

# EMS CX<sup>3</sup> Configuration Software

Installation Manual

RA00163AC



# 



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### **1. System requirements**

#### Hardware:

- Intel Core 2 Duo or AMD Athlon X2 processor
- 2GB of RAM
- 320MB of available hard-disk space
- USB port for connection to EMS CX<sup>3</sup> configuration devices

#### Supported operating systems:

- Microsoft Windows XP (Professional) Service Pack 3
- Microsoft Windows Vista Service Pack 2
- Microsoft Windows 7 Service Pack 3
- Microsoft Windows 10 all Service Pack

#### Installation and Display:

on Computer

### 2. Fundamental concepts

The EMS Configuration software offers the possibility of configuring EMS CX<sup>3</sup> modules using a simple and intuitive procedure by the creation of a customized project based on personal needs and the actual system installed. The software also performs a check on the configuration, notifying any configuration errors.

Note: EMS Configurator software is free. To be downloaded from the legrand "e-catalogue" web site. Once downloaded it will be useful for all remote configurations of EMS CX<sup>3</sup> modules

### 3. Compatible devices

#### Software version 1.06.01

- Range EMS CX<sup>3</sup>
  - Multifunction measuring devices:
    - Single-phase connection via Closed Rogowski coil(s) Cat.Nos 4 149 18 and 4 149 19
    - Three-phase connection via Closed Rogowski coil(s) Cat.Nos 4 149 20 and 4 149 21
    - Single-phase or Three-phase (configurable) connection with CT -Cat.No 4 149 23
    - Three-phase connection via Open Flexible Rogowski coils Cat.Nos 4 149 22, 4 149 24, 4 149 25 and 4 149 27
  - State and Control modules:
    - Signalling Auxiliary Contact (CA + SD) Cat.No 4 149 29
    - Universal State Module Cat.No 4 149 30
    - State & Control Module for Latching relays and Contactors Cat.No 4 149 31
    - Universal Control Module Cat.No 4 149 32
  - Display and Configuration devices:
    - Mini configuration module (local display) Cat.Nos 4 149 36/37
    - Modbus/EMS CX<sup>3</sup> interface Cat.No 4 149 40

**User Manual** 

## 4. Languages available

#### Languages:

- 中国
- Deutsch
- English
- Español
- Français
- Français (Belgique)
- Ελληνικά – Italiano
- Italiano
   Nederlands (Belgïe)
- Nederlands (beigit
   Nederlands
- Polski
- Portuguese
- Русский

### **5. Implementation**

#### 5.1 Material required

- Installation Kit (executable file ".exe")
- A computer with a compatible operating system (XP, 7, etc.)

#### 5.2 Installation

Run the file <u>\$ Legrand\_Energy\_management\_software\_Setup\_v.r.b.exe</u>
 The installation procedure starts

Installer La	anguage	<b>— X</b>
*	Please select a language.	
	English	/
	Ž	Cap 1
×	2}	

1. Choose the proper language

#### 2. Click "OK"



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4. Click to declare to have read and accepted the contract5. Click "Next"

🔌 Legrand - Energy mana	gement software 1.00.00 Setup
*	Choose Install Location Choose the folder in which to install Legrand - Energy management software 1.00.00.
	Energy management software 1.00.00 in the following folder. To , dick Browse and select another folder. Click Next to continue.
Destination Folder	and Energy management software Broyse
Legrand ————	< Back Neyt > Cancel

6. Click "Browse" to choose the installation folder7. Click "Next"



8. Choose a Folder for the Start menu (default: Legrand\Measure Software)9. Click "Install"

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## EMS CX<sup>3</sup> Configuration Software



Installation completed **10.** Click "Finish"

On the desktop of your computer are created two shortcuts: - Energy management software:

🚁 Legrand - Energy manager software

- EMS Configurator:

훩 Legrand - EMS configurator

In addition, when the software is installed, in the computer path "C:\Users\UserName\Documents\Legrand EMS", is created a folder called "Firmware Update" which contains files ".fwz"; these are files to be used to update the firmware of the EMS CX<sup>3</sup> modules according to the procedure described in §5.5 of this manual.



#### 5.3 Software update

#### 5.3.1 Update procedure with Internet connection

Run the Software.

Software's home page appears.

If an update of the software is available, the icon  $\clubsuit$  appears in the higher part of all pages of the user interface.

Software configuration		
System configuration		
O Visualize project		
Alarms and errors		

#### - Updating the software: follow the procedure

Software construction	
at syst 1 guration	
Ø Visualize project	
Alarms and errors	

#### 1. Click "Software configuration"

O back	🛖 home	Software configuration	Ŧ
	Version :	EMS configurator: 1 06 00 Energy management software: 1 05:00	
	Language :	English Y	
	COM port :	Auto 👻	
			🖌 Save

The software checks the availability of the update.

#### When the Update is available

O Dack	A home	Software configuration	¥
	Version :	EMS configurator: 1.06.00 Energy management software: 1.05.00	🛃 install
	Language :	Version 1.05.01 is ready to be installed What's new	2
	COM port :	Auto 👻	
			<b>V</b> Sec
3 back	ntone 2	Physical and they management of there 1.05.01 will be instanted. Word you like to entitude:	✓ 500 ▲
3 back	Press	Program will be closed and lineage management software 1.55.11 will be installed. Would you like to continue?	
3 back	3	Program will be closed and (newy management software 1.05.01 will be installed. Would you like to catchurd?	*

**2.** Click "Install" then **3.** Click "Yes" to start the downloading and installing of the new software version.

#### **5.3.2** Update procedure without an Internet connection Verify on the Legrand "e-catalogue" website if a software update is available.

Download the update file from the Legrand site and copy it to your computer. This file will be used to update the software.

Materials required:

- File downloaded from Legrand "e-catalogue":
  - Legrand\_Energy\_Management\_Software\_Setup\_v.r.b.zip
    - Legrand\_Energy\_Management\_Software\_Setup\_1.00.00.zip

The folder .zip contains the following file:

 Legrand\_Energy\_Management\_Software\_Setup\_v.r.b.exe: software update package

### - Updating the software: follow the procedure

Run the Software,.

Software's home page appears

1	re conjuration		
¢ <b>‡</b> Sys	Buration		
Q Visuali	ze project		
🔔 Alarms	and errors		
	<b>s≉ Sys</b> ⊘ Visuali	Visualize project	Visualize project

1. Click "Software configuration"

3 back	A home	Software configuration	
	Version :	1.01.00	
	Language :	English +	
	COM port :	Auto 🗸	
			🗸 Save

Compare the version of the installed software with the version of the file downloaded from Legrand "e-catalogue". **Update the Software if the file version is more recent than the installed version.** 

## EMS CX<sup>3</sup> Configuration Software

- Extract from the compressed folder the file:
   Legrand\_Energy\_Management\_Software\_Setup\_v.r.b.exe
  - Repeat the installation of the software

G back	A home	Software configuration	
	Version :	EMS configurator: 1.06.01 Energy management software: 1.05.01	
	Language :	Version is up to date English	
	COM port :	Auto	
			🖌 Sare

- Verify that the updating has been done checking on the "Software configuration" page.



#### 5.4 Modification of the software's language

- Procedure for changing language (if necessary)

Software conjuration	
Syst 1 Buration	
O Visualize project	
Alarms and errors	

In the software's home page 1. Click "Software configuration"



- 2. Choose the required language
- 3. Click "Save" to confirm

#### 5.5 Communication port setting

To use the EMS Configuration software, it is necessary to connect the computer to the system on the Modbus/EMS CX<sup>3</sup> interface or on the EMS CX<sup>3</sup> Mini configuration Module (local display)

- Procedure to configure the communication port (This procedure is to perform only during the first connection to a Modbus/EMS CX<sup>3</sup> interface or an EMS CX<sup>3</sup> Mini configuration Module).



