Addendum #1 to SJPC-PDI-21-94 – March 30, 2022

Additional Information for Bidders:

Please see below charger information as requested at the March 29th Pre-Bid Meeting:

- Borg Warner chargers are for the 200A and 100A circuits and are the same manual. The Borg Warner LI-C50-500-125 is for the 100A circuits (B&C size truck) and the LI-C50-500-225 is for the 200A circuits (D size truck).
- A Stromcore Charger is for the 70A circuits at Broadway main substation (A size truck)
- The DM Series is for the Yard truck at Balzano Marine Terminal and only requires a receptacle to plug the charger into. The charger itself is on wheels.

Please see attached corresponding manuals:

- Borg Warner User's Manual
- DM Series Information Sheet
- Stromcore Charger Specification Sheet

User's Manual

Installation and operation

LI-C10-500-020

LI-C36-500-080

LI-C50-500-125

LI-C80-500-200

LI-C90-500-225

Rev.202 – 2021 June

[US – EU]

Revision	Data	Author	Description
200	10 March 2021	A. Amerighi	Second Release
201	04 May 2021	A. Amerighi	Adding models
202	10 June 2021	A. Amerighi	Data update
203	28 Setp. 2021	O. Taglialatela S.	Added user menu description

INDEX

1. Introduction

This manual contains instructions and suggestions for the users of LION Series battery chargers. Before to install, use or repair the charger, it's necessary to read and understand this manual completely.
Carefully read the installation instructions contained in this manual.
Please store the manual in a safe place.
Throughout this manual, the following special annotations have been used to indicate important information.

WARNING!
Gives important information regarding possible personal injury.

CAUTION!
Gives important information regarding possible equipment damage.

NOTE
Gives additional information and tips concerning important procedures and features of the charger.

1.1 Responsibility disclaimer

The manufacturer of this battery charger will not be responsible for damages and/or injuries caused by the charger in these situations:

- The charger is not installed properly by a qualified electrician;
- Maintenance operations are not done by a qualified electrician;
- The charger is not used according to the instructions included in this manual;
- The charger is not connected to the correct input supply (see data label on the box);
- The charger has been modified without the authorization of the manufacturer;
- Non-original spare parts are used in the charger;
- Wrong spare parts are used in the charger.

2. Safety instruction and Warning

2.1 General

Battery chargers can cause injury or death, or damage to other equipment or property, if the user does not strictly observe all safety rules and take precautionary actions.
Safe practices must be learned through study and training before using this equipment.

WARNING!
The charger can be installed by qualified personnel only!
To avoid the risk of injuries, the user is not allowed to open the cabinet.
Opening the cover could put you at risk of electric shock.
Always refer to qualified electricians for installation and service operations.

Should the battery charger fail to operate correctly or be damaged, disconnect the main power supply and the battery immediately and contact the dealer.

2.2 Shock prevention

Bare conductors, or terminals in the output circuit, or ungrounded, electrically live equipment can fatally shock a person. To protect against shock, have competent electrician verify that the equipment is adequately grounded and learn what terminals and parts are electrically hot.

The body's electrical resistance is decreased when wet, permitting dangerous current to flow through the body. Do not work in damp area without being extremely careful. Stand on dry rubber mat or dry wood and use insulating gloves when dampness or sweat cannot be avoided. Keep clothing dry.

2.3 Installation and Grounding

Electrical equipment must be installed and maintained in accordance with all the applicable national and local codes.
A power disconnect switch must be located at the equipment. Check the data label for voltage and phase requirements.
If a grounding conductor is part of the power supply cable, be sure to connect it to a properly grounded switch box or building ground. If not part of the supply cable, use a separate grounding conductor.
Don't remove a ground prong from any plug.
Use correct mating receptacles.
Check ground for electrical continuity before using equipment.

The grounding conductor must be of a size equal to or larger than the size recommended by Code or this manual.

2.4 Charging leads and Plugs

Inspect leads and plugs often for damage to the insulation. Replace or repair cracked or worn leads immediately. Use leads and plugs having enough capacity to carry the operating current without overheating.

2.5 Battery Terminals

Do not touch battery terminals while equipment is operating.

2.6 Service and Maintenance

Shut OFF all power at the disconnect switch or line breaker BEFORE inspecting, adjusting, or servicing the equipment. Lock switch OPEN (or remove line fuses) so that the power cannot be turned ON accidentally.
Disconnect power to equipment if it is to be left unattended or out of service.
Disconnect battery from charger.
For service activities refer to the advanced troubleshooting guide.
Only formed and expert electricians can operate inside the charger.

2.7 Burn and Bodily injury prevention

The battery produces very high currents when short circuited and will burn the skin severely if in contact with any metal conductor that is carrying this current.
Do not permit rings on fingers to meet battery terminals or the cell connectors on top of the battery.
Battery acid is very corrosive. Always wear correct eye and body protection when near batteries.

2.8 Fire and Explosion Prevention

Always keep sparks, flames, burning cigarettes, and other sources of ignition away from the battery recharging area. Do not break "live" circuits at the terminals of batteries. Do not lay tools or anything that is metallic on top of any battery.
To prevent arcing and burning of the connector contacts, be sure the charging process is interrupted before connecting or disconnecting the battery.

2.9 Medical and first aid Treatment

First aid facilities and a qualified first aid person should be available for each shift for immediate treatment of electrical shock victims.

2.10 Emergency First Aid

Call physician and ambulance immediately and use First Aid techniques recommended by the Red Cross.

WARNING!
ELECTRICAL SHOCK CAN BE FATAL.
If person is unconscious and electric shock is suspected, do not touch person if he or she is in contact with charging equipment, battery, charging leads, or other live electrical parts. Disconnect power at wall switch and then use First Aid.
Dry wood, wooden broom, and other insulating material can be used to move cables, if necessary, away from person.
IF BREATHING IS DIFFICULT, give oxygen.
IF NOT BREATHING, BEGIN ARTIFICIAL BREATHING.
IF PULSE IS ABSENT, BEGIN ARTIFICIAL CIRCULATION, such as external heart massage.

In case of acid in the eyes, flush very well with clean water and obtain professional medical attention immediately.

