MILITARY BATTERY CHARGER

MILCHAR-MC-1B28-270-A01

- Constant Current Charge
- Constant Voltage Charge
- Wide DC Input Range 9V-36V
- Universal AC Input
- ON/OFF Switch
- Input Power Status LED
- Ready & Charge Status LED

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The MILCHAR-MC-1B28-270-A01 is a military battery charger designed to meet the demands of field operations. This device features both constant current and constant voltage charging modes to efficiently and safely charge 28V military batteries at a 270W power rating. It offers significant operational versatility with a wide DC input range of 9V-36V and universal AC input compatibility. For ease of use, it is equipped with an ON/OFF switch and user-friendly visual indicators, including separate LEDs for power status , charge status , and fault conditions.

The charger's technical specifications include an AC input of 180-264V or a DC input of 9-36V, a maximum output power of 270W, and a weight of 2.3 kg. It utilizes a smart charging algorithm ; when powered by AC or a DC source higher than 23V, it charges the battery with 8A of constant current, and with a DC source lower than 23V, it uses 2.4A of constant current until the battery voltage reaches 33.6V. Once this voltage is reached, it switches to constant voltage charging until the current rating becomes lower than 600mA. The unit's status is indicated by LEDs: a blinking amber light for "Charging Mode" , a continuously lit amber light for "Ready Mode" when charging is complete , and a blinking red light for "Fault Mode" if a battery error occurs. Furthermore, it complies with MIL-STD-810H standards for temperature, shock, humidity, and vibration.

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Product Overview

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1. PRODUCT OVERVIEW

"MILCHAR-MC-1B28-270-A01" designed to meet the demands of field operations. Our charger features both constant current and constant voltage charging modes, ensuring efficient and safe charging of 28V military batteries at a power rating of 270W. With a wide DC input range of 9V-36V and universal AC input compatibility, it offers versatility in various power supply setups. Equipped with an ON/OFF switch for easy operation and input power status LEDs for clear indication, our charger provides user-friendly functionality.

1.1. FEATURES

- Constant Current Charge
- Constant Voltage Charge
- Wide DC Input Range 9V-36V
- Universal AC Input
- ON/OFF Switch
- Input Power Status LED
- Ready & Charge Status LED

