

ENGLISH

Instruction manual

CHROMOFLEX® Pro KNX

Item no. 66000374 CV – 4-channel

Please read this manual carefully and keep it in a safe place!

1. Introduction:

The **CHROMOFLEX® Pro** KNX has been developed to control voltage controlled LEDs for up to 4 output channels via KNX. The number of output channels, the type of dimming curve and many other settings can be easily set using ETS-software.

2. Usage:

The modules were designed for indoor use in dry places. The LEDs might also be used in wet environments or outdoors, if suited for that purpose. For outdoor use, be sure to use the right protection methods (IP67).

The modules must be operated with a power supply that is matched to the used LEDs! Non-LED loads (especially inductive loads like motors, transformers, coils, etc.) might damage or destroy the module.

If any of the before mentioned points is not observed short circuit or electric shock might occur.

The **CHROMOFLEX® Pro** KNX was developed according to KNX Guidelines. KNX is a standardized digital communications interface in the field of building automation.

3. Technical Data version CV (excerpt):

Operating voltage: 10V to 48V DC

Protection class: III

Output current 4 channels: max. 2.2A / channel

Dimensions (L/W/H): 180 / 52 / 22 mm

Current consumption of one unit (without LED): about 5 - 20mA

Ambient temperature: 0°C - max. +50°C

(in dry conditions only with sufficient air circulation for heat dissipation, non-condensing)

IP Protection: IP20

Manufacturer: Josef Barthelme GmbH & Co. KG

4. Safety Instructions

The modules might produce some heat. Care must be taken to provide unrestricted air ventilation. The device should not be warmer than 80°C in standard operation at max. load.

The unit is equipped with a limited protection against reverse polarity. Connecting the power in reverse polarity can destroy the module, even if connected for a short time only.

When not used as directed, reversed polarity, modification of the device, for property damage or personal injury caused by improper use or failure to observe the safety instructions, we assume no liability and the warranty becomes void completely.

If the LEDs are provided in wet areas (e.g. swimming pools, sauna, ...) pay particular attention to the rules regarding the power supply.

The installation of the product must be performed by a qualified electrician who is familiar with the applicable regulations (e.g. DIN, VDE, EN).

This product is not a toy, keep away from children! LEDs can get quite hot. We strongly recommend ensuring maximum operating temperature is not exceeded, because this might reduce the expected life time of the LEDs significantly.

WARNING 1: LED light may have very high intensity even when dimmed. Particularly in connection with optics also weak LEDs may be very dangerous. Staring into LEDs may cause irreparable damage to the eye's retina. Use diffusers to spread the intensity!

WARNING 2: Please be aware that LED light may cause side effects. This light changes intensity very fast! Changing light may affect the perception and is also known to trigger epileptic seizures in persons who are photosensitive.

5. Installation

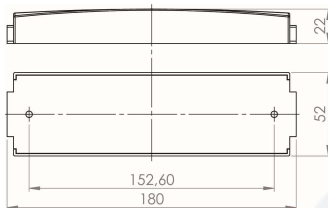
The electrical connection must only be carried out by a qualified electrician who is familiar with the applicable regulations!

Caution: Turn off the power supply or the connection lead before doing any works

Assembly site

Make sure that the unit is mounted on a **stable, plain, non-tilting** base. In operation the unit might produce heat. Care must be taken to provide unrestricted air ventilation.

Dimensions/Mounting holes



6. Connection

Please note that the LEDs have to be connected in a de-energised state of the dimmer!

Notes on the selection of the power supply:

Important: The power supply must have appropriate pulse load. Unstabilized or too weak power supplies may lead to unwanted flickering effects in the color changes.

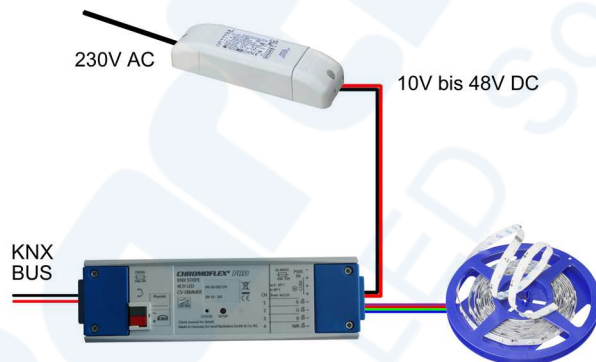
Important: The module must be operated with a power supply, that is suitable for the used LEDs! Improper power supplies may lead to malfunctions, unwanted flickering effects, destruction of LEDs, destruction of electronics or in worst case to overheating. We strongly recommend using high-quality (stabilized) switching power supplies!

We strongly advise against the use of unstabilized cheap power supplies! Also special "LED" power supplies are usually unsuitable as they may already contain control electronics for constant current, which may not be compatible with control devices as the **CHROMOFLEX® Pro**.

