



Instructions for Use

DLC3005 / DLC3005-R

Digital Lighting Controller for flash lighting with lightning currents from 1 A to 18 A

Impress

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Name of the document 999.994.671.10-en-2.0

Date of first issue 2016-04-22

Date modified 2020-05-28

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Validity

These instructions for use are valid for following devices:

Designation	Description	Order no.
DLC-3005	Digital lighting controller, wall mounting, continuous operation 4.8 A, flash operation 18 A	1-30-202
DLC-3005-R	Digital lighting controller, rail mounting, continuous operation 4.8 A, flash operation 18 A	1-30-209

Product Identification

Designation	Description		
DLC	Digital Lighting Controller		
30	max 30 V operating voltage		
05	5 A continuous current		
-R	Rail mount (model-dependent)		

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1 INFORMATION ABOUT THE INSTRUCTIONS OF USE

This document contains technical information, important instructions for correct installation, commissioning and use, as well as product information which were up-to-date at the time of going to press.

Using this document makes it easier for you to familiarise yourself with the device and avoid malfunctions caused by improper operation.

The instructions of use and the local regulations and rules must be followed.

To ensure a save and proper application, please read the instructions of use carefully and keep them for future reference.

1.1 Intended Use

The device is intended exclusively for use as a digitally controlled current source for controlling of lighting element for industrial image processing in automation technology.

The device is not suitable for use in potentially explosive areas.

The device is intended for use in a confined environment.

The device may only be used if it is in technically faultless condition and only for its intended purpose, and only in accordance with the specifications in this instructions of use by authorised operative personnel, who are aware of the safety rules and hazards.

If the device is planned to be used for any other purpose or in a different environment, the express authorisation of the manufacturer must be obtained in advance. Any modifications or adaptations required may only be made by the manufacturer.

1.2 Improper Use

All unintended use and all device-related activities not described in these instructions of use is to be deemed as unauthorised misuse outside the legal limits of indemnity of the manufacturer.

Reasonably foreseeable misuse is:

- Non-compliance with the instructions for use,
- Faulty operation,
- Operating by personnel not qualified or instructed,
- Operating the device if it is not in a proper technical condition,
- Operating the device in ambient conditions differing from the corresponding specifications in the instructions of use
- Operating the device with voltages differing from the corresponding specifications in the instructions of use,
- Using spare parts which are not original parts from the manufacturer,
- Using incompatible accessory components,
- Improper maintenance and repair works,
- · Unauthorised modifications to the device.

1.3 Qualified Personnel

The device may only be assembled, commissioned, operated, maintained, installed, set up, cleaned, repaired and transported by qualified skilled personnel.

A qualified person is deemed to be someone who has been trained and instructed for his/her activities with the device, and who has proven his/her capability to the purchaser. The operating personnel must be authorised by the purchaser for those activities at the device.

For the installation and operation of the device, the skilled personnel must know and comply with the applicable guidelines and standards for handling control equipment, electrical installations and working materials.

1.4 Warranty and Liability

The contents of this document have been checked carefully and correspond to current legislation and best practise at the time of going to press.

However, the manufacturer shall not be liable for any damage arising from the use of this edition of the manual, and rejects any warranty derived therefrom.

Within the bounds of the legal requirements, the manufacturer shall only be responsible for the technical safety characteristics of the device if the maintenance, repairs and modifications to the device are performed by himself or by authorised skilled personnel in accordance with his instructions.

Loss of warranty

The manufacturer shall accept no liability or warranty in the event of improper use, opening of the device or incorrect maintenance.

2 SAFETY

2.1 Presentation of Safety Instructions

Each safety instruction is introduced by a key word and colour highlighted.

The key word indicates the degree of danger. The danger and its cause are described, and then the measures to prevent conceivable consequences of the danger. These measures must be taken.

A DANGER

Indicates an imminent danger with high risk, resulting in severe injuries or death if not avoided.

WARNING

Indicates a hazardous situation with medium risk, possibly resulting in severe injuries or death if not avoided.

