Easy 6-channel touch push-button panel module

CE

KNX®

GW10741

Technical Manual

Contents

1 Introduction

This manual describes the functions for the devices "**Easy 6-channel touch push-button panel module**" (GW10741) and how they are set and configured using the ETS configuration software.

2 Application

The Easy 6-channel touch push-button panel module is a command device with 6 channels, which can be used individually or combined.

The touch detection areas consist of capacitive sensors positioned under the glass surface, one for each implemented channel. The device has a temperature sensor that acts as a temperature probe and a buzzer to signal touching. Each channel has two light signalling LEDs, one amber and one blue.

The device can perform the following functions:

- load ON / OFF commands
- timed commands
- dimmer management (single or double button)
- curtain / shutter management (single or double button)
- scene management

It is possible to control the sensitivity level of the touch sensors (medium or high) according to the procedure described in the paragraph **"Varying sensitivity by touch"** in the instruction sheet.

A function can be associated to each channel by means of a specific parameter, as described below.

2.1 Association limits

The maximum number of communication objects available is 37.
The maximum number of associations that the device can store is 70.
The maximum number of group addresses is 70.

3 *"Settings"* menu

The **Settings** menu contains the parameters that are used to configure the main device operating parameters (fig. 3.1) in addition to the programming mode selected from between ETS ("System" mode) and Easy using the Easy controller software (Kit GW90837, Kit GW90838, GW90840).
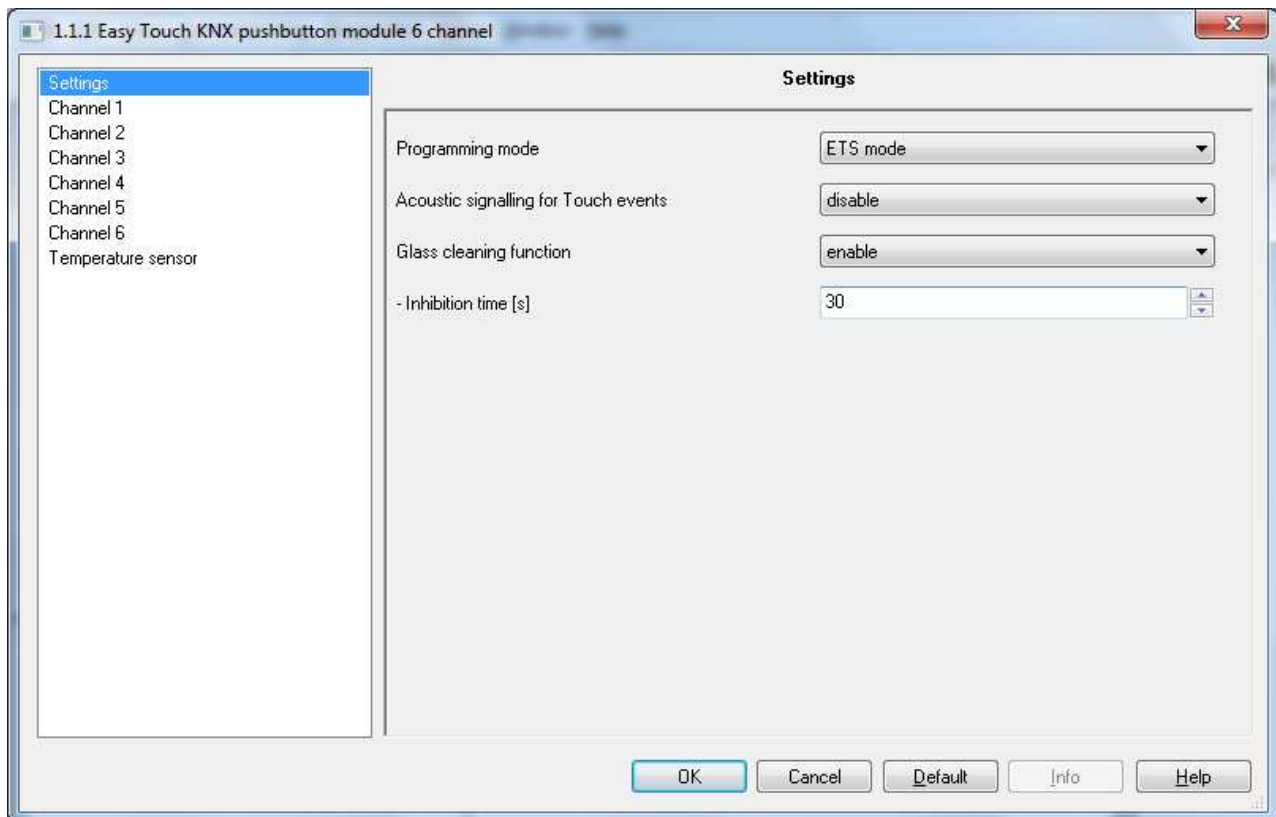

Fig. 3.1

3.1   Parameters

➢ 3.1.1 Programming mode
Determines the device's programming mode:

- **ETS mode**
  This option must be selected if the device is configured with ETS ("System Mode").

- **Easy mode**
  This option must be selected if the device is to be configured with the Easy controller software.
  If the device has been previously configured with ETS and it is to be included in an Easy project, download the application via ETS with this parameter selected in "Easy mode" to allow the Easy controller software to then be able to configure it.

➢ 3.1.2 Acoustic signalling for Touch events
This is used to enable the device to reproduce certain sound effects when the Touch events are detected. The values that can be set are:

- **Disable (default value)**

- **Enable**

The acoustic signal is linked only to the Touch event. The sound effect associated with the touch is reproduced if and only if the channel is associated with one function.

The acoustic signal associated with the input or output of manual configuration functions is always active independently of the setting of acoustic signalling by touch

➢ *3.1.3 Glass cleaning function*

This is used to temporarily inhibit the capacitive sensors so the glass surface can be cleaned without involuntarily sending bus commands. The values that can be set are:

- ● *Disable*

- ● *Enable (default value)*

Selecting **enable**, the parameter **"Inhibition time [s]"** is used to define the sensor inhibition period; The values that can be set are:

- from 10 to 120, **30 (default value)**

With regard to the procedure for activating/deactivating the glass cleaning function, refer to paragraph **"Cleaning function"** in the instruction sheet.

