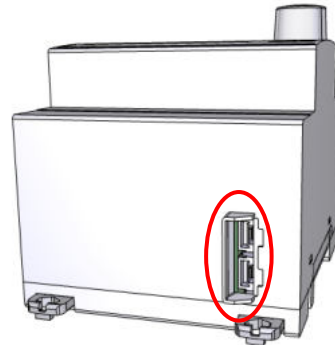
Operating positions:

- . Vertical, Horizontal, Upside down, On the side

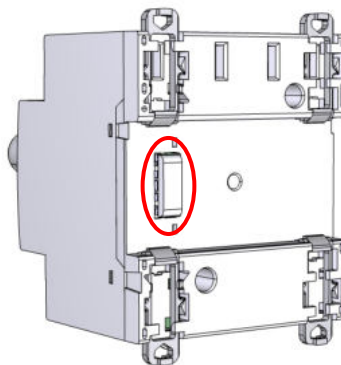


Power Supply:

- . Mandatory in 12 V d.c. via the specific Power supply module Cat n°SXAA230
- . Two ways:
 - via specific communication patch cords (cat. nos SXAC250/500/1000) to connect at the downstream through dedicated ports



- via specific communication rails (cat. nos SXAR18/24/36) to connect at the rear through dedicated connectors.



4. PREPARATION –CONNECTION *(continued)*

Recommended tools:

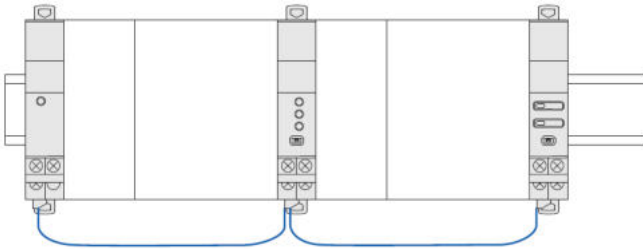
. For fixing: flat screwdriver 5.5 mm (6 mm maximum).

Data connection (Nemo SX modules inter-connection):

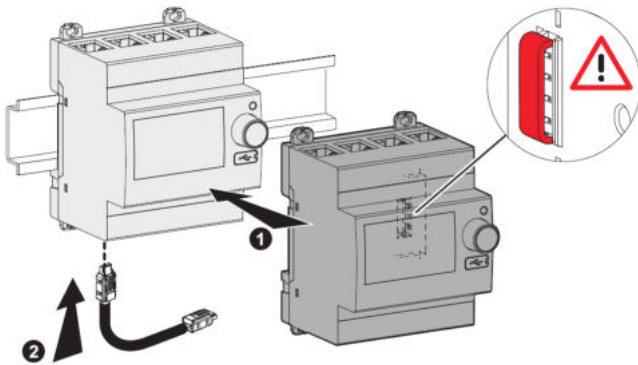
. Via specific communication patch cords (cat. nos SXAC250/500/1000)



Allow data transmission between the different Nemo SX modules. This type of connection is recommended when there are few Nemo SX modules, distributed all over the enclosure.



Implementing: with this configuration, the plastic protection cover of the backside communication ports on the Nemo SX module must be kept on.



4. PREPARATION –CONNECTION *(continued)*

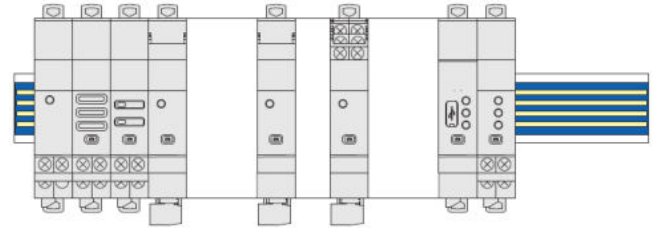
Data connection (Nemo SX modules inter-connection)

(continued):

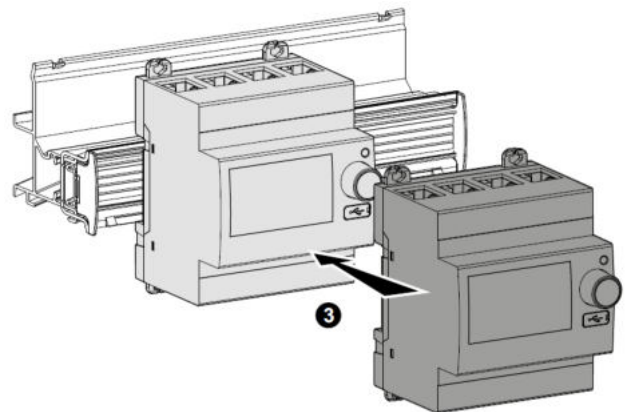
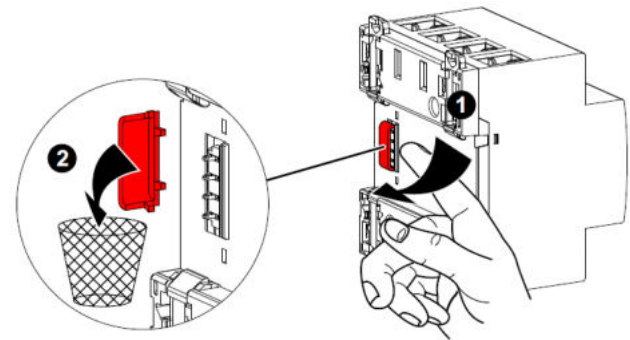
. Via specific communication rails (cat. nos SXAR18/24/36).



. Allow data transmission between the different Nemo SX modules. This type of connection is recommended when there are several Nemo SX modules on the same DIN row.



Implementing: with this configuration, the plastic protection cover of the backside communication ports on the Nemo SX module must be removed.