∕ CAUTION

Indicates a hazardous situation with low risk, resulting in minor or medium injuries if not avoided.

NOTICE

Indicates a situation that may result in property damage.

2.2 Safe Handling of the Device

Read the following applicable safety instructions carefully and completely. Follow the instructions for your own safety, the safety of other people, and to avoid damage to the device and the connected technical equipment. Hazards going beyond the general safety instructions are referred to separately at the relevant points in this manual.

CAUTION



Risk of injury due to electric shock.

- Before starting work on the device, disconnect it from the operating voltage supply.
- Follow all applicable safety regulations for the preparation and operation of electrical devices.

3 SCOPE OF DELIVERY AND ACCESSORIES

3.1 Scope of Delivery

Designation	Quantity
Device DLC-3005 / DLC-3005-R	1 x
Instructions for Use DLC3005 / DLC3005-R	1 x
USB-Stick mit: Instructions for Use DLC3005 / DLC3005-R	1 x
DLC3005 Connector-Set 1 x PTSM 0.5/ 2-P-2.5 1 x PTSM 0.5/ 7-P-2.5 1 x PTSM 0.5/ 4-P-2.5	1 x
USB cable Type-A/Micro-B - 1 m	1 x

3.2 Accessories

Connection cable DLC - operating voltage

Designation	Description	Order no.
Cable DLC3005 - 1.0 m	to connect the DLC3005 to a current	1-30-222
Cable DLC3005 - 2.0 m	source, PTSM 0.5/2-P-2.5 to cable open end, 2x0.5 mm²	1-30-223

Connection cable lighting (M8, 4-pin) to DLC

Designation	Description	Order no.
Cable M8-4pin to PTSM - 0.15 m	to connect the lighting to DLC3005; M8-Socket, 4-pin to PTSM 0.5/4-P-2.5	1-30-208
Cable M8-4pin to PTSM - 1.0 m		1-30-211
Cable M8-4pol to PTSM - 2.0 m		1-30-212
Cable M8-4pol to PTSM - 3.0 m		1-30-213

Connection cable DLC - PC

Designation	Description	Order no.
USB cable	to connect the DLC3005 to a PC,	1-30-207
Type-A/Micro-B - 1 m	USB 2.0 Type-A plug to micro-B plug	

DLC Connector-Set

Designation	Description	Order no.
DLC3005 Connector-Set (included in scope of delivery)	3 connectors for connecting operating voltage, I/O port and lighting (without cable) 1 x PTSM 0.5/ 2-P-2.5 1 x PTSM 0.5/ 7-P-2.5 1 x PTSM 0.5/ 4-P-2.5	1-30-206

4 DEVICE DESCRIPTION

The DLC3005 or DLC3005-R is a digitally controlled, adjustable current source for LED flash lights with a recommended flash current range from 1 A to 18 A.

The output currents, flash times and other parameters are configured either via the operating software or manually via switching elements.

The interfaces for the operating voltage, the power output for LED lighting and a galvanically isolated I/O interface with programmable control and trigger functions are located on the rear of the device.

After connecting a vicolux smart light LED lighting and connecting the power supply to the controller, a search is carried out. During the search, all configurable lighting values are read out and the limit values are automatically saved in the controller.

4.1 Device Views

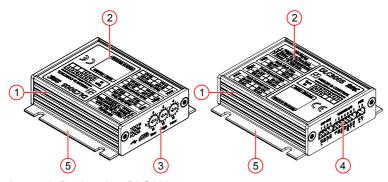


Image 1: Device view DLC3005

- 1 Casing
- 2 Upper side with type plate
- 3 Front side with LED display and operating elements
- 4 Rear side with process interfaces
- 5 Mounting tabs

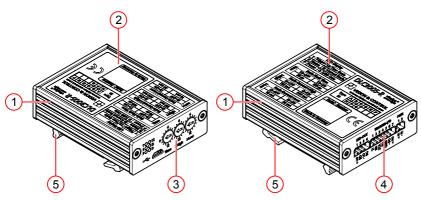


Image 2: Device view DLC3005-R

- 1 Casing
- 2 Upper side with type plate
- 3 Front side with LED display and operating elements
- 4 Rear side with process interfaces
- 5 DIN Rail mounting spring clip

4.2 Display and Operating Elements

All display and control elements are located on the front of the device.

