



# EQ CL40 LED Quad Controller

IDH# 2804936

Operating Manual



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# 1 Please Observe the Following

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## 1.1 Emphasized Sections

### **Warning!**

Refers to safety regulations and required safety measures that protect the operator or other persons from injury or danger to life.


### **Caution!**


Emphasizes what must be done or avoided so that the unit or other property is not damaged.

### **Notice:**

A notice gives recommendations for better handling of the unit during operation or adjustment as well as for service activities.


## 1.2 For Your Safety


 For safe and successful operation of the unit, read these instructions completely. If the instructions are not observed, the manufacturer can assume no responsibility.


 Do not expose the connecting cable to heat, oil, or sharp edges.

 Make sure the Unit stands stable and secure.

 Use only original equipment replacement parts.

 Always disconnect the power supply before servicing the unit.

 Observe general safety regulations for the handling of chemicals such as Loctite® adhesives and sealants. Observe the manufacturer's instructions as stated in the Safety Data Sheet.

 While under warranty, the unit may be repaired only by an authorized Loctite service representative.

## **WARNING!**

It is the responsibility of the user to ensure that all devices are set-up in a safe manner.

The manufacturer is in no way responsible for injuries or damage to persons or property resulting from the device.

For safe and successful operation of the unit, read these instructions completely. If the instructions are not observed, the manufacturer can assume no responsibility.

Removing, bypassing or putting out of operation any of the safety devices can result in radiation damage to persons and damage to the unit and is therefore prohibited!

Do not look directly at LED-UV light, or at LED-UV light reflected in a mirror or other reflective surface. Doing so could cause eye damage.

Install the LED head in a way that individuals are not exposed to LED-UV light.

Exposure could injure the skin or cause other injury.

If there is a risk of the LED-UV light being exposed to persons, place the product inside a cover with proper reflectance and heat characteristics to block that reflected light.

When operating the controller, set up the system so that the path of the LED-UV light is not at eye level.

It is strongly recommended to place a protective barrier around the product so that people cannot approach it while it is operating.

Wear protective UV glasses and other protective clothing during operation.

Never operate this product in a manner not described in this manual. Doing so risks exposure to LED UV light.

Damage to the power cord or the housing can result in contact with live electrical parts.

Check the power cord and the unit before each use. If the power cord or the unit is damaged, do not operate! Replace a damaged power cord with a new one.

The unit may be opened and repaired only by authorized service personal.

### **1.3 Unpacking and Inspection**

Carefully unpack the Loctite® Equipment and examine the items contained in the carton. Inspect the unit for any damage that might have occurred in transit. If such damage has occurred, notify the carrier immediately. Claims for damage must be made by the consignee to the carrier and should be reported to the manufacturer.

### **1.4 Packing List**

- 1.4.1 EQ CL40 LED Quad Controller x 1
- 1.4.2 Equipment Manual x 1
- 1.4.3 Power Cord x 1
- 1.4.4 Footswitch x 1
- 1.4.5 Footswitch Adapter x 1

### **1.5 Features**

- 1.5.1 Capacity for up to four UV LED Heads.
- 1.5.2 Works with Loctite EQ CL40 Spot Heads.
- 1.5.3 Touch screen HMI
- 1.5.4 3 running modes: Timer, Continue and Advance.
- 1.5.5 User friendly interface

### **1.6 Usage**

The Loctite EQ controller is used with the 365nm and 405nm LED spot head for use with light cure products that cure when exposed to ultraviolet and/or visible light. The system can be operated manually, operated with the integrated timer, or controlled with an external switch. The system is designed for intermittent or constant duty cycle.

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## **2 Description**

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### **2.1 Theory of Operation**

The EQ Controller provides electrical power to the LED's through the connecting cable.

