Tecla XL

PC-ABS Capacitive push button with 4/6/8/10 buttons and custom icons

ZVITXLX4 / ZVITXLX6 / ZVITXLX8 / ZVITXLX10

www.zennio.com

USER MANUAL

CONTENTS

DOCUMENT UPDATES

Version	Changes	Page(s)
[1.8]_a	**Changes in the application program**: • Optimisation of internal modules.	-

1 INTRODUCTION

1.1 TECLA XL

Tecla XL is a KNX **multifunction capacitive touch switch** from Zennio with proximity sensor, luminosity sensor and backlighted buttons.

They are offered at **a reduced weight**, with **four, six, eight or ten capacitive touch buttons** (according to the user's needs) with LED backlight to confirm the press of the buttons as well as showing states.

Tecla XL is a fully customisable solution for the control of rooms where user control of air conditioning systems, lighting, blinds, scenes, etc. is required.

The versatility offered by the functionality of buttons is complemented by an **internal temperature sensor** and a **thermostat** function, as well as an elegant design with **fully customisable backlit icons**.

The most outstanding features of Tecla XL are:

- **Fully customisable** backlit icons.

- **4 / 6 / 8 / 10 touch buttons**, which can operate as individual or pair controls:

- **Horizontally or vertically-oriented** configuration.

- **Light indicator (LED)** for every button.

- **Buzzer** for an audible acknowledgement of user actions (with the possibility of disabling it either by parameter or by object).

- Possibility of **locking / unlocking the touch panel** through binary orders or scenes.

- **Welcome Back object** (binary or scene) which is sent to the KNX bus when a pulsation is detected after a certain period (configurable) of inactivity.

- Built-in **temperature sensor.**

- **Ambient luminosity sensor** for brightness automatic adjustment.

- **Proximity sensor** for quick start.

- **Thermostat** function.

- **Heartbeat** or periodical "still-alive" notification.

1.2 INSTALLATION

Figure 1 shows the connection outline of Tecla XL:

1. **KNX connector**
2. **Fixing clips.**
3. **Temperature probe.**
4. **Programming LED.**
5. **Programming Button.**
6. **Touch area.**
7. **Proximity and Luminosity.**
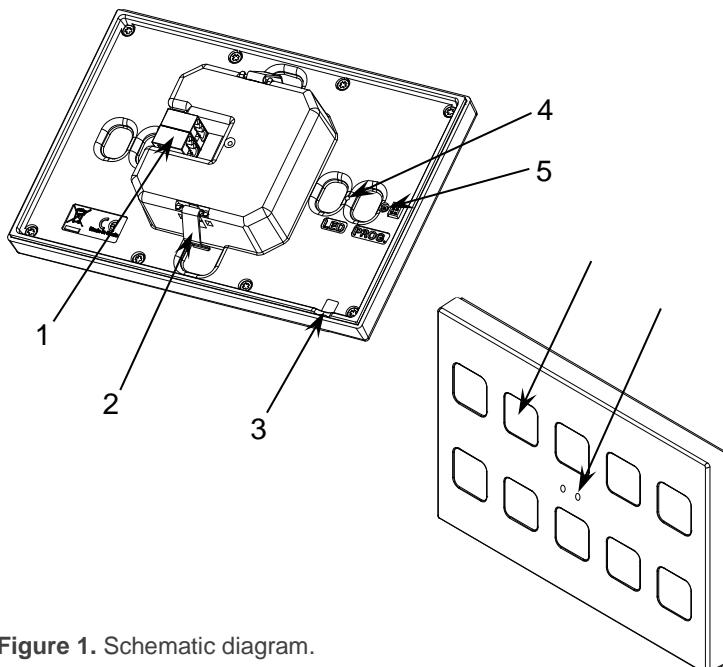
Figure 1. Schematic diagram.

Tecla XL is connected to the KNX bus through the built-in terminal (1). An external DC power supply is not needed.

A short press on the **programming button** (5) will make the device enter the programming mode. The **programming LED** (4) will then light in red. On the contrary, if this button is held while the device gets connected to the bus, the device will enter the **safe mode**. In such case, the programming LED will blink in red colour.

For detailed information about the technical features of Tecla XL, as well as on security and installation procedures, please refer to the device **Datasheet**, bundled within the device packaging and also available at www.zennio.com.

1.3 START-UP AND POWER LOSS

After download or device reset it is necessary to **wait for about 2 minutes without performing any action** in order to make it possible a proper calibration of:

- Proximity sensor.

- Luminosity sensor.

- Button presses.

For a correct calibration of the proximity and brightness sensors it is recommended not to remain too close or place anything less than 50cm approximately and do not hit with direct light to the device during this time.

2 CONFIGURATION

After importing the corresponding database in ETS and adding the device into the topology of the project, the configuration process begins by entering the Parameters tab of the device.

2.1 GENERAL

In order to allow the device to perform the desired functions, a number of options must be parameterized, either related to its general behaviour or to advanced features.