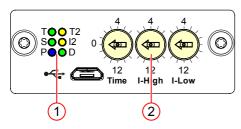


Image 3: Display and operating elements

- 1 LED display elements
- 2 Rotary switches

Display Elements

LED	Colour	Status	Description	
T - Trigger	Green	Pulse (1s)	External or internally generated trigger pulse active	
S -	Green	Off	Device is not ready for operation	
Status		Flashin (1Hz)	Device is not ready for operation Boot and calibration phase after switching on or a software reset	
		On	Device is ready for operation	
	Red	Off	Error-free operation	
		On	Operation error Power output is off	
P -	Blue	Off	Operating voltage is not present	
Power		On	Operating voltage is present	
T2 - Time	Yellow	Off	Step width of the rotary switch Time: 50 µs	
Scale		On	Step width of the rotary switch Time: 100 µs (scaled)	
		Flashin (1Hz)	gThe current flash duration does not match the switch position <i>Time</i> . The setting was made via software.	
I2 - Current	Yellow	Off	Step width of the rotary switches I-Low: 10 mA, I-High: 150 mA	
Scale		On	Step width of the rotary switches <i>I-Low</i> : 20 mA (scaled), <i>I-High</i> : 300 mA (scaled)	
		Flashin (1Hz)	gThe current LED current does not match the switch position <i>I-Low</i> and <i>I-High</i> . The setting was made via software.	
D -	Green	Off	USB data transfer inactive	
USB Data		On	USB data transfer active	

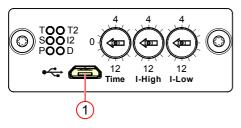
Operating Elements

The rotary switches have a continuous rotation without stops.

The step width of the rotary switches can be scaled with the factor 2 via the software. A set scale is indicated by the display elements LED-T2 or LED-I2.

Designation	Posi- tions	Step size (scaled)	Description
Time	16	50 μs (100 μs)	Manual setting of the flash duration
I-High	16	150 mA (300 mA)	Manual setting of the LED current - coarse range
I-Low	16	10 mA (20 mA)	Manual setting of the LED current - fine range

4.3 Interfaces and Connectors



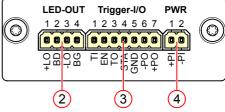


Image 4: Front side

Image 5: Rear side

Pos.	Designation	Description
1	USB connection	Configuration of parameters via the software Transmission of firmware updates
2	LED-OUT	Power supply and transmission of the data signals of the connected lighting
3	Trigger-I/O	Transmission of control and status signals of the device
4	PWR	Operating voltage supply of the device

4.4 Notices on the device

Following instructions are provided on the device:

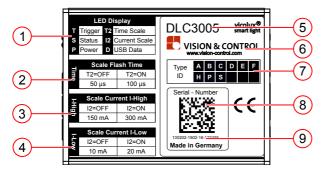


Image 6: Notices on the device

- 1 Description of the display elements
- 2 Description of the rotary switch Time
- 3 Description of the rotary switch *I-High*
- 4 Description of the rotary switch *I-Low*
- 5 Device designation
- 6 Manufacturer information
- 7 Identification of the module version
- 8 Serial number as DataMatrix code
- 9 Serial number as plain text

5 TECHNICAL DATA

5.1 General Parameters

Parameter	DLC3005 DLC3005-I				
Housing material	Aluminium, anodised				
Housing dimensions [mm]	74 x 71 x 20.8 74 x 55.8 x 2				
Weight	105 g	125 g			
Degree of protection (IP)	IP 40				
Safety class	Class III, safety extra low voltage (SELV)				

