INSTALLATION INSTRUCTIONS

MODEL SL100 REVISION: 08/11/2017



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MODEL SL100 DESCRIPTION

The SL100 LED STROBE LAMP is a long life strobe lamp for light based leak detection on conversion presses. It can be used in many different applications where light testing is being used for the detection of holes.

The SL100 LED Strobe significantly reduces operating cost due to downtime associated with change out of other limited life light sources, such as a Xenon Strobe. The life of the Xenon Strobe Lamp is only 3-4 months (50 Million ends), whereas the life of the SL100 LED Strobe is 6 years (1.5 Billion ends). The SL100 pairs with the Prime Controls Model LH200 Light Head to detect holes in ends 5 microns and below in size. Since the LED elements are spread across the face of the device, there is no lensing or "hot spot" created. Because of this, the system is able to detect the same size leaker across the entire end, not just where the xenon strobe light was focused.

SL100 PRODUCT SPECIFICATIONS

POWER:	24-29VDC, 1A average, 6A during flash.					
CONNECTION:	M12, 8-pin male pigtail, 12" long cable.					
STROBE:	Infrared LEDs for pin hole detection with white LEDs for easy strobe verification.					
DETECTION:	5 micron hole (0.0002") holes and below on standard beverage ends.					
SPEED:	1100 strobes per minute.					
EXPECTED LIFE:	6 years, 1.5 billion strobes.					
OUTPUT:	FLASH DETECT STATUS is a PNP sourcing, short circuit protected, active high output for 50msec after a good flash. There					
	is no output if there was an error detected during a flash. FLASH DETECT STATUS will source 50mA. The on voltage is the					
	supply voltage – 1.0 volt. The FLASH DETECT STATUS output is open when not active (no flash).					
INPUT:	TRIGGER is an active high 24V input whose rising edge causes the SL100 to flash. The input impedance is 15K ohms with					
	30volt transient clamps and a 7VDC threshold, normally driven by a sourcing PNP driver. TRIGGER is compatibles with					
	the LH200 TRIGGER output. The maximum TRIGGER rate is 1100 flashes per minute.					
COMMUNICATION:	Serial RS485 Half Duplex, for future use.					
POWER INDICATORS:	Power is good and the SL100 is ready when green.					
STATUS INDICATOR:	The built in flash monitoring circuit will flash the status LED Green for each good flash, Red for a bad or low flash,					
	and Amber if an input trigger is too fast.					
HOUSING:	Black anodized HRS base plate, painted aluminum cover.					
DIMENSIONS:	4.50"(114mm) x 3.13"(80mm) x 5.25"(135mm) tall.					
MOUNTING:	Supplied with grommets and 1/4-20 mounting screws for vibration control.					
	See also SL100 MOUNT AND VIBRATION CONTROL GROMMETS section.					

COMPLETE SYSTEM REQUIREMENTS

Each SL100 LED Strobe Lamp assembly requires one PS504 Din Rail Power Supply and one CBL128-10 10m cable.

- PS504: 24V DIN rail power supply with universal 100Vac to 240Vac input. This supply is designed for the impulse load generated by a SL100 flash. The PS504 mounts to standard DIN rail 35 mm x 7.5 mm x 1mm (1.37 x 0.29 x 0.03 inch).
- CBL128-10: 10 meter 8 pin shielded cable with a M12 circular connector to wire leads.



INSTALLATION AND OPERATING NOTES

- 1. Strain relief the cables near the SL100. Extra cable length should left in the wire trough and gutter. It is critical that all 4 wires (+24V x2 and the power return x2) should be directly attached to the +24V power supply for each SL100 and that the shield be directly tied to chassis ground.
- 2. Check the TRIGGER circuit to verify it is connected to the same lane LH200 LIGHT DETECTOR.
- 3. It is critical to install the SL100's bolt, washer, flat grommet, and walled bushing in the order and orientation shown in Figure6. The shoulder bolt and washer will allow complete tightening with proper compression of the vibration control grommet. The walled bushing pushed through the back side of the mounting plate controls the vibration in all axes.
- 4. The bottom LED array has WHITE and 860nm IR LEDs. The WHITE and IR lights are extremely bright and must never be directly looked at. The IR lights flash with each trigger and are much brighter than they appear because the flash is very quick and the majority of the light energy is not visible but infrared. The WHITE lights flash with each trigger and are there to verify the flash unit is functioning correctly. A cell phone camera may be used to check to see if the individual IR LEDs are on. Be aware that some cell phones do not detect infrared light or may only dimly show the infrared light. At all times observe this warning:

CAUTION LED RADIATION DO NOT STARE INTO BEAM

5. The top green POWER LED and the yellow STATUS LED on the SL100 will light as soon as power is applied. The yellow status light will then turn off after a few seconds when the power up check is complete and it is ready for a trigger.

