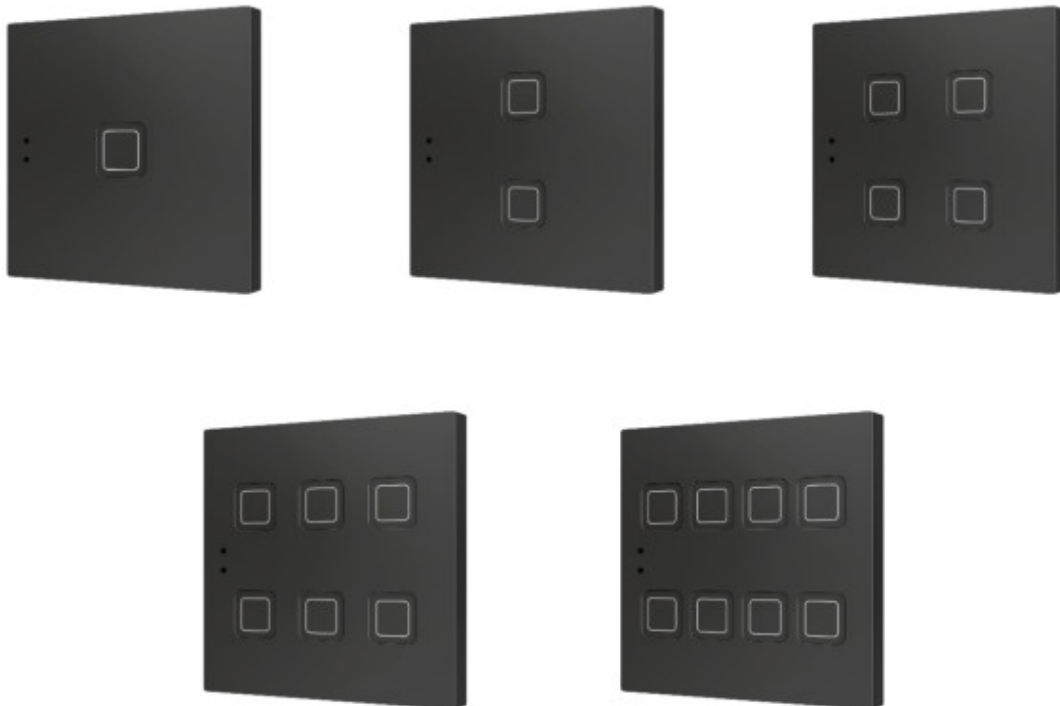


Zennio Tecla X KNX Multifunction Capacitive Touch Switch User Manual

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Tecla X KNX Multifunction Capacitive Touch Switch User Manual



Tecla X

PC-ABS Capacitive push button with 1/2/4/6/8 buttons and custom icons
ZVITX1 / ZVITX2 / ZVITX4 / ZVITX6 / ZVITX8

Application Programme Version: [1.9] User Manual Version: [1.9]_a

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INTRODUCTION

1.1 TECLA X

Tecla X is a KNX multifunction capacitive touch switch from Zennio with proximity sensor, luminosity sensor and backlit buttons.

They are offered at a reduced weight, with one, two, four, six or eight 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 X 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 the two builtin analog/digital inputs, the internal temperature sensor and a thermostat function, as well as an elegant design with fully customisable backlit icons.

The most outstanding features of Tecla X are:

- Fully customisable backlit icons.
- 1 / 2 / 4 / 6 / 8 touch buttons, which can operate as individual or pair controls.
- Horizontally or vertically oriented configuration (only available for the twobutton, six-button and eight button models).
- 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 X:

