



MicroCab™ 1500

High Reliability Non-Stop DC Power System



Weatherproof. Compact. Rugged.

- 12V or 24V DC, 40-300 AH @ 24V** - delivers reliable battery-backed power to critical DC loads
- Small, corrosion-resistant, weatherproof package** - allows wall, floor and pole mount installation
- Sealed electronics compartment** - protects rectifiers & breakers from environmental attack
- Generous conduction cooling** - reliable operation in the hottest climates
- UL listed, IBC seismic certified systems** - meet all code requirements
- Optional high-temperature batteries** - deliver long life in hot environments
- Optional battery insulation and heaters** - improve performance and life in extreme climates



Inside MicroCab™ Weatherproof DC Power System

Sealed electronics bay

Protects electronics from dirt and humidity
Conduction cooled high efficiency rectifiers

Field wiring access compartment

Large, well-marked terminations
Easy access via top and front panels

Non-corroding construction

Aluminum enclosure
Stainless hardware
White paint reduces solar heating

VRLA storage battery

Standard VRLA for moderate climates
Optional high temp VRLA for longer life

Optional battery compartment insulation

Increases battery performance in cold
Increases battery life in hot environments

Fast operating, lockable cam latches

Top and front open for easy installation

Automatic battery load test

Safely checks battery's ability to sustain load

Battery temperature compensation

Maximizes battery life & performance

IBC seismic certified design to 2.5G S_{DS}

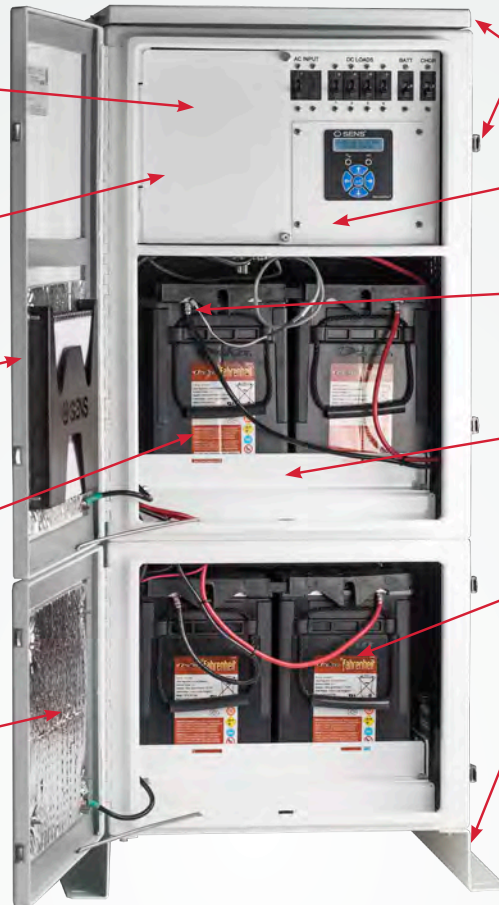
Includes battery tie-down kit

Optional second battery bay

Increases system battery capacity

Free-standing or wall/pole mounting

Free-standing cabinet shown



STANDARD: ● High reliability ● Compact size ● Network comms ● UL listed ● CEC Title 20 energy efficient

OPTIONAL: ● Surge suppression ● High temperature batteries ● Thermal management

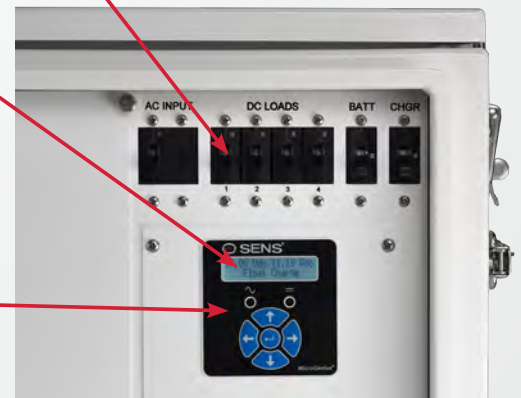
Up to 3 ea. 15A high reliability MicroGenius® 2 rectifiers

Deliver high efficiency & abuse resistance
Multiple rectifiers for increased current or redundancy



DC distribution breakers (min 1, max 4)