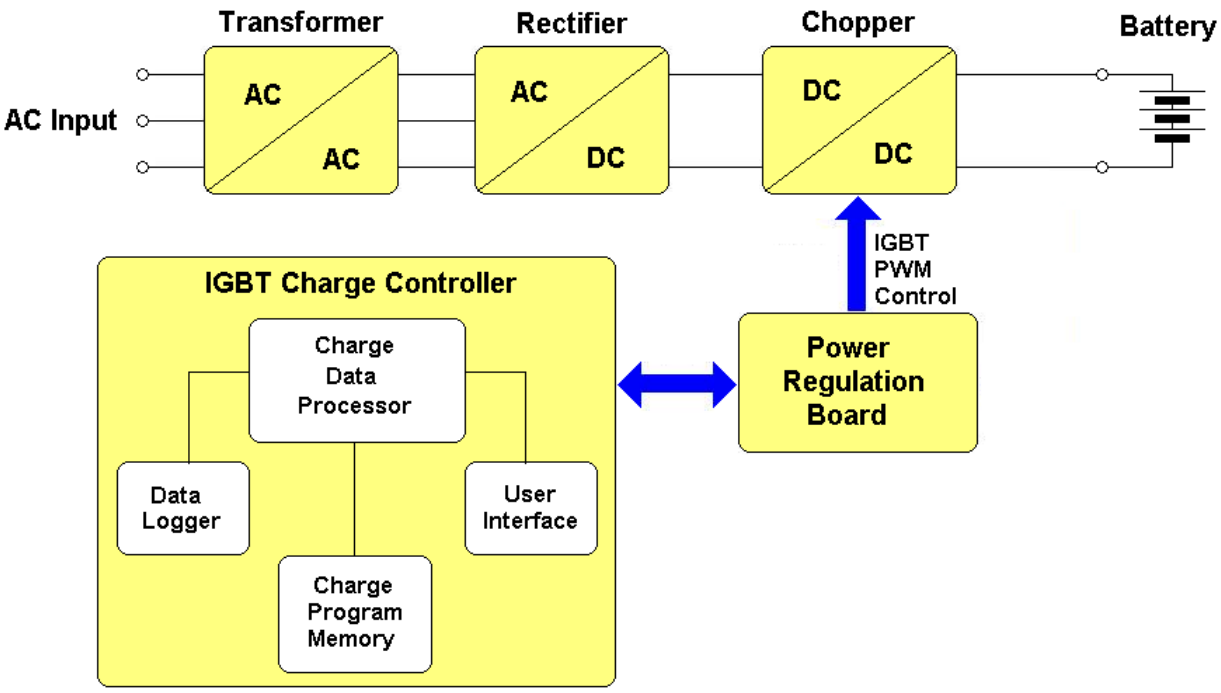
2.11 Equipment warning labels

Inspect all precautionary labels on the equipment.
Order and replace all labels that cannot be easily read.

3. Description

The *LI-ION Series* charging stations are based on high frequency IGBT technology. They are programmable and universal, and they are equipped with a complete, active protection system, which includes Reverse Polarity, Short Circuit, Overtemperature, Wrong Battery, Anti-Arcing, and more.

The electrical structure of the *LI-ION Series* is represented in the following block schematic.



Picture 1

The TRANSFORMER provides electrical insulation between the input and the output of the charger. The RECTIFIER converts the AC output of the transformer to an unregulated DC voltage.
The CHOPPER (operating at high frequency), regulates the output voltage and current to the right values.

The IGBT CHARGE CONTROLLER is the main control unit of the charging station. It's a microprocessor based electronic board, and it contains the USER INTERFACE (Display, LEDs and Keyboard), the CHARGE PROGRAM MEMORY (where all the programmable parameters are saved), the DATA LOGGER (where the charge history log is saved) and the CHARGE DATA PROCESSOR, which manages the

entire charge process and communicates with the on-board Battery Management System (BMS).

The POWER REGULATION BOARD controls the operation of all the internal power components. It receives command signals from the IGBT CHARGE CONTROLLER, and it generates the high frequency PWM control signal for the IGBT.

The start-up sequence, the thermal protection and the polarity protection of the charger are managed by the POWER REGULATION BOARD, which receives signals from several sensors that are located inside of the charger.

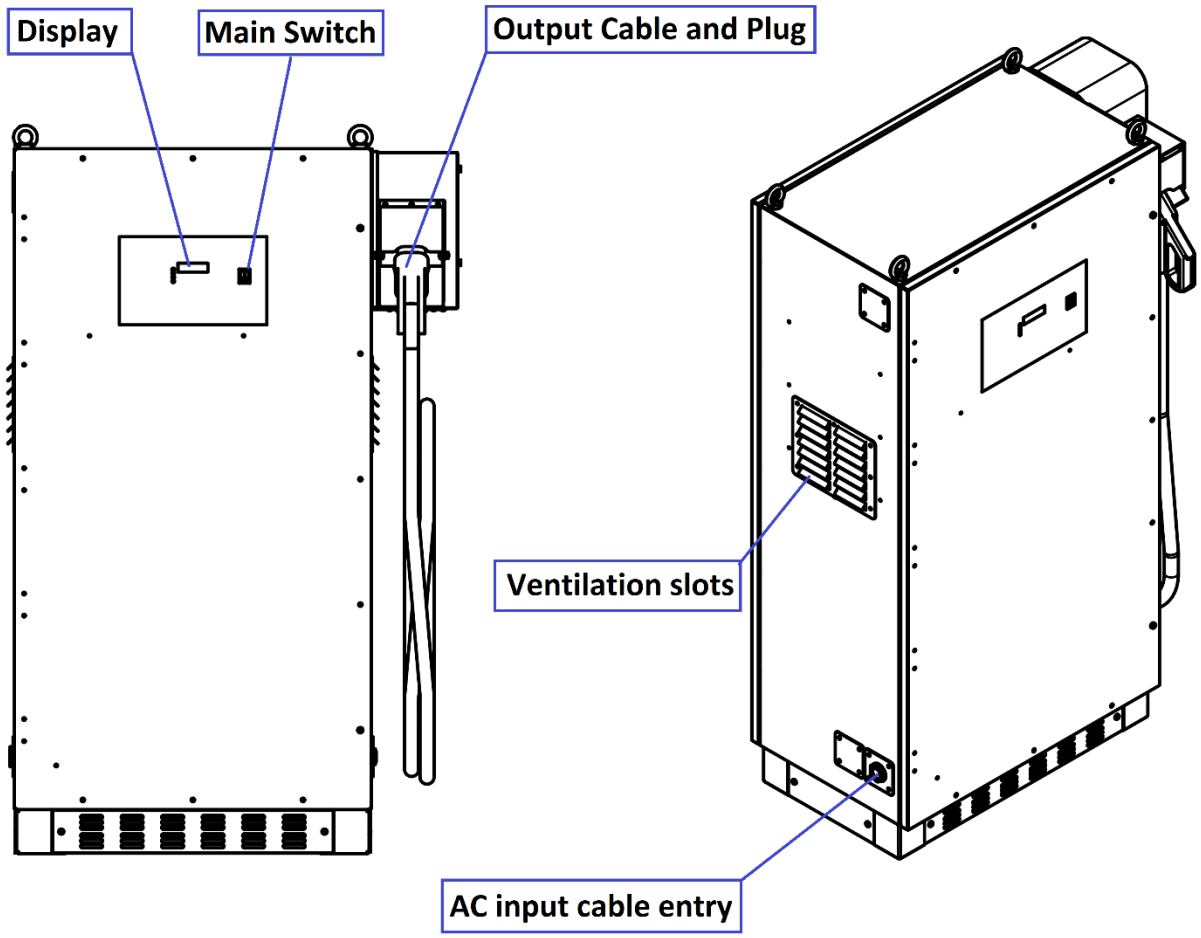
The control panel is complete and easy to use: four coloured LEDs indicate the state of the charge, while a 2x20 character dot matrix display gives complete information and error messages in plain text (multilingual).
A three-button flat membrane keyboard is used for programming and data review.
The *LION Series* charging stations are equipped with analog/digital interfaces for the connection of Battery Management Systems (BMS).

