





Compatibility mode

rev. 0.1, 10/09/2015

Compatibility mode - Sx tool manual





Index

1 COMPATIBILITY MODE FOR DUPLINE®	4
1.1 How to enable the Dupline compatibility in the Sx tool	5
1.2 How to manage the Dupline network in a Sx2WEB24 system	6
1.2.1 How to import a .scc file generated by the BH8-CTRLX-230 configuration tool	
1.2.2 How to import Locations and Dupline modules	7
1.2.3 How to manually add the modules	. 11
1.2.4 Dupline module addressing	. 13
1.2.5 How to change the proposed addresses	. 13
1.2.6 How to check the Dupline address listing	. 14
2 FUNCTIONS AND SIGNALS	. 16
2.1 How to set a Dupline: dimmable light function	18
2.1.1 How to dim a light with input commands	
2.1.2 How to set the signal properties	
2.1.3 How to select a dimmable output	. 21
2.1.4 How to set a signal as feedback of the status of the dimmer function	. 22
2.1.5 How to force the output OFF	
2.1.6 How to set predefined scenarios with input signals	
2.1.7 How to manage lights automatically	
2.1.8 How to select a PIR sensor to control Scenarios	26
2.1.9 How to turn a light ON with PIR sensors, and turn it OFF manually	
2.1.10 How to change scenario with a PIR	
2.1.11 How to turn a light ON with PIR sensors, and turn it OFF automatically	20
2.1.12 How to switch the light ON manually and OFF with the PIR sensor	20
2.1.13 How to switch the light on and off according to the lux sensor	
2.1.14 How to switch the light on/off using the Real time signals (Calendar)	
2.1.15 How to dim the light with a Function status	
2.1.16 Definitions table	
2.2 How to set a <i>Dupline: Rollerblinds</i> function	
2.2.1 How to move blinds Up/Down using a manual input	
2.2.1 How to select and configure the output for motor up	
2.2.2 How to select and configure the output for motor down	
2.2.3 How to set the running time for Motor output	
2.2.4 How to manage rollerblinds with automations	
2.2.5 How to use the wind sensor to control blinds	
2.2.6 How to control the blind according to the lux meter	
2.2.7 How to move the blinds Up/Down with Real time signals (Calendar)	
2.3 How to set a Dupline: Window control function	
2.4 How to set a <i>Dupline: Digital thermostat</i> function	
2.4.1 How to add a Thermostat signal	
2.4.2 How to enable the Night setback mode	
2.4.3 How to force heating OFF	
2.4.4 How to add the Output signals	
2.4.5 How to set the Heat ON LED as a feedback signal	
2.4.6 How to use the calendar for night setback	
2.5 How to set a Dupline: Temperature regulation function	
2.5.1 How to add a temperature signal	. 57
2.5.2 How to use the Temperature function with a temperature display	. 58
2.5.3 How to set the working mode	. 58
2.5.4 How to enable the visualization of the external temperature in the Bxx-TEMDIS display	. 61





2.5.5 How to add the Heating/Cooling control	62
2.5.6 How to add the Heating output	62
2.5.7 How to force Heating/Cooling OFF	
2.5.8 How to enable the night mode	
2.5.9 How to configure the setpoint for comfort mode	
2.5.10 How to configure the setpoint for Night setback / economy mode	65
2.5.11 How to set the antifreeze temperature	66
2.5.12 How to set the Heat safety	





1 Compatibility mode for Dupline®

The master channel generator SH2DUG24 provides the channel generator output drive for a Dupline® network in a smart-Dupline® system, which is controlled by the Sx2WEB24. Together with an Sx2WEB24, it substitutes a BH8-CTRLX-230, a BH8-CTRLZ-230, a G3800xxxx, G3890xxxx master generator or a G3490xxx channel generator.

Each Sx2WEB24 can be connected up to 7 master channel generators (the sum of SH2MCG24, SH2DUG24 and SH2WBU230 is 7) in order to have 7 Dupline® and smart Dupline® networks. All the devices are connected via an internal bus if they are in the same cabinet, or via terminals if they are mounted in different cabinets. Each SH2DUG24 must have an address that is programmed by using the Sx tool.

The Sx tool is able to read the .scc file created by means of the BH8-CTRLX-230 configuration software and import the modules list with the relevant channel addressing and locations tree. Functions have to be created from scratch.

What cannot be imported from a BH8-CTRLX-230 configuration to a Sx2WEB24 one:

- Constant light: should this be present in a BH8-CTRLX-230 system, it has to be substituted with a smart-dupline one
- Tilting feature in the rollerblind function: should this be present in a BH8-CTRLX-230 system, it has to be substituted with a smart-dupline one
- Touch screen software: should this be present in a BH8-CTRLX-230 system, it has to be substituted with a BTM-Tx-24 one





1.1 How to enable the Dupline compatibility in the Sx tool

The user has to enable the Dupline compatibility in the Sx tool in order to fully manage a Dupline® network in a smart-Dupline® system.

In the Program setup menu, the user has to click on the System setup icon (see picture below).

	s 🗨 🗋 🖬 📓 🖦 👘 🕸 👘 👘 👘 🔹							
		/iews Rep	orts Add	Program setup	p Database	Help		
\$		ß						
Project setup	System setup	Webserver accounts		Save modbus map as .csv	Modbus management	Modbus frame editor	Modbus TCP connections editor	
	Gene	ral settings				Create		
Location	Locations							

The Setup system properties window will appear as shown in the picture below: all the settings configured here will be available in all the new projects, without the need to repeat this operation every time.

Wizard					
🚳 👞 🛛 Setup sys	tem properties	Edit system pro	perties		
			Adv	anced settings	
Wizard Steps	Data logging time inter far (inity	ر -			
Properties	Shutdown restore interval (min)				240
System information Communication settings	Unit of measure for temperature	°C	°F		
Advanced settings	Language	English			
Module tags Customised locations	Analog output update (min)	Off			_
FTP push/pull	Update date and time over internet at tool start-up		×		
	Disable live signals		×		
	Enable Dupline compatibility	\checkmark			Ţ
	<			Cancel	Confirm

In the bottom of the *Advanced settings* field, the user has to enable the *Dupline compatibility* by selecting the green V icon. Once selected, the software has to be closed and then opened again to enable it.

The Sx tool starts running with the standard Dupline support: new functions will be available that can manage those modules not powered by smart-Dupline.





1.2 How to manage the Dupline network in a Sx2WEB24 system

The user has to disconnect and replace a BH8-CTRLX-230, a BH8-CTRLZ-230, or a G3800xxxx, G3890xxxx master generator with a Sx2WEB24 controller together with a SH2DUG24 Dupline generator. The BH8-CTRLX-230 controller can be connected to up to 3 bus extension modules: for each bus extension module, a SH2DUG24 Dupline generator must be used to replace it. Then, the user has to import the .scc file generated by the BH8-CTRLX-230 configuration tool: the Dupline modules, channels and locations are imported automatically and the user has to add manually only the functions.

The modules can also be added manually without importing them and the Sx tool will suggest a channel assignment that can be changed by the user at any time.

Since standard Dupline needs channels to be programmed, each module has to be programmed by means of the BGP-COD-BAT.

1.2.1 How to import a .scc file generated by the BH8-CTRLX-230 configuration tool

One of the main points of the *Dupline compatibility* feature is the possibility of importing a project from an existing installation powered by a BH8-CTRLX-230, a BH8-CTRLZ-230 or a G3800xxxx, G3890xxxx Dupline controller.

Please refer to the Dupline Hardware manual for the wiring diagram and technical instructions.

The user then has to import the .scc file generated by the BH8-CTRLX-230 configuration tool.

In the File menu of the Sx tool by clicking on the *Import .scc file* button, the user opens a 'Find' dialogue window that allows him to choose the required project file.

/			ы		Fast wired download 🗸 Wireless download			- 1 -	P	.	4	
New	Open	Import .scc file	Save	Save as new configuration	Wileless download					Master unit		
		Project			Configuration Discovery				Live signals			

X 🔻 Apri 😋 🕞 🗢 📙 « Smart-House Configurator 3.03 Build 02 🕨 ConfigTool 🕨 ProjectFolder 👻 🍫 🛛 Cerca ProjectFolder Q Organizza 🔻 Nuova cartella • 0 Ultima modifica Dimensione Nome Tipo 쑦 Preferiti 09/02/2012 11:09 🐣 Example Simple Light.scc Smart-House Configuration 7 KB 🥽 Raccolte - House.scc 12/03/2015 16:33 Smart-House Configuration 14 KB 💻 Computer 🌉 Win 7 (C:) 👝 DATA (D:) 📬 Rete Nome file: House.scc Smart-House config (*.scc) -<u>A</u>pri Annulla

The user can browse the directory and select the project to import.

After having selected the correct file, the Sx tool automatically starts the conversion into the new file extension.





1.2.2 How to import Locations and Dupline modules

In the *Location selection* window, the user has to select which locations he wants to import into the project. The Locations are organized in a tree structure: it is possible to select one or more floors and the rooms required.

See the example shown in the picture below.

Wizard		Wizard	
SCC import	SCC Import modules and loca	SCC import	SCC Import modules and lo
Wizard Steps	🗉 🔲 🐺 SccRoot	Wizard Steps	🗉 🗸 🐺 SccRoot
Location selection Module selection	Area New house	Location selection Module selection	🛛 🖉 🚖 New house
	🗏 🔲 🔛 Kitchen		💷 🗹 🔛 Kitchen
	wall		🔽 💽 wall
	🗏 🗌 📄 Bedroom 🗕		💷 🗹 🔛 Bedroom
	🔄 🔤 wall		🔽 🛃 wall
	🖻 🔲 🔛 Bathroom		🗏 🗹 📄 Bathroom
	🗖 🛃 wall		🔽 🛃 wall
	Cabinet		Cabinet
	~~~		~~~~ <b>&gt;&gt;&gt;</b>





In the *Module selection* window the user has to select which modules he wants to import into the project. After having selected them, press *Confirm*:

Wizard File .scc in	nport .scc import module.	Wizard File .scc in	nport .scc import modules
Wizard Steps	Select all Unselect all	Wizard Steps	Select all Unselect all
Location selection Module selection	🔲 🔄 K3 BFW-TEMANA	Location selection Module selection	🗹 🔳 K3 BFW-TEMANA
	🗆 🕕 K4 BSH-LUX-A - wall		🗹 📋 K4 BSH-LUX-A - wall
	🗆 🚺 K5 B4X-LS4 - wall		🗹 🚺 K5 B4X-LS4 - wall
	🗆 🌹 K6 BSN-ANE - wall		🗹 🀧 K6 BSN-ANE - wall
	🗆 💽 K8 B5X-TEMDIS - wall		☑ 🧿 K8 B5X-TEMDIS - wall
	🗖 🍓 К9 ВН4-RO5A2-230		☑ 🕡 K9 BH4-RO5A2-230
	🔲 🚋 K10 BH8-RE20A4-2		🗹 🚋 K10 BH8-RE20A4-2
	🗆 🌄 K11 B5X-LS4 - cabin		🗹 🏹 K11 B5X-LS4 - cabin
	~~~ >>>		<<< >>>>

In the *Module selection* window, there are only the Dupline modules that are present in the location selected in the *Location selection* window.

Example

The picture below shows the import of an *.scc file* with three Dupline buses. The Dupline *Bus 0* is shown in the red rectangle, the Dupline *Bus 1* is shown in the green rectangle and the Dupline *Bus 2* is shown in the blue rectangle. Each Dupline module is shown with its Dupline bus association.

Wizard File .scc in	nport .scc import module	s and locations	0
		Мо	dule selection
Wizard Steps	Select all Unselect all		Grouping by Subnet
Location selection Module selection	🗹 🔄 K3 BFW-TEMANA	BFW-TEMANA wall	Bus 0
	🔽 📋 K4 BSH-LUX-A - wall	BSH-LUX-A wall	Bus 0
	🗹 🚺 K5 B4X-LS4 - wall	B4X-LS4 wall	Bus 1
	🗹 🌹 K6 BSN-ANE - wall	BSN-ANE wall	Bus 1
	K8 B5X-TEMDIS - wall	B5X-TEMDIS wall	Bus 1
	☑	BH4-RO5A2-230 Cabine	t Bus 1
	🗹 🚋 K10 BH8-RE20A4-2	BH8-RE20A4-230 cabinet	Bus 2
	🗹 🏹 K11 B5X-LS4 - cabin	B5X-LS4 cabinet	Bus 2
	<<< >>>>		Cancel Confirm





Click on the *Close* button to close the *Configuration Download* dialog box once the importing process is finished.

Configuration Download					
100 %					
Activities Logs					
Scc file selection					
✓ Scc file parsing					
 Creating buffer structures 					
 Matching previously imported items 					
 Waiting for user selection 					
 Importing selected items 					
Close					

The imported project is now available in the Sx tool: the tree of the locations has been imported and it is shown in the *Locations* view of the Sx tool (see the red rectangle below) together with the relevant links.