2.1.1 CONFIGURATION

In the "Configuration" tab, the general settings are displayed.

ETS PARAMETERISATION
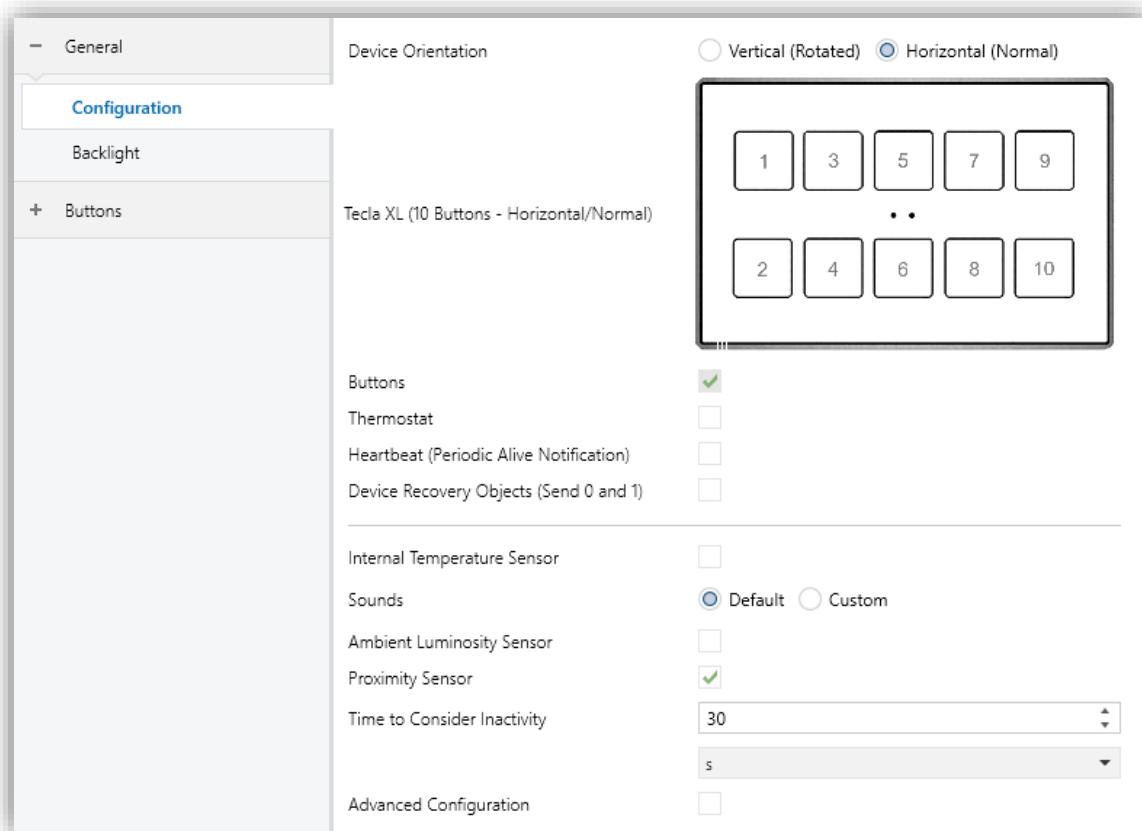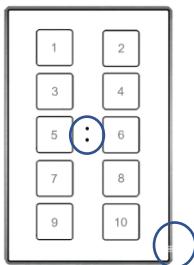
Figure 2. Main configuration.

The following parameters are shown:

- **Device Orientation** [_Vertical (Rotated) / Horizontal (Rotated)_] [1]: enables **horizontal** or **vertical** orientation to be assigned to the device, for easy identification of the push-buttons during configuration process (ETS will show a figure with the final distribution of the push-buttons). To prevent inconsistency in the configuration, please note the following criterium:

Vertical (rotado):

Temperature probe hole on the right side and the sensors on the middle.

Horizontal (normal):

Temperature probe hole on the left of the bottom side and sensors on the middle.
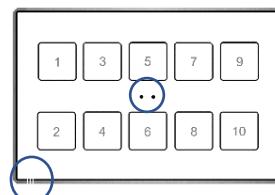
Figure 3. Orientation.

- **Buttons** [_enabled_]: read-only parameter to make it evident that the "Buttons" tab is always enabled in the tab tree on the left. See section 2.2 for details.

- **Thermostat** [_disabled/enabled_]: enables or disables the "Thermostat" tab in the tree on the left. See section 2.3 for details.

- **Heartbeat (Periodic Alive Notification)** [_disabled/enabled_]: incorporates a one-bit object to the project ("**[Heartbeat] Object to Send '1'**") that will be sent periodically with value "1" to notify that the device is still working (_still alive_).
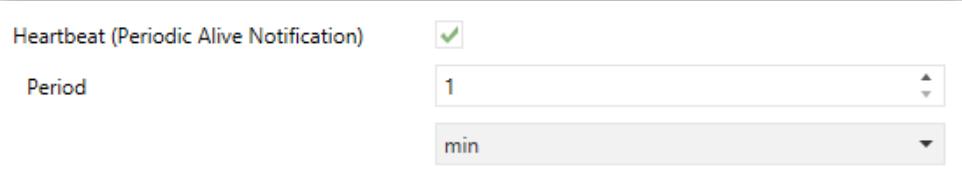
Figure 4. Heartbeat.

