

Products Catalogue 2025

Session: 2025/2028

*Recharging made smarter.
Solutions made stronger.*

Advanced battery chargers, dischargers, power supplies and converters for industrial and vehicle applications.
A complete range of smart chargers, dischargers and power systems for mobility and industrial use.
Innovative charging, discharging and power solutions for vehicles, logistics and industry.
Smart energy systems for charging, discharging and powering industrial and vehicle fleets.



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TABLE OF
CONTENTS

UBC Series Universal Battery Chargers	04
BDC Series Battery Discharger	16
BCC Series Battery Conditioning Charger	20
IPS Series Industrial Power Supply	26
HFC Series High Frequency Chargers	30
DDC Series Converter Family	40
FRC Series Ferro Resonant Chargers	48



UBC Series

Universal Battery Chargers

Engineered for high performance and reliability. The UBC Series offers a smart, flexible, and safe technology for battery charging, designed to meet the demands of modern industrial and commercial

Technical Features

- True universal compatibility
- Multi-Voltage, Multi-Capacity
- Multi-Chemistry
 - Sealed Battery (Flooded, GEL, VRLA)
 - Lithium Battery
- Suitable for all charging modes: conventional, opportunity, and fast charging
- Customizable charging curves
- Automatic battery recognition
- Reduces water consumption and extends battery life
- Customizable CAN BUS communication (only for Lithium Battery)
- Complete electronic protection system:
 - Wrong AC input
 - Wrong battery
 - Reverse polarity detection
- Easy maintenance with a highly reliable design
- Integrated data logger for advanced diagnostics



Power (kW)	V out	A out	V input (3x Vac ±10%)	Cabinet
6 - 20	24, 48, 80, 96	100 – 250	208, 230, 400, 440, 480, 600	A1
9 - 32	24, 36, 48, 80, 96	100 – 400	208, 230, 400, 440, 480, 600	A2
12 - 36	24, 36, 48, 59, 80	250 – 600	400, 440, 480, 600	A3
50	500	125	400, 480	A4
100	500	225	400, 480	A5

UBC Series

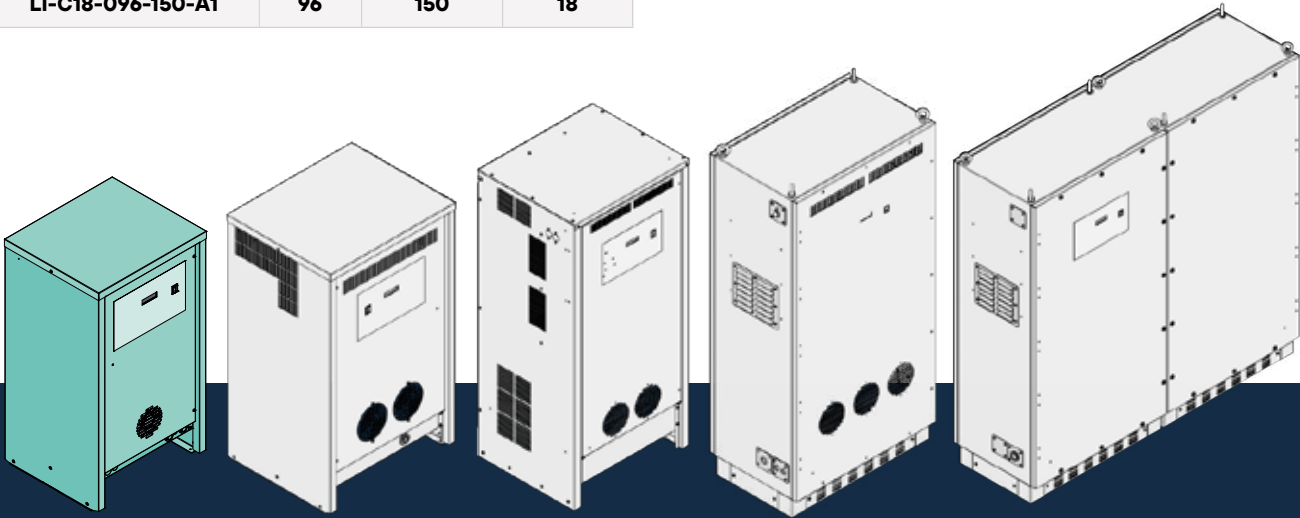
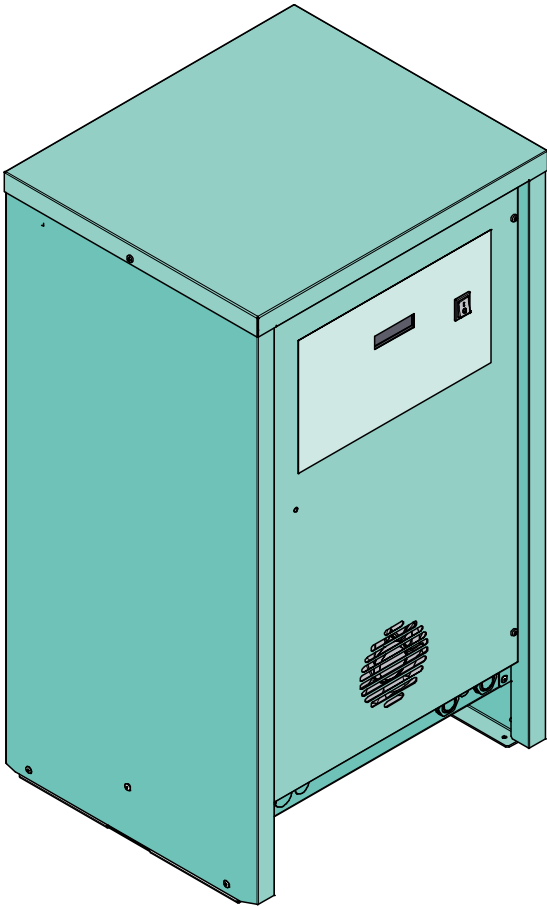
Universal
Battery
Chargers

A1

Technical Features

- Suitable for charging modes:
Conventional
Opportunity
- Customizable charging curves
- Customizable CAN BUS communication
(only for Lithium Battery)

GENERIC CODE	BATTERY VOLTAGE	CHARGING CURRENT	MAX POWER (KW)
LI-C06-024-200-A1	24	200	6
LI-C08-024-250-A1	24	250	8
LI-C09-048-150-A1	48	150	9
LI-C12-048-200-A1	48	200	12
LI-C15-048-250-A1	48	250	15
LI-C10-080-100-A1	80	100	10
LI-C15-080-150-A1	80	150	15
LI-C20-080-200-A1	80	200	20
LI-C12-096-100-A1	96	100	12
LI-C18-096-150-A1	96	150	18



A1

A2

A3

A4

A5

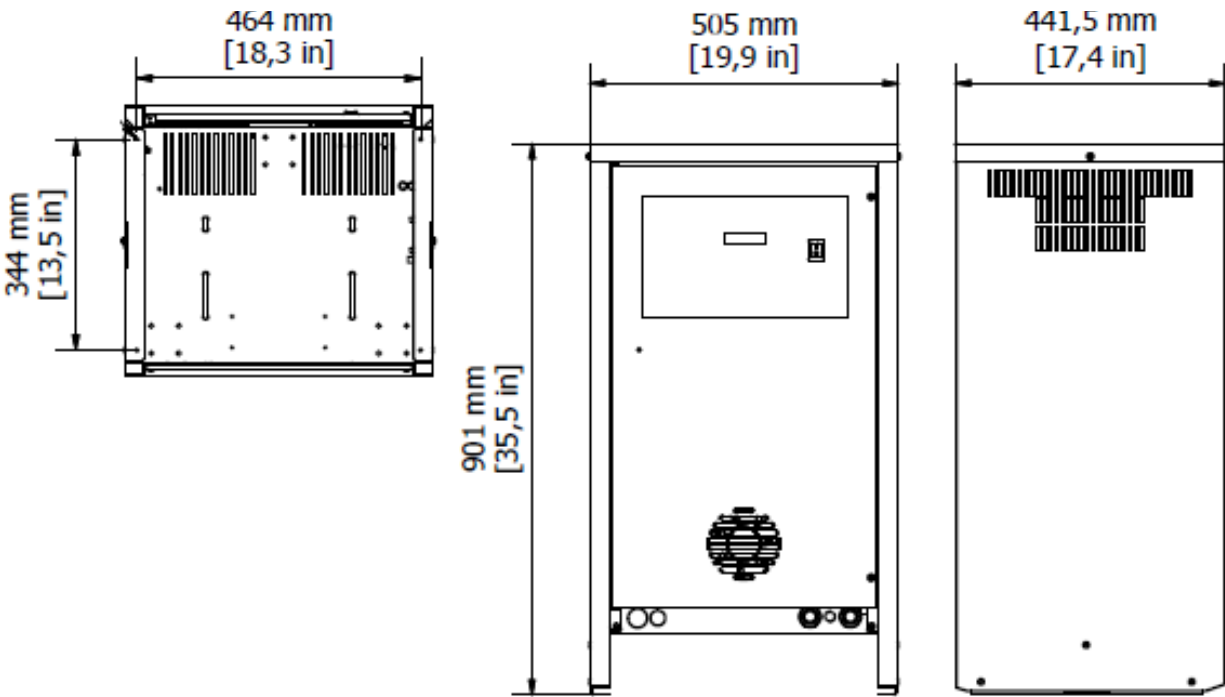
UBC Series A1

STANDARDS	
Quality	ISO 9001:2008
Marking	CE, CEC
EMC	IEC EN 61000-6-2, IEC EN 61000-6-4
Safety	IEC EN 50178, IEC EN 062040-1
Test and Performance	IEC EN 62040-3
North American Standards	UL 1564, CSA 22.2 107.2-01

MECHANICAL	
Cooling	Air Cooled
IP level	IP21 (Standard) IP54(Optional)
Ambient Temperature	-10°C to +45°C
Storage Temperature	-20°C to +70°C
Humidity	<75%
Altitude (m)	>2000m according to EN62040-3

SPECIFICATIONS	
LineVoltage(VAC) ±10%	208, 220,240,400,440,480,600
Frequency(Hz)	50/60Hz±5%
PowerFactor	>98%
Efficiency	>93%

CHARGING APPLICATION SCENARIO
Sealed Battery: Flooded, GEL, VRLA
Lithium Battery: Can Bus Interface



HOUSING DIMENSION		
L (front) mm	W (side) mm	H mm
505	442	901



UBC Series

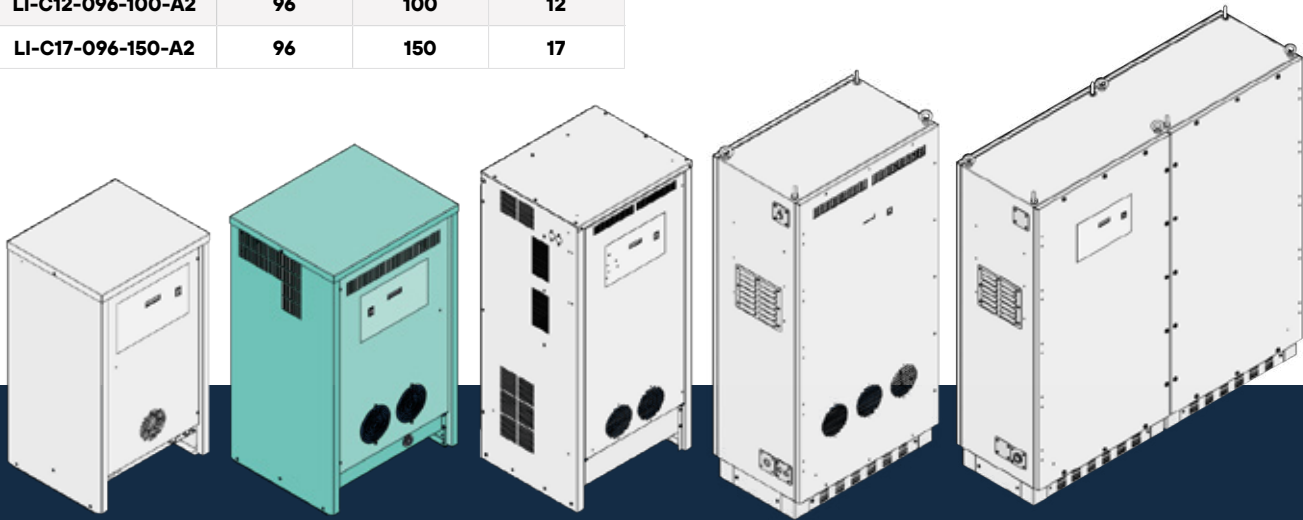
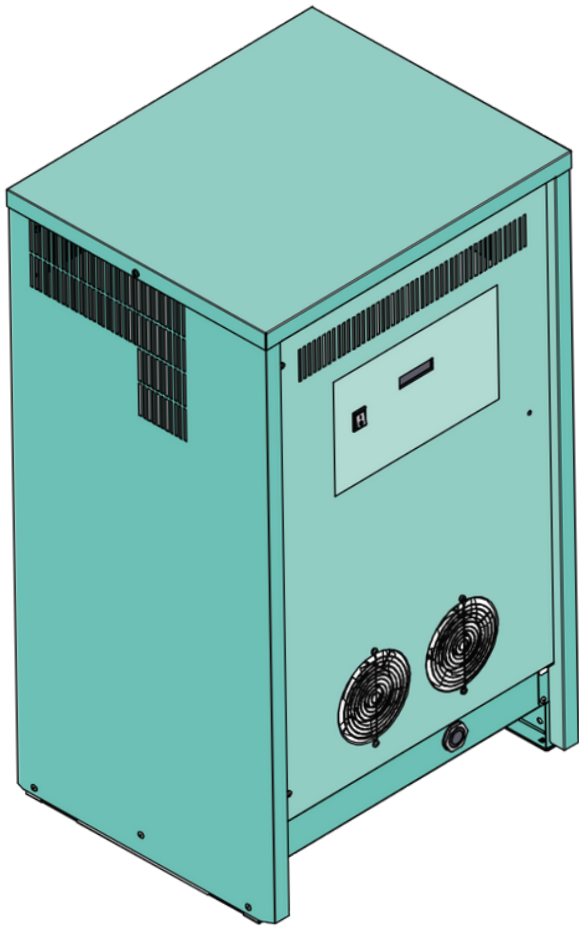
Universal Battery Chargers

A2

Technical Features

- Suitable for charging modes:
 - Conventional
 - Opportunity
 - Fast Charging
- Customizable charging curves
- Customizable CAN BUS communication (only for Lithium Battery)

GENERIC CODE	BATTERY VOLTAGE	CHARGING CURRENT	MAX POWER (KW)
LI-C09-024-360-A2	24	360	9
LI-C14-036-300-A2	36	300	14
LI-C12-048-200-A2	48	200	12
LI-C15-048-250-A2	48	250	15
LI-C17-048-300-A2	48	300	18
LI-C24-048-400-A2	48	400	24
LI-C18-059-250-A2	59	250	18
LI-C24-059-320-A2	59	320	24
LI-C20-080-200-A2	80	200	20
LI-C24-080-250-A2	80	250	24
LI-C30-080-320-A2	80	320	30
LI-C12-096-100-A2	96	100	12
LI-C17-096-150-A2	96	150	17



A1

A2

A3

A4

A5

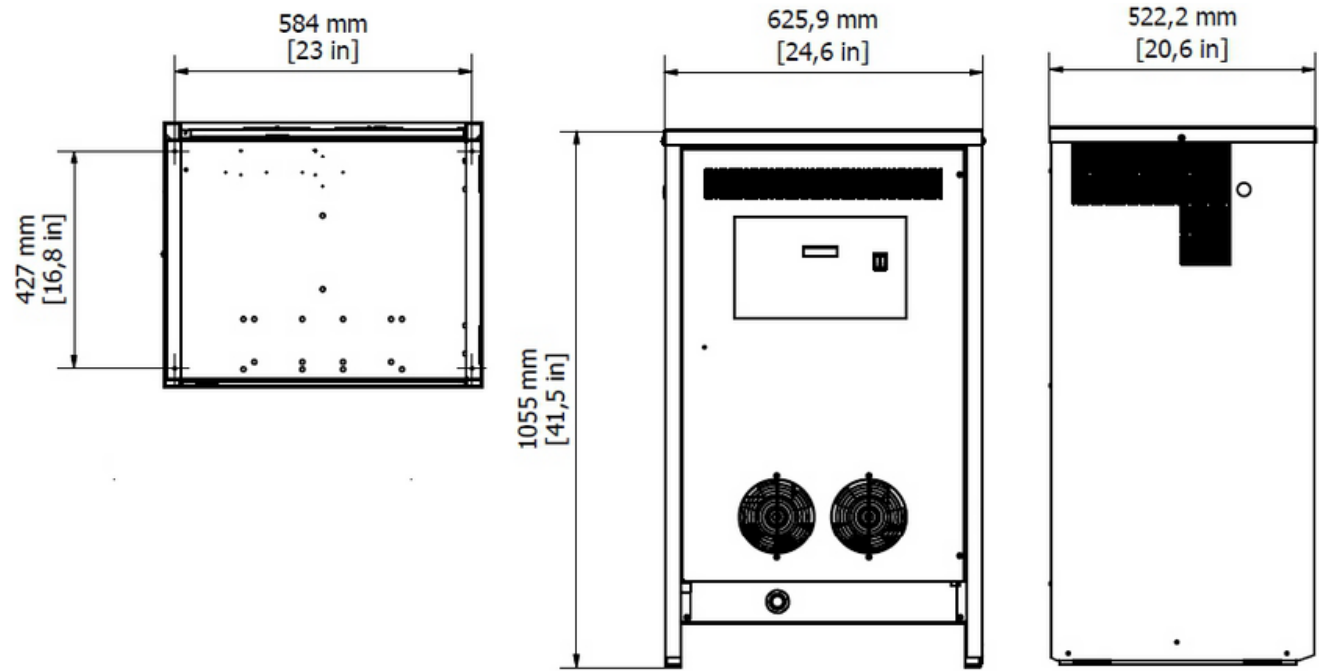
UBC Series A2

STANDARDS	
Quality	ISO 9001:2008
Marking	CE, CEC
EMC	IEC EN 61000-6-2, IEC EN 61000-6-4
Safety	IEC EN 50178, IEC EN 062040-1
Test and Performance	IEC EN 62040-3
North American Standards	UL 1564, CSA 22.2 107.2-01