5.2 Electrical Parameters

5.2.1 Operating voltage supply PWR

Parameter	Min	Nom	Max
Operating voltage U _O	10 V	24 V	30 V
Power consumption at U _O = 24 V, no load		40 mA	

5.2.2 Beleuchtungsschnittstelle LED-OUT

Parameter	Min	Nom	Max
Output voltage	0 V	U _B - 2 V	22 V
Continuous operation			
Output current	50 mA		4.8 A
Output power	0 W		105 W
Flash mode			
Output current	1 A		18.4 A
Output power	0 W		406 W
Flash time	50 µs		500 µs
Delay time Trigger IN / Trigger Out	100 ns		500 µs

5.2.3 Control Interface Trigger-I/O

The control interface Trigger-I/O provides the control and status signals of the lighting controller via the digital inputs and outputs.

Pin	Signal	Signal type	Description
1	TI	IN	Input signal to trigger the flash mode
2	EN	IN	Input signal to switch on and off continuous operation
3	STA	OUT	Output signal for error output
4	TO	OUT	Trigger output (programmable)
5	GND	GND	Common ground for signals on pin 1 to pin 4
6	-PO	PWR	Negative operating voltage output
7	+PO	PWR	Positive operating voltage output

Galvanic decoupling

The control signals Trigger Input **TI**, Enable Input **EN**, Status Output **STA** and Trigger Output **TO** are galvanically decoupled.

Parameter		Min	Nom	Max
Maximum Cor	tinuous Isolation Voltage V _{iso_peak}			560 V
ESD protec-	Contact discharge			± 4 kV
tion	Air discharge			±8 kV

5.2.3.1 Trigger Input TI

On a signal edge at the trigger input, the lighting controller triggers a flash at the connected lighting.

The configuration of the parameters is done via the configuration software or the rotary switches.

Characteristics	Parameter
Signal standards	24V I/O industry standard NPN sensor signals PNP sensor signals Open collector signals (factory setting)
Trigger modes	Low-active: NPN switching
	High-active: PNP switching (5V) or 24V I/O industry standard
Active trigger flank	High-low flank (factory setting)

Parameter		Min	Nom	Max
Input voltage Low	V_{TI_L}	- 0.2 V	0 V	1.5 V
Input voltage High	V_{TI_H}	3.5 V	24 V	30 V
Input current at 24 V	I _{IN}		4 mA	
Input resistance	R _{IN}		6 kΩ	
Input frequency	f _{TI}	0 kHz		5.5 kHz
Input pulse duration	t _{P_TI}	1 µs		
Delay time	t _{P_TI_d}	100 ns		450 µs
Galvanic decoupling			present	

5.2.3.2 Enable Input EN

With the control signal at the enable input EN, the lighting controller starts or stops the continuous operation of the connected lighting. The lighting is switched on for the duration of the control signal.

The configuration of the parameters is done via the configuration software or the rotary switches.

Characteristics	Parameter
Signal standards	24V I/O industry standard NPN sensor signals PNP sensor signals Open collector signals (factory setting)
Trigger modes	Low-active: NPN switching
	High-active: PNP switching (5V) or 24V I/O industry standard
Active level	Low level (factory setting)

Parameter		Min	Nom	Max
Input voltage Low	V _{EN_L}	- 0.2 V	0 V	1.5 V
Input voltage High	V _{EN_H}	3.5 V	24 V	30 V
Input current at 24 V	I _{IN}		4 mA	
Input resistance	R _{IN}		6 kΩ	
Input frequency	f _{EN}	0 kHz		1 kHz
Galvanic decoupling			present	

5.2.3.3 Status Output STA

The status output signals the current operating state of the lighting controller.

The status output is a low-active output with a pull-up resistor on VCC_ISO (\sim 4.5 V).

In error-free operation, the status output is inactive (off) with 4.5 V. If a critical error occurs, the status output is activated and switches to GND.