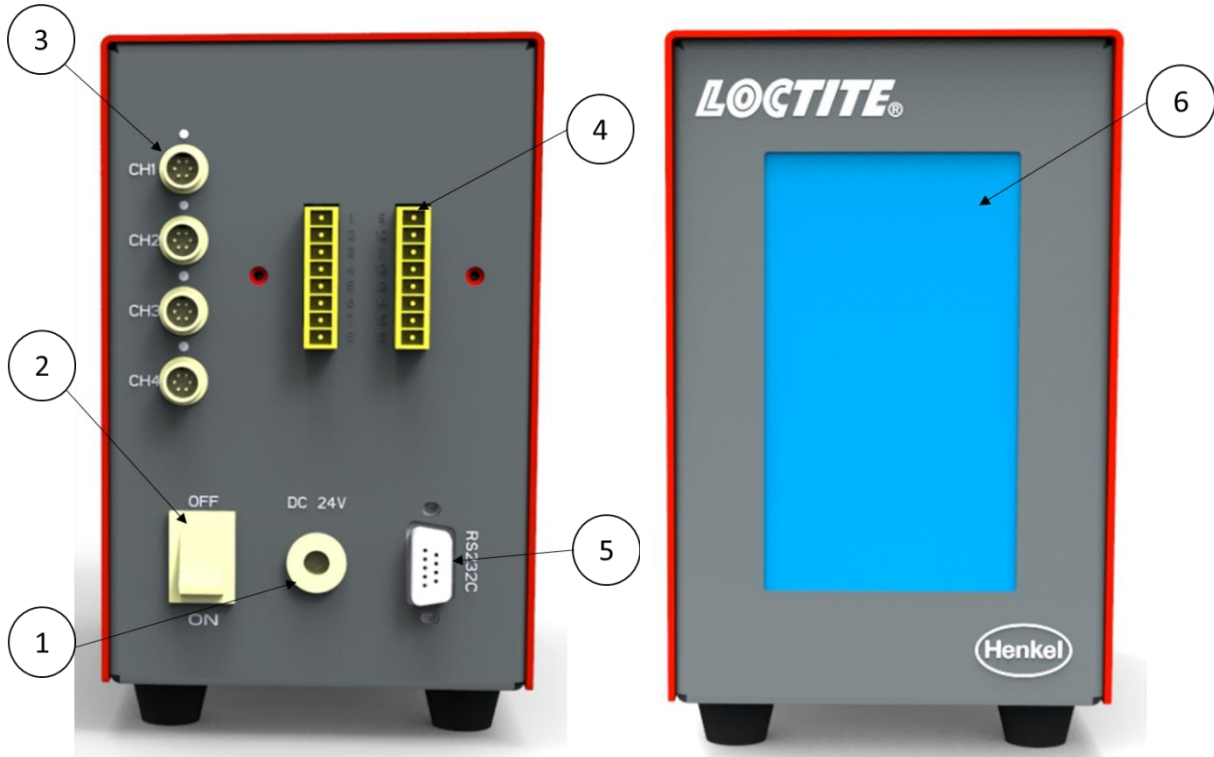
Indicator lights located on the front panel of the power supply provide visual confirmation that the LED's are in or out of their acceptable range. In the event of temperature fault the power supply will automatically shut down to protect the LED array.

When the cure cycle is initiated, light is immediately irradiated at or near maximum intensity from the LED's.

The curing process begins when the adhesive is placed under the LED's. The two primary variables that control the curing process are the time of exposure and the strength of the light (irradiance). For a given irradiance, the exposure time required to fully cure the adhesive depends primarily on the properties of the adhesive and the optical properties of the substrate that the light is transmitted through.

Note: The cooling fan on the LED Spot Head ON during the exposure cycle ONLY.

