



OPEN PROTOCOL FOR ELECTRICAL NETWORKS

CEN Frames

Open Web Net frames for Scenario Scheduler

Brand	Item
Legrand	03565
BTicino	MH200, MH200N

Document History

Version	Date	Author
1.0.0	01/10/2010	My Open Staff
Updating description: FIRST VERSION		

Index

DESCRIPTION	3
OPEN WEB NET WHO = 15	5
ACTION CONNECTION	7
1.1. Virtual pressure.....	7
1.2. Virtual release after short pressure.....	7
1.3. Virtual release after an extended pressure	7
1.4. Virtual extended pressure.....	8
EVENT CONNECTION.....	9
2.1. Pressure	9
2.2. Release after short pressure	9
2.3. Release after an extended pressure.....	9
2.4. Extended pressure.....	9
EXAMPLE	10
OPEN WEB NET WHO = 25	13
ACTION CONNECTION	16
3.1. Virtual short pressure (< 0.5 seconds).....	16
3.2. Virtual start of extended pressure (>= 0.5 seconds)	16
3.3. Virtual extended pressure.....	17
3.4. Virtual released after a extended pressure	17
EVENT CONNECTION.....	18
4.1. Short pressure (< 0.5 seconds)	18
4.2. Start of extended pressure (< 0.5 seconds).....	18
4.3. Extended pressure.....	18
4.4. And of extended.....	18
EXAMPLE	19
General Information about devices configured in CEN Mod	22
Devices that allow CEN pressure and CEN PLUS.....	24
How a Touch Screen allows to send CEN messages.....	24
Gateways that allow pressure information and CEN PLUS	24
IMPORTANT NOTE.....	25

DESCRIPTION

The **Scenario Scheduler** is a Home Controller with instructions called scenarios. This scenarios are managed by receiving **CEN Frames** from command modules or from software to activate, deactivate, enable and disable each scenario.

CEN Frames can be send on the SCS BUS using SCS Devices (as a normal SCS Command) or using an Open Web Net / SCS Gateway.

The Scenario Scheduler reads these frames on the bus, analyzes them, manages scenarios.

The Scenario Scheduler works also as an Ethernet Gateway ¹.

It monitors all the SCS Frames traveling in the SCS bus, and all the Open Web Net Frames arriving from IP socket connections. The received SCS Frames are process and routed according to the CEN source address and the key pressure information.

CEN Frames can be used for integration between My Home System and 3rd party Systems.

Installing My Home Commands in the system, configured as CEN, it's possible to forward the information of pressure of a Command to a 3rd part System using a Scenario Scheduler as Ethernet Gateway.

This information can be used to control functions of other System.

¹ *MH200 doesn't manage this function*

A SCS Command configured in modality CEN generates a CEN messages when one of his push button is pressed.

This schema helps to understand the meaning of the new functions available with the evolved CEN and CEN PLUS

BASIC CEN

1. Start pressure

EVOLVED CEN

1. Start pressure
2. Release after an extended pressure
3. Extended pressure
4. Release after short pressure

4. Any Release between 0" And 0,5"



CEN PLUS

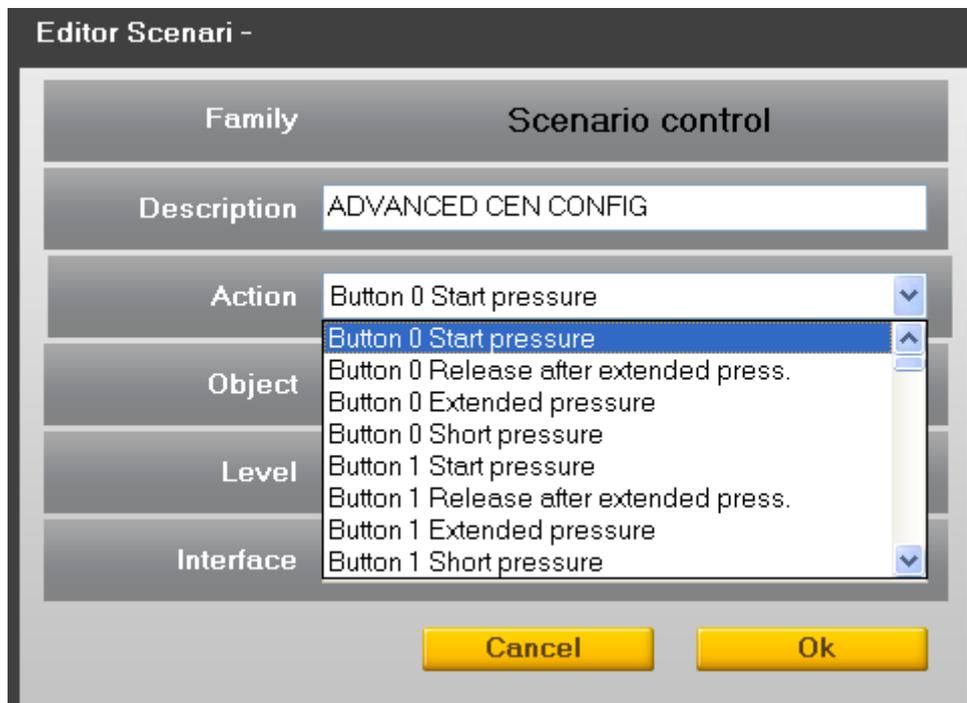
1. Short pressure
2. Start of extended pressure
3. Extended pressure
4. Release after an extended pressure