4. PREPARATION –CONNECTION (continued)

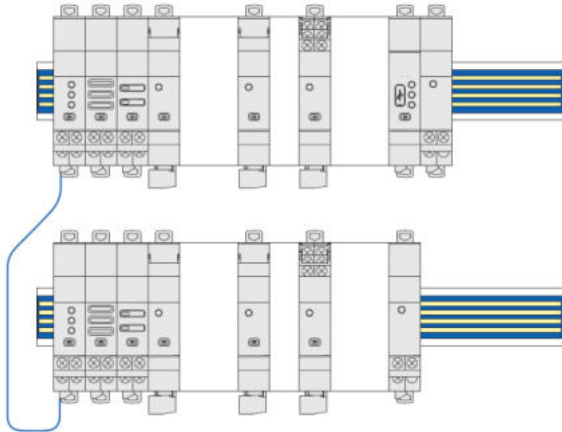
Data connection (Nemo SX modules inter-connection)

(continued):

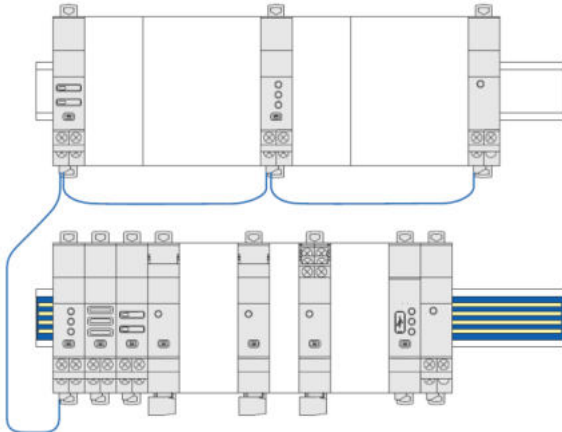
. Via a mix between specific communication patch cords and communication rails in order to create a link between several rows

Two situations:

- Individually connected with communication rails.
The communication patch cord allows to connect two rows.

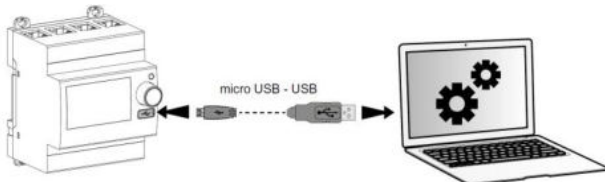


- Individually connected with communication patch cords & communication rail.
The communication patch cords allow to connect Nemo SX module on a row and to connect two rows.



Front USB port:

. Allows, if needed (e.g. for configuration), to connect the Nemo SX Mini-configurator to a computer via a "type B" micro USB - USB commercial cable.



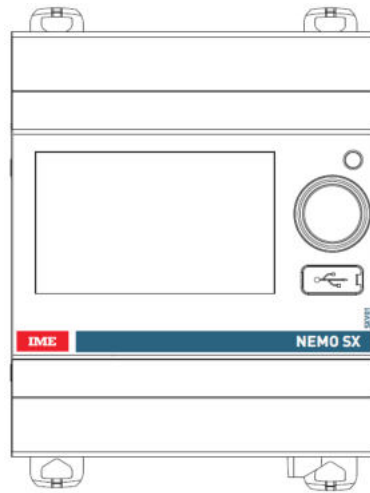
. Via the IME - Nemo SX configurator software (download for free) is possible to:

- test a Nemo SX installation
- configure the modules characteristics if the lateral DIP Switches remain on 0000 position (for the modules provided with)
- make the remote and extended addressing procedure (see §6.2.2)

5. GENERAL CHARACTERISTICS

Front face marking:

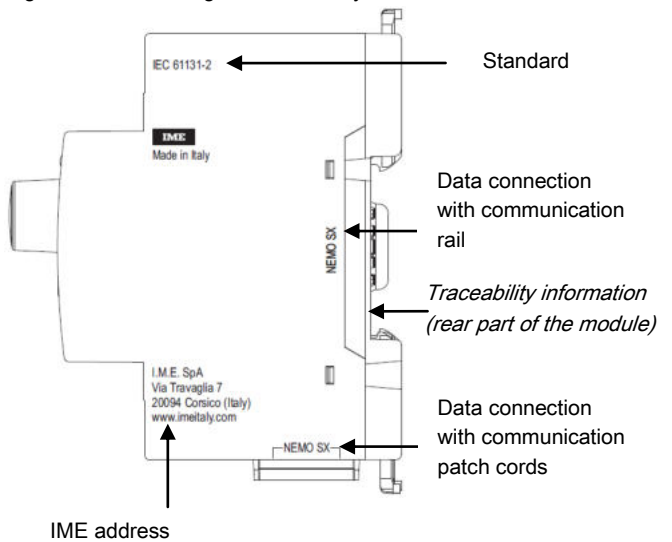
. By permanent ink pad printing



Lateral side marking:

. By laser.

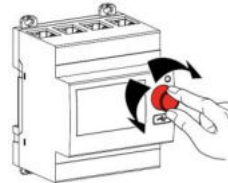
right side: Standard g and traceability information



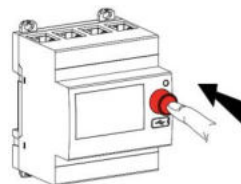
Rotary button:

. Equipped with a rotary button to browse the mini-configurator pages and to make several configurations:

- Turn: to browse / scroll pages



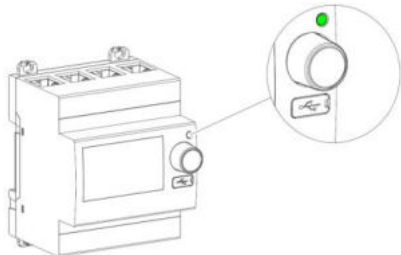
- Push: to confirm a choice, a parameter, etc...