MECHANICAL	
Cooling	Air Cooled
IP level	IP21 (Standard) IP54(Optional)
Ambient Temperature	-10°C to +45°C
Storage Temperature	-20°C to +70°C
Humidity	<75%
Altitude (m)	>2000m according to EN62040-3

SPECIFICATIONS	
LineVoltage(VAC) ±10%	208, 220,240,400,440,480,600
Frequency(Hz)	50/60Hz±5%
PowerFactor	>98%
Efficiency	>93%

CHARGING APPLICATION SCENARIO
Sealed Battery: Flooded, GEL, VRLA
Lithium Battery: Can Bus Interface



HOUSING DIMENSION		
L (front) mm	W (side) mm	H mm
626	552	1055



UBC Series

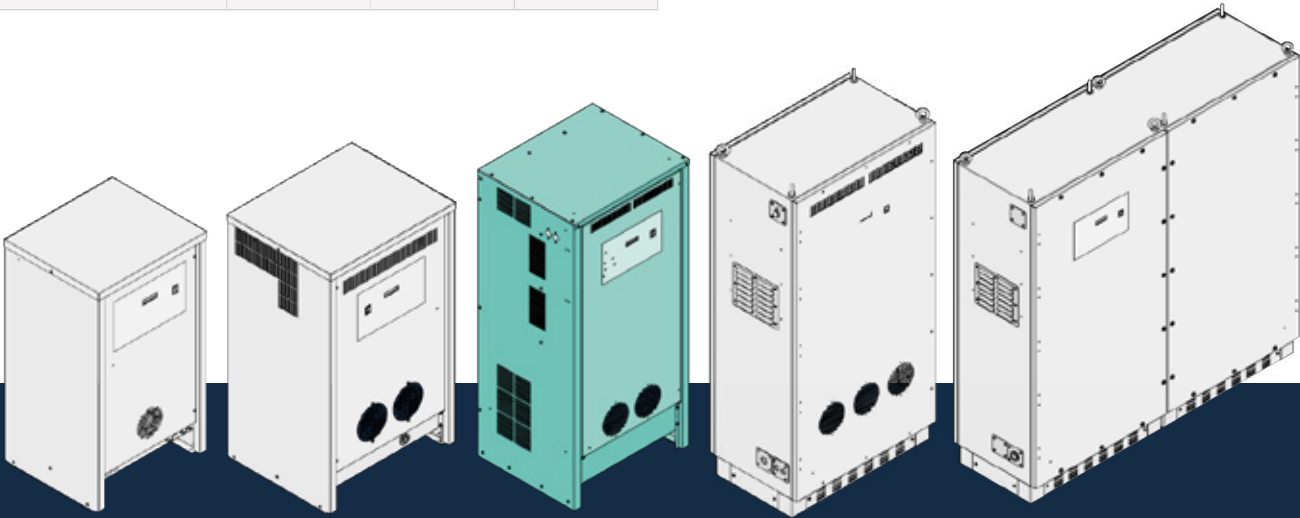
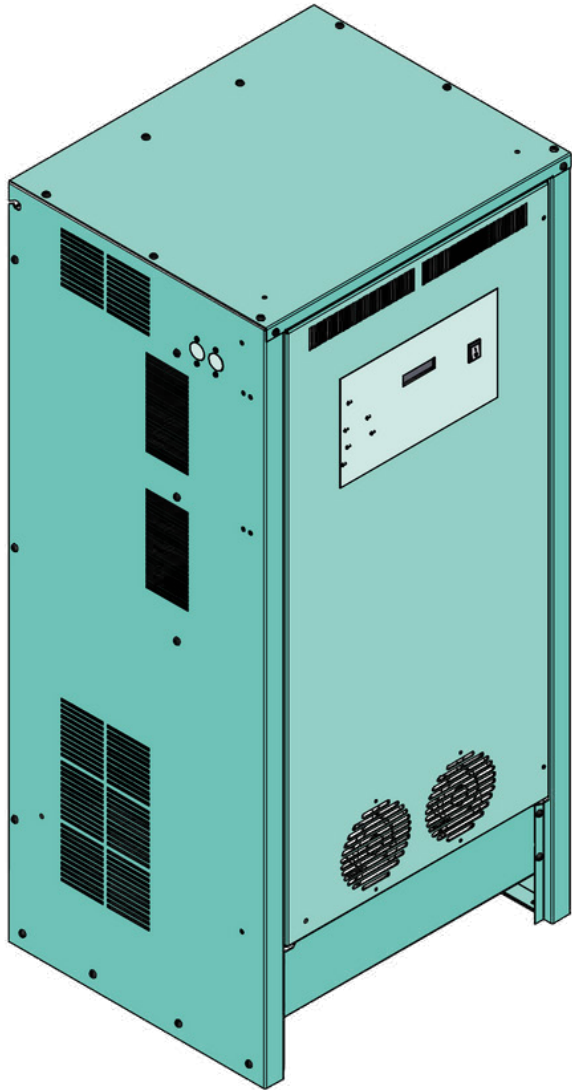
Universal
Battery
Chargers

A3

Technical Features

- Suitable for charging modes:
 - Conventional
 - Opportunity
 - Fast Charging
- Customizable charging curves
- Customizable CAN BUS communication (only for Lithium Battery)

GENERIC CODE	BATTERY VOLTAGE	CHARGING CURRENT	MAX POWER (KW)
LI-C12-024-400-A3	24	400	12
LI-C18-036-400-A3	36	400	18
LI-C24-048-400-A3	48	400	24
LI-C30-048-500-A3	48	500	30
LI-C36-048-600-A3	48	600	36
LI-C32-059-500-A3	59	500	32
LI-C36-059-600-A3	59	600	36
LI-C20-080-250-A3	80	250	20
LI-C33-080-320-A3	80	320	33
LI-C36-080-400-A3	80	400	36



A1

A2

A3

A4

A5

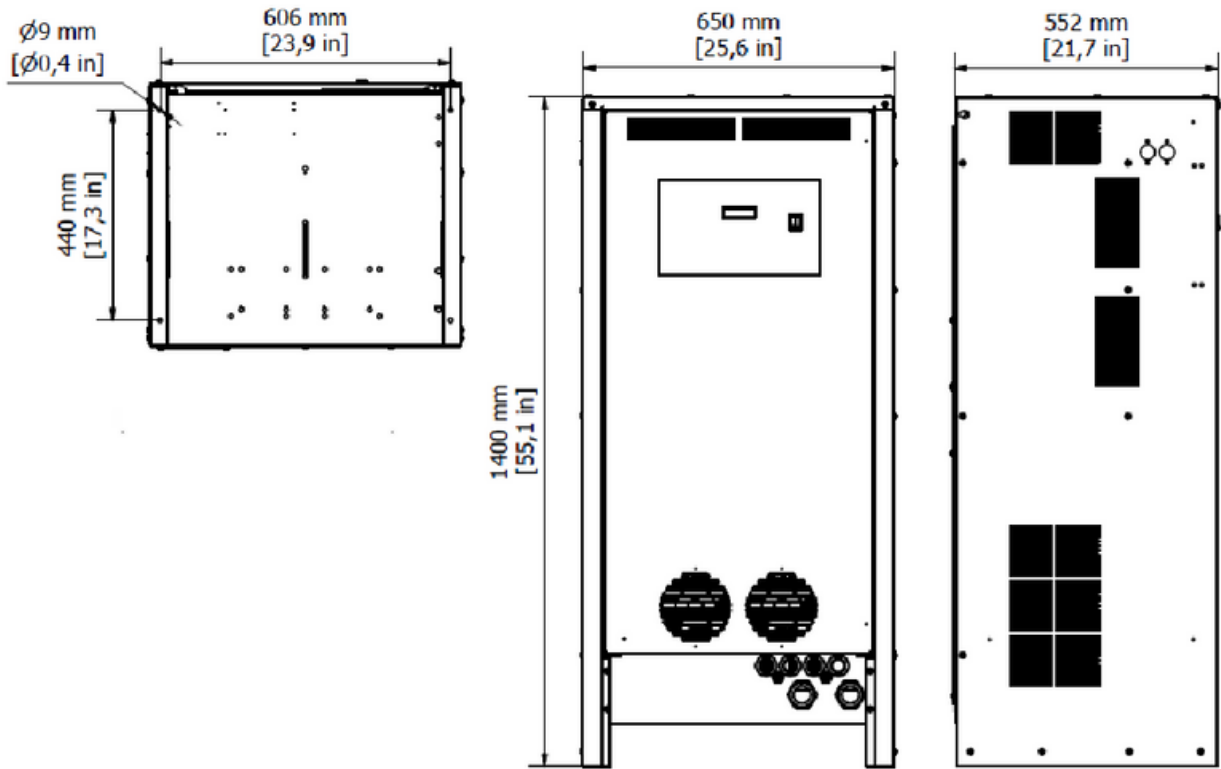
UBC Series A3

STANDARDS	
Quality	ISO 9001:2008
Marking	CE, CEC
EMC	IEC EN 61000-6-2, IEC EN 61000-6-4
Safety	IEC EN 50178, IEC EN 062040-1
Test and Performance	IEC EN 62040-3
North American Standards	UL 1564, CSA 22.2 107.2-01

SPECIFICATIONS	
Line Voltage (VAC) ±10%	208, 220, 240, 400, 440, 480, 600
Frequency (Hz)	50/60 Hz ±5%
Power Factor	>98%
Efficiency	>93%

MECHANICAL	
Cooling	Air Cooled
IP level	IP21 (Standard)
Ambient Temperature	-10°C to +45°C
Storage Temperature	-20°C to +70°C
Humidity	<75%
Altitude (m)	>2000m according to EN62040-3

CHARGING APPLICATION SCENARIO	
Sealed Battery: Flooded, GEL, VRLA	
Lithium Battery: Can Bus Interface	



HOUSING DIMENSION		
L (front) mm	W (side) mm	H mm
650	552	1400



UBC Series

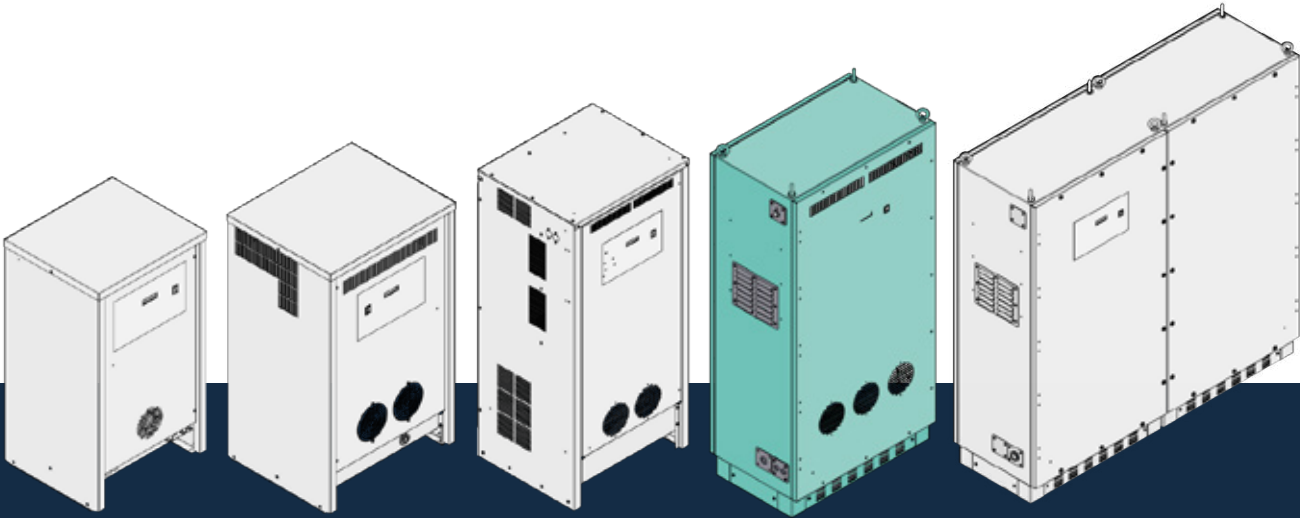
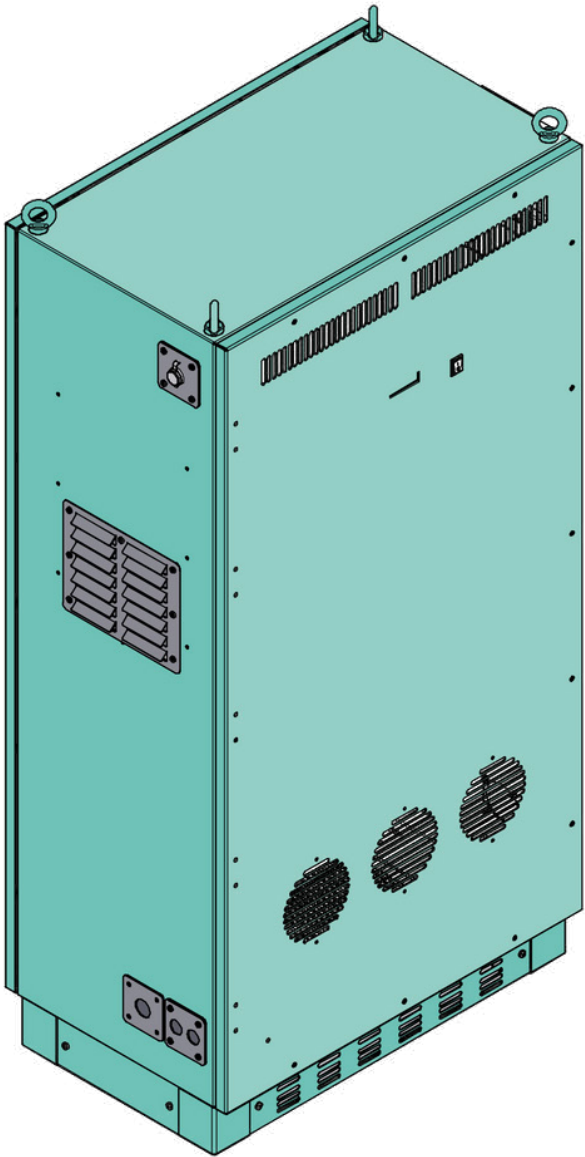
Universal
Battery
Chargers

A4

Technical Features

- Suitable for charging modes:
Conventional
Opportunity
Fast Charging
- Customizable charging curves
- Customizable CAN BUS communication
(only for Lithium Battery)

GENERIC CODE	BATTERY VOLTAGE	CHARGING CURRENT	MAX POWER (KW)
LI-C50-500-125-A4	500	125	50



A1

A2

A3

A4

A5

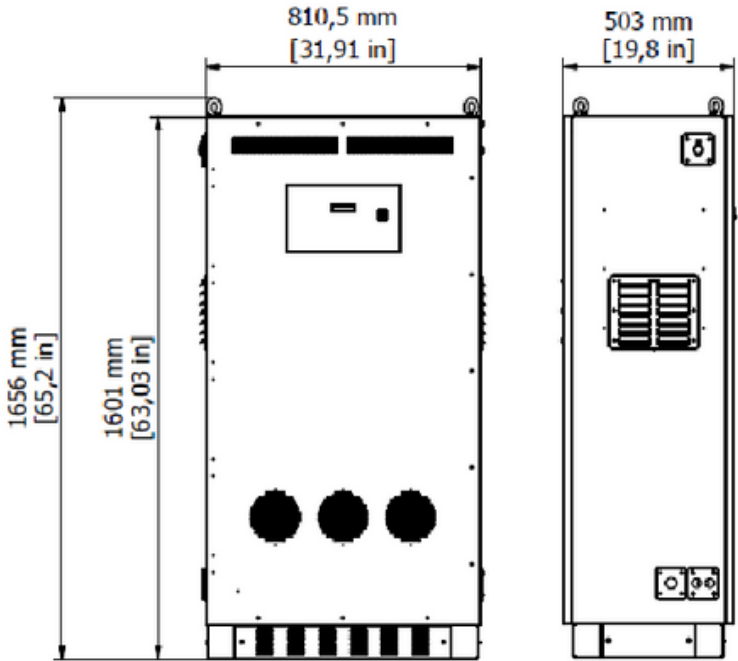
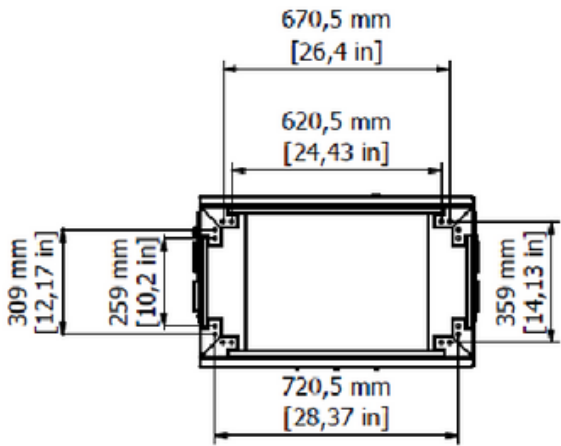
UBC Series A4

STANDARDS	
Quality	ISO 9001:2008
Marking	CE
EMC	IEC EN 61000-6-2, IEC EN 61000-6-4
Safety	IEC EN 50178, IEC EN 062040-1
Test and Performance	IEC EN 62040-3

MECHANICAL	
Cooling	Air Cooled
IP level	IP21 (Standard) IP54(Optional)
Ambient Temperature	-10°C to +50°C
Storage Temperature	-20°C to +70°C
Humidity	<75%
Altitude (m)	>2000m according to EN62040-3