		🖌 🕂 🗰	sr Sr	nart House Configu	irator		_ B >
File	Views Report	s Add Program se	tup Database Help				2
New Open	n Import.scc Sa file Project		reless download Send to Read from Modules Orp	dules unit	Enable live signals Live signals		
ocations						÷ ×	unctions # ×
∎ 🗸 🐺	Root					Â	Filter options 👻
	Mew house						
0	Kitchen					0	
8	Bedroom						
odules						▼ * ×	
odules					F	Iter options 👻	
Part	t number	Subnet	Name	SIN	Location	Find	
SH2	2DUG24	Dup 1	Ex Bus 0 House_extended	000.000.000	Root	ft î	
BH4	4-RE16A8-230	Dup 1	K0 BH4-RE16A8-230		Cabinet		
BH4	4-D230W2-230	Dup 1	K1 BH4-D230W2-230		Cabinet		
B4X	X-LS4	Dup 1	K2 B4X-LS4		wall		
BFV	W-TEMANA	Dup 1	K3 BFW-TEMANA		wall		
BSH	H-LUX-A	Dup 1	K4 BSH-LUX-A		wall		
SH2	2DUG24	Dup 2	Ex Bus 1 House_extended	000.000.000	Root	Ŧ	
B4X	X-LS4	Dup 2	K5 B4X-LS4		wall		
BSN	N-ANE	Dup 2	K6 BSN-ANE		wall		
						T	

All the Dupline modules imported from the .scc project file are shown in the *Modules* view of the Sx tool (see the green rectangle in the picture above) with the same channel coding as in the original project.





If the installation has more than one Dupline bus, the user must be sure to assign the correct subnetwork to each SH2DUG24 module according to the network it is connected to: to do this, from the *Modules* window, click on the icons marked in red, as shown in the picture below:

	Part number	Subnet	Name	SIN	Location	Find
	SH2DUG24	Dup 1	Ex Bus 0 House_extended	000.000.000	Root	Ŧ
	BH4-RE16A8-230	Dup 1	K0 BH4-RE16A8-230		Cabinet	
	BH4-D230W2-230	Dup 1	K1 BH4-D230W2-230		Cabinet	
	B4X-LS4	Dup 1	K2 B4X-LS4		wall	
	BFW-TEMANA	Dup 1	K3 BFW-TEMANA		wall	
	BSH-LUX-A	Dup 1	K4 BSH-LUX-A		wall	
	SH2DUG24	Dup 2	Ex Bus 1 House_extended	000.000.000	Root	ŦŦ
	B4X-LS4	Dup 2	K5 B4X-LS4		wall	
Ţ	BSN-ANE	Dup 2	K6 BSN-ANE		wall	

The following window will appear where only the SH2DUG24 Dupline generator is shown in order to simplify the association.

Match	ning Discoverd		
	SH2DUG24 [0]	Network unkno	001.194.229
	SH2DUG24 [0]	Network unkno	001.047.203
			Cancel Confirm

By clicking on the required module, the association is carried out.

N.B. All the other Dupline modules will not be found by the *Modules discovery*, since they are not powered by smart-Dupline capabilities.

N.B. The discovery is available if an Sx2WEB24 system is connected to the Sx tool, otherwise the SIN number of the SH2DUG24 has to be added manually.

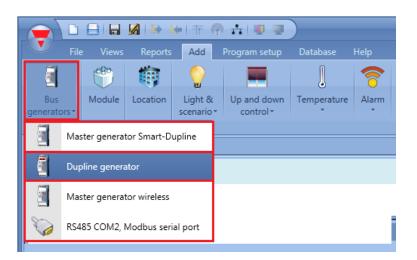




1.2.3 How to manually add the modules

When the user creates the project without using the *Import .scc file* procedure, the first thing to do is to add and configure the SH2DUG24 Dupline master generator and then add all the Dupline modules, selecting the subnetwork they belong to.

To add a Dupline generator the user should select *Bus generators* from the Add menu, then select *Dupline generator* (see picture below). The new module will be added into the selected location.



The wizard relevant to a Dupline generator can also be opened by typing Alt+F7. (See table of short cuts).

Wizard				□ ×
Add mod	ule	Bus generator		
	_		Р	roperties
Wizard Steps	Name	K1 SH2DUG24		
<u>Properties</u>	SIN:	000 🗧	000 🗧	000 🗧 Subnet Dup 1 🔽
			Properties	
(v) Advanced		perties Info		Cancel

In the picture above, a new Dupline generator is inserted with its associated new network (e.g. Dup 1 shown in the red rectangle).

Each added SH2DUG24 will be assigned to a **new sub-network**, up to 7 Master generator/Master generator wireless. The first SH2DUG24 added will be assigned to the sub-network 1 (Dup 1), the second one to sub-network 2 (Dup 2) and so on until all the Dupline generators are added.





If the project has more than one SH2DUG24 Dupline generator, the user must be sure to assign the correct sub-network to each Dupline module according to the network it is connected to: to do this, press the *triple arrow* button (see picture below) highlighted with a red rectangle. If *Confirm* is pressed, the module is added to the sub-network 1 (Dup 1) by default.

Wizard				
Add mode	ule _{Module}		Select module	
Winned Stone		[
Wizard Steps	Searc	h		
Select module	Groups	Modules	Description	n
Input signals	Dupline	B4X-LS4		
	Show all	B4X-PIR90		
Output signals		B4X-TEMDIS		
Properties		B5X-LS4		
Advanced		B5X-PIR90		
		B5X-TEMDIS		
		BACC-KEYPAD-DC		D.
		BDA-INVOL		
		BDA-RE13A		
		BDA-SSTRI1	Light switch with 4 pushbutt	ons and 4 LEDs All
		BDB-INCON4	buttons and LEDs can be progra	
		BDB-INCON8		
		BDB-IOCP8	Number of eler	nents
		BDB-IOCP8A	- 1	
	>>>		Cancel	Confirm

The selection of the network is made by choosing the correct one in the *Subnet* field, as marked in red in the picture below.

Wizard	□ ×
Add module Module	
	Input signals
Wizard Steps Name K14 B5X-LS4	
Select module	Subnet Dup 1
Input signals Signals Info	Dup 1
Output signals	Ava lable mod Dup 2
Properties 2: Root - Switches K14 Push 2	
Advanced 3: Root - Switches K14 Push 3	Dupline channel
4: Root - Switches K14 Push 4	D1
	Long activation (s)
	····· 1
	Very long activation (s)
	4
	Apply to all
<	Cancel Confirm

N.B. If a module is entered with a wrong Subnet, the user must delete it and add it again.





1.2.4 Dupline module addressing

For each Dupline module being added in a new project, the Sx tool suggests an automatic coding of all the I/O channels which the installer can change at any time if they do not suit.

The Sx tool also avoids addressing two signals with the same channel and suggests channels association without any gap in order not to waste them.

1.2.5 How to change the proposed addresses

The user can change the suggested addresses manually, opening the wizard of the module by clicking on the relevant pictures in the *Modules* window.

Modules					
	Part number	Subnet	Name	SIN	Location
	BH4-RE16A8-230	Dup 1	ReI06 BH4-RE16A8-230		Elcentral
	BH4-RE16A4-230	Dup 1	ReI07 BH4-RE16A4-230		Elcentral
	BH4-RE16A8-230	Dup 1	ReI05 BH4-RE16A8-230		Elcentral
	BH4-RE16A8-230	Dup 1	Rel01 BH4-RE16A8-230		Elcentral
	BSP-PIR90	Dup 1	BSP-PIR90		<u>Skafferi</u>
	<u>B5X-LS4</u>	Dup 1	K42 B5X-LS4		Root
Modules Signals					
Sx2WEB24 IP: Connect B i Y					

As shown below, in the *Input signals* field of the module window, the user can assign the **Dupline channel** manually in the field marked with a red rectangle, selecting any available address in the list, as shown in the green rectangle. The input channels already assigned are shown in blue.

Edit module Module Input signals Wizard Steps Name K7 B5X-L54 Input signals Subnet Dup 1 • Output signals Signals Info Properties 11 Root - Switches K15 Push 1 Available mode • Advanced 2: Root - Switches K15 Push 1 Info • Advanced 2: Root - Switches K15 Push 4 Info • Advanced • • • • • • • • • • • • • • • • • • •	Wizard		
Wizard Steps Input signals Output signals Properties Advanced Advanced Advanced Name K7 B5X-L54 Subnet Dup 1 Signals Info 2: Root - Switches K15 Push 1 2: Root - Switches K15 Push 2 3: Root - Switches K15 Push 3 4: Root - Switches K15 Push 4 B7 B8 C1 C2 C3 C4 C5 C4 C5 C4 C5 C4 C5 C4 C4 C5 C4 C5 C4 C5 C4 C5 C4 C4 C5 C4 C5 C4 C4 C5 C4 C4 C5 C4 C4 C5 C4 C4 C5 C4 C4 C4 C5 C4 C4 C5 C4 C4 C4 C4 C4 C5 C4 C4 C4 C5 C4 C4 C4 C5 C4 C4 C4 C5 C4 C4 C4 C4 C4 C5 C4 C4 C4 C4 C4 C5 C4 C4 C4 C5 C4 C4 C4 C5 C4 C4 C4 C5 C4 C4 C5 C4 C4 C4 C5 C4 C4 C5 C4 C4 C4 C5 C4 C4 C5 C4 C4 C5 C4 C4 C5 C4 C4 C5 C4 C4 C5 C4 C4 C5 C4 C4 C5 C4 C4 C5 C4 C4 C5 C4 C5 C4 C5 C4 C4 C5 C4 C5 C4 C5 C4 C5 C4 C5 C4 C4 C5 C5 C4 C5 C4 C5 C4 C5 C4 C5 C4 C5 C4 C5 C4 C5 C4 C5 C4 C5 C4 C5 C4 C5 C5 C4 C5 C4 C5 C4 C5 C4 C5 C4 C5 C4 C5 C4 C5 C4 C5 C4 C5 C4 C5 C4 C5 C4 C5 C4 C5 C4 C5 C4 C5 C5 C4 C5 C4 C5 C4 C5 C5 C4 C5 C4 C5 C5 C4 C5 C4 C5 C5 C4 C5 C5 C4 C5 C5 C4 C5 C5 C4 C5 C5 C4 C5 C5 C4 C5 C5 C5 C4 C5 C5 C4 C5 C5 C5 C4 C5 C5 C5 C5 C5 C5 C5 C5 C5 C5	Edit mo	dule _{Module}	
Input signals Subnet Dup 1 € Output signals Froperties Signals Info			Input signals
Output signals Properties Isignals Info Info </th <th>Wizard Steps</th> <th>Name K7 B5X-LS4</th> <th></th>	Wizard Steps	Name K7 B5X-LS4	
Advanced Available mode Advanced I: Root - Switches K15 Push 1 I: Root - Switches K15 Push 2 I: Root - Switches K15 Push 3 I: Root - Switches K15 Push 4	Input signals		Subnet Dup 1
Advanced Advanced I: Root - Switches K15 Push 1 I: Root - Switches K15 Push 2 I: Root - Switches K15 Push 3 I: At Root - Switches K15 Push 4 I: Root - Switches K15 Push 4		Signals Info	
Advanced Advanced 2: Root - Switches K15 Push 2 3: Root - Switches K15 Push 3 4: Root - Switches K15 Push 4 Dupline channel D5 B7 B8 C1 C2 C3 C4 C5 C1 C	Properties	1: Root - Switches K15 Push 1	Available mode
3: Root - Switches K15 Push 3 4: Root - Switches K15 Push 4 B7 B8 C1 C2 C3 C4 C5 C6	 Advanced 		
4: Root - Switches K15 Push 4			Dupline channel
		A ROOL - Switches RED Fusit 4	
			···· C5 4 💌
C8			C8
D1 D2 m		<<< >>>>	
D3			D3
D4 D5			
D6			D6
D7 D8			





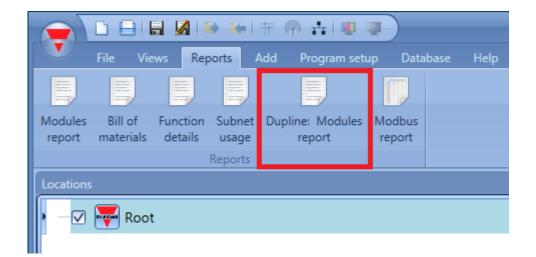
In the *Output signals* field of the module window, the user can assign the **Dupline channel** manually in the field marked with a red rectangle, selecting any available address in the list, as shown in the green rectangle. The output channels already assigned are shown in blue.

Wizard			⊟ ×
Edit mod	lule _{Module}		
		Output sign	als
Wizard Steps	Name K7 B5X-LS4		
Input signals			Subart Dur 1
Output signals	Signals Info		Subnet Dup 1 🔽
Properties	5: Root - Switches K7 B5X-LS4 Led 1	A	Available mode
 Advanced 	6: Root - Switches K7 B5X-LS4 Led 2		
	7: Root - Switches K7 B5X-LS4 Led 3		Dupline channel
	8: Root - Switches K7 B5X-L54 Led 4		D5
	8: Root - Switches K7 B5X-L54 Led 4		B7 🔺
			B8
			C1 C2
			C3
			C4 C5
			C6
	L		
			D2
_			D3 D4
			D5
			D6
			D7 D8

1.2.6 How to check the Dupline address listing

When the project is created, all the modules are to be programmed according to the address list shown in *Dupline: modules report*.

In the Reports menu, the user has to click on the Dupline: Modules report icon (see picture below).







The Dupline: Modules report will appear showing the list of channels:

% 🗁 💾 🔮 🖕		
Ex Bus 0 House	Master Generator	Dup
Root		001.194.22
K9 BH4-RE16A8-230 Root	Relay module	Dup
Re	1: Root - Relay module K9 Re 1	IO1: E
Re	2: Root - Relay module K9 Re 2	IO2: E
Re	3: Root - Relay module K9 Re 3	IO3: E
Re	4: Root - Relay module K9 Re 4	IO4: E
Re	5: Root - Relay module K9 Re 5	IO5: E
Re	6: Root - Relay module K9 Re 6	IO6: E
Re	7: Root - Relay module K9 Re 7	IO7: E
Re	8: Root - Relay module K9 Re 8	IO8: E
K1 BH4-D230W2-230 Cabinet	Dimmer module	Dup

For each module present in the project, the list of associated channels is shown.