Note: _the first sending after download or bus failure takes place with a delay of up to 255 seconds, to prevent bus overload. The following sendings march the period set._

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[1] The default values of each parameter will be highlighted in blue in this document, as follows: [_default_/rest of options].

- **Device Recovery Objects (Send 0 and 1)** [*disabled/enabled*]: this parameter lets the integrator activate two new communication objects ("**[Heartbeat] Device Recovery**"), which will be sent to the KNX bus with values "0" and "1" whenever the device begins operation (for example, after a bus power failure). It is possible to parameterise a certain **delay** [*0…255*][*s*] to this sending.
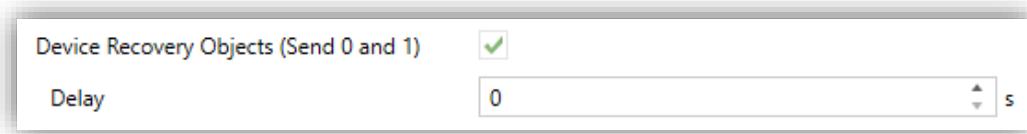
Figure 5. Device Recovery Objects.

Note: *After download or bus failure, the sending takes place with a delay of up to 6,35 seconds plus the parameterised delay, to prevent bus overload.*

- **Internal Temperature Sensor** [*disabled/enabled*]: enables or disables the "Temperature Sensor" tab in the tree on the left. See section 2.1.2 for details.

- **Sounds** [*Default / Custom*]: sets whether the sound functions (button beeps, alarm and doorbell) should work according to the pre-defined configuration or to a user-defined configuration. See section 2.1.4 for details.

- **Ambient luminosity sensor** [*disabled/enabled*]: enables setting the ambient luminosity sensor. When the sensor is enabled, a new tab for its configuration is shown. See section 2.1.5 for details.

- **Proximity Sensor** [*disabled/enabled*]: enables the proximity sensor. This functionality permits "waking up" the device when detecting presence, see section 2.1.6.

- **Time to Consider Inactivity** [*1…30…255*][*s/min/h*]: allows setting a time after which, if no pulsation or proximity detection has occurred, the LEDs turn off (or acquire the brightness level configured, see section 2.1.3).

- **Advanced Configuration** [*disabled/enabled*]: enables or disables the "Advanced" tab in the tree on the left. See section 2.1.7 for details.

2.1.2 TEMPERATURE SENSOR

The **internal temperature probe** can monitor the ambient temperature of the room, thus making the device capable of reporting it to the KNX bus and of triggering certain actions when the temperature reaches specific values.

Please refer to the specific manual "**Temperature Probe**" (available in the product section at the Zennio homepage, www.zennio.com) for detailed information about the functionality and the configuration of the related parameters.

2.1.3 BACKLIGHT

Capacitive touch switches are able to manage the brightness of the LED according to two operating modes: normal mode and night mode.

Please refer to the specific manual "**Brightness**" (available in the product section at the Zennio website, www.zennio.com) for detailed information about the functionality and the configuration of the related parameters.

2.1.4 SOUNDS

For detailed information about the functionality and the configuration of the related parameters, please refer to the specific manual "**Capacitive Touch Switches**" available in the Tecla XL product section at the Zennio homepage, www.zennio.com.

2.1.5 AMBIENT LUMINOSITY SENSOR

Capacitive touch switches incorporate **a luminosity sensor** to receive and monitor ambient brightness measurement.

Please refer to the specific manual "**Luminosity and Proximity Sensor**" (available in the product section at the Zennio homepage, www.zennio.com) for detailed information about the functionality and the configuration of the related parameters.

2.1.6 PROXIMITY SENSOR

Please refer to the specific manual "**Proximity and Luminosity Sensor**" (available in the product section at the Zennio homepage, www.zennio.com) for detailed information about the functionality and the configuration of the related parameters.

2.1.7 ADVANCED CONFIGURATION

For detailed information about the functionality and the configuration of the related parameters, please refer to the specific manual "**Capacitive Touch Switches**" available in the Tecla XL product section at the Zennio homepage, www.zennio.com.

2.2 BUTTONS

For detailed information about the functionality and the configuration of the related parameters, please refer to the specific manual "**Capacitive Touch Switches**" available in the Tecla XL product section at the Zennio homepage, www.zennio.com.

2.3 THERMOSTAT

Capacitive touch switches implement **one Zennio thermostat** which can be enabled and fully customised.

Please refer to the specific manual "**Zennio Thermostat**" (available in the product section at the Zennio website, www.zennio.com) for detailed information about the functionality and the configuration of the related parameters.

