LCM-PK SERIES

Parking Deck Photo/Time Clock
Lighting Controller

DESCRIPTION

The **LCM-PK** photo sensor lighting control systems automatically switches lights in response to changes in natural daylight. The **LCM-PK** consists of a microprocessor controller, Hand/Off/Auto switches, terminal blocks and with 4 and 8 pole 20A lighting contactors all housed in a surface mount enclosure.

The standard **LCM-PK** has two outdoor control channels capable of switching rows of parking deck luminaries when natural light is sufficient to maintain safe operational lighting levels. Each of these channels is operated by a single photodiode outdoor sensor, located on either side of the parking structure.

ADJUSTABILITY/OPERATION

The **LCM-PK** is easily configured for the appropriate lighting level to optimize energy savings. The LCD Screen prompts you to enter photo sensor setpoint limits and lets you override the controller. Lights turn ON at the Low setpoint and Off at the High setpoint with digital precision. The deadband keeps the lights stable during changing conditions. Hold on timers allow HID fixtures to reach their full operating temperature before they are turned off. This protects the lamps and fixtures from detrimental short cycling.

CONSTRUCTION

The **LCM-PK** controller has been designed with safety in mind. The processor is located in the low voltage compartment, ensuring safety during adjustment. The low voltage sensor housing meets flame retardant requirements of UL standard 94V-0. The sensor has a weatherproof visored housing. All products are factory tested and pre-calibrated to assure maximum reliability.

The entire assembly is mounted in a surface mount NEMA/EEMAC TYPE 1 enclosure with the high and low voltage components separated by a barrier.

The **LCM-PK** is constructed to ANSI/UL 508 and CAN/CSAC22.2-14M91 standards and each unit carries an Electrical Testing Laboratories label.

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FEATURES

The advantages of using the **LCM-PK** lighting control system are found in stability, versatility, quality and accuracy. The **LCM-PK** offers a complete installation package. Once mounted, the sensor, power, and lighting loads need only to be wired, and the **LCM-PK** is ready to operate.

Other advantages are:

- **Easy adjustment of On and Off set points using front buttons or optional PC software.**
- **Accumulated Run Time Hours are logged.**
- **4 modes of Operation: On & Off Override, Setup (No timers) and Auto (Full program).**
- **Standard 32 circuits, are expandable in groups of 4.**
- **Base system uses single Outdoor linear photodiode sensor calibrated to 300FC. Additional indoor or outdoor photodiode sensors can be calibrated as specified.**
- **Optional time-clock or override switches, switch Off by timer or next event.**
- **Input time delay, prevents intermittent or false switching.**
- **1/2 hr Hold-On-Timer prevents High**

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APPLICATION

The **LCM-PK** is an ideal system for multiple circuit outdoor lighting control where two monitoring points are required. Each side of the parking deck is controlled by a dedicated channel and sensor. Other zones in a parking deck include top deck night lighting, entrance contrast lighting, and interior and underground areas, all of which have different requirements. (For more information on the differences between these applications, contact **PLC-Multipoint**.) Mixed lighting loads (HID, fluorescent and incandescent) can be accomplished in a single unit.

SPECIFICATION

CONTROLLER

Each Controller shall be powered by 120VAC and shall have a 40 character LCD to display current sensor readings, setpoint settings and relay status. The controller shall be enclosed in a NEMA/EEMAC 1 enclosure for surface mounting installation. Front door operators shall include a HAND/OFF/AUTO selector and LEDs to indicate each channel's contactor output.

Each of the two channels shall have a 60 second input time delay that shall keep the controller from responding from transient sensor signals, and a 1/2 hour hold on timer to prevent short cycling of HID fixtures. Individual channel high and low setpoint limits shall be adjustable from controller increment, decrement and pagination navigation keys, The run-time hours of each channel shall be accumulated and displayed and be capable of being reset.

The controller shall have an OFF/ON/SETUP/AUTO mode selection screen, whereby setup bypasses the timing functions and auto enables the full controller algorithm. The display shall indicate the on or off status of each output channel. The program shall be stored in **EEPROM**. Setpoints, accumulated hours, and operating mode information is stored for 20 days using non-battery capacitive backup.

The relay output shall be capable of 20A current load at 120,277, 347,480, or 600V. Lighting contactors shall be assigned to channel outputs in groups of 4 circuits. The total number of poles shall be expandable to 48.

The controller shall be capable of 24 hour time of day schedule and seven day weekly schedule for each of the output channels. Daylight savings time shall be automatically adjusted.

