

# Product Manual

PWM LED Driver

OPT-LD4-111



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## About this document

This document provides detailed technical information on the function, installation and programming of the OPT-LD4-111 device.

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## Discarding the old device

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optimus ✓

# 1 Product Description

OPT-LD4-111 is an LED driver that can adjust the level of LED illuminations with constant voltage over 4 output channels with common DC supply. The supply voltage is between 12-24 VDC, determined according to the requirements of the load. LED lighting operating with the same voltage should be connected in each channel. The maximum current that can be drawn per channel is 3 Amps. By combining channels both programmatically and physically, the total current can be increased to 6A or 12A. The device can also be used for PWM signal powered LED drivers.

Connections: The KNX supply connection of the device is made with the standard KNX terminal. In the system, anode is end common. Make the supply and armature/driver connections according to the plus/minus poles. Luminaires operating with the same voltage should be installed in the channels and the device should be supply with the appropriate voltage.

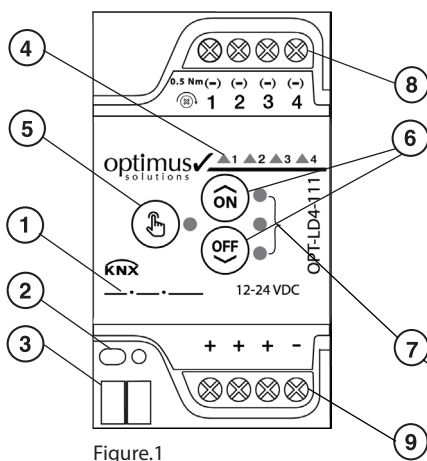


Figure.1

+ line of LED and power supply connection

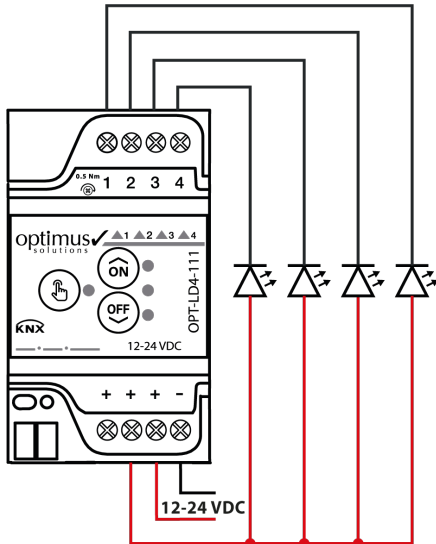
- ① Address Writing Area
- ② Programming Button
- ③ KNX Connection
- ④ Output Status Indicators
- ④ Selected Channel Indicator In Manual Mod
- ⑤ Manual Mode Key and Indicator
- ⑥ Output Control Keys
- ⑦ Output Status Indicator
- ⑧ LED Output
- ⑨ DC Supply Input

	Output ON
	Dimmed (Flash)
	Output OFF

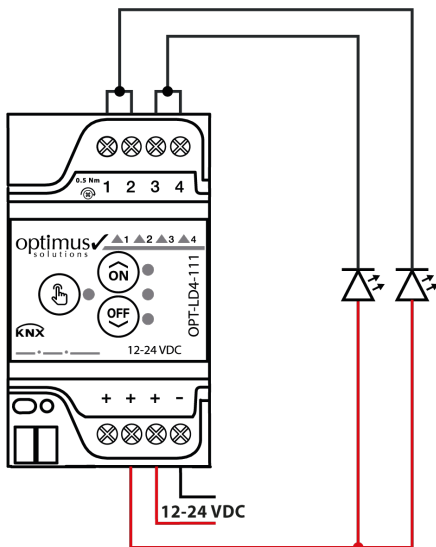
Table.1 LED Status Indicator In Manual Mode