## 2.2 Display, operating elements and connections



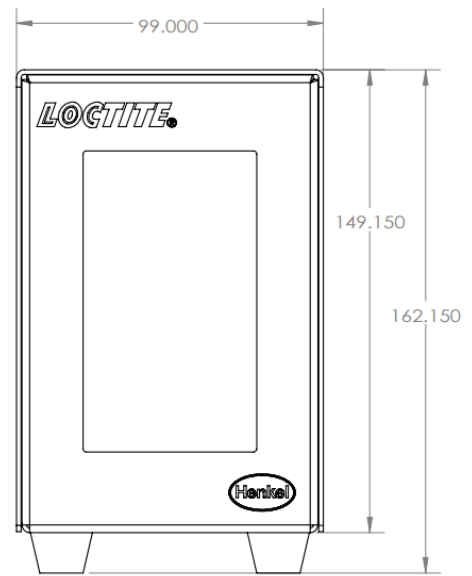
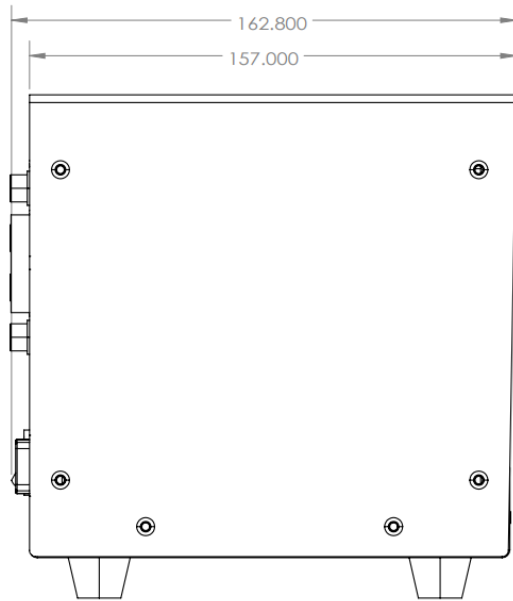
1. Power Supply Inlet
2. Power Switch ON/OFF
3. Head Connection
4. PLC/IO Interface
5. Socket XS5: RS232
6. Screen.

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### 3 Technical Data

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Dimensions (W x H x D):	99x162x163 mm
Total weight: Kg (lbs.)	2 (4.4)
Operating voltage:	24V DC (60W Adapter)
Power consumption:	<35 Watts
Operating Temperature:	+10 ° C to +40 ° C (+50 ° F to +104 ° F)
Storage Temperature:	- 10 ° C to +60 ° C (+14 ° F to +140 ° F)





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## 4 Installation

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**!** Before using the equipment for the first time check it carefully for signs of external damage. If any shipping damage is found DO NOT USE THE EQUIPMENT – return it to your supplier immediately.

### 4.1 Environmental and Operating Conditions

- No direct sunlight.
- Recommend operating temperature; +10 ° C to +40 ° C (+50 ° F to +104 ° F)
- No splashing waters.
- No suddenly temperature changes, vibration and shocks.
- No high magnetic and intense electric.

### 4.2 Connecting the Unit

- Connect Sub D 9 pin connector of the footswitch 97201 or a higher-ranking controller to the PLC interface or the footswitch adapter.
- Connect the LED head's connector to the 6 pins connector.
- Connect power cord to the appropriate plug.

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## 5 Operation

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### 5.1 Electrical Connection

