

22 JAN 2016

Photocell, Fault Monitoring, Switch-Over and Flash Controller Unit - Data Sheet and Installation examples

CEL-CSW-DCW-OA5-F - Two Output Channels

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): 200mm x 200mm x 130mm

User selectable parameter switches

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

Indicator LEDs

- Over-current alarm
- Under-current alarm
- Output 1 (Main) ON
- Output 2 (Spare) ON
- Selftest OK

Electrical characteristics

- Operating voltage range 12 ... 20V_{DC}
With 12V_{DC} operating voltage light
- Operating voltage range 23 ... 28V_{DC}
With 24V_{DC} operating voltage light
- Operating voltage range 44 ... 59V_{DC}
With 48V_{DC} operating voltage light
- Power consumption @12 V_{DC} 0,3W
- Power consumption @24 V_{DC} 0,7W
- Power consumption @48 V_{DC} 1,5W
- Operating temperature range -40 ... +55 °C

Order code:

CEL-CSW-DCW-OA5-F (current alarm range 12mA-770mA)
CEL-CSW-DCW-O2-F (current alarm range 45mA-2250mA)
CEL-CSW-DCW-O4-F (current alarm range 90mA-4120mA)



Alarm relay characteristics

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

Flash mode

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

Option (SW: CSWB 1.06-4_DE_40_60):

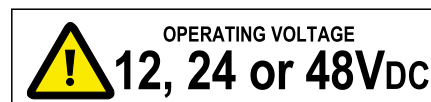
-Flash: 1s on, 0,5s off, 1s on, 1,5 s off *

*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 1.06-4_20_40_60.



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CEL-CSW-DCW-OA5-F - Two Output Channels

CEL-CSW-DCW-OA5-F, CEL-CSW-DCW-02-F and CEL-CSW-DCW-04-F

Description of operation: The CSW controller measures the current consumption of the operational output every 0,5 seconds. If five consecutive inaccurate measurements are recorded, the output is switched off, an alarm is generated and the second output (if selected) is taken into use. After 30 minutes the CSW controller will attempt to switch the first (faulty) output back on, makes five measurements, and if the fault is cleared, the alarm is turned off. If it is still faulty the alarm stays on and the second output (if selected) is kept on. Alarm is also generated in case of power loss.

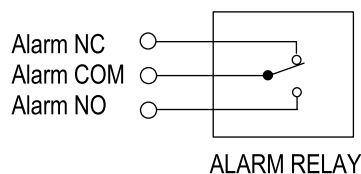
Remember always to check the DIP switch settings that output selections are correctly selected.

The CSW DIP switch settings tables on the following pages, show the selectable current limit ranges for defining the normal current consumption dependent on the types and numbers of LED lights used.

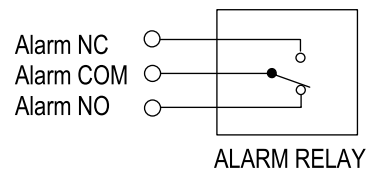
The same table also shows additional functionality such as the photocell operation, country specific flash codes, flash rates, self test modes and others.

Note! If no additional light unit is connected to output 2 as a backup, all LED lights of the failed output are automatically switched off when an alarm is generated.

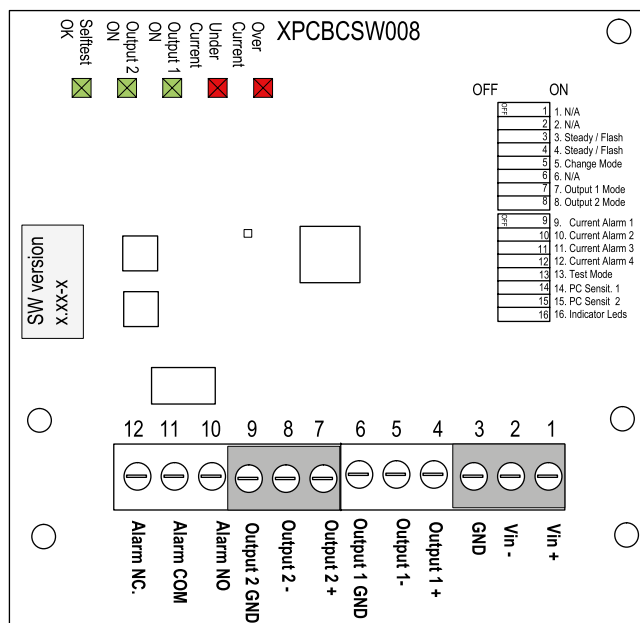
ALARM RELAY:



Relay when power connected, no alarm.



