ELV-H Series

Elevator Emergency Inverter, Harsh Environment, Three Phase, Online

The ELV-H Series maintains efficient AC Emergency Power to operate all elevators, providing superior dependability and security to commercial/industrial environments in a small footprint. Suitable for harsh environments, the inverter features a NEMA or NEMA 4X rating. The ELV-H is made to handle elevators starting and stopping when batteries are the only source of power. The ELV-H is designed to absorb elevator regeneration energy when operating on battery power during a utility outage without adding other equipment. Under normal operation, when the utility power is available, the regeneration energy is absorbed in the normal building loads.

Model: _____ Date: _____

Accessories: _____

Job Name: _____ Type: _____

SPECIFICATIONS

Standard Power Level:	4.5, 10, 16, 20, 24, 30, 40, 50 , 60 and 80 kW
Input Voltage:	208Y/120, 208, 480Y/277 or 480 VAC
Input Voltage Range:	+10% -15%
Output Voltage:	208Y/120 or 480Y/277 VAC
Output Voltage Regulation:	±3% For all loads and battery discharge mode
Output Frequencies:	60 Hz, ± 1%
Output Waveform:	Sine-wave <5% @ 100% linear load
Crest Factor:	2.5:1 Typical
Input Protection:	Input Main Circuit Breaker
Output Protection:	Output Main Circuit Breaker
Surge Protection:	The unit will protect itself and the load against surges defined in ANSI/EEE C62.45 category A/B
Battery:	Sealed maintenance-free (AGM) lead calcium
Recharge Current:	Conforms to UL924 standards
Efficiency:	≥92% at 100% Linear load
Audible Noise:	<45dBA
Cabinet:	NEMA 4 or NEMA 4X
Operating Temperature:	0º to 40ºC (32º to 104ºF)
Storage Temperature:	-20º to 60ºC (-4º to 140ºF)
Humidty:	5 - 95%, Non-condensing
Warranty:	One year full warranty on system electronics (with phone assisted start-up), separate 10 year prorated warranty on the battery and a five year power train warranty. The warranty does not cover physical damage, abuse or instances of uncontrollable natural forces. See the full Exitronix warranty document for detailed information. (Terms and Conditions Apply)

BUILD AMERICA BUY AMERICA

1/10/5 WARRANTY

ORDERING INFORMATION Example: ELV-H-30-208Y/120-208Y/120-90

Series	Power Rating	Input Voltage[1]	Output Voltage[1]	Run Time[2]	Accessories[3] (Factory installed, order as separate line item)
ELV-H	5 = 4.5kW	208Y/120 = 208Y/120VAC	208Y/120 = 208Y/120VAC	5 = 5 Min	ECM120/#[4] = 120V Environmental Control Module / Qty
	10 = 10kW	208 = 208VAC	480Y/277 = 480Y/277VAC	10 = 10 Min (Std)	ECM277/#[4] = 277V Environmental Control Module / Qty
	16 = 16kW	480Y/277 = 480Y/277VAC		15 = 15 Min	NOF/V/# = Normally OFF Output Circuit / Voltage / Qty
	20 = 20kW	480 = 480VAC		20 = 20 Min	NOH/V/# = Normally OFF "Hold ON" / Voltage / Qty
	24 = 24kW			25 = 25 Min	OCB/V/#/A = Output Circuit Breakers / Voltage / Qty / Amps
	30 = 30kW			30 = 30 Min	EPO = Emergency Power Off
	40 = 40kW			45 = 45 Min	RP = Remote Indicator Panel
	50 = 50kW			60 = 60 Min	SNMP = SNMP Card
	60 = 60kW			90 = 90 Min	FCON = Form C Contacts
	80 = 80kW			120 = 120 Min	SRB = Seismic Rated Bracket
				180 = 180 Min	OST5 = Onsite Start-Up
Notes				240 = 240 Min	IDB = Internal Dimmer Bypass
[1] Consult factory for other voltages, may effect weight, size and number of cabinets					EMB = External Maintenance Bypass Switch
[2] Consult factory for other run times					EW = Extended Warranty
[3] Order as separate line item, factory installed					
[4] One ECM is used per switching device or circuit					
[5] Includes one additional year of warranty on unit, consult factory					

Specifications are subject to change without notice.
Installation must be performed in accordance with
Barron Lighting Group installation instructions.