5. GENERAL CHARACTERISTICS (continued)

Multi-Functions LED:

. Gives information about the operating state on the module



Possible states:

Led color	State	Meaning
 red	Slow blinking	Error (e.g. addressing error)
	Fast blinking	No function
	Steady (without pressing the multifunction button)	System alarm detected (see Note*)
	Steady (pressing the multi function button longer than 20 sec.)	Total reset [any firmware updates are preserved]
 green	Slow blinking	System process is running. Wait until the Led turns steady
	Fast blinking (pressing the multi function button for 10 sec.)	put in "Stand-by" the Nemo SX module (no remote action and communication available)
	Steady	System OK, connection is running
 orange	Slow blinking	No function
	Fast blinking	Device's firmware update in progress
	Steady	No function

* Note

. Possible system alarms detected by the Mini-configurator & on site display:

- loss of communication with a Nemo SX module
- error in addressing procedure: possible mix between local and remote address (see § 6)
- duplicate function error: two Nemo SX modules with the same function have the same address.

. To turn off the system alarm:

- solve the problem according to the indication on the display of the Mini configurator
- if the problem is solved the multi-function led become steady green

Insulation voltage:

. $U_i = 400\text{ V}$

Pollution degree:

. 2 according to IEC/EN 60898-1.

Overvoltage category :

. III

5. GENERAL CHARACTERISTICS (continued)

Dielectric strength:

. 2500 V

Plastic material:

- . Self-extinguishing polycarbonate.
- . Heat and fire resistant according to IEC/EN 60695-2-12, glow-wire test at 960°C.
- . Classification UL 94 / IECEN 60695-11-10: V1

Ambient operating temperature:

. Min. = -25°C. Max. = +70°C

Ambient storage temperature:

. Min. = -40°C. Max. = +70°C

Protection Index:

- . Protection index of terminals against direct contacts: IP2X (IEC/EN 60529).
- . Protection index of terminals against solid and liquid bodies (wired device): IP 20 (IEC/EN 60529).
- . Protection index of the front face against solid and liquid bodies: IP 40 (IEC/EN 60529).
- . Class II, front panel with faceplate.

Average weight per device:

. 0,113 kg.

Volume when packed:

. 0,68 dm³.

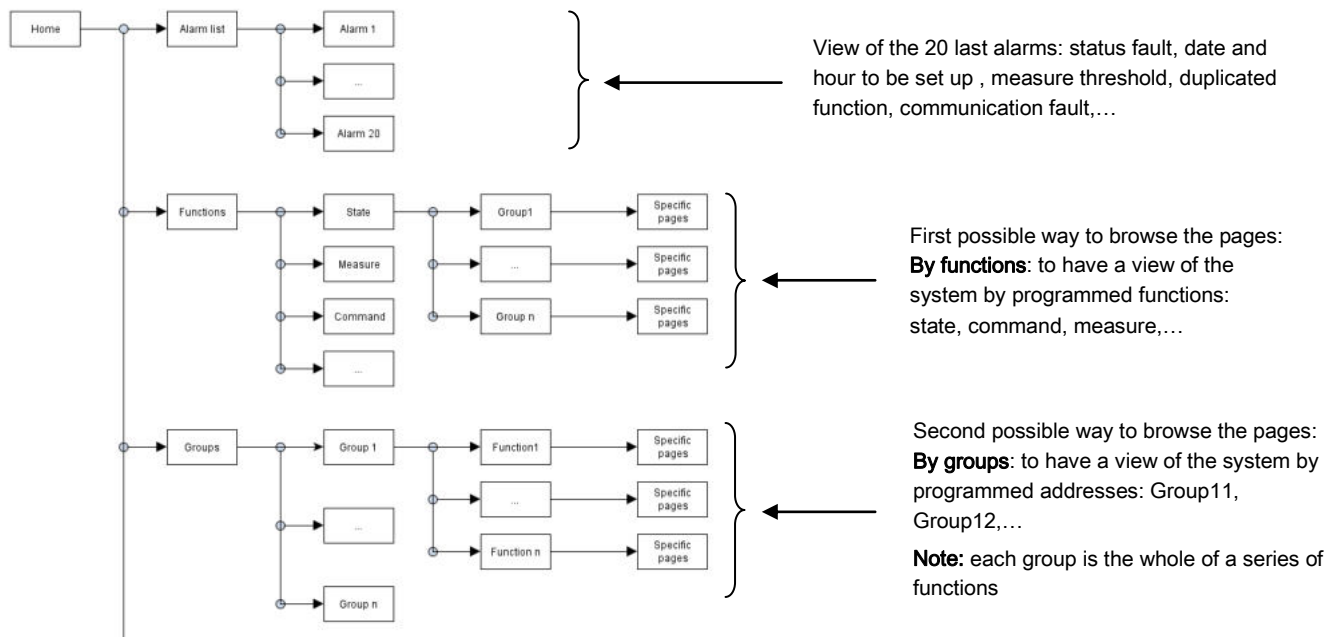
Consumption:

. Values at 12 Vd.c.