4. Installation

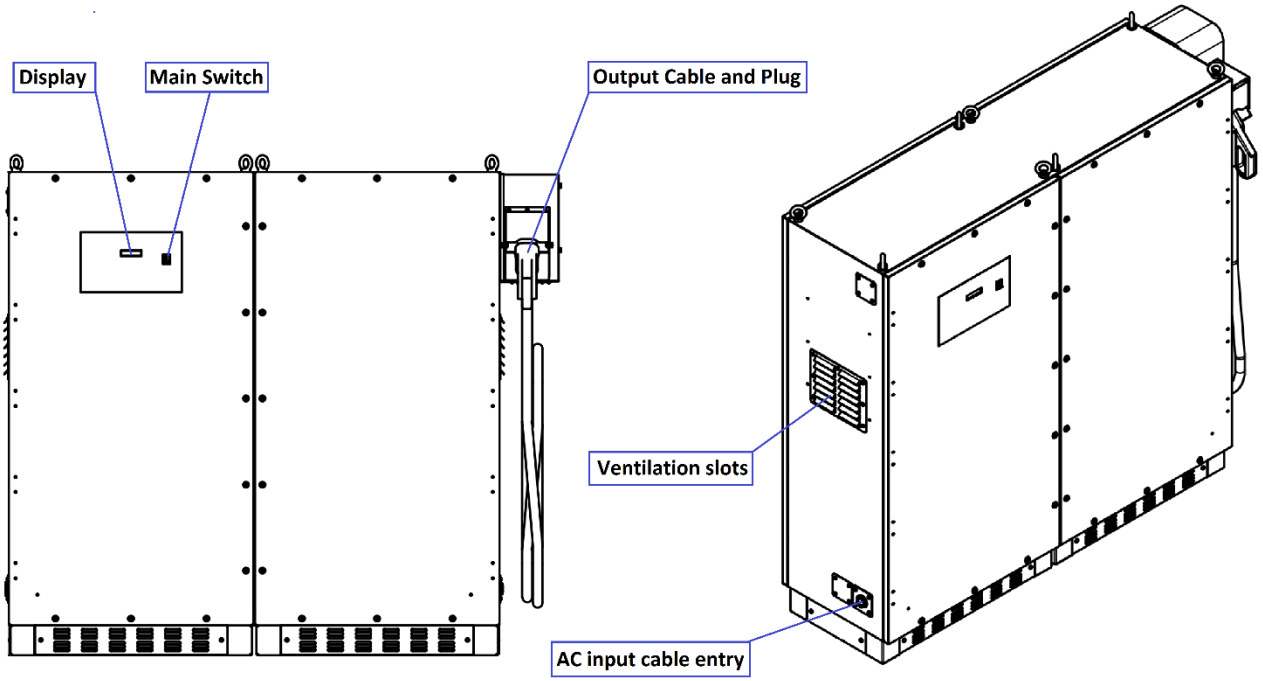
4.1 Cabinets

Models	Cabinet
LI-C10-500-020-US-01	EV - 03034A
LI-C36-500-080-US-01	
LI-C50-500-125-US-01	
LI-C80-500-200-US-01	EV Double – 03034B
LI-C90-500-225-US-01	
LI-C10-500-020-EU-01	EV - 03034A
LI-C36-500-080-EU-01	
LI-C50-500-125-EU-01	
LI-C80-500-200-EU-01	EV Double – 03034B
LI-C90-500-225-EU-01	

Table 1



EV - 03034A - Picture 2



EV Double – 03034B - Picture 3

4.2 Conditions of use

Operating temperature	-5°C to 45°C
Storage temperature	-19°C to 60°C
Relative Humidity	Less than 100%
Maximum altitude above the sea level	2000m
Protection Class	I
Degree of protection	IP54
Overvoltage category	III
Product Standards	EN 61000 / 60335
Pollution Level	3

Table 2

4.3 Electrical Ratings

WARNING!

The charger is not internally equipped of AC line protection and leakage current device.

The AC line protection and the leakage current device must be provided externally in the wall connection box.

General Characteristics	
Working Duty cycle	100%
Leakage Current	<39mA (*)
Inrush Current	< 5 x I in MAX
Output Ripple	< 3%
Power Factor	>0,96

(*) Recommended Leakage Current Device rating: 100mA

Table 3

Model	Output			Input				
	U range	Imax	Pout Max	Phases Voltage and frequency	Phases Current	Pin Max	Recommended Fuses / Circuit Breaker Rating (*)	Minimum mains cable section
	[V]	[A]	[kW]	[V] +/-10% [Hz]	[A] +/-10%	[kVA]	[A]	[mmq/ awg]
LI-C10-500-020-US-01	50-500	20	10	3x480V – 60Hz	13	11	20	4mmq AWG10
LI-C36-500-080-US-01	50-500	80	36	3x480V – 60Hz	48	40	80	16mmq AWG6
LI-C50-500-125-US-01	50-500	125	50	3x480V – 60Hz	65	55	100	25mmq AWG3
LI-C80-500-200-US-01	50-500	200	80	3x480V – 60Hz	108	90	160	35mmq AWG3
LI-C90-500-225-US-01	50-500	225	90	3x480V – 60Hz	120	100	200	50mmq AWG1/0
LI-C10-500-020-EU-01	50-500	20	10	3x400V – 50Hz	16	11	25	4mmq AWG10
LI-C36-500-080-EU-01	50-500	80	36	3x400V – 50Hz	58	40	80	16mmq AWG6
LI-C50-500-125-EU-01	50-500	125	50	3x400V – 50Hz	80	55	125	25mmq AWG3
LI-C80-500-200-EU-01	50-500	200	80	3x400V – 50Hz	130	90	200	50mmq AWG1/0
LI-C90-500-225-EU-01	50-500	225	90	3x400V – 50Hz	145	100	200	70mmq AWG2/0

(*) Recommended Fuses: class J or class aM

(*) Recommended Circuit Breaker: class D or K.

Table 4

NOTE

In order to avoid the intervention of the input fuses due to the inrush current of the power transformer, it's advisable to use Class J fuses.

To avoid the intervention of the input circuit breaker, due to the inrush current of the power transformer, it's advisable to use breakers with D or K curve.

CAUTION!
Before to install the charger:
Check that the charger input voltage (V) is identical to your AC power supply voltage.
Check that the charger max input power (KVA) is available from your AC power supply.

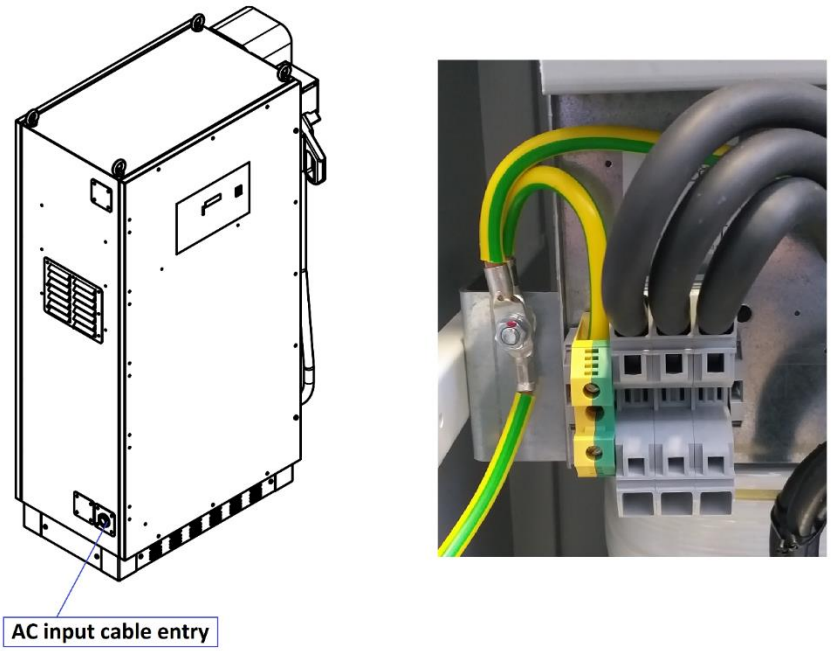
WARNING!
Avoid the power cable from being in an unsafety position. If the cable come worn out or damaged contact your dealer's service to have it replaced immediately. Should you use an extension cord or multiple socket, make sure it supports the total amount of current draw.

WARNING!
The cabinet of the battery charger must be properly grounded to protect personnel against hazard of electrical shock in case of fault on the charger!
The grounding conductor must have a current carrying capacity equal or higher than the current carrying capacity of the AC-input wires.