ANNEX I. COMMUNICATION OBJECTS

•● "**Functional range**" shows the values that, with independence of any other values permitted by the bus according to the object size, may be of any use or have a particular meaning because of the specifications or restrictions from both the KNX standard or the application program itself.

Note:

➢ The objects shown in this table are from model **Tecla XL X10**. Please note that certain objects will not be available in models with less push buttons.

Number	Size	I/O	Flags	Data type (DPT)	Functional Range	Name	Function
1	1 Bit		C - - T -	DPT_Trigger	0/1	[Heartbeat] Object to Send '1'	Sending of '1' Periodically
2	1 Bit		C - - T -	DPT_Trigger	0/1	[Heartbeat] Device Recovery	Send 0
3	1 Bit		C - - T -	DPT_Trigger	0/1	[Heartbeat] Device Recovery	Send 1
4	1 Byte	I	C - W - -	DPT_SceneNumber	0 - 63	[General] Scene: Receive	0 - 63 (Run Scene 1-64)
5	1 Byte		C - - T -	DPT_SceneControl	0-63; 128-191	[General] Scene: Send	0 - 63/128 - 191 (Run/Save Scene 1-64)
6	1 Bit	I	C - W - -	DPT_Enable	0/1	[General] Touch Locking	0 = Unlock; 1 = Lock
	1 Bit	I	C - W - -	DPT_Enable	0/1	[General] Touch Locking	0 = Lock; 1 = Unlock
7	1 Bit		C - - T -	DPT_Switch	0/1	[General] Welcome Back Object	Switch Object Sent on Wake Up
8	1 Bit	I	C - W - -	DPT_Enable	0/1	[General] Sounds - Disabling Button Sound	0 = Disable Sound; 1 = Enable Sound
	1 Bit	I	C - W - -	DPT_Enable	0/1	[General] Sounds - Disabling Button Sound	0 = Enable Sound; 1 = Disable Sound
9	1 Bit	I	C - W - -	DPT_Ack	0/1	[General] Sounds - Doorbell	1 = Play a Doorbell Sound; 0 = Nothing
	1 Bit	I	C - W - -	DPT_Ack	0/1	[General] Sounds - Doorbell	0 = Play a Doorbell Sound; 1 = Nothing
10	1 Bit	I	C - W - -	DPT_Alarm	0/1	[General] Sounds - Alarm	1 = Play Alarm Intermittent Sounds; 0 = Stop Alarm Sounds
	1 Bit	I	C - W - -	DPT_Alarm	0/1	[General] Sounds - Alarm	0 = Play Alarm Intermittent Sounds; 1 = Stop Alarm Sounds
11, 12, 13, 14, 15	1 Bit	I	C - W - -	DPT_Switch	0/1	[General] Welcome Back Object - Additional Condition	Additional Condition Object x
16	1 Bit	I	C - W - -	DPT_Enable	0/1	[General] Proximity Sensor	0 = Disable; 1 = Enable
17	1 Bit	I	C - W - -	DPT_Start	0/1	[General] External Proximity Detection	1 = Detection
18	1 Bit		C - - T -	DPT_Start	0/1	[General] Proximity Detection	Send 1 when Proximity is Detected