OPTIONS

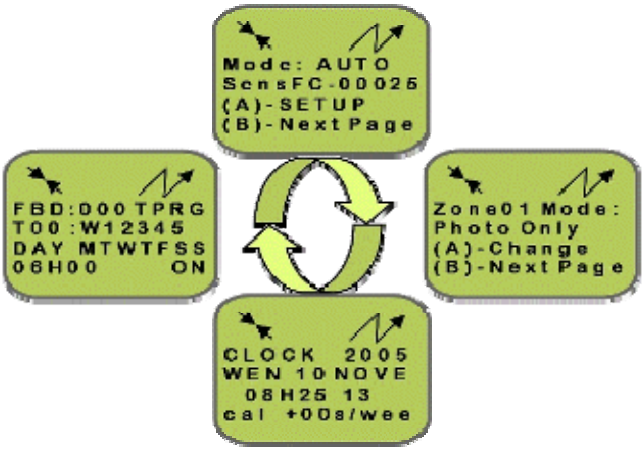
Communication options shall include direct serial RS232 interface to a PC, fiber optic communication, and local multi-drop communication bus.

Output options shall include: contrast lighting output, wiring to contactor poles to terminal block, latching mechanically held contactors, pulsed alternating output, duty cycle output, security night circuits, and warning flash on end of period.

The controller shall be capable of being overridden by momentary switch closure for either a fixed time period, or until the next scheduled event.

The Controller shall be **PLC-MULTIPOINT LCM-PK** Series.

LCM-PK Display Screen



OUTDOOR PHOTODIODE SENSOR

The Photoelectric device shall be a Class 2, low voltage ambient light sensor designed to interface directly via 18 gauge wire to the controller. The sensor shall supply an analog input signal to the controller proportional to the light measured. The sensitivity adjustment shall be at the control panel enclosure. The sensor housing shall be flame retardant and meet UL 94 HB standards.

The outdoor sensor shall have a hood over the aperture to shield the photodiode from direct sunlight. The outdoor sensor circuitry shall be completely encased in optically clear epoxy resin. The sensor shall mount to a standard threaded 1/2" conduit or fit a 1/2" knockout. The Outdoor sensor shall be calibrated to a range of 300 FC full scale. The Photoelectric sensor device shall be a **PLC-MULTIPOINT CES/O** sensor.

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LCM-PK TECHNICAL DATA

Input Voltage:	120/277 VAC standard
Deadband:	Adjustable - 0-100% of Sensor Range
Channels:	2 Standard, 4 or more available
Input Delay:	Standard - 60 seconds (Setup mode override)
Output:	32 120V 20A expand in groups of four
Load:	Incandescent, Fluorescent & HID
Enclosure:	NEMA1 - 24"Hx18"Wx6"D
Control Modes:	Displayed on LCD Mode Screen: **OFF:** Force lights OFF **ON:** Force lights ON **SETUP:** Photo setpoint control - No timers **AUTO:** Photo sensor control With timers (ON at LOW, OFF at HIGH set points)
Hold-ON-Timer:	30-minutes. (Setup mode override)
Control Inputs:	Photodiode **CES** Sensor Low voltage switches
Indicators:	Control Outputs displayed on I/O Screen. Door: Red Relay on LED
Door Override:	Hand & Off: Bypass Controller Auto: processor control
Sensor Type:	Compatible with any CES/O Sensor
Sensor Accuracy:	+/-1% at 70F. (21C.) Derated to +/-5% above 120F. or below 0F. (49C. / -18C.)
Sensor Temperature:	-13F. to 140F. (-11C to +60C) Contact factory for lower temperature operation.
Output Range:	0-300 Fc as standard. Consult PLC-Multipoint for other ranges.

LCM-PK PANEL ASSEMBLY

ORDERING MODEL
(Insert variables from numbered columns.)

EXAMPLE: LCM-PK 2-3-3-8-120-4X-MAS/O-SEH, TC7.
Configures LCM-PK for parking structure, with 3 sensor inputs, 3 outputs with each controlling 16, 16 and 8 poles. The control power is 120V in a NEMA 4X enclosure. The options include a heated sensor housings, and 7 day time clock.

LCM-PK A___- B___- C___- D___- E___- F___-G___-H___.

A Configuration	**B** Inputs	**C** Zones	**D** Poles/Zone	**E** Volts	**F** Encl. (NEMA)	**G** Sensor	**H** Options
1= Single Side 2= Side & Top Deck 3= Entrance Contrast 4= Side, Top, Contrast 5= Underground 6= Design & Build	1 - 12	1 - 8	4, 8, 12, 16, 20, 24	24VDC 120 277 480 347 600	1, 3R, 4X, 12	CES/I CES/IL CES/O CES/A CES/S MAS/I MAS/O MAS/A MAS/S MSC MSW MSR MSS MSC2 MSR2	See LCM Option List located at the end of the LCM system product data sheets.