Critical errors

- · Open lighting output
- Short circuit at the lighting output (in continuous operation only)
- · Input or logic voltage too low
- · Temperature of device or lighting too high

If an open or short-circuited output has been detected, the error automatically resets after some time. The lighting output is measured again and thus detected whether the error is corrected.

The device records status events in its internal memory, which can be displayed via the web interface.

Parameter		Min	Nom	Max
Output voltage Low	V _{STA_L}	0 V	0.1 V	0.2 V
Output voltage High	V _{STA_H}	0 V		30 V
Output current	I _{STA}		200 mA	500 mA
Galvanic decoupling			present	
Туре		Short circuit proof open drain output		

5.2.3.4 Trigger Output TO

Synchronous to the input signal TRIGGER-IN, an output signal is generated at the TRIGGER-OUT.

The configuration of the parameters is done via the configuration software or the rotary switches.

Parameter		Min	Nom	Max
Output voltage Low	V _{TO_L}	0 V	0.1 V	0.2 V
Output voltage High	V _{TO_H}	0 V		30 V
Output current	I _{TO}		200 mA	500 mA
Output frequency	f _{TO}	0 kHz		5.5 kHz
Output pulse duration	t _{P_TO}	100 ns		1.6 s
Delay time	t _{P_TO_d}	100 ns		1.6 s
Galvanic decoupling			present	
Туре			ort circuit pro en drain out	

5.2.3.5 I/O Operating Voltage Output +PO/-PO

The operating voltage of the device is brought out at the control interface +PO/-PO.

Sensors and actuators can be supplied directly with the operating voltage at this connection.

Parameter		Min	Nom	Max
Output voltage	V _{PA-OUT}		U _B	
Output current	$V_{PO\text{-}OUT}$			500 mA

5.3 Conditions for Operation, Storage and Transport

Observe the specified ambient conditions when transporting and storing the device.

For accessories, connected devices and components observe the specific information in the associated instructions for use.

Ambient Conditions

	Operation	Storage / Transport
Temperature	0 °C to 40 °C	- 20 °C to 85 °C
Air humidity	20 % to 80 %	20 % to 95 %
Condensation water	not permissible	not permissible

5.4 Technical Drawings

DLC3005

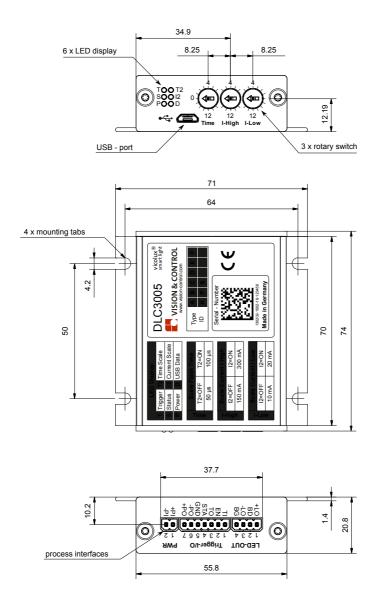
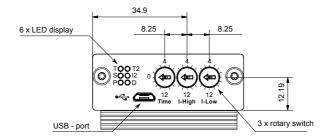


Image 7: Technical Drawings - Dimensions in mm

DLC3005-R



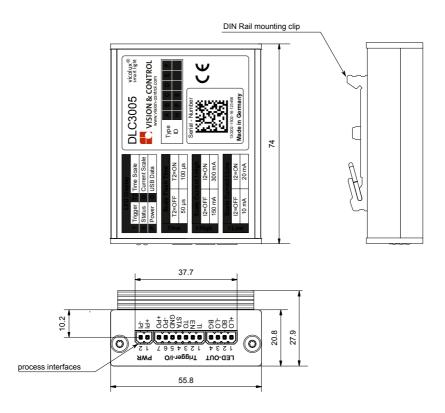


Image 8: Technical Drawings - Dimensions in mm

6 COMMISSIONING

6.1 Unpacking

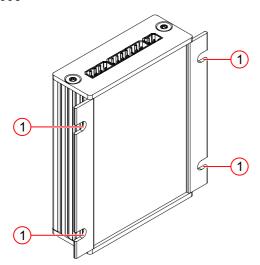
- 1. Lift the cardboard, together with the device, out of the carton.
- 2. Fold out the tucked in sides on the bottom of the cardboard. The film loosens and forms an insertion pocket.
- 3. Remove the device out of the insertion pocket.
- 4. Dispose the packing material.

