

**Photocell, fault monitoring, switch-over and flash controller unit  
Data Sheet and Installation examples****Key features**

- Extremely reliable
- Very low power consumption
- Suitable for solar cell applications
- Integrated photocell
- Master-slave switch-over
- Flash or steady burn mode
- Alarm output

**Benefits**

- Long maintenance intervals
- Low battery costs

**Characteristics**

- User selectable photocell sensitivity
- Microprocessor controlled
- Fault monitoring based on current flow through LED lamp
- Potential free relay alarm
- Shock resistant Polycarbonate enclosure (degree of protection IP65)
- Dimensions (LxWxH): 200 mm x 200 mm x 130 mm

**User selectable parameter switches**

- Photocell on/off
- Output 1 (Master) only
- Current Alarm level
- Photocell Sensitivity
- Steady burn / Flash mode
- Indicator LEDs on/off

**Indicator LEDs**

- Over-current alarm
- Under-current alarm
- Output 1 (Master) ON
- Output 2 (Slave) ON
- Selftest OK

**Electrical characteristics**

- Operating voltage range 10...16V<sub>DC</sub>  
With 12V<sub>DC</sub> operating voltage light
- Operating voltage range 22...27 V<sub>DC</sub>  
With 24V<sub>DC</sub> operating voltage light
- Operating voltage range 44...57 V<sub>DC</sub>  
With 48V<sub>DC</sub> operating voltage light
- Power consumption @12 V<sub>DC</sub> 0,3W
- Power consumption @24 V<sub>DC</sub> 0,7W
- Power consumption @48 V<sub>DC</sub> 1,5W
- Operating temperature range -40...+55 °C

Order code:

**CEL-CSW-DCW-0A5-F (current alarm range 12mA-770mA)****Alarm relay characteristics**

- Two pole contacts: Normally Open (NO) and Normally Closed (NC)
- Active when CSW-F is powered
- Switch voltage (max): 110 V<sub>DC</sub> / 125 V<sub>AC</sub>
- Switch current (max): 1 A
- Switch power (max): 30 W
- Contact resistance 0.1 ohm

**Flash mode**

- Flash 60 FPM, Flash duration 250 ms
- Flash 40 FPM, Flash duration 250 ms
- Flash 20 FPM, Flash duration 250 ms

**Optio**

- Flash: 1s on, 0,5s off, 1s on, 1,5 s off \*

\*BMVBW LS 11/60.01.87-01/5 Va 02, 24. September 2002, Page 15.

**NOTE:**

Several light units can be connected in parallel, but then separate currents has to be summed up to get the correct current limit. Alarm will only be triggered outside the current limits.

This document is valid for software CSWB 1.06-2

Made in the EU.



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**CSW-DCW-0A5-F**

**Description of operation:**

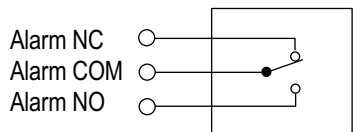
CSW measures the current consumption of the output in use every 250ms. If five consecutive measurements occur giving an overcurrent fault, the group is switched off and an alarm is generated, and the second output (if available) is turned on. After 30 minutes the CSW will try to switch the first (faulty) output back on, making five measurements, and if the fault has cleared, the alarm is turned off. If it is still faulty the alarm stays on and the other output (if available) is kept on. Alarm is also generated in case of power loss.

Remember, always to check the DIP-switches that the output limits are correct. You may connect several parallel light units to one output, but notice that you must calculate currents together to get the correct current limit, the alarm will only happen outside those current limits.

CSW DIP Switches table shows the available ranges for current alarms for defining the normal current consumption for the system depending on the number and type of LED lights used.

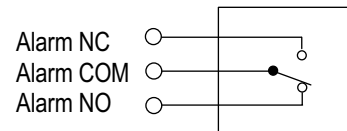
The same table also shows how to set the photocell into use or out of use, and how to define its sensitivity. If photocell is used, CSW-unit must be installed outdoors.