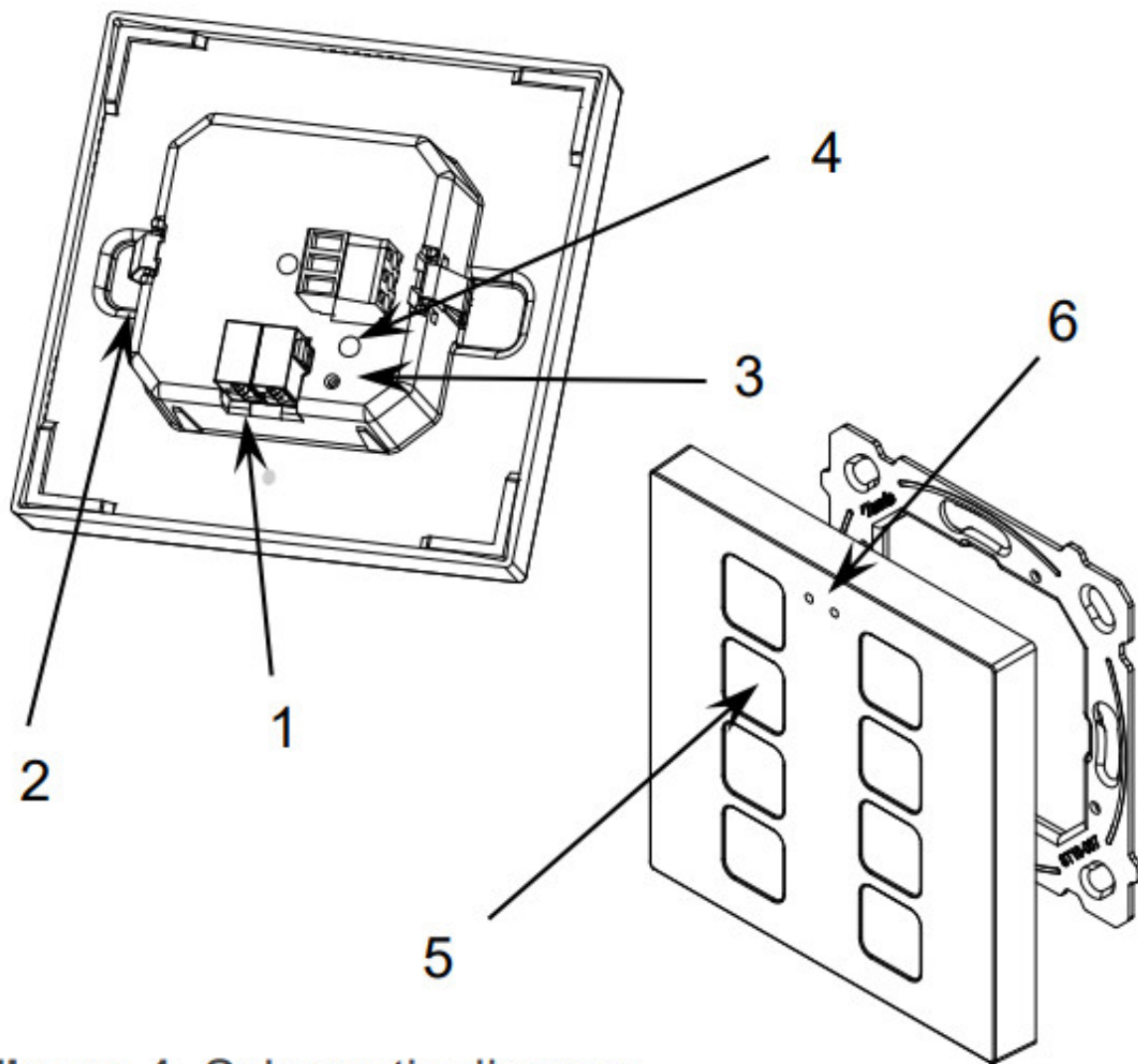


Figure 1. Schematic diagram.

1. KNX connector
2. Fixing clips.
3. Programming LED.
4. Programming Button.
5. Touch area.
6. Proximity and Luminosity.

Tecla X 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 (4) will make the device enter the programming mode. The programming LED (3) will then light in red. On the other hand, 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 X, 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.

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

This tab is subdivided into several further sections, which contain different general and function-related parameters, both general and advanced.

2.1.1 CONFIGURATION

In the “Configuration” tab, the general settings are displayed.

ETS PARAMETERISATION

Figure 2. Main configuration.