## 1.1 Connection Diagrams

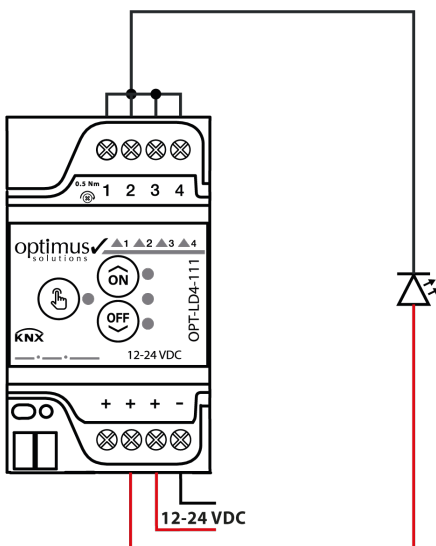
- **Independent 4 channels:** The channel is connected independently. The outputs should NOT be connected to each other.



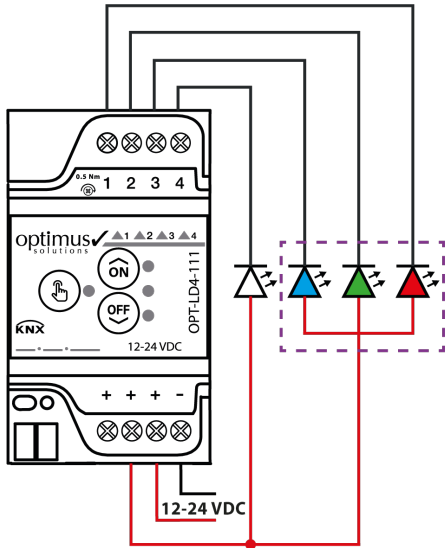
- **2x2 Channels:** Channels 1 and 2 and channels 3 and 4 are interconnected. The same setting is made via ETS



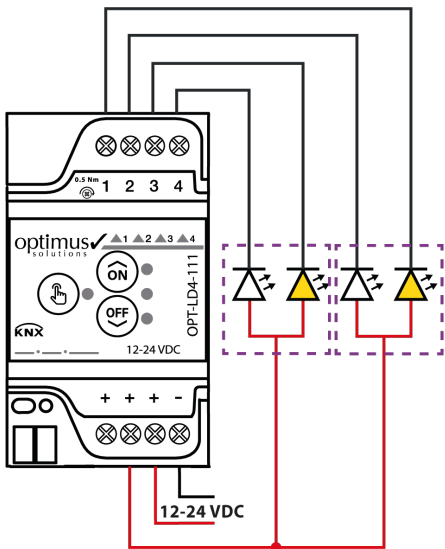
- **All Channel Combined:** Connection is made by bridging all channels to each other. The same setting is made via ETS






- RGB(W) Channel:** Channels are connected in the channel order of Red (1), Green (2), Blue (3), and White (4) if available. The 4th channel is controlled by parameters independent of RGB. RGB control is also selected via ETS.



- 2x2-Channel Tunable White:** Each channel is connected independently. Outputs should not be connected to each other. It is the parameter where the temperature and coldness of the light are adjusted. Channels must be connected in accordance with the color connections. Warm white LEDs are connected to channels 1 and 3, and cold white LEDs are connected to channels 2 and 4.







## 1.2 Technical Specifications

Supply Voltage	KNX 30 VDC
KNX Current Consumption	Max. 10mA
KNX mode	S-Mod
Connection	KNX Twisted Pair
Protection Class	IP 20
Mounting	DIN Rail
Number of Output	4
Switching Current	3A per channel, total 12A 28 VDC (max)
Temperature Range	Operation -5...+45 °C Storage -25...+55 °C
Dimensions (WxHxD)	54 x 92 x 64 mm (3 MW*)
Weight	Net:112g Gross:140g
Material	ABS V0
Connection Terminals	4 mm <sup>2</sup> multi core, 6 mm <sup>2</sup> single core
Certificate	CE
Product Information Tag	 <p>optimus ✓ OPT-LD4-111 PWM Led Driver / 4-Channel P.D: 24.08.2023 OPT-LD4-111 TP 5 Optimus Doruk Elektrik Elektronik Otomasyon A.Ş. Istanbul / Türkiye T:(+90216)4441105 Made in Türkiye</p>
Product Tag Location	 <p>Tag is on the behind of the product.</p>
Guarantee Tag Location	 <p>Tag is on the bottom of the product.</p>