Relay when alarm on, or no power.



Connectors

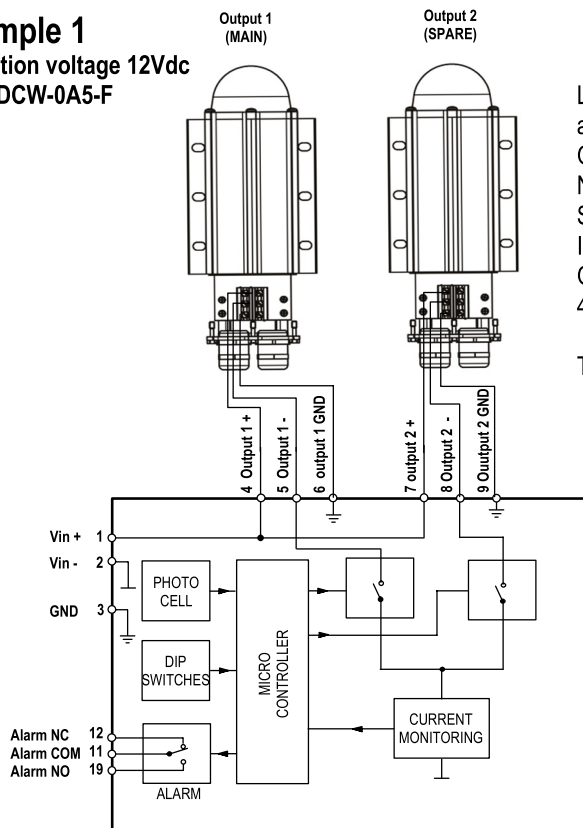
- | | |
|----------------|---|
| 1 Vin + | Power supply, positive input
12VDC, 24VDC or 48VDC |
| 2 Vin - | Power supply, negative input |
| 3 GND | Power supply ground, power supply cable shield. |
| 4 Output 1 + | Output 1 (Main) output positive |
| 5 Output 1 - | Output 1 (Main) output negative |
| 6 Output 1 GND | Output 1 (Main) cable shield |
| 7 Output 2 + | Output 2 (Spare) output positive |
| 8 Output 2 - | Output 2 (Spare) output negative |
| 9 Output 2 GND | Output 2 (Spare) 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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CEL-CSW-DCW-OA5-F - Two Output Channels

Example 1

Operation voltage 12Vdc
CSW-DCW-OA5-F



LED lights (LI-10-DCW-F) connected to both Output 1 (Main) and Output 2 (Spare).

Operation voltage 12Vdc

No Photocell control.

Steady burn.

If main fails, spare is taken into use and an alarm is generated.

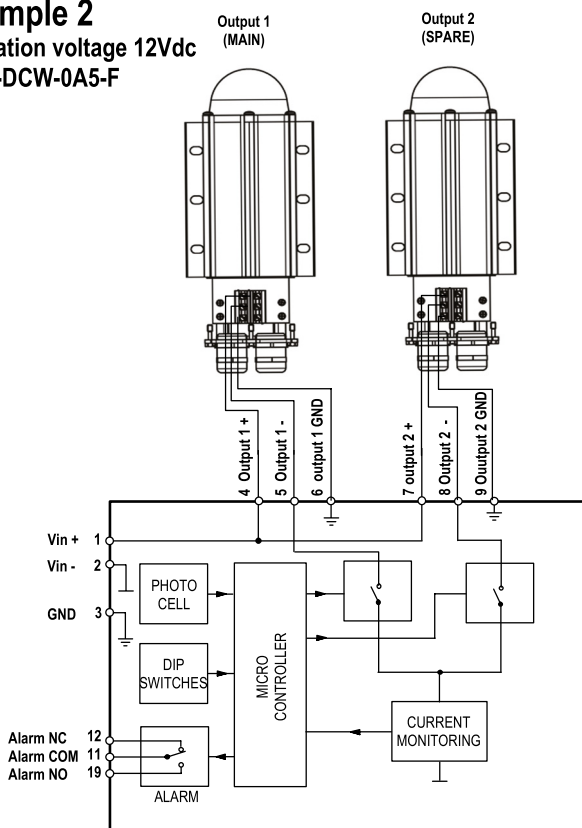
One light takes 70 mA, and the current alarm range is set to 48to 112 mA.