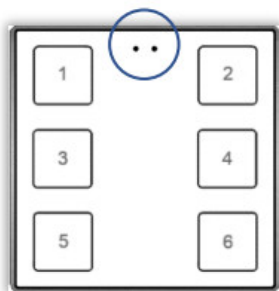
The following parameters are shown:

Number of buttons [1 / 2 / 4 / 6 / 8]: The application program can be downloaded in all five versions of the device. If the correct option is not selected, the push buttons will not work.

Device Orientation [Vertical (Normal) / 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 (Normal):

The sensors are centred and at the top of the device.



Horizontal (Rotated):

The sensors are centred and located on the left side of the device.

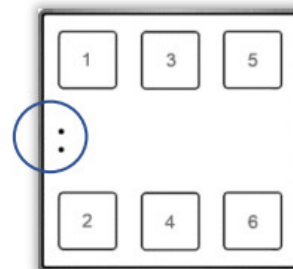


Figure 3. Orientation.

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 0 for details.

Inputs [Disabled / Enabled]: enables or disables the “Inputs” tab in the tree on the left, depending on whether the device will or will not be connected any external accessories. See section 2.3 for details.

Thermostat [Disabled / Enabled]: enables or disables the “Thermostat” tab in the tree on the left. See section 2.4 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).

Heartbeat (Periodic Alive Notification) ☒

Period min

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 follow the parameterised period.

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.

Device Recovery Objects (Send 0 and 1) ☒

Delay s

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.

Scene after download [Keep Saved Scenes / Configured by parameters]: Allows to assign the option to update scenes only on the first download of the device version or to delete the saved scenes after the download of the device version.

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.

Note: Please note that this device does not have the [General] Activity object mentioned in this manual.

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 X 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 X 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 X product section at the Zennio homepage, www.zennio.com.

2.3 INPUTS

Tecla X incorporates two analog/digital inputs, each configurable as a: Binary Input, for the connection of a pushbutton or a switch/sensor. Temperature Probe, to connect a temperature from Zennio. Motion Detector, to connect a motion detector (suitable for the new motion detector model from Zennio).

2.3.1 BINARY INPUT

Please refer to the specific user manual “Binary Inputs”, available in the Tecla X product section, at the Zennio website (www.zennio.com).

2.3.2 TEMPERATURE PROBE

Please refer to the specific user manual “Temperature Probe”, available in the Tecla X product section, at the Zennio website (www.zennio.com).

2.3.3 MOTION DETECTOR

Please refer to the specific user manual “Motion Detector”, available in the Tecla X product section, at the Zennio website (www.zennio.com).

2.4 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 and the application program itself.

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_Scene Number	0 – 63	[General] Scene: Receive	0 – 63 (Run Scene 1-64)
5	1 Byte		C – – T –	DPT_Scene Control	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	I	C – – T –	DPT_Start	0/1	[General] Proximity Detection	Send 1 when Proximity is Detected
19	1 Bit	I	C – – T –	DPT_Bool	0/1	[General] Luminosity (1-Bit)	0 = Over Threshold; 1 = Under Threshold
	1 Bit	I	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 (Detener) 0x1 (Reducir 100%) ... 0x7 (Reducir 1%) 0x8 (Detener) 0x9 (Subir 100%) ... 0xF (Subir 1%)	[Btn][Ix] Light – Dimming	(Long Press) Switch Between Dimming Up and Down

26, 32, 38, 44, 50	4 Bit	I	C – W T–	DPT_Control_Dimming	0x0 (Detener) 0x1 (Reducir 100%) ... 0x7 (Reducir 1%) 0x8 (Detener) 0x9 (Subir 100%) ... 0xF (Subir 1%)	[Btn][Ix] Light – Dimming	(Long Press) Dimming Up
	4 Bit	I	C – W T–	DPT_Control_Dimming	0x0 (Detener) 0x1 (Reducir 100%) ... 0x7 (Reducir 1%) 0x8 (Detener) 0x9 (Subir 100%)	[Btn][Ix] Light – Dimming	(Long Press) Dimming 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 –	DPT_Room_State	0 – 2	[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 (Detener) 0x1 (Reducir 100%) ... 0x7 (Reducir 1%) 0x8 (Detener) 0x9 (Subir 100%) ... 0xF (Subir 1%)	[Btn][Px] Light – Dimming	(Long Press) Left = Darker; Right = Brighter
	4 Bit	I	C – W T –	DPT_Control_Dimming	0x0 (Detener) 0x1 (Reducir 100%) ... 0x7 (Reducir 1%) 0x8 (Detener) 0x9 (Subir 100%) ...0xF (Subir 1%)	[Btn][Px] Light – Dimming	(Long Press) Left = Brighter; Right = Darker