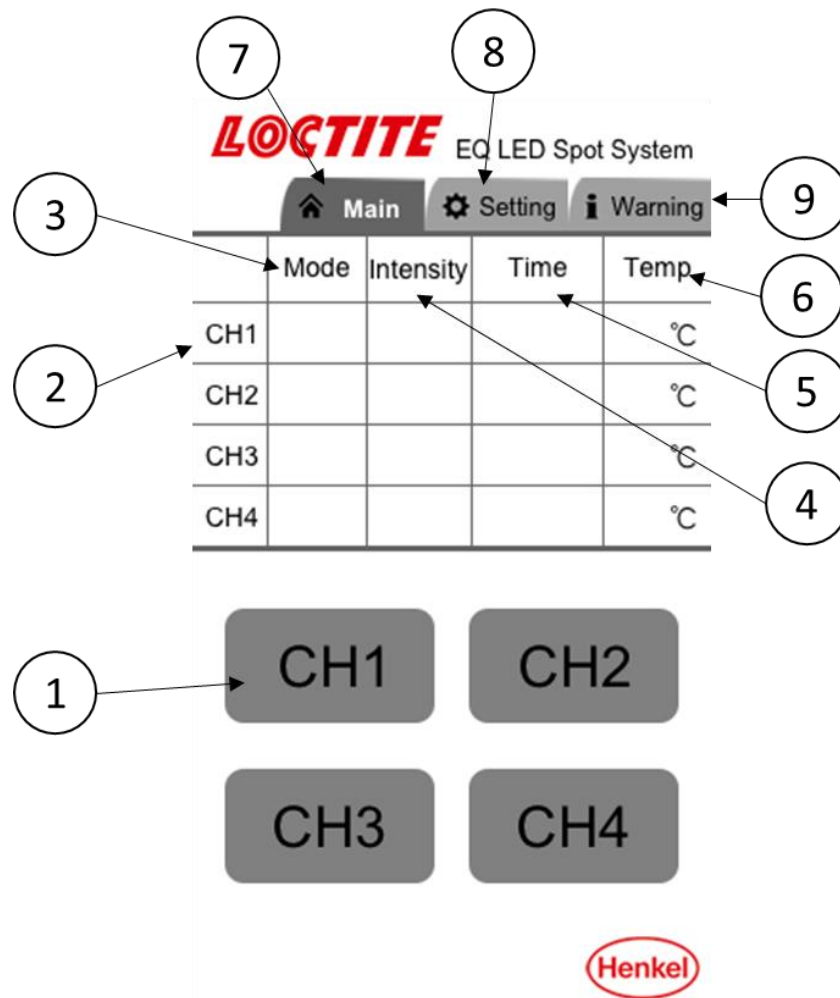
- Plug the end of the LED power cable into the 6 pins connector located on the rear panel of the CL40 controller. Make sure that the connection is secure.
- Plug the DC power cord into the back of the controller and connect to power source.
- For manual operation, plug the footswitch into the PLC interface or the footswitch adapter, located on the rear panel of the CL40 controller.
- For automated control, connect external PLC output relay to the PLC interface.

### 5.2 Turn on the Unit

**!** Observe the operating manual of the LED head used.

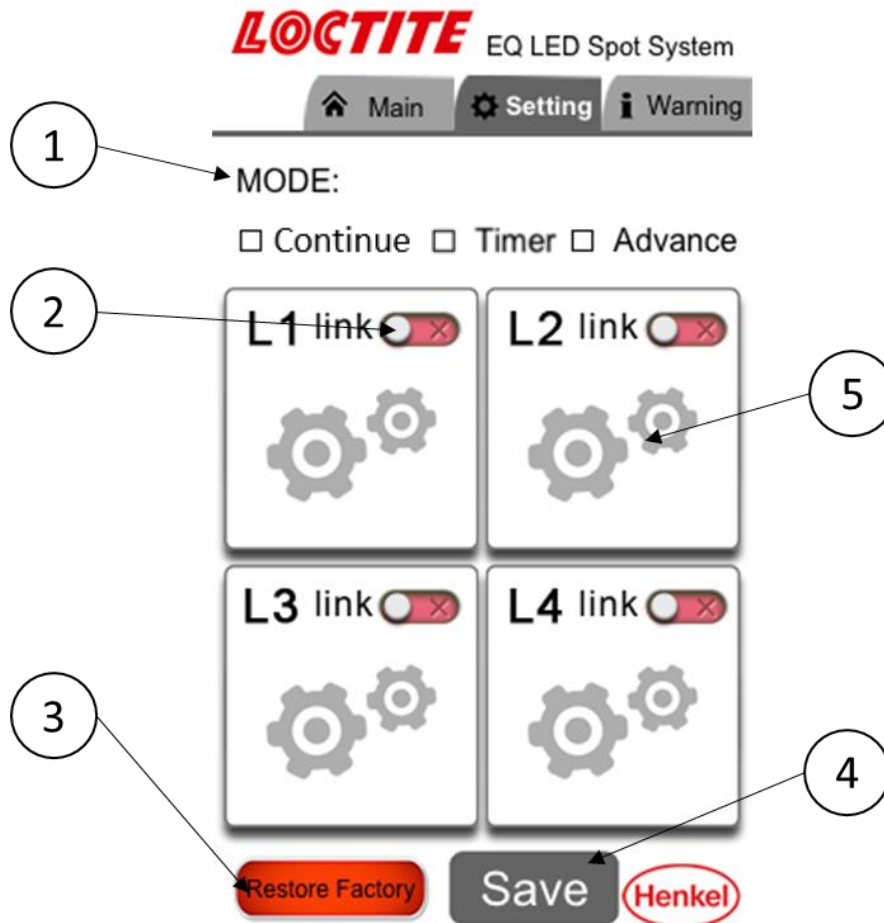
Turn the power switch 2 to ON.