**ALARM RELAY:**



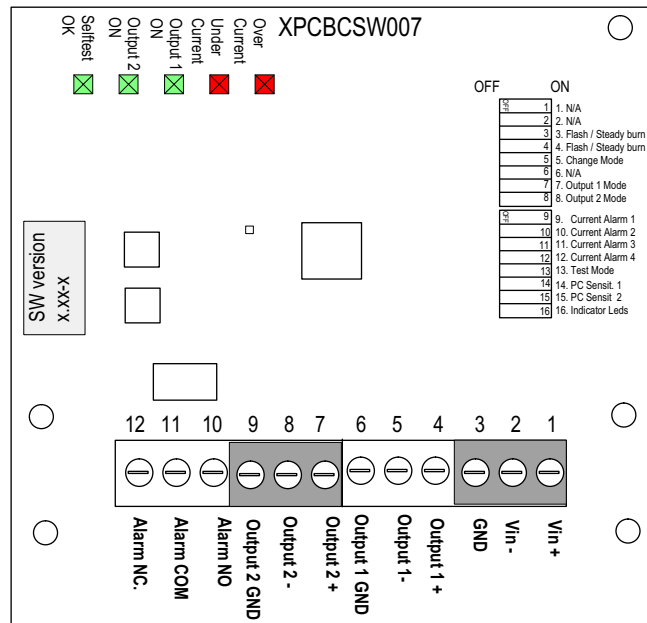
ALARM RELAY

Relay when power connected, no alarm.



ALARM RELAY

Relay when alarm on, or no power.

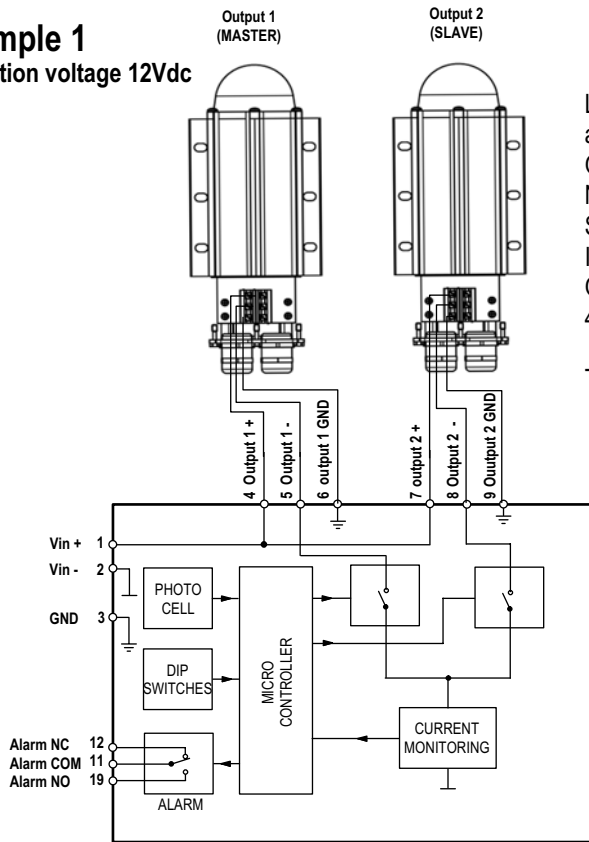


**Connectors**

- 1 Vin + Power supply, positive input  
12VDC, 24VDC or 48VDC
- 2 Vin - Power supply, negative input
- 3 GND Power supply ground, power supply cable shield.
- 4 Output 1 + Output 1 (Master) output positive
- 5 Output 1 - Output 1 (Master) output negative
- 6 Output 1 GND Output 1 (Master) cable shield
- 7 Output 2 + Output 2 (Slave) output positive
- 8 Output 2 - Output 2 (Slave) output negative
- 9 Output 2 GND Output 2 (Slave) cable shield
- 10 Alarm NC External alarm output, Normally Closed
- 11 Alarm NO External alarm output, Normally Open
- 12 Alarm COM External alarm output, COMmon

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**Example 1**  
Operation voltage 12Vdc