4 "Channel x" menu

This chapter describes in general the communication objects and parameters related to channels 1, 2, 3, 4, 5, 6 (indicated generically as *channel x* - fig. 4.1).
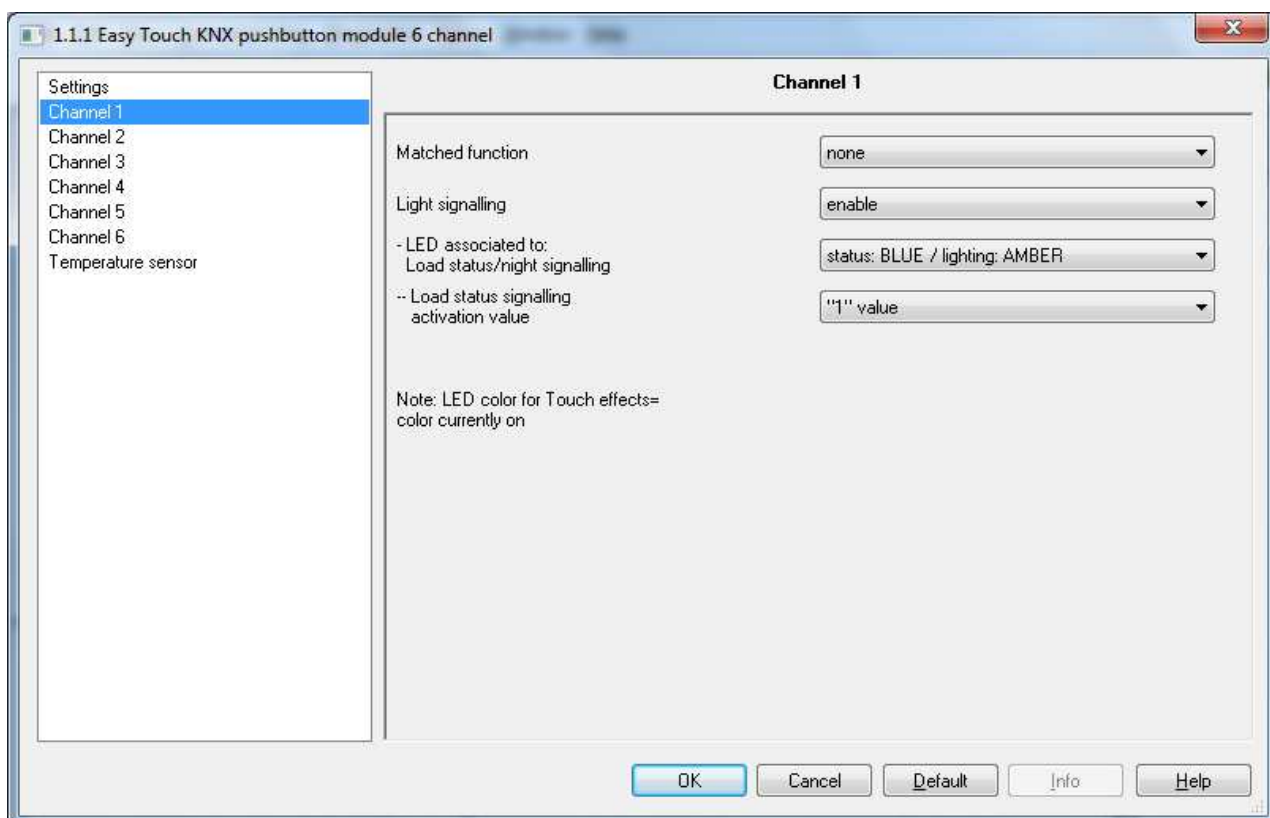The value set for the first item (*Matched function*) determines the menu structure.

Fig. 4.1

4.1 Parameters

➢ 4.1.1 Matched function

This determines the function associated to the generic channel x; based on the value set with this parameter, the *Channel x* menu will appear differently. The values that can be set are:

- *no function (none)*

No function is associated with the generic channel, therefore it is disabled.

- *button (toggle)*

See chapter 5 - **Function** *"button (toggle)"*

- *single button dimmer*

See chapter 6 - **Function** *"single button dimmer"*

- *single button shutter*

See chapter 7 - **Function** *"single button shutter"*

- *double button dimmer*

See chapter 8 - **Function** *"double button dimmer"*

- *double button shutter*

See chapter 9 - **Function** *"double button shutter"*

- *edges*

See chapter 10 - **Function** *"edges"*

- *timing*

See chapter 11 - **Function** *"timing"*

- *scene*

See chapter 12 - **Function** *"scene"*

➢ 4.1.2 Light signalling

This enables the device to reproduce particular light effects; the values that can be set are:
- *Disable (default value)*
- *Enable*

By enabling indicator lights, if the function matched with the channel is **none**, **single button shutter**, **double button shutter** or **edges**, this displays the parameter **"LED associated to: load status/night lighting"** for defining which LED to associate with the load status signalling and which to night lighting; the values that can be set are:

- **Status: BLUE / lighting: AMBER (default value)**
- Status: BLUE / lighting: NONE
- Status: AMBER / lighting: NONE
- Status: AMBER / lighting: BLUE
- Status: NONE / lighting NONE
- Status: NONE / lighting BLUE
- Status: NONE / lighting AMBER

Selecting the **status value: BLUE / lighting: AMBER** o **status: BLUE / lighting: NONE**, displays the communication object *Ch.x - Blue light signalling* which allows to manage the signalling from the bus and the parameter **"Load status signalling activation value"**, which defines the logical value for activating the light signalling.
Selecting the **status value: AMBER / lighting: BLUE** or **status: AMBER / lighting: NONE**, displays the communication object *Ch.x - Amber light signalling* which allows to manage the signalling from the bus and the parameter **"Load status signalling activation value"**, which defines the logical value for activating the light signalling.

The values that can be set for the parameter **"Load status signalling activation value"** are:

- value "0"
- **value "1" (default value)**

Each time the bus voltage is recovered, the device sends a status reading command on the object *Ch.x - Blue (amber) light signalling* in order to reupdate the push-button panel about the status of the connected devices.

If light signalling is enabled independently of the function associated with the channel, the color associated with the touch effect is defined based on the colors associated with night lighting or status signalling, as described in the table:

STATUS SIGNALLING	NIGHT LIGHTING	TOUCH EFFECT ON LED COLOUR
BLUE	AMBER	CURRENT LED COLOR
BLUE	NONE	BLUE
AMBER	NONE	AMBER
AMBER	BLUE	CURRENT LED COLOR
NONE	NONE	BLUE

In summary, the color of the touch effect is that of the currently switched on LED (if both signals are activated) or corresponds to the color of the active signalling (if only one signal is activated). If both LEDs are deactivated, blue will be used. If light signalling is disabled, also the touch effect will be disabled.

The following light effects are active by default and cannot be modified:
- Touch → effect 1 (down ramp)
- Maintenance → effect 2 (heartbeat)
- Long touch → no light effect with the exception of the scene function
- Release → no light effect

When these events occur, the associated effects are replicated without changing the color of the light signalling; only the value of the status notification object can modify the color of the light signalling.

Therefore, the Touch effects that can be reproduced for each channel are:

			Touch events		
			Touch	Maintenance	Long touch
Matched function		No function	YES		
		Button (toggle)	YES		
		Single button dimmer	YES	YES	
		Single button shutter	YES		
		Double button dimmer	YES	YES	
		Double button shutter	YES		
		Edges	YES		
		Timing	YES		
		Scene	YES		YES
	Light effect		down ramp	heartbeat	executes 5 flashes

5 Function *"button (toggle)"*

This function is used to set the sending of an alternating ON/OFF switching command. When the sensitive area associated with channel x is touched, the device sends a telegram via the bus with the logic value opposite to the value of the status adopted by the controlled actuator or the last sent value.

The value (ON or OFF) evaluated by the device to send the next status is the last received via the communication object **Ch.x - Status feedback** which the device uses to determine, for example, the current status of the output channel of the controlled actuator (by itself or by other devices).

Each time the bus voltage is recovered, the device sends a status reading command on the object **Ch.x - Status notification** in order to reupdate the push-button panel about the status of the connected devices.