\*MW: Module Width (18mm)

## 1.3 Monitoring and Manual Operation

There are status indicators and control buttons on the monitoring and control panel on the front of the device. When you press and hold the  symbol (>0.5s), the device switches to manual control mode (or exits manual mode if it is in manual mode) and the LED next to the symbol lights up. The light of output channel 1 starts flashing (selected channel indicator / its mean current indicator.). By pressing the  button for a short time, the device activates the relevant channel; drives the output according to the previous or parametric value. Among the status indicators, it shows that the upper channel is active, the lower channel is closed, and the one in between shows that the channel is partially open (blinks). Pressing the  symbol again switches to the next channel. When the device is in manual mode, when you press the  symbol for a long time, the device exits the manual mode and the LED next to the button turns off. Output status indicators become to show the status of the channels. The open, closed or level information of the channels is shared over the relevant objects even when the device is in manual mode. *Refer to Table.1*

Note: The device is programmed as 4 channels with factory settings and starts to work in this way at boot. If you are going to merge channels in the connection, the parameters must be edited and loaded before this merge process.

Note 2: When the tunnable white program is installed on the device, the manual operation works like 4-channel manual operation, independent of this program. When entering the manual operation, each channel operates at values between 0-100%. After exiting manual operation, it does not return to the values before entering manual operation and turns all channels off.

## 1.4 Commissioning

KNX connection is made after the device is connected in accordance with the voltage and current values of the lighting elements. The device does not need an external power supply for commissioning, it is sufficient to have the KNX line connected. (KNX line must be connected for addressing and programming.)

ETS 5 or higher software is required for commissioning the device, and it is sold separately by the KNX Association. The current KNX product file of the device can be downloaded from the online catalog or from the manufacturer's current website ([www.optimusdoruk.com](http://www.optimusdoruk.com)). After the provided library file is added to the project, proceed to programming device.



## 2 Setting Parameters

### 2.1 General Settings

For all output assignments, the general settings tab looks as follows.

General

General

Channel - 1

Channel - 2

Channel - 3

Channel - 4

Output Allocation: 4 Channel

Start Up Delay: 2 sec

Allow Manual Operation:  Disable  Enable

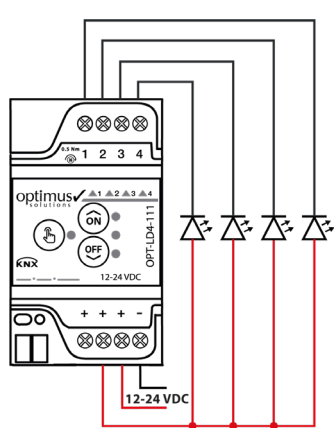
Manual Operation Timeout: Never

PWM Frequency: 600 Hz

Status Sending Period (for Each Channel): 2 x100 ms

Load Test at Start Up:  Disable  Enable

Wiring Diagram



#### 2.1.1 Output Allocation

The device is set to drive independent 4-channel by default. Other options: 2x2 Channel, RGB+1 Channel, Combined Single Channel, 2x2-Channel Tunable White. Page views are adapted for each option. The connection diagram at the bottom of the page changes according to the assignment.

#### 2.1.2 Start Up Delay

It determines the suspend time, which starts from the moment the device is energized. It is used to balance the data density on the line at the start of the system. It is selected from the list between 2 and 60 sec. The default value is 2 seconds.

#### 2.1.3 Allow Manual Operation

It is the parameter that allows/prevents the use of the keys on the device. By default, manual operation is allowed.

#### 2.1.4 Manual Operation Timeout

When the device is in manual operation, it ignores the commands from the KNX line. If it is desired to exit the manual mode after a certain time, it can be selected from this list.