19	1 Bit		**C - - T -**	DPT_Bool	0/1	[General] Luminosity (1-Bit)	0 = Over Threshold; 1 = Under Threshold
	1 Bit		**C - - T -**	DPT_Bool	0/1	[General] Luminosity (1-Bit)	0 = Under Threshold; 1 = Over Threshold
20	1 Byte	O	**C R - - -**	DPT_Scaling	0% - 100%	[General] Luminosity (Percentage)	0% … 100%
21	2 Bytes	O	**C R - - -**	DPT_Value_Lux		[General] Luminosity (Lux)	0 Lux … 670760 Lux
22	1 Bit	I	**C - W - -**	DPT_DayNight	0/1	[General] Backlight Mode	0 = Night Mode; 1 = Normal Mode
	1 Bit	I	**C - W - -**	DPT_DayNight	0/1	[General] Backlight Mode	0 = Normal Mode; 1 = Night Mode
23	1 Byte	I	**C - W - -**	DPT_Scaling	0% - 100%	[General] Display - Brightness	0% … 100%
24	1 Byte	I	**C - W - -**	DPT_Scaling	0% - 100%	[General] Display - Contrast	0% … 100%
25, 31, 37, 43, 49, 55, 61, 67, 73, 79	1 Bit	I	**C - W T -**	DPT_Switch	0/1	[Btn][Ix] Switch	Send Selected Value on Short Press
	1 Bit	I	**C - W T -**	DPT_Switch	0/1	[Btn][Ix] Hold & Release	Send Selected Values on Hold and Release Presses
	1 Bit	I	**C - W T -**	DPT_Switch	0/1	[Btn][Ix] Two Objects - Short Press	Send Selected Value on Short Press
	1 Bit		**C - - T -**	DPT_Switch	0/1	[Btn][Ix] Light - On/Off	(Short Press) Switch Between On and Off
	1 Bit		**C - - T -**	DPT_Step	0/1	[Btn][Ix] Shutter - Stop/Step	(Short Press) 0 = Stop Shutter/Step Up; 1 = Stop Shutter/Step Down
	1 Bit		**C - - T -**	DPT_Trigger	0/1	[Btn][Ix] Shutter - Stop	(End Pressing) Stop Shutter
25, 31, 37, 43, 49	1 Bit		**C - - T -**	DPT_Switch	0/1	[Btn][Ix] Light - On	(Short Press) Send On
	1 Bit		**C - - T -**	DPT_Switch	0/1	[Btn][Ix] Light - Off	(Short Press) Send Off
25, 31, 37, 43, 49, 55, 61, 67, 73, 79	1 Bit		**C - - T -**	DPT_Step	0/1	[Btn][Ix] Shutter - Stop/Step	(Short Press) Stop Shutter/Step Up
	1 Bit		**C - - T -**	DPT_Step	0/1	[Btn][Ix] Shutter - Stop/Step	(Short Press) Stop Shutter/Step Down
26, 32, 38, 44, 50, 56, 62, 68, 74, 80	4 Bit	I	**C - W T -**	DPT_Control_Dimming	0x0 (Stop) 0x1 (Dec. by 100%) … 0x7 (Dec. by 1%) 0x8 (Stop) 0xD (Inc. by 100%) … 0xF (Inc. by 1%)	[Btn][Ix] Light - Dimming	(Long Press) Switch Between Dimming Up and Down
27, 33, 39, 45, 51, 57, 63, 69, 75, 81	1 Bit		**C - - T -**	DPT_UpDown	0/1	[Btn][Ix] Shutter - Move	(Long Press) 0 = Up ; 1 = Down
	1 Bit		**C - - T -**	DPT_UpDown	0/1	[Btn][Ix] Shutter - Move	(Start Pressing) Switch Between Up and Down
	1 Bit	I	**C - W T -**	DPT_Switch	0/1	[Btn][Ix] Two Objects - Long Press	Send Selected Value on Long Press
	1 Bit		**C - - T -**	DPT_UpDown	0/1	[Btn][Ix] Shutter - Move	(Long Press) Up
	1 Bit		**C - - T -**	DPT_UpDown	0/1	[Btn][Ix] Shutter - Move	(Long Press) Down
	1 Bit		**C - - T -**	DPT_UpDown	0/1	[Btn][Ix] Shutter - Move	(Start Pressing) Up

	1 Bit		C - - T -	DPT_UpDown	0/1	[Btn][Ix] Shutter - Move	(Start Pressing) Down
28, 34, 40, 46, 52, 58, 64, 70, 76, 82	1 Bit	I	C - W T -	DPT_Switch	0/1	[Btn][Ix] LED On/Off	0 = Off; 1 = On
	1 Bit	I	C - W T -	DPT_Switch	0/1	[Btn][Ix] LED On/Off	0 = On; 1 = Off
29, 35, 41, 47, 53, 59, 65, 71, 77, 83	1 Byte	I	C - W T -	DPT_Scaling	0% - 100%	[Btn][Ix] Scaling	Send Selected Percentage Value on Short Press
	1 Byte	I	C - W T -	DPT_Value_1_Ucount	0 - 255	[Btn][Ix] Counter - 1-Byte Unsigned	Send Selected Value on Short Press
	1 Byte	I	C - W T -	DPT_Value_1_Count	-128 - 127	[Btn][Ix] Counter - 1-Byte Signed	Send Selected Value on Short Press
	2 Bytes	I	C - W T -	DPT_Value_2_Ucount	0 - 65535	[Btn][Ix] Counter - 2-Byte Unsigned	Send Selected Value on Short Press
	2 Bytes	I	C - W T -	DPT_Value_2_Count	-32768 - 32767	[Btn][Ix] Counter - 2-Byte Signed	Send Selected Value on Short Press
	2 Bytes	I	C - W T -	9.xxx	-671088.64 - 670433.28	[Btn][Ix] Float	Send Selected Value on Short Press
	1 Byte	I	C - W T -	DPT_Value_1_Ucount	0 - 255	[Btn][Ix] Two Objects - Short Press (1-Byte)	Send Selected 1-Byte Value on Short Press
	1 Byte	I	C - W T -	DPT_Scaling	0% - 100%	[Btn][Ix] Shutter - Position	0 - 100 %
	1 Byte	I	C - W T -	DPT_Scaling	0% - 100%	[Btn][Ix] Light - Dimming (Status)	0 - 100 %
	1 Byte	I	C - W T -	1.xxx	0/1	[Btn][Ix] Room State	0 = Normal; 1 = Make-up Room; 2 = Do not Disturb
30, 36, 42, 48, 54, 60, 66, 72, 78, 84	1 Byte	I	C - W T -	DPT_Value_1_Ucount	0 - 255	[Btn][Ix] Two Objects - Long Press (1-Byte)	Send Selected 1-Byte Value on Long Press
85, 91, 97, 103, 109	1 Bit	I	C - W T -	DPT_Switch	0/1	[Btn][Px] Switch	Left = 0; Right = 1
	1 Bit	I	C - W T -	DPT_Switch	0/1	[Btn][Px] Two Objects - Short Press	Left = 1; Right = 0
	1 Bit	I	C - W T -	DPT_Switch	0/1	[Btn][Px] Two Objects - Short Press	Left = 0; Right = 1
	1 Bit		C - - T -	DPT_Switch	0/1	[Btn][Px] Light - On/Off	(Short Press) Left = Off; Right = On
	1 Bit		C - - T -	DPT_Step	0/1	[Btn][Px] Shutter - Stop/Step	(Short Press) Left = Stop/Step Down; Right = Stop/Step Up
	1 Bit		C - - T -	DPT_Trigger	0/1	[Btn][Px] Shutter - Stop	(End Pressing) Left = Stop-Down; Right = Stop-Up
	1 Bit	I	C - W T -	DPT_Switch	0/1	[Btn][Px] Switch	Left = 1; Right = 0
	1 Bit		C - - T -	DPT_Switch	0/1	[Btn][Px] Light - On/Off	(Short Press) Left = On; Right = Off
	1 Bit		C - - T -	DPT_Step	0/1	[Btn][Px] Shutter - Stop/Step	(Short Press) Left = Stop/Step Up; Right = Stop/Step Down
	1 Bit		C - - T -	DPT_Trigger	0/1	[Btn][Px] Shutter - Stop	(End Pressing) Left = Stop-Up; Right = Stop-Down
	1 Bit	I	C - W T -	DPT_Switch	0/1	[Btn][Px] Switch	Lower = 0; Upper = 1
	1 Bit	I	C - W T -	DPT_Switch	0/1	[Btn][Px] Switch	Lower = 1; Upper = 0