We always recommend switching power supplies in power supply technology! Suitable power supplies are available from us.

One power supply can be used for several units in parallel, if the maximum output power of the supply is observed. For wiring cables with a cross section of max. 2.5mm² can be used.

The modules should be provided with min. 10 Volts; the maximum voltage of the **CHROMOFLEX® Pro** KNX is 48 Volts.



Notes / additions

- At the output channels please
- avoid reverse polarity
- note correct voltage
- ensure that the power per output channel is not exceeded
- never connect current-controlled LEDs (CC)

Fig. 2

6.1 CHROMOFLEX® Pro KNX CV

„CV“ is an abbreviation for constant voltage.

This model does not have any internal current regulator. Supply voltage is passed through and the voltage of the power supply must match the voltage of the LED stripe. So if the LED strip requires 12 volts, this must also be the output voltage of the power supply.

Note: LED stripes of 10 Volts, 12 Volts and 24 Volts are offered on the market. Depending on the cable length the used LEDs might need very high currents.

Note: We deliver flexible stripes on reels in length of max. 6 metres, with a power consumption of about 1 Amperes at 24 Volts per color. The „**CHROMOFLEX® Pro** KNX CV“ 4-channel version is able to control up to 2.2 amperes per channel (Fig. 3). It is possible to use 1-channel with 8.8 amperes, but it is very important to bridge all channel outputs (Fig. 4).

Fig. 3

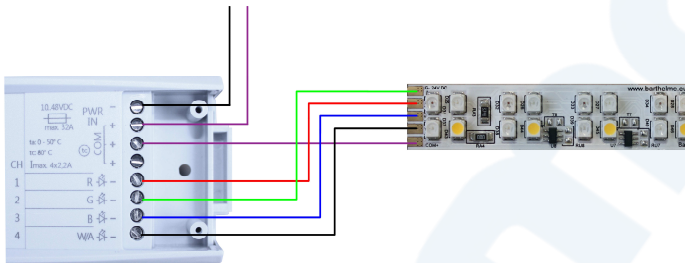
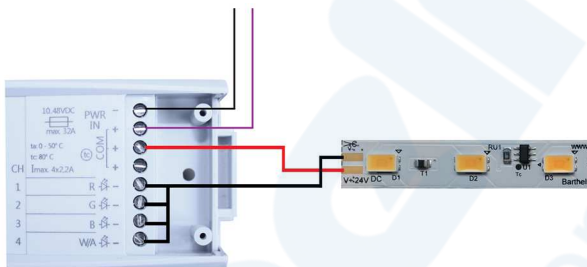


Fig. 4



7. Operation

Please operate this unit only, when it is working properly. In case of an error, switch off the unit immediately. Do not operate the unit, until the unit was verified electronically by a qualified electrician.

A case of error is:

- visible signs of damage on the unit
- the unit is not working properly
- fume rising or crackling sounds from the unit
- visible signs of overheating

Maintenance and service which require access to live components inside the unit must be carried out by an authorized electrician.

Warning: Danger of life! Risk of electric shock!

How to avoid malfunctions or fire risk:

- Do not affect air circulation by covering the unit.
- Do not attach anything to the unit e.g. decoration items etc.

Do not let your children play unattended with electrical equipment. Children cannot always perceive possible dangers correctly.

7.1 Start-up

Connect LEDs and power supply as shown in fig. 2 and 3. Make sure that LED-stripes and correct power supply are connected to **CHROMOFLEX® Pro** KNX CV.

For programming you need the newest version of ETS software. Needed files for the ETS software can be found at our webpage "www.barthelme.eu". Below you find explanation for all parameters and group objects.

Parameters:

Designation	Explanation	Range	Standard value
Global parameters			
Operation Mode	How many channels are needed.	1 Channel, 2 Channel, 4 Channel, RGB(W)	4 Channel
NOTE: Maximum Current per Channel	Information about maximum current per channel.	-	-
Use Relais	Activate / deactivate relais function.	True, False	False
Global Sequence Fade Time [100ms]	Global fade time for sequences. (Used value multiplied by 100ms)	0 until 65535	10 (1s)
Global Sequence Rest Time [100ms]	Global rest time for sequences. (Used value multiplied by 100ms)	0 until 65535	50 (5s)
Dimming Characteristic	Dimming Characteristic.	Linear, Log 100, Log 1000	Log 100
Camera Flicker Mode	Frequency of the PWM signal.	130 Hz 488 Hz	488 Hz
Channel 1, channel 2, channel 3, channel 4 and master parameters			
Minimum Level	Minimum level of the channel.	1 until 255	1
Maximum Level	Maximum level of the channel.	1 until 255	255
Calibration Factor (Not at master)	Calibration factor of the channel. Here you can set an additionally dim for every channel.	0,4 until 100%	100%
Behaviour Switch On	Behaviour at switch on the channel. Recall last light level -> Recall the last light level. Set fixed light level -> A fix light level at every switch on.		Set fixed light level
Switch On Set Value	Presettet light level. (Only at Set fixed light level)	0 until 255	255
Fade Rate [100ms/100%]	Value for the relative dimming.	0 until 65535	50
Fade Time (Switch On) [100ms]	Switch on fading time. (Used value multiplied by 100ms)	0 until 65535	5 (0,5s)
Fade Time (Switch Off) [100ms]	Switch off fading time. (Used value multiplied by 100ms)	0 until 65535	5 (0,5s)
Delay Switch Off [100ms]	Delay time at switch off the LED.	0 until 65535	0 (0s)
Behaviour Mains Power Up	Behaviour at switch in the main power. (PWR IN) Last Light Value before Power down -> Recall the light level before main power off. Fixed Light Level -> A fix light level at every switch on main power.		Fixed Light Level
Mains Up Set Value	Presettet light level. (Only at Fixed light level)	0 until 255	255
Behaviour Bus Power Up	Behaviour at connect KNX bus. (KNX) Fixed Light Level -> A fix light level at every connection with the KNX bus. No Change -> Light level doesn't change.		Fixed Light Level
Bus Power Up Set Value	Presettet light level. (Only at Fixed light level)	0 until 255	255
Behaviour Bus Power Down	Behaviour at disconnect KNX bus. (KNX) Fixed Light Level -> A fix light level at every disconnection with the KNX bus. No Change -> Light level doesn't change.		Fixed Light Level
Bus Power Down Set Value	Presettet light level. (Only at Fixed light level)	0 until 255	255
Scenes parameters			
Scene A until J			
Channel 1 Scene Number	The addressing of the channels is selectable. Once an address has been selected, a value for each channel can defined below.	Inactive or 1 until 64	Inactive
Channel 2 Scene Number			
Channel 3 Scene Number			
Channel 4 Scene Number			
Channel X Scene X	Here you can set the light level for an addressed channel.	0 until 255	-
Sequence 1 until 6 parameters			
Only at RGB(W)			
Sequence Mapping Number	Address of the color-sequence. There are 6 preprogrammed, changeable sequences saved.	1 until 64	1 until 6
Used Sequence Colors	Number of used colors in this sequence.	0 until 10	10
Color 1 until Color 10			
Use Global Sequence Timing Color X	Use global timing (Global Sequence Fade Time, Global Sequence Rest Time) for this color?	True, False	False
Rest Time [100ms]	Rest time for this color. (Only at Use Global Sequence Timing Color = False)	0 until 65535	different
Fade Time [100ms]	Fade time for this color. (Only at Use Global Sequence Timing Color = False)	0 until 65535	different
Level Red Color X	Red light level for this color.	0 until 255	different
Level Green Color X	Green light level for this color.	0 until 255	different
Level Blue Color X	Blue light level for this color.	0 until 255	different
Level White Color X	White light level for this color.	0 until 255	different

Group Objects:

Name and Object Function	Explanation	Length
Master Start Sequence	Start desired sequence. (Only at RGB(W))	1 byte
Master Pause Sequence	Pause the currently running sequence. (Only at RGB(W))	1 bit
Master Stop Sequence	Stop the currently running sequence. (Only at RGB(W))	1 bit
Channel X Switch OnOff	Turn on / off the channel X.	1 bit
Channel X Absolute Level	Set the light level of channel X to a defined value.	1 byte
Channel X Relative Level	Relative dimming of channel X.	4 bit
Channel X Scene Control	Set or save the light level of scene X.	1 byte
Channel X Info OnOff	Information about the channel if on or off.	1 bit
Channel X Actual Dimming Value	Information about the current light level of the channel.	1 byte
Master Switch OnOff	Turn on / off the master channel. (WARNING: If the master channel is off, actions of the individual channels have no effect.)	1 bit
Master Absolute Level	Set the light level of the master channel to a defined value. (WARNING: The individual channels cannot be dimmed higher than the master channel.)	1 byte
Master Relative Level	Relative dimming of the master channel. (WARNING: The individual channels cannot be dimmed higher than the master channel.)	4 bit
Master Info OnOff	Information about the master channel if on or off.	1 bit
Master Actual Dimming Value	Information about the current light level of the master channel.	1 byte

8. Contents and accessories

Every **CHROMOFLEX® Pro** DALI unit is shipped with this manual. The instructions are an integral part of the equipment to which they relate and must be handed to the user.

Important note: Complete manuals for any **CHROMOFLEX®** can be downloaded at www.barthelme.eu . Please look for updates before installation.

9. Contact

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Subject to technical changes and errors