2 Functions and signals

The digital input signals coming from the Dupline modules can be used in all the functions. The digital output signals coming from the LEDs and the relays can also be used in all the functions. The analink signals can also be used in all the functions.

The signals coming from dimmer modules, rollerblind modules, temdis and temthe modules have to be used in the special compatibility functions that are very similar to those of the BH8-CTRLX-230 controller: **they cannot be used in the smart-Dupline functions.**

These five functions

- Dupline: dimmable light
- Dupline: Rollerblinds and Dupline: Window control
- Dupline: Temperature regulation and Dupline: Digital thermostat

appear in the Sx tool when the Compatibility feature is enabled.

In all the functions, a mix of smart- Dupline and Dupline signals can be used, with the exceptions explained below.

		Avai	ilable signals	
Sx tool Function	Digital Input	Digital Output	Analog Input	Analog Output
Light	Dupline	Dupline	Dupline	/
-	Smart Dupline	Smart Dupline	Smart Dupline	
Dimmable light	Dupline	/	Dupline	Smart Dupline
	Smart Dupline		Smart Dupline	
Constant light	Dupline	/	Dupline	Smart Dupline
	Smart Dupline		Smart Dupline	
Dupline: Dimmable	Dupline	Dupline	Dupline	/
light	Smart Dupline		Smart Dupline	
Rollerblinds	Dupline	/	Dupline	Smart Dupline
	Smart Dupline		Smart Dupline	
Tilting blinds	Dupline	/	Dupline	Smart Dupline
	Smart Dupline		Smart Dupline	
Open/close window	Dupline	/	Dupline	Smart Dupline
	Smart Dupline		Smart Dupline	
Dupline: Rollerblind	Dupline	Dupline	Dupline	/
	Smart Dupline		Smart Dupline	
Dupline: Window	Dupline	Dupline	Dupline	/
control	Smart Dupline		Smart Dupline	
Zone temperature	Dupline	Dupline	Dupline	Smart Dupline
	Smart Dupline	Smart Dupline	Smart Dupline	
Heating temperature	Dupline	Dupline	/	/
system	Smart Dupline	Smart Dupline		
Cooling temperature	Dupline	Dupline	/	/
system	Smart Dupline	Smart Dupline		
Dupline: temperature	Dupline	Dupline	Dupline (Only	/
regulation	Smart Dupline	Smart Dupline	TEMDIS)	
Dupline: digital	Dupline	Dupline	/	/
thermostat		Smart Dupline		





Zone intruder alarm	Dupline	Dupline	/	/
	Smart Dupline	Smart Dupline	1	
Main intruder alarm	Dupline	Dupline	/	/
Orregion alarma	Smart Dupline	Smart Dupline	1	
Smoke alarm	Dupline	Dupline	/	/
	Smart Dupline	Smart Dupline		
Water alarm	Dupline	Dupline	/	/
	Smart Dupline	Smart Dupline	,	
Siren alarm	Dupline	Dupline	/	/
-	Smart Dupline	Smart Dupline	,	
Sequence	Dupline	Dupline	/	/
	Smart Dupline	Smart Dupline		
Dimmer sequence	Dupline	Dupline	/	/
	Smart Dupline	Smart Dupline		
Delay timer	Dupline	Dupline	/	/
	Smart Dupline	Smart Dupline		
Recycling timer	Dupline	Dupline	/	/
	Smart Dupline	Smart Dupline		
Interval timer	Dupline	Dupline	/	/
	Smart Dupline	Smart Dupline		
Counter	Dupline	Dupline	/	Smart Dupline
	Smart Dupline	Smart Dupline		
Multigate	Dupline	Dupline	/	/
5	Smart Dupline	Smart Dupline		
Analogue comparator	Dupline	Dupline	Dupline	Smart Dupline
· · · · · · · · · · · · · · · · · · ·	Smart Dupline	Smart Dupline	Smart Dupline	
Mathematical	/	/	Dupline	Smart Dupline
function	,	,	Smart Dupline	officie Duplino
Analogue output	1	/	Dupline	Smart Dupline
, indioguo output	,	,	Smart Dupline	
Hour counting	Dupline	Dupline	/	/
riour oounting	Smart Dupline	Smart Dupline	1	,
Simulated habitation	Dupline	Dupline	/	/
	Smart Dupline	Smart Dupline	1	/
Sms setup	Dupline		1	/
Onio Setup	Smart Dupline	,	1	/
Mail	Dupline	/	1	1
IVIAII		/	/	/
Corbecting	Smart Dupline	Dunling	Dunling	1
Car heating	Dupline	Dupline	Dupline Smort Dupling	/
	Smart Dupline	Smart Dupline	Smart Dupline	



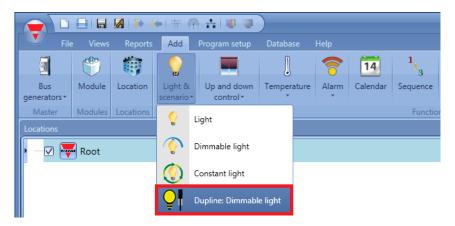


2.1 How to set a *Dupline: dimmable light function*

This function allows the installer to manage one Dupline dimmer output from the following modules: BH4-D230W2-230, BH4-500W-230, SH2D500W230, BH6-D500W2-230, BH4-D10V2-230 or G42484134. This *Dupline: dimmable light* function is the same as the *Dimmable light* function available in the BH8-CTRLX-230 configuration tool.

The user can either configure a basic function to switch the light on/off and adjust the light intensity, or implement an automated system, by programming the relevant objects of the function by using the *Advanced* section.

To set up a dimmable light function the user should select *Light & Scenario* from the Add menu, then select *Dupline: Dimmable Light* (see picture below). The new function will be added into the selected location.



This function can manage only one dimmer output, controlled by one or more input commands. The command might be a real signal such as a pushbutton, a function or a remote command (Webserver, sms, email, Modbus TCP/IP).

The automation of the *Dupline: dimmable light* function is managed by accessing the *Advanced* section (see picture below).

In the *Advanced* section the user can select different ways of controlling the dimmable light: according to the ambient light, the presence of people, with timers and/or schedulers. Up to 4 different predefined scenarios can be set (for the G42484134 dimmer module up to 6 scenarios can be set).

Wizard		□ ×		
Add function Dupline: Dimmable light				
¥¶		On/off input signals		
Wizard Steps	Function name: (Fx) Root - Dupline: Dimmer functi	on		
On/off input signals	Signals Notes			
Controlled output				
Feedback signals				
Advanced				
Automation override				
Motion detectors				
Real time signals (Calendar)				
Functions				
Scene selection				
Available output status				
Location				
		Signal settings Signal properties		
	<<< >>>	Cancel Confirm		





2.1.1 How to dim a light with input commands

First, the user has to add the input signals to control the dimmable light in the *On/off input signals* field. The input signal can be a pushbutton or a switch and can manage both the On/Off switching and the light level adjustments: a short click of the switch toggles the light on or off, and a long press dims the light up and down.

The user should select the one required, then double click on it and add the input signal from the list.

Wizard	Add signal
Add function Dupline: Dim	able lig
¥!	
	Hide used output signals 🗹 Signals 🗹 Functions
Wizard Steps Function name: (Fx) Root	Dupline: Name
On/off input signals Signals Notes	1: Kitchen wall Switch K2 Sw 1
	2: Kitchen wall Switch K2 Sw 2
Feedback signals	3: Kitchen wall Switch K2 Sw 3
Autoriced	4: Kitchen wall Switch K2 Sw 4
	1: Root - Switches K7 Push 1
	2: Root - Switches K7 Push 2
	3: Root - Switches K7 Push 3
	4: Root - Switches K7 Push 4
	Input channels used Output channels used Address Consumption (mA)
	2 12/129 18/129 6/249 12.5/450.0





2.1.2 How to set the signal properties

The light is switched On/Off with a short click (input active for a period shorter than 1 second). When the light is on, by keeping the input active for more than 1 second (see the Long activation(s) field in the yellow rectangle), the light level starts going up/down.

Each time the light reaches the maximum/minimum level, the ramp is inverted. In the Signal properties window, the user can also check the Dupline channel of each added signal (See the yellow rectangle in the picture below).

Wizard		
Add funct	tion Dupline: Dimmable light	On/off input signals
Wizard Steps On/off input signals Controlled output Feedback signals	Function name: (Fx) Root - Dupline: Dimmer func Signals Notes 1: Kitchen wall Switch K2 Sw 1	
	· · · · · · · · · · · · · · · · · · ·	Confirm





2.1.3 How to select a dimmable output

To select the output signal that is controlled by the *Dupline: dimmable light* function, click on *Controlled output* and then double click on the Signals window. Once the output window is opened, select the relevant outputs from the list.

Wizard		Add signal				_ 0
Add funct	ion Dupline: Din	Search	Location			
			General			ſ
		Hide used	d output si 🗹 Signals 🛛 🖓 Functions 🗌 Gr	oup by functio	ns 🗌 Grou	p by subnet
Wizard Steps	Function name: (Fx) R		Name	Locatio	Subnet	SIN 🔺
On/off input signals	Signals Notes		1: Cabinet Dimmer K1 Dimmer status 1	Cabinet	Dup 1	F1
Controlled output Feedback signals			2: Cabinet 2 x 230W Lighting scene 1	Cabinet	Dup 1	F2
Advanced			3: Cabinet 2 x 230W Lighting scene 1	Cabinet	Dup 1	F3
Advanced) 🗹 📀	4: Cabinet 2 x 230W dimmer up/down 1	Cabinet	Dup 1	F4
			5: Cabinet Dimmer K1 Dimmer status 2	Cabinet	Dup 1	F5
			6: Cabinet 2 x 230W Lighting scene 2	Cabinet	Dup 1	F6
			7: Cabinet 2 x 230W Lighting scene 2	Cabinet	Dup 1	F7
			8: Cabinet 2 x 230W dimmer up/down 2	Cabinet	Dup 1	F8
						
	<<< <	Input channels 12 / 129	used Output channels used Address Consumption (mA) 18 / 129 6 / 249 12.5 / 450.0		ancel	Confirm

The signals available in the output window are only standard Dupline dimmer signals.

For each dimmer output, four signals are used: the user just needs to check one and immediately the other three will be added automatically.

Wizard		⊡ ×
🔼 🖡 🗛 Add func	tion Dupline: Dimmable light	
¥¶		Controlled output
Wizard Steps	Function name: (Fx) Root - Dupline: Dimmer function	n
Controlled output Feedback signals Advanced	Signals Notes 	Available mode
		Signal settings Signal properties Confirm





2.1.4 How to set a signal as feedback of the status of the dimmer function

To select the feedback signal that indicates the status of the function, click on *Feedback signals* and then double click on the Signals window.

Wizard		Add signal					_ 0
Add func	tion Dupline: D	Search		Location			
IYI				General			ſ
		Hide used	output sig 🗹 Signals 🛛 🗹 Functions	🗌 Gro	up by funct	ions ; 📃 Gro	up by subnet
Wizard Steps	Function name: (Fx) R		Name		Locatio	Subnet	SIN / CH
On/off input signals Controlled output	Signals Notes	▶ ☑ 🔿	5: Kitchen wall Switch K2 LED 1	1	wall	Dup 1	D1
Feedback signals		ΠÒ	6: Kitchen wall Switch K2 LED 2	,	wall	Dup 1	D2
Advanced		ΠÒ	7: Kitchen wall Switch K2 LED 3	1	wall	Dup 1	D3
		Π¢	8: Kitchen wall Switch K2 LED 4	,	wall	Dup 1	D4
			5: Bedroom wall Temp sensor K3 LED	,	wall	Dup 1	C2
		Þ	5: Root - Switches K7 Led 1	I	Root	Dup 1	C2
		Þ	6: Root - Switches K7 Led 2	l	Root	Dup 1	C3
		Π¢	7: Root - Switches K7 Led 3	1	Root	Dup 1	C4
		Π¢	8: Root - Switches K7 Led 4	1	Root	Dup 1	C5
			1: Cabinet Relay module K0 Re 1		Cabinet	Dup 1	E1
			2: Cabinet Relay module K0 Re 2		Cabinet	Dup 1	E2
	<<<	Input channels u 12 / 129	Seed Output channels used Address Consumption (mA) 18 / 129 6 / 249 12.5 / 450.0			Cancel	Confirm

The signals available in this window are LEDs and relays.

Up to 50 signals can be chosen and they will be managed in parallel.

The logic of each feedback signal can be set as normal or inverted (see the yellow rectangle).

Wizard	nction Dupline: Dimmable light	□ ×
Y		Feedback signals
Wizard Steps On/off input signals Controlled output Feedback signals Advanced	Function name: (Fx) Root - Dupline: Dimmer function Signals Notes S: Kitchen wall Switch K2 LED 1	Available mode
	<	Confirm





2.1.5 How to force the output OFF

If the user wants to stop the automation regardless of all other signals used in the function, the *Automation override* field has to be used: to enable it, select Automation override in the Advanced section, then double click on the signal window and select the right signal. A level signal has to be selected, such as a toggle switch or a function.

