

VeriSens® – VeriSens® Flash Controller

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Description

In this document we will give answers to questions that are asked very often regarding flash capacity of illuminations and the use of the *VeriSens®* flash controller, which is integrated in every model of the *VeriSens®* XC series.

Products

VeriSens® XC series

Preparation

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1 VeriSens® Flash Controller FAQs

1.1 Does VeriSens® support Baumer illumination only?

No, it is also possible to connect illuminations from other manufacturers, if the voltage and current supplied by VeriSens® are suitable for the illumination in question. This applies to most illuminations used in industrial image data processing. However, there are ready-made illumination profiles available for Baumer illuminations that simplify the startup procedure.

1.2 Are all illuminations flashable?

Three kinds of illuminations can be distinguished:

- Illuminations only suitable for *steady light illumination*
- Illuminations suitable for *steady light and flash illumination*
- Illuminations *only* suitable for *flash illumination*

Illuminations that are only suitable for flash illumination are normally explicitly marked, in the other case a statement is usually missing. Your illumination supplier will be able to inform you about the illumination mode your illumination is suitable for. The following question gives you information about the kind of illuminations that are not flashable.

1.3 Which illuminations are not suitable for flash illumination?

Generally the manufacturer states whether the illumination can or cannot be run at flash mode. Usually illuminations, that regulate the current at steady light illumination only with a pre-resistor and not with a pre-resistor with an internal voltage controller, are also suitable for flash illumination. If a voltage range is given in the data sheet (e.g. 10-30V), it is a hint, that a voltage controller is implemented. A higher voltage does not lead to a higher luminous power in this case. Due to that flash illumination is not possible.

These are some examples for how manufacturers display whether flash mode use is possible or not:

Statement	Design												
Not suitable for flash mode	<p>Wiring</p> <table border="1"> <tr> <td>brown</td> <td>+10...30 V DC</td> <td>+ operating voltage (max. 30 V)</td> </tr> <tr> <td>white</td> <td>GND</td> <td>GND operating voltage</td> </tr> <tr> <td>yellow</td> <td>+1...10 V DC</td> <td>VC analogue input brightness regulation / Pulse</td> </tr> <tr> <td>green (green/yellow)</td> <td>earth</td> <td>earth connection</td> </tr> </table>	brown	+10...30 V DC	+ operating voltage (max. 30 V)	white	GND	GND operating voltage	yellow	+1...10 V DC	VC analogue input brightness regulation / Pulse	green (green/yellow)	earth	earth connection
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white	GND	GND operating voltage											
yellow	+1...10 V DC	VC analogue input brightness regulation / Pulse											
green (green/yellow)	earth	earth connection											
Suitable for steady and flash illumination	<p>► Illumination</p> <table border="1"> <tr> <td>Operating Voltage:</td> <td>24 V</td> </tr> <tr> <td>Current:</td> <td>0,28 A</td> </tr> <tr> <td>Power Consumption:</td> <td>6,72 W</td> </tr> <tr> <td>Voltage:</td> <td>Continuous = 24V Pulsing 24-48V 0-10% Duty Cycle</td> </tr> </table>	Operating Voltage:	24 V	Current:	0,28 A	Power Consumption:	6,72 W	Voltage:	Continuous = 24V Pulsing 24-48V 0-10% Duty Cycle				
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Flash illumination only	<p>FHLV / FLSP / FHSP</p> <p>Artikel-Nr. 6-12-60940-55 LED High Brightness Spot Light</p> <p>No internal resistor! Needs constant current controller (then separate added resistor not needed). Only strobe mode. Pay regard to datasheet. Operating duty cycle at max. current is recommended at 10 %</p>												

Please contact your illumination supplier, if your illumination is not able to be run at flash mode. Often suppliers offer both, steady light and flash illuminations.

1.4 Which parameters have to be defined when the flash controller is configured?

There are ready-made illumination profiles provided for illuminations you purchase from Baumer. For all other illuminations you have to create new user defined profiles.



Depending on the illumination mode you have to put the following settings:

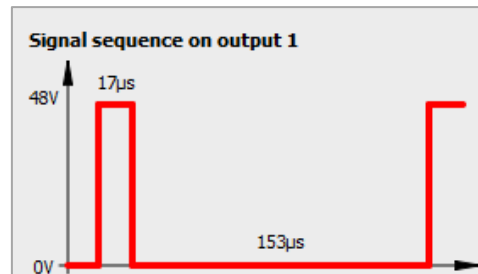
Steady illumination	
Operating voltage of illumination	Voltage at which the illumination is run. 12V or 24V can be set.
Current restriction	<p>Max. Current that is allowed to flow during operation.</p> <p>For illuminations that can be run with a normal industrial power supply, 800mA can be set as the maximum. The matching current sets in during operation automatically.</p> <p>For illuminations that explicitly need the current regulation by a controller, the suitable current has to be set.</p> <p>Wrong parameters may lead to the destruction of the illumination!</p>
Flash illumination	
<p>For all parameters you have to set for flash illumination, please contact your illumination supplier. Wrong settings may lead to the destruction of the illumination!</p> <p>Please consider the following statements only as a rough guideline.</p>	
Operating voltage of illumination	<p>Max. current that shall be applied for the flash. It can be set on 24V (setting 12VDC, flash 24VDC) or 48V (setting 24VDC, flash 48VDC).</p> <p>Illuminations that are suitable for steady light illumination as well as for flash illumination are mostly flashed with up to twice the voltage used for steady light illumination. That means that illuminations that are run at 12V usually are flashed at 24V. 24V illuminations are mostly flashed with up to 48V.</p> <p>Please keep in mind that also during the flash the maximal current given by the manufacturer is not to be exceeded. It can be regulated with the following parameters.</p>
Current restriction	<p>Max. current that is allowed to flow at the moment of the flash.</p> <p>Normally this value is two or three times as high as the current that flows while the illumination is run at steady light illumination.</p> <p>For illuminations that are suitable for flash illumination only, the suitable current is always given.</p>
Maximum flash period	<p>Max. period of time during which the illumination is allowed to be flashed without interruption.</p> <p>Typically this value is 1ms.</p>
Duty cycle	<p>Ratio between flash period and entire cycle period.</p> <p>The duty cycle is used to define the breaks between two flashes.</p> <p>Typically this value is around 10%.</p>

1.5 How are the pins at the illumination output assigned?

The pin assignment depends on the settings for the flash controller. The assignment and the signal sequence are shown in the configuration dialogue in the device settings. Please make sure that these results match your preferred settings at the end of your configuration.

Example:

Signal assignment at VeriSens	
■ Output 1:	+48V, max. 850mA
□ Output 2:	not used
■ Output 3:	Ground
■ Output 4:	not used



1.6 When do I need the mode “Control the external flash controller“?

In this mode, *VeriSens*[®] issues the signal “Flash Sync” via output 4. This signal is high during the flash period, otherwise it is low. It can be used to trigger an external flash controller. There are also illuminations with an internal flash controller available (obtainable from iiM AG) or else a switch input. These can also be triggered in this mode.

Signal assignment at VeriSens	
■ Output 1:	24V
□ Output 2:	not used
■ Output 3:	Ground
■ Output 4:	Flash Sync

2 Support

In the case of any questions or for troubleshooting please contact our support team.

Worldwide

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