**1.** Use a USB cable, connecting it between the device's micro USB connector and the PC's USB port.

2. An automatic Drivers installation procedure runs.



At the end of the installation procedure, it is possible to check the port number assigned from the PC to the device in the "Computer management" window.



3. Run the EMS Configuration Software



#### In the software's home page

Software conjuration	
st Syst 4 guration	
O Visualize project	
Alarms and errors	
Diegrand	

#### 4. Click "Software configuration"

G back 🏫 home	Software configuration
Version :	1.01.00
Language :	English 🗸
COM port :	COM11
	C 11
	5
	$\checkmark$
	6

5. Choose the proper COM port

**Note:** Automatic detection of the COM port "Auto" is the default configuration. **6.** Click "Save" to confirm

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### 6. Remote operation

#### 6.1 Configuration and Firmware update of EMS CX<sup>3</sup> modules – "System configuration"

Run the EMS Configuration Software



**1.** In the software's Home page Click "System configuration" System configuration page appears

3 back	A home	System configuration
		⊷ Automatic mode via USB
		• Read configuration from USB
		+
		🖉 Link Functionality
		/ Manual mode
		1 Import configuration from XML
		Edit configuration
		Export configuration to XML
		Diegrand

- Possible actions:
  - Read configuration from USB and Module's firmware update
  - Edit configuration
  - Link functions between modules to create automatic actions
  - Export (if necessary) the edited configuration
  - Import a previously saved configuration



#### 6.1.1 Local addressed system

In the "System configuration" page



#### **1.** Click "Read configuration from USB" A page with a table of reading results appears

			Found: 5 modules			0
		Press "Continu	ue" to import structure o	r press 'Refres	h' to retry	
	00	e or more modules run obsole				
-	On	e or more moudles run obsole	ete inniware, press Pvi	upgraue to up	to date to the idlest version.	
			Import errors			
		Model	Module ID	Address	Result	FW
	4 149 40	RS455 interface	0000-0000-0038-6513	10	1	
	4 149 26	Measure (pulse)	0000-0000-0076-1808	15	1	
	4 149 29	State (modular device)	FFFF-FFF-FDA3	12	1	
	4 149 30	State (generic)	0000-0000-0038-5900	13	Configurable function	
	4 149 19	Measure (singlephase 63A)	0000-0000-00E0-074D	11	1	1
	4 149 32	Control (generic)	0000-0000-0038-5F6F	14	Configurable function	1

Icon 🌠 in the "FW" column means that a firmware update is available for the module



**2.** Click "Update FW" to perform the update of the firmware of all the modules at once.

**Note:** for Mini configuration modules (4 149 36/37), the update procedure is to be performed directly connecting it to the PC's USB port.

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At the end of the update procedure or, if all module's firmware are updated, the page the page looks like below

		Found: 5 modules			0
	Press "Continu	ue" to import structure o	r prace 'Dafrac	h' to rator	
On	e or more modules run obsole	ete firmware, press "FW	upgrade" to up	to date to the latest version.	
		Import errors			
	Model	Module ID	Address	Result	FW
4 149 40	RS485 interface	0000-0000-0038-6513	10	1	1
4 149 20	Measure (pulse)	0000-0000-0076-1808	15	1	1
4 149 29	State (modular device)	FFFF-FFFF-FDA9	12	1	1
4 149 30	State (generic)	0000-0000-0038-5900	13	Configurable function	1
4 149 19	Measure (singlephase 63A)	0000-0000-00E0-074D	11	1	1
4 149 32	Control (generic)	0000-0000-0038-6F6F	14	Configurable function	1

3. Click "Continue" to go to the edit page of the configuration read.

**Note:** if configuration software detects some mistakes (e.g., addressing, duplicated functions, etc.), error detail are shown in the table.

	Drace "Contin	ue' to import struct	Found: 5 modules 2 groups	and ulas or prace	*Defresh* to retry
_	Treas Contai	ue to import artic		budies of press	riteriesi to reay.
_	Model		Import errors Module ID	Address	Result
4 145 40		interfere	FFFF-FFFF-FFFF-FDF1	10	rvsut
4 149 31			0000-0000-0000-0000	15	
4 149 32			FFFF-FFFF-FFFF-FD89	15	4
4 149 30	State (conta	ct+feuit)	FFFF-FFF-FFFF-FD98	<b>-</b>	8.0000
4 149 29	State (modula	r device)	FFFF-FFFF-FFFF-FDA6	12	Duplicated address
4 149 26	Measure (	pulse)	FFFF-FFFF-FFFF-FD88	11	¥
			Diegrand	Software ad	C Retroy

Correct the configuration according the indications then, **a.** click "Refresh". if the software no longer reports errors, **b.** click "Continue" to go to the edit page of the configuration read.

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The page is divided into two sections:

section A is the "Read Groups" area.

**Note:** a Group is a set of several devices with the same address. A group is made with the purpose of grouping different functions, <u>because they are related to the same electrical circuits</u>. For example, it is possible to assign the same address to a signalling auxiliary module (cat. no 4 149 29), a universal control module (cat. no 4 149 32), a measuring module, and so on. In this way on the supervision system the grouped functions will be displayed as a unique "device" with all grouped functions.

section **B** shows the "Group Settings" area, where the configuration fields for the selected group are available.



- 1. Address of the group
- 2. Name of the group (name proposed by default user editable parameter)
- 3. Symbols of the functions associated to the group (depending on the characteristics related to each EMS CX3 module)

measure 🎢

State

Command

Link Function

- 4. Icon used to turn on the multifunction led button on the front face of all the EMS CX<sup>3</sup> modules included in the group
- 5. Communication status
  - System connected via USB to a PC
    - 🚺 Communication error

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## • TO VIEW/CONFIGURE THE EMS CX<sup>3</sup> DEVICES CHARACTERISTICS UNDER A GROUP

In the Module groups page



- 1. Select a Group
- 2. Rename the Group (if necessary)
- 3. Click "Modules" to view/configure the devices characteristics

Module's settings page appears

Modules of group : Group 31	Settings	Groups
Group 31 +		
State (contact+fault)	Model : Contact+fau	II) ~
Control (motor driven )		
Measure (pulse)		

The page is divided into three sections:

section (A) shows the modules under the selected group with their characteristics and icons

section **B** is the area where is possible to select two pages:

• Settings: display page of the base configuration of the selected module

• Advanced (if present): page dedicate to configure whole or some settings of the selected module. **Note:** this page change according to the module type, local DIP switch configuration, etc...

section C shows the basic and advanced settings fields of the selected module

#### • Description of the device selection button



- 1. Identification number of the module (univocal code that identifies the module)
- 2. Module function
- 3. Icon used to turn on the multifunction led on the front face of the module
- 4. Communication status
  - System connected via USB to a PC
  - 🔼 Communication error

Note: Whenever you make a modification to the system (adding/removing a module, change of address, change of configuration by DIP switches, etc ...) must repeat the reading procedure of the configuration from USB

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#### 6.1.2 Remote addressed system

In the "System configuration" page



**1.** Click "Read configuration from USB" A page with the reading results appears

			Found: 5 modules			0
		Press "Continue	e" to import structure of	or press 'Refreshi	to retry.	
	00	e or more modules run obsolet				
_	UII	e or more moudles full obsolet			e date to the altest version.	
	_		Import errors			
		Model	Module ID	Address	Result	FW 🛃
	4 149 40	RS485 interface	0000-0000-0038-6513		invalid address	
	4 149 26	Measure (pulse)	0000-0000-0076-1808		Invalid address	
- 11	4 149 29	State (modular device) State (penenc)	0000-0000-0038-5900		invalid address	
	4 149 30	Measure (singlephase 63A)	0000-0000-0058-8900		Invelid address	
20	4 149 32	Centrol (generic)	0000-0000-0038-6F6F		inveid address	
	4 149 54	Control (Jonane)	0000-0000-0038-0P6P		Invent address	