The bus commands are sent via the communication object **Ch.x - switching**

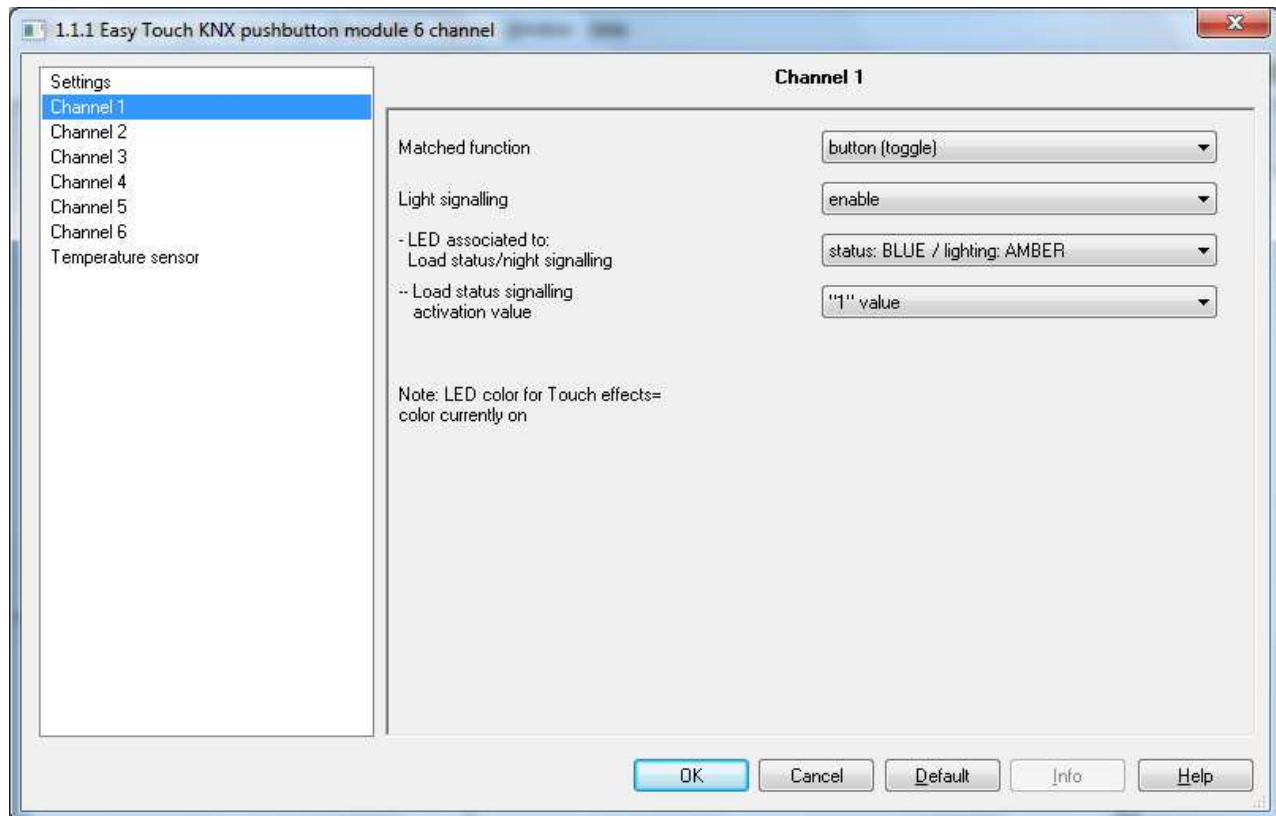The basic structure of the menu is as follows (Fig. 5.1):

Fig. 5.1

5.1 Parameters

➢ *5.1.1 Light signalling*
Refer to paragraph 4.1.2 for the settings of this parameter

6 Function *"single button dimmer"*

This is used to configure the channel to control a dimmer with a single channel, increasing and decreasing dimmer brightness always using the same channel.

For sending on/off telegrams and brightness control telegrams.

As there is only one channel to manage the On/Off and brightness control functions, the operation is managed by differentiating between short operations and long operations:

- if the touch operation lasts longer than 0.5 sec, a long operation is recognised, which is transformed into a brightness increase/decrease command. if the last received command was increase, the new command will be decrease command and vice versa
- if the touch operation does not last longer than 0.5 sec, a short operation is recognised, which is transformed into an on/off command. if the last received command was on, the new command will be off command and vice versa

The brightness control commands are sent via the communication object **Ch.x - Brightness dimming** while the on/off commands are sent via the object **Ch.x - Switching**.

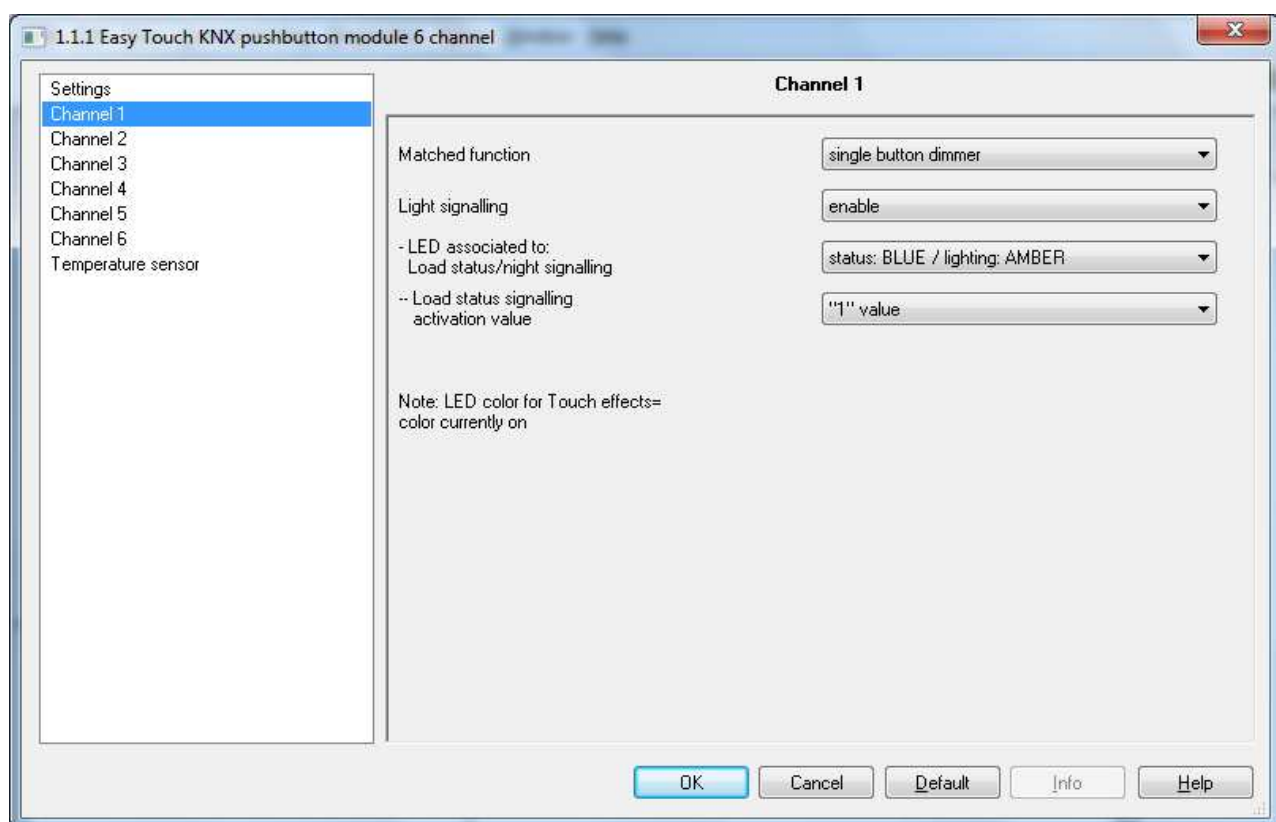The basic structure of the menu is as follows (Fig. 6.1):

Fig. 6.1

6.1 Parameters

➢ **6.1.1 Light signalling**
Refer to paragraph 4.1.2 for the settings of this parameter

7 Function *"single button shutter"*

This is used to configure the channel to control a shutter with a channel, regulating the upward and downward travel of the shutter and, depending on the device version, controlling louvres opening/closing.