SPECIFICATIONS	
Line Voltage (VAC) ±10%	400, 480
Frequency (Hz)	50/60 Hz ±5%
Power Factor	>98%
Efficiency	>93%

CHARGING APPLICATION SCENARIO
Sealed Battery: Flooded, GEL, VRLA
Lithium Battery: Can Bus Interface



HOUSING DIMENSION		
L (front) mm	W (side) mm	H mm
811	503	1601



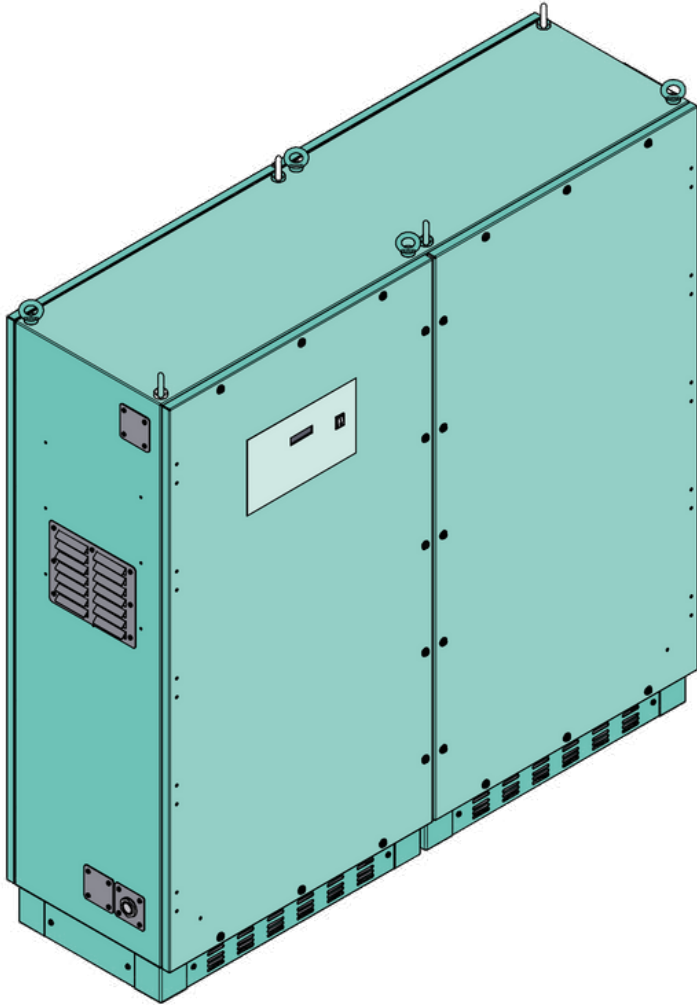
UBC Series

Universal
Battery
Chargers

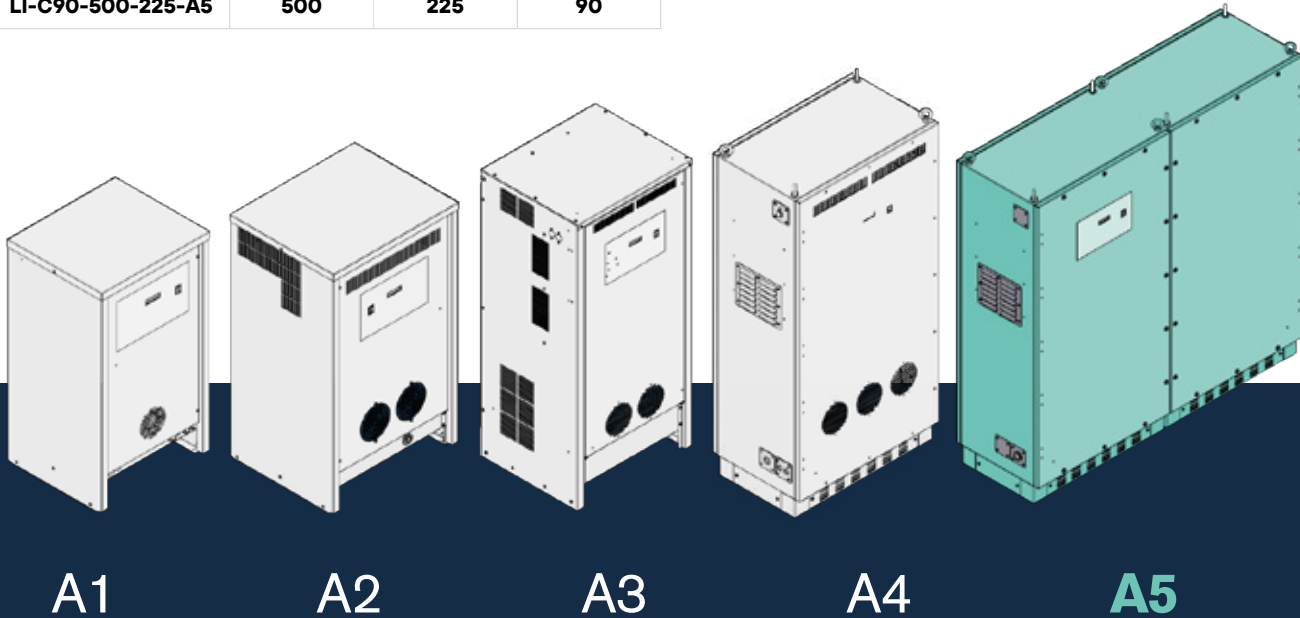
A5

Technical Features

- Suitable for charging modes:
 Conventional
 Opportunity
 Fast Charging
- Customizable charging curves
- Customizable CAN BUS communication
 (only for Lithium Battery)



GENERIC CODE	BATTERY VOLTAGE	CHARGING CURRENT	MAX POWER (KW)
LI-C90-500-225-A5	500	225	90



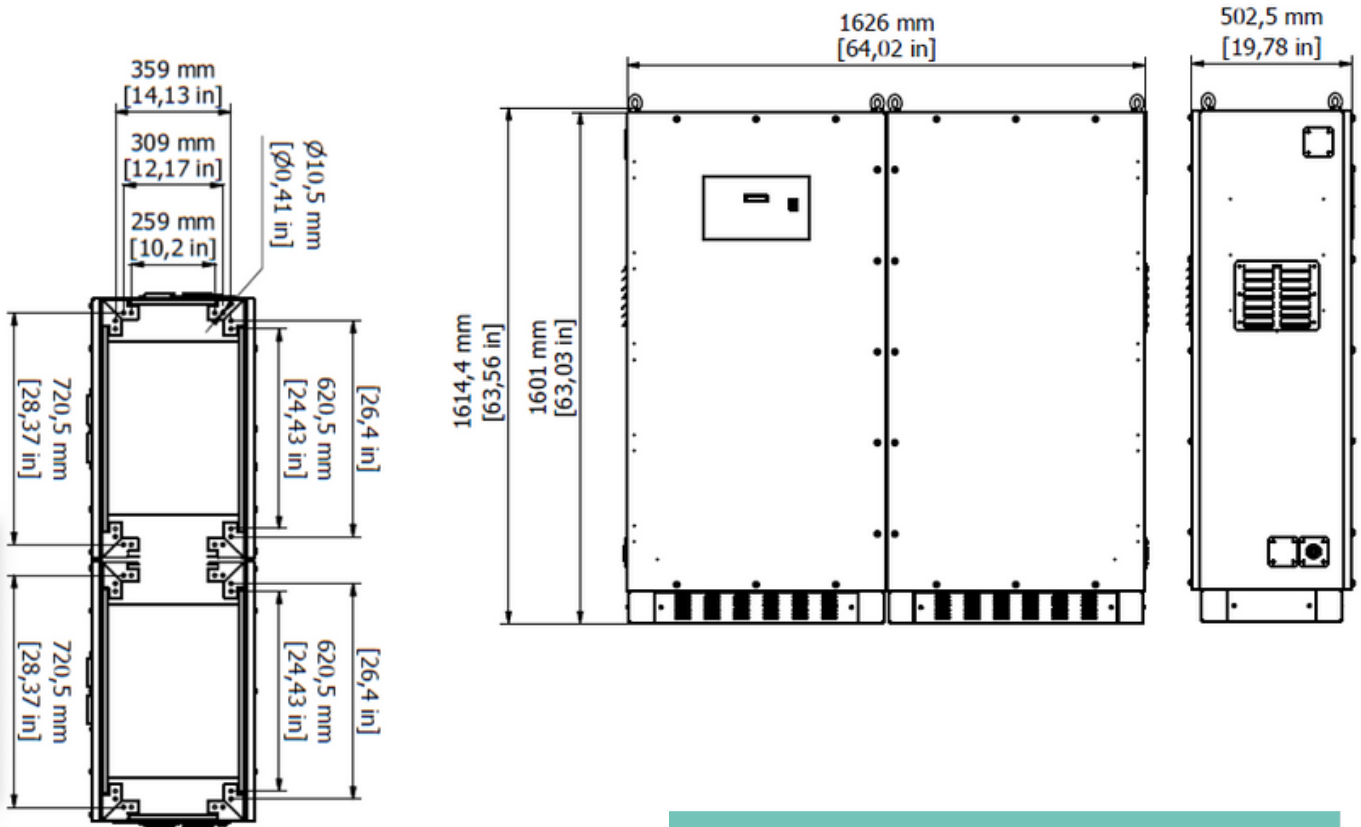
UBC Series A5

STANDARDS	
Quality	ISO 9001:2008
Marking	CE
EMC	IEC EN 61000-6-2, IEC EN 61000-6-4
Safety	IEC EN 50178, IEC EN 062040-1
Test and Performance	IEC EN 62040-3

MECHANICAL	
Cooling	Air Cooled
IP level	IP21 (Standard) IP54(Optional)
Ambient Temperature	-10°C to +50°C
Storage Temperature	-20°C to +70°C
Humidity	<75%
Altitude (m)	>2000m according to EN62040-3

SPECIFICATIONS	
Line Voltage (VAC) ±10%	400, 480
Frequency (Hz)	50/60 Hz ±5%
Power Factor	>98%
Efficiency	>93%

CHARGING APPLICATION SCENARIO
Sealed Battery: Flooded, GEL, VRLA
Lithium Battery: Can Bus Interface



HOUSING DIMENSION		
L (front) mm	W (side) mm	H mm
1626	503	1601

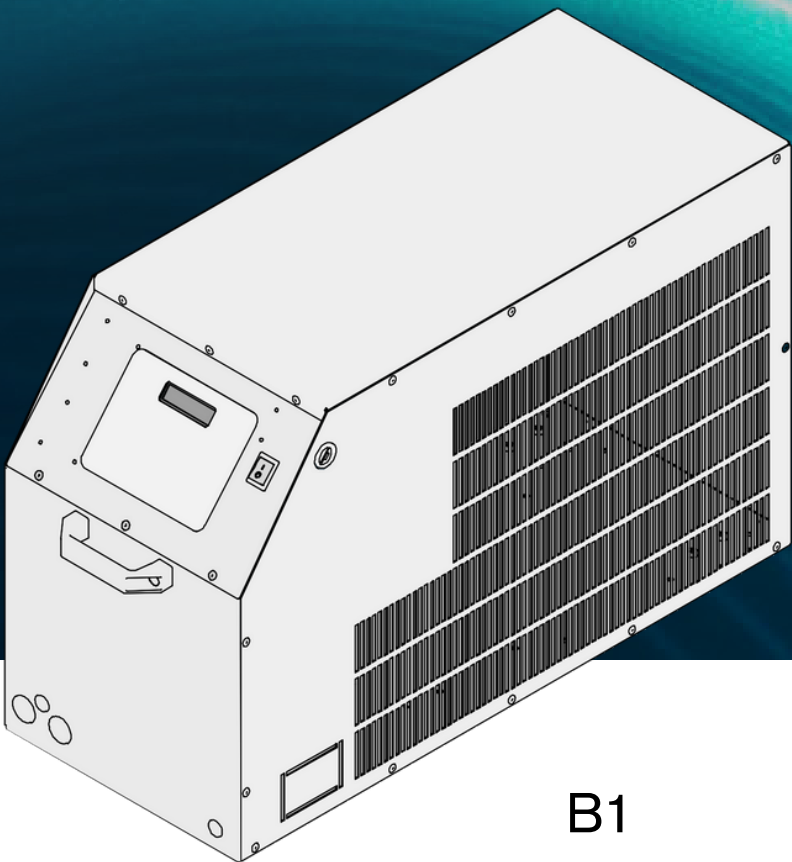




BDC Series

Battery Discharger

Designed to discharge any type of industrial battery with a constant discharge current. Used for the characterization, testing, and recovery of batteries of different types, voltages, and capacities.



B1

Technical Features

- Can operate with batteries of any type
- Most E High frequency IGBT regulator, featuring constant current discharge of the battery.
- Rugged construction for maximum reliability in heavy duty industrial applications.
- Compact and easily portable.
- Single units with parallelable design, for unlimited total discharge current.
- Intelligent electronic protection system
 - Soft start
 - Battery polarity reversal
 - Over-temperature
- Digital display (battery voltage and current, time, capacity discharged, programmed values)

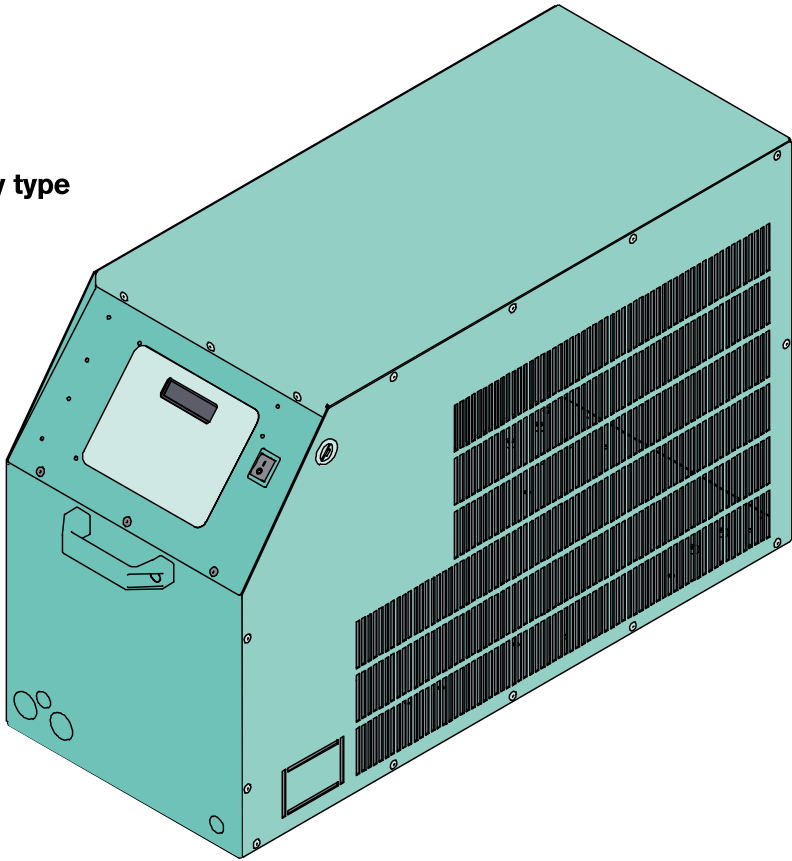
Power (kW)	A out	V input (1x Vac ±10%)	Cabinet
48, 96, 135, 240, 400, 500, 600	Up to 200	120, 230	B1

BDC Series

Battery
Discharger **B1**

Technical Features

- Can operate with batteries of any type
- Automatically shuts down
- PC interface (miniUSB)



GENERIC CODE	BATTERY VOLTAGE	CHARGING CURRENT
BDC-048-200	48	200
BDC-096-200	96	200
BDC-135-150	135	150
BDC-240-075	240	75
BDC-400-040	400	40
BDC-500-025	500	25
BDC-600-015	600	15

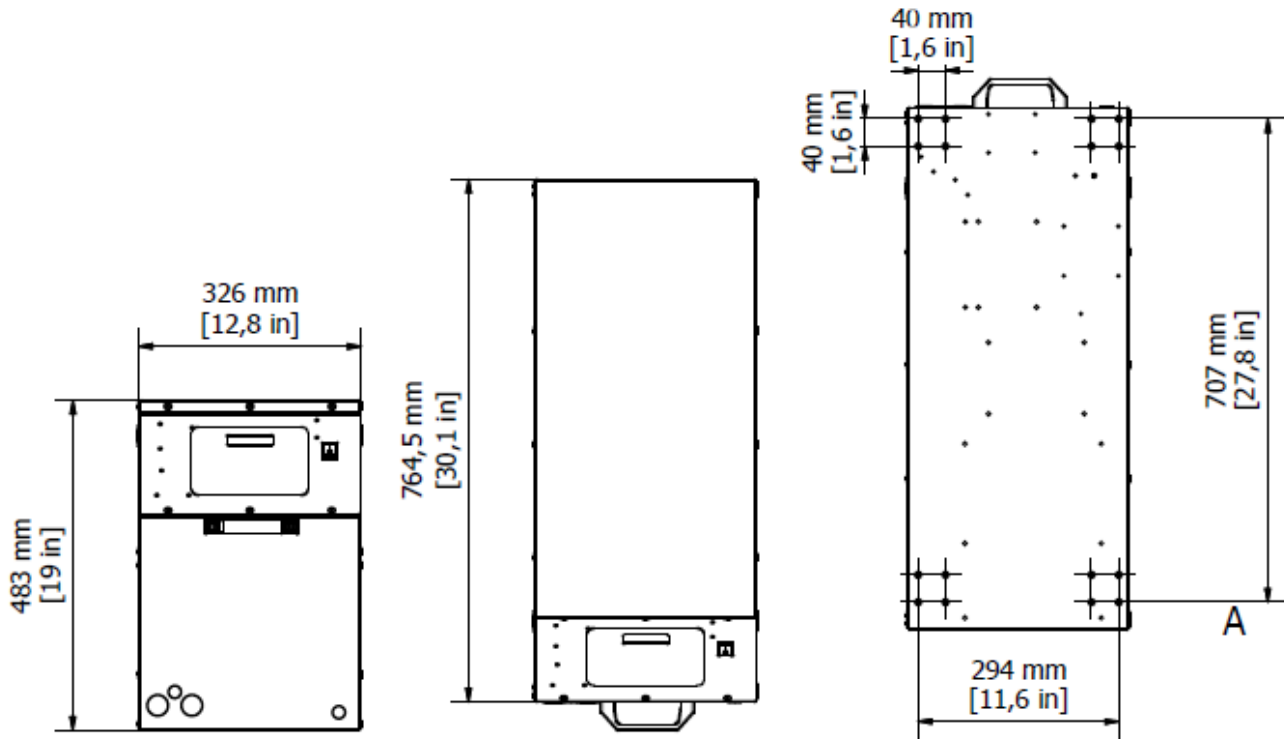
BDC Series B1

STANDARDS	
Quality	ISO 9001:2008
Marking	CE
EMC	IEC EN 61000-6-2, IEC EN 61000-6-4
Safety	IEC EN 50178, IEC EN 062040-1