	4 Bit	I	C – W – T –	DPT_Control _Dimming	0x0 (Deten er) 0x1 (Re ducir 100%) ... 0x7 (Re ducir 1%) 0 x8 (Detene r) 0x9 (Sub ir 100%) ... 0xF (Su bir 1%)	[Btn][Px] Light – Dim ming	(Long Press) Lower = Darker; Upper = Brighter

	4 Bit	I	C – W – T –	DPT_Control _Dimming	0x0 (Deten er) 0x1 (Re ducir 100%) ... 0x7 (Re ducir 1%) 0 x8 (Detene r) 0x9 (Sub ir 100%) ... 0xF (Su bir 1%)	[Btn][Px] Light – Dim ming	(Long Press) Lower = Bright er; Upper = Darker
87, 93, 99, 10 5, 111	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_UpDow n	0/1	[Btn][Px] Shutter – Mo ve	(Long Press) Left = Down; Right = Up
	1 Bit		C – – T –	DPT_UpDow n	0/1	[Btn][Px] Shutter – Mo ve	(Start Pressing) Left = Dow n; Right = Up
	1 Bit		C – – T –	DPT_UpDow n	0/1	[Btn][Px] Shutter – Mo ve	(Long Press) Left = Up; Rig ht = Down
	1 Bit		C – – T –	DPT_UpDow n	0/1	[Btn][Px] Shutter – Mo ve	(Start Pressing) Left = Up; Right = Down
	1 Bit		C – – T –	DPT_UpDow n	0/1	[Btn][Px] Shutter – Mo ve	(Long Press) Lower = Down ; Upper = Up
	1 Bit		C – – T –	DPT_UpDow n	0/1	[Btn][Px] Shutter – Mo ve	(Long Press) Lower = Up; U pper = Down
	1 Bit		C – – T –	DPT_UpDow n	0/1	[Btn][Px] Shutter – Mo ve	(Start Pressing) Lower = Do wn; Upper = Up
	1 Bit		C – – T –	DPT_UpDow n	0/1	[Btn][Px] Shutter – Mo ve	(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 %
90, 96, 102, 108, 114	1 Byte		-- --	DPT_Value_1_Ucount	0 – 255	[Btn][Px]	dummy
115	1 Byte	I	C – W –	DPT_Scene Control	0-63; 128-191	[Thermostat] Scenes	0 – 63 (Execute 1 – 64); 128 – 191 (Save 1 – 64)
116	2 Bytes	I	C – W T U	DPT_Value_Temp	-273,00° – 670433,28°	[Tx] Temperature Source 1	External Sensor Temperature
117	2 Bytes	I	C – W T U	DPT_Value_Temp	-273,00° – 670433,28°	[Tx] Temperature Source 2	External Sensor Temperature

118	2 Bytes	O	C R – T –	DPT_Value_Temp	-273,00° – 670433,28°	[Tx] Effective Temperature	Effective Control Temperature
119	1 Byte	I	C – W --	DPT_HVAC Mode	1=Confort 2=Standby 3=Económico 4=Protección	[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_HVAC Mode	1=Comfort 2=Standby 3=Económico 4=Protección	[Tx] Special Mode Status	1-Byte HVAC Mode
127	2 Bytes	I	C – W –	DPT_Value_Temp	-273,00° – 670433,28°	[Tx] Setpoint	Thermostat Setpoint Input
	2 Bytes	I	C – W –	DPT_Value_Temp	-273,00° – 670433,28°	[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	- 671088,64° – 670433,28°	[Tx] Setpoint Offset	Float Offset Value
130	2 Bytes	O	C R – T –	DPT_Value_Temp	-273,00° – 670433,28°	[Tx] Setpoint Status	Current Setpoint