As only one channel manages the louvres up/down and control functions, the operation is managed so that at each touch, a command is sent that is the opposite of the last movement signal received by the actuator that manages the shutter; there is a difference between short and long operations:

- if the touch operation lasts longer than 0.5 sec, a long operation is recognised, which is transformed into an up/down movement command. If the last received movement signal was "up", the new command will be a down command, and vice versa.
- if the touch operation does not last longer than 0.5 sec, a short operation is recognised, which is transformed into a louvre control command. If the last received movement signal was "up", the new command will be a closing louvres control command. However, if the last received movement signal was "down", the new command will be an opening louvres control command. If the shutter is moving, the louvres control command will only stop the shutter up/down movement.

The up/down movement commands are sent via the object **Ch.x - Shutter movement**, the stop movement in progress/louvres control commands via the object **Ch.x - Shutter stop/Louvres control** whereas the movement in progress signals for the controlled shutter/venetian blind is received via the object **Ch.x - Movement feedback**.

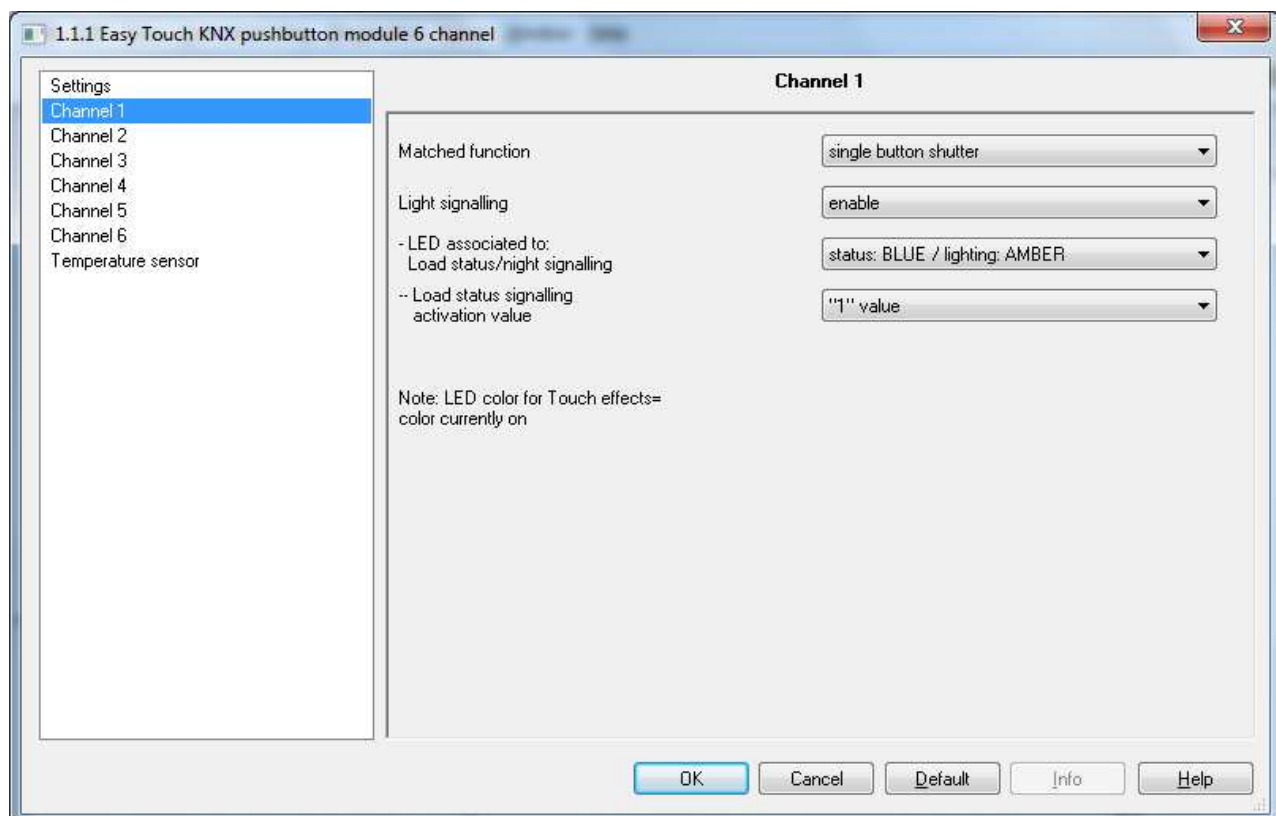The structure of the menu is as follows (Fig. 7.1):

Fig. 7.1

7.1 Parameters

➢ 7.1.1 Light signalling
Refer to paragraph 4.1.2 for the settings of this parameter.

8 Function *"double button dimmer"*

This is used to configure the channel to control a dimmer with two buttons, managing in this case only one of the two control directions (brightness increase/decrease).

On or off telegrams and brightness increase or decrease telegrams can be sent, based on the configured control direction. Also in this case, there is a difference between short and long operations:

- a long operation is transformed into a brightness control command. If the set control direction is "increase", the control will only be increasing, otherwise if the set control direction is "decrease" the control will be decreasing. In both cases, when released, an adjustment stop telegram is sent to stop the brightness increase or decrease operation for the dimmer and to fix the brightness value reached at the moment the stop control command was received.
- a short operation is transformed in to an on or off command depending on the set control direction. If the set control direction is "increase" the sent command will only be an ON command. If the set control direction is "decrease" the sent command will only be an OFF command.

The brightness control commands are sent via the communication object **Ch.x - Brightness dimming** while the on/off commands are sent via the object **Ch.x - Switching**.

The structure of the menu is as follows (fig. 8.1):

Fig. 8.1

8.1 Parameters

➢ *8.1.1 Regulation direction*

This configures the control direction of the brightness that the channel controls; the settable values are:

- **Increase (uneven channel default value)**
- **Decrease (even channel default value)**

Selecting "increase", the sent commands will be 'increase brightness 100%' or ON, depending on the recognised activation; otherwise, selecting "decrease" the sent commands will be 'decrease brightness 100%' or OFF.

➢ *8.1.2 Light signalling*

Refer to paragraph 4.1.2 for the settings of this parameter.

9 Function *"double button shutter"*

This is used to configure the channel to control a shutter/venetian blind with two buttons, managing in this case only one of the two movement directions (down or up).

Up or down movement telegrams or louvres open or close control telegrams can be sent. Also in this case, there is a difference between short and long operations:

- a long operation is transformed into a movement command. If the set movement direction is "up", the movement will only be up, vice versa if the set direction is "down" the movement will be down. When released, the device will not perform any action.
- a short operation is transformed into a louvres control command (stop movement if the shutter is moving), depending on the set movement direction.

  If the set movement direction is "up" the sent command will only be a louvres opening control command (or stop movement). If the set adjustment direction is "down" the sent command will only be a louvres closing control command (or stop movement).