6.2 Mounting the Device

NOTICE

Installation and connection operations may only be performed in the off and de-energised state.

DLC3005



Attach the device using the mounting brackets (1). Use M4 screws.

DLC3005-R

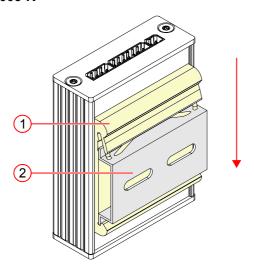


Image 9: Mounting on a DIN Rail

Place the device on the DIN rail (2) from above. Lock the spring clip (1) in the desired position on the DIN rail.

6.3 Connecting

NOTICE

Installation and connection operations may only be performed in the off and de-energised state.

NOTICE

Cable damage

- · Comply with the specified minimum bending radius.
- Cables must generally be mounted with a strain relief clamp.
- · Use cables corresponding to the specification (see data sheet).

6.3.1 Connect the supply voltage

The power supply of the device is via the connection PWR at the rear of the device. The corresponding cable is available as an accessory: see "Connection cable DLC - operating voltage", page 11.

- 1. Make sure the supply voltage is off.
- 2. Plug the 2-pin PTSM plug into the PWR connector of the lighting controller.
- 3. Connect the device electrically according to the connection assignment.

Pin	Core colour	Signal	Description	
1	BN (brown)	+ PI	Input positive operating voltage	
2	BK (black)	- PI	Input negative operating voltage (GND / ground)	

6.3.2 Connect the lighting

The lighting is connected via LED-OUT on the front of the device. The corresponding cable is available as an accessory: see "Connection cable lighting (M8, 4-pin) to DLC", page 11.

- 1. Make sure the power supply is switched off.
- 2. Plug the 4-pin PTSM plug into the LED-Out connector of the lighting controller.
- 3. Connect the M8 socket of the adapter cable to the M8 plug of the lighting.

Pin assignment at vicolux smart light lighting

Pin assignment

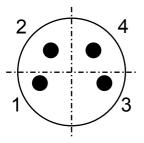


Image 10: M8 male plug, 4-pin

Connection diagram

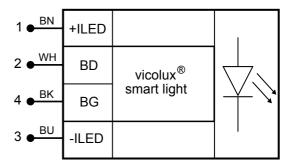


Image 11: Connection diagram vicolux smart light

Pin	Core colour	Signal	Description	
1	BN (brown)	+ILED	LED anode, positive current input	
2	WH (white)	BD	Data Channel for vicolux smart light modules	
3	BU (blue)	-ILED	LED cathode, negative current input	
4	BK (black)	BG	Data Channel for vicolux smart light modules	

Pin assignment at vicolux UDC lighting

Pin assignment

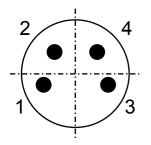


Image 12: M8 male plug, 4-pin

Connection diagram

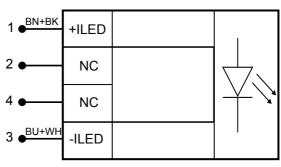


Image 13: Connection diagram vicolux - UDC

Pin	Core colour	Signal	Description
1	BN (brown) BU (blue)	+ILED	LED anode, positive current input
2(1)	NC	Not connected	Data Channel for vicolux smart light modules
3	BK (black) WH (white)	-ILED	LED cathode, negative current input
4(1)	NC	Not connected	Data Channel for vicolux smart light modules

⁽¹⁾ The data lines of the vicolux smart light lighting controllers are not available with UDC variants.