### **2.1.5 PWM Frequency**

Flickering in light level may be observed depending on the PWM frequencies at which LED fixtures are driven. When this situation is encountered, a higher frequency PWM signal can solve the problem.

### **2.1.6 Status Sending Period for Each Channel**

The value set in this parameter defines the waiting minimum time between two consecutive telegrams. Channels send status information while turning on and off, this status information sending frequency may be different. Adjusting the frequency of this information may be necessary to balance the line density.

### **2.1.7 Load Test at Start Up**

When the device is energized (KNX and supply), it checks the output channels and performs tests to generate faults or warnings. During these tests, the channels are opened and closed for a short time. Its default value is Active and it can be considered to be set to Inactive after the commissioning is completed.

## 2.2 Output Assignments: Common Parameters for 4 Channels, 2x2 Channels, and All Channel Combined

Action When Power Recovery	<input checked="" type="radio"/> Last Value <input type="radio"/> Defined Value
Switch On Value	<input checked="" type="radio"/> Last Value <input type="radio"/> Defined Value
Dim Characteristic	<input checked="" type="radio"/> via Dimming <input type="radio"/> via Jump
Minimum Dimming Value	<input type="text" value="0"/>
Maximum Dimming Value	<input type="text" value="255"/>
Min to Max Dimming Speed	<input type="text" value="1"/> sec
Loading Style	<input type="radio"/> Linear <input checked="" type="radio"/> Logarithmic
Min Change Value to Send Status	<input type="text" value="1"/> %

### 2.2.1 Action When Power Recovery

The behavior of the output channel during the restoration (recovery) of the mains supply is determined in this area. When the device is turned on again while the last value is selected, it turns on at the last value. If the defined value is selected, it starts from the value we enter. The default is the "Last Value" function.

#### 2.2.1.1 Last Value

It defines when it reaches the value before the power outage. OPT-LD4-111's last value option is greater than 0 must. Therefore, if the last value = 0, the last value is defined as 255. Other values remain the same. If you want to turn it off after the outage, "Defined Value" should be selected.

#### 2.2.1.2 Defined Value

When selected, a new line is added and the value is entered. A value between 0-255 can be entered. 0 is Off, 255 sets the maximum value.

### 2.2.2 Switch On Value

We set the value from which it should start when the Switch On command is sent to the device. While the last value is selected, when the device is turned on again, it opens at the last value. If the defined value is selected, it starts from the value we enter. Default "Last Value" function.

#### 2.2.2.1 Last Value

It defines the current value of the device before the "OFF" command. The final value option of OPT-LD4-111 must be greater than 0. Therefore, if the last value = 0, the last value is defined as 255. Other values remain the same. If you want to turn it off after the Switch On command, "Defined Value" should be selected.

#### 2.2.2.2 Defined Value

When selected, a value between 1-255 can be entered into the opened line, and it can be opened at the same level in every opening command.

### 2.2.3 Dim Characteristic

It is used to choose between reaching the value sent to the device directly or by ramping. The Ramp option allows the channel to reach its target value by ramping (smooth transition), while Jumping allows it to reach its target value abruptly.

### 2.2.4 Minimum Dimming Value

It is the area where the minimum brightness level of the luminaire is determined. Some luminaires may flicker at low values. To prevent this, this threshold value is defined to keep the flickering region out of control. Value requests between the values defined here and 0 are shifted to the minimum value.

### 2.2.5 Maximum Dimming Value

It is the area where the maximum brightness level of the luminaire is determined. It can be determined between 1-255. In case the luminaire produces more light brightness than needed, this value is adjusted so that the output does not produce more power than this value.

### 2.2.6 Min To Max Dimming Speed

It is the area where the time to reach the maximum level of the device from the off state is determined. It can be determined between 1-15 seconds.

### 2.2.7 Loading Style

The luminosity of the luminaires can be changed linearly or logarithmically. These settings adjust the brightness characteristic of the channel output, the default value is Logarithmic.