Wizard		Wizard		Wizard	
Add functi	10	Add fun	ction Dupline	Add fu	nction Dupline: Dimmable light
	Fur	Wizard Steps	Function name: (Wizard Steps	Function name: (Fx) Root - Dupline: Dimmer function
On/off input signals	5	On/off input signals	Signals Not	On/off input signals	Signals Notes
Controlled output	ſ٢ –	Controlled output		Controlled output	(Fx) Root - Automation On/off.Status
Feedback signals		Feedback signals		Feedback signals	
Advanced		 Advanced 		 Advanced 	
Automation override		Automation override		Automation override	
Motion detectors					
Luxsensor Real time signals (Calendar)		→	II —		
Scene selection					
Available output status					
Location					
Automation override					
	L				
			~~~		~~~ >>>

Each signal used in the *Automation override,* when active, stops the automation. Until the signal is active, the light is forced to the off status; when the signal is non-active, the light returns to the previous status.

#### 2.1.6 How to set predefined scenarios with input signals

In this section, the user can customize different scenarios and select different input signals to activate them. There are two scenarios that are not editable (Scenario 5 and Scenario 6 are reserved for the G42484134 dimmer module only). Here the user can only set the signals that activate them.

Each scenario can be activated manually by adding an input signal in the Signals window, or it can also be activated by different automations such as PIR sensors, functions or Calendars.

The first thing to do to use different Scenarios is to enable them in the *Advanced* section. The user should go to the *Advanced* steps of the function and then check *Scene selection*. The user can select the scenario from the list, then with a double click in the signals field, he can add one or more inputs to activate the Scenario.

Wizard		Wizard
Add func	tion Duplin	Add function Dupline: Dimmable light
		₹ 1
Wizard Steps	Info	Wizard Steps Info
On/off input signals	Info	On/off input signals Info
Controlled output		Controlled output
Feedback signals		Feedback signals
Advanced		✓ Advanced
Automation override		Scene selection
Motion detectors		Scenario 1 (20%)
Real time signals (Calendar)		Scenario 2 (40%)
Scene selection		Scenario 3 (60%)
Available output status		Scenario 4 (80%)
Scene selection		Scenario 5
Scenario 1 (20%)		Scenario 6
Scenario 2 (40%)		
Scenario 3 (60%)	<<<	

Compatibility mode - Sx tool manual





The light is switched On with a short press (input activated and deactivated within 1 sec). When the light is on, by keeping the input active for more than 1 second, the light level will start going Up/Down until the input signal is active. In the *Signals* window, the user can also enable the reversing of each added signal.

#### 2.1.6.1 Scenario 1 (20%).

In the Scenario 1 (20%) window the user can add an input signal with a double click on the Signal window and then select the input from the list of available signals.

Wizard		□ ×
🔼 📕 Add func	tion Dupline: Dimmable light	
¥¶		Scenario 1 (20%)
Wizard Steps	Function name: (Fx) Root - Dupline: Dimmer function	
On/off input signals	Signals Notes	
Controlled output	2: Kitchen wall Switch K2 Sw 2	Available mode
Feedback signals		
<ul> <li>Advanced</li> </ul>		Inverted signal
Scene selection		
Scenario 1 (20%)		
Scenario 2 (40%)		
Scenario 3 (60%)		
Scenario 4 (80%)		
Scenario 5		
Scenario 6		
		Signal settings Signal properties
	<	Confirm

In the example above, the user has set one pushbutton for the manual activation of *Scenario 1* (20%). Each time pushbutton 2 is activated with a short press, the light level will be set to 20%.





#### 2.1.6.2 Scenario 2 (40%)

The light is switched On with a short press (input activated and deactivated within 1 sec). In the Signals window, the user can also enable the reversing of each added signal.

In the *Scenario 2* (40%) window the user can add an input signal with a double click on the *Signals* window and then select the input from the list of available signals.

Wizard		□ ×
Add func	tion Dupline: Dimmable light	
¥¶		Scenario 2 (40%)
Wizard Steps	Function name: (Fx) Root - Dupline: Dimmer function	
On/off input signals	Signals Notes	
Controlled output	3: Kitchen wall Switch K2 Sw 3	Available mode
Feedback signals		
✓ Advanced		Inverted signal
Scene selection		
Scenario 1 (20%)		
Scenario 2 (40%)		
Scenario 3 (60%)		
Scenario 4 (80%)		
Scenario 5		
Scenario 6		
		Signal settings Signal properties
	<<< >>>>	Confirm

In the example above, the user has set one pushbutton for the manual activation of *Scenario 2* (40%). The output dimming percentage is set to 40%.

Each time pushbutton 3 is activated with a short press, the light level will be set to 40%.

#### 2.1.6.3 Scenario 3 (60%)

This scenario is managed in the same way as the previous scenarios.

#### 2.1.6.4 Scenario 4 (80%)

This scenario is managed in the same way as the previous scenarios.

#### 2.1.6.5 Scenario 5 and Scenario 6

These Scenarios are reserved for the G42484134 dimmer module only.





#### 2.1.7 How to manage lights automatically

The automatic on/off switching of the light can be managed by PIR sensors (the light will be switched ON when the PIR sensor detects people movement), by Real time signals (calendar to switch the light on/off at pre-defined time intervals) or by lux meters which switch the light on/off according to the level of ambient light.

All these automations can be enabled in the Advanced section.

#### 2.1.8 How to select a PIR sensor to control Scenarios

The motion detector sensor can be used to perform different functions:

- switching the light on, on movement detection.
- adjusting the light level to a predefined value.
- switching the light off if no movement is detected within a set time interval.

The first thing to do when a PIR sensor needs to be used in a *Dupline: dimmable light* function is to enable it in the *Advanced* section.

The *Motion detectors* menu will appear. After selecting this, with a double click on the Signals window the list of available signals will appear.

Select the required signal/signals and click on *Confirm*. Up to 50 signals can be selected and the system will perform a logical OR of all of them.

Wizard	Wizard		Add signal						
Add function	Add funct	tion Ca	Search		Lo	ocation			
<b>⊻</b> ⊺					0	General			(
<b>₹</b> 1	1 <b>-</b> 1		Hide used o	output si 🗹 Signals 🛛 🗹 Func	tions	Grou	up by functi	ions 📃 Gra	up by subne
Vizard Steps	Wizard Steps	Function nar		Name			Locatio	. Subnet	SIN / CH
In/off input signals	On/off input signals	Signals	• 🖸 💮	1: Root - Motion detectors K12 PIR	1		Root	Dup 1	C7
ontrolled output	Controlled output			1: Kitchen wall Switch K2 Sw 1			wall	Dup 1	D1
edback signals	Feedback signals		ПÓ	2: Kitchen wall Switch K2 Sw 2			wall	Dup 1	D2
Advanced Automation override	(v) Advanced			3: Kitchen wall Switch K2 Sw 3			wall	Dup 1	D3
Motion detectors	Motion detectors		οŎ	4: Kitchen wall Switch K2 Sw 4			wall	Dup 1	D4
Luxsensor	Energy save timer			1: Root - Switches K7 Push 1			Root	Dup 1	C2
Real time signals (Calendar)				2: Root - Switches K7 Push 2			Root	Dup 1	C3
Available output status				3: Root - Switches K7 Push 3			Root	Dup 1	C4
Location		Pir switches		4: Root - Switches K7 Push 4			Root	Dup 1	C6
lotion detectors		TH SWITCHES		4. Root - Switches R7 Fusit 4			Root	Dupi	0
Energy save timer		Use auto sc							
			Input channels us	ed Output channels used Address Consumption (mA	•		_		
		<<<	13 / 129	20 / 129 7 / 249 16.0 / 450.0				Cancel	Confirm





Once the PIR sensor is added, the user can also choose to invert the signal by selecting the green *V* below *Inverted signal*, in the *Signals* Setting tab window.

Wizard		□ ×
Add func	tion Dupline: Dimmable light	
¥¶		Motion detectors
Wizard Steps On/off input signals	Function name: (Fx) Root - Dupline: Dimmer function Signals Notes	
Controlled output Feedback signals Controlled output Controlled out	1: Root - Motion detectors K12 PIR 1	Available mode
	Pir switches on 🖌 🔀	Signal settings Signal properties Scenario 1 20 Set 20% Scenario 2 80 Set 80%
	<<< >>>>	Confirm

#### 2.1.9 How to turn a light ON with PIR sensors, and turn it OFF manually

In order to create this easy automation, the user must select at least one input signal for the manual command, one output signal to control the load and then a PIR sensor in the *Advanced section*. In this case the light will not be switched OFF automatically if no presence is detected, so the energy-save

timer must not be used in the Advanced section.

Once the PIR signal is entered, the user should select the green "V" in the option *Pir switches on* (see the red rectangle in the picture below). In this way, each time the PIR detects movement, the light will automatically go to ON.

The user can also select the light percentage value of the output when the PIR detects movement and switches the light ON.

Wizard Edit funct	tion Dupline: Dimmable light	□ ×
		Motion detectors
Wizard Steps On/off input signals	Function name: (Fx) Root - Dupline: Dimmer function Signals Notes	
Controlled output Feedback signals Controlled Advanced Motion detectors Energy save timer	1: Root - Motion detectors K12 PIR 1	Available mode
	Pir switches on 🖌 💓	Scenario 1 20 Set 20%
	Use auto scenarios 🖌 🔀	Scenario 2 80 📄 Set 80%
	~~~~ >>>	Confirm





2.1.10 How to change scenario with a PIR

The user should select the green "V" in the option *Use auto scenarios* to use two different light levels: each time the PIR detects movement, the light will automatically be switched to the light level defined in the field *Scenario 2 (%); when the PIR does not detect any movement in the corridor and the energy save timer has expired, the light goes to the light level set in <i>Scenario 1 (%)*.

Wizard		□ ×
Edit funct	tion Dupline: Dimmable light	
¥¶		Motion detectors
Wizard Steps	Function name: (Fx) Root - Dupline: Dimmer function	
On/off input signals	Signals Notes	
Controlled output	1: Root - Motion detectors K12 PIR 1	Available mode
Feedback signals		
 Advanced 		Inverted signal
Motion detectors		
Energy save timer		Signal settings Signal properties
	Pir switches on 🖌 🔛	Scenario 1 20 🗧 Set 20%
	Use auto scenarios 🖌 🔛	Scenario 2 80 💽 Set 80%
	<<< >>>>	Confirm

In the example above, the PIR is set to switch the light ON at 80% when it detects movement and sets it to 20% when it does not detect any movement.

2.1.11 How to turn a light ON with PIR sensors, and turn it OFF automatically

The energy-save timer must be set in order to turn the dimmable light OFF when the timer expires.

An example of this automation could be in a corridor: when a person enters the corridor, the light is switched on and the energy-save timer starts counting: when it expires, the light is switched off.

The first step is to add the output signal, then to add a PIR sensor with the option *Pir switches on* enabled, and then to set an energy-save timer to switch the light off automatically when no movement is detected. To set an energy-save timer, select *Motion detectors* then select *Energy save timer* from the *Advanced* section, change the timing by moving the slider or typing hours, minutes and seconds, then press *Confirm*. The energy-save timer starts counting when no presence is detected. Each time presence is detected the timer is reloaded. When the timer expires, the light is switched off.

CARLO GAVAZZI Automation Components



ion Dupline: Dimmable light	
Energy save timer	
Function name: (Fx) Root - Dupline: Dimmer function	
0 нн 10 мм 0	ss
Disable	24 hr
<	onfirm
	Energy save timer Function name: [Fx) Root - Dupline: Dimmer function

In the picture above the energy save timer is configured to turn the dimmable light OFF 10 minutes after the PIR stops detecting presence.

2.1.12 How to switch the light ON manually and OFF with the PIR sensor

An example of this automation is an office where the employees sometimes forget to switch the light off when they leave the office. When the PIR stops detecting presence in the office, the energy-save timer starts counting and when it expires, the light is turned off.

If the user wants to use the PIR sensor to switch the light off automatically, the following settings should be used. Add a PIR sensor and an energy-save timer from the *Advanced* section.

In the *Motion detectors* window the red cross in the *Pir switches on* and *Use auto scenarios* fields must be unchecked because the light has to be switched on manually.

Wizard		
🔼 🖡 Add func	tion Dupline: Dimmable light	
¥¶		Motion detectors
Wizard Steps	Function name: (Fx) Root - Dupline: Dimmer function	
On/off input signals	Signals Notes	
Controlled output	1: Root - Motion detectors K12 PIR 1	Available mode
Feedback signals	1: Root - Motion detectors K17 PIR 1	
✓ Advanced	1-7-1	Inverted signal
Motion detectors		
Energy save timer		
		Signal settings Signal properties
	Pir switches on 🛛 💓	Scenario 1 20 📰 %
	Use auto scenarios 💓 🞇	Scenario 2 80 🎆 %
	<<< >>>>	Cancel Confirm

The energy-save timer must be set differently from zero, and will be triggered when the light is switched on. While the PIR detects movement, the timer is reloaded. When the PIR stops detecting movement, the timer starts counting down and when it expires the light is switched off accordingly.

CARLO GAVAZZI Automation Components



Wizard		
Add func	Dupline: Dimmable light	
¥¶	Energy save timer	
Wizard Steps On/off input signals	Function name: (Fx) Root - Dupline: Dimmer function	
Controlled output Feedback signals		_
Advanced <u>Motion detectors</u>	0 HH 15 MM 0 SS	;
Energy save timer		
		24 hr
	Cancel Confirm	

In the picture above the energy save timer is configured to turn the dimmable light OFF 15 minutes after the PIR stop detecting movement.

2.1.13 How to switch the light on and off according to the lux sensor

An example of this automation could be an outdoor light that has to be switched on at sunset and stay on during the night.

To create this kind of automation, lux meters have to be used: the user can set a threshold value so that the smart-house system switches the light ON when the measured daylight goes below this threshold, and switches the light OFF when the daylight goes above this threshold.

Since this is an Advanced functionality, the *Luxsensor* field has to be enabled in the *Advanced* section. The *Luxsensor* menu will appear. After selecting this, with a double click on the Signals window the list of available signals will appear.