MECHANICAL	
Cooling	Air Cooled
IP level	IP21 (Standard) IP54(Optional)
Ambient Temperature	-10°C to +45°C
Storage Temperature	-20°C to +70°C
Humidity	<75%
Altitude (m)	>2000m according to EN62040-3

SPECIFICATIONS	
Line Voltage (VAC) ±10%	Single Phase: 120, 230

DISCHARGE APPLICATION SCENARIO
All type of Battery



HOUSING DIMENSION		
L (front) mm	W (side) mm	H mm
326	765	483

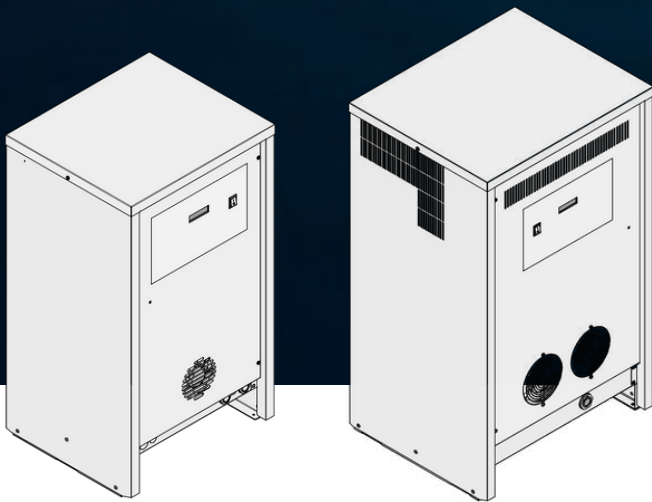




BCC Series

Battery Conditioning Charger

The BCC is a versatile, digitally controlled battery charger with a programmable charging profile for all battery types. Perfect for formation, conditioning, testing, and desulfation, it adapts to various battery topologies and maintenance needs with precision and reliability.



A1

A2

Technical Features

- **True Universal Charging capability: Multi-Voltage, Multi-Capacity, Multi-Chemistry, from single cell to full battery packs**
- **Most Efficient technology available**
- **Single units with parallelable design, for unlimited total discharge current**
- **Intelligent electronic protection system**
 - Soft start
 - Battery polarity reversal
 - Over-temperature
- **Very quiet operation**
- **Very Reliable design, easy maintenance**

V out	A out	V input (3x Vac ±10%)	Cabinet
80, 96	100, 150	400, 480	A1
80, 96	150, 200	400, 480	A2

BCC Series

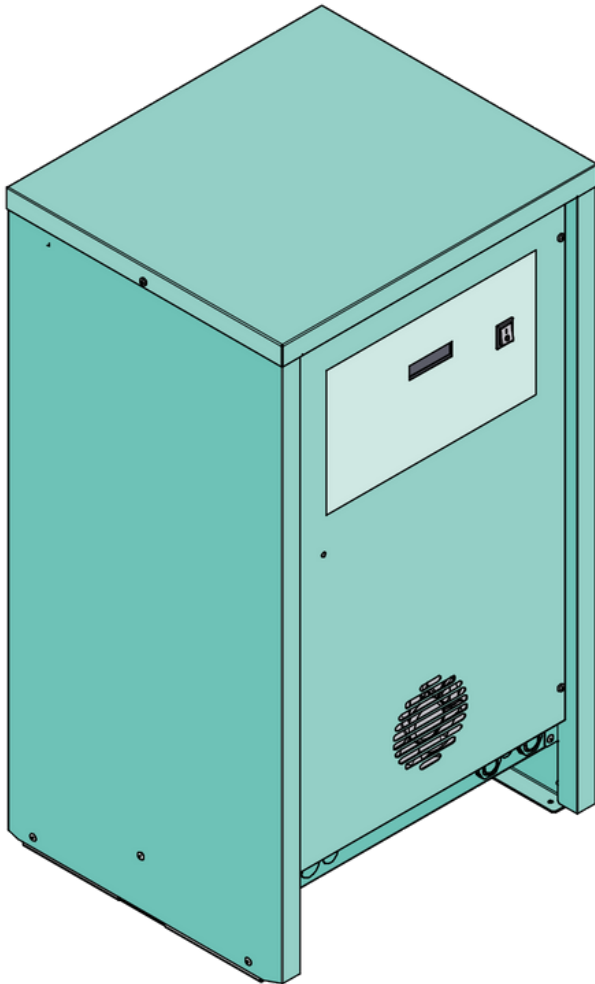
Battery
Conditioning
Charger

A1

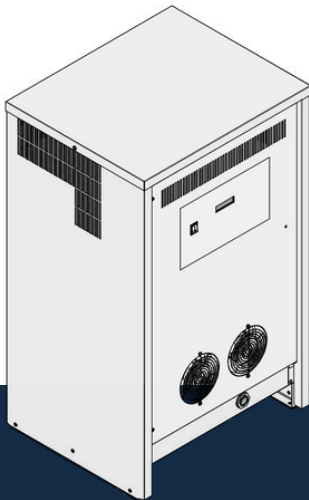
Technical Features

- Versatile, digitally controlled battery charger with a programmable charging profile.
- Usable with any types of battery.
- Perfect for formation, conditioning, testing, and desulfation of any kind of battery type.

GENERIC CODE	OUTPUT VOLTAGE [V]	OUTPUT CURRENT [A]
BCC-080-100-A1	80	100
BCC-096-150-A1	96	150



A1



A2

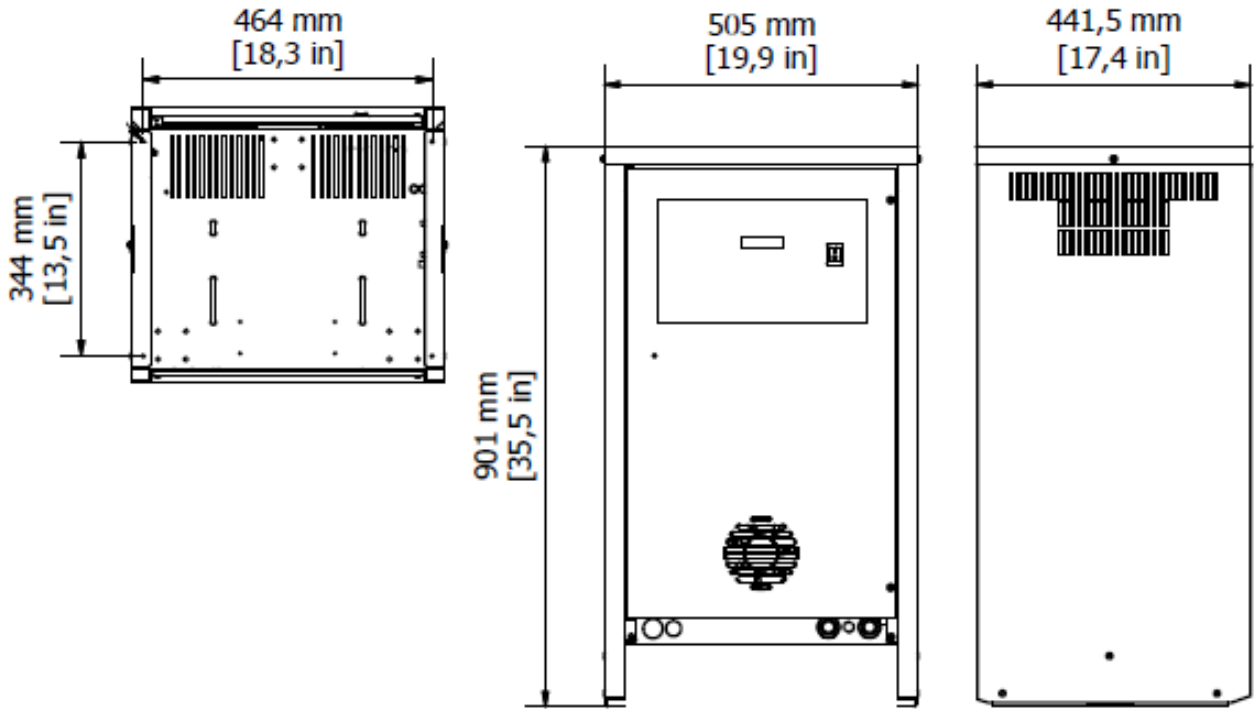
BCC Series A1

STANDARDS	
Quality	ISO 9001:2008
Marking	CE
EMC	IEC EN 61000-6-2, IEC EN 61000-6-4
Safety	IEC EN 50178, IEC EN 062040-1
Test and Performance	IEC EN 62040-3

MECHANICAL	
Cooling	Air Cooled
IP level	IP21 (Standard) IP54(Optional)
Ambient Temperature	-10°C to +45°C
Storage Temperature	-20°C to +70°C
Humidity	<75%
Altitude (m)	>2000m according to EN62040-3

SPECIFICATIONS	
Line Voltage (VAC) ±10%	Three Phase: 400, 480
Frequency (Hz)	50/60 Hz ±5%
Power Factor	>98%
Efficiency	>93%

CHARGING APPLICATION SCENARIO
Usable for formation, conditioning, testing, and desulfation of any kind of battery type.



HOUSING DIMENSION		
L (front) mm	W (side) mm	H mm
505	442	901



BCC Series

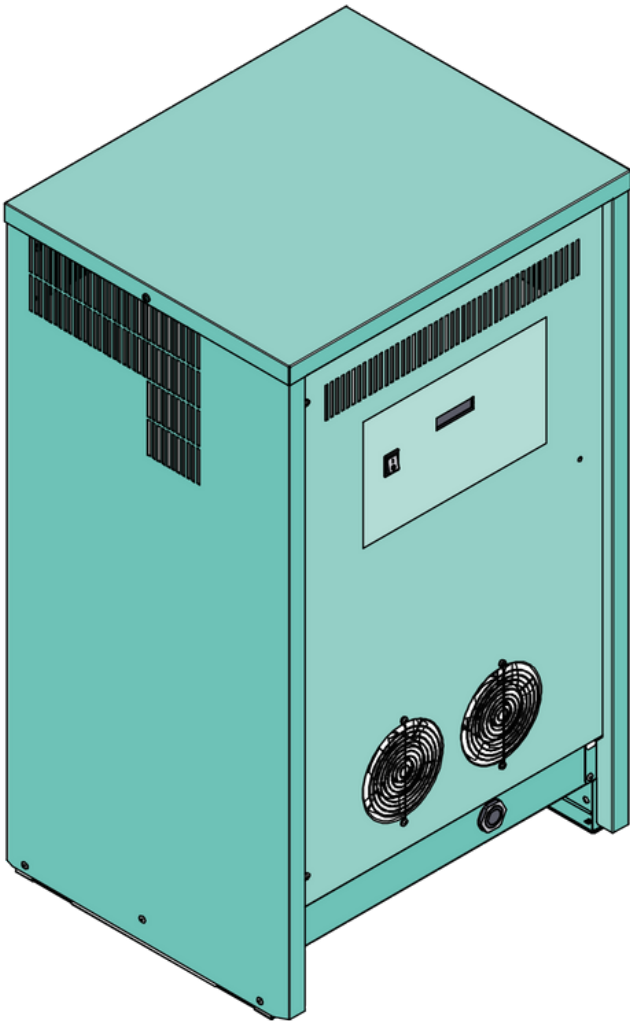
Battery
Conditioning
Charger

A2

Technical Features

- Versatile, digitally controlled battery charger with a programmable charging profile.
- Usable with any types of battery.
- Perfect for formation, conditioning, testing, and desulfation of any kind of battery type.

GENERIC CODE	OUTPUT VOLTAGE [V]	OUTPUT CURRENT [A]
BCC-080-200-A2	80	200
BCC-096-200-A2	96	200



A1



A2

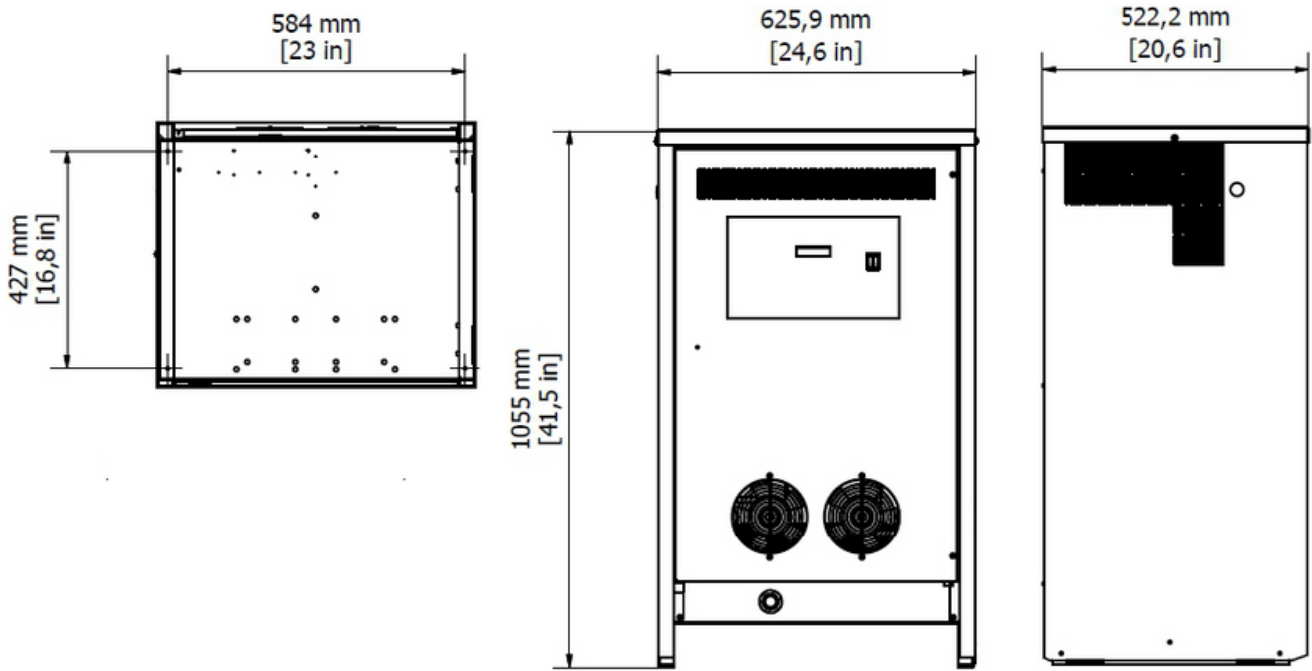
BCC Series A2

STANDARDS	
Quality	ISO 9001:2008
Marking	CE
EMC	IEC EN 61000-6-2, IEC EN 61000-6-4
Safety	IEC EN 50178, IEC EN 062040-1
Test and Performance	IEC EN 62040-3

MECHANICAL	
Cooling	Air Cooled
IP level	IP21 (Standard) IP54(Optional)
Ambient Temperature	-10°C to +45°C
Storage Temperature	-20°C to +70°C
Humidity	<75%
Altitude (m)	>2000m according to EN62040-3

SPECIFICATIONS	
Line Voltage (VAC) ±10%	Three Phase: 400, 480
Frequency (Hz)	50/60 Hz ±5%
Power Factor	>98%
Efficiency	>93%

CHARGING APPLICATION SCENARIO
Usable for formation, conditioning, testing, and desulfation of any kind of battery type.



HOUSING DIMENSION		
L (front) mm	W (side) mm	H mm
626	522	1055

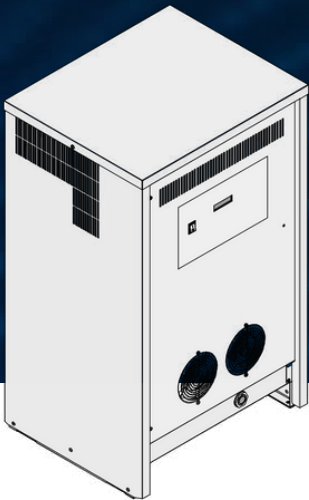


IPS Series

Industrial Power Supply

The IPS Series offers a high-performance line of industrial battery chargers and power supplies, engineered for maximum efficiency, flexibility, and long-term durability.

Using advanced high-frequency technology, these units ensure a clean, stable output, a high-power factor, and a rapid response to load changes making them a perfect choice for even the most demanding industrial environment.