**OPEN WEB NET WHO = 15
BASIC & EVOLVED CEN**

WHAT TABLE

VALUE	DESCRIPTION	CONNECTION ³	
		ACTION	EVENT
00	Button Number	W	R
...		W	R
31	Button Number	W	R

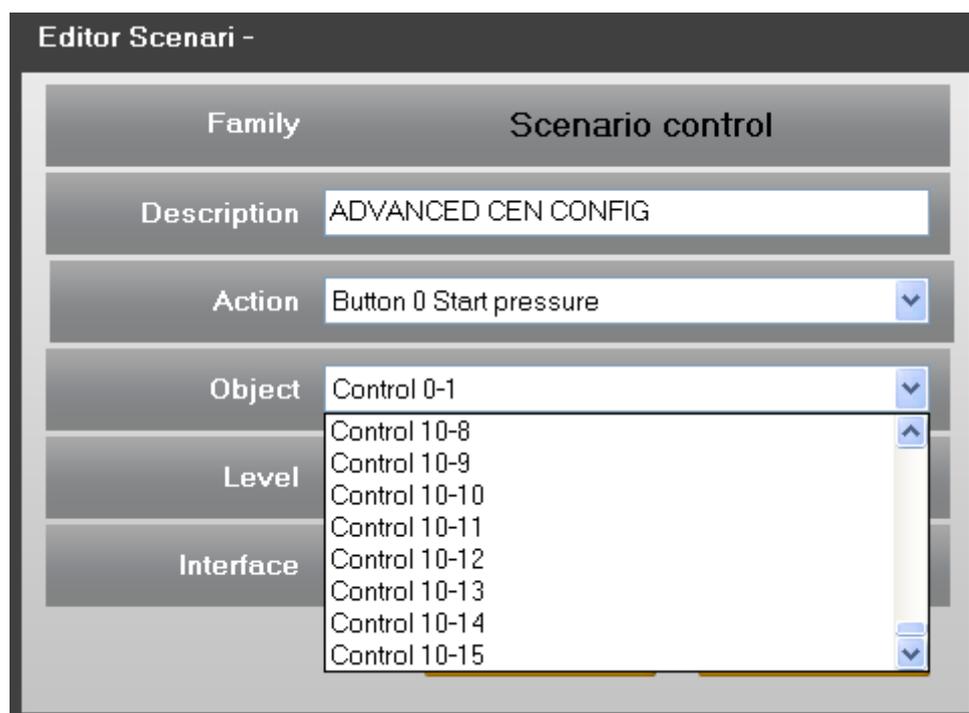
PARAMETER	DESCRIPTION	CONNECTION ³	
		ACTION	EVENT
1	Release after short pressure ¹	W	R
2	Release after an extended pressure ¹	W	R
3	Extended pressure ¹⁻²	W	R



WHERE TABLE

VALUE		DESCRIPTION
A – PL	[1-9][1-9]	Normal Area – Light Point
A – PL	[00][01-15]	Zone 0 : Advanced A-PL ¹
A – PL	[10][01-15]	Zone 10 : Advanced A-PL ¹
A – PL	[01-09][10-15]	Light Point 10-15 : Advanced A-PL ¹

PARAMETER	DESCRIPTION
#3	Private Raiser BUS ¹
#4#[01-15]	Local BUS where SCS/SCS Interface has address I ₄



¹ MH200 doesn't manage this function

² To have an extended pressure of a command, the push button has to be pressed for 0.5s. From the first pressure, to the release, every 0.5s the relative frames is sent on the SCS BUS.

³ W = Write , R = Read

ACTION CONNECTION

1.1. Virtual pressure

Action Connection	Open Frame	Note
Client → Server	*15*WHAT*WHERE##	WHAT = virtual pressure of the push button n N value = [00-31] WHERE = push button virtual address values = all the values in the WHERE Table
Client ← Server	*#*1##	
Event Connection	Open Frame	Note
Client ← Server	*15*WHAT*WHERE##	The OWN/SCS Gateway informs each Client with an opened Event Connection that a CEN Frame is read on the SCS BUS

1.2. Virtual release after short pressure

Action Connection	Open Frame	Note
Client → Server	*15*WHAT#1*WHERE##	WHAT = virtual pressure of the push button n N value = [00-31] WHERE = push button virtual address values = all the values in the WHERE Table
Client ← Server	*#*1##	
Event Connection	Open Frame	Note
Client ← Server	*15*WHAT#1*WHERE##	The OWN/SCS Gateway informs each Client with an opened Event Connection that a CEN Frame is read on the SCS BUS

1.3. Virtual release after an extended pressure

Action Connection	Open Frame	Note
Client → Server	*15*WHAT#2*WHERE##	WHAT = virtual pressure of the push button n N value = [00-31] WHERE = push button virtual address values = all the values in the WHERE Table
Client ← Server	*#*1##	
Event Connection	Open Frame	Note
Client ← Server	*15*WHAT#2*WHERE##	The OWN/SCS Gateway informs each Client with an opened Event Connection that a CEN Frame is read on the SCS BUS

