

# **SBZ-2008 simmer supply**

## **User manual**

## Overview / Applications

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SBZ-2008 simmer supply is a device that strikes and maintains low-current discharge in the flashlamp in order to increase lifetime and operation stability of the lamp.

Input voltage – 24V DC, max. output voltage – 200V, max. output current – 800mA, max. output power – 70W. Restrike rate is approximately 3 Hz.

SBZ-2008 may be used in laser systems with serial triggering as well as in laser systems with external triggering.

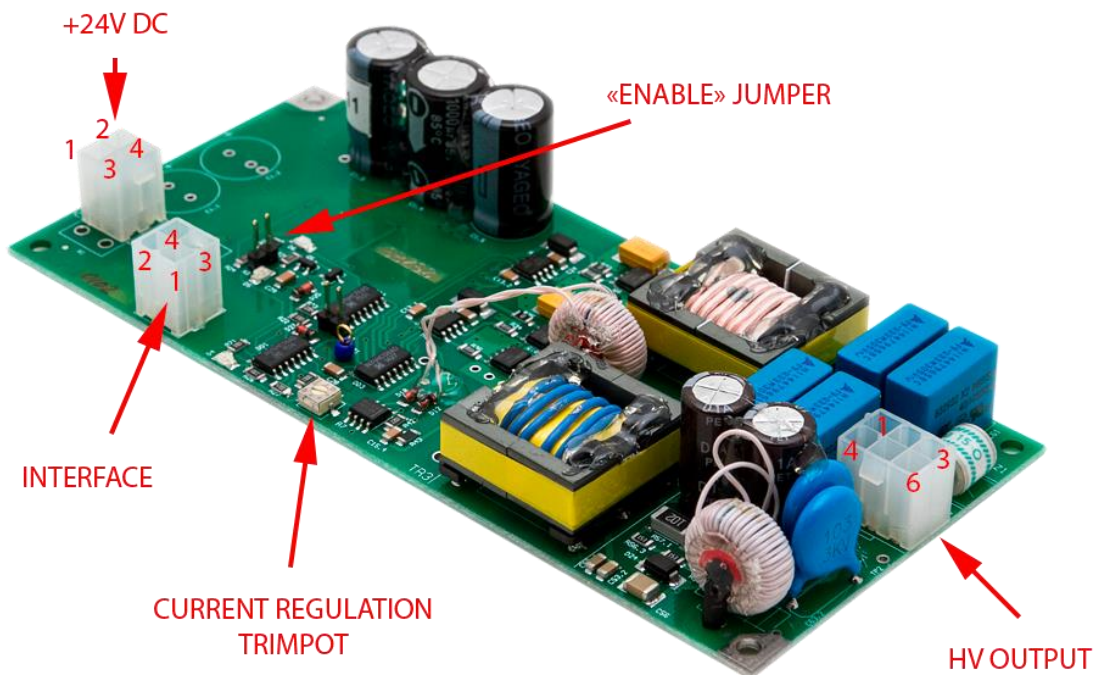
## Cooling

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No external cooling is required.

## Appearance

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## Connections, signals, signal descriptions

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### +24V DC (TO +24V POWER SUPPLY MODULE): Molex 39-30-1040