A2

Technical Features

- High-frequency IGBT-based regulation for excellent efficiency, fast transient response and minimal output ripple
- Can operate with or without batteries
- Advanced protection features:
 - Soft StartReverse
 - Battery polarity protection
 - Capacity charged (Ah)
 - Output short-circuit protection
 - Overtemperature protection with internal device
- Front panel control and monitoring:
 - Available with digital instruments
 - Voltage and current adjustment via potentiometers or remote

V out	A out	V input (3x Vac ±10%)	Cabinet
12 - 128	Up to 150	400	A2

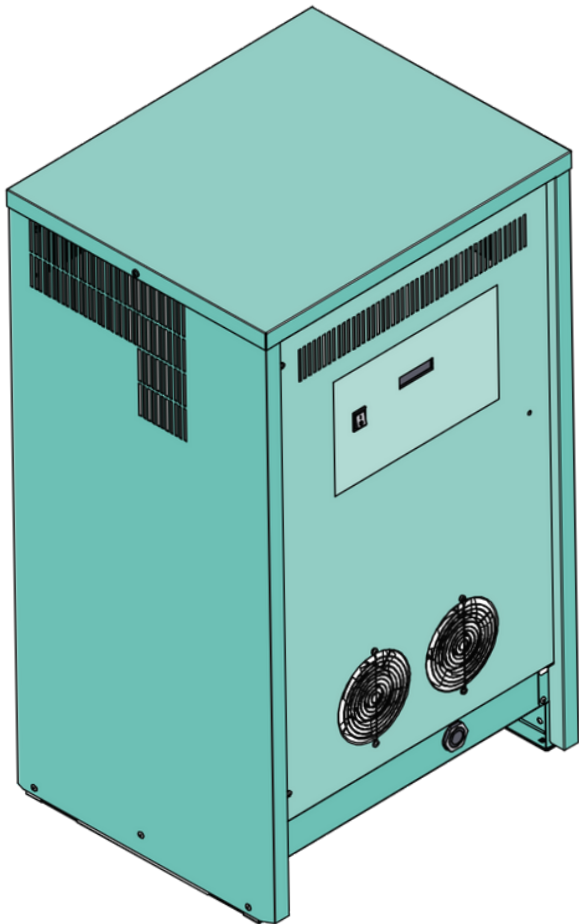
IPS Series

Industrial
Power
Supplier **A2**

Technical Features

- High-frequency IGBT-based technology
- Two selectable functional modes (single power supplier or power supplier + battery charger)
- Can work with any type of load
- Advanced protection features
- Available with analog or digital interface

GENERIC CODE	BATTERY VOLTAGE	CHARGING CURRENT
IPS-12/130-150-A2	12/130	150
IPS-28/128-150-CBC-A2 *	28/128	150



A2

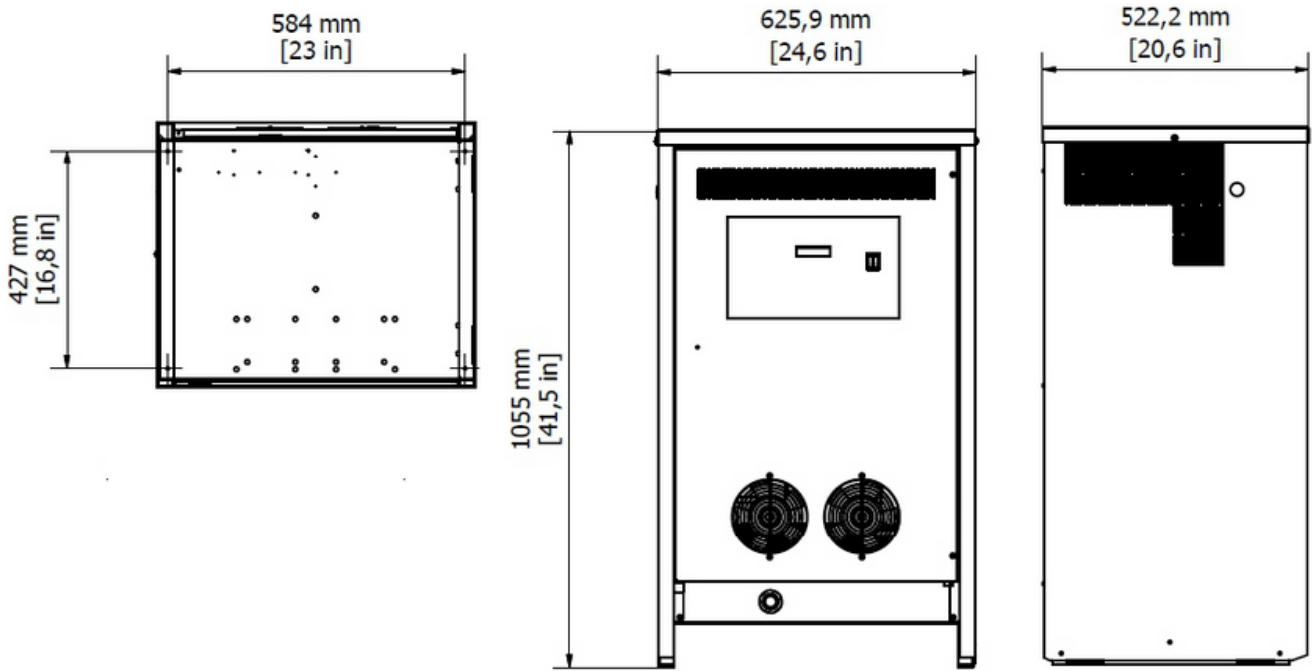
IPS Series **A2**

STANDARDS	
Quality	ISO 9001:2008
Marking	CE
EMC	IEC EN 61000-6-2, IEC EN 61000-6-4
Safety	IEC EN 50178, IEC EN 062040-1
Test and Performance	IEC EN 62040-3

SPECIFICATIONS	
Line Voltage (VAC) ±10%	Three Phase: x 400
Frequency (Hz)	50/60 Hz ±5%
Power Factor	>98%
Efficiency	>93%

MECHANICAL	
Cooling	Air Cooled
IP level	IP21 (Standard) IP54(Optional)
Ambient Temperature	-10°C to +45°C
Storage Temperature	-20°C to +70°C
Humidity	<75%
Altitude (m)	>2000m according to EN62040-3

CHARGING APPLICATION SCENARIO
Usable with any kind of load (battery, resistive or capacitive load). * Usable like power supplier or battery charger.



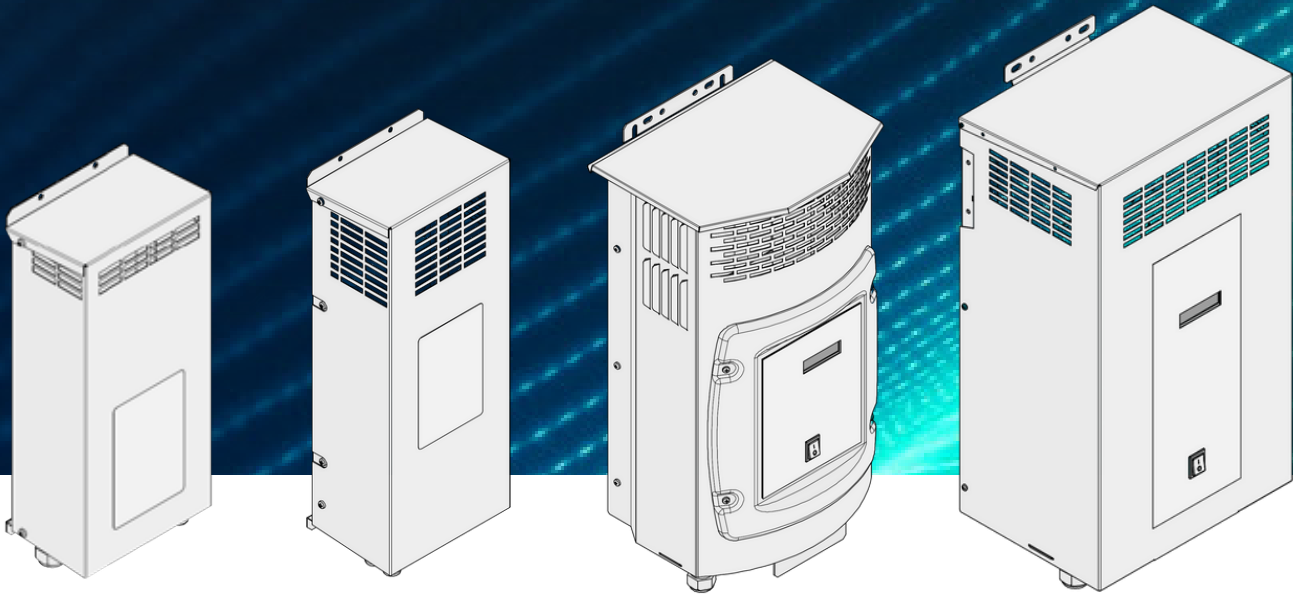
HOUSING DIMENSION		
L (front) mm	W (side) mm	H mm
626	552	1055



HFC Series

High Frequency Chargers

The HFC is designed for conventional and opportunity charging applications.
It based on High Frequency technology, featuring a perfect combination of very high efficiency, high power factor, universal capabilities and precise charge control.



K0

K1

K2

K3

Technical Features

- Very high efficiency
- Heavy duty design
- Multi-Voltage
- Multi-Capacity
- Multi-Chemistry
 - Sealed Battery (Flooded, GEL, VRLA)
 - Lithium Battery
- Maximizes battery life, reduces water consumption and maintenance
- Intelligent electronic protection
- Very quiet operation

Power (kW)	V out	A out	V input (Vac ±10%)	Cabinet
<1	24	30	1Ph: 230	K0
1 - 2	24, 36, 48	30, 40, 60	1Ph: 120, 230	K1
2 - 5	24, 36, 48	70 - 100	1Ph: 120, 230	K2
2 - 9	48	70 - 150	3Ph: 208, 230, 400, 480	K3

HFC Series

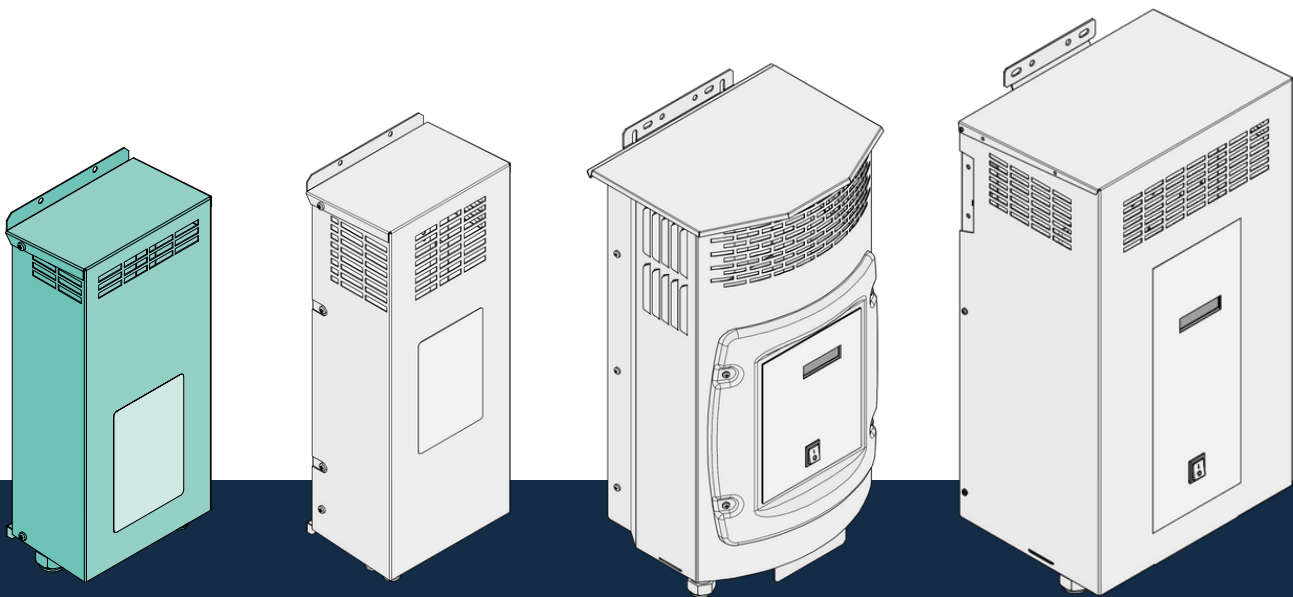
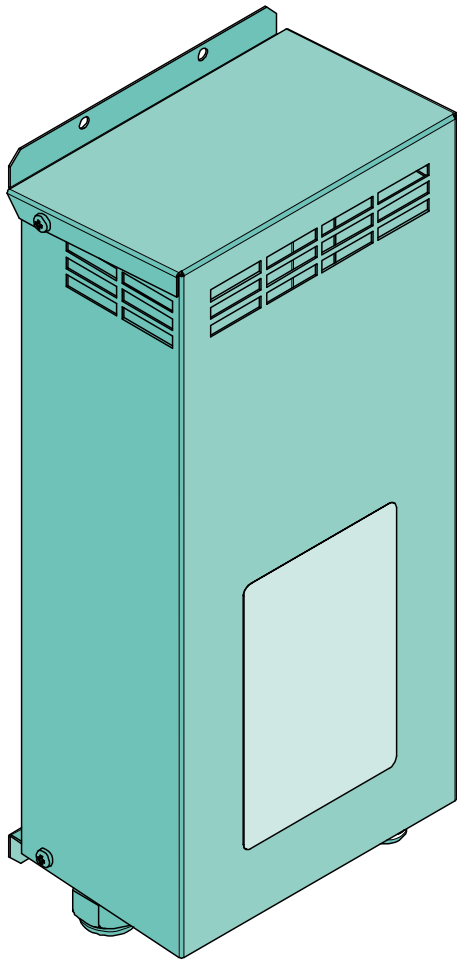
High
Frequency
Chargers

K0

Technical Features

- Suitable for charging modes:
 Conventional
 Opportunity
- Customizable charging curves
- Customizable CAN BUS communication
 (only for Lithium Battery)

GENERIC CODE	BATTERY VOLTAGE [V]	CHARGING CURRENT [A]	MAX POWER [KW]
KF-024-030-K0	24	30	1.4



K0

K1

K2

K3

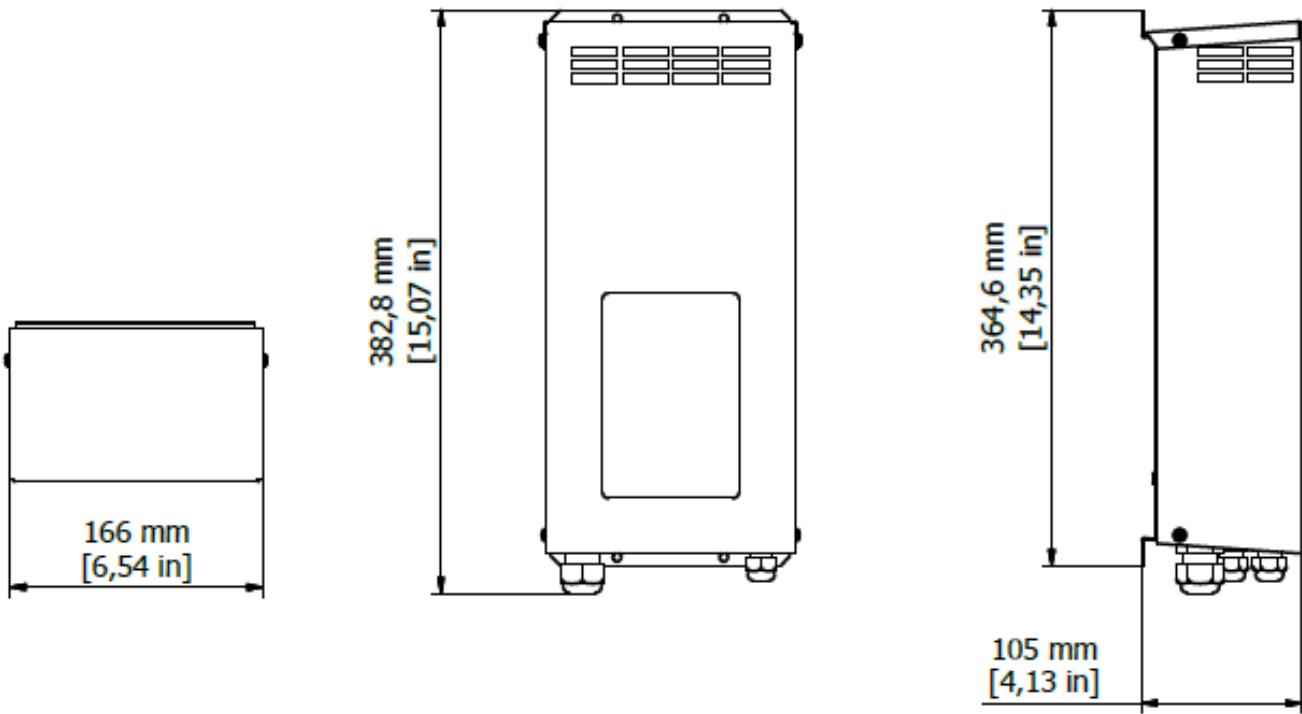
HFC Series K0

STANDARDS	
Quality	ISO 9001:2008
Marking	CE
EMC	IEC EN 61000-6-2, IEC EN 61000-6-4
Safety	IEC EN 50178, IEC EN 062040-1
Test and Performance	IEC EN 62040-3

MECHANICAL	
Cooling	Air Cooled
IP level	IP21 (Standard)
Ambient Temperature	-10°C to +45°C
Storage Temperature	-20°C to +70°C
Humidity	<75%
Altitude (m)	>2000m according to EN62040-3

SPECIFICATIONS	
Line Voltage (VAC) ±10%	Single Phase: 120, 230
Frequency (Hz)	50/60 Hz ±5%
Power Factor	>98%
Efficiency	>93%

CHARGING APPLICATION SCENARIO
Sealed Battery: Flooded, GEL, VRLA
Lithium Battery: Can Bus Interface