Technical Specifications

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2. TECHNICAL SPECIFICATIONS

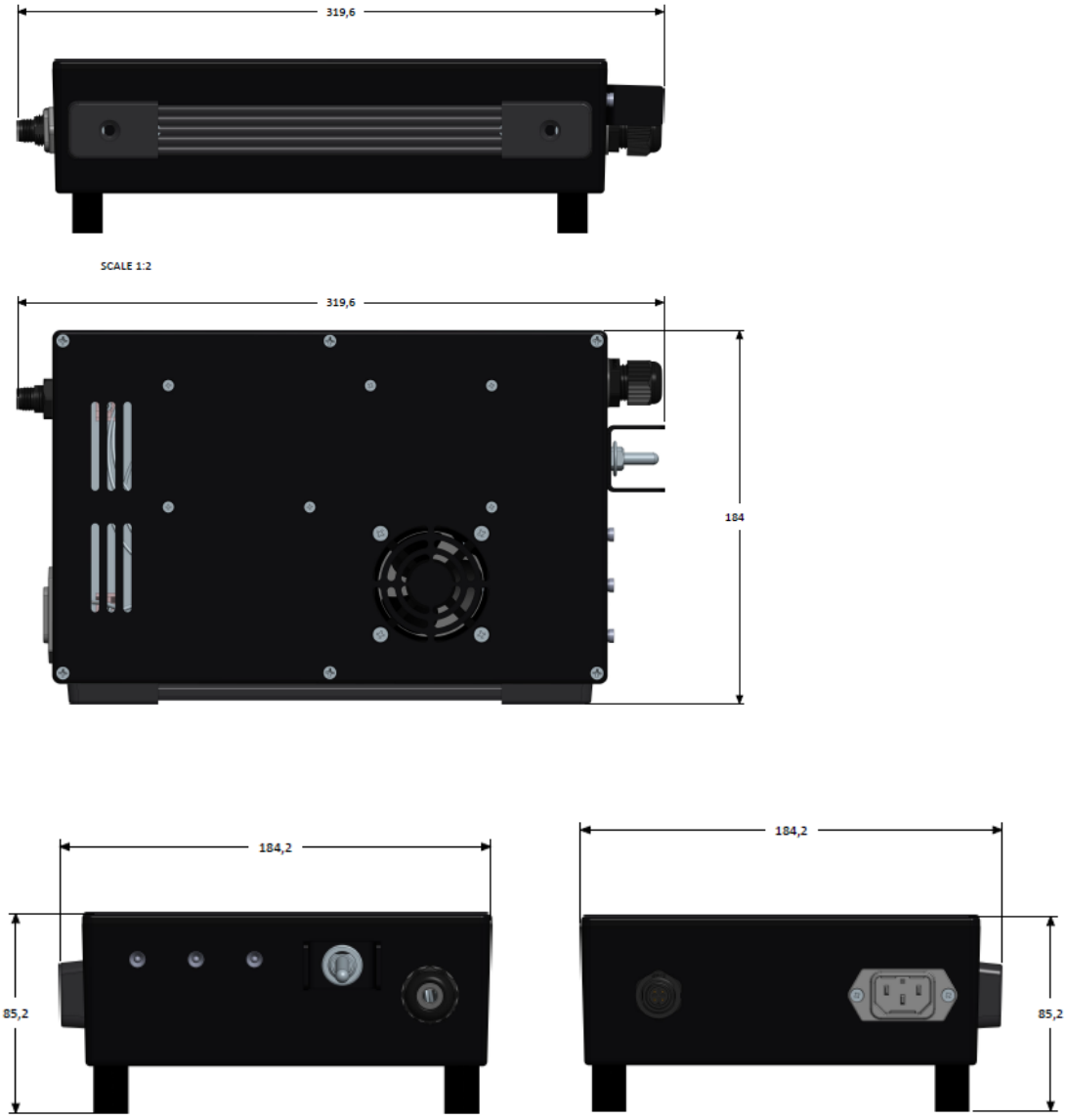
Table 1: Electrical Specification

PARAMETER	VALUE	UNIT
DC Input Voltage	9 - 36	Vdc
AC Input Voltage	180-264	Vrms
AC Input Frequency	47-63	Hz
Output Voltage	9-36	Vdc
Pre Defined Battery Charge Voltage	20-33.6	Vdc
Maximum Battery Charge Current (AC Input)	8	A
Maximum Battery Charge Current (DC Input)	4	A
Pre Defined Battery Charge Current (DC Input)	2.4	A
Maximum Output Power	270	W
Operating Temperature	-30 / +50	°C
Storage Temperature	-40 / +60	°C
Weight	2.3	kg
Size	320x184x85	mm

Table 2: Environmental Specification

DESCRIPTION	PROCEDURE
Temperature	MIL STD 810 H METOD 501.7 Procedure II (+50°) MIL STD 810 H METOD 502.7 Procedure II (-30°) MIL STD 810 H METOD 501.7 Procedure I (+60°) MIL STD 810 H METOD 502.7 Procedure I (-40°)
Shock	MIL STD 810 H METOD 516.8 Procedure I (20g/11ms sawtooth)
Humidity	MIL STD 810 H METOD 507.6 Procedure II (80%RH 40°)
Vibration	MIL STD 810 H METOD 514.8 Procedure II

Figure1: Technical Draw



Panel Controls and Indicators

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3. PANEL CONTROLS AND INDICATOR

Figure 2: Front panel

Figure 3: Back panel

3.1. AC INPUT CONNECTOR (KN1)

For AC input Universal AC Connector (RCPT IEC320-C14) used in the unit.

3.2. DC INPUT CONNECTOR (KN2)

The part number for the power input connector used in the unit is '643110100404'

The part number of the mating connector is '643721100004'.

Table 3: KN2 Pinout

Pin No	
1	DC+
2	DC+
3	DC-
4	DC-

3.3. DC OUTPUT CONNECTOR (KN3)

The part number for the power output connector used in the unit is 'RT06128PNH-K'

The part number of the mating connector is 'RT07128SNH-K'.

Table 4: KN1 Pinout

Pin No	
A	BAT+
B	BAT+
C	BAT-
D	BAT-
E	Reserved
F	Reserved
G	Reserved
H	Reserved

3.4. POWER INDICATOR LED

The power LED lights up green when switch turned on and there is power at the Input. Does not light up when there is no power.

3.5. CHARGE INDICATOR LED

The Charge LED blinking with amber indication color when unit at the charging operations. It start to lights up continuously when charge operation complited.

3.6. FAULT INDICATOR LED

The Fault LED blinking with red indication color when the fault conditions happened.

3.7. SWITCH

The battery switch is used to ON and OFF the unit. The switch should be set to 'OFF' when the unit is not in use and being stored. To enable the Unit, switch should be set to ‘ON’ position.

Operating Procedure

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4. USAGE INSTRUCTIONS

4.1. Quick Usage Instruction

1- Connect the KN3 connector to the battery.

2- For use with 220 Vac, connect the cable numbered V-004-100034 to the KN1 connector or for use with 12/24 Vdc, connect the cable numbered V-004-100035 to the KN2 connector. **Do not connect the two cables at the same time.**

3- Turn the switch to the 'ON' position. Observe that the power LED is lighting.

4- Wait for the unit to charge the battery until the charge LED become continuously lighting.

4.2. Operating Modes

4.2.1. Charging Mode

When Input power and battery connected to the unit, if switch at the 'ON' position and battery is not fully charged unit starts to charging operation. At charging mode charge LED blinks.

MILCHAR-MC-1B28-270-A01 use smart battery charging algortym. If AC input or DC input with highger voltage level than 23V connected as a input source, unit charge battery with 8A constant current until its voltage reach 33,6V. If DC input with lower voltage level than 23V connected as a input source, unit charge battery with 2.4A constant current until its voltage reach 33,6V. After voltage reached 33,6V unit charge battery with constant voltage until its current rating become lower than 600mA.

4.2.2. Ready Mode

When Input power and battery connected to the unit, if battery is fully charged unit become ready mode. At ready mode charge LED continuously lights.

4.2.3. Fault Mode

If battery is damaged or fault condition happened unit become fault mode. At fault mode fault LED blinks. Depending on condition fault can be temporary or latch, turning switch OFF and ON again clears the latch.

4.2.4. Forced Charging Mode

Smart batteries close their output and turn to the sleep mode when battery fully discharged. To aweke this type of batteries, unit try to charge batteries when switch first opened even if battery is not connected.