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Series	Power Rating (kW)	Voltage (VAC)		UPS Cabinet Dimen			Battery Cabinet Dimen			Battery Cabinet Qty	Weight (LBS)	BTUs	Battery Type	Output Protection	Safety Approvals
		Input	Output	W	H	D	W	H	D						
ELV-H	4.5	208Y/120, 208, 480Y/277, or 480	208Y/120 or 480Y/277	41”	52”	32”	Not Required			0	1,600	1,428	Sealed, Maintenance Free (AGM) Lead Calcium	Input and Output Circuit Breakers Standard	UL 924 UL1778 NFPA101 NFPA70 NEC
	10			41”	72”	32”				0	2,750	2,720			
	16									0	3,450	4,352			
	20						41”	72”	32”	1	4,300	5,440			
	24									1	5,050	6,528			
	30									1	5,900	8,160			
	40									1	Consult Factory	10,880			
	50									2		13,600			
	60									2		16,328			
	80									3		21,760			

POWER RATING
4.5kW - 80kW, Three phase output unit uses the latest technology to provide the most advanced performance and reliability features.

INPUT
208Y/120, 208, 480Y/277 or 480 VAC Input.

AC Input Characteristics
- Input Frequency: 60 Hz
- Power walk-in: 3 cycles.
- Input Surge Protection: The ELV-H is equipped with a standard input filter assembly that will withstand surges per ANSI/IEEE C62.45 category A and B.

OUTPUT
208Y/120 or 480Y/277 VAC Output.

AC Output Characteristics
- Voltage Regulation: ±3% for all loads and during battery discharge.
- Frequency: 60 Hz (±1% when free running).
- Voltage Distortion: Maximum 5% total harmonic distortion (THD) @ 100% linear loads.
- Voltage Transient (Step Load) Response:
  - ±5% for 50% step load change
  - ±8% for 100% step load change
  - ±3% for loss or return of AC input power or manual transfer at full load
- Voltage Recovery Time: Return to within 3% of nominal value within 50 milliseconds.
- Non-Linear Load Capability: Less than 8% total harmonic distortion (THD) at 100% non-linear load with a crest factor ≤ 2.5%
- Slew Rate: 1 Hz/second maximum
- Power Factor: Unity power factor.
- Inverter Overload Capability:
  - 125% for 100 cycles
  - 150% for 3 cycles
- Bypass Overload Capability: >200% for one cycle; >150% for 30 seconds

BATTERIES
The ELV-H module employs a valve regulated, sealed, lead calcium, heavy-duty, industrial battery. This battery system is designed for auxiliary power service. The primary battery is furnished with an impact resistant plastic case and housed in matching battery cabinet (units 20KW or under are self contained).
- Protection against deep discharge and self-discharge: The ELV-H is equipped to protect the battery against deep discharge depending on discharge conditions, with isolation of the battery by a circuit breaker. In particular, a monitoring device will adjust the battery shutdown voltage as a function of a discharge coefficient in order to avoid excessive discharge.
- Battery self-test: The battery monitoring system is to perform the following automatic functions:
  - 1. Battery circuit check
- Sealed, maintenance-free, lead calcium (AGM) batteries
- 10 year prorated warranty
- Guardian Smart Battery Monitoring System is TEMPERATURE COMPENSATED maintaining maximum runtime and battery life
- Microprocessor controlled recharge and overcharge protection is standard

CODES
- City of Chicago, Los Angeles and New York approved
- Complies with the Buy American Act – (Level 3)
- The ELV-H will meet the requirements of the following standards:
  - IEEE 587-1980/ANSI C62.41 1980 Standards for Surge Withstand Ability
  - FCC rules and regulations of Part 15, Subpart J, Class A
  - Meets UL 1778, UL 924, Standards for Lighting Inverter Equipment
  - NEMA PE 1 (National Electrical Manufacturers Association) - Lighting Inverter Systems
  - NEMA 250 (National Electrical Manufacturers Association) - Enclosures for Electrical Equipment (1000 Volts Maximum)
  - NFPA 70 - National Electrical Code
  - NFPA 101 - Life Safety Code
  - Occupational Safety & Health Administration (OSHA)