	1 Bit		**C - - T -**	DPT_Switch	0/1	[Btn][Px] Light - On/Off	(Short Press) Lower = Off; Upper = On
	1 Bit		**C - - T -**	DPT_Switch	0/1	[Btn][Px] Light - On/Off	(Short Press) Lower = On; Upper = Off
	1 Bit		**C - - T -**	DPT_Step	0/1	[Btn][Px] Shutter - Stop/Step	(Short Press) Lower = Stop/Step Down; Upper = Stop/Step Up
	1 Bit		**C - - T -**	DPT_Step	0/1	[Btn][Px] Shutter - Stop/Step	(Short Press) Lower = Stop/Step Up; Upper = Stop/Step Down
	1 Bit		**C - - T -**	DPT_Trigger	0/1	[Btn][Px] Shutter - Stop	(End Pressing) Lower = Stop-Down; Upper = Stop-Up
	1 Bit		**C - - T -**	DPT_Trigger	0/1	[Btn][Px] Shutter - Stop	(End Pressing) Lower = Stop-Up; Upper = Stop-Down
	1 Bit	I	**C - W T -**	DPT_Switch	0/1	[Btn][Px] Two Objects - Short Press	Lower = 0; Upper = 1
	1 Bit	I	**C - W T -**	DPT_Switch	0/1	[Btn][Px] Two Objects - Short Press	Lower = 1; Upper = 0
86, 92, 98, 104, 110	4 Bit	I	**C - W T -**	DPT_Control_Dimming	0x0 (Stop) 0x1 (Dec. by 100%) … 0x7 (Dec. by 1%) 0x8 (Stop) 0xD (Inc. by 100%) … 0xF (Inc. by 1%)	[Btn][Px] Light - Dimming	(Long Press) Left = Darker; Right = Brighter
	4 Bit	I	**C - W T -**	DPT_Control_Dimming	0x0 (Stop) 0x1 (Dec. by 100%) … 0x7 (Dec. by 1%) 0x8 (Stop) 0xD (Inc. by 100%) … 0xF (Inc. by 1%)	[Btn][Px] Light - Dimming	(Long Press) Left = Brighter; Right = Darker
	4 Bit	I	**C - W T -**	DPT_Control_Dimming	0x0 (Stop) 0x1 (Dec. by 100%) … 0x7 (Dec. by 1%) 0x8 (Stop) 0xD (Inc. by 100%) … 0xF (Inc. by 1%)	[Btn][Px] Light - Dimming	(Long Press) Lower = Darker; Upper = Brighter
	4 Bit	I	**C - W T -**	DPT_Control_Dimming	0x0 (Stop) 0x1 (Dec. by 100%) … 0x7 (Dec. by 1%) 0x8 (Stop) 0xD (Inc. by 100%) … 0xF (Inc. by 1%)	[Btn][Px] Light - Dimming	(Long Press) Lower = Brighter; Upper = Darker