1.4. Virtual extended pressure

Action Connection	Open Frame	Note
Client → Server	*15*WHAT#3*WHERE##	WHAT = virtual pressure of the push button n N value = [00-31] WHERE = push button virtual address values = all the values in the WHERE Table
Client ← Server	*#*1##	
Event Connection	Open Frame	Note
Client ← Server	*15*WHAT#3*WHERE##	The OWN/SCS Gateway informs each Client with an opened Event Connection that a CEN Frame is read on the SCS BUS

EVENT CONNECTION

2.1. Pressure

Event Connection	Open Frame	Note
Client ← Server	*15*WHAT*WHERE##	This frame is sent to a Client if: <ul style="list-style-type: none"> - a physical push button is pressed - a OWN client sends a virtual pressure on the bus

2.2. Release after short pressure

Event Connection	Open Frame	Note
Client ← Server	*15*WHAT#1*WHERE##	This frame is sent to a Client if: <ul style="list-style-type: none"> - a physical push button is released after a short pressure - a OWN client sends a virtual release after a short pressure on the bus

2.3. Release after an extended pressure

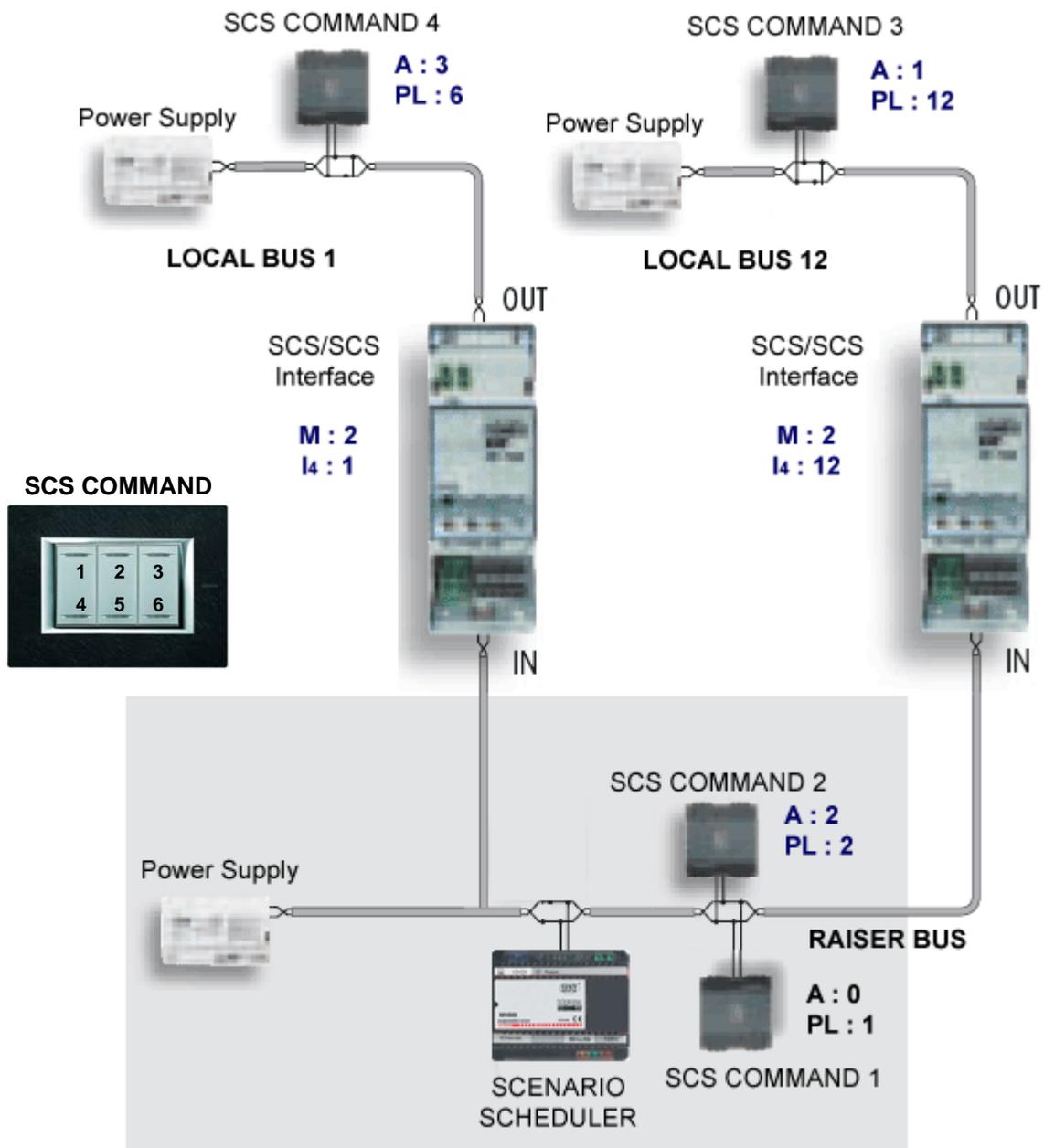
Event Connection	Open Frame	Note
Client ← Server	*15*WHAT#2*WHERE##	This frame is sent to a Client if: <ul style="list-style-type: none"> - a physical push button is released after an extended pressure - a OWN client sends a virtual release after a long pressure on the bus

2.4. Extended pressure

Event Connection	Open Frame	Note
Client ← Server	*15*WHAT#3*WHERE##	This frame is sent to a Client if: <ul style="list-style-type: none"> - a physical push button is keep pressing - a OWN client sends a virtual keep pressing on the bus

EXAMPLE

The following schema helps to understand how the Scenario Scheduled translates in Open Web Net frames the actions done on the systems, when a push button of SCS Command configured with M = CEN is pressed or a Software send CEN Message to the System.