### 5.3 Main Page



1. Channel Manual Switch
2. Channel
3. LED head running Mode: CONTINUE, TIMER, ADVANCE
4. Intensity percentage
5. Time (Exposure time)
6. Temperature (To display LED head temperature - For indication only)
7. To Main page
8. To Parameter Setting page
9. To Warning Message page

## 5.4 Parameter Setting Page



1. Operating Mode selection: Continue, Timer or Advance

Continue Mode: The LED head will turn ON when a footswitch is pressed and remain ON until the footswitch is released. The intensity can be set up for each channel independently.

Timer Mode: The LED head will turn ON when a footswitch is pressed and remain ON for the duration that is set on the timer. If the time is set to 0 then when a footswitch is pressed the LED head will turn ON and remain ON until the Footswitch is pressed again. The intensity can be set up for each channel independently.

Advance Mode: This enables intensity to change automatically during the curing cycle.

2. Link Button: The linked LED head will turn on with start signal.

3. Restore factory setting.
4. Save Setting: Save changes.
5. Intensity & Timer setting. When clicked, can enter below page to set intensity and timer.

**Continue Mode:** Enter required intensity percentage setting (normal operation set 100%).

**LOCTITE** EQ LED Spot System

CH4 Continue

Intensity

Save Cancel



**Timer Mode:** Enter required intensity percentage setting (normal operation set 100%) and curing time required.

**LOCTITE** EQ LED Spot System

CH1 Timer

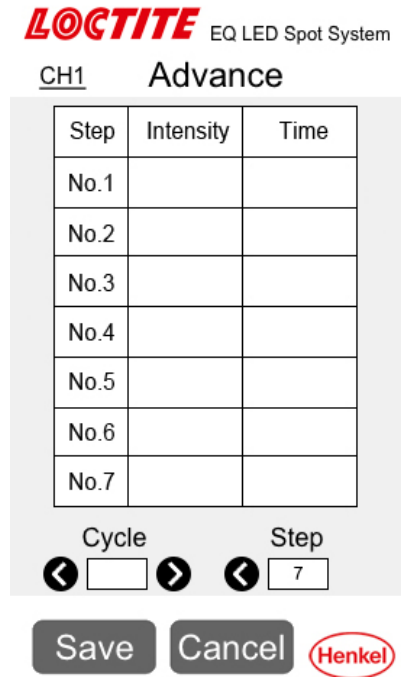
Intensity

Time

Save Cancel



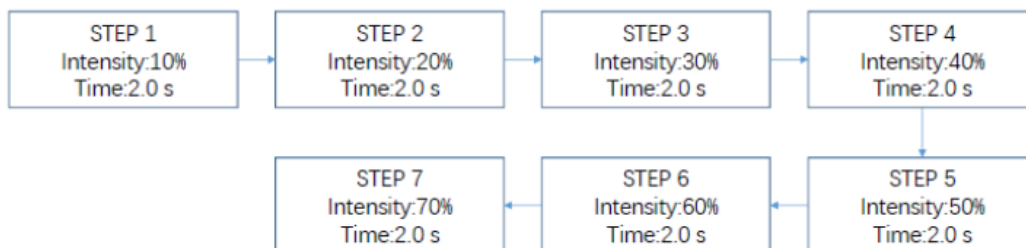
**Advance Mode:** This enables intensity to change automatically during the curing cycle