	1 Bit	I	C - W T -	DPT_Switch	0/1	[Btn][Px] Two Objects - Long Press	Left = 0; Right = 1
	1 Bit	I	C - W T -	DPT_Switch	0/1	[Btn][Px] Two Objects - Long Press	Left = 1; Right = 0
	1 Bit		C - - T -	DPT_UpDown	0/1	[Btn][Px] Shutter - Move	(Long Press) Left = Down; Right = Up
	1 Bit		C - - T -	DPT_UpDown	0/1	[Btn][Px] Shutter - Move	(Start Pressing) Left = Down; Right = Up
	1 Bit		C - - T -	DPT_UpDown	0/1	[Btn][Px] Shutter - Move	(Long Press) Left = Up; Right = Down
	1 Bit		C - - T -	DPT_UpDown	0/1	[Btn][Px] Shutter - Move	(Start Pressing) Left = Up; Right = Down
87, 93, 99, 105, 111	1 Bit		C - - T -	DPT_UpDown	0/1	[Btn][Px] Shutter - Move	(Long Press) Lower = Down; Upper = Up
	1 Bit		C - - T -	DPT_UpDown	0/1	[Btn][Px] Shutter - Move	(Long Press) Lower = Up; Upper = Down
	1 Bit		C - - T -	DPT_UpDown	0/1	[Btn][Px] Shutter - Move	(Start Pressing) Lower = Down; Upper = Up
	1 Bit		C - - T -	DPT_UpDown	0/1	[Btn][Px] Shutter - Move	(Start Pressing) Lower = Up; Upper = Down
	1 Bit	I	C - W T -	DPT_Switch	0/1	[Btn][Px] Two Objects - Long Press	Lower = 0; Upper = 1
	1 Bit	I	C - W T -	DPT_Switch	0/1	[Btn][Px] Two Objects - Long Press	Lower = 1; Upper = 0
88, 94, 100, 106, 112	1 Bit	I	C - W T -	DPT_Switch	0/1	[Btn][Px] LED On/Off	0 = On; 1 = Off
	1 Bit	I	C - W T -	DPT_Switch	0/1	[Btn][Px] LED On/Off	0 = Off; 1 = On
89, 95, 101, 107, 113	1 Byte	I	C - W T -	DPT_Scaling	0% - 100%	[Btn][Px] Light - Dimming (Status)	0 - 100 %
115	1 Byte	I	C - W - -	DPT_SceneControl	0-63; 128-191	[Thermostat] Scene Input	Scene Value
116	2 Bytes	I	C - W T U	DPT_Value_Temp	-273.00º - 670433.28º	[Tx] Temperature Source 1	External Sensor Temperature
117	2 Bytes	I	C - W T U	DPT_Value_Temp	-273.00º - 670433.28º	[Tx] Temperature Source 2	External Sensor Temperature
118	2 Bytes	O	C R - T -	DPT_Value_Temp	-273.00º - 670433.28º	[Tx] Effective Temperature	Effective Control Temperature
119	1 Byte	I	C - W - -	DPT_HVACMode	1=Comfort 2=Standby 3=Economy 4=Building Protection	[Tx] Special Mode	1-Byte HVAC Mode
120	1 Bit	I	C - W - -	DPT_Ack	0/1	[Tx] Special Mode: Comfort	0 = Nothing; 1 = Trigger
	1 Bit	I	C - W - -	DPT_Switch	0/1	[Tx] Special Mode: Comfort	0 = Off; 1 = On
121	1 Bit	I	C - W - -	DPT_Ack	0/1	[Tx] Special Mode: Standby	0 = Nothing; 1 = Trigger
	1 Bit	I	C - W - -	DPT_Switch	0/1	[Tx] Special Mode: Standby	0 = Off; 1 = On
122	1 Bit	I	C - W - -	DPT_Ack	0/1	[Tx] Special Mode: Economy	0 = Nothing; 1 = Trigger
	1 Bit	I	C - W - -	DPT_Switch	0/1	[Tx] Special Mode: Economy	0 = Off; 1 = On
123	1 Bit	I	C - W - -	DPT_Ack	0/1	[Tx] Special Mode: Protection	0 = Nothing; 1 = Trigger