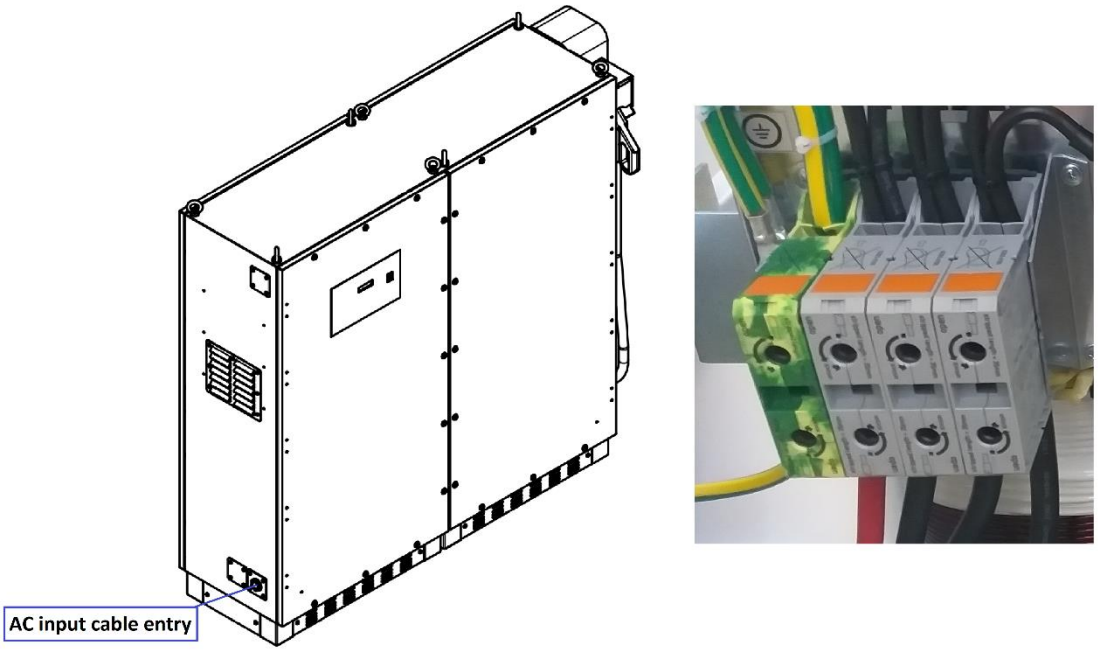
NOTE
Grounding and line connection

If, for any reason, an input cable which does not include a grounding conductor is used, the equipment must be grounded with separate conductor. Minimum size and colour coding requirements must be in accordance with any applicable national or local code.
Procedure

- Read on the data label the AC current value corresponding to the line voltage to which charger is to be connected. Using this current value, select the proper fuses, disconnect switch/circuit breaker and power cable size, according with any applicable national or local code.
- Check that the charger is disconnected from AC input and battery.
- Open the cabinet.
- Route the input cable/cables through the openings located on the left side on the bottom (pictures 4 and 5).
- Mount the input cable/cables and connect the four power conductors (three phases + ground) to the AC INPUT terminal blocks (pictures 4 and 5).
  The input terminal block may vary depending by the power supply type and by the rating of the charger.



Picture 4



Picture 5

- Close the cabinet.
- Move the disconnect switch/circuit breaker on the mains junction box in position OFF.

- Connect the power cable/cables coming from the charger on the disconnect switch/circuit breaker inside the mains junction box.
- Install the fuses on the disconnect switch if necessary.
- Close the mains junction box.
- Move the disconnect switch/circuit breaker in position ON to provide power supply to the charger.

If the unit is already equipped of input cable and plug:

- Check if input cable and plug are OK based on the current absorbed by the charger. Refer to the data label.
- Move the disconnect switch/circuit breaker on the mains junction box in position OFF.
- Connect the AC Input plug of the charger on the socket on the mains junction box.
- Move the disconnect switch/circuit breaker in position ON to provide power supply to the charger.

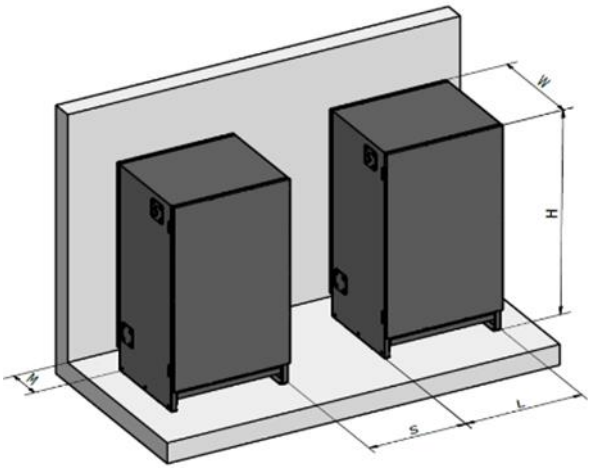
4.4 Mechanical Installation

WARNING!
Place the battery charger on a flat and stable surface.
To reduce the risk of fire, the charger must be installed on a floor of non-combustible material.
If this is not possible, a floor plate of at least 1,6mm steel, extended at least 150mm beyond the charger on all sides, must be installed.

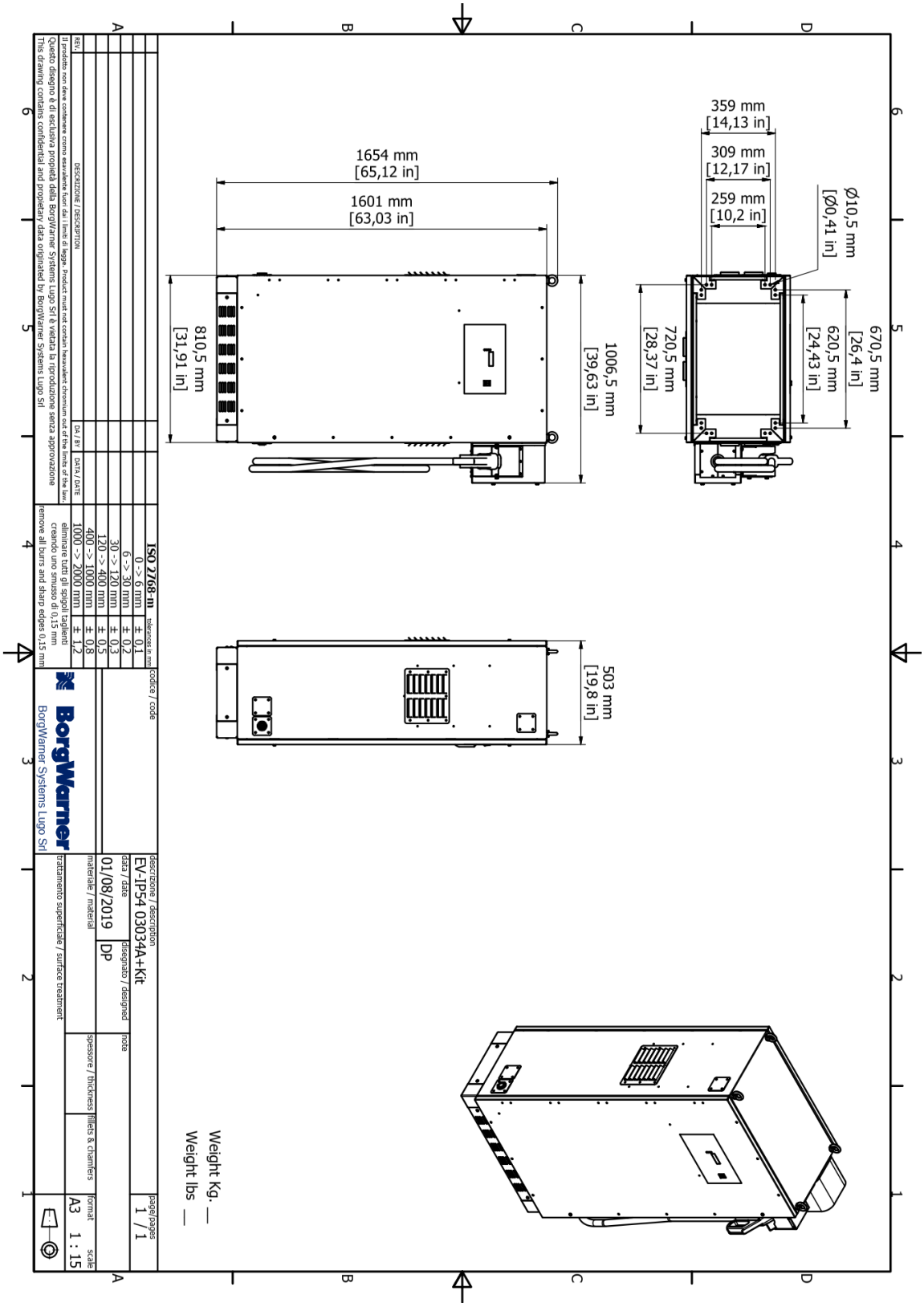
CAUTION!
Allow adequate air circulation to prevent internal heat build-up.
Do not place the unit near materials that may block the ventilation slots.
Do not install the unit near heat sources such as radiators or air ducts, or in a place subject to direct sunlight, excessive dust, mechanical vibration or shock.
Make sure there is enough free space around the battery charger to safeguard correct ventilation and ready access to the cable connector.