### 2.2.8 Min Change Value to Send Status

When the output level of the device changes, the level status information is also broadcast during the ramp operation. It is the field in which the change interval is determined by which this information is published. Status information is published for each % change in the output level. The value entered into the parameter must be entered taking into account 2.2.6 Min to max dimming speed and 2.1.6 Status sending period for each channel.

## 2.3 Output Assignment: Parameter Page for RGB+1 Channel:

General	Action When Power Recovery	<input type="radio"/> Last Value <input checked="" type="radio"/> Defined Value
General	Value Red	255
Channel - RGB	Value Green	255
	Value Blue	255
Parameters	Switch On Value	<input type="radio"/> Last Value <input checked="" type="radio"/> Defined Value
Channel - 4	Value Red	255
Parameters	Value Green	255
	Value Blue	255
	Dim Characteristic	<input checked="" type="radio"/> via Dimming <input type="radio"/> via Jump
	Minimum Dimming Value	0
	Maximum Dimming Value	255
	Min to Max Dimming Speed	1 sec
	Loading Style	<input type="radio"/> Linear <input checked="" type="radio"/> Logarithmic
	Min Change Value to Send Status	1 %

### 2.3.1 Action When Power Recovery

The behavior of the output channel during the restoration (recovery) of the mains supply is determined in this area. When the device is turned on again while the last value is selected, it turns on at the last value. If the defined value is selected, it starts from the value we enter. The default is the "Last Value" function.

#### 2.3.1.1 Last Value

It defines the value (color and brightness) reached before the power outage. The final value option of OPT-LD4-111 must be greater than 0. Therefore, if the last value = 0, the last value is defined as 255. Other values remain the same. If you want to turn it off after a power outage, "Defined Value" should be selected.

#### 2.3.1.2 Defined Value

When selected, values are entered in the new lines added for Red, Green and Blue. A value between 0-255 can be entered for each channel. 0 is Off, 255 sets the maximum value. These values are processed by adapting them between the lower and upper values of Dim. Other parameters are the same as before.

### 2.3.2 Switch On Value

We set the value from which it should start when the Switch On command is sent to the device. When the device is turned on again while the last value is selected, it turns on at the last value. If the defined value is selected, it starts from the value we enter. The default is the "Last Value" function.

### 2.3.2.1 Last Value

It saves the current value of the device before the OFF command. The recorded value is defined as the Switch On value. The final value option of OPT-LD4-111 must be greater than 0. Therefore, if the last value = 0, the last value is defined as 255. Other values remain the same. If you want to turn it off after a power outage, "Defined Value" should be selected.

### 2.3.2.2 Defined Value

When selected, values will be entered in the new lines added for Red, Green and Blue. You can enter values between 0-255 per channel. 0 is Off, and 255 is the maximum value. These values are placed between Dim lower and upper values. It is processed and adapted. Other parameters are the same as before.

### 2.3.5 Dim Characteristic

It is used to choose whether to reach the color value sent to the device directly or by ramping. The Ramp option allows the channel to reach its target value by ramping (smooth transition), while Jumping allows it to reach its target value abruptly.

### 2.3.6 Minimum Dimming Value

It is the area where the minimum brightness level for all colors of the luminaire is determined. Some luminaires may flicker at low values. To prevent this, this threshold value is defined to keep the flickering region out of control. Value requests between the values defined here and 0 are shifted to the minimum value.

### 2.3.7 Maximum Dimming Value

It is the area where the maximum brightness level for all colors of the luminaire is determined. It can be determined between 1-255. In case the luminaire produces more light brightness than needed, this value is adjusted so that the output does not produce more power than this value.

### 2.3.8 Min to Max Dimming Speed

It is the area where the time to reach the maximum level from the closed state of the device is determined. It can be determined between 1-15 seconds.

### 2.3.9 Loading Style

The luminosity of the luminaires can be changed linearly or logarithmically. These settings adjust the brightness characteristic of the channel output, the default value is Logarithmic.