The up or down movement commands are sent via the communication object **Ch.x - Shutter movement** whereas the louvres opening or closing control commands (stop movement) are sent via the object **Ch.x - Shutter stop/Louvres control**.

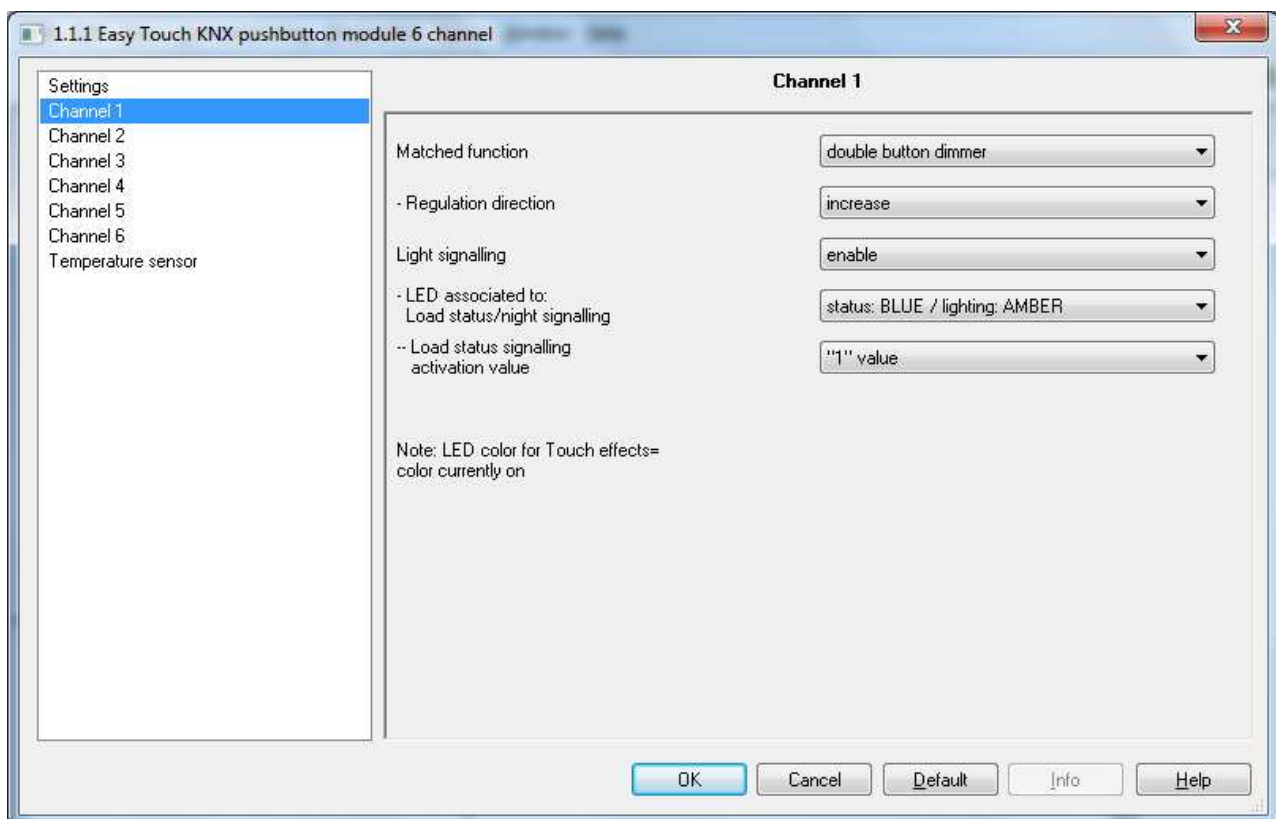The structure of the menu is as follows (fig. 9.1):

Fig. 9.1
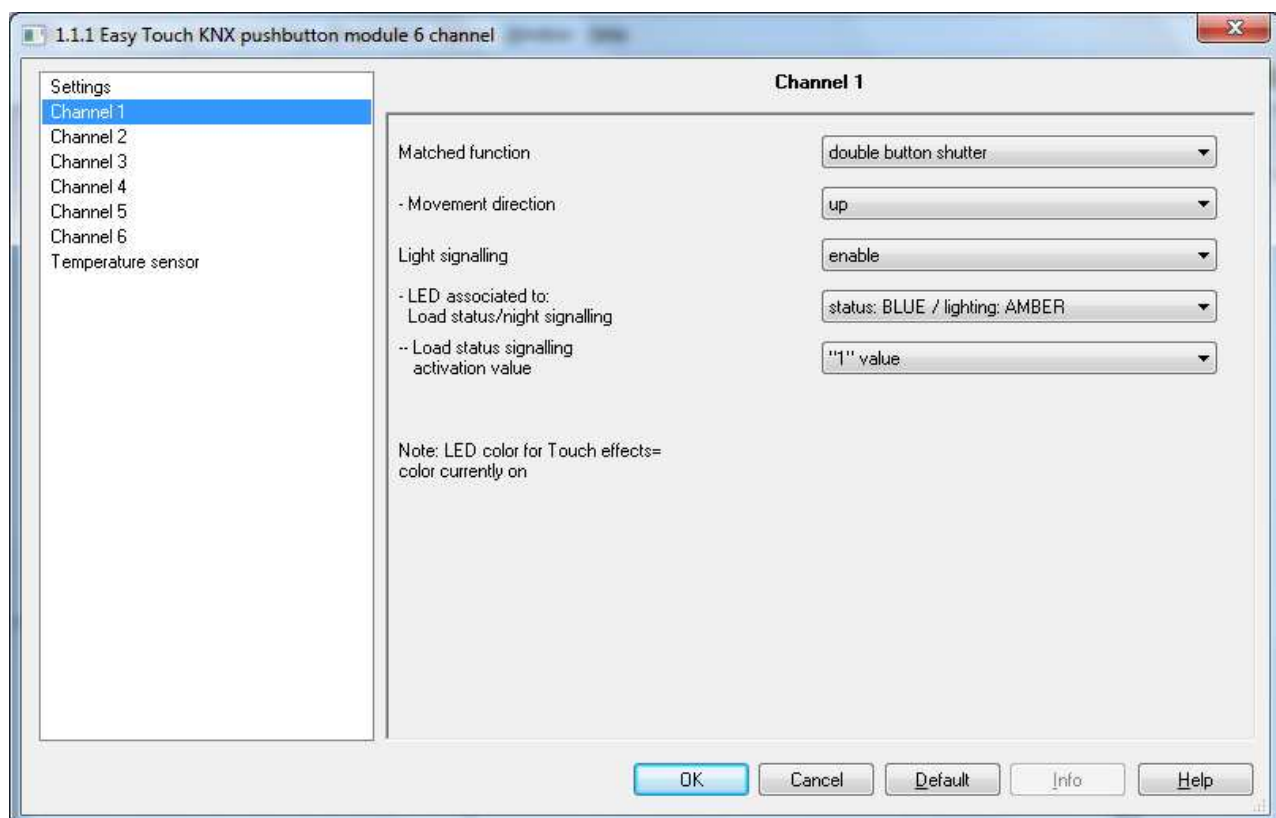
9.1 Parameters

➢ 9.1.1 Movement direction

This configures the control direction of the brightness that the channel controls; the values that can be set are:

- **Up (uneven channel default value)**
- **Down (even channel default value)**

Selecting "up", the sent commands will be up movement or louvres opening control (stop movement), depending on the recognised activation; vice versa, selecting "down", the sent commands will be down movement or louvres closing control (stop movement).