**2.** Click "Software addressing". Configuration software automatically assigns an address to each module detected

	n" to retry.	r press "Refrest				
			ue" to import structure o	Press *Contin		
	to date to the latest version	upgrade" to up	ete firmware, press "FW	e or more modules run obsol	On	
		obligant, in ab				
		5	Found module			
FW 🛃	Result	Address	Module ID	Model		
	1		0000-0000-0038-6513	R5485 interface	4 149 40	
	1	. 2 .	0000-0000-0076-1808	Measure (pulse)	4 149 26	
	1		FFFF-FFFF-FFFF-FDA3	State (modular device)	4 149 29	
	Configurable function		0000-0000-0038-6900	State (penerc)	4 149 30	
1	1		0000-0000-00E0-074D	Measure (singlephase 63A)	4 149 19	
1	Configurable function		0000-0000-0038-6F6F	Control (generic)	4 149 32	
	1		FFFF-FFFF-FDA3 0000-0000-0038-59DD 0000-0000-0058-49DD	State (modular device) State (peneric) Measure (singlephase 63A)	4 149 29 4 149 30 4 149 19	

Icon 🔽 in the "FW" column means that a firmware update is available for the module

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			3		-
	Press "Continu	e" to import structure o	or press "Refrest	r" to retry.	
One o	or more modules run obsole	ete firmware, press "FW	/ upgrade" to up	to date to the latest version.	
	Model			Result	FW 🔽
149 40	RS485 interface	0000-0000-0038-6513	(111)	1	
149 26	Measure (pulse)	0000-0000-0076-1808	01280	1	
149.29	State (modular device)	FFFF-FFFF-FFFF-FDAS		1	
149 30	State (peneric)	0000-0000-0038-6900		Configurable function	
149 19	Measure (singlephase 63A)	0000-0000-00E0-074D		1	1
149 32	Control (generic)	0000-0000-0038-6F6F		Configurable function	1
	149 40 149 25 149 29 149 30 149 19	Model 143-0 RS-435 riseffece 143-26 Massure (suba) 143-29 State (modular dentes) 143-29 State (proces) 143-19 Massure (organ/sase 03A)	Model         Module D           169 40         75435 min/time         0000-0000-0354513           149 26         Manune (junke)         0000-0000-0375-1986           149 26         State (module device)         7777-0777-078-03           149 20         State (panels)         0000-0000-0358-050           149 30         State (panels)         0000-0000-0358-050           149 31         Massure (pinglagsad 514)         0000-0000-0358-070	Kodel         Koduki /D         Address           18 40         R5455 nikrilsa         00004000 00354113         111           149 25         Starle (meluiter fermion)         000040000 003751883         2           149 25         Starle (meluiter fermion)         000040000 003751883         2           149 25         Starle (meluiter fermion)         000040000 003751883         2           149 26         Starle (meluiter fermion)         0000040000000000000000000000000000000	Model         Modele ID         Address         Result           168 40         R5455 minflow         0000-0000-0005-4613         4         4           169 26         Maxume (pulk)         0000-0000-0005-4613         6         4         4           169 26         Maxume (pulk)         0000-0000-0005-4613         6         3         4           169 26         State (module risking)         0000-0000-0005-6163         6         3         4           169 26         State (gradue risking)         0000-0000-0005-0160         6         1         Configurable function           169 36         Maxume (pright/mass 634)         0000-0000-0005-01761         6         3         4

3. Click "Update FW" to perform the update of the firmware of all the modules at once.

**Note:** for Mini configuration modules (4 149 36/37), the update procedure is to be performed directly connecting it to the PC's USB port.

At the end of the update procedure or, if all module's firmware are updated, the page looks like below

			Found: 5 modules			3
		Press "Continu	ue" to import structure o	r press 'Refresi	n" to retry.	
	On	e or more modules run obsole	ete firmware, press "FW	upgrade" to up	to date to the latest version.	
-	-		Found module			
		Model	Module ID	Address	Result	FW
	4 149 40	RS485 interface	0000-0000-0038-6513		1	1
	4 149 26	Measure (pulse)	0000-0000-0076-1808	. 2 .	1	1
P	4 149 29	State (modular device)	FFFF-FFFF-FFFF-FDA3	<b>710</b>	1	1
	4 149 30	State (peneric)	0000-0000-0038-6907		Configurable function	1
	4 149 19	Measure (singlephase 63A)	0000-0000-00E		1	1
	4 149 32	Control (ganarie)	0000-0000-0	A REAL PROPERTY.	Configurable function	1

**4.** Change (if necessary) the addresses assigned by the software according to the real configuration of installed modules.

**Note:** to identify clearly a module in a row, **a.** click on the icon to turn on the multifunction led on the front face of the module

	Press *Continu	5 modules			
	Pless Collan	ue" to import structure of	r press 'Refresi	n' to retry.	
Or	ne or more modules run obsole	ete firmware, press "FW	upgrade" to up	to date to the latest version.	
		Found module			
	Model	Module ID	Address	Result	FW E
4 149 40	RS485 interface	0000-0000-0038-6513	0.1.0	1	1
4 149 26	Measure (pulse)	0000-0000-0076-1808	0 2 0	1	1
4 149 29	State (modular device)	FFFF-FFFF-FFFF-FDA3	· · · ·	1	1
4 149 30	State (generic)	0000-0000-0038-6900	<b>•••</b>	Configurable function	1
4 149 19	Measure (singlephase 63A)	0000-0000-00E0-074D		1	1
4 149 32	Control (ganaric)	0000-0000-0038-6F6F		Configurable function	1

5. Click "Continue" to go to the edit page of the configuration read.

O back ♠ home	Module groups	online + C
Module groups	+ Group settings	
Group 2 👔 🖁 🕯	A Name : Bar	oup 2
2 😔	Address :	1 D C 2 D
Group 3		
3 😔		
Group 4 🗿 🌡		
4 😔		
4 😁		
		Visual.proj.
		📅 Defeto 🖌 Save

The page is divided into two sections:

section (A) is the "Read Groups" area.

**Note:** a Group is a set of several devices with the same address. A group is made with the purpose of grouping different functions, <u>because they are related to the same electrical circuits</u>. For example, it is possible to assign the same address to a signalling auxiliary module (cat. no 4 149 29), a universal control module (cat. no 4 149 32), a measuring module, and so on. In this way on the supervision system the grouped function will be displayed as a unique "device" with all grouped functions.

section <sup>B</sup> shows the "Group Settings" area, where the configuration fields for the selected group are available.

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#### • Description of the group selection button



- 1. Address of the group
- 2. Name of the group (name proposed by default user editable parameter)
- 3. Symbols of the functions associated to the group (depending on the characteristics related to each EMS CX3 module)

Measure 🔢 State



S Link Function

- 4. Icon used to turn on the multifunction led button on the front face of all the EMS CX<sup>3</sup> modules included in the group
- 5. Communication status

System connected via USB to a PC

🔼 Communication error

## • TO VIEW/CONFIGURE THE EMS CX<sup>3</sup> DEVICES CHARACTERISTICS UNDER A GROUP

In the Module groups page



- 1. Select a Group
- 2. Rename the Group (if necessary)

**3.** Click "Modules" to view/configure the devices characteristics Module's settings page appears

## EMS CX<sup>3</sup> Configuration Software



The page is divided into three sections:

section A shows the modules under the selected group with their characteristics and icons

section **B** is the area where is possible to select two pages:

• Settings: display page of the base configuration of the selected module

• Advanced (if present): page dedicate to configure whole or some settings of the selected module. **Note:** this page change according to the module type, local DIP switch configuration, etc...

section **C** shows the basic and advanced settings fields of the selected module

#### Description of the device selection button



- 1. Identification number of the module (univocal code that identifies the module)
- 2. Module function
- 3. Icon used to turn on the multifunction led on the front face of the module
- 4. Communication status
  - System connected via USB to a PC
  - 🔨 Communication error

Note: Whenever you make a change to the system (adding/removing a module, change of address, change of configuration by DIP switches, etc ...) must repeat the reading procedure of the configuration from USB

## **6.1.3** Remote configuration of a universal state or command module via configuration

Universal State (4 120 30) and Command (4 120 32) modules can be configured in two ways:

- Locally, setting the dip-switches on the side of the module

- Remotely, via configuration software leaving the dip-switches in "0000" position (factory configuration)

**Note:** this procedure applies in the same way for a system locally or virtually addressed.

Procedure for remote configuration of modules.