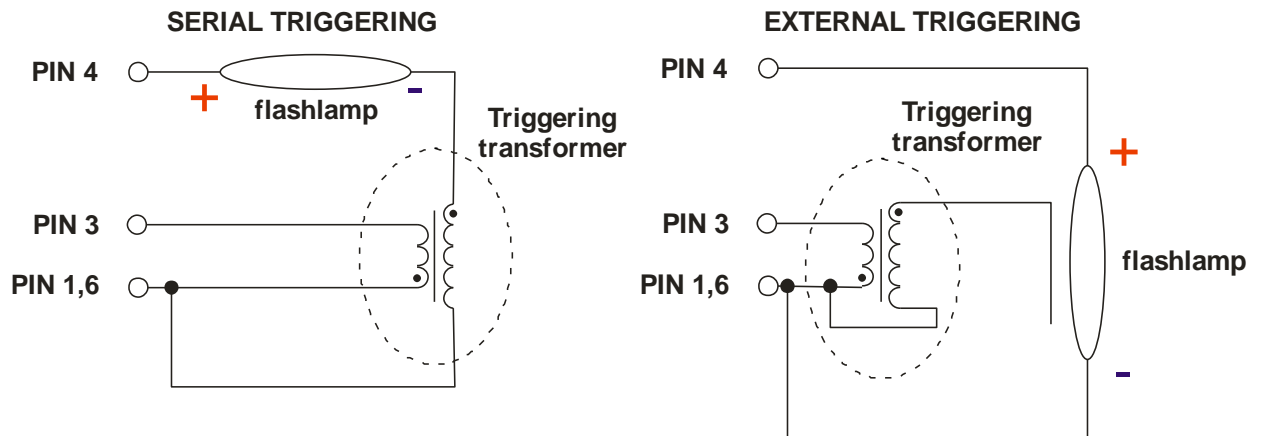
PIN (color)	DESIGNATION	DESCRIPTION
2 (red)	+24V DC	Connect to these pins positive wire of 24V DC power supply Input: 24V DC. Max. current 4A
3 (blue)	+24V DC Return	Return from power supply producing 24V DC

### OUTPUT (TO TRIGGER TRANSFORMER AND LAMP):

Molex 39-30-1060

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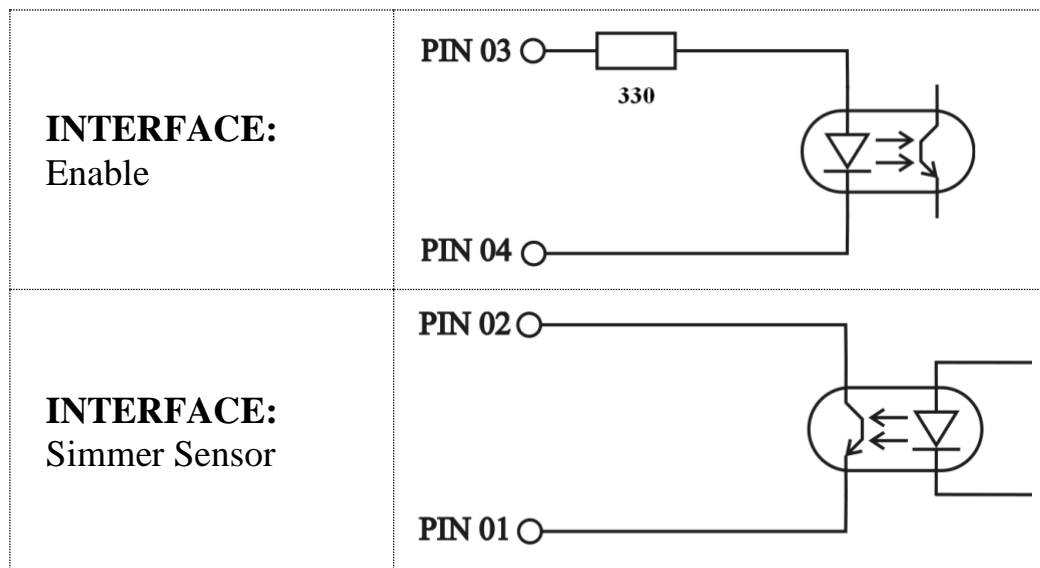
PIN (color)	DESIGNATION	DESCRIPTION
1, 6 (black)	OUTPUT Ground	Negative of trigger transformer primary winding
3 (blue)	OUTPUT Negative	Positive of trigger transformer primary winding
4 (red)	OUTPUT Positive	Flashlamp anode (+)