➢ *9.1.2 Light signalling*
Refer to paragraph 4.1.2 for the settings of this parameter

10 Function *"edges"*

This function is used to set the type of ON/OFF command to send after a status change has been detected; it is possible to differentiate the type of command depending on the event that is detected (touching and releasing).
The ON/OFF commands are sent via the communication object **Ch.x - Switching**.

Figure 10.1 shows the parameters that define the behaviour of the individual channels.
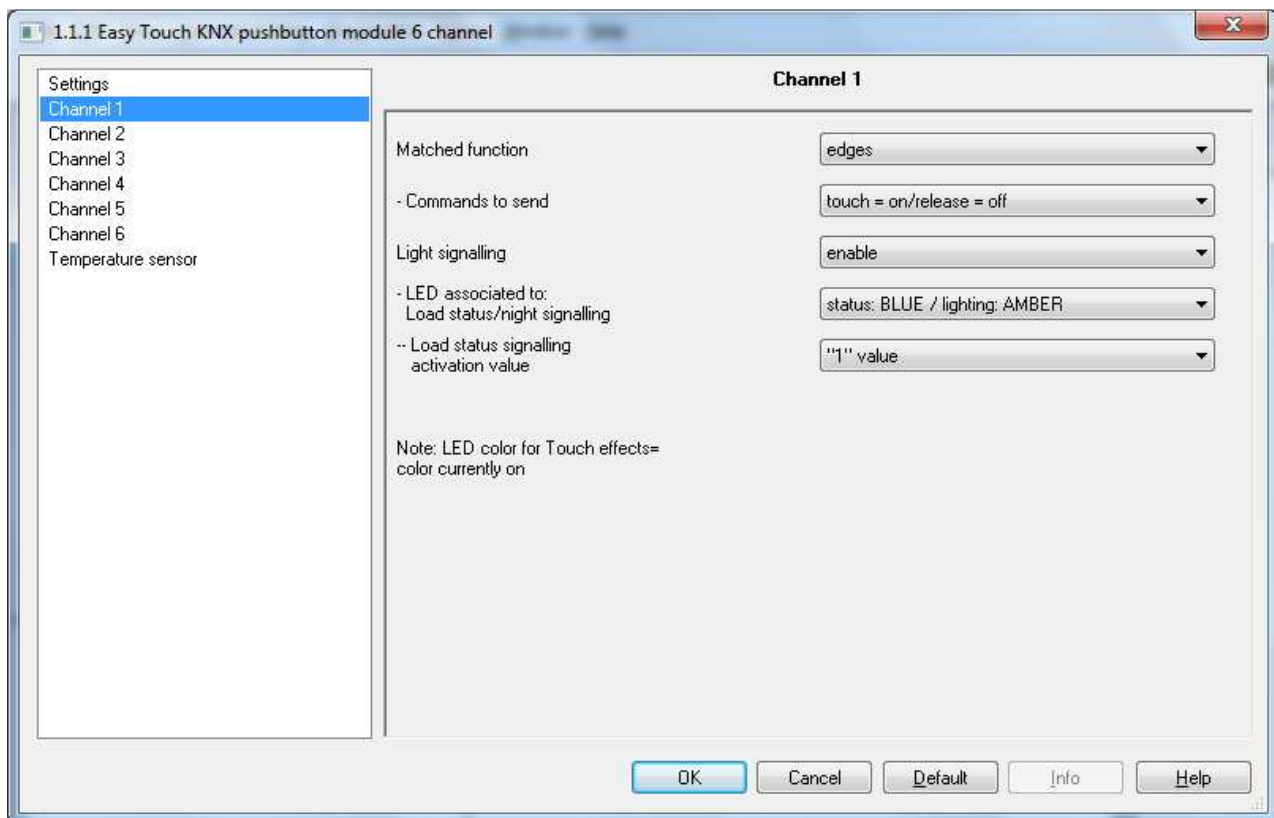
Fig. 10.1

10.1   Parameters

➢ **10.1.1 Commands to send**
This is used to set the value to send via the object **Ch.x - Switching** after the "Touch" and "Release" events have been detected.
The values that can be set are:

- touch → off / release → no effect
- touch → on / release → no effect
- touch → off / release → on
- **touch → on / release → off (default value)**

> ### *10.1.2 Light signalling*
Refer to paragraph 4.1.2 for the settings of this parameter

11 Function *"timing"*

This function is used to configure a channel to send a timed on command to an actuator output channel.
The device sends only the time start command, associated to the "touch" event, whereas no action occurs upon release. The timing is set on the actuator, which will deactivate itself independently.
This mode is typically used for the stairs light function.
The ON/OFF commands are sent via the communication object **Ch.x - Timed switch**.

Figure 11.1 shows the parameters that define the behaviour of the individual channels.
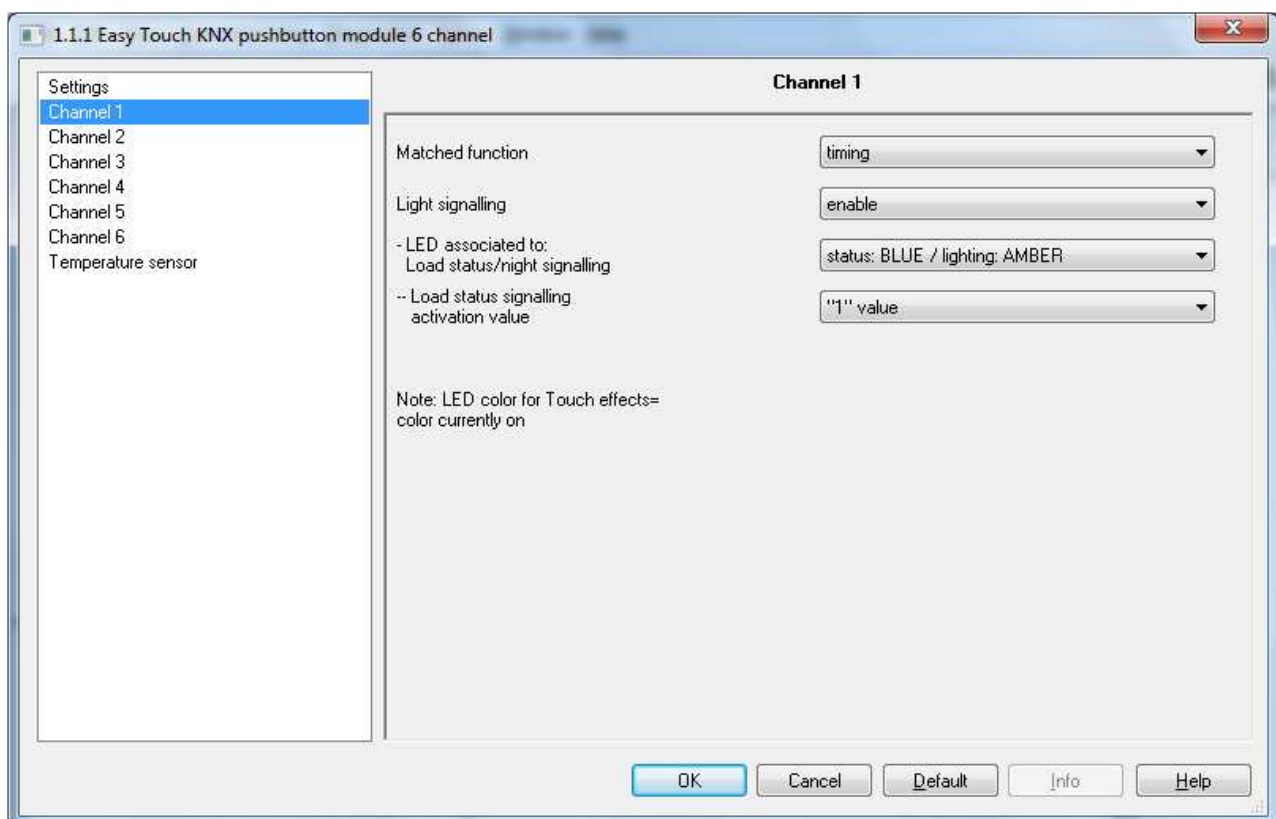