**1.** Install and wire modules according to the function they must perform in the installation (for wiring diagram refer to the Technical Data Sheet of each module).

2. Access the configuration software



3. In ~``System configuration'' page click ~``Read configuration from USB''

The page with the reading results table is displayed.

Beside the description of each universal module (state or command) with dip-switches in "0000" position appears the icon " 
" and in the "Result" field appears the text "Configurable function"

			Found: 11 modules 7 groups		•
		Press "Continue"	to import structure or pro-	ess "Refresh" t	o retry.
	4 149 40	H3485 miertace	0000-0000-0018-4055	10	v
	4 149 29	State (modular device)	0000-0000-0084-ED7A		V
	4 149 31	Control + State (CT/LR)	0000-0000-0000	15	1
	4 149 29	State (modular device)	0000-0000-0084-E825	14	1
	4 149 26	Measure (pulse)	0000-0000-0086-043D	16	1
	4 149 29	State (modular device)	0000-0000-008D-6E7A	19	×
	4 149 19	Measure (singlephase 63A)	0000-0000-00E0-06A7	11	1
	4 149 32	Control (generic)	0000-0000-000E-BAEB	14	Configurable function
	4 149 36/37	Display	0000-0000-0076-186E	10	V
	4 149 23	Measure (CT)	0000-0000-00E0-06DD	12	1
3	4 149 30	State (penent)	MOL-1999-1999-1004	12	🖌 Configurable function
Þ	4 149 20	Measure (threephase 63A)	0000-0000-00E0-078F	14	1
γ			-	Software ad	🕄 Refresh 🖌 Continu

**Note:** to identify clearly a module in a row, **a**. click on the icon to turn on the multifunction led on the front face of the module

#### Back to "Contents"

## EMS CX<sup>3</sup> Configuration Software

		Found: 11 modules 7 groups		
	Press "Continue"	to import structure or pre	ess "Refresh"	to retry.
4 149 40	H3480 mierteoe	0000-0000-0018-405E	10	*
4 149 29	State (modular device)	0000-0000-0084-ED7A	11	1
4 149 31	Control + State (CT/LR)	0000-0000-0000	15	1
4 149 29	State (modular device)	0000-0000-0084-E825	14	1
4 149 26	Measure (pulse)	0000-0000-0086-0430	16	1
4 149 29	State (modular device)	0000-0000-008D-6E7A	19	1
4 149 19	Measure (singlephase 63A)	0000-0000-00E0-06A7	11	1
4 149 32	Control (peneric)	0000-0000-000E-84EB	14	Configurable function
4 149 36/37	Display	0000-0000-0076-186E	13	1
4 149 23	Measure (CT)	0000-0000-00E0-06DD	12	1
4 149 30	State (penenc)	FFFF-FFFF-FD96	12	Configurable function
4 149 20	Measure (threephay	0000-0000-00E0-078F	14	1
	4		Software ad	Refresh 🖌 Continue

**4.** Click on icon " **( )**". A pop-up window appears

The window shows all the possible configurations that can be assigned to the selected module.

- For universal state module (4 149 30) possible configurations are:



- For universal command module (4 149 32) possible configurations are :

S back A home Read configuration from USB
Universal module configuration Select in which configuration you want to use the universal command module
• 1 2 3 4 • • • • • • • • • • • • • • • • • •
(● 1 2 3 4 ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) (
• 1 2 3 4 6 <sup>1</sup> 1 2 3 6 <sup>1</sup>
$\begin{array}{c c c c c c c c c c c c c c c c c c c $



#### To complete the configuration:



- 5. Select the appropriate configuration
- 6. Click "OK" to confirm.



Perform the configuration of other configurable modules present in the system (modules for which appears the icon " " and the text "Configurable function"), then **7.** click "Continue" to complete programming access the edit page of the configuration read (*use of this part is described on pages 13 to 15 of this Manual*).

**Note:** to modify the configuration of an already configured module, it is necessary to return the module to the factory settings by pressing the multifunction button on the front face until the LED becomes steady red (*approximately 20 seconds*), then repeat the reading procedure via USB and assign a new configuration to the module.

The only exception is if the configuration chosen is the one with all dip-switches in 0000 position



In this case, simply repeat the configuration reading procedure via USB and assign a new configuration to the module without returning it to factor settings.

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#### 6.2 Editing a configuration online

Function used to change settings of Groups and Modules once the reading of a configuration from USB is already done and there are still settings to edit. In the "System configuration" page

🗿 back 🔺 home	System configuration	
	⊷ Automatic mode via USB	
	• C Read configuration from USB	
	Edit configuration online	
	& Link Fr heality	
	/ Manual mode	
	Import configuration from XML	
	Edit configuration	
	Export configuration to XML	
	Diegrand	

1. Click "Edit configuration online"

The Configuration software redirect the user directly to the Modules group page

3 back 🕈 home			Module groups		online 🔩
grid view					Modules
Module groups		+	Group settings	<	2
Group 31	8		Name :	Group 31	
31	<b>⊗</b>		Address :	30 D	group 31
Group 1	<b>í</b>	۲			
Group 33	8				
33	•				
					View
				Delete	🖌 Save

#### 1. Select a Group

2. Click "Modules" to view/configure the devices characteristics

Modules	online +@-
Settings Advanced	Groups
Module settings	
Model : Bre	aker command 🛛 👻
	🛍 Delete 🖌 Save
	Settings Advanced Module settings

#### 6.2.1 Configurable parameters of each module

This section of the manual describes in detail the configurable parameters of each module



• Single-phase measuring module with Closed Rogowski sensor(s) up to 63 A (Cat.Nos 4 149 18 and 4 149 19)

Configurable parameters:

Module settings		
Network :	2P	×
Current versus :	Upstream of tore/CT	~

#### It is possible to set:

- Supply: current direction through the measuring Rogowski coil sensor

• Three-phase measuring module with Closed Rogowski sensors up to 63 A (Cat.No 4 149 20) and up to 125 A (Cat.No 4 149 21)

Configurable parameters:

Module settings		
Network :	3P+N	~
Current versus :	Upstream of tore/CT	~

It is possible to set:

- Network: Three-phase network with or without neutral conductor
- Supply: current direction through the measuring Rogowski coil sensor

• Three-phase measuring module with Open Flexible Rogowski sensors from 630 A to 6300 A (Cat.Nos 4 149 22, 4 149 24, 4 149 25 and 4 149 27) Configurable parameters:

Module settings	i	
Network :	3P+N	~
Current versus :	Upstream of tore/CT	v

It is possible to set:

- Network: Three-phase network with or without neutral conductor
- Supply: current direction through the measuring Rogowski coil sensor



• Measuring module, connected via current transformers (Cat.No 4 149 23) Configurable parameters:

Module settings		
Network :	3P+N	×
Current versus :	Upstream of tore/CT	×
Current transformer ratio :		1

It is possible to set:

- Network: Single-phase, Three-phase network with or without neutral conductor
- Supply: current direction through the measuring current transformer
- Current transformer ratio: obtained by dividing "Primary Current of CT" / 5A (e.g., 800A / 5A, CT ratio = 160)
- Pulse concentrator (Cat.No 4 149 26)

Configurable parameters:

Module settings						
Pulse input 1	Pulse input 2	Pulse input 3				
Weight :			10.00			
Unit :			Wh 🗸			

For each pulse input it is possible to set:

- Weight of the pulse in input (e.g., each impulse = 10.00)

- Unit: measurement unit of the pulse in input. Possible values: pulses, Wh, kWh, MWh, varh, kvarh, Mvarh, VAh, kVAh, MVAh, m3, km3, Mm3, Nm3, kNm3, MNm3, J, kJ, MJ, cal, kcal, g, kg, t.

