



# CH Series

DC Central Emergency Lighting System

Project/Location:	_____
Contractor:	_____
Date:	_____
Prepared by:	_____

## Fully automatic charger, battery and specified transfer and distribution features

**Emergi-Lite**®'s DC Systems are utilized where a large number of remote heads or standard 120V incandescent fixtures may be supplied from a single source. The systems offer the advantage of a central location for maintenance with full supervision of all operating functions. Contact your **Emergi-Lite**® representative for information.

## FEATURES

- 24, 36 and 120 VDC systems sealed lead acid batteries
- Control and supervision functions on single modular board
- Complete package of full supervisory functions and alarms included in standard system
- Totally sealed maintenance free Lead Calcium batteries
- All systems are designed and manufactured in Canada
- CSA certified
- BMEC (Building Materials Evaluation Commission) approved for compliance to the Ontario Building Code

## BATTERY

### Sealed Maintenance-Free Lead Calcium Gas Recombination (SG Series)

Uses gas recombination to eliminate the escape of hydrogen. Thick plates are constructed of high strength material which resists shedding, flaking, or mechanical failure. Design Life: 10 years under normal operating conditions.

## CHARGER FEATURES

**Emergi-Lite**® has developed a unique modular charger design in which all electronic control functions and pilot lights are mounted on a single control board. This is connected to the operating power components using screw type connectors— making the circuit board easily removable by means of only four screws. Any required field service, consequently, is faster and significantly simpler than with older style multiple board designs. All chargers include a contactor which automatically disconnects the batteries from the load when battery bank voltage falls below 91% of nominal, in order to prevent over-discharge of batteries. The operating temperature for the system is from 20°C to 25°C (68°F to 77°F). The control board is temperature compensated in order to meet the battery required float voltage at temperatures below and above 25°C, as recommended by battery manufacturers. Internal control allows for spark free battery bank connection during installation and scheduled maintenance procedures.

## CHARGING OPERATION

The charger will fully recharge the battery within a twenty four hour period from a full discharge. The charger maintains regulation of  $\pm 0.5\%$  of voltage for a  $\pm 10\%$  input voltage variation. The charger provides automatic equalize cycle whenever the charge current is more than a preset value. The charger operates in an equalize mode after each utility power return. This ensures maximum battery capacity at all times, with maintained life expectancy

## STANDARD CONTROLS

The front panel includes the following controls:

- DC Battery Voltmeter (2% Accuracy)
- DC Charge Rate Ammeter (2% Accuracy)
- Green "ac on" LED (on at all times except during power failure)
- Green "float" LED (indicates that the battery is receiving float charge to maintain the battery at full charge at all times)
- Amber "equalize" LED (indicates that the charger is in the high charge equalize mode, balancing the charge level in the individual battery cells)
- Brown-out protection
- Test switch
- A.C input circuit breaker

## STANDARD ALARMS

- AC Failure LED and Alarm
- High Battery Voltage LED and Alarm
- Charger Failure LED and Alarm
- Ground Leakage Alarm
- An audible alarm and a common LED shall indicate "Ground Leakage" and/or Fuse/Circuit Breaker open/trip alarm
- High ambient temperature

## DISTRIBUTION OPTIONS

A separate distribution panel is available for all systems. A choice of fuses or circuit breakers is available. Fuse Distribution Panel Select -OPF ( ) for separate distribution fuse panel. Select -OFA ( ) for separate distribution fuse panel with visual and audible alarm on main console for failure of any fuse.

Note: "( )" indicates the number of circuits required.

Circuit Breaker Distribution Panel Specify - CBO ( ) for separate circuit breaker panel. Specify - OCA ( ) for separate circuit breaker panel with visual and audible alarm on main console for tripping or opening of any breaker.



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### TRANSFER OPTIONS

- System may be selected to either turn on a normally "off" load or alternatively on 120VDC systems, maintain a normally "on" load
- Normally "off" (DC load): (CP)
- If the lamp load is going to be turned on in the event of power failure add suffix -CP to the model number
- Normally "on" (AC/DC load): (TS) 120 V DC systems only
- The 120V incandescent load shall have 120VAC power normally supplied to it and the load shall be transferred to 120VDC upon failure. Add suffix -TS to the model number. For other AC input voltages please contact factory
- Both Normally "on" & "off" loads: (CP/TS)
- Both of the above apply

### OTHER OPTIONS

CODE	DESCRIPTION
Time delay	TD
3 phase sensing	3PH
Battery circuit breaker	BCB
Battery exerciser	CYC
Common Zone Sensing	ZSC( )*
Individual zone sensing, specify number of zones	ZSI( )*

\* Zone explanation: each specified zone relay monitors an individual lighting circuit in a building. Should the monitored circuits lose AC power, the connected lighting load will automatically illuminate:

- a - all zones if ZSC is specified
- b - that zone only if ZSI is specified

### CABINETS

Systems are available in a free standing floor mount cabinet. The cabinet shall be constructed of not less than 14 gauge steel with corrosion resistant undercoating. Standard finish is ASA61 grey baked enamel.