Open Web Net Protocol

When the push button n° 1 of SCS Command 1 is pressed, keep pressed, then released an Open Web Net Client reads the following sequence of OWN Frames:

Event Connection	Time	OWN Frame	Action
Client ← Server	17:07:48:140	*15*01*0001##	Pressure
Client ← Server	17:07:48:687	*15*01#3*0001##	Extended Pressure
Client ← Server	17:07:49:202	*15*01#3*0001##	Extended Pressure
Client ← Server	17:07:49:499	*15*01#2*0001##	Release

When the push button n° 4 of Command SCS 1 is pressed and released an Open Web Net Client reads the following sequence of OWN Frames:

Event Connection	Time	OWN Frame	Action
Client ← Server	17:06:50:733	*15*04*0001##	Pressure
Client ← Server	17:06:51:014	*15*04#1*0001##	Release

When the push button n° 2 of Command SCS 2 is pressed and released an Open Web Net Client reads the following sequence of OWN Frames:

Event Connection	Time	OWN Frame	Action
Client ← Server	17:06:53:013	*15*02*22##	Pressure
Client ← Server	17:06:53:204	*15*02#1*22##	Release

When the push button n° 6 of Command SCS 3 is pressed and released an Open Web Net Client reads the following sequence of OWN Frames:

Event Connection	Time	OWN Frame	Action
Client ← Server	17:06:54:883	*15*06*36#4#01##	Pressure
Client ← Server	17:06:55:125	*15*06#1*36#4#01##	Release

When the push button n° 3 of Command SCS 4 is pressed and released an Open Web Net Client reads the following sequence of OWN Frames:

Event Connection	Time	OWN Frame	Action
Client ← Server	17:06:56:232	*15*03*0112#4#12##	Pressure
Client ← Server	17:06:56:418	*15*03#1*0112#4#12##	Release

Open Web Net Protocol

When an OWN Client sends a Virtual Pressure of Button=31, A=02, PL=15, each Client with an Event Connection opened reads the following OWN Frame:

Action Connection	Time	OWN Frame	Action
Client → Server	17:21:05:528	*15*31*0215##	Virtual Pressure
Event Connection	Time	OWN Frame	Action
Client ← Server	17:21:05:044	*15*31*0215##	Virtual Pressure

When an OWN Client sends a Virtual Short Release of Button=3, A=10, PL=01, each Client with an Event Connection opened reads the following OWN Frame:

Action Connection	Time	OWN Frame	Action
Client → Server	17:21:07:041	*15*03#1*1001##	Virtual Short Release
Event Connection	Time	OWN Frame	Action
Client ← Server	17:21:07:062	*15*03#1*1001##	Virtual Short Release

When an OWN Client sends a Virtual keep pressing of Button=0, A=00, PL=10, each Client with an Event Connection opened reads the following OWN Frame:

Action Connection	Time	OWN Frame	Action
Client → Server	17:21:11:916	*15*00#3*0010##	Virtual Extended Pressure
Event Connection	Time	OWN Frame	Action
Client ← Server	7:21:11:932	*15*00#3*0010##	Virtual Extended Pressure

When an OWN Client sends a Virtual Release after an Extended Pressure of Button=20, A=03, PL=03, I₄ = 02, each Client with an Event Connection opened reads the following OWN Frame:

Action Connection	Time	OWN Frame	Action
Client → Server	17:21:07:041	*15*20#2*33#4#02##	Virtual Release after Extended Pressure
Event Connection	Time	OWN Frame	Action
Client ← Server	17:21:07:062	*15*20#2*33#4#02##	Virtual Release after Extended Pressure

OPEN WEB NET WHO = 25

CEN PLUS

WHAT TABLE

VALUE	DESCRIPTION	CONNECTION	
		ACTION	EVENT
21	Short pressure (< 0.5 seconds)	W	R
22	Start of extended pressure (>= 0.5 seconds)	W	R
23	Extended pressure	W	R
24	Released after an extended pressure	W	R
25	Rotary selector in slow clockwise rotation	W	R
26	Rotary selector in fast clockwise rotation	W	R
27	Rotary selector in slow counter-clockwise rotation	W	R
28	Rotary selector in fast counter-clockwise rotation	W	R

Editor Scenari -

Family	Scenario control
Description	CEN PLUS
Action	Short pressure
Object	Short pressure Start of extended pressure Extended pressure Release after extended pressure
Pushbutton	Pushbutton 0

Cancel Ok

PARAMETER	DESCRIPTION	CONNECTION	
		ACTION	EVENT
0-31	Virtual Pushbutton	W	R

Editor Scenari -

Family	Scenario control
Description	CEN PLUS
Action	Short pressure
Object	Control 2
Pushbutton	Pushbutton 0 Pushbutton 24 Pushbutton 25 Pushbutton 26 Pushbutton 27 Pushbutton 28 Pushbutton 29 Pushbutton 30 Pushbutton 31