Note: default configuration for the three inputs: 10 Wh/imp

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• Universal signalling module (Cat.No 4 149 30)

#### - <u>Generic input</u>

DIP Switches combinations:

	X1 0 X2 0
1 2 3 4	X3 O
	X1 <del>¥</del> X2 <del>¥</del>
1 2 3 4	X3 +

Configurable parameters:

Module settings						
Input 1	Input 2	Input 3				
Name :		Input 1				
Active state :			OON	OFF		

For each input it is possible to set:

- Name
- Active state: "ON" or "OFF"

ON: input is activated when the contact closes (normally open contact in input) OFF: input is activated when the contact opens (contact normally closed in input

- Breaker state (Open, Close, Tripped)

DIP Switches combination:

	X1	☀	.l.
	X2	¥-	$\setminus^{\mathbf{x}}$
1234	X3	☀	I

#### - General tipped

**DIP Switches combination:** 



- <u>Breaker position</u> (Inserted, Drown-out, Test) DIP Switches combination:



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• Universal signalling module (Cat.No 4 149 30) (continued) - <u>Spring state</u> (Charged/Discharged, Ready to close)

DIP Switches combination:



#### - Contactor/Latching relay state

Following DIP Switches combination:

	X1 X2	*	
1234	X3	*	

Configurable parameters:

## Module settings

Contact 1	Contact 2	Contact 3	Contact 4	. +
Name :	Contact 2	Contact 1	Contact 4	- +
Normal state				• • • •
Normal state			● N.O.	ON.C.

It is possible to set:

- Number of the contacts of the associated Contactor or Latching relay. Possible to add or remove contacts (via "+" or "-" button)

- Name of each contact
- Normal state of each contact: Normally Open (N.O.) or Normally Closed (N.C.)

#### Legend:

- 🔆 Steady LED
- 🔆 Blinking LED
- LED off





• Control and state reporting module (Cat.No 4 149 31) DIP Switches combination table:



Configurable parameters:

Module sett	ings			
Normal state :			<b>N</b> .O.	●N.C.
Activation :		Impulsive		· · · · · ·
Activation time [s] :				1.0
Delay [s] :				0.0
Contact 1 Co	ntact 2	Contact 3	Contact 4	- +
Name :		Contact 1		
Normal state :			<b>O</b> N.O.	●N.C.

It is possible to set:

- Activation time (only for configurations for Latching relays)
- Delay: time between sending a command and the output activation
- Number of the contacts of the associated Contactor or Latching relay. Possible to add or remove contacts (via "+" or "-" button)
- Name of each contact
- Normal state of each contact: Normally Open (N.O.) or Normally Closed (N.C.)



• Universal control module (Cat.No 4 149 32)

- Generic output

DIP Switches combinations:





Configurable parameters:

Module settings					
Output 1	Output 2				
Name :		Output 1			
Normal state	:	ON.	.O.	●N.C.	
Interlocked outputs :		•			
Activation :		Impulsive			×
Activation tim	e [s] :			1.0	D
Delay [s] :				0.0	D

For each output it is possible to set:

- Name
- Normal state : Normally Open (N.O.) or Normally Closed (N.C.)
- A flag to interlock the two outputs: pressing one of the two buttons or sending a command both outputs are activated
- Activation: Impulsive or Maintained command
- Activation time (only if the command is impulsive)
- Delay: time between pressing one of the two buttons or sending a command and the output activation

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• Universal control module (Cat.No 4 149 32) (continued)

- Breaker command

DIP Switches combination:



Configurable parameters:

## Module settings

Open	Close				
Normal state :		0	N.O.	N.C.	
Activation :		Impulsive			~
Activation time	e [s] :			1.0	D
Delay [s] :				0.0	D

For each output it is possible to set:

- Activation time

- Delay: time between pressing one of the two buttons or sending a command and the output activation


Universal control module (Cat.No 4 149 32) (continued)

- Contactor command

DIP Switches combination:



Configurable	parameters:
--------------	-------------

Module settings				
Normal state :		<b>N</b> .O.	●N.C.	
Activation :	Impulsive			v
Activation time [s] :		٩	0.5	D
Delay [s] :			0.0	D

It is possible to set:

- Activation time (only for the configuration for Latching relays)

- Delay: time between pressing one of the two buttons or sending a command and the output activation

# 



## 6.2.2 Load shedding function

Allows to carry out automatically load shedding in case of the power demand of a circuit exceed a preset threshold (in kW).

Function is implementable using following EMS CX<sup>3</sup> modules:

- Universal Control module (cat. No 4 149 32) using the default configuration (DIP switches in 0000 position)

- Multifunction measurement modules (cat. nos 4 149 18/19/20/21/22/23/24/25/27)

#### Procedure to set the different parameters

1. Assign the same address to the EMS CX<sup>3</sup> modules (Universal control module and Multifunction measurement module) that you want to link together

In the "Module groups" page of the software

3 back 🕐 home		Vodule groups		online 🛶
grid view				Modules
Module groups	+	Group settings	<	3
Group 11		Name :	Group 12	
11 🚭		Address :		group
Group 12	₩ 🌢 👝			
Group 2				
13				
				🔎 Visual.proje
			Delete	Save

2. Select the group containing the Universal control module and the Multifunction measurement module

3. Click "Modules" to view/configure the devices characteristics Module's settings page appears

3 back 🕐 home	Modules	online +G
	Settings Advanced	Groups
Modules of group : Group 12	+ Module settings	
State (contact+fault)	Model :	easure (singlephase 63A) 🛛 🗸
FFFF-FFFF-FFF9B	Click to activate load sheddin	g function
Control (Generic)	1	
FFFF-FFFF-FD89	5	
Measure (singlephase 63A)		
FFFF-FFFF-F F-FD6C 🚭		
{ 4 }		
$\sim$		
		fft Delete 🖌 Save

- 4. Select the Multifunction measurement module
- 5. Click to activate the load shedding function

For more details, see diagram in page 40

## A set of additional parameters are shown

G back 🕈 home	Modules	online +&
	Settings Advanced	Groups
Modules of group : Group 12	Module settings	
State (contact+fault)	Model :	Measure (singlephase 63A)
FFFF-FFFF-FD9B	Click to activate load she	edding function
Control (Generic)	Load s	ihedding configuration :
FFFF-FFFF-FD89	Measure :	Power [kW]
Measure (singlephase 63A)	Threshold :	25.00
FFFF-FFFF-FFFF-FD6C	Hysteresis [%] :	5.0
	Delay [s] :	
1		1

- 6. Set the threshold: value of Total active power (kW) above which procedure starts.7. Assign the other control parameters:
- Hysteresis: value expressed in % of the threshold under which the alarm is over and the disconnected loads are restored (*default value 5%*).
- Alarm delay (s) (default value 0s): during the activation of an alarm is the waiting time between the threshold point and the alarm on the EMS bus during the de-activation of an alarm is the waiting time between the hysteresis point and the alarm is deactivation on the EMS bus
- 8. Click "Save" to confirm

In the Module settings page of the Universal control module



Set following parameters:

- Normal state: is the rest position of the relay; normally open (NO) or normally closed (NC).

- The flag to interlock the two outputs: pressing one of the two buttons or sending a command both outputs are activated

- Activation: impulsive or maintained
- Activation time (s): used for the impulsive work method; represents the time in which the relay remains in the working position.