Configuration	W	mA
Backlight min.	0,175	14,6
Backlight 50%	0,322	26,8
Backlight 100%	0,438	36,5

5. GENERAL CHARACTERISTICS *(continued)*

Mini-configurator menu tree

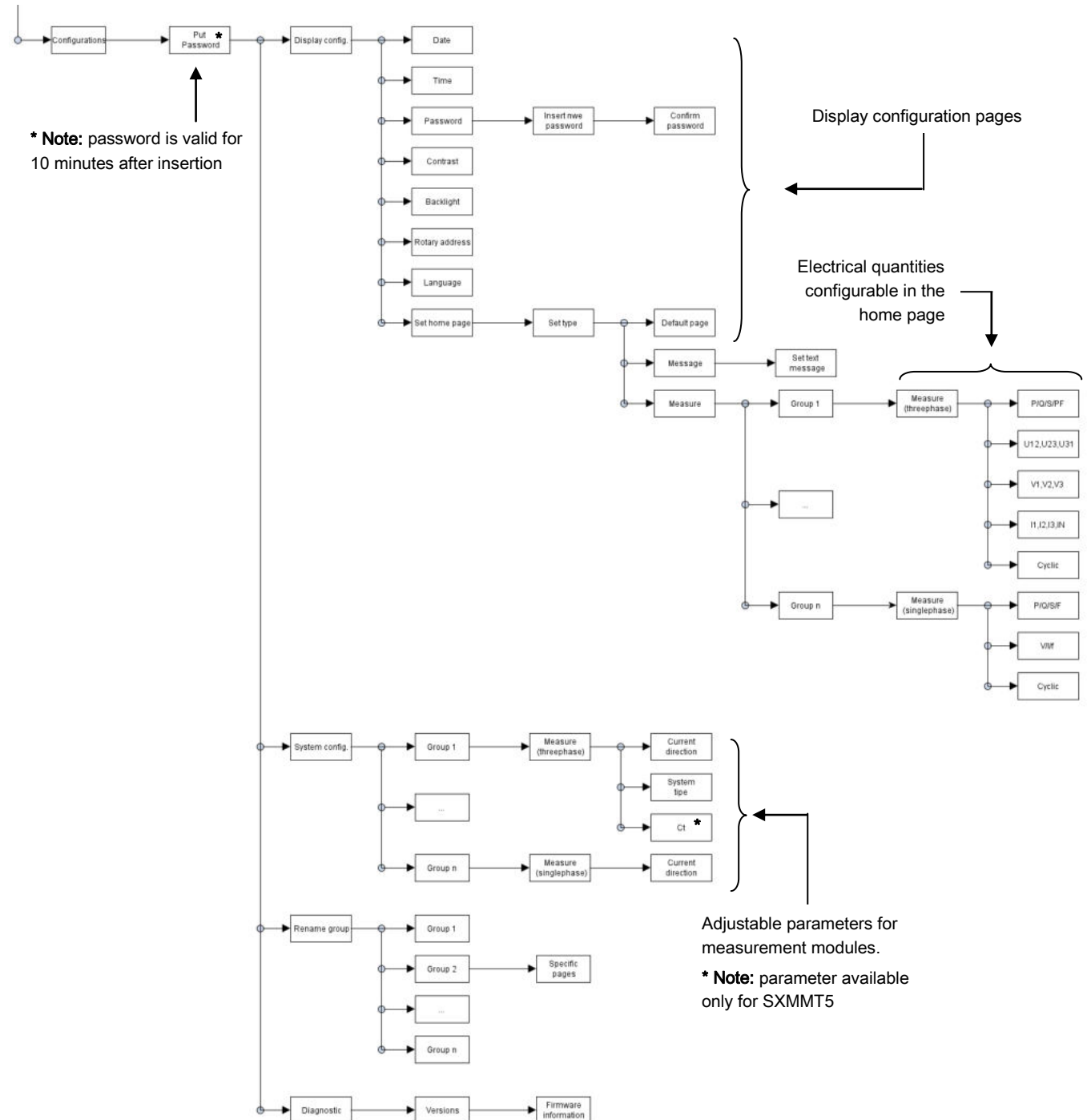


continue →

5. GENERAL CHARACTERISTICS (continued)

Mini-configurator menu tree (continued):

→ follow



Screen characteristics:

- . Type: LCD back lighted
- . Back light color: white
- . Resolution: 240x128 pixel
- . Dimensions: 2"
- . Automatic backlight reduction, after 20 sec. of rotary button inactivity

6. SYSTEM ARCHITECTURES

The Nemo SX is a polyvalent system and, according to the needs of the customer, can be set up and/or used as “Stand-alone” or “Supervised” system. Based on this choice the configuration and addressing methods are different.

Four possible architectures are provided:

6.1 Stand alone system

6.1.1 with local addressing (through the track wheel)

6.1.2 with remote addressing (through a computer)

6.2 Supervised (Computer Supervisory System)

6.2.1 with local addressing

6.2.2 with remote addressing

6.1 Stand-alone system

. **Stand alone** = autonomous system. To be used by the end-user if it is not necessary to have a computer for the supervision outside the envelope. Everything can be manage on site.

6.1.1 Stand-alone system with local addressing (through the track wheel)

Local addressing advantages:

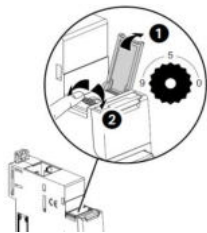
- No configuration software needed to set-up the installation
- **It is not necessary to use a computer to manage settings** (configurations, test, ...) and to use the system (visualize and be alerted, ...). Everything can be done through the Mini configuration module (local display, cat. no SXV01). [see § "Menu tree"].
- No communication Interfaces or gateways are required.
- Installation can be done without the intervention of a System Integrator

Programming procedure:

. For Nemo SX modules which need some: mandatory through to lateral DIP-switch of each Nemo SX modules (see § "Module configuration" in the technical sheet of each device).