### WARRANTY

The complete system is guaranteed for a period of one (1) year against defects in workmanship and materials. The battery portion of the equipment carries a ten (10) year pro-rata warranty during its useful service life against defects in workmanship and materials. The battery warranty is subject to the provision of normal testing and inspection as specified in the Canadian Electrical Code, Section 46-102, and National Fire Code of Canada. Limit room ambient temperature between 20°C to 25°C (68°F to 77°F). Optimum system performance occurs at 25°C (77°F). A battery service life is defined as the period which the battery could still provide at least 80% of its rated capacity.

### TYPICAL SPECIFICATION

Provide and install a complete emergency lighting system as described herein and shown on the drawings. The system shall consist of a charger, battery and specified transfer and distribution features. The charger shall be fully automatic solid state type using integrated circuit control. The output voltage variation shall be  $\pm 0.5\%$  for input variation of  $\pm 10\%$ . The charger shall recharge the battery within 24 hours after a power failure. The charger shall include a contactor to automatically disconnect the battery from the load when the battery voltage falls below 91% of nominal. The charger shall be of a modular design with all pilot lights and electronic control functions on a single board mounted behind the front panel. The single control board shall have LED pilot lights for the following functions (which shall show through the front panel):

- Green "ac on" LED
- Green "float" Charge LED
- Amber "equalize" LED
- The single control board shall also include LED and an audible alarm with call-back function for the following alarms:
- AC Failure
- High Battery Voltage
- Charger Failure
- Battery Ground Leakage
- High ambient temperature

### OPTIONAL ALARMS

- Fuse/Circuit Breaker Open/Trip

### SELECT SG BATTERY

Select battery bank voltage, capacity and duration of required backup time. Select AC input voltage. Select system transfer option from CP ( ), TS( ), or CP( )/TS( ) where the load watts are shown in brackets.

### SELECT OPTIONS

The equipment shall be provided with a separate distribution panel with \_\_\_\_\_ fuses or circuit breakers (select one) rated at \_\_\_\_\_ Amps.

Optional: All distribution fuse or circuit breaker panels shall be alarmed so that if a fuse or circuit breaker has failed during operation, a visual and audible alarm is activated. The system shall be - **Emergi-Lite®** System CH [select model number from ordering information chart]. Select remote fixture from fixture section of Catalogue.



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## SG SERIES :

### Battery Capacity Chart

MODEL	NOMINAL BACKUP CAPACITY				
	30 MIN	60 MIN	90 MIN	120 MIN	
A	CH24SG820	820W	490W	355W	285W
B	CH24SG1280	1130W	800W	585W	470W
C	CH24SG1875	1875W	1115W	815W	655W
D	CH24SG2250	2250W	1340W	975W	785W
E	CH24SG2625	2625W	1560W	1140W	920W
F	CH24SG3755	3755W	2235W	1630W	1315W
G	CH36SG1230	1230W	730W	537W	432W
H	CH36SG1920	1695W	1205W	880W	705W
I	CH36SG2815	2815W	1675W	1220W	985W
J	CH36SG3375	3375W	2010W	1465W	1180W
K	CH36SG3940	3940W	2345W	1710W	1380W
L	CH120SG4120	4120W	2450W	1790W	1440W
M	CH120SG5660	5660W	4015W	2935W	2355W
N	CH120SG9390	9390W	5590W	4080W	3290W
O	CH120SG11260	11260W	6700W	4890W	3940W
P	CH120SG13140	13140W	7820W	5710W	4600W
Q	CH120SG18780	18780W	11180W	8160W	6580W
R	CH120SG22520	22520W	13400W	9780W	7880W

All capacities are in watts to 91% of nominal voltage. Note: For other voltages and capacities contact your sales representative.

## FEATURES

- One set of dry contacts for remote fault sensings
- Remote alarm panel
- Drip shield (2.5" overhang on console)
- Brownout

## CABINET DIMENSIONS

SERIES	DIMENSIONS H X W X D
CH24SG820-3755	25" X 29" X 14"
CH36SG1230-3375	
CH36SG3940	38" X 38" X 18"
CH120SG4120	
CH120SG5660-11260	38" X 38" X 28"
CH120SG13140-22520	56" X 38" X 28"

Electronics and batteries are in the same cabinet.

## ORDERING INFORMATION

SYSTEM DESIGNATION	D.C. OUTPUT VOLTAGE	BATTERY TYPE	CAPACITY IN WATTS	OPERATING TIME	A.C. INPUT VOLTAGE (1PH)	TRANSFER OPTIONS	DISTRIBUTION OPTIONS	OPTIONS
CH	24 = 24VDC 36 = 36VDC 120 = 120VDC	SG= sealed Lead-Calcium	_____*	30 = 30 min 60 = 60 min 90 = 90 min 120 = 120 min	120 = 120VAC 208 = 208VAC 240 = 240VAC 277 = 277VAC 347 = 347VAC 600 = 600VAC	CP(I)= normally off load TS(I)= normally on load CP/TS(I)= normally on and off load*	OPF(I)= fuse panel* OFA(I)= fuse panel with alarm CBO(I)= circuit breaker panel* OCA(I)= circuit breaker panel with breaker trip alarm	TD= Time delay (15 minutes) 3PH= 3 phase sensing 12HR= 12 hour recharge CYC= Battery exerciser BCB= Battery circuit breaker ZSC(I)= Common zone sensing* ZSI(I)= Individual zone sensing*
			* Select from Battery Capacity chart in folder			* Specify Watts for each type of load.	*Specify number of circuits	* Specify No. of zones.