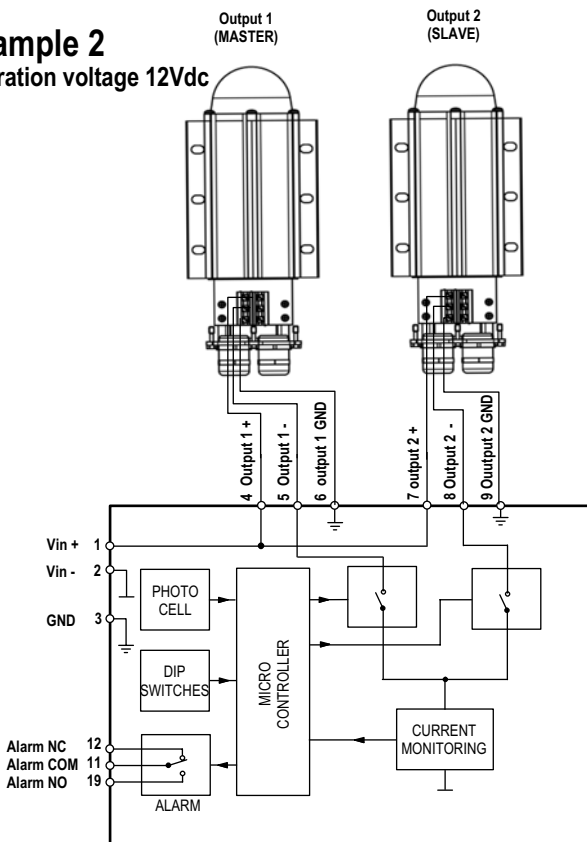


LED lights (LI-10-DCW-F) connected to both Output 1 (Master) and Output 2 (Slave).  
Operation voltage 12Vdc  
No Photocell control.  
Steady burn.  
If master fails, slave is taken into use and an alarm is generated.  
One light takes 70 mA, and the current alarm range is set to 48to 112 mA.

The correct DIP switch settings are shown below.

OFF	ON	
<input type="checkbox"/>	<input checked="" type="checkbox"/>	1. N/A
<input type="checkbox"/>	<input checked="" type="checkbox"/>	2. N/A
<input type="checkbox"/>	<input checked="" type="checkbox"/>	3. Flash / Steady burn
<input type="checkbox"/>	<input checked="" type="checkbox"/>	4. Flash / Steady burn
<input type="checkbox"/>	<input checked="" type="checkbox"/>	5. Change Mode
<input type="checkbox"/>	<input checked="" type="checkbox"/>	6. N/A
<input type="checkbox"/>	<input checked="" type="checkbox"/>	7. Output 1 Mode
<input type="checkbox"/>	<input checked="" type="checkbox"/>	8. Output 2 Mode
<input type="checkbox"/>	<input checked="" type="checkbox"/>	9. Current Alarm 1
<input type="checkbox"/>	<input checked="" type="checkbox"/>	10. Current Alarm 2
<input type="checkbox"/>	<input checked="" type="checkbox"/>	11. Current Alarm 3
<input type="checkbox"/>	<input checked="" type="checkbox"/>	12. Current Alarm 4
<input type="checkbox"/>	<input checked="" type="checkbox"/>	13. Test Mode
<input type="checkbox"/>	<input checked="" type="checkbox"/>	14. PC Sensit. 1
<input type="checkbox"/>	<input checked="" type="checkbox"/>	15. PC Sensit. 2
<input type="checkbox"/>	<input checked="" type="checkbox"/>	16. Indicator Leds

**Example 2**  
Operation voltage 12Vdc



LED lights (LI-DCW-F) connected to both output 1 (Master) and output 2 (Slave).  
Operation voltage 12Vdc  
Photocell control, 200 lux selected.  
Steady burn.  
If master fails, slave is taken into use and an alarm is generated.  
One light takes 70 mA, and the current alarm range is set to 48 to 112 mA.

The correct DIP switch settings are shown below.