## INTERFACE (SIMMER SUPPLY CONTROL): Molex 39-30-1040

PIN (color)	DESIGNATION	DESCRIPTION
1 (violet)	Sensor Return	Return <i>Simmer Sensor</i> signal
2 (yellow)	Simmer Sensor	<i>Simmer Sensor</i> circuit is closed while simmer current flows through flashlamp and is open while simmer current is absent
3 (red)	Enable	Once +5V TTL signal is applied to <i>PIN3</i> simmer supply tries to strike and maintain low-current discharge (simmer) in the flashlamp. If flashlamp triggering is failed simmer supply module tries to trigger it again with approximately 3Hz repetition rate. After successful triggering the simmer supply can support up to 800mA flashlamp current (500mA is set by default). If simmer discharge isn't established in approx. 4s, simmer board stops operations, to continue it must be disabled, then enabled again. Simmer discharge will be maintained until 0V is applied to <i>PIN3</i> .
4 (black)	Enable Return	Return <i>Simmer Enable</i> signal

### INTERFACE CIRCUITS:



### CURRENT REGULATION TRIMPOT

Simmer current is adjusted by this trimpot (clockwise rotation leads to simmer current increase). Value set by default is about 500mA.

### “ENABLE” JUMPER:

Use this jumper instead of *ENABLE* pin of *INTERFACE*.  
Don't use *ENABLE* pin and “*ENABLE*” *JUMPER* at the same time!

## Safety

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**Warning!** This equipment produces high voltages that can be very dangerous. Be careful around the device.

- Disconnect the module from the DC power source before making or changing electrical or mechanical connections.
- SBZ-2008 simmer supply is designed to be installed inside a properly grounded metal. It is the user's responsibility to ensure that personnel are prevented from accidentally contacting the SBZ-2008. **Casual contact could be fatal!**

## Operations

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1. Connect +24V DC power supply, trigger transformer and flashlamp to SBZ-2008 simmer supply
2. *Disable* simmer supply (*PIN3* of *INTERFACE*)
3. Apply +24V DC power to the module
4. *Enable* simmer supply (set +5V TTL on *PIN3* of *INTERFACE* or use "*ENABLE*" *JUMPER*)
5. Wait 5-10 seconds for *Simmer Sensor*. If it fails shut down your system

To power down SBZ-2008

1. Remove +24V DC power from the module or *DISABLE* it.

## Faults / protections

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There are next protections available:

1. From short-circuit at the output – simmer module considers short-circuit at the output as one of normal regimes of operations
2. From open-circuit – if simmer discharge isn't established in approx. 4s, simmer board stops operations; to continue it must be disabled, then enabled again

### Warning

Simmer board isn't protected from voltage of reverse polarity applied to the output which would appear as a result of transient process after the flash. The cause of oscillation is inductance of wires and flashlamp itself and cannot be completely eliminated. To suppress pulses of reverse polarity, recuperative diodes must be included in schematics of your discharge circuit. Please consult us if you have further questions.

## Specification

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<b>+24V DC:</b>	
Input voltage	+24 V DC
Maximum input current	3.5 A
<b>SIMMER PARAMETERS</b>	
Output current	300-800 mA (adjusted by trimpot, about 500 mA is set by default) *
Output voltage	Is set automatically in accordance with current set point and V/A curve of your flashlamp
Max. output voltage	200 V *
Max. output power	70 W *
Open circuit voltage	1400 V
<b>TRIGGERING PARAMETERS</b>	
Trigger voltage	1 kV
Trigger pulse energy	~150 mJ
Restrike rate	~3 Hz
<b>Protections</b>	<ul style="list-style-type: none"><li>- Short circuit at the output</li><li>- Open circuit</li></ul>
<b>Cooling</b>	No external cooling is required
<b>Environment:</b>	
Operation temperature	-20 ... +45 °C
Storage temperature	-40 ... +85 °C
Humidity	90%, non-condensing
<b>Size (LxWxH)</b>	152x68x38 mm
<b>Weight</b>	0.2 kg

(\*) The performance of simmer module is limited with maximum output current, or with maximum output voltage, or with maximum output power. In other words, maximum output voltage and maximum output current cannot be achieved at the same time because of maximum output power limitation.