131	2 Bytes	O	CRT-	DPT_Value_Temp	-273,00° – 670433,28°	[Tx] Basic Setpoint Status	Current Basic Setpoint
132	2 Bytes	O	CRT-	DPT_Value_Tempd	- 671088,64° – 670433,28°	[Tx] Setpoint Offset Status	Current Setpoint Offset
133	1 Bit	I	CW-	DPT_Reset	0/1	[Tx] Setpoint Reset	Reset Setpoint to Default

	1 Bit	I	CW--	DPT_Reset	0/1	[Tx] Offset Reset	Reset Offset
134	1 Bit	I	CW-	DPT_Heat_Cool	0/1	[Tx] Mode	0 = Cool; 1 = Heat
135	1 Bit	O	CRT-	DPT_Heat_Cool	0/1	[Tx] Mode Status	0 = Cool; 1 = Heat
136	1 Bit	I	CW--	DPT_Switch	0/1	[Tx] On/Off	0 = Off; 1 = On
137	1 Bit	O	CRT-	DPT_Switch	0/1	[Tx] On/Off Status	0 = Off; 1 = On
138	1 Bit	I/O	CRW-	DPT_Switch	0/1	[Tx] Main System (Cool)	0 = System 1; 1 = System 2
139	1 Bit	I/O	CRW-	DPT_Switch	0/1	[Tx] Main System (Heat)	0 = System 1; 1 = System 2
140	1 Bit	I	CW-	DPT_Enable	0/1	[Tx] Enable/Disable Secondary System (Cool)	0 = Disable; 1 = Enable
141	1 Bit	I	CW-	DPT_Enable	0/1	[Tx] Enable/Disable Secondary System (Heat)	0 = Disable; 1 = Enable
142, 148	1 Byte	O	CRT-	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)
	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
	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
	1 Bit	O	C R – T –	DPT_Switch	0/1	[Tx] [Sx] Control Variable (Heat)	PI Control (PWM)
	1 Bit	O	C R – T –	DPT_Switch	0/1	[Tx] [Sx] Control Variable	2-Point Control
	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%
	1 Bit	O	C R – T –	DPT_Switch	0/1	[Tx] [Sx] PI State	0 = PI Signal 0%; 1 = PI Signal Greater than 0%
154, 158	2 Bytes	O	C R – T –	DPT_Value_Temp	-273,00° – 670433,28°	[Ix] Current Temperature	Temperature Sensor Value

155, 159	1 Bit	O	C R – T –	DPT_Alarm	0/1	[Ix] Overcooling	0 = No Alarm; 1 = Alarm
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156, 160	1 Bit	O	C R – T –	DPT_Alarm	0/1	[Ix] Overheating	0 = No Alarm; 1 = Alarm
157, 161	1 Bit	O	C R – T –	DPT_Alarm	0/1	[Ix] Probe Error	0 = No Alarm; 1 = Alarm
162	2 Bytes	O	C R – T –	DPT_Value_Temp	-273,00° – 670433,28°	[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
165	1 Byte	I	C – W – –	DPT_Scene Number	0 – 63	[Motion Detector] Scene Input	Scene Value
166	1 Byte		C – – T –	DPT_Scene Control	0-63; 128-191	[Motion Detector] Scene Output	Scene Value
167, 196	1 Byte	O	C R – T –	DPT_Scaling	0% – 100%	[Ix] Luminosity	0-100%
168, 197	1 Bit	O	C R – T –	DPT_Alarm	0/1	[Ix] Open Circuit Error	0 = No Error; 1 = Open Circuit Error
169, 198	1 Bit	O	C R – T –	DPT_Alarm	0/1	[Ix] Short Circuit Error	0 = No Error; 1 = Short Circuit Error
170, 199	1 Byte	O	C R – T –	DPT_Scaling	0% – 100%	[Ix] Presence State (Scaling)	0-100%
171, 200	1 Byte	O	C R – T –	DPT_HVAC Mode	1=Confort 2=Standby 3=Económico 4=Protección	[Ix] Presence State (HVAC)	Auto, Comfort, Standby, Economy, Building Protection
172, 201	1 Bit	O	C R – T –	DPT_Switch	0/1	[Ix] Presence State (Binary)	Binary Value

