

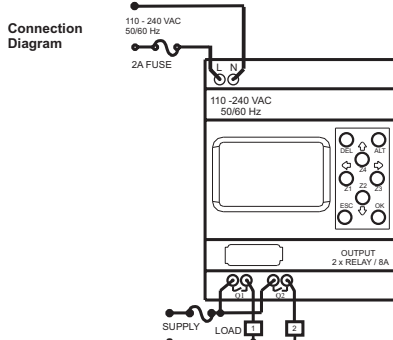
# Lighting Control Unit from **RIPLEY**

## What is "Lighting Control Unit"?

This is an astronomical time switch specifically designed for lighting applications. It can be programmed to turn ON and turn OFF the lights with reference to the sunrise and sunset. It has two relay outputs. Each relay can be independently programmed for ON or OFF operation by specifying the time offset and OFF-Hours with reference to sunrise and sunset.

## Safety Notice

- Turn off the mains power supply before installing or rewiring the unit.
- Connect a fuse (250mA/250VAC) in series with AC Live line.
- Take all necessary measures to avoid unwanted relay triggering.
- Make the necessary ground connections
- Always follow the instructions stated in this user's guide.
- Remember, only qualified person are authorized to install the device.
- Automation and control devices must be installed so that they are protected against any risk of involuntary actuation.
- It is essential to ensure that all control system connections meet applicable safety standards.
- Fluctuations or variations in the mains supply voltage should not exceed the tolerance stated thresholds.



Note :- Please use proper lugs for connections

## Manual Override Modes

- **Manual ON / OFF:** This mode is used to turn ON/OFF the output forcefully (manual mode). Once this mode is selected the output remains in ON/OFF condition forever unless user selects another mode.
- **Auto-ON / OFF:** This mode is used to turn ON/OFF the output forcefully, but in this mode the ON/OFF condition will not be forever. The device will change the operating mode to AUTO on next auto event. For example, user selects Auto-ON/OFF at 4:00 P.M. and device has OFF event at 6:00 P.M. The device will remain ON/OFF from 4:00 P.M. to 5:59 P.M. and become OFF at 6:00 P.M. Because the device will automatically shift to AUTO mode at 6:00 P.M., which is next auto event.
- **AUTO:** In this mode the status of the output channel is decided automatically according to the settings made in the device, the present clock, and the sunrise/sunset time or Twilight.

## Basic Features

- **Trigger Modes:** The time settings of all outputs can be either referenced from timings of sunrise/sunset or twilight. The trigger mode SRISE/SET will provide the reference time from sunrise/sunset, while, the trigger mode TWILIGHT will provide the reference time from being/end of twilight.
- **Day-light Saving Time (DST):** DST is the period in which clocks are set one hour or more ahead of standard time to provide more daylight at the end of the working day. The Device provides automatic DST switching for regions like, North America, Europe, Australia, and New Zealand. Device also provides custom settings to define DST period and DST offset time.
- **Operating Modes (Op-mode):** The device has three operating modes ON, OFF, and PULSE. An 'ON' op-mode causes an output is to be turned ON on event. 'OFF' op-mode causes an output is to be turned OFF on event. A 'PULSE' operational mode is to be used to have an output ON for few seconds on event.
- **Offset from Rise/Set:** Sometimes it may be necessary to have an output action before or after some time of rise/set. This can be achieved using OFFSET feature of the DEVICE. The Device allows offset up to +/- 23:59.
- **Off-Hours:** This feature is to turn off any output for a particular time period. Maximum 23 hours of Off-hours can be set individually for every output. For example, off-hours from 23:00 to 2:00 will switch the output OFF for three hours everyday.
- **Alternate Mode:** In this mode the Off-Hours feature is applied to alternate output on alternate days. This mode is useful to save energy due to the off-hours feature and is useful to save the load's life due to an alternate action.
- **Weekly Off:** This feature will automatically keeps offan output on weekly off ays(s). However Device allows to programming weekly off day(s) and related begin/end time. This feature offers energy savings by switching an output OFF on week-off day(s). This feature can be set individually for every output. For example, the Device with weekly-off feature set from FRIDAY 23:00 to MONDAY 06:00, will make the output OFF from 23:00 on every Friday up to 6:00 on every Monday.
- **Season Mode:** In a rainy season or in a cloudy atmosphere, sunlight may be insufficient. Hence different time offset needs may be programmed to control light switching in such season. The user can program period during season with related time-offset. This feature avoids frequent interaction of the user with the device.