WHERE TABLE

VALUE		DESCRIPTION
2	[0-2047]	Virtual Address has a value done with the union of: [2] [Object]

Editor Scenari -

Family	Scenario control
Description	CEN PLUS
Action	Short pressure
Object	Control 0
Pushbutton	<ul style="list-style-type: none"> Control 2040 Control 2041 Control 2042 Control 2043 Control 2044 Control 2045 Control 2046 Control 2047

ACTION CONNECTION

3.1. Virtual short pressure (< 0.5 seconds)

Action Connection	Open Frame	Note
Client → Server	*25*21#pushbutton*WHERE##	WHAT = action # object pushbutton = virtual pressure of the push button n N value = [0-31] WHERE = [2] [object] object = push button virtual address = [0-2047]
Client ← Server	*#*1##	
Event Connection	Open Frame	Note
Client ← Server	*25*21#pushbutton *WHERE##	The OWN/SCS Gateway informs each Client with an opened Event Connection that a CEN PLUS Frame is read on the SCS BUS

3.2. Virtual start of extended pressure (>= 0.5 seconds)

Action Connection	Open Frame	Note
Client → Server	*25*22#pushbutton*WHERE##	WHAT = action # object pushbutton = virtual pressure of the push button n N value = [0-31] WHERE = [2] [object] object = push button virtual address = [0-2047]
Client ← Server	*#*1##	
Event Connection	Open Frame	Note
Client ← Server	*25*22#pushbutton *WHERE##	The OWN/SCS Gateway informs each Client with an opened Event Connection that a CEN PLUS Frame is read on the SCS BUS

3.3. Virtual extended pressure

Action Connection	Open Frame	Note
Client → Server	*25*23#pushbutton*WHERE##	WHAT = action # object pushbutton = virtual pressure of the push button n N value = [0-31] WHERE = [2] [object] object = push button virtual address = [0-2047]
Client ← Server	*#*1##	
Event Connection	Open Frame	Note
Client ← Server	*25*23#pushbutton *WHERE##	The OWN/SCS Gateway informs each Client with an opened Event Connection that a CEN PLUS Frame is read on the SCS BUS

3.4. Virtual released after a extended pressure

Action Connection	Open Frame	Note
Client → Server	*25*24#pushbutton*WHERE##	WHAT = action # object pushbutton = virtual pressure of the push button n N value = [0-31] WHERE = [2] [object] object = push button virtual address = [0-2047]
Client ← Server	*#*1##	
Event Connection	Open Frame	Note
Client ← Server	*25*24#pushbutton *WHERE##	The OWN/SCS Gateway informs each Client with an opened Event Connection that a CEN PLUS Frame is read on the SCS BUS

EVENT CONNECTION

4.1. Short pressure (< 0.5 seconds)

Event Connection	Open Frame	Note
Client ← Server	*25*21#object*WHERE##	This frame is sent to a Client if: <ul style="list-style-type: none"> - a physical push button configured as CEN PLUS is short pressed - a OWN client sends a virtual short pressure on the bus

4.2. Start of extended pressure (< 0.5 seconds)

Event Connection	Open Frame	Note
Client ← Server	*25*22#object*WHERE##	This frame is sent to a Client if: <ul style="list-style-type: none"> - a physical push button configured as CEN PLUS is pressed (≥ 0.5 seconds) - a OWN client sends a virtual start of extended pressure on the bus