	1 Bit	O	C R – T –	DPT_Start	0/1	[Ix] Presence: Slave Output	1 = Motion Detected
173, 202	1 Bit	I	C – W –	DPT_Window_Door	0/1	[Ix] Presence Trigger	Binary Value to Trigger the Presence Detection
174, 203	1 Bit	I	C – W – –	DPT_Start	0/1	[Ix] Presence: Slave Input	0 = Nothing; 1 = Detection from slave device
175, 204	2 Bytes	I	C – W –	DPT_TimePeriodSec	0 – 65535	[Ix] Presence: Waiting Time	0-65535 s.
176, 205	2 Bytes	I	C – W –	DPT_TimePeriodSec	0 – 65535	[Ix] Presence: Listening Time	1-65535 s.
177, 206	1 Bit	I	C – W –	DPT_Enable	0/1	[Ix] Presence: Enable	According to parameters
178, 207	1 Bit	I	C – W – –	DPT_DayNight	0/1	[Ix] Presence: Day/Night	According to parameters
179, 208	1 Bit	O	C R – T –	DPT_Occupancy	0/1	[Ix] Presence: Occupancy State	0 = Not Occupied; 1 = Occupied

180, 209	1 Bit	I	C – W –	DPT_Start	0/1	[Ix] External Motion Detection	0 = Nothing; 1 = Motion detected by an external sensor
181, 186, 191, 210, 215, 220	1 Byte	O	C R – T –	DPT_Scaling	0% – 100%	[Ix] [ax] Detection State (Scaling)	0-100%
182, 187, 192, 211, 216, 221	1 Byte	O	C R – T –	DPT_HVAC Mode	1=Confort 2=Standby 3=Económico 4=Protección	[Ix] [ax] Detection State (HVAC)	Auto, Comfort, Standby, Economy, Building Protection
183, 188, 193, 212, 217, 222	1 Bit	O	C R – T –	DPT_Switch	0/1	[Ix] [ax] Detection State (Binary)	Binary Value
184, 189, 194, 213, 218, 223	1 Bit	I	C – W – –	DPT_Enable	0/1	[Ix] [ax] Enable Channel	According to parameters

185, 190, 195, 214, 219, 224	1 Bit	I	C – W – –	DPT_Switch	0/1	[Ix] [ax] Force State	0 = No Detection; 1 = Detection
225, 231	1 Bit	I	C – W – –	DPT_Enable	0/1	[Ix] Input Lock	0 = Unlock; 1 = Lock
226, 232	1 Bit		C – – T –	DPT_Switch	0/1	[Ix] [Short Press] 0	Sending of 0
	1 Bit		C – – T –	DPT_Switch	0/1	[Ix] [Short Press] 1	Sending of 1
	1 Bit	I	C – W T –	DPT_Switch	0/1	[Ix] [Short Press] 0/1 Switching	Switching 0/1
	1 Bit		C – – T –	DPT_UpDown	0/1	[Ix] [Short Press] Move Up Shutter	Sending of 0 (Up)
	1 Bit		C – – T –	DPT_UpDown	0/1	[Ix] [Short Press] Move Down Shutter	Sending of 1 (Down)
	1 Bit		C – – T –	DPT_UpDown	0/1	[Ix] [Short Press] Move Up/Down Shutter	Switching 0/1 (Up/Down)
	1 Bit		C – – T –	DPT_Step	0/1	[Ix] [Short Press] Stop/Step Up Shutter	Sending of 0 (Stop/Step Up)
	1 Bit		C – – T –	DPT_Step	0/1	[Ix] [Short Press] Stop/Step Down Shutter	Sending of 1 (Stop/Step Down)
	1 Bit		C – – T –	DPT_Step	0/1	[Ix] [Short Press] Stop/Step Shutter (Switched)	Switching of 0/1 (Stop/Step Up/Down)
	4 Bit		C – – T –	DPT_Control_Dimming	0x0 (Detener) 0x1 (Reducir 100%) ... 0x7 (Reducir 1%) 0x8 (Detener) 0x9 (Subir 100%) ... 0xF (Subir 1%)	[Ix] [Short Press] Brighter	Increase Brightness