### 2.3.10 Min Change Value to Send Status

When the output level of any channel changes in the device, the level status information is also broadcast during the ramping process. This is the area where the frequency of publication of information is determined. Status information is published for each % change in the output level. The value entered into the parameter must be entered taking into account 2.3.6 Min to max dimming speed and 2.1.6 Status sending period for each channel.

## 2.4 Output Assignments: Parameter Page for 2x2-Channel Tunable White Option

General	Action When Power Recovery	<input type="radio"/> Last Value <input checked="" type="radio"/> Defined Value
General	Brightness Value	255
Channel - 1 ... 2	Colour Temperature Value	4000 K
Parameters	Switch On Value	<input type="radio"/> Last Value <input checked="" type="radio"/> Defined Value
Channel - 3 ... 4	Brightness Value	255
Parameters	Colour Temperature Value	4000 K
	Dim Characteristic	<input checked="" type="radio"/> via Dimming <input type="radio"/> via Jump
	Minimum Dimming Value	0
	Maximum Dimming Value	255
	Min to Max Dimming Speed	1 sec
	Loading Style	<input type="radio"/> Linear <input checked="" type="radio"/> Logarithmic
	Min Change Value to Send Status	1 %
	Warm White Colour Temperature	2000 K
	Cold White Colour Temperature	6000 K
	Min Colour Temperature	3650 K
	Max Colour Temperature	5550 K
	Additional 1-Byte Set Colour Temperature Object	<input type="checkbox"/>

### 2.4.1 Action When Power Recovery

The behavior of the output channel during the restoration (recovery) of the mains supply is determined in this area. When the device is turned on again while the last value is selected, it turns on at the last value. If the defined value is selected, it starts from the value you enter. The default is the "Last Value" function.

#### 2.4.1.1 Last Value

It defines when the brightness and light temperature reach the values before the power outage. The final value option of OPT-LD4-111 must be greater than 0. Therefore, if the last value = 0, the last value is defined as 255. Other values remain the same. If you want to turn it off after a power outage, "Defined Value" should be selected.

#### 2.4.1.2 Defined Value

When the defined value selected, 2 new subparameters appear. These parameters are the part where we set how the device should behave when energized. The brightness value is the parameter that determines how bright the device will be when powered on. A value between 0-255 is entered. Color temperature is the parameter in Kelvin that determines what color temperature the device will start with when powered on. Value between 1000-10000K is entered.

### 2.4.2 Switch On Value

It is the field where the values to be turned on are determined when the Switch On command is sent to the device.

### 2.4.2.1 Last Value

It defines the current brightness and temperature values of the device before the OFF command. The final value option of OPT-LD4-111 must be greater than 0. Therefore, if the last value = 0, the last value is defined as 255. Other values remain the same. If you want to turn it off after a power outage, "Defined Value" should be selected.

### 2.4.2.2 Defined Value

When the defined value is selected, 2 new subparameters appear. These parameters are where we set how the device should behave when "Switch On" is turned on. The brightness value is the parameter that determines how bright the device will be when powered on. A value between 0-255 is entered. Color temperature is the parameter in Kelvin that determines what color temperature the device will start with when powered on. Value between 1000-10000K is entered.

### 2.4.3 Dim Characteristic

It is used to choose whether to reach the color value sent to the device directly or by ramping. The Ramp option allows the channel to reach its target value by ramping (smooth transition), while Jumping allows it to reach its target value abruptly.

### 2.4.4 Minimum Dimming Value

It is the area where the minimum brightness level for all colors of the luminaire is determined. Some luminaires may flicker at low values. To prevent this, this threshold value is defined to keep the flickering region out of control. Value requests between the values defined here and 0 are shifted to the minimum value.

### 2.4.5 Maximum Dimming Value

It is the area where the maximum brightness level for all colors of the luminaire is determined. It can be determined between 1-255. In case the luminaire produces more light brightness than needed, this value is adjusted so that the output does not produce more power than this value.

### 2.4.6 Min to Max Dimming Speed

It is the area where the time to reach the maximum level from the closed state of the device is determined. It can be determined between 1-15 seconds.