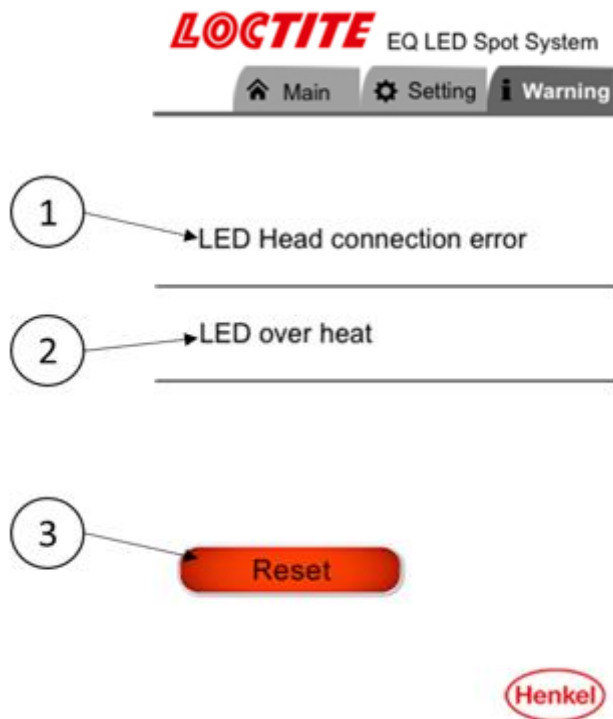
**Note:**  
 1~7: Means from step 1 to step 7  
 Time: working time for each step  
 Intensity: Intensity for each step

For example, if operator have defined as below, when start signal comes, LED head will work step by step. Time and power will follow each step's setting to run 2 cycles.

Step	Intensity	Time
No.1	10%	2.0 s
No.2	20%	2.0 s
No.3	30%	2.0 s
No.4	40%	2.0 s
No.5	50%	2.0 s
No.6	60%	2.0 s
No.7	70%	2.0 s
Cycle No.	2	
Step No.	7	



## 5.5 Warning Message Page



1. Connection error
2. Overheat error (Alarm temperature threshold 65 °C)
3. Clear the warnings

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## 6 Application Hints


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As with all adhesives, performance depends on conditions of use. Suggestions or recommendations contained herein are for guidance only since actual conditions of use are outside the supplier's control.

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## 7 Troubleshooting

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 Before proceeding with any repair or maintenance operation disconnect the tool from the main electricity supply.

<b>Malfunction</b>	<b>Cause/Demonstration</b>	<b>Corrective Action</b>
No display appears on the screen when turning on power supply	Check that the main power cable is connected to an AC source.	Plug in power cable properly.
	Check the fuse in power inlet.	Replace fuse.
LED head does not irradiate	Check if selecting the target channel for the program.	Select the target channel when setting the program.
	Check if the UV intensity level is set to 0% in the channel program.	If it is 0%, set the UV intensity level to 1% or higher.
Temperature warning	The channel connection indicator changes to orange when the LED head temperature has reached the warning level. If you continue the operation in this condition, the product life will be significantly shortened, and the temperature may exceed the upper limit 65°C, causing an emergency stop.	Set the UV intensity level(%) lower or improve the heat radiation performance of the LED head to keep the temperature lower than the warning level.
	Check if the fan on the LED head is working well.	Replace the fan, make sure there is good heat exhaust for LED head.
LED head Connection Error	Check the connection cable or LED head is broken or disconnected.	Reset the error status, check the connection of the cable and LED head with the channel in question, and replace them if necessary.
	Check if the LED head has been removed from the controller.	Reconnect the LED head.

The linked LED head does not turn on with start signal	Check if linked button was selected.	Resolve the problem, and then restart irradiation
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## 8 Care and Maintenance

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The unit requires no special care and maintenance.