	4 Bit		C – T –	DPT_Control_Dimming	0x0 (Detener) 0x1 (Reducir 100%) ... 0x7 (Reducir 1%) 0x8 (Detener) 0x9 (Subir 100%) ... 0xF (Subir 1%)	[Ix] [Short Press] Darker	Decrease Brightness
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	4 Bit		C – T –	DPT_Control_Dimming	0x0 (Detener) 0x1 (Reducir 100%) ... 0x7 (Reducir 1%) 0x8 (Detener) 0x9 (Subir 100%) ...0xF (Subir 1%)	[Ix] [Short Press] Brighter/Darker	Switch Bright/Dark
	1 Bit		C – T –	DPT_Switch	0/1	[Ix] [Short Press] Light On	Sending of 1 (On)
	1 Bit		C – T –	DPT_Switch	0/1	[Ix] [Short Press] Light Off	Sending of 0 (Off)
	1 Bit	I	C – W T –	DPT_Switch	0/1	[Ix] [Short Press] Light On/Off	Switching 0/1
	1 Byte		C – T –	DPT_Scene Control	0-63; 128-191	[Ix] [Short Press] Run Scene	Sending of 0 – 63
	1 Byte		C – T –	DPT_Scene Control	0-63; 128-191	[Ix] [Short Press] Save Scene	Sending of 128 – 191
	1 Bit	I/O	C R W T –	DPT_Switch	0/1	[Ix] [Switch/Sensor] Edge	Sending of 0 or 1
	1 Byte		C – T –	DPT_Value_1_Ucount	0 – 255	[Ix] [Short Press] Constant Value (Integer)	0 – 255

	1 Byte		C – – T –	DPT_Scaling	0% – 100%	[Ix] [Short Press] Constant Value (Percentage)	0% – 100%
	2 Bytes		C – – T –	DPT_Value_2_Ucount	0 – 65535	[Ix] [Short Press] Constant Value (Integer)	0 – 65535
	2 Bytes		C – – T –	9.xxx	- 671088,64 – 670433,28	[Ix] [Short Press] Constant Value (Float)	Float Value
227, 233	1 Byte	I	C – W –	DPT_Scaling	0% – 100%	[Ix] [Short Press] Shutter Status (Input)	0% = Top; 100% = Bottom
	1 Byte	I	C – W –	DPT_Scaling	0% – 100%	[Ix] [Short Press] Dimming Status (Input)	0% – 100%
228, 234	1 Bit		C – – T –	DPT_Switch	0/1	[Ix] [Long Press] 0	Sending of 0
	1 Bit		C – – T –	DPT_Switch	0/1	[Ix] [Long Press] 1	Sending of 1
	1 Bit	I	C – W T–	DPT_Switch	0/1	[Ix] [Long Press] 0/1 Switching	Switching 0/1
	1 Bit		C – – T –	DPT_UpDown	0/1	[Ix] [Long Press] Move Up Shutter	Sending of 0 (Up)
	1 Bit		C – – T –	DPT_UpDown	0/1	[Ix] [Long Press] Move Down Shutter	Sending of 1 (Down)
	1 Bit		C – – T –	DPT_UpDown	0/1	[Ix] [Long Press] Move Up/Down Shutter	Switching 0/1 (Up/Down)
	1 Bit		C – – T –	DPT_Step	0/1	[Ix] [Long Press] Stop /Step Up Shutter	Sending of 0 (Stop/Step Up)
	1 Bit		C – – T –	DPT_Step	0/1	[Ix] [Long Press] Stop /Step Down Shutter	Sending of 1 (Stop/Step Down)
	1 Bit		C – – T –	DPT_Step	0/1	[Ix] [Long Press] Stop /Step Shutter (Switched)	Switching of 0/1 (Stop/Step Up/Down)