Fig. 11.1

11.1   Parameters

> ### *11.1.1 Light signalling*
Refer to paragraph 4.1.2 for the settings of this parameter

12 Function *"scene"*

This is used to configure the channel to send scene memorising and execution commands. Only one scene can be managed for each channel.
There is a difference between short and long operations:

– a long operation (≥ 0.5 sec) is transformed into a scene storing command.
– a short operation (< 0.5 sec) is transformed into a scene execution command.

The execution/memorising commands are sent via the communication object ***Ch.x - Scene.***

The menu associated with the generic ***Channel x*** is as shown in fig. 12.1.
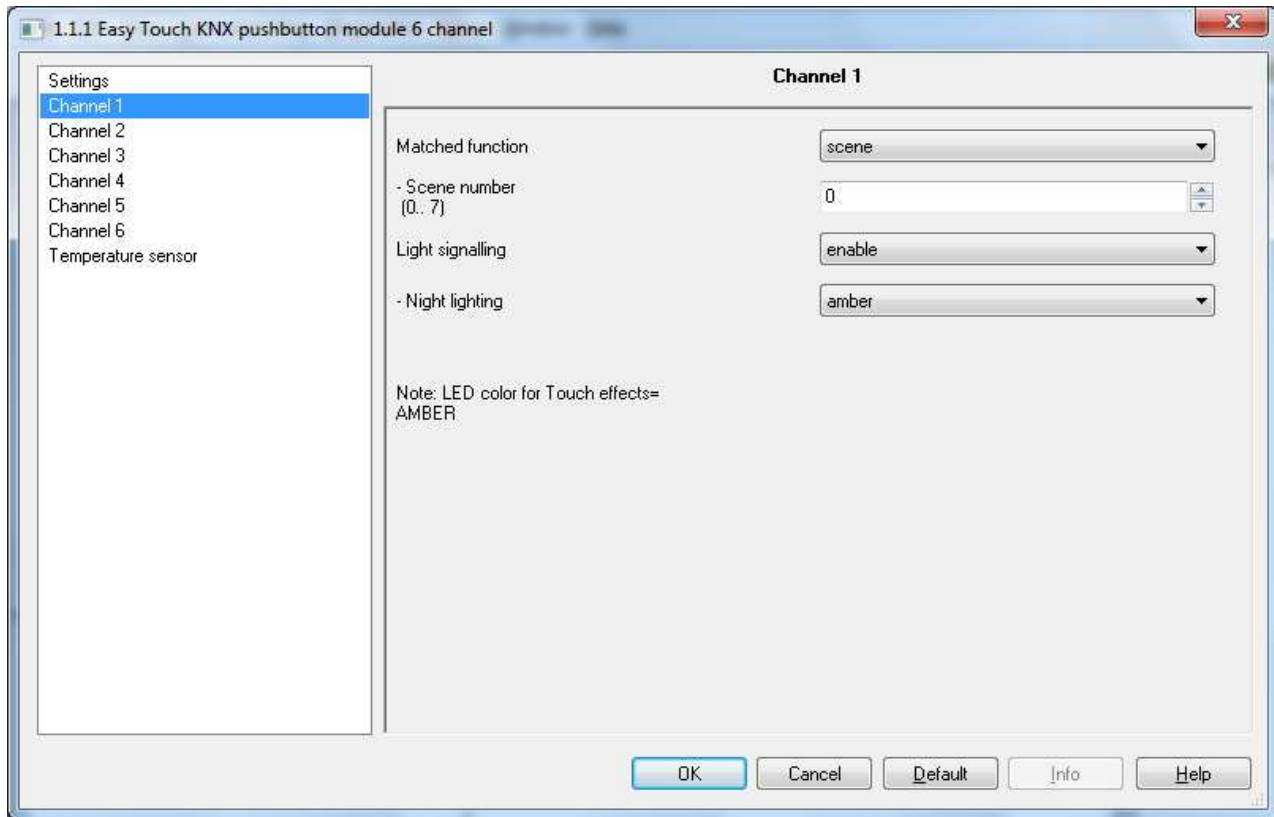
Fig. 12.1

12.1 Parameters

➢ *12.1.1 Scene number (0..7)*
This is used to set the value of the scene to be recalled/stored and as a result the relative values that are sent via the object ***Ch.x - Scene***. The possible values are:

- from **0 (default value)** to 7

➢ *12.1.2 Light signalling*
This enables the device to reproduce particular light effects; the values that can be set are:

- **Disable (default value)**
- Enable

Selecting the value **enable** displays the parameter **"Night lighting"** which is used to enable and define the LED to associate with night lighting; the values that can be set are:

- Disabled
- **Amber (default value)**
- Blue

13 *"Temperature sensor"* menu

This is used to enable and set the conditions for sending the temperature value measured by the sensor located inside the device.
The basic structure of the menu is as follows (fig. 13.1):