### 2.4.7 Loading Style

The luminosity of the luminaires can be changed linearly or logarithmically. These settings adjust the brightness characteristic of the channel output, the default value is Logarithmic.

### 2.4.8 Warm White Colour Temperature

In this parameter, the warm white value of the luminaire to be used is entered. Values between 1000-3650 K can be entered. Default value is 2000K.



### **2.4.9 Cold White Colour Temperature**

In this parameter, the cool white value of the luminaire to be used is entered. Values between 5550-10000 K can be entered. Default value is 6000K.

### **2.4.10 Min. Colour Temperature**

In this parameter, the minimum color temperature value you want is entered. The lower value should not be less than the warm white value you entered in the upper parameter. Values between 1000-3650 K can be entered. The default value is 2000K.

### **2.4.11 Max. Colour Temperature**

In this parameter, the maximum color temperature value you want is entered. The upper value should not be higher than the cool white value you entered in the upper parameter. Values between 5550-10000K can be entered. The default value is 5550K.

### **2.4.12 Additional 1 Byte Set Colour Temperature Object**

In this parameter defines the entire range from the warmest light color to the coldest light color. The warmest color (lowest lux value) is defined as "0" and the coldest color (highest lux value) as "255", and the intermediate values are calculated accordingly.

## 3 Communication Objects

### 3.1 General(Common) Communication Objects

General	Common Object: Channel Number	Object Function	Length / Data Type	C	R	W	T
	1 : General	Manual Operation Status	1 bit / state	C	R	-	T
	2 : General	Stop Manual Operation	1 bit / switch	C	-	W	-
	3 : General	Supply Voltage Fail	1 bit / switch	C	R	-	T

- General: Manual Operation Status:** It gives information by generating "1" when the device is in manual operation. "0" information is shared from this object when the device exits the manual operation or when the device is started.
- General: Stop Operation Control:** Allows the device to be removed from manual operation by command. When "1" or "0" value is sent from this object, the device exits the manual operation, reports this information from the 1st object and becomes operational with KNX commands.
- General: Supply Voltage Fail:** The device shares the status of the external supply while it is running from the KNX line. In case of a power supply failure, a value of "1" is generated, and if the supply is suitable, a value of "0" is generated.

4 Channels	Number	Object Function	Length / Data Type	C	R	W	T
	4 : Channels - 1 6 : Channels - 2 8 : Channels - 3 10 : Channels - 4	Overload Alarm	1 bit / alarm	C	-	-	T
	5 : Channels - 1 7 : Channels - 2 9 : Channels - 3 11 : Channels - 4	Load Detection Warning	1 bit / alarm	C	-	-	T
	12 : Channels - 1 17 : Channels - 2 22 : Channels - 2 27 : Channels - 4	Switch On / Off	1 bit / switch	C	-	-	T
	13 : Channels - 1 18 : Channels - 2 23 : Channels - 3 28 : Channels - 4	Switch Status	1 bit / switch	C	R	-	T
	14 : Channels - 1 19 : Channels - 2 24 : Channels - 3 29 : Channels - 4	Relative Dimming	4 bit / dimming control	C	-	W	-
	15 : Channels - 1 20 : Channels - 2 25 : Channels - 3 30 : Channels - 4	Set Value	1 byte / counter pulses (0..255)	C	-	W	-
	16 : Channels - 1 21 : Channels - 2 26 : Channels - 3 31 : Channels - 4	Value Status	1 byte / counter pulses (0..255)	C	R	-	T

- **4,6,8,10: Channel-x: Overload Alarm:** If more current is drawn in the channel than the acceptable value or if the channel output is short-circuited, the value "1" is broadcast to the BUS line. If there is no overload or short circuit at the output, the value "0" is broadcast to the BUS line. During an overload warning, the relevant channel is closed. (These telegrams are updated after an opening or closing command is sent to the relevant channel.)
- **5,7,9,11: Channel-x: Load Detection Alarm:** If no load is connected to the channel or the load becomes open circuit, the value "1" is broadcast to the BUS line. When the problem is resolved, the "0" value is broadcast to the BUS line. (These telegrams are updated after an opening or closing command is sent to the relevant channel.)