6.3.3 Connect the Control Interface Trigger I/O

The control interface trigger I/O is connected via trigger I/O on the rear of the device. Use the included connector 1 x PTSM 0.5 / 7-P-2.5: see "DLC Connector-Set", page 12.

Depending on the required signals, equip the plug with cables (core cross section 0.5 mm²).

Pin	Signal	Signal type	Description	
1	TI	IN	Input signal to trigger the flash mode	
2	EN	IN	Input signal to switch on and off continuous operation	
3	STA	OUT	Output signal for error output	
4	TO	OUT	Trigger output (programmable)	
5	GND	GND	Common ground for signals on pin 1 to pin 4	
6	-PO	PWR	Negative operating voltage output	
7	+PO	PWR	Positive operating voltage output	

6.3.4 Connect the USB

The controller can be configured and monitored via software by connecting the controller to the computer using a USB cable.

The USB port is located on the front of the device. Use the included USB cable (see "Connection cable DLC - PC", page 12).

6.4 Install and Run the Operating Software

Hardware and Software Requirements

The configuration PC must meet the following requirements:

- Operating systems: Windows 7, Windows 8, Windows 8.1, Windows 10 (32/64 bit version). Windows RT is not supported.
- x86 compatible processor with at least 1GHz
- RAM: at least 512 MB
- Hard disk: at least 350 MB free
- Monitor resolution: at least 800 x 600 pixels
- USB port or an internet connection (for installing the software)
- USB port (for connection to controller)
- .NET 4.0 (will be installed if necessary)

Installing and Starting the DLC Server

The DLC server provides a web server that makes all lighting controllers connected to the PC visible locally on the PC or in the network.

The setup for the DLC server is located on the included USB stick.

Installation steps:

- 1. Plug the USB stick into the configuration PC.
- 2. Open the Windows Explorer and navigate to the "Software" directory on the USB stick.
- 3. Run the installer DLC Server 1.4.0.0 Setup.exe.
- 4. Follow the instructions of the installer.
- → After successful installation, the configuration program of the DLC server, the DLC Server Control Center, is started automatically.
- 5. Connect the lighting controller with the included USB cable to a free USB port of the PC.
- 6. In the DLC Server Control Center, click the [Configure DLC] button.
- → The default web browser of your PC opens and the start page of the web server with the device selection is displayed.

6.5 Initial commissioning

NOTICE

The protection of the lighting by the lighting controller is only guaranteed with vicolux smart light lighting.

When using lighting that does not belong to the vicolux smart light (SL) type, the specified limit values must be complied with.

Making Operational Readiness

- 1. Make sure that the switch position of the rotary switches is set to level 0.
- 2. Switch on the lighting controller by applying the supply voltage.
- \rightarrow The Power-LED *P* is permanently green.
- → The lighting controller starts and performs a self-test.
- → If a vicolux smart light is connected, the internal memory of the lighting is also read out and the limit values are stored in the controller.
- 3. Wait until the status LED S is green permanently.
- → The lighting controller is ready for software configuration or for manual setting.

6.6 Configuration

The parameters can be configured either via the configuration software or via the rotary switches.

The configuration via the rotary switches is preset at the factory.

The change between hardware and software configuration takes place via configuration software.

6.6.1 Configuration via Operating Software

The configuration is carried out via the DLC Server Control Center.

For information, refer to the instructions for use *Operating Software Server Control Center*

6.6.2 Configuration via rotary switches

Use a slot screwdriver (width 4 mm) to set the rotary switches.

Manual adjustment of the LED current

Set the LED current via the rotary switches *I-High* and *I-Low*.

Parameter	Factory setting	Scaled (software)
Step width I-High	150 mA	300 mA
Step width I-Low	10 mA	20 mA
Output current continuous operation	0 mA to 2.4 A	0 mA to 4.8 A
Output current pulse operation	0 mA to 4.8 A	0 mA to 9.6 A
Display LED I2	Off	On (yellow)

Manual setting of the LED flash duration

Set the LED current via the rotary switch *Time*.