	4 Bit		C – – T –	DPT_Control_Dimming	0x0 (Detener) 0x1 (Reducir 100%) ... 0x7 (Reducir 1%)	[Ix] [Long Press] Brighter	Long Pr. -> Brighter; Release -> Stop
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					0x8 (Detener) 0x9 (Subir 100%) ... 0xF (Subir 1%)		
	4 Bit		C – – T –	DPT_Control_Dimming	0x0 (Detener) 0x1 (Reducir 100%) ... 0x7 (Reducir 1%) 0x8 (Detener) 0x9 (Subir 100%) ... 0xF (Subir 1%)	[Ix] [Long Press] Darker	Long Pr. -> Darker; Release -> Stop
	4 Bit		C – – T –	DPT_Control_Dimming	0x0 (Detener) 0x1 (Reducir 100%) ... 0x7 (Reducir 1%) 0x8 (Detener) 0x9 (Subir 100%) ... 0xF (Subir 1%)	[Ix] [Long Press] Brighter/Darker	Long Pr. -> Brighter/Darker; Release -> Stop
	1 Bit		C – – T –	DPT_Switch	0/1	[Ix] [Long Press] Light On	Sending of 1 (On)
	1 Bit		C – – T –	DPT_Switch	0/1	[Ix] [Long Press] Light Off	Sending of 0 (Off)
	1 Bit	I	C – W T –	DPT_Switch	0/1	[Ix] [Long Press] Light On/Off	Switching 0/1
	1 Byte		C – – T –	DPT_Scene Control	0-63; 128-191	[Ix] [Long Press] Run Scene	Sending of 0 – 63

	1 Byte		C – T –	DPT_Scene Control	0-63; 128-191	[Ix] [Long Press] Save Scene	Sending of 128 – 191
	1 Bit	O	C R – T –	DPT_Alarm	0/1	[Ix] [Switch/Sensor] Alarm: Breakdown or Sabotage	1 = Alarm; 0 = No Alarm
	2 Bytes		C – T –	9.xxx	- 671088,64 – 670433,28	[Ix] [Long Press] Constant Value (Float)	Float Value
	2 Bytes		C – T –	DPT_Value_2_Ucount	0 – 65535	[Ix] [Long Press] Constant Value (Integer)	0 – 65535
	1 Byte		C – T –	DPT_Scaling	0% – 100%	[Ix] [Long Press] Constant Value (Percentage)	0% – 100%
	1 Byte		C – T –	DPT_Value_1_Ucount	0 – 255	[Ix] [Long Press] Constant Value (Integer)	0 – 255
229, 235	1 Bit		C – T –	DPT_Trigger	0/1	[Ix] [Long Press/Release] Stop Shutter	Release -> Stop Shutter
230, 236	1 Byte	I	C – W –	DPT_Scaling	0% – 100%	[Ix] [Long Press] Dimming Status (Input)	0% – 100%
	1 Byte	I	C – W –	DPT_Scaling	0% – 100%	[Ix] [Long Press] Shutter Status (Input)	0% = Top; 100% = Bottom

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 Tecla X PC-485 Capacitive push-button with 120/16/8 buttons and custom icons Buttons: 120/16/8 / 120/16/8 / 120/16/8 Buttons: 120/16/8 / 120/16/8 / 120/16/8 Buttons: 120/16/8 / 120/16/8 / 120/16/8	Zennio Tecla X KNX Multifunction Capacitive Touch Switch [pdf] User Manual ZVITX1, ZVITX2, ZVITX4, ZVITX6, ZVITX8, Tecla X, Tecla X KNX Multifunction Capacitive Touch Switch, KNX Multifunction Capacitive Touch Switch, Multifunction Capacitive Touch Switch, Capacitive Touch Switch, Touch Switch
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