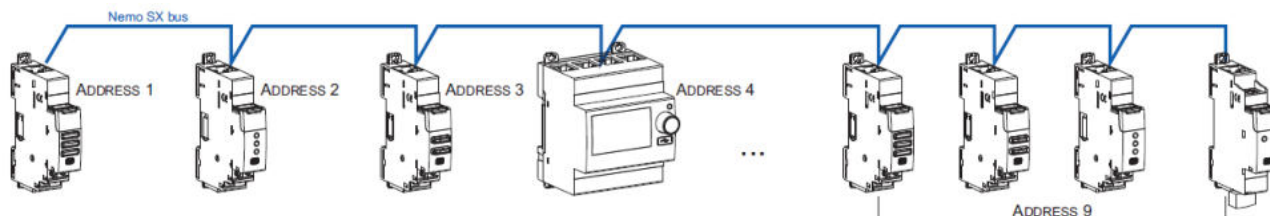
Addressing procedure:

. For all Nemo SX modules: mandatory through the track wheel located on the top upper face of each Nemo SX modules
. Marked from 0 to 9 in order to locally define the Modbus address of the Nemo SX modules



Consequences of the local addressing mode (through the track wheel):

- . Each device of the system must be addressed.
- . Addresses available: from 1 to 9
- . Address 0 not permitted
- . It is possible to assign to several devices the same address with the purpose of grouping different functions, **because they are related to the same electrical circuit**. For example it is possible to assign the same address to a multifunction signalling module (cat. no SXMC02), a multifunction control module (cat. no SXM0C1), a measuring module, and so on. In this way on the Nemo SX mini configuration module (local display) the grouped function will be displayed as a unique “device” with all grouped functions. [Refer to the schemes hereunder]



Note for the mini configuration module (local display)

- . It is possible to assign it the same address as another Nemo SX through the programming menu of the device
- . The mini configuration module can be placed everywhere in the Nemo SX bus

6. SYSTEM ARCHITECTURES

6.1 Stand-alone system *(continued)*

6.1.2 Stand-alone system with remote addressing (through a computer)

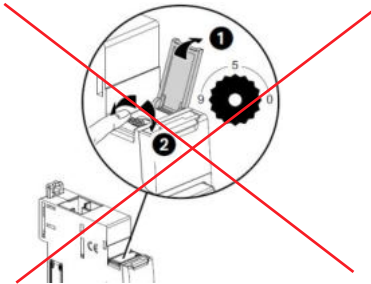
Remote addressing advantages:

- Whole configuration (addresses and functions) can be set up through the Nemo SX Configuration software
- Configuration software available for free
- **Automatic detection of the Nemo SX modules** installed in the system (characteristics, functions, configuration...)
- **Increased settings possibilities: load shedding function**
- Increased addressing: **up to 30 Modbus addresses in a system**

Programming procedure:

. For Nemo SX modules which need some: possible through the lateral DIP-switch of each Nemo SX modules *(see § "Module configuration" in the technical sheet of each device)*.

Addressing procedure:

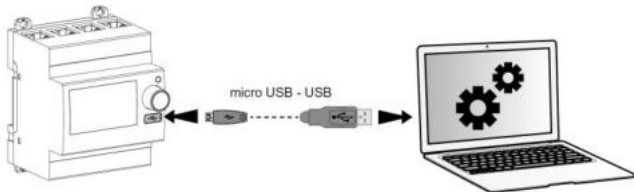


. It is not necessary to address the Nemo SX modules. The track wheel must be left in default position "0".

. All the addressing/configuring procedure will be done with the Configuration Software (available online for free)

. With remote addressing, the software does the automatic detection of modules installed in the system but the supervision is not possible until the user assign the remote address and all the characteristics to each module.

Note: it is mandatory to connect the computer to the mini configuration module with a "type B" micro USB - USB cable. *[see § "Front USB port"]*



back home Read configuration from USB

Found: 7 modules
0 groups

Group modules in sets assigning the same address.
Press "Continue" to save addressing and import configuration.

Found modules				
	Model	Module ID	Address	Result
	SX1485	EMS-RS485 interface	0000-0000-000E-128A	< 1 > ✓
	SXMC02	State (contact+fault)	FFFF-FFFF-FFFF-FD8B	< 3 > ✓
	SXMM03	Measure (singlephase ESA)	FFFF-FFFF-FFFF-FD86	< 2 > ✓
	SXMM75	Measure (CT)	FFFF-FFFF-FFFF-FD71	< 4 > ✓
	SXMC01	Control (motor driver)	FFFF-FFFF-FFFF-FD81	< 2 > ✓
	SXMT03	Measure (threephase ESA)	FFFF-FFFF-FFFF-FD80	< 3 > ✓
	SXMM0P	Measure (pulse)	FFFF-FFFF-FFFF-FD83	< 4 > ✓
	SXMC02	State (contact+fault)	FFFF-FFFF-FFFF-FFFF	< 2 > ✓