Contact us if you need further assistance.

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NO.	REVISION/ISSUE:	DATE:
1	PLC-MULTIPOINT CONTINUE TO IMPROVE THEIR	05/22/06
	REVISION PROCESS	

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DWG. NO:	DATE:	SHEET:	REV
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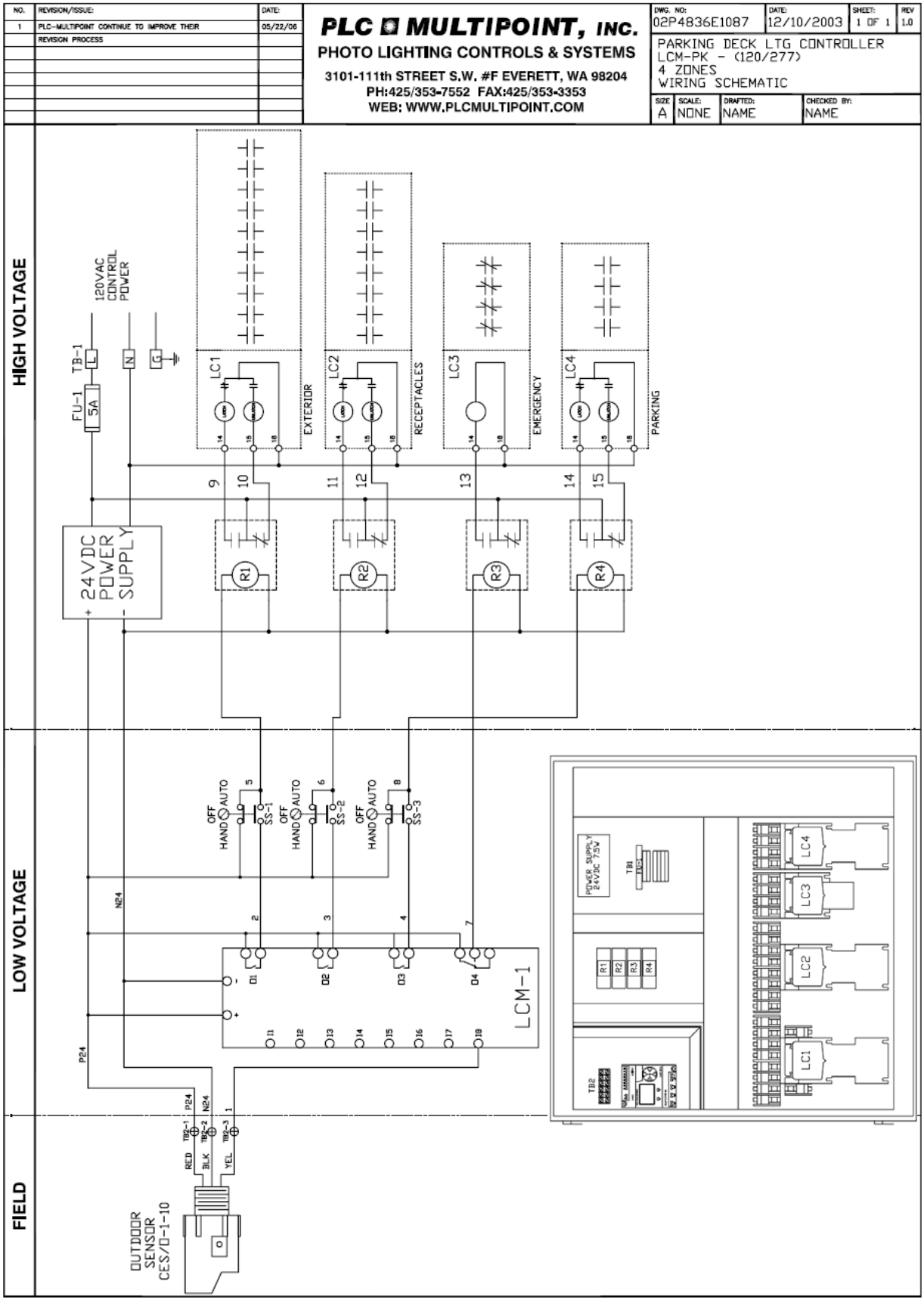
PARKING DECK LTG CONTROLLER
LCM-PK - (120/277)
4 ZONES
WIRING SCHEMATIC

SIZE	SCALE:	DRAFTED:	CHECKED BY:
A	NONE	NAME	NAME



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