10-40A per circuit available



Display & control panel

Backlit LCD
Adjust using keypad or computer

Complete protection

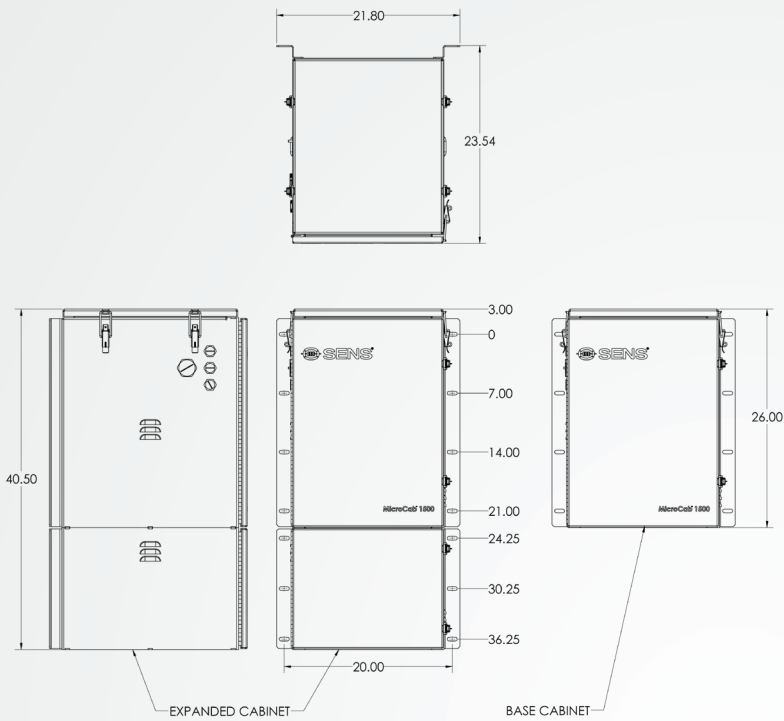
Optional AC & DC surge suppression
Optional low voltage load disconnect

Communications & Alarms

Standard battery failure alarm
Standard Form C alarm contacts
Standard Modbus RS-485
Optional Modbus over Ethernet

Dimensions and Weights

Wallmount enclosure

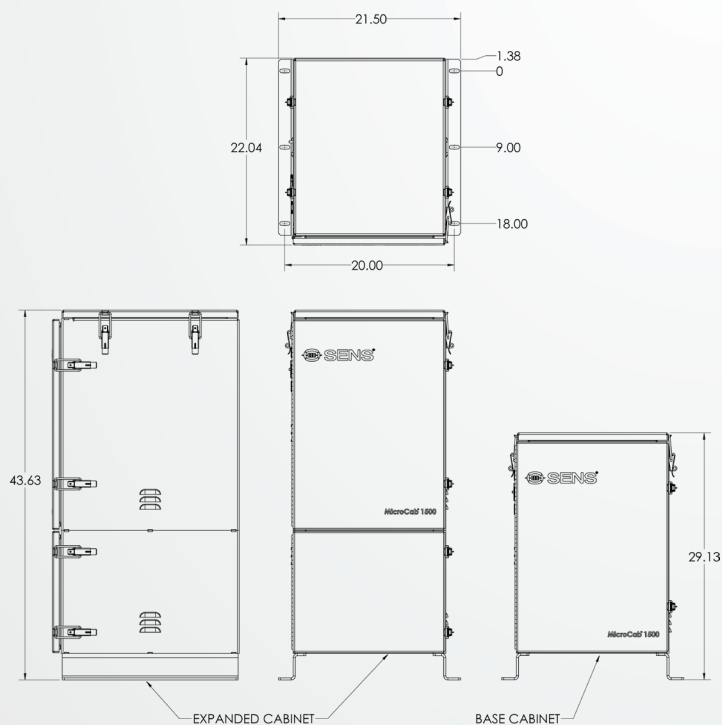


Cabinet without expansion base



Typical weight for a single cabinet 24V system is 280 lbs.

Free-standing enclosure



Cabinet with optional expansion base

Optional top lift brackets shown



Typical maximum weight for an expanded cabinet 24V system is 535 lbs.