The correct DIP switch settings are shown below.

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

Example 2

Operation voltage 12Vdc
CSW-DCW-OA5-F



LED lights (LI-DCW-F) connected to both output 1 (Main) and output 2 (Spare).

Operation voltage 12Vdc

Photocell control, 200 lux selected.

Steady burn.

If main fails, spare 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.

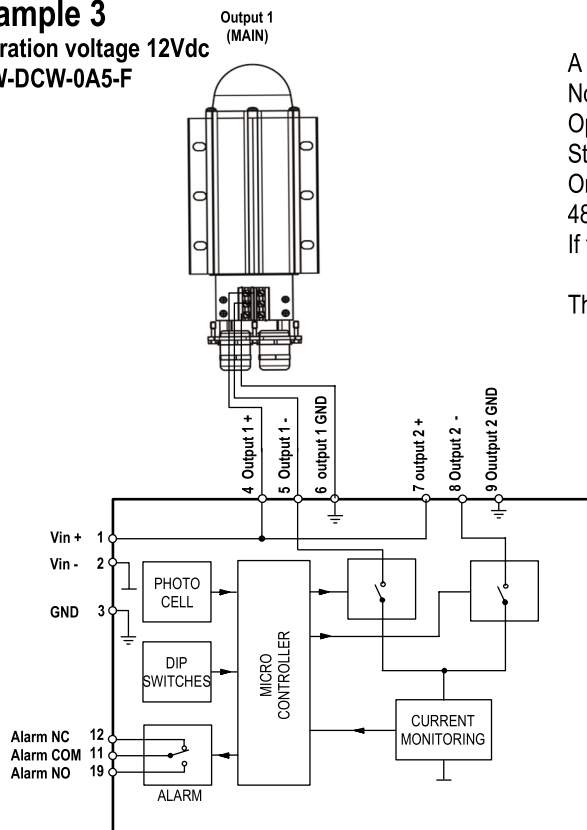
OFF	ON
<input type="checkbox"/>	<input type="checkbox"/> 1. N/A
<input type="checkbox"/>	<input type="checkbox"/> 2. N/A
<input type="checkbox"/>	<input type="checkbox"/> 3. Flash / Steady burn
<input type="checkbox"/>	<input type="checkbox"/> 4. Flash / Steady burn
<input type="checkbox"/>	<input type="checkbox"/>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

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CEL-CSW-DCW-OA5-F - Two Output Channels

Example 3

Operation voltage 12Vdc
CSW-DCW-OA5-F



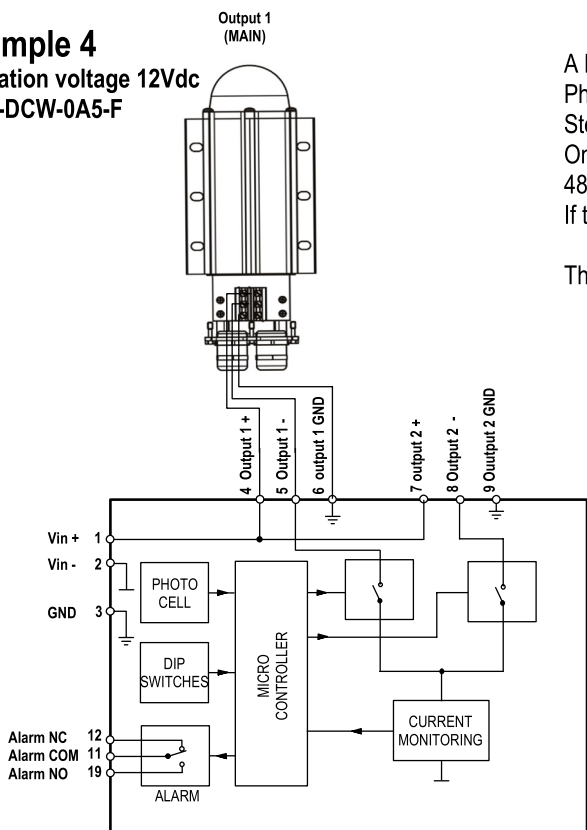
A LED light (LI-10-DCW-F) connected to Output 1 (Main).
No Photocell control
Operation voltage 12Vdc.
Steady burn.
One light takes 70 mA, and the current alarm range is set to 48 mA to 112 mA.
If the current consumption is outside this range, an alarm is generated.