Click on this icon on the side to make the LED blink on the corresponding module

Rotary addr. Refresh Continue

6. SYSTEM ARCHITECTURES

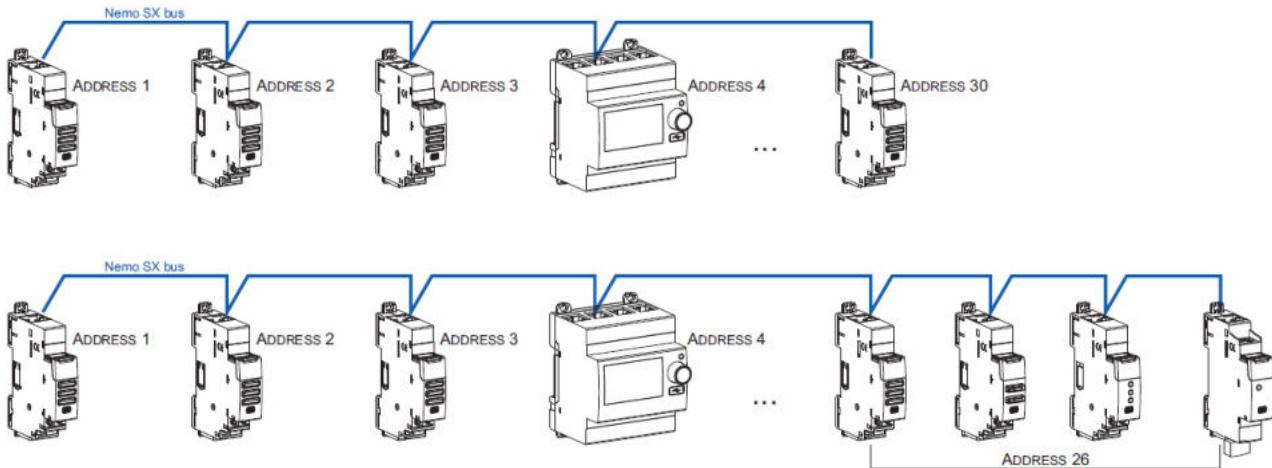
6.1 Stand-alone system (continued):

6.1.2 Stand-alone system with remote addressing (through a computer) (continued):

Consequences for the system architecture:

- for 1 mini configuration module (cat. no SXV01)
 - o up to **30 Nemo SX modules** (e.g. 30 devices grouped per functions with addresses from 1 to 30)

It is possible to assign to several devices the same address with the purpose of grouping different functions, **because they are related to the same electrical circuit**. For example it is possible to assign the same address to a multifunction signalling module (cat. no SXMC02), a multifunction control module (cat. no SXM0C1), a measuring module, and so on. In this way on the Nemo SX display or in a supervision system the grouped function will be displayed as a unique “device” with all grouped functions. [Refer to the schemes here under]



Note for the mini configuration module (local display)

- . It is possible to assign it the same address as another Nemo SX
- . The mini configuration module can be placed everywhere in the Nemo SX bus

6.2 Supervised system (Computer Supervisory System)

. **Supervised system** = System to be used through a Computer Supervisory System to remotely read data from the Nemo SX devices and/or do operations on these devices (e.g. commands of a motor driven or contactor ...).

6.2.1 Supervised system-with local addressing (through the track wheel)

Local addressing advantages:

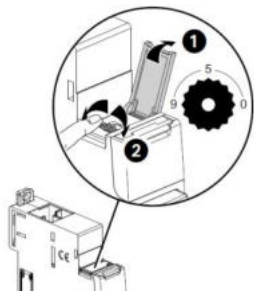
- No configuration software needed to set-up the installation
- Installation can be done without the intervention of a System Integrator

Programming procedure:

. For Nemo SX modules which need some: possible through the lateral DIP-switch of each Nemo SX modules (see § "Module configuration" in the technical sheet of each device).

Addressing procedure:

- . For all Nemo SX modules: mandatory through the track wheel located on the top upper face of each Nemo SX modules
 - . Marked from 0 to 9 in order to locally define the Modbus address to Nemo SX modules
- In this system the Modbus address of an Nemo SX module device or group of modules (several functions) is obtained considering the address of the interface Modbus/Nemo SX Interface as tenth and the address of a device or group of function as unit (e.g. Interface address 1 = 10 → address of module n°5 = Modbus address 15)



6. SYSTEM ARCHITECTURES *(continued)*

6.2 Supervised system (Computer Supervisory System) *(continued)*

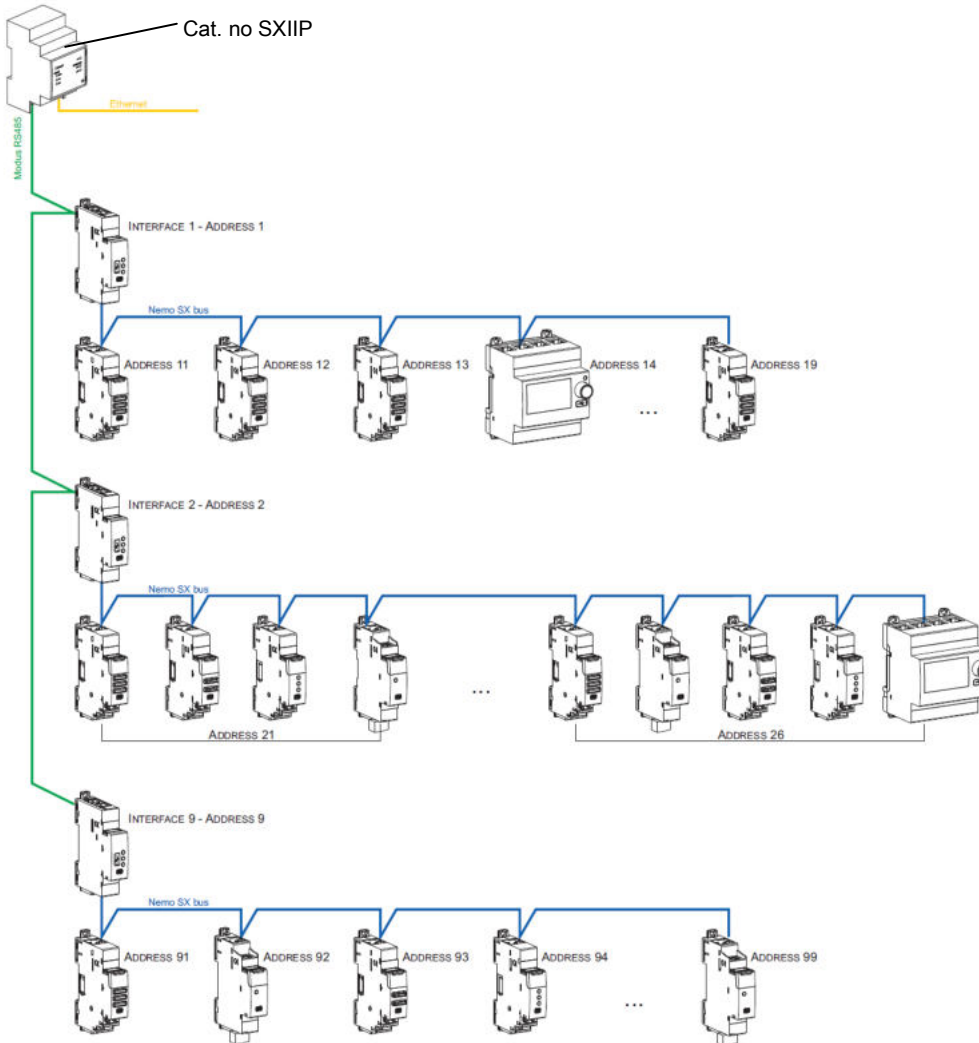
6.2.1 Supervised system-with local addressing (through the track wheel) *(continued)*