## Technical Data

**Supply voltage:** 110-240VAC  
**Supply variation :** -20% to +10% of Un  
**Frequency:** 50/60 HZ  
**Consumption:** max 6 VA  
**Clock deviation (max):** +/- 1 sec per day @ 20 °C  
**Contact rating:** 8A (Resistive Load) 28 VDC/ 240 VAC  
**Battery reserve:** 1000Hrs  
**Mounting:** Base/ DIN rail  
**Dimension:** 72(4 Modular Spaces) X 90.5 X 67 mm  
**Storage temperature:** -10°C - 65°C  
**Operating temperature:** 0°C - 50°C  
**Calculation Accuracy:** +/- 2 min

## EMI/EMC Specifications

Specification - EN 61000-4-5  
 Test - Surge  
 Result - Level IV  
  
 Specification -EN 61000-4-4  
 Test - Fast transients  
 Result - Level IV 4 KV  
 Frequencies 5KHz -100KHz  
  
 Specification - EN 61000-4-11  
 Test - Voltage dips  
 Result - 30% reduction / 100mS, 60% reduction / 10 ms  
  
 Specification -EN 55011  
 Test - Radiated noise from product to power line  
 Result - 0.15MHz-0.5MHz, 79dBu V Quasi Peak, 66dBu V Average  
 0.50MHz-30MHz 73dBu V Quasi Peak, 66dBu V Average

## Auto/Manual Overriding

- Overriding Manual ON:** To turn output Q1 ON in manual mode, keep pressing z1 key until you see "Q1-M<sup>h</sup>" on run screen.
- Overriding Manual OFF:** To turn output Q1 OFF in manual mode, keep pressing z1 key until you see "Q1-MX" on run screen.
- Overriding Auto-ON:** To turn output Q1 ON in semi-auto mode, keep pressing z1 key until you see "Q1-A<sup>h</sup>" on run screen.
- Overriding Auto-OFF:** To turn output Q1 OFF in semi-auto mode, keep pressing z1 key until you see "Q1-AX" on run screen.
- Overriding Auto:** To switch output Q1 in auto mode, keep pressing z1 key until you see "Q1-A" on run screen.
- Note:** To override the Output-Q2 use z2 key respectively.

1. Setting Date/Time	
	Select DATE/TIME functional block using following sequence of menus, SETTINGS → CLOCK → DATE/TIME (Refer Appendix-A for more detail)
DD/MM/YY 09 / 09 / 06 HH:MM 05 : 30	Set the date/time parameters. (Refer Appendix-B for more detail)

2. Setting Latitude and Longitude	
	Select LAT/LONG functional block using following sequence of menus, SETTINGS → LAT/LONG  (Refer Appendix-A for more detail)
LONGITUDE 073° - 55' LATITUDE N 18° - 31'	Set the longitude/latitude parameters. (Refer Appendix-B for more detail)

3. Data transfer: DEVICE ↔ MEMORY CARD	
	To transfer data from DEVICE to memory card, use following sequence of menus TRANSFER → DEVICE->CARD
	To transfer data from memory card to DEVICE, use following sequence of menus TRANSFER → CARD-> DEVICE  (Refer Appendix-A for more detail)

4. Setting Alternate Mode	
	Select ALT MODE functional block using following sequence of menus, EDIT → ALT MODE (Refer Appendix-A for more detail)
ALT SET ALTERNATE MODE?	Change the parameter from 'N' to 'Y'. Then press <b>OK</b> key.  (Refer Appendix-B for more detail)
ALT MODE COMBINATION	Set the combination outputs in ALT mode. Press <b>OK</b> key.  (Refer Appendix-B for more detail)
OP - MODE ALT OFFSET OFF HOURS WEEKLY OFF	Now set operating mode, offset, off-hours, and weekly-off feature in ALT mode using this menu.

5 Setting Custom DST	
	Select DST functional block using following sequence of menus, SETTINGS → CLOCK → DST (Refer Appendix-A for more detail)
X NAM X ALS X EUR X NZL CUSTOM	Select check mark ✓ against CUSTOM option.  Then press <b>OK</b> key.
DST BEGIN 11/11/2006 12:00	With this screen set DST begin period by setting required date and time. (Refer Appendix-B for more detail)
DST END 11/03/2007 12:00	With this screen set DST end period by setting required date and time. (Refer Appendix-B for more detail)
DST OFFSET TIME 00	Now set the required DST offset time. (Refer Appendix-B for more detail)

6. Setting Off-Hours	
Note-1: To set Off-Hours of Q2, use Q2 PARAMS menu.  Note-2: To set Off-Hours of ALT mode, select ALT's OFF-HOURS menu .	Select OFF-HOURS functional block OF Q1 using following sequence of menus, EDIT → Q SETTINGS → Q1 PARAMS → OFF HOURS (Refer Appendix-A for more detail)
OFF HOURS? Q1 START - 00 : 00 END - 00 : 00	To enable this feature, select 'Y' at shown cursor position. Then set start and end time. (Refer Appendix-B for more detail)