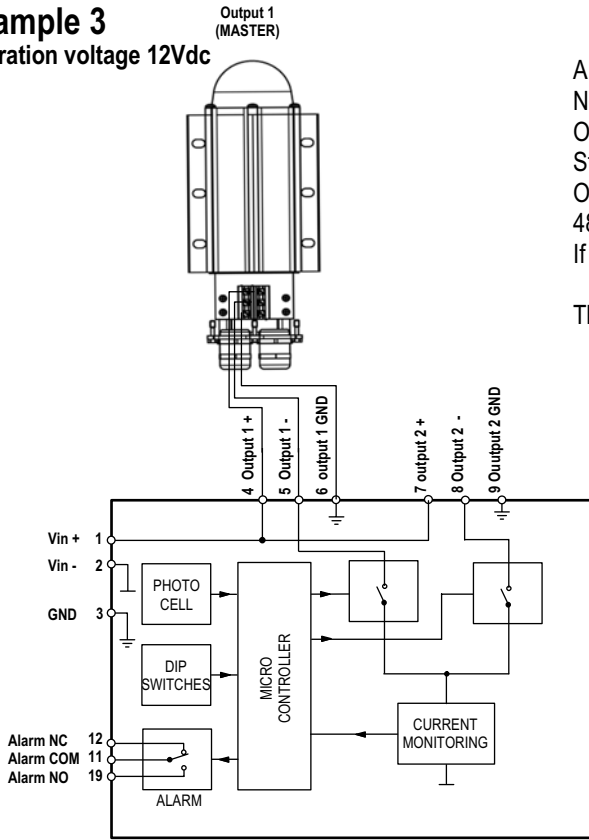
OFF	ON	
<input type="checkbox"/>	<input checked="" type="checkbox"/>	1. N/A
<input type="checkbox"/>	<input checked="" type="checkbox"/>	2. N/A
<input type="checkbox"/>	<input checked="" type="checkbox"/>	3. Flash / Steady burn
<input type="checkbox"/>	<input checked="" type="checkbox"/>	4. Flash / Steady burn
<input type="checkbox"/>	<input checked="" type="checkbox"/>	5. Change Mode
<input type="checkbox"/>	<input checked="" type="checkbox"/>	6. N/A
<input type="checkbox"/>	<input checked="" type="checkbox"/>	7. Output 1 Mode
<input type="checkbox"/>	<input checked="" type="checkbox"/>	8. Output 2 Mode
<input type="checkbox"/>	<input checked="" type="checkbox"/>	9. Current Alarm 1
<input type="checkbox"/>	<input checked="" type="checkbox"/>	10. Current Alarm 2
<input type="checkbox"/>	<input checked="" type="checkbox"/>	11. Current Alarm 3
<input type="checkbox"/>	<input checked="" type="checkbox"/>	12. Current Alarm 4
<input type="checkbox"/>	<input checked="" type="checkbox"/>	13. Test Mode
<input type="checkbox"/>	<input checked="" type="checkbox"/>	14. PC Sensit. 1
<input type="checkbox"/>	<input checked="" type="checkbox"/>	15. PC Sensit. 2
<input type="checkbox"/>	<input checked="" type="checkbox"/>	16. Indicator Leds

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### Example 3

Operation voltage 12Vdc



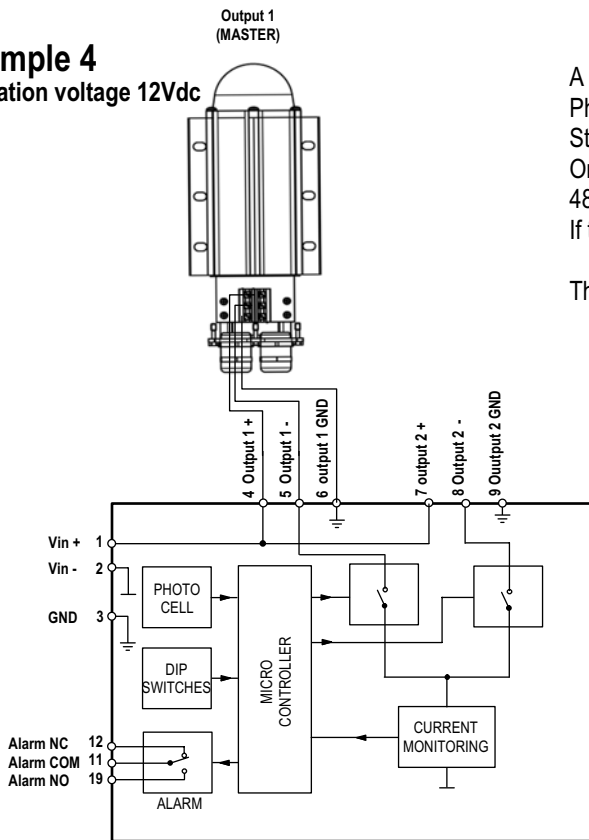
A LED light (LI-10-DCW-F) connected to Output 1 (Master).  
No Photocell control  
Operation voltage 12Vdc.  
Steady burn.  
One light takes 70 mA, and the current alarm range is set to 48 mA to 112 mA.  
If the current consumption is outside this range, an alarm is generated.