4.3. Extended pressure

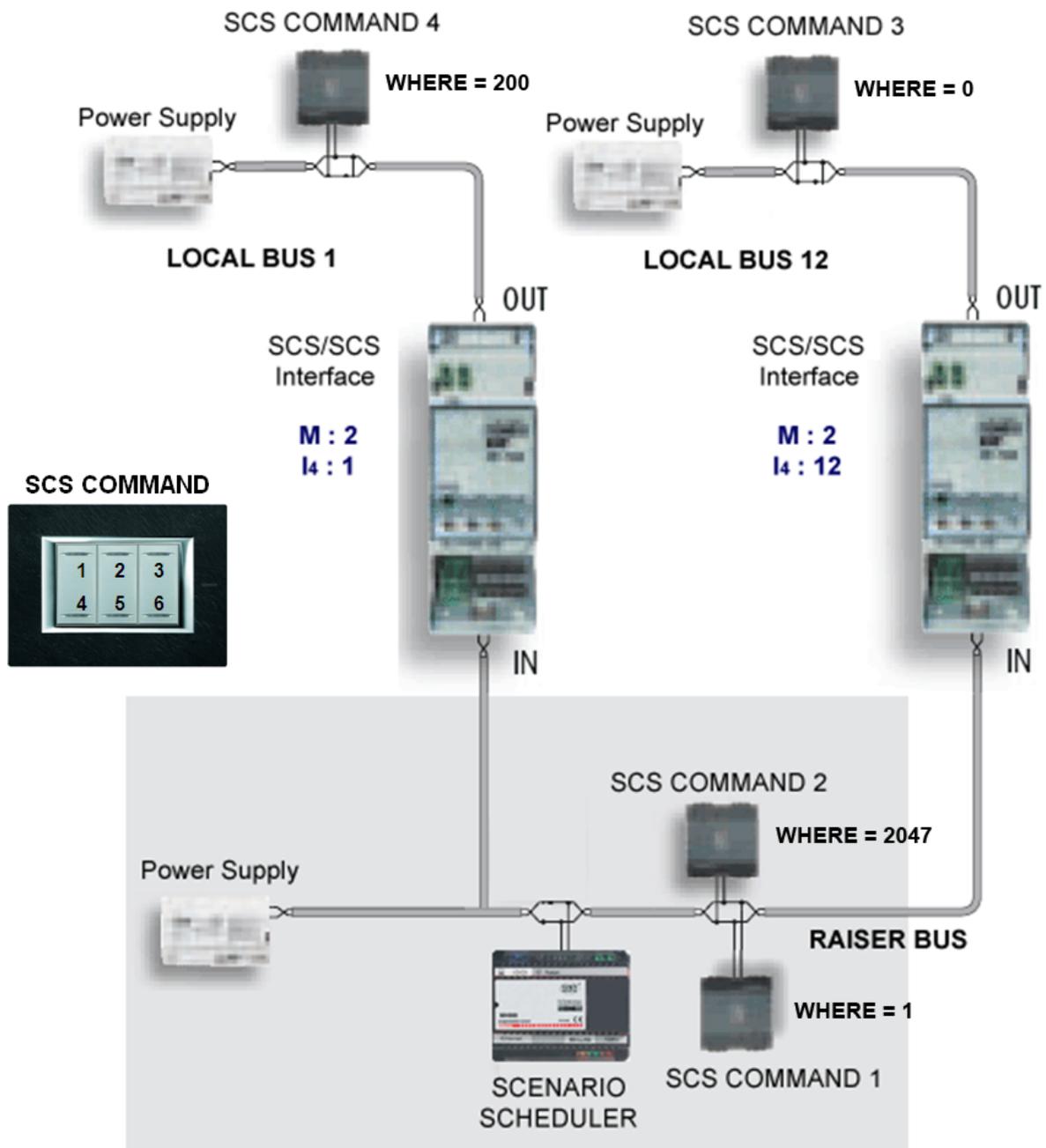
Event Connection	Open Frame	Note
Client ← Server	*25*23#object*WHERE##	This frame is sent to a Client if: <ul style="list-style-type: none"> - a physical push button configured as CEN PLUS is keep pressed - a OWN client sends a virtual extended pressure on the bus

4.4. And of extended

Event Connection	Open Frame	Note
Client ← Server	*25*24#object*WHERE##	This frame is sent to a Client if: <ul style="list-style-type: none"> - a physical push button configured as CEN PLUS is released after an extended pressure - a OWN client sends a virtual end of extended pressure on the bus

EXAMPLE

The following schema helps to understand how the Scenario Scheduled translates in Open Web Net frames the actions done on the systems, when a push button of SCS Command configured with M = CEN PLUS is pressed or a Software send CEN Message to the System.



Open Web Net Protocol

When the push button n° 1 of SCS Command 1 is pressed, keep pressed, then released an Open Web Net Client reads the following sequence of OWN Frames:

Event Connection	Time	OWN Frame	Action
Client ← Server	14:44:00:051	*25*22#1*21##	Pressure
Client ← Server	14:44:00:551	*25*23#1*21##	Extended Pressure
Client ← Server	14:44:01:082	*25*23#1*21##	Extended Pressure
Client ← Server	14:44:01:238	*25*24#1*21##	Release

When the push button n° 2 of SCS Command 2 is pressed and released after 0.5 seconds an Open Web Net Client reads the following sequence of OWN Frames:

Event Connection	Time	OWN Frame	Action
Client ← Server	14:42:29:354	*25*22#2*22047##	Pressure
Client ← Server	14:42:29:557	*25*24#2*22047##	Release

When the push button n° 3, address 3, of SCS Command is pressed and released in less than 0.5 seconds an Open Web Net Client reads the following sequence of OWN Frames:

Event Connection	Time	OWN Frame	Action
Client ← Server	14:43:22:604	*25*21#3*20##	Pressure

Open Web Net Protocol

When an OWN Client sends a Virtual Short Pressure of Button=31, WHERE = 1, each Client with an Event Connection opened reads the following OWN Frame:

Action Connection	Time	OWN Frame	Action
Client → Server	16:11:07:528	*25* 21#31 *21##	Virtual short pressure
Event Connection	Time	OWN Frame	Action
Client ← Server	16:11:07:044	*25* 21#31 *21##	Virtual Short Pressure

When an OWN Client sends a Virtual Start of extended pressure of Button=3, WHERE = 2010, each Client with an Event Connection opened reads the following OWN Frame:

Action Connection	Time	OWN Frame	Action
Client → Server	16:11:09:041	*25* 22#3 *22010##	Start of a virtual extended pressure
Event Connection	Time	OWN Frame	Action
Client ← Server	16:11:09:062	*25* 22#3 *22010##	Start of a virtual extended pressure

When an OWN Client sends a Virtual extended pressure of Button=0, WHERE = 0, each Client with an Event Connection opened reads the following OWN Frame:

Action Connection	Time	OWN Frame	Action
Client → Server	16:11:21:926	*15* 23#0 *20##	Virtual extended pressure
Event Connection	Time	OWN Frame	Action
Client ← Server	16:11:21:942	*15* 23#0 *20##	Virtual extended pressure

When an OWN Client sends a Virtual Release after extended pressure of Button=10, WHERE = 101, each Client with an Event Connection opened reads the following OWN Frame:

Action Connection	Time	OWN Frame	Action
Client → Server	16:15:57:142	*15* 24#10 *2101##	End of a virtual extended pressure
Event Connection	Time	OWN Frame	Action
Client ← Server	16:15:57:163	*15* 24#10 *2101##	End of a virtual extended pressure

General Information about devices configured in CEN Mod

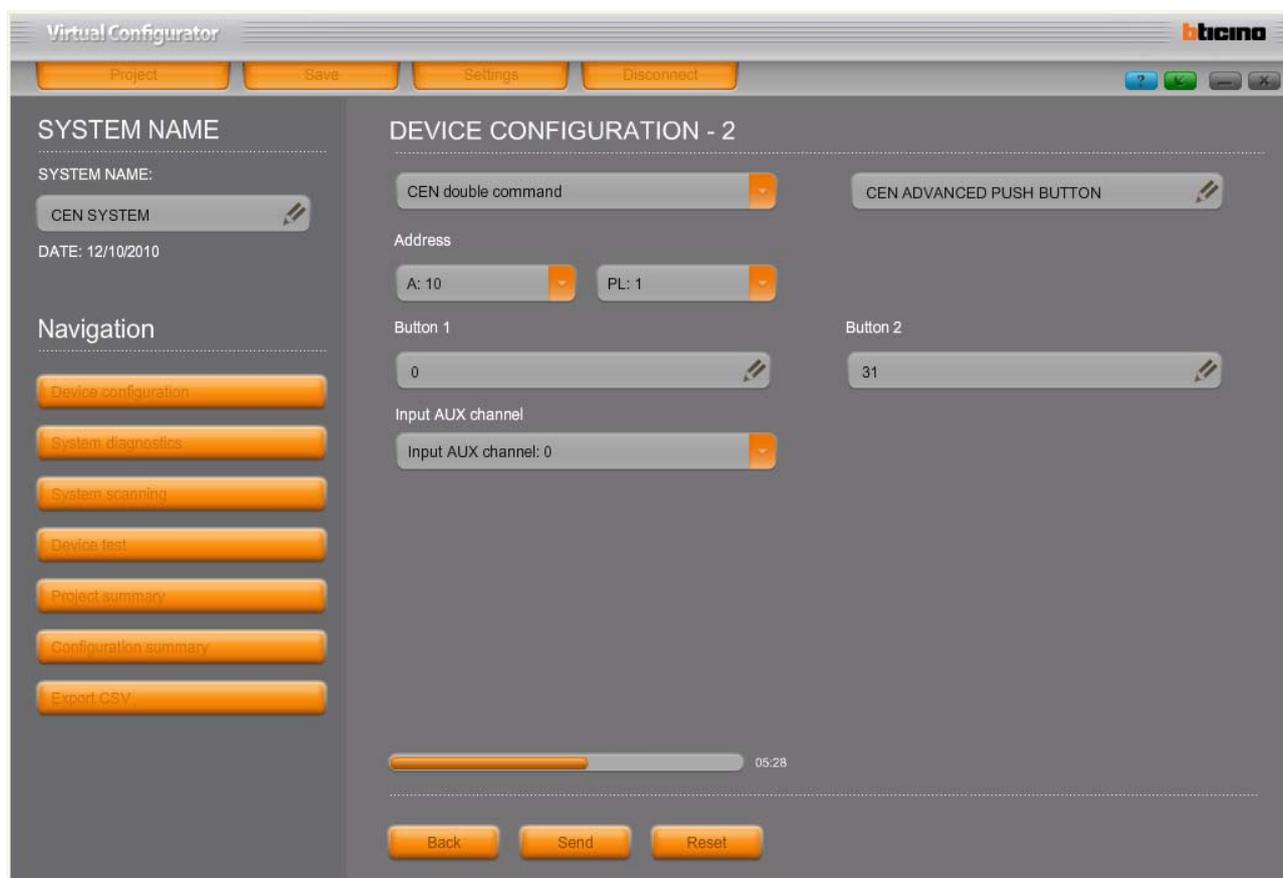
ADVANCED CEN CONFIGURATION

- CEN devices configured with Advanced Virtual Configuration don't use an address on the SCS BUS
- CEN devices configured with Basic Virtual Configuration use an address on the SCS BUS
- CEN devices configured with Physical Jumper use an address on the SCS BUS

Advanced Virtual Configuration

Address → WHERE → Object (TiMH200N)

Button n → WHAT → Action (**Button**) (TiMH200N)