<b>!</b> Observe the operating manual of the LED head used.
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## 9 Accessories and Spare Parts

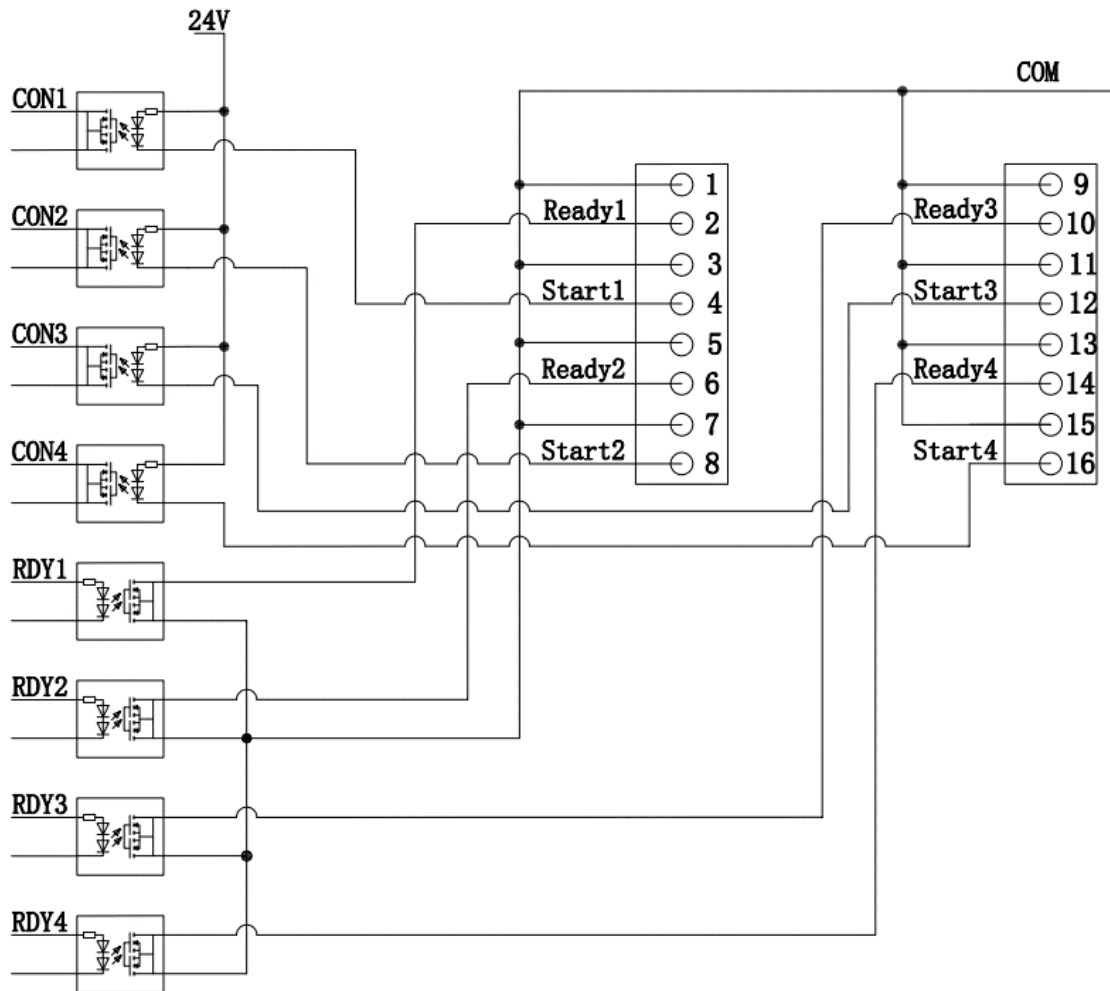
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Item	Description	IDH#
1	EQ CL40 LED Spot Head, 365nm 6mm LED Head	2804938
2	EQ CL40 LED Spot Head, 405nm 6mm LED Head	2804937
3	EQ CL40 LED Quad Controller	2804936
4	EQ CL40 LED Spot Head, Lens $\phi$ 3mm, 365nm	2804939
5	EQ CL40 LED Spot Head, Lens $\phi$ 6mm, 365nm	2804940
6	EQ CL40 LED Spot Head, Lens $\phi$ 10mm, 365nm	2804951
7	EQ CL40 LED Spot Head, Lens $\phi$ 3mm, 405nm	2804952
8	EQ CL40 LED Spot Head, Lens $\phi$ 6mm, 405nm	2804953
9	EQ CL40 LED Spot Head, Lens $\phi$ 10mm, 405nm	2804954
10	EQ CL40 Extension cable, 5 meters	2852572
11	Footswitch	88653
12	EQ PM20 UV AB Radiometer/Dosimeter	2436353
13	EQ PM20 UV VIS Radiometer/Dosimeter	2436352
14	UV & Visible Light Safety Glasses, Yellow	717763