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
CSW-DCW-OA5-F



A LED light (LI-10-DCW-F) connected to Output 1 (Main).
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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CEL-CSW-DCW-OA5-F - Two Output Channels

Switch	CSW-DCW-0A5-F switches					
1 to 2	not used					
3 to 4	Steady burn / Flash mode					
	3	4				
	on	on	Steady burn			
	on	off	Flash 60 FPM , Flash duration 250 ms			
	off	on	Flash 40 FPM , Flash duration 250 ms			
	off	off	Flash 20 FPM , Flash duration 250 ms			
5	Change mode					
	off Must be always off					
6	not used					
7	Photocell ON /OFF					
	on Photocell on. Day and night switch in use					
	off Photocell off					
8	Output 1-2					
	on A led light connected to Output 1 (Main) only					
	off Led lights connected to both Output 1 (Main) and Output 2 (Spare)					
9 to 12	Current alarm range			CSW-DCW-0A5-F		
	9	10	11	12	low limit[mA]	high limit[mA]
	on	on	on	on	12	28
	on	on	on	off	18	42
	on	on	off	on	24	56
	on	on	off	off	30	70
	on	off	on	on	36	84
	on	off	on	off	48	112
	on	off	off	on	60	140
	on	off	off	off	72	168
	off	on	on	on	90	210
	off	on	on	off	120	280
	off	on	off	on	150	350
	off	on	off	off	180	420
	off	off	on	on	210	490
	off	off	on	off	240	560
	off	off	off	on	300	700
	off	off	off	off	330	770
13	Photocell test mode					
	on - light switched on after 3 seconds delay and off after 3 seconds delay					
	off - light switched on after 3 seconds delay and off after 3 minutes delay					
14 to 15	Photocell sensitivity					
	14	15				
	on	on	100 lux on , 400 lux off			
	on	off	100 lux on , 100 lux off			
	off	on	200 lux on , 200 lux off			
	off	off	400 lux on , 400 lux off			
16	Indicator LEDs on/off					
	on Indicator LEDs in use					
	off Indicator LEDs not used					
	LEDs					
	Over Current	Current too high (red LED)				
	Under Current	Current too low (red LED)				
	OUTPUT 1 ON	Output 1 (Main) used (Green LED)				
	OUTPUT 2 ON	Output 2 (Spare) used (Green LED)				
	Self test OK	Steady green, when everything is OK				

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CEL-CSW-DCW-OA5-F - Two Output Channels

Obelux light unit current consumptions:

Type:	Voltage dc	Current (mA):	CSW -DCW-XX-F	CSW- XX - YY -F
10-12-F	12	200	02	12 - 16
32-12-F	12	750	02	12 - 16
30-12-CST	12	830	02	12 - 16
10-24-F	24	190	02	24 - 16
32-24-F	24	380	02	24 - 16
30-24-CST	24	420	02	24 - 16
150-24-CST	24	1600	04	24 - 16
10-48-F	48	100	02	48 - 16
32-48-F	48	190	02	48 - 16
30-48-CST	48	210	02	48 - 16
LI-10-DCW-F	12	70	0A5	12 - 02
LI-10-DCW-F	24	40	0A5	24 - 02
LI-10-DCW-F	48	23	0A5	48 - 02
LI-32-DCW-F	12	216	0A5	12 - 02
LI-32-DCW-F	24	110	0A5	24 - 02
LI-32-DCW-F	48	58	0A5	48 - 02
MI-IF-024	24	2400	04	24 - 16
MI-IF-048	48	1000	04	48 - 16

Example ordering codes for CSW: CSW-DCW-02-F CSW-24-16-F

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