Fig. 13.1

13.1 Parameters

➢ 13.1.1 Measured temperature

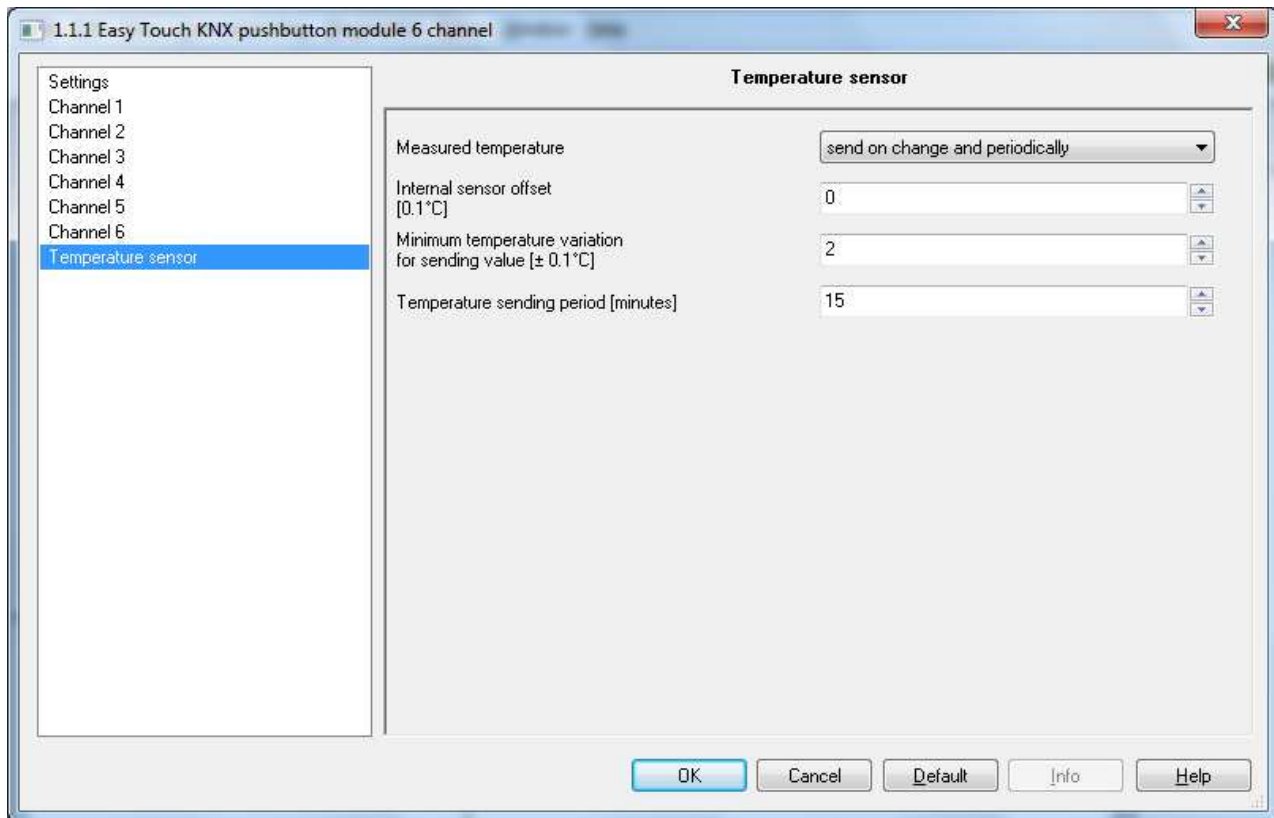This is used to define the conditions for sending the value of the temperature measured by the probe; the values that can be set are:

- **do not send (default value)**
- send on demand only
- send in case of change
- send periodically
- send on change and periodically

By selecting the "**do not send"** value, no new parameter or communication object will be visible; by selecting any other value, the communication object *Temperature sensor* and the parameter **"Internal sensor offset factor [0.1°C]"** will be visible. Selecting the value **send on change** or **send on change and periodically**, also the parameter **"Minimum temperature variation for sending value [± 0.1°C]"** will be visible, whereas by selecting **send periodically** or **send on change and periodically** the parameter **"Temperature sending period [minutes]"** will be visible.
Selecting the value **send only on request**, no new parameter will be enabled, as the temperature value is not sent spontaneously by the device; in the case of a status reading request, it sends the requester a telegram in response to the received command, which includes information about the measured temperature value.

> ### *13.1.2 Internal sensor offset factor [0.1 ℃]*

This is used to set the correction factor to be applied to the temperature value measured by the probe, to eliminate the contribution of heat generated by the device or the site of installation; the values that can be set are:

- from -20 to + 20, **0 (default value)**

> ### *13.1.3 Minimum temperature variation for sending value [± 0.1 ℃]*

This is visible if the temperature is sent on change, and is used to define the minimum temperature variation, with respect to the last sent temperature value, which causes the new measured value to be spontaneously sent; the values that can be set are:

- from 1 to 10, **2 (default value)**

> ### *13.1.4 Temperature sending period [minutes]*

This is visible if the temperature is sent periodically, and is used to define the period after which the measured temperature indication telegrams are sent spontaneously; the values that can be set are:

- from 1 to 255, **15 (default value)**

14 Communication objects

Fig. 14.1 shows all the communication objects that can be enabled by the ETS database; in this specific case, the image only shows the objects for channel 1:

Number	Name	Object Function	Leng...	C	R	W	T	U	Data Type	Priority
0	Ch.1 - Movement feedback	Increase/Decrease	1 bit	C	-	W	-	-		Low
0	Ch.1 - Dimmer status feedback	On/Off status	1 bit	C	-	W	T	U		Low
0	Ch.1 - Status feedback	On/Off status	1 bit	C	-	W	T	U		Low
1	Ch.1 - Shutter stop/Louvres control	Stop/Step	1 bit	C	R	-	T	-		Low
1	Ch.1 - Timed switch	Activate timing	1 bit	C	R	-	T	-		Low
1	Ch.1 - Switch	On/Off	1 bit	C	R	-	T	-		Low
2	Ch.1 - Shutter movement	Up/Down	1 bit	C	R	-	T	-		Low
3	Ch.1 - Brightness dimming	Increase/Decrease	4 bit	C	R	-	T	-		Low
4	Ch.1 - Scene	Execute/Store	1 Byte	C	R	-	T	-		Low
30	Ch.1 - Blue light signalling	1=on/0=off	1 bit	C	-	W	T	U		Low
36	Temperature sensor	Measured value (°C)	2 Byte	C	R	-	-	-		Low

Fig. 14.1

14.1   Communication object table

The following tables summarise all the communication objects with their ID number, the name and function displayed in ETS, plus a brief description of the function performed and the type of Datapoint used.

➢ 14.1.1 Communication objects with input functions

The following table contains all the objects with an input function:

No. of communication objects						Object name	Object function	Description	Datapoint
Ch.1	Ch.2	Ch.3	Ch.4	Ch.5	Ch.6				
0	5	10	15	20	25	Ch.x - Status feedback	On/Off status	Receives the actuator status feedback	1.001 DPT_Switch
0	5	10	15	20	25	Ch.x - Dimmer status feedback	On/Off status	Receives the dimmer status feedback	1.001 DPT_Switch
0	5	10	15	20	25	Ch.x - Movement feedback	Increase/Decrease	Receives the feedback about the current movement direction of the motor command actuator	1.008 DPT_UpDown
30	31	32	33	34	35	Ch.x - Blue light signalling	1=on/ 0=off	Activates/deactivates the blue light signalling	1.001 DPT_Switch
30	31	32	33	34	35	Ch.x - Amber light signalling	1=on/ 0=off	Activates/deactivates the amber light signalling	1.001 DPT_Switch

➢ *14.1.2 Communication objects with output functions*

The following table contains all the objects with an output function:

No. of communication objects						Object name	Object function	Description	Datapoint
Ch.1	Ch.2	Ch.3	Ch.4	Ch.5	Ch.6				
1	2	3	4	5	6	Ch.x - Switching	On/Off	Sends on/off commands	1.001 DPT_Switch
1	2	3	4	5	6	Ch.x - Timed switching (=Timed switch)	Timing activated	Sends timing activated commands (stairs light)	1.010 DPT_Start
1	6	11	16	21	26	Ch.x - Shutter stop/Louvres control	Stop/Step	Sends stop movement/louvres control commands	1.007 DPT_Step
2	7	12	17	22	27	Ch.x - Shutter movement	Up/down	Sends shutter up/down movement commands	1.008 DPT_UpDown
3	8	13	18	23	28	Ch.x - Brightness dimming	Increase/decrease	Sends brightness control commands	3.007 DPT_Control_Dimming
4	9	14	19	24	29	Ch.x - Scene	Execute/Store	Sends scene memorising/execution commands	18.001 DPT_SceneControl
36						Ch.x - Temperature sensor	Measured value (°C)	Sends the value of the measured temperature in °C	9.001 DPT_Value_Temp

GEWISS - *MATERIALE ELETTRICO*

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