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Product Overview

Lumen

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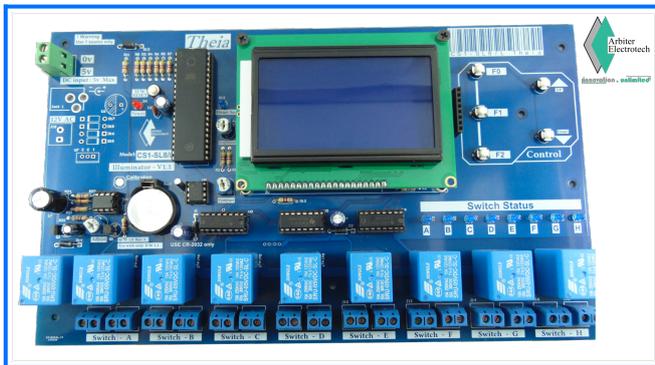
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1. Applications

- Automatic schedule based illumination controller for any residential or commercial architecture
- Security light, Street lights, Convenience lighting, Decorative illumination, Advertisement apparatus
- Any application where an automated schedule based power/switching controller is needed

Aforementioned applications only represent the most common examples. Real scope of applications are much wider and depends largely on the situation, application and the users.



2. Product Features

- Completely new type of product for untapped Bangladeshi market
- Fully automatic operation with intelligent “*Set & forget*” algorithm
- Intelligent Automation algorithm, requiring minimum human touch
- 8 individual programmable channels with individual schedule each
- Large Graphic Liquid Crystal display with easy to use & intuitive user interface
- Load protection in case of voltage fluctuation in power lines
- Completely “Sensorless” operation
- Dedicated Real Time Clock chip to keep accurate timetable
- Battery backup to keep programmed data in case of power outage
- Optional full manual operation
- Low power consumption in both idle & active mode
- Compatible with any external electromagnetic contactor (suitable for both 110 V & 220 V)

3. Product Description

“Lumen” is an eight channel programmable control system, designed specifically to handle different types of lighting systems in **residential** and **commercial** buildings/properties/architectures. Lumen features eight individual switches. Each switch can be programmed differently to follow a different schedule. Large Graphic LCD, minimalist control panel and intuitive user interface makes Lumen an extremely efficient and safe replacement to any human asset.

Applications of Lumen includes but is not limited to security and decorative lighting control in commercial and residential buildings, digital billboard, commercial billboard lighting, decorative lighting on bridges and national landmarks, streetlight and more. Lumen can be used in any applications that require a strict daily schedule based task execution.

The user have to set up the schedule for the switches just once, and the “*Set & forget*” algorithm of Lumen will strictly follow the given schedule. All outputs of Lumen have UL Listed electromagnetic relay switch that is turned On/Off based on the schedule and the user’s requirement. The UL listed electromagnetic relay switches can handle enough power for any medium power residential/commercial requirement. In case of high power requirement, electromagnetic contactor from brands like **Siemens**, **LS** or **ABB** can be used to with the Lumen.

Lumen offers its users a complete “sensorless” operation. Lumen doesn’t require any kind of sensor to work flawlessly. In case of power outage, internal battery keep the user data safe in its memory. Lumen has been designed to automate mundane repeated tasks without the need for any human touch while requiring as less maintenance as possible. When deployed properly, Lumen along with uPAC can remove human from repeated mundane tasks and make the overall system more efficient, self sufficient and secured.

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4. Applications Overview

Residential and commercial applications of Lumen includes lighting for an entire building including security lighting at the main entrance, the parking lot, lighting for the stairway and passage, illumination for garden and general relaxation areas along with all decorative lighting such as building name signboard. Non lighting applications can include decorative materials such as water fountains, LED strips and spot lights.

Lumen can be used to automate the entire streetlamp controlling system for a small area. With proper power switching and handling equipment, Lumen can be used to control the street lighting for an entire area such as Dhanmondi. Furthermore, lighting responsibility for recreation parks, bridges, landmarks, walkway etc.

Although “Lumen” has been designed with the intention to handle lighting applications for residential, commercial and business applications, the possible applications are limitless. As Lumen doesn't use any sensor for normal flawlessly operation, the operation, maintenance and manufacturing is significantly easier than the sensor based products. As Bangladesh is making advancements in the economic arena, automation is going to be a demanding aspect of the society very soon. At present, Lumen has negligible competition in Bangladeshi market.