Select the required signal/signals and click on Confirm.

Wizard	Wizard		Add signal					_ 0
Add functic	Add func	tion o	Search		Ь	ocation		
						General		
₹ 1	1 - 1		Hide used	output sig 🗹 Signals	✓ Functions	Group by fu	nctions ; 📃 Gr	oup by subnet
Wizard Steps	Wizard Steps	Function na		Name		Locatio	Subnet	SIN / CH
On/off input signals	On/off input signals	Signals	• 🗸 🔒	1: Bathroom wall LUX Ser	nsor K4 Sig	wall	Dup 1	C5
Controlled output	Controlled output			1: Bedroom wall Temp se	-	wall	Dup 1	C1
Feedback signals	Feedback signals							
Advanced	Advanced							
Automation override	Luxsensor	11						
Luxsensor								
Real time signals (Calendar)								
Scene selection				→				
Available output status								
Luxsensor								
		Lux level or						
			Input channels u 13 / 129	sed Output channels used Address Co 20 / 129 7 / 249	nsumption (mA) 16.0 / 450.0		Cancel	Confirm





The user can add up to ten lux sensors: if more lux signals are linked to the function, the average lux value is calculated and then used.

Once a lux sensor is selected, the user can change the settings as shown in the picture below:

Wizard		
Add fund	tion Compatibility dimmable light	Luxsensor
Wizard Steps On/off input signals	Function name: (Fx) Root - Compatibility dimmer fun Signals Notes	
Controlled output Feedback signals Advanced	🔐 1: Bathroom wall LUX Sensor K4 Sig	Available mode
<u>Luxsensor</u>		
		Signal settings Signal properties
	Lux level on 300 😜	Lux level off 500 💼
	~~~	Confirm

Lux level on (Lux)

When the light level goes below the threshold, the light goes ON. The user has to set the light level threshold by filling in the *Lux level on* field.

Lux level off (Lux)

When the light level goes above the threshold, the light goes OFF. The user has to set the light level threshold by filling in the *Lux level off* field.

The ON and OFF switching is done in the event of the thresholds being surpassed, so if the light status is changed manually by means of a light switch or automatically, e.g. by a scheduler, the automation of the lux sensors will not change it unless thresholds are surpassed another time.





2.1.14 How to switch the light on/off using the Real time signals (Calendar)

An example of this automation could be a Real time signals (Calendar) that switches all lights off at a pre-set time in the night. If the function uses an energy-save timer, the Real time signals (Calendar) does not affect it. Before using a global calendar, the user should define it as a function (See How to set a global calendar in the Sx Tool manual by clicking on Real time signals and then double clicking in the Signals window to select the required Real time signals function.

In the example below, the global calendar added is a calendar generated for switching on all the lights at a pre-set time.

Wizard	Wizard		Add signal		
Add functi	Add fun	ction Du	Search		
	I⊻ I				
	- I		🗌 Hide use	d output signals 🛛 🗸 Signals	V Functions
Wizard Steps	Wizard Steps	Function nam		Name	
On/off input signals	On/off input signals	Signals			
Controlled output	Controlled output		▶ 🔽 14	(Fx) Root - Calendar.Status	
Feedback signals	Feedback signals				
Advanced	Advanced				
Automation override	Real time signals				
Motion detectors					
Luxsensor					
Real time signals (Calendar)					
Scene selection					
Available output status		· · · · · ·			
Location					
Real time signals (Calendar)					
			Input channels	used Output channels used Address Consumption (mA)	
		~~~			

N.B. To control the *Dupline: dimmable light* function with a *Real time signals (Calendar)*, the user has to create a Calendar function and has to select the green V Use this calendar for command and disable signals, as shown in the picture below:

Wizard			
Edit funct	tion Calendar		
14		Calendar options	
Wizard Steps	Function name: (Fx) Root - Calendar		
Calendar Calendar options	Use this calendar only with "Tilting blinds" functions	✓	
Advanced	Use this calendar as level signals	✓	
	Use this calendar for command and disable signals		
	<<< >>>>		Confirm

To set the *Global calendar* function, please read paragraph *How to set a global calendar function* in the Sx tool manual.





#### 2.1.15 How to dim the light with a Function status

An example of this automation could be the change of the *Dupline: Dimmable light* status according to the output status of another function. If this function uses an energy-save timer, the function status does not affect it in anyway.

The *Functions* field has to be selected in the *Advanced* menu. By clicking on *Functions* and then double clicking in the *Signals* window, select *Functions* status.

Wizard	Wizard		Add signal	
Edit function	Edit fun	ction Dup	Search	
<b>=</b> I	1 - 1		Hide used output signals	✓ Functions
Wizard Steps	Wizard Steps	Function name:	Name	
On/off input signals	On/off input signals	Signals		
Controlled output	Controlled output		▶ 🗹 🎧 (Fx) Root - Light function.Status	
Feedback signals	Feedback signals			
Advanced	✓ Advanced			
Automation override	Functions			
Motion detectors				
Luxsensor     Real time signals (Calendar)	<u>-</u>			
✓ Functions				
Scene selection				
Available output status				
Location				
Functions				
			L	
			Input channels used Output channels used Address Consumption (mA)	

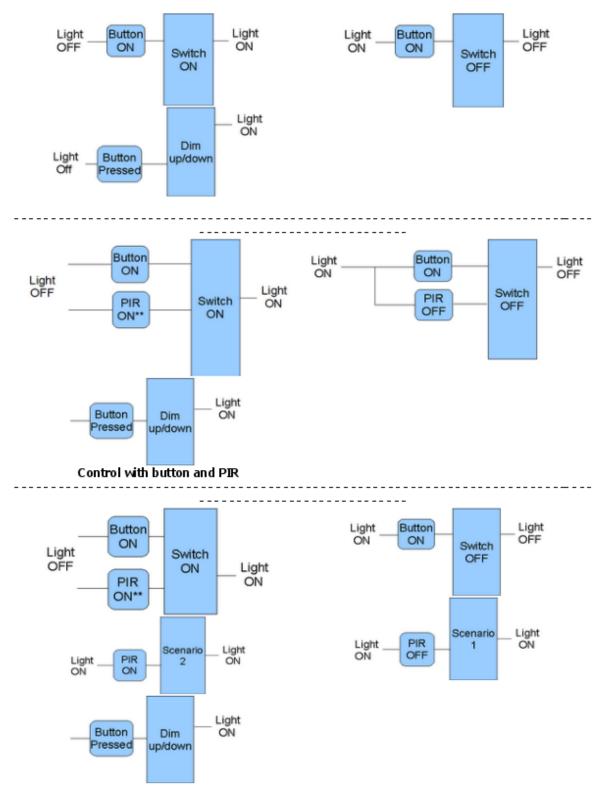
A generic *Light* function can be linked to the *Dupline: Dimmable light* status in order to change the dimmer output status according to its status: when the generic function status is ON, the *Dupline: Dimmable light* goes ON at Scenario1, when the generic function status is OFF, the dimmer output goes OFF.





#### 2.1.16 Definitions table

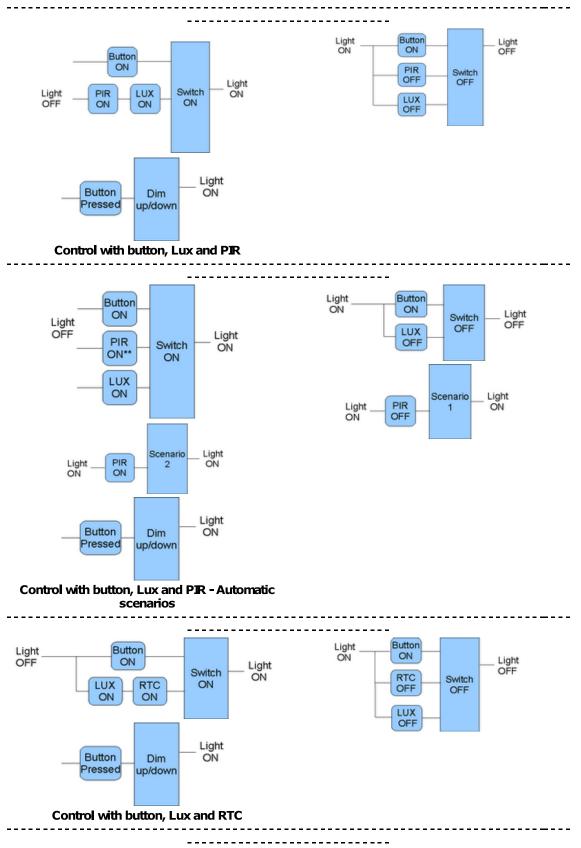
#### Table of light dimmer function combinations:





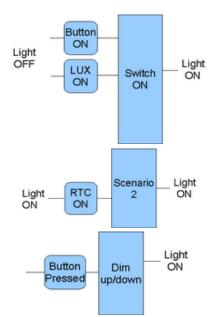


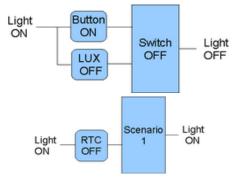
#### Control with button & PIR - Automatic scenarios



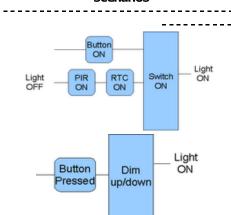


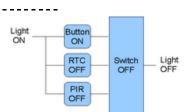






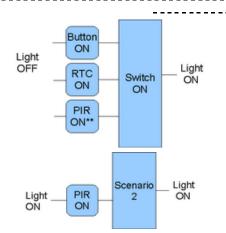
Control with button, Lux and RTC - Automatic scenarios

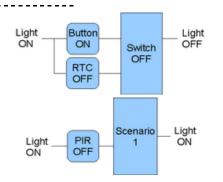




_ _ _ _ _ _

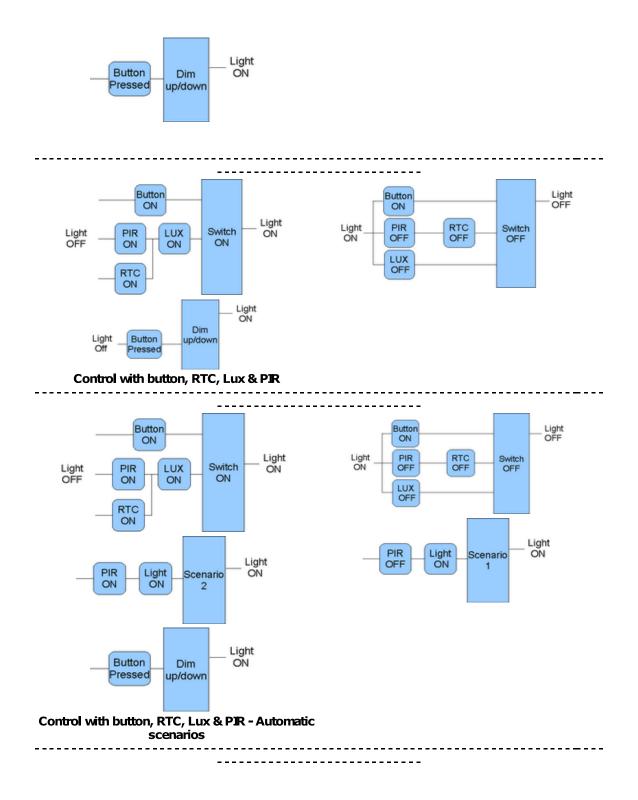
Control with button, RTC & PIR











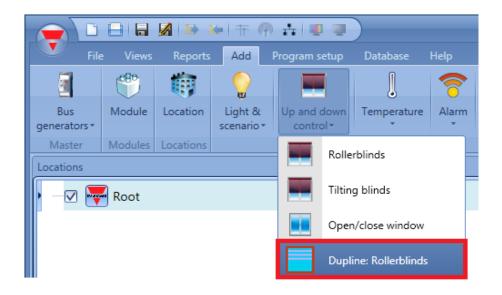




# 2.2 How to set a Dupline: Rollerblinds function

The user can either configure a basic function to move blinds up and down, or implement an automated system by programming the relevant objects of the function.

To set up this kind of function, the user should select *Up and down control* from the Add menu, then select *Dupline: Rollerblinds* (see picture below). The new function will be added into the selected location.



Like the legacy function present in the BH8-CTRLX-230 configuration tool, this function manages only one motor output controlled by one or more input commands. The command might be a physical signal like a pushbutton, a switch, a function or a remote command (Webserver, sms, Modbus TCP/IP).

The automation of the blinds can be managed by accessing the *Advanced* section, where the user can select different kinds of automation: wind sensors, lux sensors or Real time signals (Calendar).

Wizard		□ ×
Add funct	tion Dupline: Rollerblinds	
	Up sign	als
Wizard Steps	Function name: (Fx) Root - Dupline: Rollerblinds	
<u>Up signals</u>	Signals Notes	
Down signals		
Controlled output		
Options		
Advanced		
Wind sensors		
Luxsensor		
Real time signals (Calendar)		
Available output status		
Location		
		Signal settings Signal properties
		3 3 3
	<<< >>>>	Cancel Confirm





## 2.2.1 How to move blinds Up/Down using a manual input

The user should add the input signals to control the Up/Down movement of the blinds. To add the Up/Down signal, the user has to click on the relevant section, then double click on the Signals window and select the input signal from the list (see picture below). The input signal may be a pushbutton, a switch or a level signal.