## 10 Diagrams

### PLC/IO Interface



**Note:**

- Output signal follow PLC standard level 0-24V.
- 0V means LED head is working.

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## 11 Warranty

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Henkel expressly warrants that all products referred to in this Instruction Manual for Loctite® EQ CL40 LED Quad Controller (hereafter called “Products”) shall be free from defects in materials and workmanship. Liability for Henkel shall be limited, as its option, to replacing those Products which are shown to be defective in either materials or workmanship or to credit the purchaser the amount of the purchase price thereof (plus freight and insurance charges paid therefor by the user). The purchaser’s sole and exclusive remedy for breach of warranty shall be such replacement or credit.

A claim of defect in materials or workmanship in any Products shall be allowed only when it is submitted in writing within one month after discovery of the defect or after the time the defect should reasonably have been discovered and in any event, within (12) months after the delivery of the Products to the purchaser. This warranty does not apply to perishable items, such as fuses, filters, lights, etc.. No such claim shall be allowed in respect of products which have been neglected or improperly stored, transported, handled, installed, connected, operated, used or maintained. In the event of unauthorized modification of the Products including, where products, parts or attachments for use in connection with the Products are available from Henkel, the use of products, parts or attachments which are not manufactured by Henkel, no claim shall be allowed.

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## 12 Declaration of Conformity

Konformitätserklärung	
Der Hersteller gemäß der EU-Richtlinien	Henkel AG & Co. KGaA Standort München Gutenbergstr. 3 D-85748 Garching bei München
erklärt, dass das nachfolgend bezeichnete Gerät auf Grund seiner Konzipierung und Bauart den unten aufgeführten europäischen Richtlinien, harmonisierten Normen und nationalen Normen entspricht.	
Bezeichnung des Gerätes	EQ CL40 LED Quad Controller
Gerätenummer	2804936
Einschlägige EU-Richtlinien	EU-Richtlinie Niederspannung 2014/35/EU EU-Richtlinie Elektromagnetische Verträglichkeit 2014/30/EU EU-Richtlinie RoHS 2011/65/EU
Angewandte harmonisierte Normen	EN 61326-1: 2013; EN 6100-3-2: 2014; EN 61000-3-3: 2013
Bevollmächtigter für die technischen Unterlagen	Henkel AG & Co. KGaA Standort München Gutenbergstr. 3 D-85748 Garching bei München
Garching, 11.08.2017	 (D. Majid) Business Director AG Deutschland/Schweiz Standorteleiter München

Declaration of Conformity	
The Manufacturer according to the EC regulations	Henkel AG & Co. KGaA Standort München Gutenbergstr. 3 D-85748 Garching bei München
declares that the unit designated in the following is, as a result of its design and construction, in accordance with the European regulations, harmonized standards and national standards listed below.	
Designation of the unit	EQ CL40 LED Quad Controller
Unit number	2804936
Applicable EC Regulations	EC Directive of Low Voltage 2014/35/EC EC Directive for Electro-Magnetic Compatibility 2014/30/EC EC Directive of RoHS 2011/65/EC
Applicable harmonized standards	EN 61326-1: 2013; EN 6100-3-2: 2014; EN 61000-3-3: 2013
Authorized person for technical files	Henkel AG & Co. KGaA Site Munich Gutenbergstr. 3 85748 Garching bei München Germany
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