7. Setting Offset (from Rise and/or Set)	
Note-1: To set Off-Hours of Q2, use Q2 PARAMS menu.  Note-2: To set Off-Hours of ALT mode, select ALT's OFFSET menu .	Select OFFSET functional block of Q1 using following sequence of menus, EDIT → Q SETTINGS → Q1 PARAMS → OFFSET (Refer Appendix-A for more detail)
RISE Q1 + 00 : 00 SET + 00 : 00	Set the offset as per requirements. (Refer Appendix-B for more detail)

8. Setting Weekly Off	
Note-1: To set Off-Hours of Q2, use Q2 PARAMS menu.  Note-2: To set Off-Hours of ALT mode, select ALT's WEEKLY OFF menu .	Select WEEKLY OFF functional block of Q1 using following sequence of menus, EDIT → Q SETTINGS → Q1 PARAMS → WEEKLY OFF (Refer Appendix-A for more detail)
SET? Q1 BEGIN END SUN SUN 00:00 00:00	To enable this feature, select 'Y' at shown cursor position. Then set begin-day/time and end-day/time. (Refer Appendix-B for more detail)

9. Setting a operating mode (PULSE for example)	
Note-1: To set Off-Hours of Q2, use Q2 PARAMS menu.  Note-2: PULSE mode is not available for ALT MODE.	Select OP MODE functional block of Q1 using following sequence of menus, EDIT → Q SETTINGS → Q1 PARAMS → OP MODE (Refer Appendix-A for more detail)
OP - MODE Q1 RISE -- OFF SET -- ON	Change the RISE mode from OFF to PULSE. Press <b>OK</b> key to go to set pulse  (Refer Appendix-B for more detail)
PULSE PERIOD Q1 RISE : 01 SEC SET : 01 SEC	Set RISE pulse period in seconds.  (Refer Appendix-B for more detail)

10. Settings Seasonal Mode	
	Select SEASON MODE functional block using following sequence of menus, EDIT → SEASON MODE (Refer Appendix-A for more detail)
ENABLE SEASONAL MODE?	Change the parameter from 'N' to 'Y'. Press <b>OK</b> key.  (Refer Appendix-B for more detail)
SEASON PERIOD DD/MM FROM 01 / 06 TO 01 / 09	Set required season period by setting begin and end day/month. Similarly set required season offsets for Q2 and ALT.  (Refer Appendix-B for more detail)
SEASON OFFSET Q1 RISE + 00:30 SET - 00:30	Set required season offset for output Q1. Similarly set required season offsets for Q2 and ALT.  (Refer Appendix-B for more detail)

Appendix A – Selecting a required menu	
This section describes how to select a menu. The menu selection is required either for selecting a sub-menu or for viewing a functional block for setting parameters. The following example illustrates how to view today's sunrise/sunset.	
Q1-A Q2-A 09/09/06 WED 11:00 ESC	On power up this screen will be displayed. Press <b>ESC</b> key to view main menu.
EDIT... VIEW... SETTINGS... TRANSFER...	Press <b>Z2</b> or <b>Z4</b> key to move cursor to "VIEW" Menu. Then Press <b>OK</b> key.
SUN TODAY Q TODAY...	Press <b>Z2</b> or <b>Z4</b> key to move cursor to "SUN TODAY" Menu. Press <b>OK</b> key.
RISE 05 : 30 SET 18:40	

Appendix B - Setting the value of parameter	
The following example illustrates the procedure to set the value of parameter in detail. This procedure can be used for setting any parameter in function block. Here the time zone value is to be set to +05:35.	
GMT 04:50	When user selects "TIME ZONE" menu, this screen appears. As an example it shows the time zone that was set to -4:50. Start pressing <b>Z1</b> or <b>Z3</b> key to locate the cursor at +/- sign. Once cursor is located, press <b>ALT</b> key to edit the value.  The digit or character under cursor starts blinking.
GMT 04:50	Press <b>Z2</b> or <b>Z4</b> key to change sign to '+'. Then press <b>ALT</b> key fix the change.
GMT 04:50	Keep pressing <b>Z1</b> or <b>Z3</b> key to locate the cursor at '04'. Once cursor is located, press <b>ALT</b> key to edit the value. The digit or character under cursor starts blinking.
GMT + 04:50	Press <b>Z3</b> key to select second digit of '04'. Now press <b>Z4</b> key to increment digit to '05'. Then press <b>ALT</b> key fix the change.
GMT + 05:50	Keep pressing <b>Z1</b> or <b>Z3</b> key to locate the cursor at '50'. Once cursor is located, press <b>ALT</b> key to edit the value. The digit or character under cursor starts blinking.
GMT + 05:00	Press <b>Z2</b> key two times to decrement digit to '3'. Press <b>Z1</b> or <b>Z3</b> key to select next digit.
GMT + 05:30	Press <b>Z4</b> key five times to increment digit to '5'. Then press <b>ALT</b> key fix the change.
GMT + 05:35	Press <b>OK</b> to save the entire changes. Or press <b>ESC</b> to discard the entire changes.