Wizard	A	Add signal						_ 0
Add funct	ion Du	Search			Location			
					General			ſ
		Hide used	output siç 🗹 Signals	✓ Functions	🔲 Gra	oup by functi	ons ; 📃 Gro	oup by subnet
Wizard Steps	Function name		Name			Locatio	Subnet	SIN / CH
Down signals	Signals	•	1: Kitchen wall Switch K2	? Sw 1		wall	Dup 1	D1
Controlled output			2: Kitchen wall Switch K2	2 Sw 2		wall	Dup 1	D2
Options		$\Box \diamondsuit$	3: Kitchen wall Switch K2	2 Sw 3		wall	Dup 1	D3
Advanced			4: Kitchen wall Switch K2	? Sw 4		wall	Dup 1	D4
			1: Root - Switches K7 Pu	sh 1		Root	Dup 1	C2
			2: Root - Switches K7 Pu	sh 2		Root	Dup 1	C3
		$\Box \diamondsuit$	3: Root - Switches K7 Pu	sh 3		Root	Dup 1	C4
		$\Box \diamondsuit$	4: Root - Switches K7 Pu	sh 4		Root	Dup 1	C6
	<<<	Input channels us 11 / 129	sed Output channels used Address C 16 / 129 6 / 249	onsumption (mA) 16.5 / 450.0		E	Cancel	Confirm

Once the Up/Down signal is entered, the user can also choose to use the inverted logic of the signal (see yellow rectangle in the picture below).

Wizard		□ ×
Add func	tion Dupline: Rollerblinds	
		Up signals
Wizard Steps	Function name: (Fx) Root - Dupline: Rollerblinds	
Down signals	Signals Notes	Available mode
Controlled output Options		Inverted signal
(     Advanced		
		Signal settings Signal properties
	<<< >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>	Cancel Confirm

All the signals selected in the Up/Down window work in parallel (OR level).

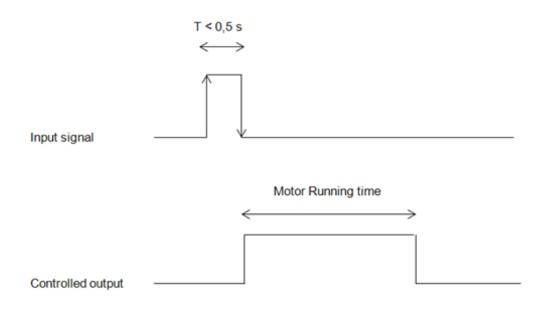




According to the release time of the signal, the output can behave in two ways:

1. Once a pushbutton is pressed, the motor is activated for the time it needs to go fully Up/Down. When the button is pressed again, the motor is stopped.

In the figure below, an example of the activation of the input signal and Controlled output is shown.



2. Once a pushbutton is pressed, the motor is activated for the time it needs to go fully Up/Down. When a pushbutton for the opposite direction is pressed, the motor is stopped for the time set in the *Reverses motor time* field, then reverses its direction and will go up/down for the whole *Running UP/DOWN time* (fully Up/Down).





## 2.2.1 How to select and configure the output for motor up

To select the output signal for motor up, which is controlled by the *Dupline: Rollerblinds* function, the user has to click on *Controlled output* and then double click on the *Output for motor up* signal window. Once the output window is opened, select the relevant motor output from the list.

Wizard		Add signal						_ 0
Add funct	tion Dupline: Ro	Search			Location			
					General			6
		Hide used	output : 🗹 Signals	✓ Functions	🗌 Group b	y function	Grou	p by subne
Wizard Steps	Function name: (Fx) Roc		Name			Locat	Subnet	SIN 🔺
Up signals	Output for motor up	• 🗹 M	1: Root - Rollerblinds m	odule K18 Mo	tor Up 1	Root	Dup 1	G1
Down signals Controlled output			3: Root - Rollerblinds m	odule K18 Mo	tor Up 2	Root	Dup 1	G3
Options								
Advanced								
0								
	<<<	Input channels u 11 / 129	ised Output channels used Address C 16 / 129 6 / 249	onsumption (m 16.5 / 450.0		Cano	el 🗌	Confirm

The signals available in this window are only the standard Dupline motor output type (BH4-RO5A2-230, BH4-RO5ADC2-230). **Only one motor output can be selected.** 

Wizard				E ×
Add funct	tion Dupline:	Rollerblinds		
			Controlled	d output
Wizard Steps	Function name: (Fx) F	oot - Dupline: Rollerblinds		
<u>Up signals</u>	Output for motor up	Output for motor down		
Down signals	• M 1: Root - Roll	erblinds module K18 Moto	or Up 1	Available mode
Controlled output				- (M)-
Options				
✓ Advanced				
			v	Signal settings Signal properties
	<<<	>>>		Cancel Confirm





## 2.2.2 How to select and configure the output for motor down

To select the output signal for motor down, which is controlled by the *Dupline: Rollerblinds* function, the user has to click on *Controlled output* and then double click on the *Output for motor down* signal window. Once the output window is opened, select the relevant motor output from the list.

Wizard		Add signal						_ 0
Add funct	tion Dupline: Rollerblinds	Search			Location			
					General			6
		Hide used o	output : 🗹 Signals	✓ Functions	Group	by function	Grou	p by subne
Wizard Steps	Function name: (Fx) Root - Dupline: Rollerblinds		Name			Locat	Subnet	SIN 🔺
Down signals	Output for motor up Output for motor down	• 🗹 M	2: Root - Rollerblinds m	nodule K18 Mot	tor Down 1	Root	Dup 1	G2
Controlled output			4: Root - Rollerblinds m	nodule K18 Mot	tor Down 2	Root	Dup 1	G4
Options								
Advanced								
Ŭ								
	<u> </u>							
		Input channels use	ed Output channels used Address	Consumption (m				
	<<< >>>>	11 / 129	16 / 129 6 / 249	16.5 / 450.0		Cano	el	Confirm

The signals available in this window are only the standard Dupline motor output type. **Only one motor output can be selected.** 

Wizard		□ ×
Add func	tion Dupline: Rollerblinds	
		Controlled output
Wizard Steps	Function name: (Fx) Root - Dupline: Rollerblinds	
Up signals	Output for motor up Output for motor down	
Down signals	• Rollerblinds module K18 Motor	
Controlled output		<b>M</b>
Options		
Advanced		
		Signal settings Signal properties
	<<< >>>>	Cancel Confirm





## 2.2.3 How to set the running time for Motor output

The running and reverse times of the motor have to be set when the rollerblind module is added.

These settings are needed for the correct operation of the function and they have to be defined in the wizard relevant to the *Dupline: Rollerblinds* function.

To access this, the user has to open the *Dupline: Rollerblinds* function window and then select *Options* (see picture below).

Wizard			
Add fund	tion Dupline: Rollerblinds		
		Options	
Wizard Steps	Function name: (Fx) Root - Dupline: Rollerblinds		
Up signals Down signals Controlled output Options (*) Advanced	Reverse motor timer (s) 1 Minutes Seconds Running UP time 0 Running DOWN time 0 50 50 50 50 50 50 50		
		Cancel	nfirm

Reverse motor time (seconds):

This is the time in seconds to change the motor direction (this time should be set to 1 second at least, to avoid damaging the motor).

## Running UP time (Minutes and Seconds):

This is the time for the blinds to go from a fully down position to a fully up position.

Starting from a fully open position, the user must use the manual command to completely close the blind. The entire running time must be measured: the accuracy of the time is to 1 second.

	_	
Curtain fully up	Running time	
		Curtain fully down





Running DOWN time (Minutes and Seconds):

This is the time for the blinds to go from a fully up position to a fully down position.

Starting from a fully wrapped position, the user must use the manual command to completely open the blind. The entire running time must be measured: the accuracy of the time is to 1 second.

L.Curtain fully up		
	Part to	
	Running time	
	Ļ	Curtain fully down

## 2.2.4 How to manage rollerblinds with automations

The automatic up/down adjustment of the blinds can be managed by wind sensors (the speed value measured by the sensor can be used to adjust the blinds up/down), by the Real time signals function (Calendar to adjust up/down at pre-defined time intervals) or by lux meters moving blinds up/down according to the levels of ambient light.

All these automation have to be enabled in the Advanced section.

## 2.2.5 How to use the wind sensor to control blinds

The wind sensor can be used to bring blinds into a safety position (useful if the user has a sunblind over his terrace) if the measured wind speed is very high or to make the blinds go down if the wind is calm.

When a wind sensor needs to be used, it must first be enabled in the Advanced section.

The *Wind sensors* menu will appear. After selecting this, with a double click on the Signal window the list of available signals will appear.

Select the required signal and click on Confirm. Only one signal can be selected.

Wizard		Wizard		Add signal		_ 0
Edit functi	ion Du	Edit fur	nction Du	Search	Loc	ation
					Ge	eneral
Wizard Steps Up signals Controlled output Options Advanced Wind sensors Luxeenors Real time signals (Calendar) Available output status Location	Function nat	Wizard Steps Up signals Down signals Controlled output Options ♥ Advanced Wind sensors Wind speed	Function nam Signals	Hide used output () Signals		Cancel Confirm





Once the wind sensor is added, the user has to set the wind speed limits in the Wind speed menu:

Wizard			
Add func	tion Dupline: Rollerblinds	Wind speed	
Wizard Steps	Function name: (Fx) Root - Dupline: Rollerblinds		
Up signals	Down when < For at least		
Down signals	Enabled 3 m/s 0 Minutes		
Controlled output Options	Up when > For at least		
<ul> <li>Advanced</li> </ul>	Enabled 5 m/s 0 Minutes		
Wind sensors			
Wind speed			
	<b>~~~</b>	Cancel	Confirm

In the *Down when* < field the user can select a wind threshold - when the wind speed goes below this threshold, the blinds totally open automatically (the totally-open position is fully down according to the settings in the output of the function).

In the *Up when* > field the user can select a wind threshold - when the wind speed goes over this threshold, the blinds are automatically brought into the safety position (the safety position is fully up according to the settings in the output of the function).

In the *For at least* fields the user can select a delay time to move the blind to fully down or to the safety position: the blind will be moved only when the wind condition is active for a time longer than this set value. If the delay time is set to 0 seconds, the delay time is disabled.

The Up and Down movement can be enabled/disabled separately by the Enable checkbox.





## Example 1

In the picture below, when the wind speed goes below 3 m/s for more than 2 minutes, the blind is moved to the fully Down position.

Wizard		□ ×
Add funct	tion Dupline: Rollerblinds	
	Wind speed	
Wizard Steps	Function name: (Fx) Root - Dupline: Rollerblinds	
<u>Up signals</u>	Down when < For at least	
Down signals	Enabled 3 m/s 2 Minutes	
Controlled output	Up when > For at least	
Options Advanced	Enabled 5 m/s 0 Minutes	
Wind sensors		
Wind speed		
	Cancel	Confirm

## Example 2

In the picture below, when the wind speed goes over 5 m/s for more than 1 minute, the blind is moved to the safety position.

Wizard		
Add funct	tion Dupline: Rollerblinds	
	Wind speed	
Wizard Steps	Function name: (Fx) Root - Dupline: Rollerblinds	
<u>Up signals</u>	Down when < For at least	
Down signals	Enabled 3 m/s 2 Minutes	
Controlled output	Up when > For at least	
Options	✓ Enabled 5 🗧 m/s 1 🕄 Minutes	
Advanced     Wind sensors		
Wind speed		
	Cancel Con	firm





## 2.2.6 How to control the blind according to the lux meter

The blind position can be managed in an automatic way by using the lux meter: the user can define up to two light thresholds to make the Sx2WEB24 system move the blinds up/down.

To select the lux sensor, the user has to click on the *Luxsensor* field and then double click on the Signals window. Once the output window is opened, select the relevant signal from the list.

Wizard	Wizard		Add signal						_ =
Edit functi	Edit func	tion Du	Search			Location			
						General			
			Hide used	output : 🗹 Signals	✓ Functions	Group	by functio	n 📃 Group	by subne
Wizard Steps	Wizard Steps	Function name		Name			Locat	Subnet	SIN /
<u>Up signals</u>	<u>Up signals</u>	Signals	۰ 🗆 🔒	1: Garden wall LUX Se	nsor K4 Sig		wall	Dup 1	C5
Down signals	Down signals		LUX						
Controlled output	Controlled output								
Options	Options								
Advanced	Advanced								
Wind sensors	Luxsensor								
Real time signals (Calendar)	Luxsensor settings								
Available output status									
Location									
		<<<	Input channels u 19 / 129	sed Output channels used Addres 16 / 129 7 / 249			Can	cel 🛛	Confirm

Once the lux sensor is added, the user can change the threshold values and the action that the blind has to perform when these values are reached in the *Luxsensor settings* window.

Wizard			
Edit funct	tion Dupline: Rollerblinds		
		Luxsensor settings	
Wizard Steps	Function name: (Fx) Root - Dupline: Rollerblinds		
Down signals	Cloud filter (s) 60 🕃 Lux level up (lux) 1000 🕃		
Controlled output Options	Lux level down (lux) 3500 💼		
Advanced     Luxsensor			
Luxsensor settings			
	<b>~~~</b>	Confirm	

The up/down movements start when the thresholds are surpassed, so if the blind position is changed manually by means of a light switch or automatically e.g. by the calendar, the automation of the lux sensor will not change it unless the thresholds are surpassed.