RELATED PRODUCTS

In a typical 4 lane system, a single SQ100 controls the flash sequence for each of the 4 lane's pair of SL100 (4total) and LH200 (4total). SL100 LED Strobe Lamp (Qty 1/lane) PS504 Din Rail Power Supply (Qty 1/lane) CBL128-10 10m cable (Qty 1/lane)

LH200 Light Detector Array Head (Qty 1/lane) CBL108-15 15m cable (Qty 1/lane) SQ100 Sequencer (Qty 1/machine)



LH200 Light Detector Array

SQ100 Sequencer



1 LANE SL100 WITH LH200 INTERCONNECT DRAWING

MODEL SL100 KIT UPGRADE FOR PRESS CHECK SYSTEMS

- Table 1 shows the parts list and Figures 1 through 3 shows where the parts will be located. Figure 4 shows the required field modifications to the back panel. These Figures show a four lane configuration. Table 1 shows how to scale the parts for a 1 to 4 lane configuration. Figure 5 shows the electrical interconnect for the required SL100 system modifications and Figure 6 shows special SL100 mounting tips. Figure 7 shows the SL100 and mounting plate.
- 2. To replace the typical installation of xenon flash lamps the old assemblies, cables and wires must first be removed. Remove the old xenon flash tube assembly(s). Remove the cables from the old xenon flash tube assembly(s) to the terminal block in the Press Check Enclosure. Remove the 12VDC Power Supply and its wires to the terminal block in the Press Check Enclosure. Also remove the phone jacks and mounting plates and its wires to the terminal blocks. Do not remove the fault detect wiring from the terminal block in the Press Check enclosure to the PLC; it is used with the SL100. Do not remove the 24VDC power from the press to the Light Head Detector(s) or its wiring to the terminal block in the Press Check enclosure; it is still used.
- 3. Drill and tap through 4 M6 holes for the DIN rails as shown in Figure 4.
- 4. Install the DIN rails (item 3) as shown in Figure 3 using M6 screws (item 7).
- 5. Attach the 24V power supplies (item 5) to the mounting brackets (item 2) with M3 screws (item 6). Install the power supplies and brackets to the DIN rail as shown in figure 3. Be sure to maintain spacing between power supplies for air flow. The power supply input is 100-240VAC 1.9A. The output is 24V at up to 6.5Amps.

	QTY	QTY	QTY	QTY		
	with 1	with 2	with 3	with 4		
ITEM	SL100	SL100	SL100	SL100	NUMBER	DESCRIPTION
1	1	1	1	1	201989	CURRENTLY INSTALLED ENCLOSURE BACK PANEL
2	1	2	3	4	201982	POWER SUPPLY BRACKET ALTER PRIME PART NUMBER
3	1	1	2	2	201983	4.25INCH DIN RAIL
4	1	1	1	1	201990	CURRENTLY INSTALLED ENCLOSURE
5	1	2 3	2	3 4	201973	POWER SUPPLY Leak Check System 24V Supply
			5			RWS150B24
6	2	4	6	8	200857-06.0	BHCS M3 X 0.5 X 6
7	2	2	4	4	201986-08.0	BHCS M6 X 1 X 8
8	2	2	4	4	201207	DIN RAIL STOP
9	1	2	3	4	CBL128-10	10 METER CABLE 8 CONDUCTOR WITH SHIELD FEMALE
					201935	M12



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Figure 4 (ALL UNITS ARE IN INCHES)

- 6. Install wiring and cables as shown in Figure 5. Use existing feed through and strain relief for the 10 meter cables (item 9) to the SL100. Extra cable length should left in the wire trough and gutter. It is critical that all 4 wires (+24V x2 and the power return x2) should be directly attached to the +24V power supply for each SL100 and that the shield be directly tied to chassis ground.
- 7. Verify the FLASH DETECT circuit is completed through to the PLC for each SL100.
- 8. Verify the TRIGGER circuit is completed through to the same lane LH200 LIGHT DETECTOR.
- 9. Verify the LH200 LIGHT DETECTOR and the SQ100 SEQUENCER are powered by +24V from the press. The newly installed SL100 +24V power supplies may be used if more convenient.
- 10. It is critical to install the SL100's bolt, washer, flat grommet, and walled bushing in the order and orientation shown in Figure6. The shoulder bolt and washer will allow complete tightening with proper compression of the vibration control grommet. The walled bushing pushed through the back side of the mounting plate controls the vibration in all axes. The extra washer and nut are for shipping purposes only and may be discarded. Repeat for all four mounting holes on each SL100.
- 11. The bottom LED array has WHITE and 860nm IR LEDs. The WHITE and IR lights are extremely bright and must never be directly looked at. The IR lights flash with each trigger and are much brighter than they appear because the flash is very quick and the majority of the light energy is not visible but infrared. The WHITE lights flash with each trigger and are there to verify the flash unit is functioning correctly. A cell phone camera may be used to check to see if the individual IR LEDs are on. Be aware that some cell phones do not detect infrared light or may only dimly show the infrared light. At all times observe this warning:

CAUTION LED RADIATION DO NOT STARE INTO BEAM

- 12. After checking the wiring, power may be applied. The top green POWER LED and the yellow STATUS LED on the SL100 will light as soon as power is applied. The yellow status light will then turn off after a few seconds when the power up check is complete and it is ready for a trigger.
- 13. The STATUS LED is GREEN for a good flash, RED for a bad flash, and YELLOW if the TRIGGER is too fast.
- 14. TRIGGER is an active high 24V input whose rising edge causes the SL100 to flash. The maximum TRIGGER rate is 937 flashes per minute. The input impedance is 15K ohms with 30volt transient clamps. Trigger is compatibles with the LH200 TRIGGER output.
- 15. STATUS is an active high output for 50msec after a good flash. There is no STATUS output if there was an error detected during a flash. STATUS will source 50mA. The on voltage is the supply voltage 1.0 volt. The STATUS output is open when not active (no flash).
- 16. The SL100 has an estimated 6 year life.
- 17. The SL100 and mounting plate dimensions are shown in Figure 7. The SL100 is 5.3 inches tall.

PRESS CHECK SYSTEM INTERCONNECT DRAWING



See Page 7 for Further Interconnect Details

SL100 MOUNT AND VIBRATION CONTROL GROMMETS





Figure 6







LIMITATION AND EXCLUSION OF WARRANTIES

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