Parameter	Factory setting	Scaled (software)
Step width Time	50 µs	100 µs
LED flash duration	50 μs to 0.8 ms	100 μs to 1.6 ms
Display Scale T2	Off	On (yellow)

7 OPERATION

CAUTION



Danger of burns due to hot surfaces.

- The housing of the device can reach temperatures exceeding 55 °C during operation.
- Do not touch the device.
- · Allow the surface to cool down before touching.

NOTICE

Damage caused by incorrect connecting and disconnecting

- The vicolux smart light lighting controller is not hot-plug capable.
- Connect or disconnect lights during operation may destroy the lights.
- Connect or disconnect lights only if the lighting controller is in the off and deenergized state.

Making Operational Readiness

The lighting controller is switched on when the operating voltage is applied.

The lighting controller starts and performs a self-test.

Then the lighting controller loads the configured values of the connected lighting and starts it.

Configuration during Operation

The lighting parameters can be adjusted during operation.

Please note the user rights and the configuration via the software.

8 MAINTENANCE AND SERVICE

8.1 Maintenance

The device is maintenance-free. Depending on the operating environment, it may have to be cleaned.

The housing can be cleaned according to the conditions applicable to the given protection class.

Cleansers must not be applied directly to the housing, and the housing must not be bathed.

Cleaning the outside

- Clean the outside with a damp cloth.
- Remove excessive dirt with an approved anodised aluminium cleaner. Refer to the instructions of the cleaner.
- The connectors must be clean and dry before the device is connected and put into operation.

Cleaning by the manufacturer

The device can be sent to the manufacturer for cleaning (for a fee). Please contact our technical support.

8.2 Service

Technical Support

Please contact our technical support if you have any technical questions concerning our products.

We will be glad to be of service:

Monday to Thursday 8:00 to 17:00, and Friday 8:00 to 15:00.

Vision & Control GmbH

Mittelbergstraße 16

98527 Suhl, Germany

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Defective device

If the device has a defect, the manufacturer can repair or exchange it. Please contact your local sales partner or technical support.

9 DISPOSAL

The device and its accessories and packaging must be sent to environmentally compatible recycling.

Do not throw electrical devices or tools into the household waste!



According to European Directive 2012/19/EU on waste electrical and electronic equipment and its implementation in national law, unusable electric tools must be collected separately, and sent to environmentally compatible recycling.

Disposal, including that of individual components, must also always be in a way that does not harm the environment, which means it must be done in accordance with the currently valid legal regulations.

Please contact the manufacturer, your local specialist dealer or the relevant national authority for the proper disposal of old devices.

The electrical and electronic components must be sent to a specialist recycling company or to the manufacturer for proper disposal.

10 EU DECLARATION OF CONFORMITY



Vision & Control GmbH

Mittelbergstraße 16 D-98527 Suhl, Germany

Representative: Dr. Jürgen Geffe, Managing director

We, Vision & Control GmbH Suhl, declare that the product described below

Designation: DLC3005 / DLC3005-R

Order no.: 1-30-202 / 1-30-209

has been manufactured in accordance with the following standards and normative documents:

- 2014/30/EU Electromagnetic compatibility (EMC directive)
- DIN EN 61000-6-2:2006-3 Electromagnetic compatibility (EMC) Immunity for industrial environments
- DIN EN 61000-6-4:2011-09 Electromagnetic compatibility (EMC) -Emission standard for industrial environments
- DIN EN 61000-4-2:2009-12 Electromagnetic compatibility (EMC) Testing and measurement techniques Electrostatic discharge immunity test

The product complies with the requirements of Directive 2011/65/EU (RoHS 2) of June 8, 2011 along with Directive 2015/863/EU (RoHS 3) of March 31, 2015 of the European Parliament and of the Council on the restriction of the use of certain hazardous substances in electrical and electronic equipment.

Suhl, 22.08.2018

Dr. Jürgen Geffe

Managing director

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Management System ISO 9001:2015

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