Consequences of the local addressing mode (through the track wheel):

- . Each device of the system must be addressed.
- . Addresses available: from 1 to 9
- . Address 0 not permitted

It is possible to assign to several devices the same address with the purpose of grouping different functions, **because they are related to the same electrical circuit**. For example it is possible to assign the same address to a multifunction signalling module (cat. no SXMC02), a multifunction control module (cat. no SXM0C1), a measuring module, and so on. In this way on the Nemo SX display or in a supervision system the grouped function will be displayed as a unique “device” with all grouped functions. *[Refer to the scheme hereunder]*

Note: In this configuration the Modbus address of an Nemo SX module device or group of modules (several functions) is obtained considering the address of the interface Modbus/Nemo SX Interface as tenth and the address of a device or group of function as unit (e.g. Interface address 1 = 10 and device address = 5 → Modbus address = 15)



Consequences for the system architecture:

- for 1 IP/Modbus gateway (cat. no SXIIP):
 - o up to **81 Modbus address**
 - o mandatory limit of max. **9 Modbus/Nemo SX interfaces** or max. **1000 m of Modbus cable** (cable Belden 9842, Belden 3106A or equivalent).
- for 1 Modbus/Nemo SX Interface (cat. no SXI485):
 - o up to **30 Nemo SX modules** (ex. 30 devices grouped per functions with addresses from 1 to 9)

Note: with local addressing, the Modbus/Nemo SX interface, does the automatic detection of modules (characteristics, functions, configuration...)

6. SYSTEM ARCHITECTURES *(continued)*

6.2 Supervised system (Computer Supervisory System) *(continued)*

6.2.2 Supervised system-with remote addressing (through a computer)

Remote addressing advantages:

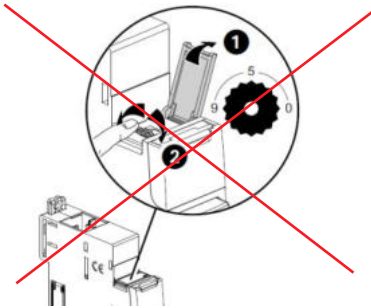
- Whole of configuration (addresses and functions) can be done a remotely through the Nemo SX Configuration software
- Configuration software available for free
- **Automatic detection of the Nemo SX modules** installed in the system (characteristics, functions, configuration...)
- **Increased settings possibilities: load shedding function**
- Increased addressing: **up to 32 Modbus/Nemo SX interfaces**
- Increased addressing: **up to 247 Modbus addresses in a system**

Programming procedure:

. For Nemo SX modules which need some: possible through the lateral DIP-switch of each Nemo SX modules *(see § "Module configuration" in the technical sheet of each device).*

Note: via the configuration software it is possible to assign all the functions and characteristics of each Nemo SX module

Addressing procedure:

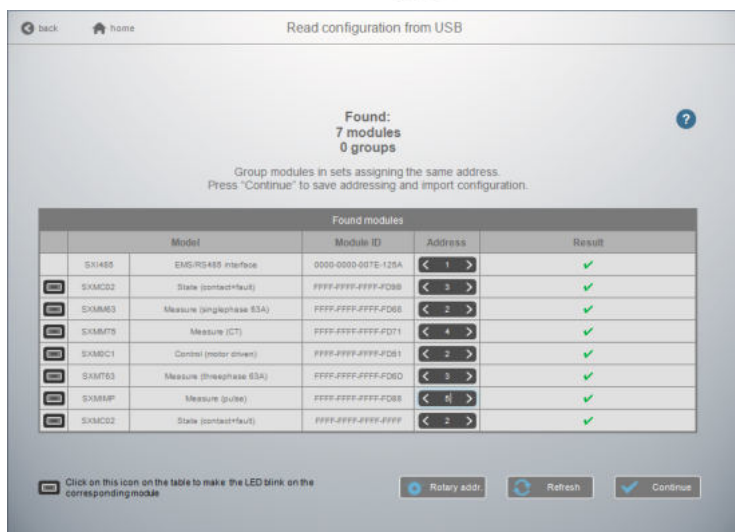
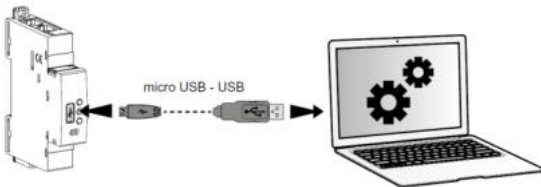


. It is not necessary to address the Nemo SX modules. The track wheel must be left in default position "0".

. A all the addressing/configuring procedure will be done with the Configuration Software (available online for free)

. With remote addressing, the software does the automatic detection of modules installed in the system but the supervision is not possible until the user assign the remote address and all the characteristics to each module.