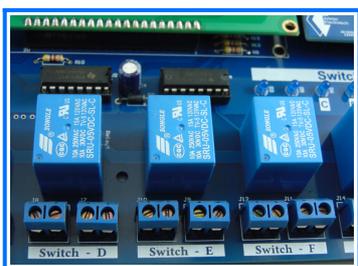
Large Graphic LCD

Alphanumeric LCD makes for an intuitive user interface. However, a Graphic LCD makes for an even better user interface. Lumen features a 2.4 inch GLCD. Large size of the display along with graphical properties means that the user interface will be really easy to understand and use.



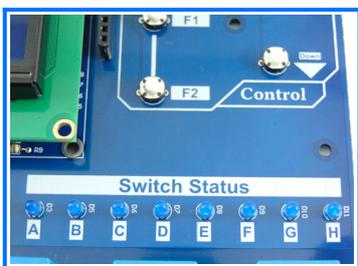
Easy & Minimalist Control

Lumen is as easy to use as using a cell phone. The minimalist control panel and the straightforward user interface makes Lumen one of the most easy to use device in the market. Anyone can use Lumen perfectly with just a little introduction.



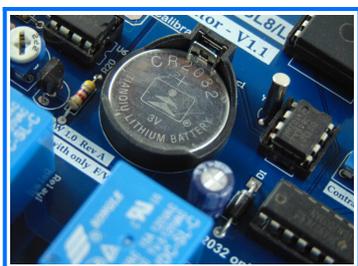
8 Individually Programmable Channels

Lumen has eight total channels. Each channel can be programmed separately with an individual schedule. This gives the user a lot of freedom to use any channel as they prefer. Each channel is connected to a **UL Listed** relay switch and a pair of **UL Listed** screw terminals.



Visual Notification without the GLCD

Visual notification is the key for safety. Lumen shows the switch status in both the display and in the dedicated visual notification section. The visual notification is conducted by using bright LED. Each channel has one dedicated LED to show if that particular channel is active.



Battery Backup for Memory

Lumen has 56KB of onboard memory to store all user defined data. To ensure no data is lost in case of any power outage, Lumen has its own built in battery to guarantee the safety of the user's settings and schedule.

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5. Lumen Specifications

■ Device Properties	Number of Individual Channels	8
	Application type	Schedule with single interval
	Schedule type	User Defined
	Total number of schedules	8 (One per channel)
	Automation type	Full Auto & full manual
	Control type	Button & Display based User Interface
■ Power Consumption	Operating voltage	5 Volts
	Current Consumption ^{*1}	<10mA when idle, 330mA max when active
■ Relay Switch	Relay type	Electromechanical (SPDT)
	Coil Voltage	5 Volts
	Relay load Current (maximum)	10A @ 250VAC, 15A @ 120VAC
	Relay Load Current (Recommended ^{*2})	3A @ 110/250VAC
	Relay Certification ^{*3}	UL
■ Power/Sensor Connector	Power/Sensor Connector type	Screw Terminal (caged)
	Screw Terminal Rated load Current	10A
	Screw Terminal Recommended load Current	1A @ 220VAC
	Screw Terminal Certification ^{*3}	UL
■ PCB	PCB type	FR-4, double sided
	Component mounting	Through Hole only (single sided)
■ Power Supply options	AC-DC with a 220 VAC to 6VAC step down transformer (rectifier, regulation and smoothing circuits are built in)	
	Direct 5VDC input from any external source	
	Dedicated 5VDC input via barrel connector	
■ Display	Display type	Graphical Liquid Crystal Display (GLCD)
	Display Chipset	STMicroelectronics ST7920 Chipset
■ Others	Sensors	None, Complete sensorless operation
	Memory backup battery	3V Lithium Coin Cell

Notes:

1. Current consumption is measured only for uPAC & doesn't include the current consumption of the external contactor
2. The value is recommended by Arbiter Electrotech
3. All certification procedures were completed by the respective component manufacturer

Complete specifications, functionality & datasheet are available on request only

- Specifications are subject to change without any prior notice.
 - For updated specifications and information, visit www.arbiterelectro.com/product/lumen or contact us at support@arbiterelectro.com
 - For business purposes, contact us at business@arbiterelectro.com
 - For any purposes, contact us at arbiter.electro@gmail.com

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