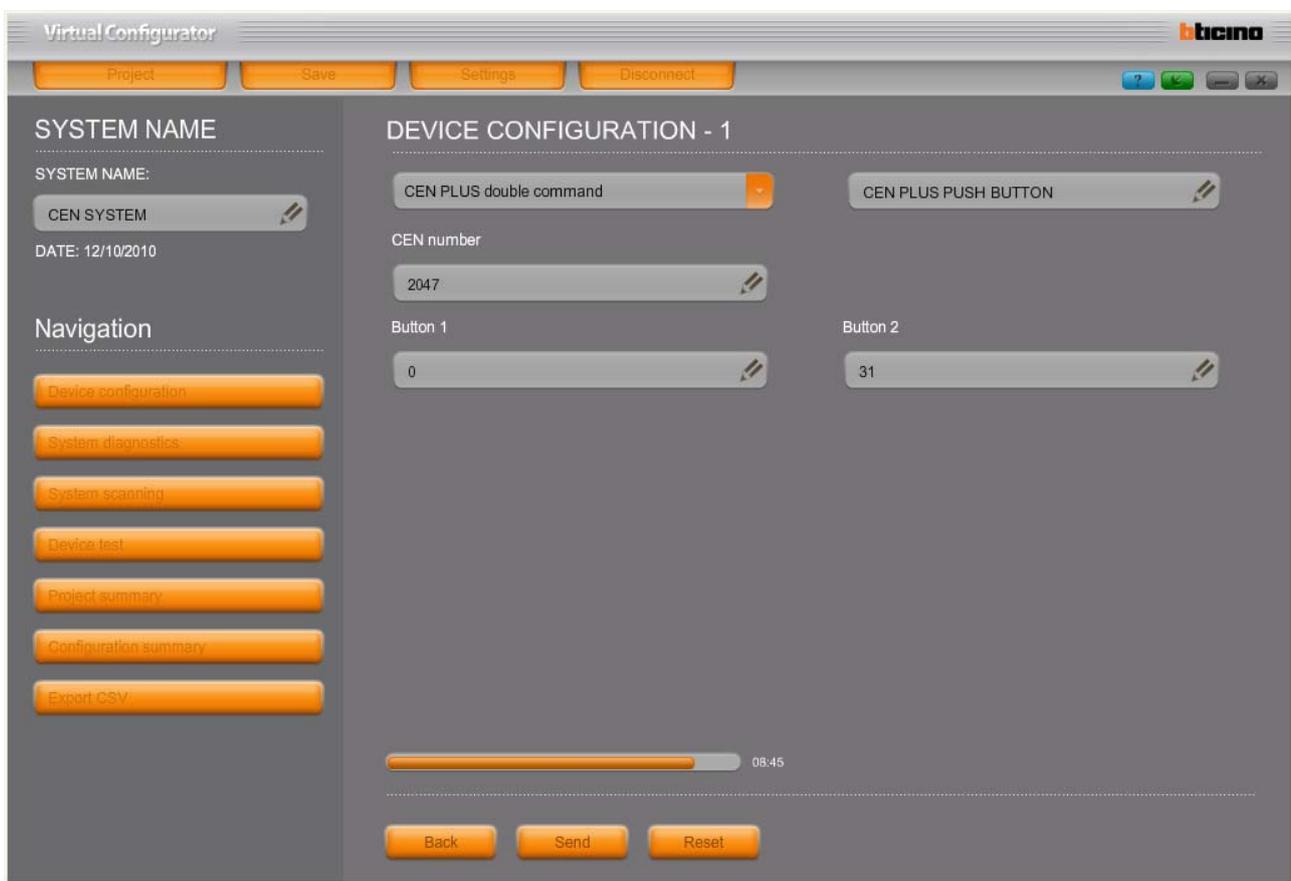
CEN PLUS CONFIGURATION

- CEN Plus device can be configured only with Advanced Virtual Configuration and don't use and address on the BUS

Advanced Virtual Configuration

CEN Number → WHERE → Pushbutton (TiMH200N)

Button n → WHAT parameter → Object (TiMH200N)



Devices that allow CEN pressure and CEN PLUS

BTicino	Legrand	Data
H / L / N / NT 4652/2	573974 – 67241	09W46
H / L / N / NT 4652/3	573975	09W37
H / L / N / NT 4651M2	573976 – 67242	All
H / L / N / NT 4680	573902/3 – 67217/8	09W08
3477	573996	10W04
F428	03553	09W50

How a Touch Screen allows to send CEN messages

BTicino	Legrand	FW	CEN	CEN PRESSURE	CEN PLUS
TS 3.5"	TS 3.5"	5.0.33	YES	NO	NO
TS 3.5"	TS 3.5"	6.0.7	YES	NO	Only Short Pressure
TS 10"	TS 10"	1.0.36	NO	NO	NO
TS 10"	TS 10"	2.0.x	YES	NO	Only Short Pressure

Gateways that allow pressure information and CEN PLUS

BTicino	Legrand	CEN	CEN PRESSURE	CEN PLUS
MH200		YES	NO	NO
MH200N	03565	YES	YES	YES
F453AV (v1.0.19)		YES	NO	NO
F453AV (v2.1.7)	573992 (v2.1.7)	YES	YES	YES
F453		YES	YES	YES
F452V		YES	NO	NO
F452		YES	NO	NO

IMPORTANT NOTE

CEN frames are always delivered via SCS to a Scenario Scheduler. Without a Scenario Scheduler connected on the SCS BUS, the other gateways are not able to read from the SCS System the CEN frames.

For example, if a command is configured as CEN a F453 can forward OWN CEN Frames to a Client only if an MH200N is on the BUS. Else when the pushbutton of a command is pressed, the F453 doesn't translate this information.