- Activation delay (s): waiting time between alarm is declared on the EMS bus and the load(s) is (are) disconnected by the universal control module (default value 0s)

For more details, see diagram in page 40



### Load shedding diagram



### 6.3 Link Functionality

This function allows you to link two EMS CX<sup>3</sup> modules to create automatic actions that, once programmed, can run independently without a connection to a manager is needed.

The basic rule is the link between an event (circuit breaker that trip, a threshold exceeded, etc.) and an action accordingly (signaling, opening of a circuit by motorized control or contactor, etc.).

Possible associations are:

		Action module	
Event generator	Command: 4 149 32	State + Command: 4 149 31	State: 4 149 30
Measure: 4 149 18, 4 149 19 4 149 20, 4 149 21 4 149 23, 4 149 22, 4 149 24 4 149 25, 4 149 27	~	~	Only with "Generic" configurations
State: 4 149 29/30	~	$\checkmark$	× Standard configuration
State + Command: 4 149 31	~	$\checkmark$	× Standard configuration

### Note:

- association can only be of type 1 to 1 (1 event and 1 action).

- modules already associated can not be used for other associations.



### In the software's Home page

Software configuration	
System configuration	
O Visu 1 ject	
Alarms and errors	

1. Click "System configuration"

3 back	A home	System configuration	
		⊷ Automatic mode via USB	
		• Read configuration from USB	
		● 🥩 Edit configuration online	
		C Link Functionality	
		1 Manua 2 e	
		Import configuration from XML	
		Edit configuration	
		Export configuration to XML	
		Diegrand	

2. Click "Link Functionality"





## EMS CX<sup>3</sup> Configuration Software

G back	A home	Link Fun	tionality	online +4
		A Event generator	Action module	9
1	Module			•
	Criteria		•	
S	Settings			
				C TEST
			💼 o	elete 🖌 Save

The page is divided into three sections:

section (A) is the area where it is possible to:

- select the module that generates the event

- assign to the module the criteria of the event generation (e.g., trip of a circuitbreaker, etc.) and the additional parameters, if available (e.g., for the measuring module it is possible to select the electrical quantity, to set the threshold, the hysteresis and the delay of the activation of the event).

- choose whether the event also generates an alert (for measurement modules, and universal state modules with generic configurations).

section **B** is the area where it is possible to:

- select the module that performs the action

- assign to the module the criteria of the action (e.g., opening or closing of a breaker, etc.) and the additional parameters, if available (e.g., for a command module configured as "Breaker command" it is possible to set activation time and activation delay time for each output).

#### Procedure to create links between EMS CX<sup>3</sup> modules



**4.** Click to select the event generator module.

#### Note:

- the devices list is filtered by "Groups"
- only modules that can generate an event are listed:
  - measure modules (4 149 18/19/20/21/22/23/24/25/27), state modules (4 149 29/30) and Command + State module (4 149 31) [see following pages for details]

Depending on the configuration and model type, possible criteria that can be selected are different:



• Single-phase Measuring module with closed Rogowski sensor(s) (Cat.Nos 4 149 18 and 4 149 19) and Measuring module, connected via current transformers (Cat.No 4 149 23) set as 1P

Settings:

	Event generator		
Module	Measure (singleph	nase 63A) 🔹 💌	
Criteria	Event	v	
Settings	Measure :	Power P↑	
	Threshold [kW] :	100,00	
	Hysteresis [%] :	<ul><li>5,0</li></ul>	
	Delay [s] :	◀ 1,0 ►	
Alert :	Generate alarm :		

### Criteria:

Event (fixed parameter)

Parameters:

• Measure : V1 $\uparrow$ , V1 $\downarrow$ , I1 $\uparrow$ , P1 $\uparrow$ , S1 $\uparrow$ , f $\uparrow$ , f $\downarrow$ , PF $\downarrow$ 

Note:

 $\uparrow$  = Maximum threshold

 $\downarrow$  = Minimum threshold

For the active power (P) and for power factor (PF) it is possible to set also negative values as a threshold value.

- Threshold: value above or below which the "action/alert procedure" is activated.
- Hysteresis : value expressed in % of the threshold under which the alarm is over and the disconnected loads are restored (*default value 5%*).

Alarm delay (s) - (default value 1 s):

during the activation of an alarm is the waiting time between the threshold point and the alarm on the EMS bus

during the de-activation of an alarm is the waiting time between the hysteresis point and the alarm is deactivation on the EMS bus;

• Alert: select whether you want the event also generates an alert. If the field is selected, configuration software gives the possibility to type a message which will be used for the identification of the alert type (see below).

Alert :	Generate ala	irm : 🗹
	Message :	Exceeded threshold



• Three-phase Measuring module with closed Rogowski sensors (Cat.Nos 4 149 20 and 4 149 21), Measuring module, connected via current transformers (Cat.No 4 149 23) and Measuring module with Flexible Open Rogowski sensor (Cat.Nos 4 149 22, 4 149 24, 4 149 25 and 4 149 27) set as 3P

#### Settings:

	Event generator		
Module	Measure (threepha	ise 63A) 🔹 📼	
Criteria	Event	v	
Settings	Measure :	Power P↑ ✓	
	Threshold [kW] :	100,00	
	Hysteresis [%] :	< 5,0 ►	
	Delay [s] :	◀ 1,0 ►	
Alert :	Generate alarm :		

Criteria:

Event (fixed parameter)

Parameters:

• Measure : U12 $\uparrow$ , U12 $\downarrow$ , U23 $\uparrow$ , U23 $\downarrow$  U31 $\uparrow$ , U31 $\downarrow$ , I1 $\uparrow$ , I2 $\uparrow$ , I3 $\uparrow$ , IN $\uparrow$ , P $\uparrow$ , P1 $\uparrow$ , P2 $\uparrow$ , P3 $\uparrow$ , S $\uparrow$ , S1 $\uparrow$ , S2 $\uparrow$ , S3 $\uparrow$ , f $\uparrow$ , f $\downarrow$ , PF $\downarrow$ 

Note:

 $\uparrow$  = Maximum threshold

 $\downarrow$  = Minimum threshold

For the active power (P) and for power factor (PF) it is possible to set also negative values as a threshold value.

• Threshold: value above or below which the "action/alert procedure" is activated.

• Hysteresis : value expressed in % of the threshold under which the alarm is over and the disconnected loads are restored (*default value 5%*).

Alarm delay (s) - (default value 1 s):

during the activation of an alarm is the waiting time between the threshold point and the alarm on the EMS bus

during the de-activation of an alarm is the waiting time between the hysteresis point and the alarm is deactivation on the EMS bus;

• Alert: select whether you want the event also generates an alert. If the field is selected, configuration software gives the possibility to type a message which will be used for the identification of the alert type (see below).



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• Three-phase measuring module with closed Rogowski sensors (Cat.Nos 4 149 20 and 4 149 21), Measuring module, connected via current transformers (Cat.No 4 149 23) and Measuring module with Flexible Open Rogowski sensor (Cat.Nos 4 149 22, 4 149 24, 4 149 25 and 4 149 27) set as 3P+N

#### Settings:

	Event generator			
Module	Measure (threeph	ase 63A) 🔹 📼		
Criteria	Event	v		
Settings	Measure :	Power P↑ •		
	Threshold [kW]	100,00		
	Hysteresis [%] :	<ul><li>5,0</li></ul>		
	Delay [s] :	< 1,0 ▶		
Alert :	Generate alarm :			

Criteria:

Event (fixed parameter)

Parameters:

• Measure: V1 $\uparrow$ , V1 $\downarrow$ , V2 $\uparrow$ , V2 $\downarrow$  V3 $\uparrow$ , V3 $\downarrow$  U12 $\uparrow$ , U12 $\downarrow$ , U23 $\uparrow$ , U23 $\downarrow$  U31 $\uparrow$ , U31 $\downarrow$ , I1 $\uparrow$ , I2 $\uparrow$ , I3 $\uparrow$ , IN $\uparrow$ , P $\uparrow$ , P1 $\uparrow$ , P2 $\uparrow$ , P3 $\uparrow$ , S1 $\uparrow$ , S2 $\uparrow$ , S3 $\uparrow$ , f $\uparrow$ , f $\downarrow$ , PF $\downarrow$ 

### Note:

 $\uparrow$  = Maximum threshold

 $\downarrow$  = Minimum threshold

For the active power (P) and for power factor (PF) it is possible to set also negative values as a threshold value.