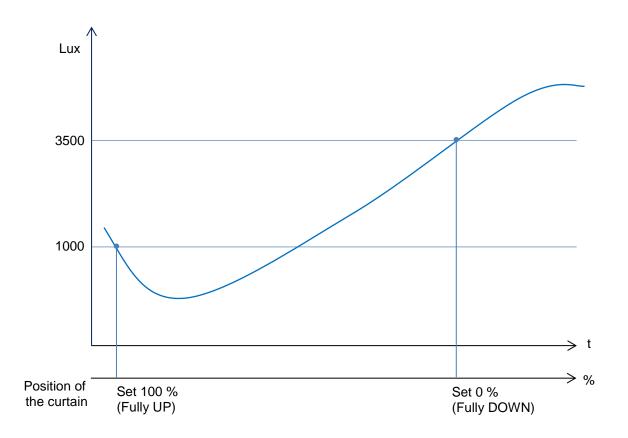
In the *Lux level up (lux)* field the user can select a lux threshold - when the light goes below this threshold, the blinds are automatically open (the totally open position is according to the settings in the output of the function).

In the *Lux level down (lux)* field the user can select a lux threshold - when the light goes over this threshold, the blinds are totally closed automatically (the totally closed position is according to the settings in the output of the function).

The user can also set a cloud filter to prevent the up/down movements if a cloud shields the sun for a short time. We suggest setting the time for at least 60 seconds; if the time is set to 0 the filter is disabled.

#### Example

The picture below shows how the blind position is changed according to the light level: the *Lux level up (lux)* threshold is set to 1000 Lux and the *Lux level down (lux)* threshold is set to 3500 Lux: the cloud filter is disabled. When the light goes below 1000 Lux, the blind is moved to the fully Up position. When the light goes over 3500 Lux, the blind is moved to the fully Down position.







# 2.2.7 How to move the blinds Up/Down with Real time signals (Calendar)

An example of this automation could be to use the Real time signals (calendar) to move the blinds Up or Down at a certain hour, e.g. at ten o'clock in the evening.

To control the *Dupline: Rollerblinds* function with the *Real time signals (Calendar)*, the user has to create a Calendar function and then select the green V *Use this calendar for command and disable signals,* as shown in the picture below:

Wizard		
Edit funct	ion Calendar	Calendar options
Wizard Steps Calendar Calendar options (*) Advanced	Function name: (Fx) Root - Calendar Use this calendar only with "Tilting blinds" functions Use this calendar as level signals Use this calendar for command and disable signals	
	<<< >>>>	Confirm

To set the *Global calendar* function, please read paragraph *How to set a global calendar function* in the Sx tool manual.

The *Real time signals* (Calendar) field has to be selected in the *Advanced* menu and then double click in the *Signals* window to select the calendar function.

Wizard	Wizard		Add signal		
Edit funct	Edit func	tion Dup	Search		
			🗌 Hide used	d output signals 🔽 Signals	Functions
Wizard Steps	Wizard Steps	Function name		Name	
<u>Up signals</u>	Up signals	Signals	• 🔽 🚺	(Fx) Compatibility - Calendar.Status	
Down signals	Down signals			(FX) Compatibility - Calendar.Status	
Controlled output	Controlled output				
Options	Options				
Advanced	Advanced				
Wind sensors	Real time signals (Calendar)	11			
Luxsensor					
Real time signals (Calendar)					
Available output status					
Location	<b></b> →			•	
Real time signals				-	
			Input channels	used Output channels used Address Consumption (mA)	
		<<<			





## Example

One example is to use a calendar function set to work all year round (from 1st January to 31st December). The working days are: Monday, Tuesday, Wednesday, Thursday and Friday (the calendar does not work on Saturday and Sunday).

The start time is 7:30 and the stop time is 20:30.

At 7:30 the blind starts moving up. At 20:30 the blind starts moving down.

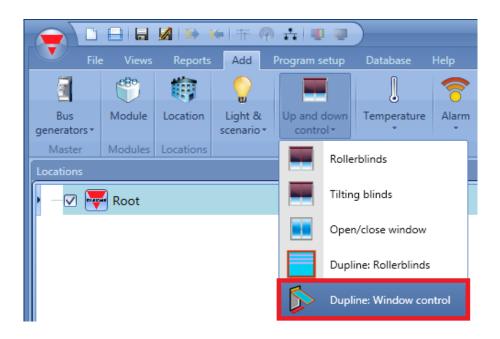
New activity	×
Activity name	Activity
From	1/1/2015 To 12/31/2015
Start	07:30 Stop 20:30
	Saturday Sunday ✓ Monday ✓ Tuesday ✓ Wednesday ✓ Thursday ✓ Friday During time period
@ Start time	© End time © End time © 😭 ? Confirm Cancel Delete





# 2.3 How to set a Dupline: Window control function

To set up this function, the user should select *Up and down control* from the *Add* menu, then select *Dupline: Window control* (see picture below). The new function will be added into the selected location.



The *Dupline: window control* function is similar to the *Dupline: Rollerblinds* function as described in the previous section.

The difference between the two functions are:

• The temperature sensor is used instead of the lux-meter

The temperature sensor makes the windows open if the temperature rises above the *Temperature* open value, and close when the temperature falls below the *Temperature close* value.

• The use of the Rain sensor

When a rain sensor is active (because of rain falling on it) the windows will close.



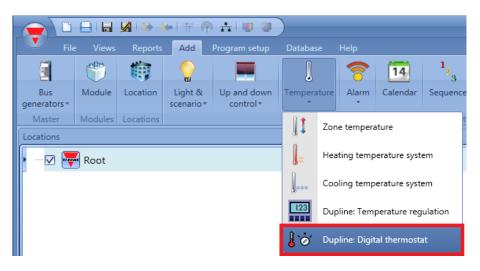


# 2.4 How to set a *Dupline: Digital thermostat* function

The *Dupline: Digital thermostat* function has been developed only for the standard Dupline BxW-TEMTHE module.

The BxW-TEMTHE is a module with one built-in temperature sensor, a manually adjustable set-point with a rotary control and a LED for indication.

To set up a *Dupline: Digital thermostat* function, the user has to select Temperature from the Add menu, then select *Dupline: Digital thermostat* function.



# 2.4.1 How to add a Thermostat signal

To add the Thermostat signal, the user has to click on the *Thermostat signals* field in the wizard menu of the function, then double click on the *Signals* window and select the signal from the Dupline BxW-TEMTHE module.

Wizard		
Edit funct	ion Dupline: Digital thermostat	
		Thermostat signals
Wizard Steps	Function name: (Fx) Compatibility - Dupline: Digital the	rmostat
Thermostat signals	Signals Notes	
Night setback signals	1: Root - Temperatures K79 Thermostat 1	Available mode
Stop signals		<b>b</b> 🙆
Output signals		
Signals for night setback		
Advanced		
		Signal settings Signal properties
	<<< >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>	Confirm





## 2.4.2 How to enable the Night setback mode

The *Night setback signals* field allows the temperature regulation to work in energy saving mode. This is used to control the room temperature with a predefined setpoint of 4°C lower than the normal setpoint. The user cannot change this offset value.

If the user wants to use the Night setback setpoint in the function, the *Night setback signals* field has to be used: to enable this, select *Night setback signals* in the wizard menu of the function, then double click on the Signals window and select the signal from the Dupline BxW-TEMTHE module.

Wizard		
Edit funct	tion Dupline: Digital thermostat	ack signals
• •	Night setb	
Wizard Steps	Function name: (Fx) Compatibility - Dupline: Digital thermostat	
Thermostat signals	Signals Notes	
Night setback signals	5: Root - Temperatures K79 Night Set Back 1	Available mode
Stop signals		
Output signals		
Signals for night setback		
<ul> <li>Advanced</li> </ul>		
		City of Signal graphering
		Signal settings Signal properties
	<<< >>>>	Confirm

The *Night setback signals* works as a level signal. Until the signal is active, the Night setback setpoint is active.





## 2.4.3 How to force heating OFF

If the user wants to force the deactivation of the Output signals regardless of all the other signals used in the function, the *Stop signals* field has to be used: to enable this, select *Stop signals* in the *wizard menu* section, then double click on the Signals window and select the signal to use (see picture below).

Wizard			□ ×
Edit funct	ion Dupline: Digital thermosta	t	
• •		Stop signals	
Wizard Steps Thermostat signals	Function name: (Fx) Compatibility - Dupline Signals Notes	e: Digital thermostat	
Night setback signals Stop signals Output signals Signals for night setback  Advanced	(Fx) Compatibility - Automation	ON/OFF.Status	Available mode Inverted signal
	····		Confirm

Each signal used in the *Stop signals* window works as a level signal. Until the signal is active, the output is forced off.

## 2.4.4 How to add the Output signals

To add the *Output signals* the user should click on the *Output signals* field in the wizard menu then double click on the Signals window and select the signal from the list of those available (see picture below):

Wizard		□ ×
Edit funct	tion Dupline: Digital thermostat	
<b>o</b>		Output signals
Wizard Steps Thermostat signals Night setback signals	Function name: (Fx) Compatibility - Dupline: Digital the Signals Notes	A with the words
Stop signals         Output signals         Signals for night setback <ul> <li>Advanced</li> </ul>	। 🚰 4: Root - House - Cabinet - Relay module	Ko Ke 4
	<	Confirm





The logic of each output signal can be set as normal or inverted (see the yellow rectangle in the picture below).

Edit function Dupline: Digital thermostat Output signals
Wizard Steps     Function name: (Fx) Compatibility - Dupline: Digital thermostat       Intermostat signals     Notes       Night setback signals     Stop signals       Output signals     Inverted signal       Signals for night setback     Inverted signal       Image: Advanced     Image: Signal settings       Signal settings     Signal settings

### 2.4.5 How to set the Heat ON LED as a feedback signal

The onboard red LED can be used to give information about the status of the *Dupline: Digital thermostat* function.

It follows the status of the function: it is on if the function is on, and off if the function is off.

To manage the feedback LED, the user should click on the *Output signals* field in the wizard of the function, then double click on the *Signals* window and select the LED signal from the list of those available.

Wizard		Add signal
〕 ( ヽヽヽヽヽ Add func	tion Dupline: Digital thern	Search
<u>↓</u> ⊘		
Wizard Steps		☐ Hide used output signals
Thermostat signals	Function name: (Fx) Root - Dupline: [	Name
	Signals Notes	🗹 🚝 🛕 1: Root - Relay module K5 Re 1
Night setback signals	🛒 1: Root - Relay module K5	2: Root - Relay module K5 Re 2
<u>Stop signals</u>		3: Root - Relay module K5 Re 3
Output signals		4: Root - Relay module K5 Re 4
Signals for night setback		5: Root - Relay module K5 Re 5
Advanced		→ □ → 6: Root - Relay module K5 Re 6
		7: Root - Relay module K5 Re 7
		8: Root - Relay module K5 Re 8
		🕨 🔽 🐧 6: Root - Temperatures K3 Led 2
		5: Root - Temperatures K3 Night Set Back 1
	· · · · · · · · · · · · · · · · · · ·	Input channels used         Output channels used         Address         Consumption (mA)           1/129         10/129         2/249         3.0/450.0





The signals available in this window are LEDs and relays and we suggest using the dedicated red LED present on the BxW-TEMTHE module. Up to 50 signals can also be used as feedback status signals and they can be managed in parallel.

The logic of each feedback signal can be set as normal or inverted (see yellow rectangle in the picture below).

Wizard		□ ×
♪ Add funct	tion Dupline: Digital thermostat	
<b>₿</b> ⊘		Output signals
Wizard Steps	Function name: (Fx) Root - Dupline: Digital thermostat	
Thermostat signals	Signals Notes	
Night setback signals	1: Root - Relay module K5 Re 1	Available mode
<u>Stop signals</u>	🕨 🕵 6: Root - Temperatures K3 Led 2	N N
Output signals		Inverted signal
Signals for night setback		
Advanced		
		Signal settings Signal properties
	<	Cancel Confirm

## 2.4.6 How to use the calendar for night setback

The Calendar must be created before using the calendar function. To set the Global calendar function, please read paragraph *How to set a global calendar function* in the Sx tool manual.

To add the *Calendar* function, the user has to click on the *Signals for night setback* field in the wizard menu then double click on the *Signals* window and select the *Calendar* function from the list of those available (see picture below).

Wizard	•
Edit funct	tion Dupline: Digital thermostat
<mark>↓</mark> ⊘	Real time signals for night setback
Wizard Steps Thermostat signals	Function name: (Fx) Compatibility - Dupline: Digital thermostat
Night setback signals Stop signals Qutput signals Signals for night setback	Signals Notes Metal (Fx) Compatibility - Event Calendar.Status Inverted signal Notes Available mode Inverted signal Notes Inverted signal
	Signal settings Signal properties
	Confirm





# 2.5 How to set a *Dupline: Temperature regulation* function

To set up a *Dupline: Temperature regulation* function, the user has to select *Temperature* from the *Add* menu, then select *Dupline: Temperature regulation*.

Note: The *Dupline: Temperature regulation* function is also available in the webserver and in the *Live signals* window in the Sx tool. When the configuration is uploaded into the Sx2WEB24, the temperature value takes up to 5 minutes to be shown.

			<b>M</b> =	•  † 🧖	÷ 💷 🔍						
	File	e Views	Reports	Add	Program setup	Databas	;e	Help			
8		٣	(iii)			Į		7	14	1 ₂ 3	
Bi		Module	Location	Light & scenario *	Up and down control <del>*</del>	Tempera *	ature	Alarm	Calendar	Sequence	e
Ma	ster	Modules	Locations			It	Zon	e tempera	ature	t	tio
Locati	ons					4.*					
• -	v 🖣	Root				J.	Hea	ting temp	erature syst	em	
								ling temp	erature syst	em	
						123	Dup	line: Tem	perature reg	ulation	
						<b>)</b> `ó	Dup	line: Digit	al thermosta	at	-

## 2.5.1 How to add a temperature signal

In the first step of the function, the user must enter the temperature signal that has to be used to control heating/cooling.

The available signals are from sensors such as Bxx-TEMANA, Bxx-TEMDIS.