The correct DIP switch settings are shown below.

OFF	ON	
<input type="checkbox"/>	<input checked="" type="checkbox"/>	1. N/A
<input type="checkbox"/>	<input checked="" type="checkbox"/>	2. N/A
<input type="checkbox"/>	<input checked="" type="checkbox"/>	3. Flash / Steady burn
<input type="checkbox"/>	<input checked="" type="checkbox"/>	4. Flash / Steady burn
<input type="checkbox"/>	<input checked="" type="checkbox"/>	5. Change Mode
<input type="checkbox"/>	<input checked="" type="checkbox"/>	6. N/A
<input type="checkbox"/>	<input checked="" type="checkbox"/>	7. Output 1 Mode
<input type="checkbox"/>	<input checked="" type="checkbox"/>	8. Output 2 Mode
<input type="checkbox"/>	<input checked="" type="checkbox"/>	9. Current Alarm 1
<input type="checkbox"/>	<input checked="" type="checkbox"/>	10. Current Alarm 2
<input type="checkbox"/>	<input checked="" type="checkbox"/>	11. Current Alarm 3
<input type="checkbox"/>	<input checked="" type="checkbox"/>	12. Current Alarm 4
<input type="checkbox"/>	<input checked="" type="checkbox"/>	13. Test Mode
<input type="checkbox"/>	<input checked="" type="checkbox"/>	14. PC Sensit. 1
<input type="checkbox"/>	<input checked="" type="checkbox"/>	15. PC Sensit. 2
<input type="checkbox"/>	<input checked="" type="checkbox"/>	16. Indicator Leds

### Example 4

Operation voltage 12Vdc



A LED light (LI-10-DCW-F) connected to Output 1 (Master).  
Photocell control, 200 lux selected.  
Steady burn.  
One light takes 70 mA, and the current alarm range is set to 48 to 112 mA.  
If the current consumption is outside this range, an alarm is generated.

The correct DIP switch settings are shown below.

OFF	ON	
<input type="checkbox"/>	<input checked="" type="checkbox"/>	1. N/A
<input type="checkbox"/>	<input checked="" type="checkbox"/>	2. N/A
<input type="checkbox"/>	<input checked="" type="checkbox"/>	3. Flash / Steady burn
<input type="checkbox"/>	<input checked="" type="checkbox"/>	4. Flash / Steady burn
<input type="checkbox"/>	<input checked="" type="checkbox"/>	5. Change Mode
<input type="checkbox"/>	<input checked="" type="checkbox"/>	6. N/A
<input type="checkbox"/>	<input checked="" type="checkbox"/>	7. Output 1 Mode
<input type="checkbox"/>	<input checked="" type="checkbox"/>	8. Output2 Mode
<input type="checkbox"/>	<input checked="" type="checkbox"/>	9. Current Alarm 1
<input type="checkbox"/>	<input checked="" type="checkbox"/>	10. Current Alarm 2
<input type="checkbox"/>	<input checked="" type="checkbox"/>	11. Current Alarm 3
<input type="checkbox"/>	<input checked="" type="checkbox"/>	12. Current Alarm 4
<input type="checkbox"/>	<input checked="" type="checkbox"/>	13. Test Mode
<input type="checkbox"/>	<input checked="" type="checkbox"/>	14. PC Sensit. 1
<input type="checkbox"/>	<input checked="" type="checkbox"/>	15. PC Sensit. 2
<input type="checkbox"/>	<input checked="" type="checkbox"/>	16. Indicator Leds

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**Photocell, fault monitoring, switch-over and flash controller unit  
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<b>Type:</b>	<b>Voltage dc</b>	<b>Current (mA):</b>	<b>Aalarm range 1 pcs/ Output</b>
LI-10-DCW-F	12	70	48 mA - 112 mA
LI-10-DCW-F	24	40	30 mA - 70 mA
LI-10-DCW-F	48	23	18 mA - 42 mA
LI-32-DCW-F	12	216	120 mA - 280 mA
LI-32-DCW-F	24	110	72 mA - 168 mA
LI-32-DCW-F	48	58	36 mA - 68 mA

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