M=150mm
S=460mm

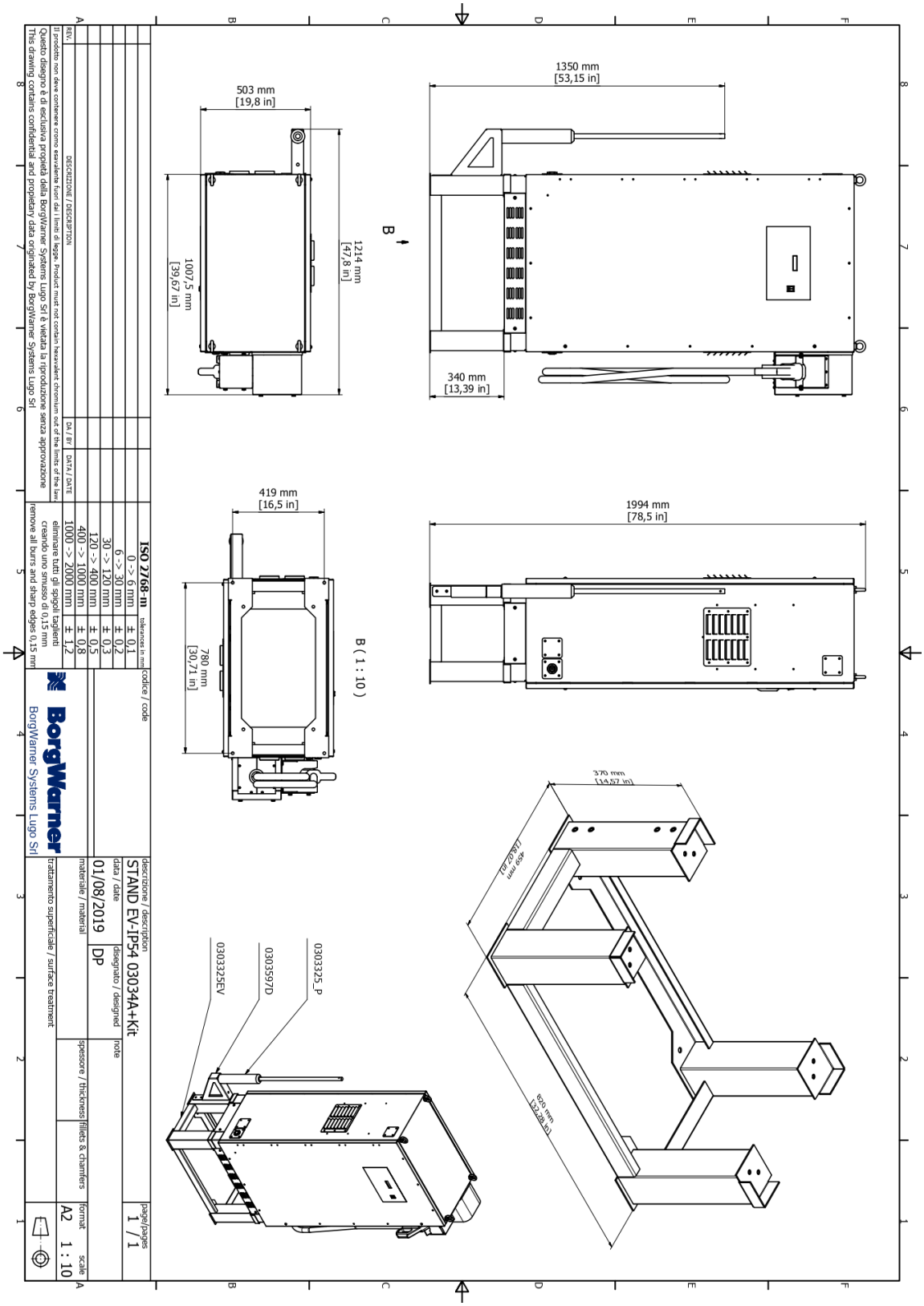
-



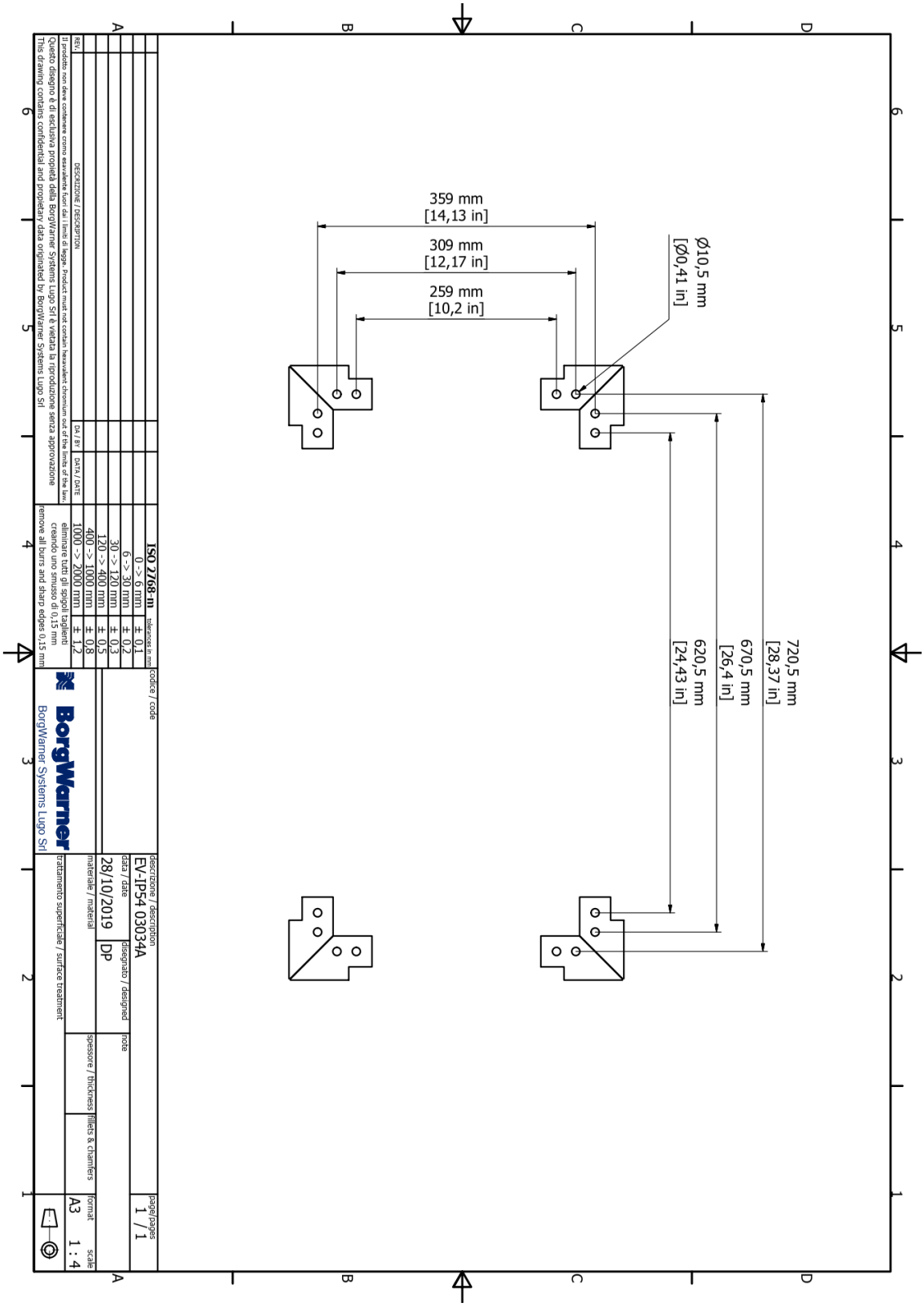
Picture 6


359 mm
[14,13 in]
309 mm
[12,17 in]
259 mm
[10,2 in]
Ø10,5 mm
[Ø0,41 in]
1654 mm
[65,12 in]
1601 mm
[63,03 in]
810,5 mm
[31,91 in]
1006,5 mm
[39,63 in]
670,5 mm
[26,4 in]
620,5 mm
[24,43 in]
720,5 mm
[28,37 in]
503 mm
[19,8 in]
Weight Kg. —
Weight lbs —
BorgWarner
BorgWarner Systems Lugo Srl
ISO 2768-m
0 -> 6 mm ± 0,1