Wizard		
123 Add funct	Dupline: Temperature regulation	
		Temperature sensors
Wizard Steps	Function name: (Fx) Root - Dupline: Temperature regu	lation
Temperature sensors	Signals Notes	
Temperature options		
Outdoor temperature sensor		
Advanced		
Heating		
Cooling Available output status		
Location		
		Signal settings Signal properties
	<<< >>>>	Cancel

If only the room temperature signal is used, the fields *Temperature options* and *Outdoor temperature sensor* are not managed.





## 2.5.2 How to use the Temperature function with a temperature display

In the *Temperature sensors* field, the user can add one temperature signal from a TEMDIS module (Bxx-TEMDIS). The signal is called *Temp dat 1*.

Wizard		• • •
123 Add func	tion Dupline: Temperature regulation	
	Tempo	erature sensors
Wizard Steps	Function name: (Fx) Root - Dupline: Temperature regulation	
Temperature sensors	Signals Notes	
Temperature options	1: Root - Temdis display K30 Temp dat 1	Available mode
Outdoor temperature sensor		
(     Advanced		
		Signal settings Signal properties
	<<< >>>>	Confirm

# Note: *Temp dat* is a special data used by the system to transmit the Troom and Tfloor values, so in the *Live signals* window only Troom and Tfloor are shown.

## 2.5.3 How to set the working mode

In the *Temperature options* window, the user should select the relevant working mode of the temperature function, as shown in the picture below.

### 2.5.3.1 Room Temperature

The function regulates only according to the room temperature (T-room measured by Bxx-TEMDIS). In the *Temperature options* field, the user has to select the first icon on the left, as shown in the picture below.

Wizard	□ ×
Edit function Dupline: Tem	perature regulation
	Temperature options
Wizard Steps Function name:	
Temperature sensors	
Outdoor temperature sensor	
	>>> Confirm





## 2.5.3.2 Floor Temperature

The user shall select this working mode when the temperature regulation has to be done according to the floor temperature (usually this is the probe that is often placed in the floor to monitor the temperature in the heating tubes).

In the *Temperature options* field, the user has to select the second icon on the left, as shown in the picture below.

Wizard			□ ×
[123] Edit funct	tion Dupline: Temperature regulation		
		Temperature options	
Wizard Steps	Function name:		
Temperature options	🕸 🔝 🏠		
Outdoor temperature sensor	Floor min temperature (°C) 10 🕃		
Advanced	Floor max temperature (°C) 15 🗐		
	<<<		Confirm

The user can set two different thresholds: the *Floor min temperature* ( $^{\circ}C$ ) to allow a minimum floor temperature and the *Floor max temperature* ( $^{\circ}C$ ) in order to avoid over-heating of the floor.





## 2.5.3.3 Room Temperature with floor monitor

The function regulates according to the room temperature (T-room measured by Bxx-TEMDIS) but monitoring the floor temperature in order to avoid over-heating of the floor and to maintain a minimum temperature on the floor.

In the *Temperature options* field, the user has to select the third icon, as shown in the picture below.

Wizard			×
123 Edit funct	Dupline: Temperature regulation		
		Temperature options	
Wizard Steps	Function name:		]
Temperature sensors Temperature options	🕸 🗈 🎦		
Outdoor temperature sensor	Floor min temperature (°C) 10 🚼		
V Advanced	Floor max temperature (°C) 15 🕃		
	<	Confirm	

The user can set two different thresholds: the *Floor min temperature* (°C) to allow a minimum floor temperature and the *Floor max temperature* (°C) in order to avoid over-heating of the floor.





## 2.5.4 How to enable the visualization of the external temperature in the Bxx-TEMDIS display

To add the external temperature signal, the user has to select the relevant section in the wizard of the function, then double click on the Signals window and select the input signal from the list of those available (see picture below).

Wizard							
Edit funct	tic	on D	upline:	Temperature regulation			
					utdoor tem	perature sensor	
Wizard Steps	F	unction na	me: (Fx)	() Root - Dupline: Temperature reg	ulation		
Temperature sensors	[	Signals	Notes				
Temperature options         Outdoor temperature sensor         (~) Advanced		1: 6	arden -	Temp sensor K27 Temperatu	re 1	Available n	node
Auvanced						Signal settings Sig	gnal properties
		<<<		>>>		(	Confirm

In the *Outdoor temperature* signals window, the user can add one temperature signal from the sensor modules (e.g. BSI-TEMANA).

This gives the possibility to show the outdoor temperature in the Bxx-TEMDIS display.





## 2.5.5 How to add the Heating/Cooling control

In the *Advanced* options of the wizard, the user shall set the heating/cooling parameters. By enabling *Heating* control, the relevant fields will appear (see picture below).

Wizard	Wizard
Edit function Dupline: Tempera	Edit function Dupline: Temperature reg
Wizard Steps Function name: (Fx) Root - Duplin	Wizard Steps
Temperature sensors       Temperature options       Outdoor temperature sensor       Advanced       Heating       Cooling       Available output status       Location	Iemperature sensors       Temperature options       Outdoor temperature sensor <ul> <li>Advanced</li> <li>Heating</li> <li>Heating output</li> <li>Off signals</li> <li>Night setback signals</li> <li>Options</li> </ul> <ul> <li></li> <li></li></ul> <li> </li> <li> <ul> <li></li></ul> <li> <li></li> <li> <li> <li></li> <li> <li></li></li></li></li></li></li></li></li></li></li></li></li></li></li></li></li></li></li></li></li></li></li></li></li></li></li></li></li></li></li></li></li></li></li></li></li></li></li></li></li></li></li></li></li></li></li></li></li></li></li></li></li></li></li></li></li></li></li></li></li></li></li></li></li></li></li>

The settings of the Cooling control are the same as the Heating control.

## 2.5.6 How to add the Heating output

To add the *Heating output* signals the user shall click on the *Heating output* field in the *Advanced* section, then double click on the Signals window and select the signal from the list of those available (see picture below).

Wizard	1	= ×
[123] Edit funct	tion Dupline: Temperature regulation	
	Heating output	
Wizard Steps Temperature sensors	Function name: (Fx) Root - Dupline: Temperature regulation           Signals         Notes	
Temperature options       Outdoor temperature sensor <ul> <li>Advanced</li> <li>Heating</li> <li>Heating output</li> </ul>	Available mode	
Off signals Night setback signals Options		
	Signal settings Signal propertie	s





The logic of each output signal can be set as normal or inverted (see the yellow rectangle).

Wizard		□ ×
[123] Edit funct	Dupline: Temperature regulation	
		Heating output
Wizard Steps	Function name: (Fx) Root - Dupline: Temperature reg	gulation
Temperature sensors	Signals Notes	
Temperature options	1: Root - Relay module K31 Re 1	Available mode
Outdoor temperature sensor		
✓ Advanced		Inverted signal
Heating		
Heating output		
Off signals		
Night setback signals		
Options		
Cooling		
		Signal settings Signal properties
	<<< >>>>	Confirm

## 2.5.7 How to force Heating/Cooling OFF

If the user wants to force the deactivation of the Heating/Cooling outputs regardless of all the other signals used in the function, the *Off signal* field has to be used: to enable it, select *Off signals* in the *Advanced* section, then double click on the Signals window and select the signal to use (see picture below).

Wizard		
Edit funct	tion Dupline: Temperature regulation	
	Off signals	5
Wizard Steps	Function name: (Fx) Root - Dupline: Temperature regulation	
Temperature sensors	Signals Notes	
Temperature options	(Fx) Automation on/off function.Status	Available mode
Outdoor temperature sensor		
<ul> <li>Advanced</li> </ul>		Inverted signal
Heating		
Heating output		
Off signals		
Night setback signals		
Options		
Cooling		
	Sign	nal settings Signal properties
	<	Confirm

Each signal used in the Off signals window works as a level signal. Until the signal is active, the Heating/Cooling output is forced Off.





# 2.5.8 How to enable the night mode

The *Night setback* signals allow the temperature regulation to work in energy saving mode. Each signal used in this field works as a level signal: while the signal is active, the regulating setpoint is the one set in *Night setback signals*.

Wizard		= ×
Edit funct	ion Dupline: Temperature regulation	
		Night setback signals
Wizard Steps	Function name: (Fx) Root - Dupline: Temperature regulation	
Temperature sensors	Signals Notes	
Temperature options	Fx) Night setback toggle.Status	Available mode
Outdoor temperature sensor		
<ul> <li>Advanced</li> </ul>		Inverted signal
Heating		
Heating output		
Off signals		
Night setback signals		
<u>Options</u>		
Cooling		
		Signal settings Signal properties
	<<< >>>>	Confirm

## 2.5.9 How to configure the setpoint for comfort mode

To change the predefined setpoints, the user shall click on the Options field in the Advanced section.

Wizard		
Edit funct	tion Dupline: Temperature regulation	
	Options	
Wizard Steps	Function name: (Fx) Root - Dupline: Temperature regulation	
Temperature sensors	Min setpoint (°C)	
Temperature options	Max setpoint (°C) 30 🕃	
Outdoor temperature sensor	Temperature setpoint (°C)	
Heating	Night setback min value (°C)	
Heating output	Night setback max value (°C) 30 🗧	
Off signals	Night setback (°C) 16.5 🗧	
Night setback signals Options	Antifreeze	
Cooling	Heat safety	
	Antifreeze temperature (°C) 5	
	Heating output percentage on sensor fail	-
	<<< >>>> Con	firm

The user can select the operating range for the comfort setpoint. The temperatures chosen in the *Min* setpoint (°C) and *Max* setpoint (°C) fields are the setpoint limits between which the setpoint can be changed.

In the *Temperature setpoint* (°C) field, the user has to set the desired one for the comfort mode.





## 2.5.10 How to configure the setpoint for Night setback / economy mode

To change the predefined *Night setback* value, the user shall click on the *Options* field in the Advanced section of the function.

Wizard		
Edit funct	ion Dupline: Temperature regulation	
	Options	
Wizard Steps	Function name: (Fx) Root - Dupline: Temperature regulation	A
Temperature sensors	Min setpoint (°C) 10 😴	_
Temperature options	Max setpoint (°C) 30	
Outdoor temperature sensor	Temperature setpoint (°C)	
( Advanced		
Heating	Night setback min value (°C) 10 🕃	
Heating output	Night setback max value (°C) 30 🕃	
Off signals	Night setback (°C) 16.5 蒙	
Night setback signals Options	Antifreeze	
Cooling	Heat safety	
	Antifreeze temperature (°C) 5	
	Heating output percentage on sensor fail 21	•
	<<< >>>> Cor	nfirm

The user can select the operating range for the economy setpoint. The temperatures chosen in the *Night* setback min value (°C) and *Night* setback max value (°C) fields are the setpoint limits between which the setpoint can be changed.

In the *Night setback* (°C) field the user has to set the desired value for the economy mode.





## 2.5.11 How to set the antifreeze temperature

In the Options window of the function, the user can set the Antifreeze value.

If the function status is set to OFF (the function status is Off), and the measured temperature in the function falls below the antifreeze value, the output in the zone is activated until the temperature is once again above the antifreeze limit.

Wizard		
Edit funct	tion Dupline: Temperature regulation	
	Options	
Wizard Steps	Function name: (Fx) Root - Dupline: Temperature regulation	-
Temperature sensors	Min setpoint (°C) 10 🕃	
Temperature options	Max setpoint (°C) 30 😨	
Outdoor temperature sensor	Temperature setpoint (°C) 22	
Heating	Night setback min value (*C) 10 🚼	
Heating output	Night setback max value (°C) 30 🚼	
Off signals	Night setback (°C) 16.5 🚼	
Night setback signals Options	Antifreeze	
Cooling	Heat safety	
	Antifreeze temperature (°C) 5	
	Heating output percentage on sensor fail 21	-
	<<< >>>> Co	nfirm

The antifreeze regulation works with a hysteresis of one degree:

Heating ON → temperature < antifreeze temperature Heating OFF → temperature ≥ antifreeze temperature





## 2.5.12 How to set the Heat safety

The safe condition can be set in order to keep the system in a safe working mode in case of a fault in the regulating temperature probe. The user shall choose different actions to be performed for Heating and Cooling. To configure the safe mode settings, the user has to click on the relevant field *Heat safety* of the function wizard (see picture below).

Wizard		n x
Edit funct	Dupline: Temperature regulation	
	Options	
Wizard Steps	Function name: (Fx) Root - Dupline: Temperature regulation	A
Temperature sensors	Min setpoint (°C) 10 🕃	
Temperature options	Max setpoint (°C) 30 🕃	
Outdoor temperature sensor	Temperature setpoint (°C) 22 🕃	
Heating	Night setback min value (°C)	
Heating output	Night setback max value (°C) 30 🕃	
Off signals	Night setback (°C)	
Night setback signals Options	Antifreeze	
Cooling	Heat safety	
	Antifreeze temperature (°C) 5	
	Heating output percentage on sensor fail	
	~~~~ >>>	Confirm

The heat safety function will protect from overheating, in case of a sensor breakdown.

As soon as this fault is detected, the system will make the regulating output cycle according to the setting in the *Heating output percentage on sensor fail*, so that a minimum temperature is always maintained avoiding over-heating and preventing the house from freezing.

N.B. The Heat safely function is active when a signal is added in the 'Heat output' field

The user has to consider very thoroughly which value to put here; if set is too high, the room might be overheated.

Example

The cycle time of the regulator is 100 seconds, when the Heat safety is active.

If the value of the *Heat output percentage on sensor fail* is set to 21%, the ON time will be 21 seconds of the full 100 seconds cycle time. The rest 79 seconds, the output will be OFF