	1 Bit	I	C - W - -	DPT_Switch	0/1	[Tx] Special Mode: Protection	0 = Off; 1 = On
124	1 Bit	I	C - W - -	DPT_Window_Door	0/1	[Tx] Window Status (Input)	0 = Closed; 1 = Open
125	1 Bit	I	C - W - -	DPT_Trigger	0/1	[Tx] Comfort Prolongation	0 = Nothing; 1 = Timed Comfort
126	1 Byte	O	C R - T -	DPT_HVACMode	1=Comfort 2=Standby 3=Economy 4=Building Protection	[Tx] Special Mode Status	1-Byte HVAC Mode
127	2 Bytes	I	C - W - -	DPT_Value_Temp	-273.00º - 670433.28º	[Tx] Setpoint	Thermostat Setpoint Input
127	2 Bytes	I	C - W - -	DPT_Value_Temp	-273.00º - 670433.28º	[Tx] Basic Setpoint	Reference Setpoint
128	1 Bit	I	C - W - -	DPT_Step	0/1	[Tx] Setpoint Step	0 = Decrease Setpoint; 1 = Increase Setpoint
129	2 Bytes	I	C - W - -	DPT_Value_Tempd	-671088.64º - 670433.28º	[Tx] Setpoint Offset	Float Offset Value
130	2 Bytes	O	C R - T -	DPT_Value_Temp	-273.00º - 670433.28º	[Tx] Setpoint Status	Current Setpoint
131	2 Bytes	O	C R - T -	DPT_Value_Temp	-273.00º - 670433.28º	[Tx] Basic Setpoint Status	Current Basic Setpoint
132	2 Bytes	O	C R - T -	DPT_Value_Tempd	-671088.64º - 670433.28º	[Tx] Setpoint Offset Status	Current Setpoint Offset
133	1 Bit	I	C - W - -	DPT_Reset	0/1	[Tx] Setpoint Reset	Reset Setpoint to Default
133	1 Bit	I	C - W - -	DPT_Reset	0/1	[Tx] Offset Reset	Reset Offset
134	1 Bit	I	C - W - -	DPT_Heat_Cool	0/1	[Tx] Mode	0 = Cool; 1 = Heat
135	1 Bit	O	C R - T -	DPT_Heat_Cool	0/1	[Tx] Mode Status	0 = Cool; 1 = Heat
136	1 Bit	I	C - W - -	DPT_Switch	0/1	[Tx] On/Off	0 = Off; 1 = On
137	1 Bit	O	C R - T -	DPT_Switch	0/1	[Tx] On/Off Status	0 = Off; 1 = On
138	1 Bit	I/O	C R W - -	DPT_Switch	0/1	[Tx] Main System (Cool)	0 = System 1; 1 = System 2
139	1 Bit	I/O	C R W - -	DPT_Switch	0/1	[Tx] Main System (Heat)	0 = System 1; 1 = System 2
140	1 Bit	I	C - W - -	DPT_Enable	0/1	[Tx] Enable/Disable Secondary System (Cool)	0 = Disable; 1 = Enable
141	1 Bit	I	C - W - -	DPT_Enable	0/1	[Tx] Enable/Disable Secondary System (Heat)	0 = Disable; 1 = Enable
142, 148	1 Byte	O	C R - T -	DPT_Scaling	0% - 100%	[Tx] [Sx] Control Variable (Cool)	PI Control (Continuous)
143, 149	1 Byte	O	C R - T -	DPT_Scaling	0% - 100%	[Tx] [Sx] Control Variable (Heat)	PI Control (Continuous)
143, 149	1 Byte	O	C R - T -	DPT_Scaling	0% - 100%	[Tx] [Sx] Control Variable	PI Control (Continuous)
144, 150	1 Bit	O	C R - T -	DPT_Switch	0/1	[Tx] [Sx] Control Variable (Cool)	2-Point Control
144, 150	1 Bit	O	C R - T -	DPT_Switch	0/1	[Tx] [Sx] Control Variable (Cool)	PI Control (PWM)
145, 151	1 Bit	O	C R - T -	DPT_Switch	0/1	[Tx] [Sx] Control Variable (Heat)	2-Point Control
145, 151	1 Bit	O	C R - T -	DPT_Switch	0/1	[Tx] [Sx] Control Variable (Heat)	PI Control (PWM)
145, 151	1 Bit	O	C R - T -	DPT_Switch	0/1	[Tx] [Sx] Control Variable	2-Point Control
145, 151	1 Bit	O	C R - T -	DPT_Switch	0/1	[Tx] [Sx] Control Variable	PI Control (PWM)
146, 152	1 Bit	O	C R - T -	DPT_Switch	0/1	[Tx] [Sx] PI State (Cool)	0 = PI Signal 0%; 1 = PI Signal Greater than 0%
147, 153	1 Bit	O	C R - T -	DPT_Switch	0/1	[Tx] [Sx] PI State (Heat)	0 = PI Signal 0%; 1 = PI Signal Greater than 0%
147, 153	1 Bit	O	C R - T -	DPT_Switch	0/1	[Tx] [Sx] PI State	0 = PI Signal 0%; 1 = PI Signal Greater than 0%

162	2 Bytes	O	**C R - T -**	DPT_Value_Temp	-273.00º - 670433.28º	[Internal Probe] Current Temperature	Temperature Sensor Value
163	1 Bit	O	**C R - T -**	DPT_Alarm	0/1	[Internal Probe] Overcooling	0 = No Alarm; 1 = Alarm
164	1 Bit	O	**C R - T -**	DPT_Alarm	0/1	[Internal Probe] Overheating	0 = No Alarm; 1 = Alarm