HOUSING DIMENSION		
L (front) mm	W (side) mm	H mm
166	105	382



HFC Series

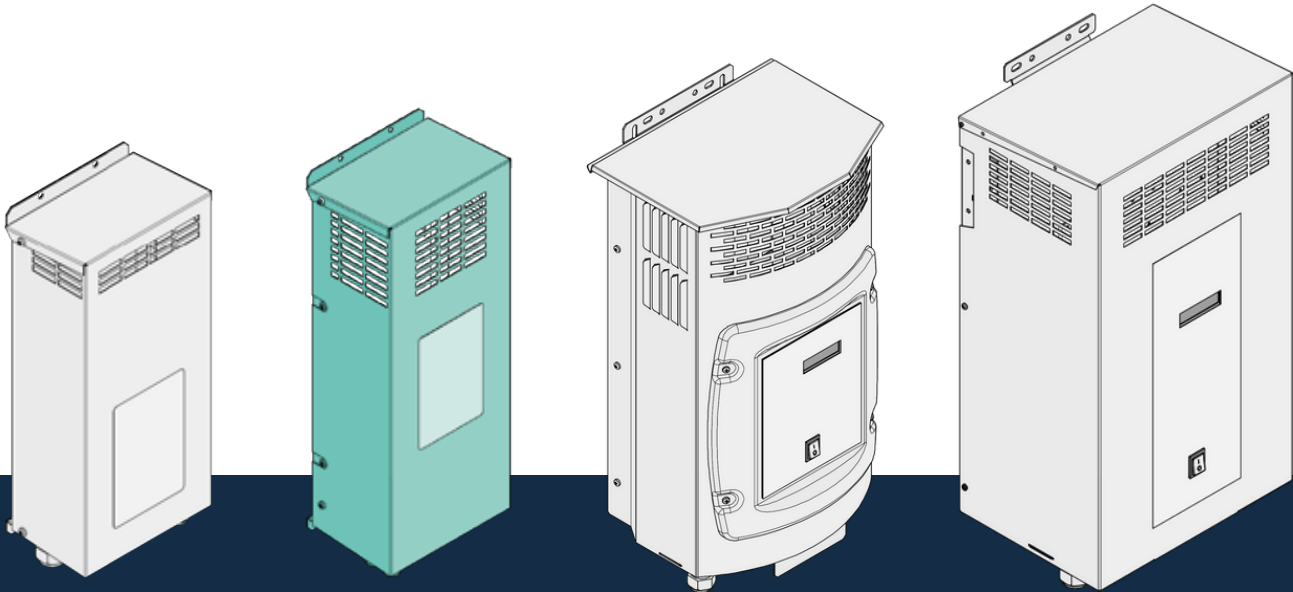
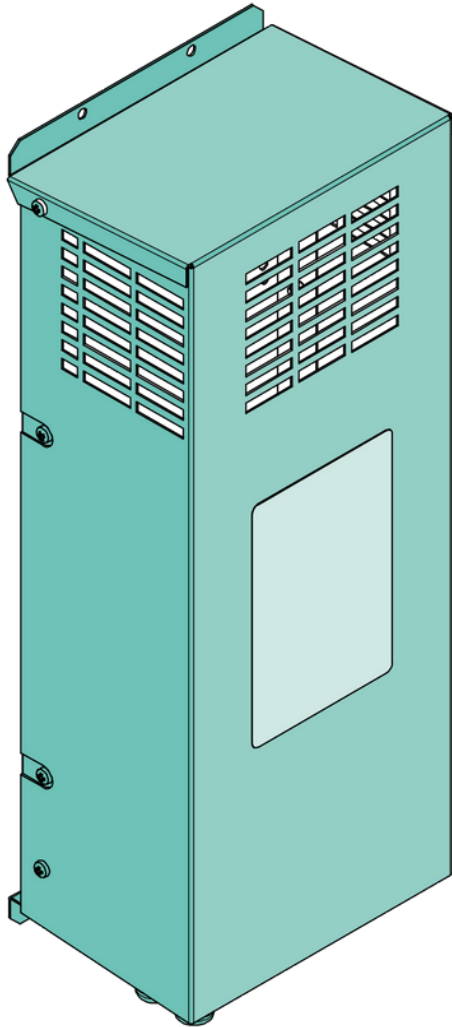
High
Frequency
Chargers

K1

Technical Features

- Suitable for charging modes:
Conventional
Opportunity
- Customizable charging curves
- Customizable CAN BUS communication
(only for Lithium Battery)

GENERIC CODE	BATTERY VOLTAGE [V]	CHARGING CURRENT [A]	MAX POWER [KW]
KF-024-060-K1	24	60	1.7
KF-036-040-K1	36	40	1.7
KF-048-030-K1	48	30	1.7



K0

K1

K2

K3

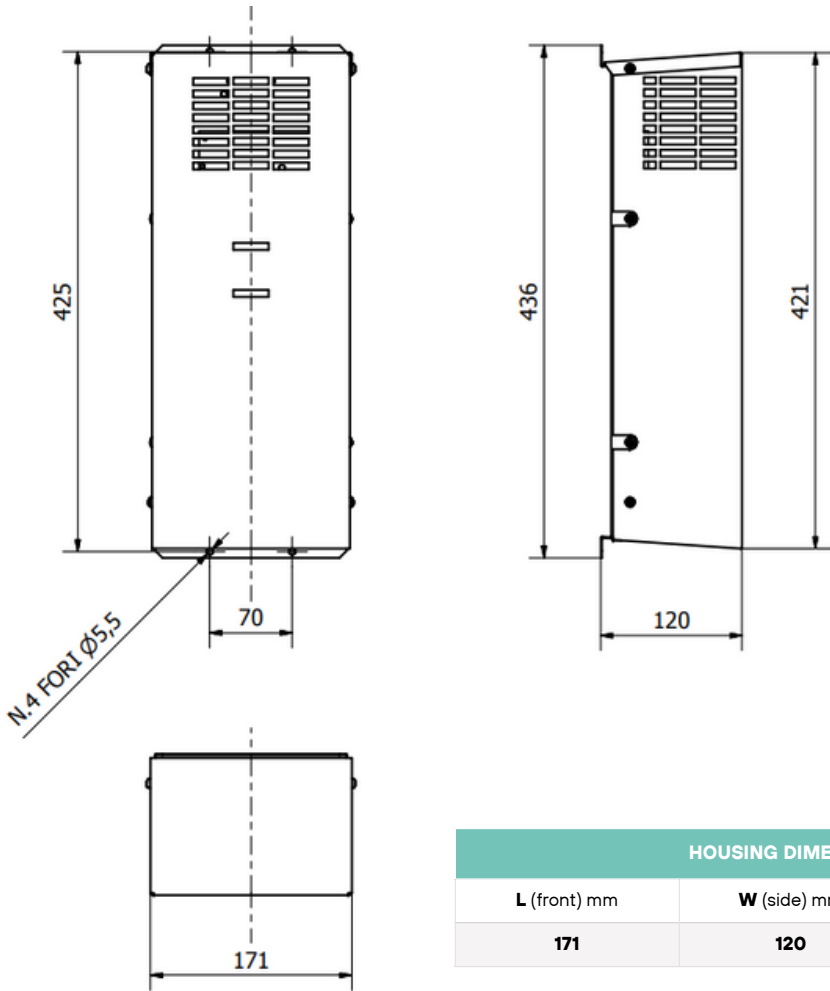
HFC Series K1

STANDARDS	
Quality	ISO 9001:2008
Marking	CE, CEC
EMC	IEC EN 61000-6-2, IEC EN 61000-6-4
Safety	IEC EN 50178, IEC EN 062040-1
Test and Performance	IEC EN 62040-3
North American Standards	UL 1564, CSA 22.2 107.2-01

SPECIFICATIONS	
Line Voltage (VAC) ±10%	Single Phase: 120, 230
Frequency (Hz)	50/60 Hz ±5%
Power Factor	>98%
Efficiency	>93%

MECHANICAL	
Cooling	Air Cooled
IP level	IP21 (Standard)
Ambient Temperature	-10°C to +45°C
Storage Temperature	-20°C to +70°C
Humidity	<75%
Altitude (m)	>2000m according to EN62040-3

CHARGING APPLICATION SCENARIO	
Sealed Battery:	Flooded, GEL, VRLA
Lithium Battery:	Can Bus Interface



HOUSING DIMENSION		
L (front) mm	W (side) mm	H mm
171	120	425



HFC Series

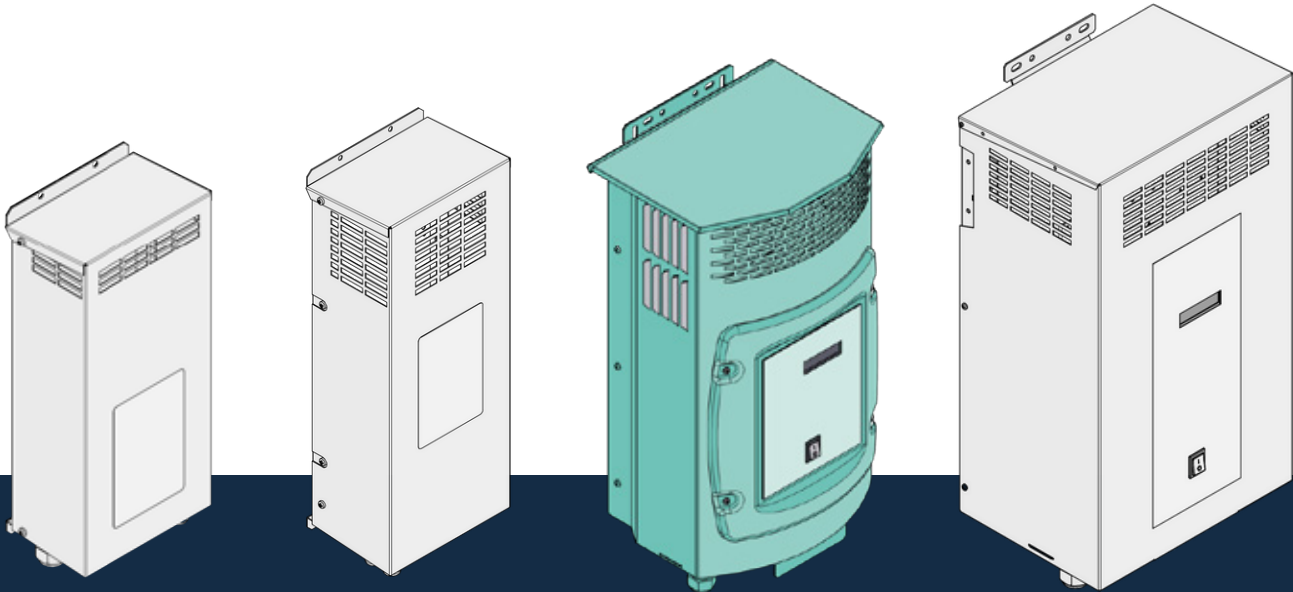
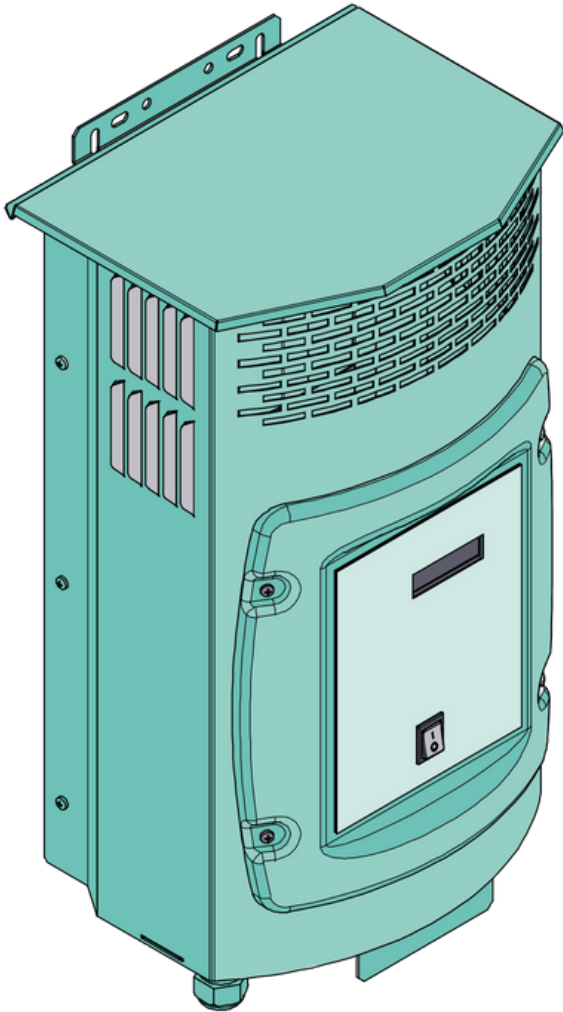
High
Frequency
Chargers

K2

Technical Features

- Suitable for charging modes:
Conventional
Opportunity
- Customizable charging curves
- Customizable CAN BUS communication
(only for Lithium Battery)

GENERIC CODE	BATTERY VOLTAGE [V]	CHARGING CURRENT [A]	MAX POWER [KW]
KF-024-100-K2	24	100	2,9
KF-048-070-K2	48	70	3.2



K0

K1

K2

K3

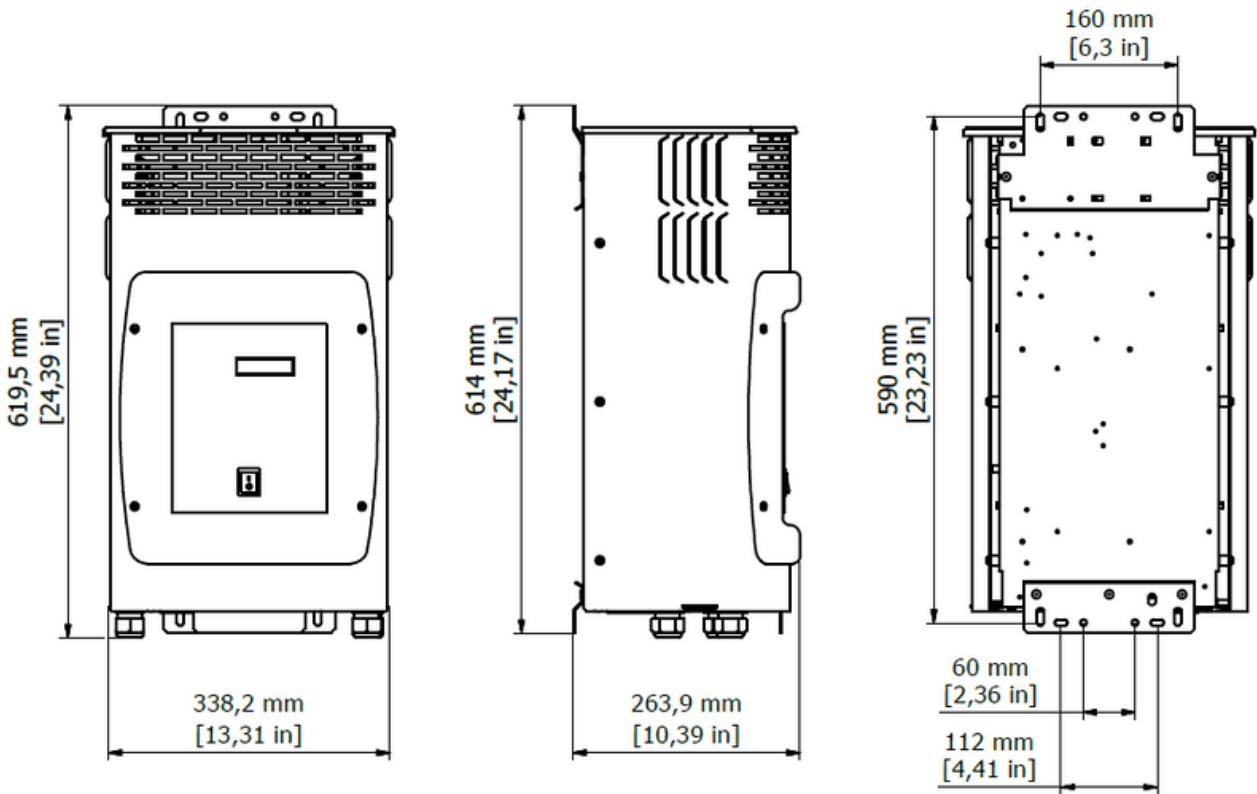
HFC Series K2

STANDARDS	
Quality	ISO 9001:2008
Marking	CE
EMC	IEC EN 61000-6-2, IEC EN 61000-6-4
Safety	IEC EN 50178, IEC EN 062040-1
Test and Performance	IEC EN 62040-3
North American Standards	UL 1564, CSA 22.2 107.2-01

MECHANICAL	
Cooling	Air Cooled
IP level	IP21 (Standard)
Ambient Temperature	-10°C to +45°C
Storage Temperature	-20°C to +70°C
Humidity	<75%
Altitude (m)	>2000m according to EN62040-3

SPECIFICATIONS	
Line Voltage (VAC) ±10%	Single Phase: 120, 230
Frequency (Hz)	50/60 Hz ±5%
Power Factor	>98%
Efficiency	>93%

CHARGING APPLICATION SCENARIO
Sealed Battery: Flooded, GEL, VRLA
Lithium Battery: Can Bus Interface