- **12,17,22,27: Channel x: Switch On / Off:** It is a 1-bit communication object used to reach the opening or closing values of the related channel and/or channel group, which are determined by parameters. It is only used to send commands from the KNX line.
- **13,18,23,28: Channel x: Switch Status:** It is the communication object that the related channel and/or channel group shares open or closed status information. This object shares its current 1-bit state when its value changes or is queried.
- **14,19,24,29: Channel x: Relative Dimming:** Allows the relevant channel and/or channels to work with 4-bit relative dim commands. They are used by matching with the relative dim communication object on the switches.
- **15,20,25,30: Channel x: Value Set:** It is used to directly access the value determined between 0-255 for the relevant channel and/or channels.
- **16,21,26,31: Channel x: Value Status:** The current brightness level of the relevant channel and/or channel group is transmitted from this channel. The transmission frequency is determined by the exchange amount and the transmission period parameter.

### 3.2 Additional Communication Objects for RGB Channels

In addition to the presence of the above communication objects for each colour in RGB lighting, there are also combined communication objects:

	Numara	Nesne İşlevi	Uzunluk / Veri Türü	C	R	W	T
RGB+1 Channel	32 : Channel - RGB	RGB Switch On / Off	1 bit / switch	C	-	W	-
	33 : Channel - RGB	RGB Set Value	3 bytes / RGB value 3x(0..255)	C	-	W	-
	34 : Channel - RGB	Value Status	3 bytes / RGB value 3x(0..255)	C	R	-	T

- **32. Channel-RGB: RGB Switch On / Off:** It opens channels with the 1-Bit communication object and the Switch On Value values entered in the RGB parameters. If "Last Value" is selected, each channel is opened with the values saved when the KNX supply is lost, but the next opening will be the value at which it was closed while the device was used. If "Assigned Value" is selected, it opens the channels with the values entered in the parameters.
- **33. Channel-RGB: RGB Set Value:** It is used to obtain the desired color in a simple move with a 3-byte communication object. It is processed by receiving information over the KNX line.
- **34. Channel-RGB: Value Status:** It is a communication object where 3-byte communication object and channel states are shared over a single object.

### 3.3 Additional Communication Objects for Tunable White

The communication objects below is brought into use, besides standard dimmer objects:

2x2 Channel	Number	Object Function	Length / Data Type	C	R	W	T
	17 : Channel - 1 ... 2 26 : Channel - 3 ... 4	Set Colour Temperature	1 byte / percentage (0..100%)	C	-	W	-
	18 : Channel - 1 ... 2 27 : Channel - 3 ... 4	Set Colour Temperature	2 bytes / absolute colour temperature (K)	C	-	W	-
	19 : Channel - 3 ... 4 28 : Channel - 3 ... 4	Dim Colour Temperature	4 bit / dimming control	c	-	w	-
	20 : Channel - 1 ... 2 29 : Channel - 3 ... 4	Colour Temperature Status	2 bytes / absolute colour temperature (K)	C	R	-	T

- **17,26: Channel x: Set Color Temperature (1-byte):** This communication object defines the entire range from the warmest light color to the coldest light color. The warmest color (lowest lux value) is defined as "0" and the coldest color (highest lux value) as "255", and the intermediate values are calculated accordingly.
- **18,27: Channel x: Set Color Temperature (DPT 7.600):** With this communication object, the desired color temperature is defined in Kelvin. When information is received from this object, the channel switches to the desired color temperature if it is open. If it is closed, the channel is not opened, but the color value determined here becomes valid with the open command.
- **19,28: Channel x: Dim Color Temperature:** It is used to change the color temperature with the "Dimming" object of the automation switch.
- **20,29: Channel x: Color Temperature Status:** Channel's color information is published on the "Diagnostic" tab on this object when the output values change.



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