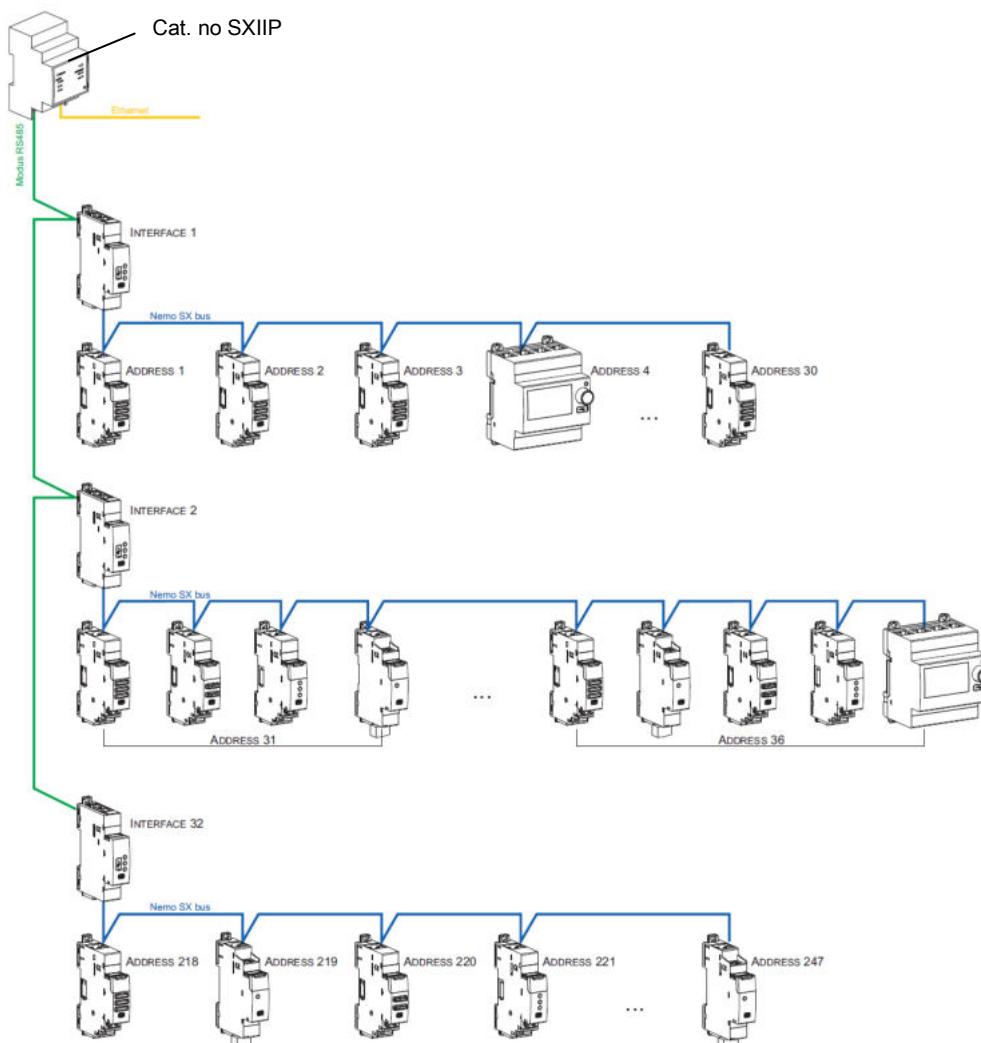
Note: it is mandatory to connect the computer to the different Modbus/Nemo SX interface with a "type B" micro USB - USB cable (one interface at a time). *[For more details, refer to the technical sheet of this module]*



6. SYSTEM ARCHITECTURES *(continued)*

6.2 Supervised system (Computer Supervisory System) *(continued)*

6.2.2 Supervised system-with remote addressing (through a computer) *(continued)*



Consequences for the system architecture:

- for 1 IP/Modbus gateway (cat. no SXIIP):
 - o up to **247 Modbus address**
 - o Because of Modbus: mandatory limit of max. **32 Modbus/Nemo SX interfaces** or max. **1000 m of Modbus cable** (cable Belden 9842, Belden 3106A or equivalent).
- for 1 Modbus/Nemo SX Interface (cat. no SXI485):
 - o up to **30 Nemo SX modules or grouped modules** (e.g. 30 devices grouped per functions with addresses from 1 to 30)

It is possible to assign to several devices the same address with the purpose of grouping different functions, **because they are related to the same electrical circuit**. For example it is possible to assign the same address to a multifunction signalling module (cat. no SXMC02), a multifunction control module (cat. no SXM0C1), a measuring module, and so on. In this way on the Nemo SX display or in a supervision system the grouped function will be displayed as a unique “device” with all grouped functions. *[Refer to the scheme up here]*

7. COMPLIANCE AND APPROVALS

Compliance to standards:

- . Compliance with Directive on electromagnetic compatibility (EMC) n° 2014/30/EU
- . Compliance with low voltage directive n° 2014/35/EU.
- . Electromagnetic Compatibility:
IEC/EN 61131-2

Environment respect – Compliance with EU directives:

- . Compliance with Directive 2011/65/EU known as “RoHS 2” on the restriction of the use of certain hazardous substances in electrical and electronic equipment.
- . Compliance with REACH regulation: at the date of the publication of this document no substance from the candidate list is present in these products.

Plastic materials :

- . Halogens-free plastic materials.
- . Marking of parts according to ISO 11469 and ISO 1043.

Packaging :

- . Design and manufacture of packaging compliant to decree 98-638 of the 20/07/98 and also to directive 94/62/CE.