6 -> 30 mm ± 0,2
30 -> 120 mm ± 0,3
120 -> 400 mm ± 0,5
400 -> 1000 mm ± 0,8
1000 -> 2000 mm ± 1,2
EV-IP54 03034A+Kit
01/08/2019
DP
A3
1 : 15
1 / 1

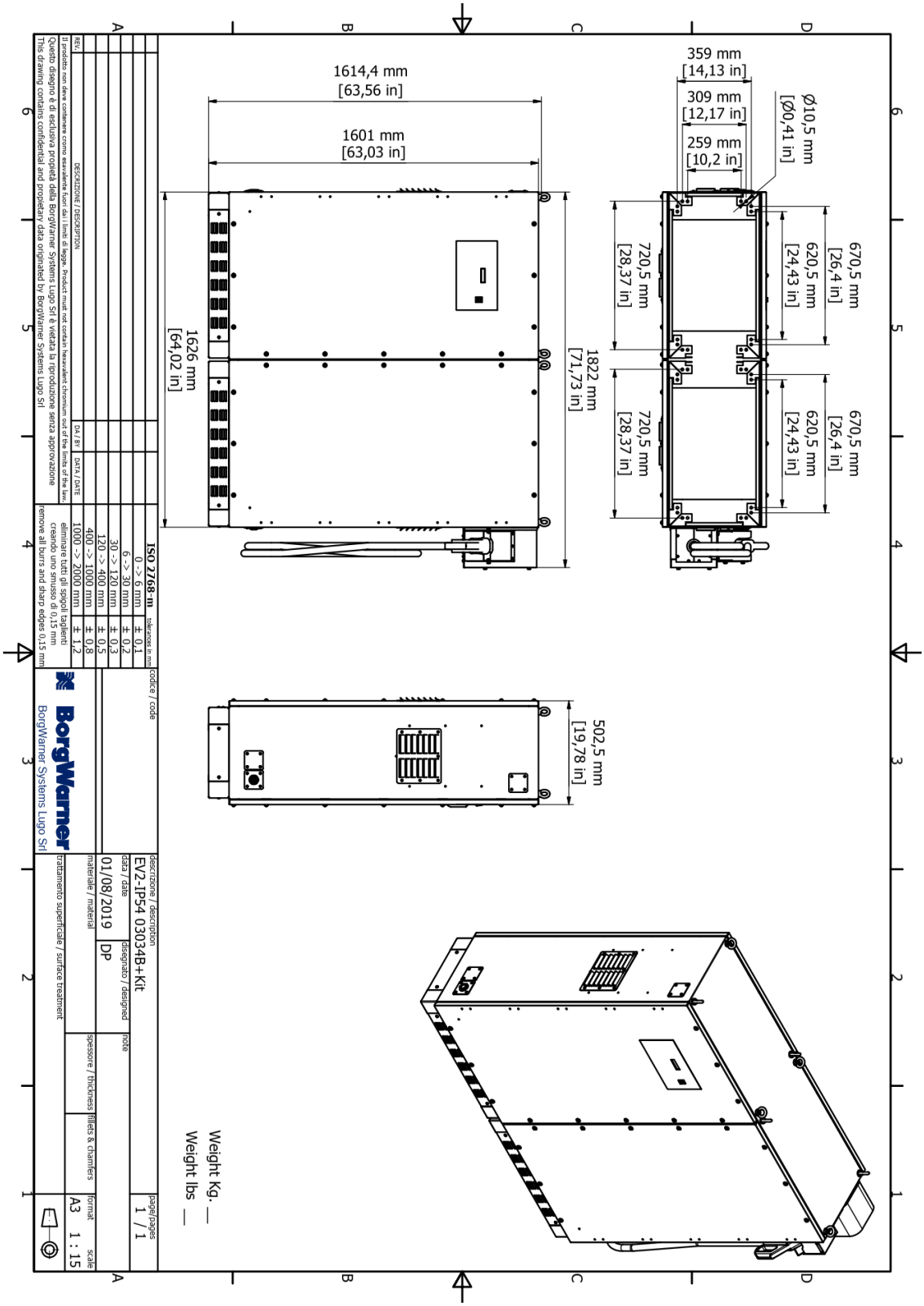
Picture 7


503 mm
[19,8 in]
1007,5 mm
[39,67 in]
1214 mm
[47,8 in]
B
1350 mm
[53,15 in]
340 mm
[13,39 in]
419 mm
[16,5 in]
780 mm
[30,71 in]
B (1 : 10)
1994 mm
[78,5 in]
0303325EV
0303597D
0303325_P
STAND EV-IP54 03034A+Kit
01/08/2019
DP
1 / 1
A2
1 : 10