HOUSING DIMENSION		
L (front) mm	W (side) mm	H mm
338	264	619



HFC Series

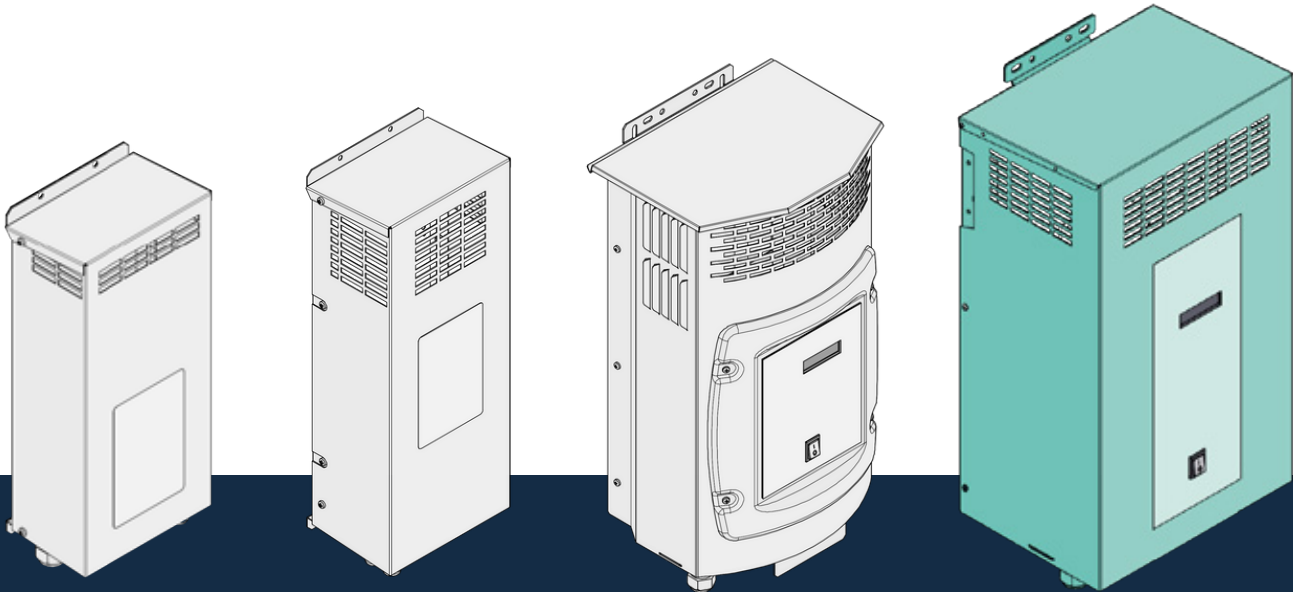
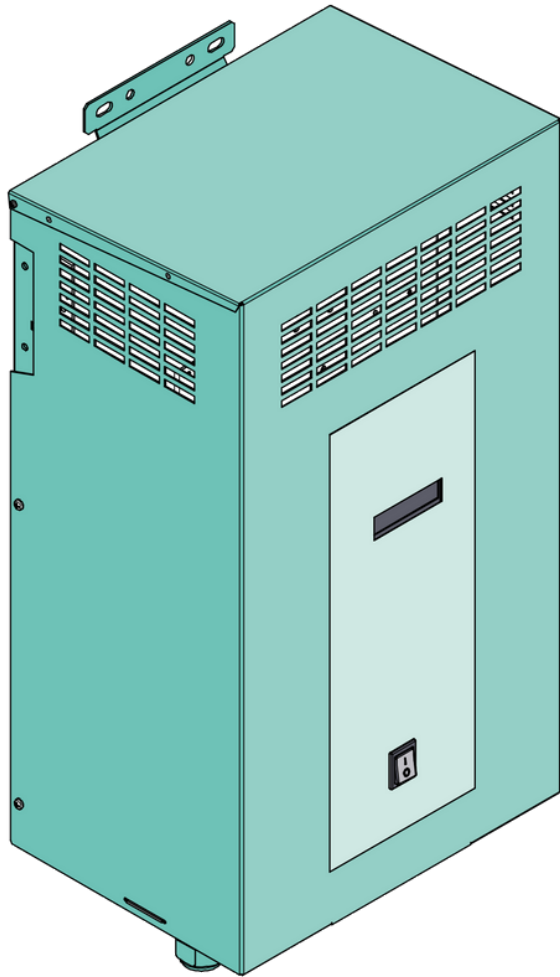
High
Frequency
Chargers

K3

Technical Features

- Suitable for charging modes:
Conventional
Opportunity
- Customizable charging curves
- Customizable CAN BUS communication
(only for Lithium Battery)

GENERIC CODE	BATTERY VOLTAGE [V]	CHARGING CURRENT [A]	MAX POWER [KW]
KF-048-100-K3	48	100	5.8
KF-048-150-K3	48	150	8.6



K0

K1

K2

K3

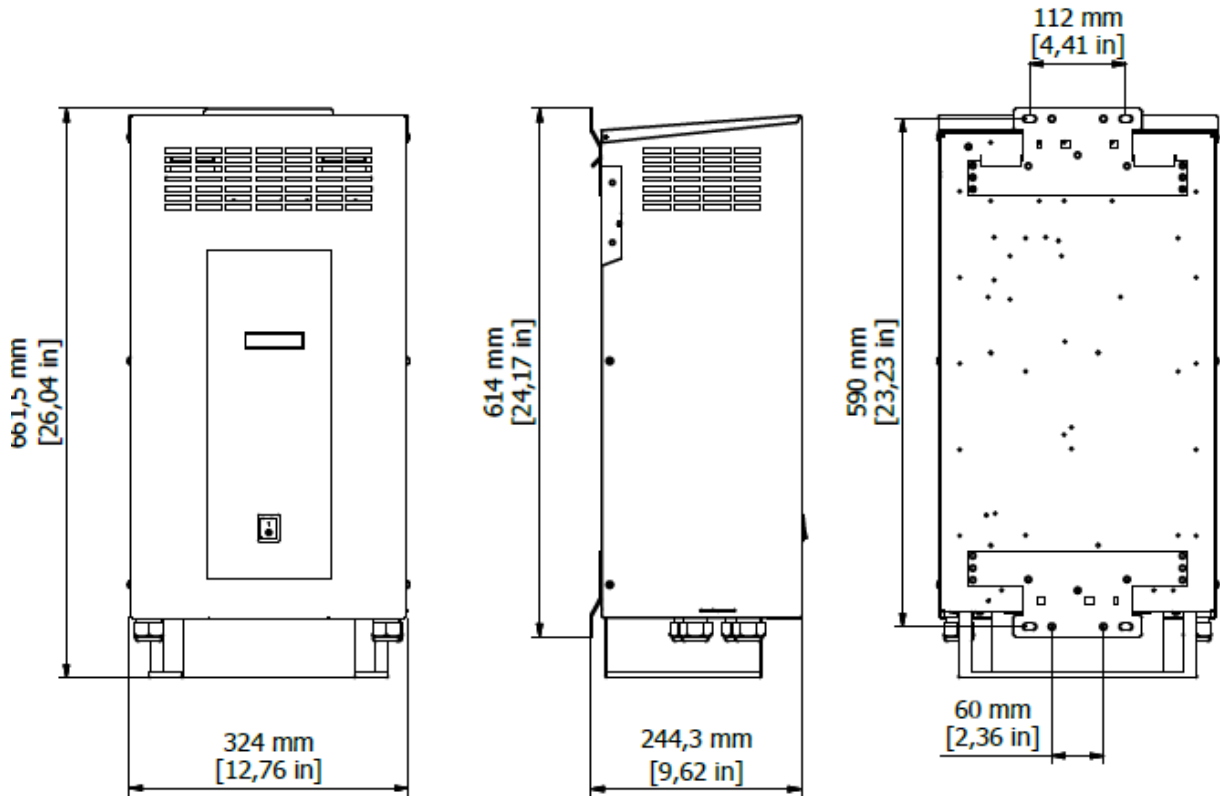
HFC Series K3

STANDARDS	
Quality	ISO 9001:2008
Marking	CE
EMC	IEC EN 61000-6-2, IEC EN 61000-6-4
Safety	IEC EN 50178, IEC EN 062040-1
Test and Performance	IEC EN 62040-3
North American Standards	UL 1564, CSA 22.2 107.2-01

MECHANICAL	
Cooling	Air Cooled
IP level	IP21 (Standard)
Ambient Temperature	-10°C to +45°C
Storage Temperature	-20°C to +70°C
Humidity	<75%
Altitude (m)	>2000m according to EN62040-3

SPECIFICATIONS	
Line Voltage (VAC) ±10%	Three Phase: 400, 480
Frequency (Hz)	50/60 Hz ±5%
Power Factor	>98%
Efficiency	>93%

CHARGING APPLICATION SCENARIO
Sealed Battery: Flooded, GEL, VRLA
Lithium Battery: Can Bus Interface



HOUSING DIMENSION		
L (front) mm	W (side) mm	H mm
324	244	662





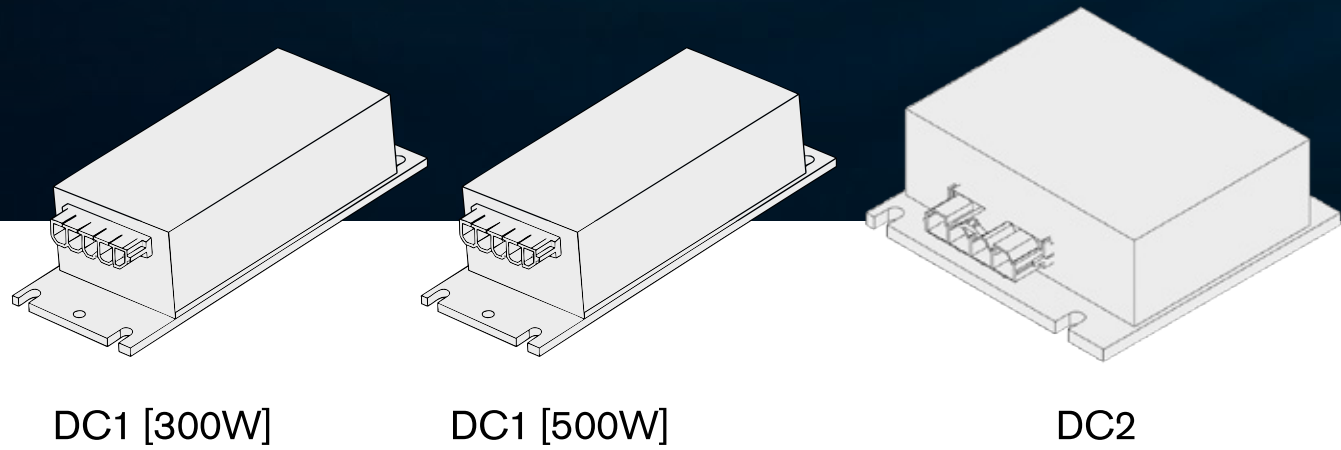
DDC

DC/DC Converter Family

Ideally suited for electric vehicle applications. Each model incorporates a sturdy and efficient design within a compact footprint. An isolated and stable 12 or 24 Volt output works with industry-standard lights, wipers, and other electronics. This provides a simpler and more economical solution than inefficient battery taps or expensive high-voltage accessories.

Technical Features

- Silent, high-frequency operation
- 500 Watt or 300 Watt output power
- Input Protection:
 - reverse polarity and inrush
- Output protection:
 - overload and short circuit
- Output enable available on select models
- Fully isolated (Input, output and baseplate)
- IP67 protected enclosure
- Parallel operation possible for up to three converters (300 Watt models require an additional resistor or diode on each converter)
- Integrated fuse holder on some models
- UL approved versions available



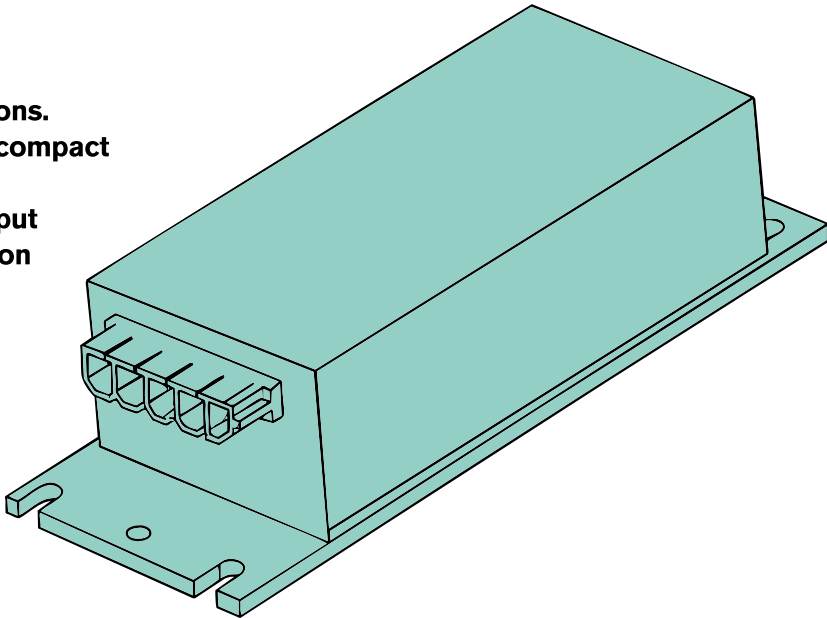
Power (kW)	Output Voltage [V]	Input Voltage [V]
90 - 500	12, 13.5, 14.5, 24	24, 36, 48, 72, 80, 96

DDC Series

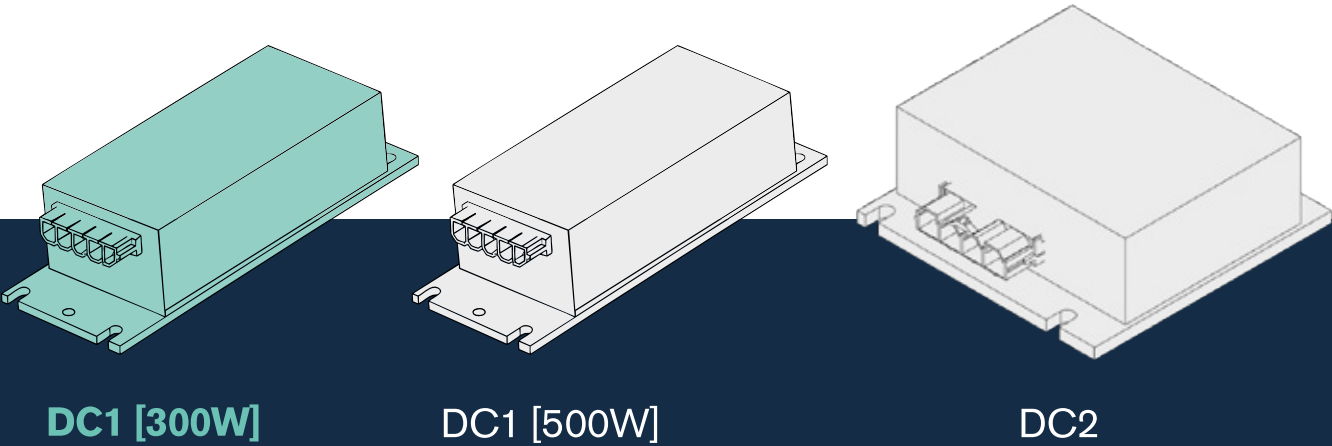
DC/DC Converters **DC1** [300W]

Technical Features

- Suitable for electric vehicle applications.
- Sturdy and efficient design within a compact footprint.
- Isolated and stable 12 or 24 Volt output
- Simpler and more economical solution than inefficient battery.



PART NUMBER	INPUT VOLTAGE [V]	OUTPUT VOLTAGE [V]	MAX POWER [W]
622/11151	20/60	15.6	90
622/11102	240	24	150
622/11091	24/36	12	200
622/11240	24	14.1	200
622/11xxx	24, 48, 96, 36/48, 36/80, 72/80	12, 13.5, 14.5, 24	300



DDC Series
DC/DC Converters

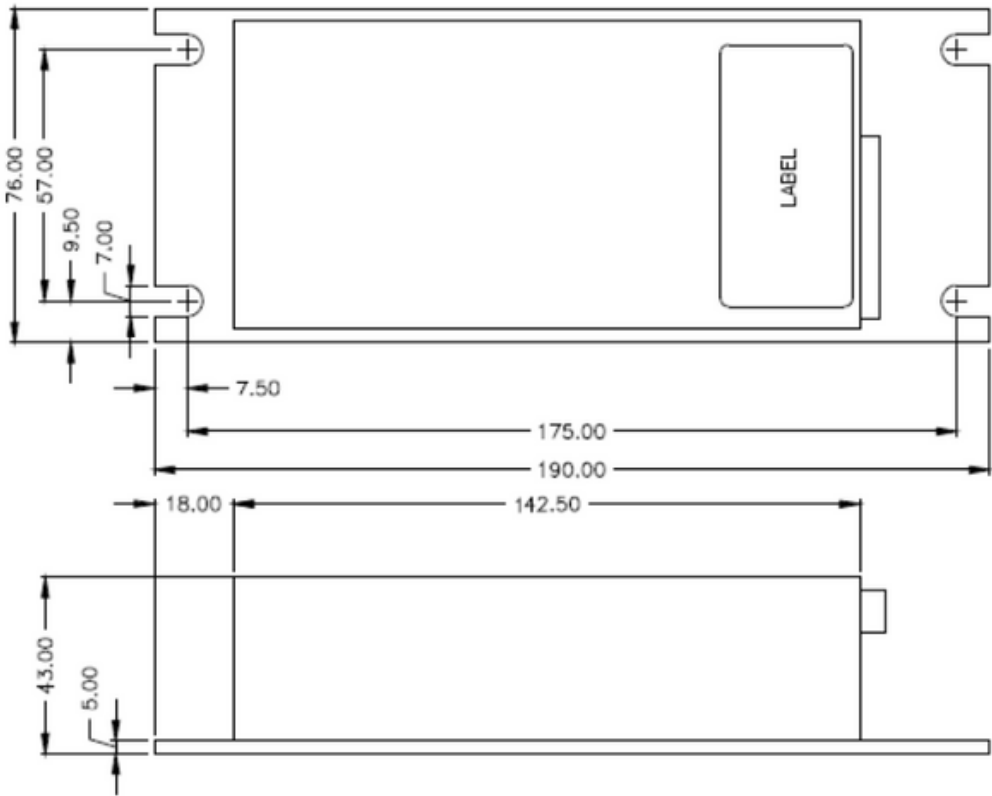
DC1 [300W]

STANDARDS	
Quality	ISO 9001:2008
Marking	-
EMC	EN12895
Safety	IEC-950
North American Standards	UL 1950, CSA 234