• Threshold: value above or below which the "action/alert procedure" is activated.

• Hysteresis : value expressed in % of the threshold under which the alarm is over and the disconnected loads are restored (*default value 5%*).

Alarm delay (s) - (default value 1 s):

during the activation of an alarm is the waiting time between the threshold point and the alarm on the EMS bus

during the de-activation of an alarm is the waiting time between the hysteresis point and the alarm is deactivation on the EMS bus;

• Alert: select whether you want the event also generates an alert. If the field is selected, configuration software gives the possibility to type a message which will be used for the identification of the alert type (see below).



38;	۰Si	gnalling A	uxiliary Contact CA + SD (Cat.No 4 149 29)
			Event generator
		Module	State (modular device)
		Criteria	Open 🗸
		Settings	
		eria :	
	• O	pen, Close,	Tripped
	۰U	niversal sig	nalling module - 3 LEDs (Cat.No 4 149 30)
ίH,		eneric input	
	Dip	-switch con	figurations :
		123	4
			<u> </u>
			▲ X2 ○
		123	4 X3 O
			X1 🔆
		1 2 3	$\begin{array}{ c c c c c c c c c c c c c c c c c c c$
	Catt		4 X3 🔆
	sett	ings:	Event generator
		Module	State (generic)
		Criteria	Input 1
		Settings	Normal state : ON.O. ON.C.
		Alert :	Generate alarm :
	Crite	eria:	
	■ In	put 1. Input	2 or Input 3 (Only 1 input can be used with Lip

ink Functionality) be used with Li input I, inp Parameters:

• Normal state of contact : Normally open (N.O.) or Normally closed (N.C.)

• Alert: select whether you want the event also generates an alert.

If the field is selected, configuration software gives the possibility to set: - a message which will be used for the identification of the alert type.

- Alarm state: "ON" or "OFF"

ON: alert is activated when the contact closes (normally open contact in input) OFF: alert is activated when the contact opens (contact normally closed in input)

- Time for alert activation (s): waiting time between changing state of the input and activating the alarm on the bus. (see below)



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### • Universal signalling module – 3 LEDs (Cat.No 4 149 30) (continued)

- Breaker state (Open, Close, Tripped)

Dip-switch configurations :





### Criteria:

Open, Close or Tripped

### - General tipped

Dip-switch configurations :

			X1	0	1	
			X2	Ŭ-	- <u>\</u> 2	114
	1 2	34	X3	0	I	
Sett	ings:					
		E	vent gene	erator		
			Ŭ			
	Modul	e	State (cabinet f	tripped)		•
	Critori					
	Criteri	a	ripped			ľ,
	Setting	S N	ormal state :		<b>O</b> N.O.	N.C.
Crite	eria:					

- Tripped
- Parameters:
- Normal state of contact : Normally open (N.O.) or Normally closed (N.C.)



• Universal signalling module – 3 LEDs (Cat.No 4 149 30) (continued) - Breaker position (Inserted, Drown-out, Test)

DIP Switches combination:



Settings::

	Event generator
Module	State (break /sw. posit.)
Criteria	Draw-out (Protection out of its support)
Settings	

Criteria:

Inserted, Drown-out or Test

- <u>Spring state</u> (Charged/Discharged, Ready to close) DIP Switches combination:

Sett	1 2 3	4	X1 X2 X3	**	୍ଲ୍ୟୁର READY ୯୦୦	
Jett	ings.	_				
		E	vent gen	erator		
	Module	S	state (spring)		~	
	Criteria		)ischarged			•
	Settings					
Crite	eria					

• Charged/Discharged or Ready to close

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• Universal signalling module – 3 LEDs (Cat.No 4 149 30) (continued)

- Contactor/Latching relay state

DIP Switches combination:



Settings:



Criteria:

Contact 1, Contact 2, Contact 3 or Contact 4

Parameters:

• Normal state of each contact: Normally Open (N.O.) or Normally Closed (N.C.)

**Note:** all these configurations can be realized with universal signalling module (Cat.No 4 149 30) with micro-switches in position 0000 by specializing the module with the configuration software (see § 6.1.3)

• <b>Control and state reporting module</b> (Cat.No 4 149 31) Settings:					
		Event generator			
	Module	Control + State (CT/LR)		• 0	
	Criteria	Contact 1		*	
	Settings	Normal state :	<b>O</b> N.O.	●N.C.	
Crite	eria:				

Contact 1, Contact 2, Contact 3 or Contact 4

Parameters:

• Normal state of each contact: Normally Open (N.O.) or Normally Closed (N.C.)

Once the event generator module has been set (e.g., a signalling module 4 149 30 CA + SD with criteria "Tripped"), the "action module" must be selected

🕒 back 🔺 home	Link Fund	ionality online +4
	Event generator	Action module
Module	State (contact+fault)	
Criteria	Tripped	Control + State (CT/LR)
Settings		Control (motor driven)
		O TEST
		Delete Save

5. Click to select the action module.

### Note:

- the devices list is filtered by "Groups"
- only modules that can generate an action are listed:
  - Control modules (4 149 32), signalling modules (4 149 30) and Control and state reporting modules [see following pages for details]

online •		Link Functional	3 back 🛖 home
	Action module	Event generator	
1) 👻 🦷	Control (motor driver	State (contact+fault)	Module
1	Open	Tripped	Criteria
ONO ONC	Normal state :		Settings
Impulsive	Activation :		
< 1,0 D	Activation time [s] :		
0,0	Delay [s] :		
7			
TEST OF			
· · /	tt De		

6. Click "Save" to confirm

**7.** It is possible to test the action as a result of the event by clicking on the "Test" button.

**Note:** for safety reasons, before testing the automation process, the software asks for confirmation.



Depending on the configuration and model type, possible criteria that can be selected are different:

¥.	Control and state reporting module (Cat.No 4 149 31)
	Control and state reporting module (Cat.No 4 149 31) Settings:



Criteria:

Open, Close, Open/Close or Close/Open

Parameters:

- Activation time (only for configurations for Latching relays)
- Delay: time between sending a command and the output activation



- Universal control module (Cat.No 4 149 32)
- <u>Generic output</u>
- DIP Switches combinations:

1 2 3 4	
1 2 3 4	R1 R2 Ev Ev
1 2 3 4	R1 R2 E E
1 2 3 4	R1  R2  E
1 2 3 4	R1 R2 E7 E7



### Settings:

Action module	
Control (generic)	•
Output 1	×
Normal state :	<b>●</b> N.O. <b>●</b> N.C.
Interlocked outputs :	
Activation :	Impulsive 🗸
Activation time [s] :	< 1,0 
Delay [s] :	< 0,0 ►

### Criteria:

- Output1 or Output 2
- Parameters:
- Normal state : Normally Open (N.O.) or Normally Closed (N.C.)
- A flag to interlock the two outputs: pressing one of the two buttons or sending a command both outputs are activated
- Activation: Impulsive or Maintained command
- Activation time (only if the command is impulsive)
- Delay: time between pressing one of the two buttons or sending a command and the output activation

# La legrand®



• Universal control module (Cat.No 4 149 32) (continued)

- Breaker command

DIP Switches combination:



Settings:

### Action module

Control (motor driven)	•
Open	×
Normal state :	●N.O. ●N.C.
Activation :	Impulsive v
Activation time [s] :	◀ 1,0 ►
Delay [s] :	● 0,0 ▶