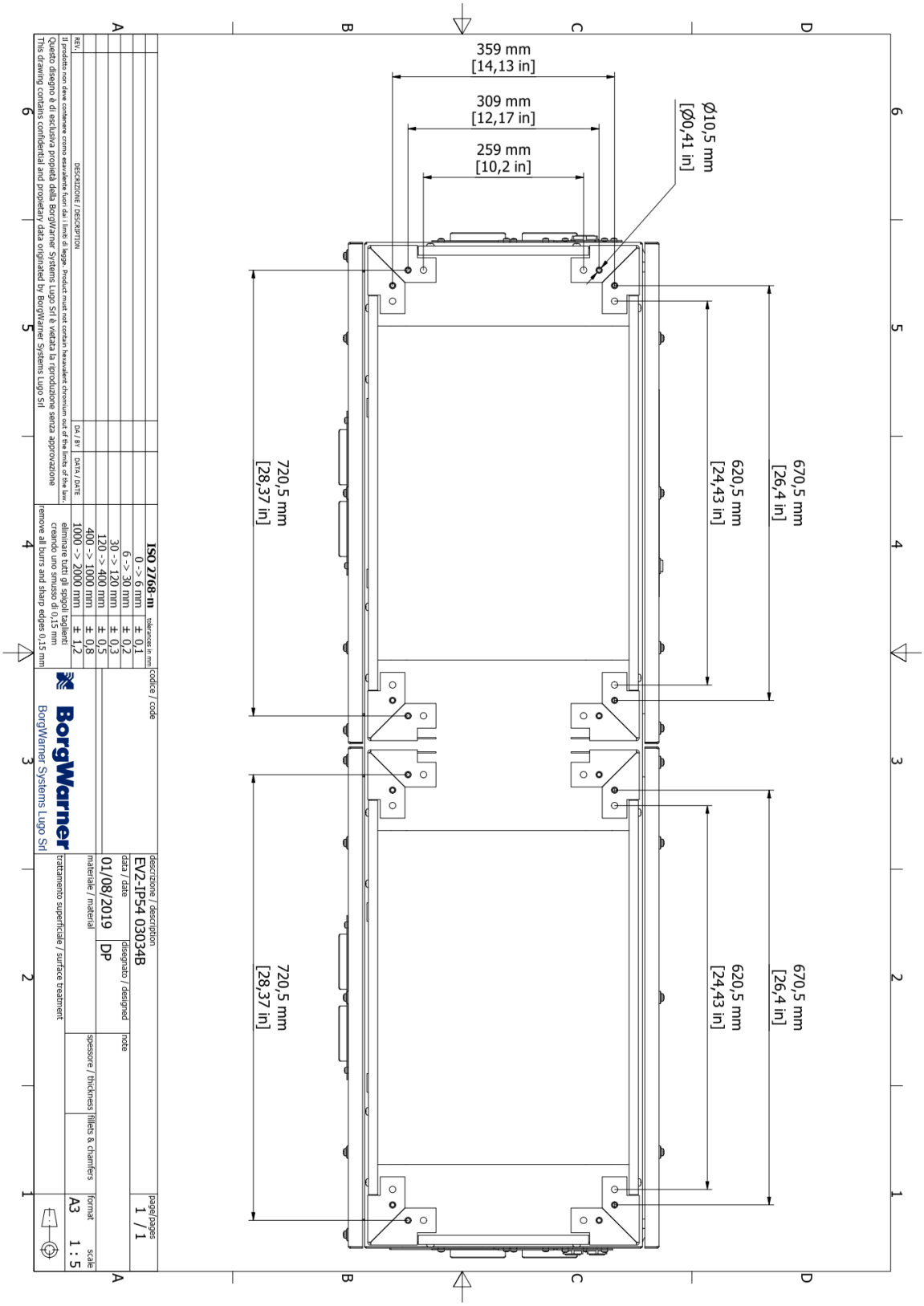
Picture 8


359 mm
[14,13 in]
309 mm
[12,17 in]
259 mm
[10,2 in]
Ø10,5 mm
[Ø0,41 in]
720,5 mm
[28,37 in]
670,5 mm
[26,4 in]
620,5 mm
[24,43 in]
ISO 2768-m
EV-IP54 03034A
28/10/2019
DP
A3
1 : 4
BorgWarner Systems Lugo Srl

Picture 9


1614,4 mm
[63,56 in]
1601 mm
[63,03 in]
1626 mm
[64,02 in]
359 mm
[14,13 in]
309 mm
[12,17 in]
259 mm
[10,2 in]
Ø10,5 mm
[Ø0,41 in]
670,5 mm
[26,4 in]
620,5 mm
[24,43 in]
720,5 mm
[28,37 in]
1822 mm
[71,73 in]
502,5 mm
[19,78 in]
Weight Kg. —
Weight lbs —
BorgWarner Systems Lugo Srl
EV2-IP54 03034B+Kit
01/08/2019
DP
A3
1 : 15

Picture 10


359 mm
[14,13 in]
309 mm
[12,17 in]
259 mm
[10,2 in]
Ø10,5 mm
[Ø0,41 in]
720,5 mm
[28,37 in]
620,5 mm
[24,43 in]
670,5 mm
[26,4 in]
720,5 mm
[28,37 in]
620,5 mm
[24,43 in]
670,5 mm
[26,4 in]
BorgWarner
BorgWarner Systems Lugo Srl
EV2-IP54 03034B
01/08/2019
DP
A3
1 : 5
1 / 1

Picture 11

5. Operation

5.1 Battery connection voltage check and AutoStart

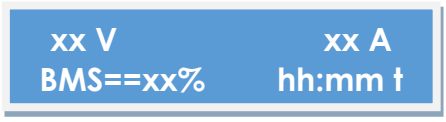
CAUTION!
LION Series chargers are programmed to do a complete cycle of charge automatically; however, it's always recommended to survey the operations, especially when the battery is connected to the charger for more than 12 hours.

Turn on the charger moving in 1 position the main switch 0/1.
With battery not connected the charger is in stand-by mode.
The display shows the message:

Remove the DC Plug of the charger from the housing.
Connect the DC Plug of the charger on the vehicle socket.
The charging process begins automatically:

The output current will ramp up slowly to the value that is commanded by the BMS, and the display will show the charge parameters:

[Volt]	BATTERY VOLTAGE,
[Amps]	CHARGING CURRENT,
[Ah]	CAPACITY RETURNED TO THE BATTERY,
[BMS %]	DUTY CYCLE OF THE PWM SIGNAL GENERATED BY THE BMS,
[hh:mm]	TOTAL CHARGE TIME



While the charge is in progress, the charge parameters continuously showed on the display. The LEDs indicate the charge status:
LED 1 - L1: Battery state of charge 'SOC'<50%
LED 2 - L2: Battery state of charge 'SOC'>50%
LED 3 - L3 Charge Completed
LED 4 - L4: Emergency Stop (Over Voltage, Over Current, Internal failure, BMS failure, Can bus failure).

5.2 Automatic and manual charge termination

WARNING!
Don't disconnect the battery from the charger while it's being charged.

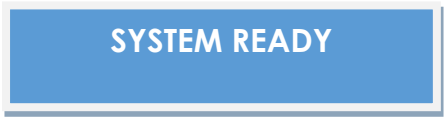
When the charge has been normally completed, the power stage turns off automatically, and it's possible to disconnect the battery:

While the charge is in progress, it's possible to suspend it in any moment, by pressing the button UP and keeping it pressed for 3 seconds.
The charge current will be reduced to zero and the display will show the message:

Now It's possible to disconnect the battery.

5.3 Alarms during the charging process

A. The display board shows SYSTEM READY also with charger plug connected to the battery socket.



The problem could be on the CAN-BUS Communication.

B. Emergency Stop – Maximum Time exceeded.

If the charging process is not completed within a programmable time limit this alarm occurs.

C. Emergency STOP – INT. POWER STAGE

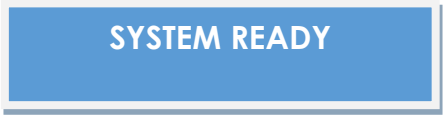
This error happens if the chargers force an output current different from 0A, but the current remains 0A.
The problem could be on the antiarcing system or there is an internal alarm enabled as the intervention of a thermostat or a problem on the cooling system.

D. Emergency STOP – Maximum Internal Temperature.

The internal temperature of the PowerStage has reached the maximum value.
The problem could be on the cooling system or in a bad location where the charger is installed.

5.4 Access to User parameters

- Turn on the charger acting on the main switch 0/1.
  Don't connect the vehicle and keep the DC plug of the charger on the housing.