MicroCab™ 1500

Specifications

AC Input	Voltage, Frequency	90-265 VAC , 47-63 Hz auto-selecting
	Input current	14A maximum (for models with 3x rectifiers and heaters)
	Protection	2-pole circuit breaker, soft start, transient protection
	Efficiency	Up to 93%
	Power factor	>.95 typical at maximum rated load current and boost charge voltage
DC Output	Voltage	12V nominal: adjustable from 0-17V 24V nominal: adjustable from 0-34V
	Line/load regulation	±0.5%
	Output ripple	< 30 mVrms with or without battery
	Current (per rectifier)	15A at 12/24V nominal, 450W maximum (12A max below 170VAC input voltage in 24V configuration)
	Charging characteristic	Constant voltage, current limited
	DC power supply	Delivers fast-responding, stable, well-filtered DC without battery
	Soft start	5 seconds from startup to full-required output
	Current limit	Factory set at 100%. Field adjustable. Subject to temperature & input voltage limits. Current limit set at max allowed current for redundant charger systems.
	Battery temperature compensation	Battery sensor controls changes in output voltage when battery temperature is between 0°C and +40°C
	Output protection	2-pole circuit breaker, transient protected
	Overvoltage protection	Self-resetting and selective
	Dead battery charge	Starts into and recharges zero volt battery without user intervention
	Output blocking protection	Non-functioning chargers are isolated from others in the system
Batteries	Type	VRLA, standard or high temperature
	Number	Up to 2ea. 12V blocks with base cabinet, up to 4 blocks with expanded cabinet
	Ah capacity	Up to 300Ah at 24V, up to 600Ah at 12V
Adjustment & Controls	Factory adjustment	Factory set to customer specifications; field reconfigurable
	Adjustment	Change or customize settings from either front panel keypad, or from computer using optional USB adapter and SENS Setup Utility
Status display	LEDs	Dual multi-color front panel status LEDs
	Digital metering	Voltmeter accurate to ±2%; ammeter to ±5%
	Status messages	20-character display of status and alarm messages
Alarms	Alarm operation	System automatically monitors all alarm conditions, but provides alerts only for those selected as active. Selected alerts shown on display and via Form C contacts. All alarms available via Modbus.
		Alarms (either factory defaults or customer-specified alarms) set at factory; field reconfigurable using SENS Setup Utility with optional USB adapter
	Display output	All active alarms shown on system display
	Network output	All alarms available via Modbus
	Form C contacts	Three alarm contacts available: Summary alarm, major alarms, minor alarms. Contact SENS Sales or see user manual for detailed information.
		Contacts rated 30VDC/VAC, 2A resistive, normally open or normally closed, assignable at factory or with SENS Setup Utility
		Time Delay: default 30 seconds, adjustable from 5 to 60 seconds

MicroCab™ 1500

Specifications

Networking	Modbus communications	Modbus RS-485 via field wiring terminal block. Optional Modbus over TCP/IP.
	SENSbus	Proprietary bus for internal communications, field programming and SENS accessories
Environmental	Operating temperature	-40C to +70C; meets full specification from -40C to +40C. Heaters and/or insulation are recommended for the batteries in ambient temperatures below 0°C.
	Cooling	Natural convection cooled; no fans in electronics bay
	Cold Start	5 seconds warm-up time required for operation below -20C
	Humidity	5% to 95%, non-condensing
	Water ingress	Charging and electronics panel is IP 66, NEMA 4X Battery compartment(s) is IP 33, NEMA 3RX. Battery compartment(s) utilize louvers for battery gas ventilation.
	Electrical transient	ANSI/IEEE C62.41 and EN 61000-4-12 on power terminals
Options	Distribution Breakers	1 breaker standard, up to 3 additional breakers optional, 10-40A each
	Low Voltage Load Disconnect	Disconnects the batteries from the load at a set voltage. Field reconfigurable.
	Expanded Battery Cabinet	Provides a second battery compartment doubling the battery capacity of the system
	Battery Heater	Keeps batteries above 0°C in ambient temperatures down to -30°C
	Battery Insulation	Thermally insulates batteries in hot and cold environments and allows heaters to keep batteries above 0°C in ambient temperatures down to -40°C
	Battery Fans	Provide forced ventilation to battery compartment(s). Thermostatically controlled.
	High Temp Batteries	Provides rated battery life of 6 years with battery temperatures at 35°C
	Supplemental Surge Protection	Provides supplemental AC and DC surge protection. Surge protective devices are field replaceable. Alarm indicates when replacement required.
Abuse protection	Reverse polarity	Rectifiers self-protect without fuse clearing; indication via LED and LCD; system recovers automatically after removal of the fault condition
	Wrong voltage battery	Charger-battery voltage mismatch shuts down charger(s). Indication/alarm provided.
	Overvoltage shutdown	Selective; shutdown only operates if charger causes the overvoltage condition
	Over temperature protection	Gradual output power reduction if heatsink temperature becomes excessive
Regulatory compliance	North America	UL Listed for the United States and Canada: CSA 22.2, No. 107.2; UL 1012 category QQIJ
		Seismic: IBC certified for both rigid and non-structure wall mount; max S_{DS} of 2.5G; IBC 2000-2015; California BC 2007-2010
		California Energy Commission (CEC): Title 20 Appliance Efficiency Regulations
		FCC Part 15, Class B
	European Union (CE)	MG2 Charger EMC: 2014/30/EU (EN 61000-6-2 & EN 61000-6-4)
		MG2 Charger LVD: 2014/35/EU (EN 60335-1 & EN 60335-2-29)
		RoHS2: 2011/65/EU (EN 50581)
Construction	Housing/configuration	Welded 5052 aluminum, hi-reflective outdoor powder-coated finish
		All hardware is stainless steel
	Dimensions	See drawings
	Weight	Maximum weight of system (excluding batteries) is 105 lbs (47.6 kg)