Criteria:

Open, Close, Open/Close or Close/Open

Parameters:

- Activation time (only for the configuration for Latching relays)
- Delay: time between pressing one of the two buttons or sending a command and the output activation



• Universal control module (Cat.No 4 149 32) (continued)

- Contactor command

DIP Switches combination:



|--|

## Action module

Control (CT/LR)	•
Open	×
Normal state :	●N.O. ●N.C.
Activation :	Maintained v
Activation time [s] :	◀ 0,5 ►
Delay [s] :	● 0,0 ●

### Criteria:

• Open, Close, Open/Close or Close/Open

Parameters:

- Activation time (only for the configuration for Latching relays)
- Delay: time between pressing one of the two buttons or sending a command and the output activation

**Note:** all these configurations can be realized with universal control module (Cat.No 4 149 32) with micro-switches in position 0000 by specializing the module with the configuration software (see § 6.1.3)

# La legrand®



#### • Universal signalling module - 3 LEDs (Cat.No 4 149 30)

**Note:** this module can be used as "action module" only if the "event generator" module is a measuring module (4 149 19/20/23)

### - Generic input

Dip-switch configurations:

1 2 3 4	
	X1 0
	<b>X2</b> O
1 2 3 4	X3 O
	X1 🔆
	X2 🔆
1 2 3 4	X3 🔆

Settings:

Action module		
State (generic)		•
Input 1		~
Normal state :	<b>O</b> N.O.	●N.C.

Criteria:

• Input 1 (activation of the red LED), Input 2 (activation of the orange LED) or Input 3 (activation of the green LED)

Parameters:

Normal state of contact : Normally open (N.O.) or Normally closed (N.C.)

#### Note :

#### - It is not necessary to wire 4 149 30 module's inputs for use it in this

**configuration.** Selected LED is switched on or off (according to the configured normal state of contact) by the electronic board of the module itself.

- all these configurations can be realized with universal signalling module (Cat.No 4 149 30) with micro-switches in position 0000 by specializing the module with the configuration software (see § 6.1.3)

### **Display of created links**

Once the creation process is completed, all created links are listed in the "Link Function" page:

- on the left, modules that generate events

- on the right, modules that generate actions in response to the events Each module is indicated with its name, function and identification number.

Adules (all modules)	Contraction Contra
Group 12: State (contact+fault)	Group 15: Control + State (CT/LR)
FFFF-FFFF-FD96	0000-0000-0000
Group 11: Measure (singlephase 63A)	Group 14: Control (motor driven)
0000-0000-00E0-06A7	0000-0000-000E-9AEB
	75
	(2)
	~

In this page it is possible to

1. Edit a configuration or 2. Delete a configuration

At the same time, the symbol  $\mathscr{O}$  appears in the device selection button to indicate that there is one or more modules configured with the Link function

**User Manual** 



### 6.4 View pages

In the software's Home page

Software configuration	
System configuration	
O Visualize project	
Alar 1 rors	

**1.** Click "Visualize project" Devices display page appears

G back 🔶 h	ome	Devices Measure
Devices	(all functions) 🗸	Break.Sintle
Group 11	₩80 A	C C + CLOSED # - ON)
Group 12	ã ₿ ₽ , ⊖	Cilick to open (O - OFF) Open
Group 14	ĩi 🖁 🎍 P 🔊	
Group 15	<b>₩ % %</b> >	
Gruppo 16	<b>1</b> >	

The page is divided into three sections:

section (A) shows the Devices (each device is a group of EMS CX<sup>3</sup> modules with different functions) with their characteristics and status icons.

It is possible to filter Device list per function: State, Command, Measure or "all functions"(default)

section **B** is the area where is possible to select several pages (according to the functions present in a Device):

- State: display of devices status, control buttons... for each EMS CX<sup>3</sup> Device/ Group of devices

- Measure: display of the quantities measured by a device:
  - Electricity measuring devices: Energy, Power, Voltages / Currents / Frequency, THD and Harmonics
  - Pulse Collector module: Energy, Water and Gas consumptions

section **C** shows the values measured by the selected device, status and command button(s)

Back to "Contents"

• Description of the device selection button



- 1. Name of the group
- 2. Symbols of the functions associated to the group (depending on the characteristics related to each EMS CX3 module)
  - measure 📅
  - State

Command

- 🔗 Link Function
- 3. Communication status
  - System connected via USB to a PC
  - Communication error
- 4. This symbol appears only if in the group is present the state function related to a protection device and shows the circuit-breaker state:
  - 🚺 Open
  - Closed
  - 이 Tripped



### 6.5 Historical of alarms

In the software's Home page

Software configuration	
System configuration	
Visualize project	
Alarms and pors	
Diegrand	

1. Click "Alarms and errors"

Alarms and errors display page appears

Date and time	Group name	Group address	Description
2/11/2016 17:30:05		253	Wrong configuration (local/remote address conflict)
2/11/2016 17:29:53	Group 12	12	No communication
2/11/2016 17:29:29	Group 13	13	Duplicated function
2/11/2016 17:29:20	Group 12	12	Tripped
2/11/2016 17:29:16	Group 12	12	Tripped
2/11/2016 17:29:01	Group 13	13	Duplicated function
2/11/2016 17:28:38	Group 12	12	Tripped
2/11/2016 17:17:02	Group 12	12	No communication

Page shows the last 20 errors (occurred during the configuration steps or during the operation of the system) with following details:

- Data & Time of the error
- Group name
- Group address
- Description of error cause

### 7. Off-line operation

### 7.1 Import a configuration

In the Software's home page

So so	ftware configuration	
st Sy	stem configuration	
Q Vis	u 1 ect	
Ala	irms and errors	

1. Click "System configuration"

System configuration page appears

3 back	A home	System configuration	
		⊷ Automatic mode via USB	
		• C Read configuration from USB	
		€ Edit configuration online	
		C Link Functionality	
		/ Manual mode	
		Import configuration from XML	
		Edit of ation	
		Export configuration to XML	
		Diegrand	

**2.** Click "Import Configuration from XML" A pop-up window appears

🌘 Apri	• 49	Cerco Nuova cartella (3) P
Organizza 👻 Nuova cartella		III • []] •
🚖 Preferiti	Nome	Ultima modifica 1
E Desktop	Configurion.XML	28/11/2016 10:01 F
Nome file: Configuration	۲ m	X0/L file; ('ami)
		Annulla

**3.** Select the file to import (e.g., Configuration.XML), then **4.** click "Open" Configuration is ready to be edit



### 7.2 Edit a configuration

In the System configuration page



1. Click "Edit configuration"

Edit page of the imported configuration appears

G back 🏫 home	Module groups
Module groups +	
Group 11 🗳 🔊	Name : Croup 11
Group 12 👔 🖁 >	
Group 13 🎢 🔊	
	🔎 Visual pri 💼 Delete 🖌 Sive

In this page it is possible to edit Group's parameters (Names, Address) and modules parameters (according the modules type under a group parameters are different). It is also possible to add new groups or duplicate an existing group using the Add button "

Note: at the end of each modification click "Save" to confirm changes.

**User Manual** 

### 7.3 Export a configuration

In the System configuration page



**1.** Click "Export configuration" A pop-up window appears

Salva con nome	
🕒 💭 🗢 🕌 🕨 Nuova cartella (3)	
Organizza 🔻 Nuova cartella	i • 0
▶ 🖈 Preferiti ▲ Nome	Ultima modifica Tipo
	20/11/2016 10:01 File 3A4.
Nome file: Configuration.XML	·
Salva come: XML files (".xml)	•

**3.** Select the where to save file, then **3.** click "OK" Configuration is saved on your computer

# 

Back to "Contents"

# EMS CX<sup>3</sup> Configuration Software

# 

Back to "Contents"

# EMS CX<sup>3</sup> Configuration Software



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