- Press and keep pressed the DOWN Pushbutton until the "Password" prompt is displayed.

Use the pushbuttons UP and DOWN to enter the user-level password:

UP – DOWN – UP - DOWN – UP

The user parameters are displayed. It is possible to navigate through them by using the UP/DOWN buttons.

To modify a parameter, keep pressed the ENTER button until a square cursor is displayed.

Parameters' values can be modified by using the UP/DOWN buttons.

To save a parameter, keep pressed the ENTER button until the square cursor disappears.

To exit from the user menu and return to the normal operation mode, press both the UP and DOWN keys at the same time.

RANGE VOLT.START

Sets the battery's voltage range in which the charger starts the charging process.

MAX OUTPUT POWER

Sets the maximum deliverable power in watts.

CAN BAUD RATE

Sets the baud rate of the CAN bus.

START BEG<->END

Sets the time of the day in which the charger starts/stops the charging process, provided that a battery is attached.

DATE/TIME

Sets the current date/time of the day.

INTERNAL COOLING

Sets the duration of time in which the cooling fan is on after the charging process has ended.

MAX INTERN.TEMP.

Sets the maximum temperature (as measured by the temperature probe), above which an alarm is issued.

COOLING TIME

Sets the duration in minutes the charger remains in cooling mode after the charging process has ended.

STARTUP TIME

Sets the delay in seconds from the moment a battery is attached to the start of the charging process.

CHARGING CURRENT

Sets the maximum amount of deliverable current (in percentage of the nominal current).

BMS VALUE

It's a read-only parameter whose value is the current setpoint that has been received from the BMS.

MAX VOLT CONTROL

When enabled, the charger displays the voltage setpoint from the BMS instead of the measured value.

5.5 History Log

At the end of each charge cycle, the charging station saves the relevant charge data into the DATA LOGGER memory.
The history log can be accessed in any moment, even while a charge cycle is in progress.
Scroll the menu using the UP or DOWN pushbuttons, until the display shows the message:

MENU STATS

Press ENTER for 3 seconds, until the cursor starts to blink.
Using the UP pushbutton, it's possible to scroll between all the charge logs.
Each charge log is composed by two pages.
Use the UP or DOWN pushbuttons scroll between each record.

PAGE A

No Start	VSTART Date and	VSTOP Time

No	=	Number of cycle (1 is the most recent),
Vstart	=	Battery Voltage at the connection,
Vstop	=	Battery Voltage at the end of the charge,
Start Date and Time	=	Date and Time of the BEGINNING of the charge.

PAGE B

End TT	Date and HH.MM	Time AHRET

End Date and Time	=	Date and Time of the TERMINATION of the charge
TT	=	Charge Termination Code (see next paragraph)

HH.MM = Total charge time
AHRET = Total capacity Returned to the battery

5.6 Charger Termination Code

GROUP 1: CHARGE COMPLETED

01 *Charge completed successfully.*
18 *Unplugged after Charge completed successfully.*

GROUP 2: MANUAL STOP

11 *Charge stopped manually.*
20 *Charge stopped manually during charging.*

GROUP 3: BATTERY DISCONNECTED

30 *The battery has been disconnected before the begin of the charge, while the charger was waiting for the programmed Start Time window.*
34 *The battery has been disconnected during charging with BMS.*
36 *The battery has been disconnected during initial hand shake with BMS.*
42 *The battery has been disconnected before the begin of the charge, while the charger was waiting for internal Power Stage ON.*
43 *The battery has been disconnected before the begin of the charge, while the charger was waiting for recognize battery.*

GROUP 4: EMERGENCY STOP

61 *Emergency Stop!*
Maximum voltage exceeded during charging.
69 *Emergency Stop!*
Maximum temperature exceeded during charging.
K0 *Emergency Stop!*
Maximum time overrange, during charging.
K1 *Emergency Stop! BMS in fault.*
K2 *Emergency Stop! CAN BUS line in fault.*
K3 *Emergency Stop! Charger internal fault.*

GROUP 5: WARNING MESSAGES

82	*The battery has been disconnected while the charge was in progress.*
83	*Output fuse blown, or AC Input in error.*
86	*Internal temperature probe malfunction.*
88	*Can bus. missing messages.*
99	*Black out of the AC input.*

END OF MANUAL

DM series

30kW Moveable DC Fast Charger

Feature

- Multi-standard: CCS, CHAdeMO and GB/T
- Network or standalone operation
- User authentication
- Supports smart charging and load balancing
- Efficiency > 94%
- PF > 0.99(APFC)
- 7-inch LCD screen with user friendly interface
- OCPP 1.6 JSON
- IK10/NEMA 3R(Not including screen and RFID module), IP55
- Customization available

Applications

- Parking garage
- Commercial fleet operators
- EV dealer workshops

Wheel

For EU

For US

Model Name		CE, DM 30 Series	UL, DM 30 Series
Safety (Not including GB)		CE/CB (Europe)	NRTL – cETLus (USA/Canada)
Picture			
Power Specification			
AC Input	Input Rating	3Φ_380~415Vac (±15%)	3Φ_480Vac (+10%, -15%)
	AC Input Connection	3P+N+PE (Wye configuration),TN/TT/IT	3P+N+PE (Wye configuration),TN/TT
	Max. Input Current	3Φ47A	3Φ40A
	Frequency	50Hz/60Hz	
	Power Factor	> 0.99	
	Efficiency	>94%,at optimize V/I point	
DC Output	Output Voltage Range	• CHAdeMO:150~500Vdc • CCS:150~950Vdc	
	Max. Output Current	CHAdeMO/CCS:60A@500Vdc	
	Max. Output Power	DC 30kW	
	Voltage Accuracy	±2%	
	Current Accuracy	±2%	
User Interface & Control			
Display		7" LCD	
Push Buttons		Operation buttons /Emergency stop button	
User Authentication		RFID: support ISO 14443A/B, ISO 15693, FeliCa Lite-S (RCS966) OCPP, 2D barcode, APP, Mobile payment	
Communication			
External		Ethernet,Wi-Fi,and 4G	
Internal		CAN bus/RS485	
Environmental			
Operating Temperature		-30˚C~50˚C, will derating from 50˚C and above	
Humidity		5%~95% RH, non-condensing	
Altitude		≦ 2000m	
IP/IK Level		• IP55 • IK10 (not including screen and RFID module)	• NEMA 3R • IK10 (not including screen and RFID module)
Cooling Method		Fan cooling	
Mechanical			
Cabinet Dimension(W x D x H)		W589XD620XH1020mm(cable holder 155)	W589XD620XH988mm (cable holder 155)
Weight		≦ 80kg ±1%	
Cable Length		4m	
Protection			
Input Protection		OVP, OCP, OPP, OTP, UVP, RCD, SPD	OVP, OCP, OPP, OTP, UVP, SPD
Output Protection		OCP, SCP, OVP, LVP, OTP, IMD	
Regulation			
Certificate		IEC 61851-1, IEC 61851-23, IEC 61851-21-2	UL 2202, UL2231
Charging Interface		CHAdeMO V1.2, DIN 70121, ISO15118, GB/T 27930	

LAST REVISION : KL 2021-09-21

STROMCORE FREEZER CHARGER	
Model	LI-C36-C4-EV2R-STR
Nominal output	24-80Vdc 400A (38.4kW)
Input	3x 480Vac (~5%)
Phase current max	3x 55A (~5%)
Minimum input wire	AWG4
Enclosure	NEMAEV
Protection type	IP54 / NEMA 3R
Operating temperature	-20C to +45C
CanBus	TURBO (P2)
Cable Length	15’
Connector type	1x LV500
Option	Heaters, cable mesh.