How To Order

Product Type	Cabinet type	DC Volts	DC Amps	# Chgrs	Batt Type	Batt Cap.	Output Brkrs	LVLD	Batt Therm.	Surge Protect	Mount	Comms	Factory option
MC	2	24	45	3	S	30	4211	1	4	1	4	0	0
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)	(N)

	Parameter	Code	Value
(A)	Product Family	MC	MicroCab™ 1500
(B)	Cabinet Type	1 2	Base cabinet Expanded cabinet
(C)	DC Output Voltage	12 24	12 VDC 24 VDC
(D)	DC Output Current	15 30 45	15A 30A 45A
(E)	Number of Chargers	1 2 3	1X 15A MG2 (15A total) 2X 15A MG2 (30A total or 15A with N+1 redundancy) 3X 15A MG2 (45A total or 30A with N+1 redundancy or 15A with N+2 redundancy)
(F)	Battery Type	S H	Standard VRLA High temperature VRLA (only available with 70, 150, 300 and 600AH battery capacity)
(G)	Battery Capacity	##	Nominal System Amp-hour Capacity (Ah/10, ex: "04"=40AH, "30"=300AH) 12V AH choices: 40, 70, 100, 150, 200, 300, 400, 600 AH 24V AH choices: 40, 70, 100, 150, 200, 300 AH
(H)	Output Breakers	Slot A Slot B Slot C Slot D	1 = 10A; 2=20A; 3=30A; 4=40A 0 = blank; 1 = 10A; 2=20A; 3=30A; 4=40A 0 = blank; 1 = 10A; 2=20A; 3=30A; 4=40A 0 = blank; 1 = 10A; 2=20A; 3=30A; 4=40A <i>NOTE: Min. 1 breaker required. All blank slots are covered with blank panel.</i>
(I)	Low Voltage Load Disconnect	0 1	No LVD With LVD
(J)	Battery Thermal Management	0 1 2 3 4 5 6 7	None Heaters Heaters, fans Heaters, insulation Heaters, fans, insulation Fans Fans, insulation Insulation
(K)	Surge Protection	0 1	Standard AC/DC protection Supplemental AC/DC protection
(L)	Mounting	1 2 3 4	Wallmount/polemount Wallmount/polemount with toplift Floormount Floormount with toplift
(M)	Communications	0 1	Standard, Modbus RS-485 Modbus TCP/IP
(N)	Configuration	0 X	Standard Factory specified custom configuration

Contact SENS or your local sales representative for additional specification, engineering and installation information, or visit SENS' website for latest available data. Specification subject to change without notice. SENS, Stored Energy Systems, the battery/rectifier logo, Dynamic Boost, HELIX, MicroGenius and MicroCab are trademarks of Stored Energy Systems LLC. Patented US 9,270,140; 9,385,556; 9,413,186; 9,509,164; 9,466,995; 9,948,125.

Contact Information

Sales 1.866.736.7872 • 303.678.7500 • Fax 303.678.7504 • www.sens-usa.com • info@sens-usa.com
Stored Energy Systems, LLC 1840 Industrial Circle, Longmont, CO 80501 USA

© Stored Energy Systems, LLC 2016
111069 E