PROTECTION
- Provides overload, surge and undercurrent protection using the latest technology and Guardian Diagnostics to protect system performance and reliability
- Surge protection against load surges as defined in ANSI/IEEE C62.45 category A and B

DIAGNOSTICS, MAINTENANCE AND ACCESSIBILITY
All ELV-H sub-assemblies, as well as the battery, are accessible from the front only. The ELV-H design will provide maximum reliability and minimum MTTR (mean time to repair). The electronic ELV-H control and monitoring assembly is fully microprocessor based. The unit is repairable by replacing standard subassemblies.
- Guardian Diagnostics provides complete self diagnostic capabilities and LED Monitoring
- Informative, advanced display and alarms allow complete control of the emergency lighting environment
- Automatically performs periodic self-tests ensuring a safely lighted environment prior to an emergency
- Single point of testing instead of multiple testing points with battery packs

CABINET
- Modular design enabling flexible installation
- Enclosed in a NEMA 4 or NEMA 4X cabinet which is designed to withstand direct rain, sleet, snow, windblown dust, splashing water, and corrosion; with compressed air cooling for maximum reliability.
- Enclosure: The ELV-H is housed in a freestanding enclosure. The mechanical structure of the unit is sufficiently strong and rigid to withstand handling and installation operations without risk. Access to ELV-H subassemblies is through the front only. The sheet-metal elements in the structure are protected against corrosion by a suitable treatment, such as zinc electroplating, powder coating, epoxy paint or an equivalent.
- Cable Access: The ELV-H allows for side, top and bottom entry cables.
- Ventilation and Heat Rejection: The ELV-H designed specifically for forced air cooling. Air inlets are provided in the front, bottom of the ELV-H enclosure. Air exhaust is achieved from the top or side portions of the unit.
- Units up to 20kW are self contained, larger units require an external battery cabinet(s).

INSTALLATION

- Modular design allows easy installation in electrical closet or other convenient locations.
- Phone assisted factory start-up standard for all systems.
- Extended warranty available.
- The ELV-H will operate under the following environmental conditions:
  - Temperature:
    - ELV-H Module:
      - Operating: 0° to 40°C (32°F to 104°F)
      - Non-Operating: -20° to +60°C (-4°F to 140°F)
    - Batteries: 25°C (77°F)
  - Relative humidity (operating and storage): 5 to 95% non-condensing
  - Barometric Pressure:
    - Up to 1,000 meters above sea level
    - Up to 2,000 meters with ambient temperature less than 28°C
    - Up to 12,000 meters above sea level non operating
  - Audible Noise: 45dBA
- Site Testing and Start-Up – If selected, the inverter system will be checked, started and tested by a manufacturer's qualified field service engineer either by phone start-up (standard) or by optional onsite start up when performed by a factory technician

SPECIAL APPLICATIONS

- Barron offers numerous UL924 optional devices to meet unusual or difficult application parameters
- ECM – Eco-Control Module allows fixtures and lamps on the emergency circuit(s) to be operated by normal switching and/or dimming devices in NON-emergency conditions

DELIVERY, STORAGE, AND HANDLING

- All products are packaged in a manner to prevent penetration by debris and to allow safe delivery by all modes of ground transportation and air transportation where specified.
- Prior to shipping all products are inspected at the factory for damage.
- Equipment is protected against extreme temperature and humidity and is stored in a conditioned or protected environment.
- Equipment containing batteries will not be stored for a period exceeding three months without powering up the equipment for a period of eight hours to recharge the batteries.

WARRANTY

- One (1) year full warranty on system electronics (with phone assisted start-up), consult factory for Onsite Start-Up option warranty
- Battery warranty one (1) year with nine (9) years pro-rated
- Five (5) year power train warranty
- Maintenance contracts available