MECHANICAL	
Cooling	Aluminium base
IP level	IP67 (Standard)
Ambient Temperature	-30°C to +55°C
Storage Temperature	-40°C to +70°C
Humidity	<90%

SPECIFICATIONS	
Input Voltage VDC	24V [16V – 35V]36/48V [22V – 60V]72/80V [50V – 120V]240V
Output Voltage VDC	12 V, 13.5 V, 14.5 V, 24 V +/-5%
Peak output power	300W

CHARGING APPLICATION SCENARIO
Electric Vehicle Applications



HOUSING DIMENSION		
L (front) mm	W (side) mm	H mm
190	76	43

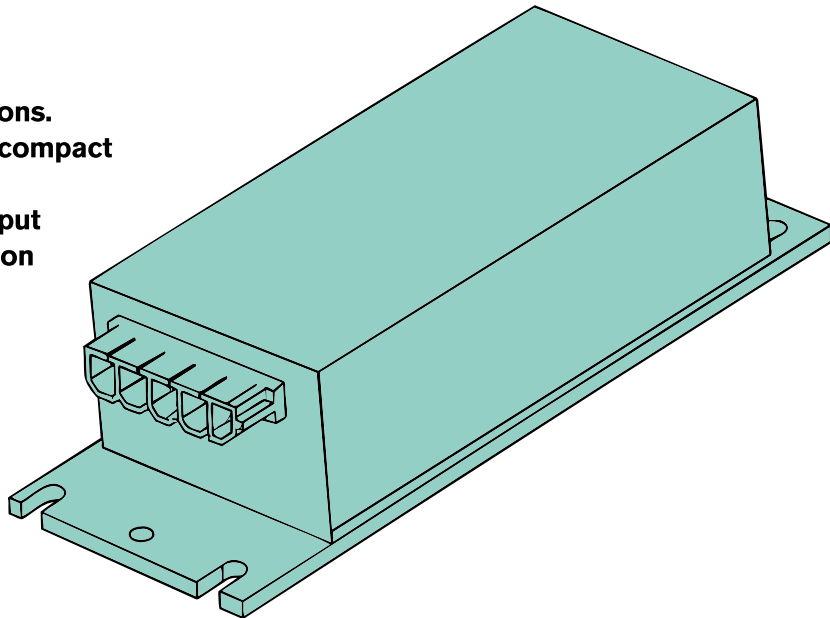


DDC Series

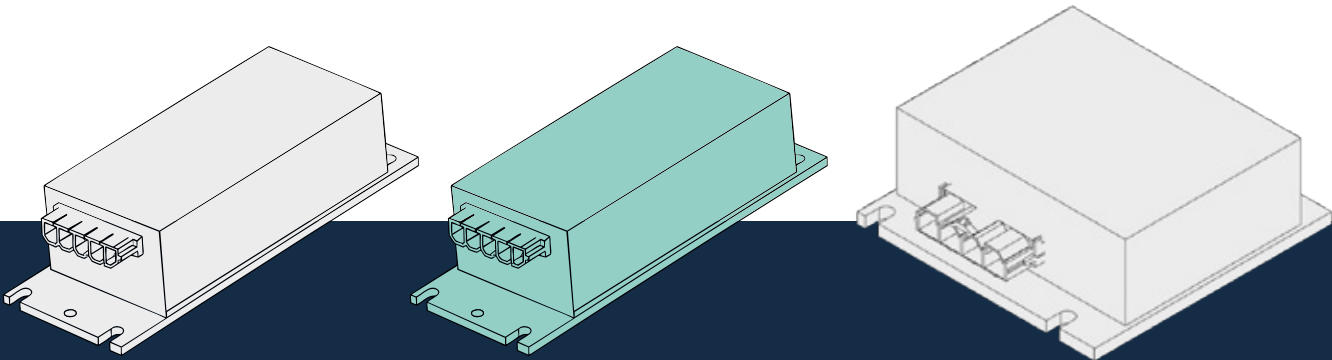
DC/DC
Converters **DC1** [500W]

Technical Features

- Suitable for electric vehicle applications.
- Sturdy and efficient design within a compact footprint.
- Isolated and stable 12 or 24 Volt output
- Simpler and more economical solution than inefficient battery.



PART NUMBER	INPUT VOLTAGE [V]	OUTPUT VOLTAGE [V]	MAX POWER [W]
622/11212	48	14	500
622/11213	80	13.4	500
622/11213-A	80	13.4	500
622/11214	48	13.4	500



DC1 [300W]

DC1 [500W]

DC2

DDC Series
DC/DC Converters

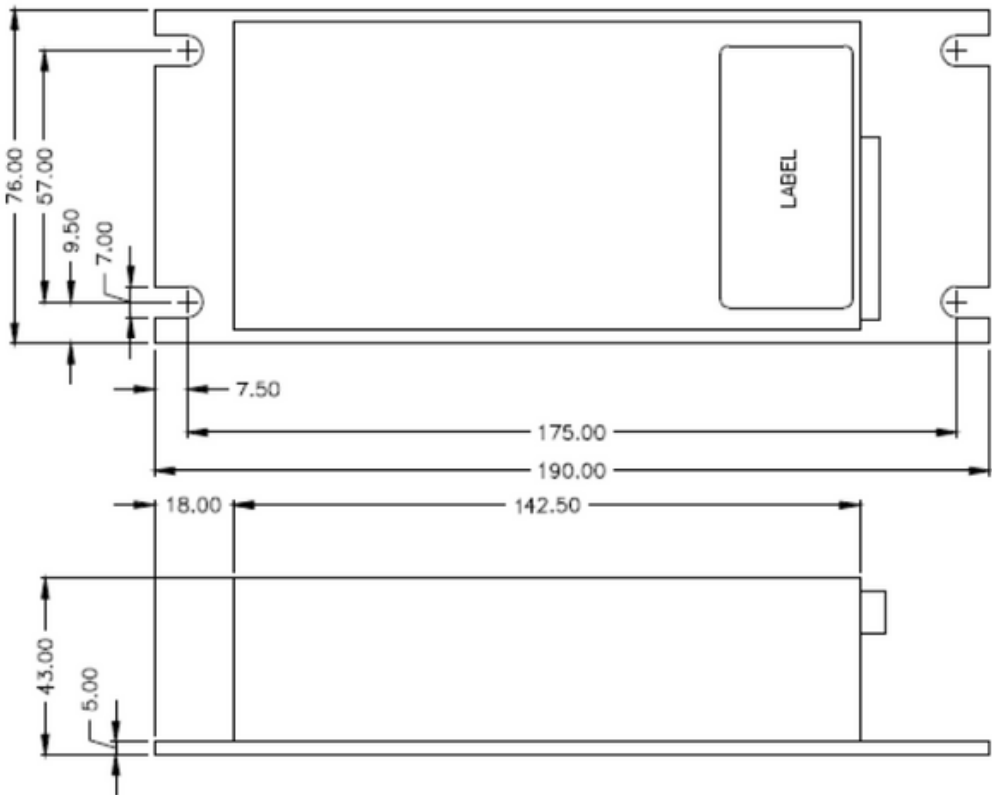
DC1 [500W]

STANDARDS	
Quality	ISO 9001:2008
Marking	CE
EMC	EN12895, EN55022
Safety	IEC-950
North American Standards	UL 583, CSA 234

MECHANICAL	
Cooling	Aluminium base
IP level	IP67 (Standard)
Ambient Temperature	-40°C to +85°C
Storage Temperature	-40°C to +85°C
Humidity	<90%

SPECIFICATIONS	
Line Voltage (VAC) ±10%	36/48V [22V – 60V] 72/80V [50V – 120V]
Output Voltage VDC	13.5 V, 14.5 V +/-5%
Peak output power	500W

CHARGING APPLICATION SCENARIO
Electric Vehicle Applications



HOUSING DIMENSION		
L (front) mm	W (side) mm	H mm
190	76	43



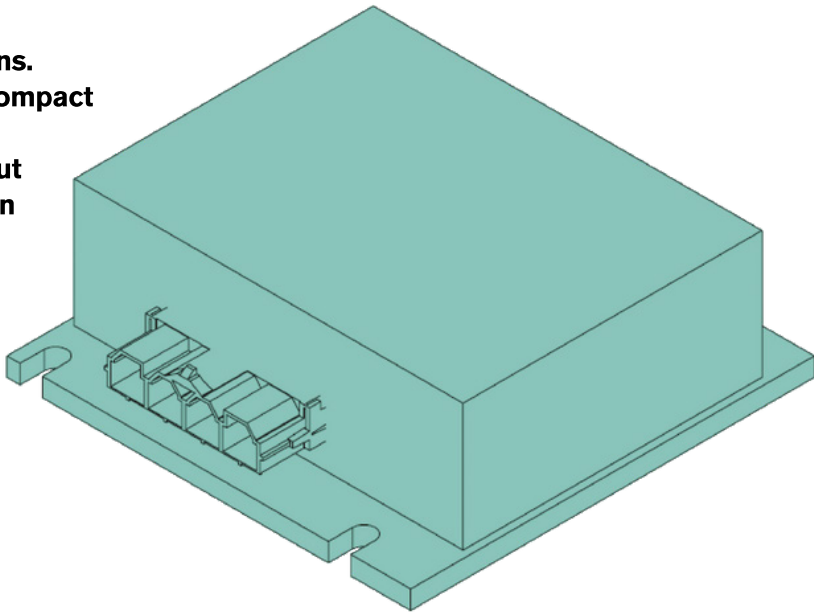
DDC Series

DC/DC
Converters

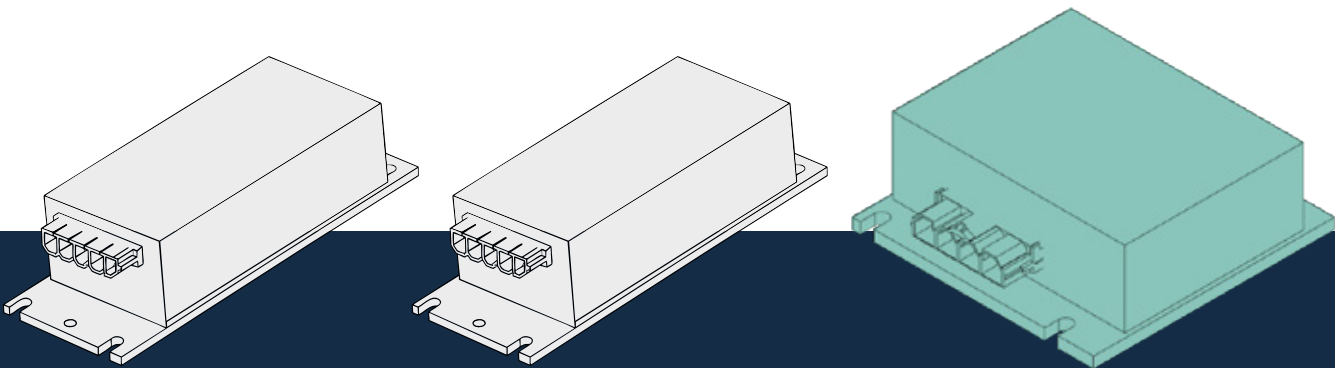
DC2

Technical Features

- Suitable for electric vehicle applications.
- Sturdy and efficient design within a compact footprint.
- Isolated and stable 12 or 24 Volt output
- Simpler and more economical solution than inefficient battery.



PART NUMBER	INPUT VOLTAGE [V]	OUTPUT VOLTAGE [V]	MAX POWER [W]
622/11153	17/112	24	175
622/45003	19.2/112	13.5	400
622/45007	19.2/112	13.5	400
622/45001	30/120	14	450
622/45002	30/120	14	450
622/45005	50/130	13,8	450



DC1 [300W]

DC1 [500W]

DC2

DDC Series
DC/DC Converters

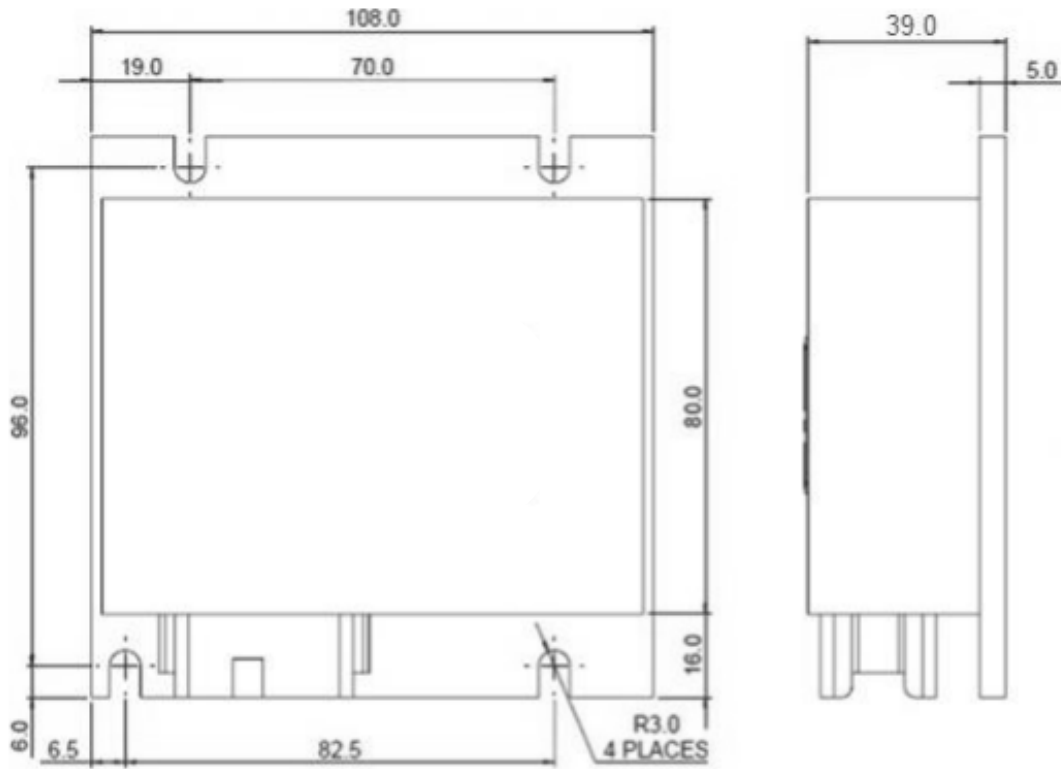
DC2

STANDARDS	
Quality	ISO 9001:2008
Marking	-
EMC	EN12895
Safety	IEC-950
North American Standards	-

MECHANICAL	
Cooling	Aluminium base
IP level	IP67 (Standard)
Ambient Temperature	-25°C to +85°C
Storage Temperature	-40°C to +105°C
Humidity	<100%

SPECIFICATIONS	
Line Voltage (VAC) ±10%	[17V – 112V] [19.2V – 112V] [30V – 120V] [50V-130V]
Output Voltage VDC	13.5 V, 14.5 V, 24 V +/-5%
Peak output power	450W

CHARGING APPLICATION SCENARIO
Electric Vehicle Applications



HOUSING DIMENSION		
L (front) mm	W (side) mm	H mm
108	108	39



FRC Series

Ferro Resonant Chargers

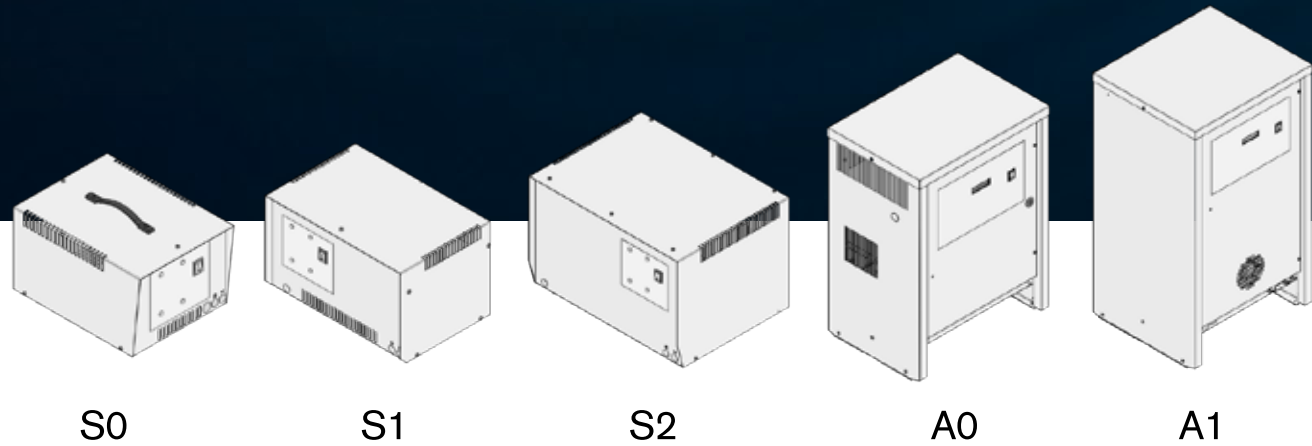
The FRC is a motive battery charger specifically engineered for industrial applications of varying complexity.

The FRC features lower gas development in the gassing phase, reduced water consumption and battery temperature rise, resulting in a maximized battery life.

Technical Features

- Designed for industrial applications of any type and complexity
- Reliable taper charging system
- Wa-curve as the standard charging profile.
 Wo-Wa curve available.
- Reduced gas emission, lower water consumption, and minimized battery temperature rise
- Automatic Equalization and Refresh.
- Maximizes battery lifespan
- Compact and easily portable.

Power (kW)	V out	A out	V input (3x Vac ±10%)	Cabinet
<1	12, 24	15- 40	3Ph: 400, 480	S0
1- 2	12, 24, 36, 48	30 - 60	3Ph: 400, 480	S1
2- 3	24, 36, 48	50 - 100	3Ph: 400, 480	S2
2- 10	24, 36, 48, 72, 80	50- 140	3Ph: 400, 480	A0
4- 14	24, 36, 48, 72, 80, 96	100- 200	3Ph: 400, 480	A1



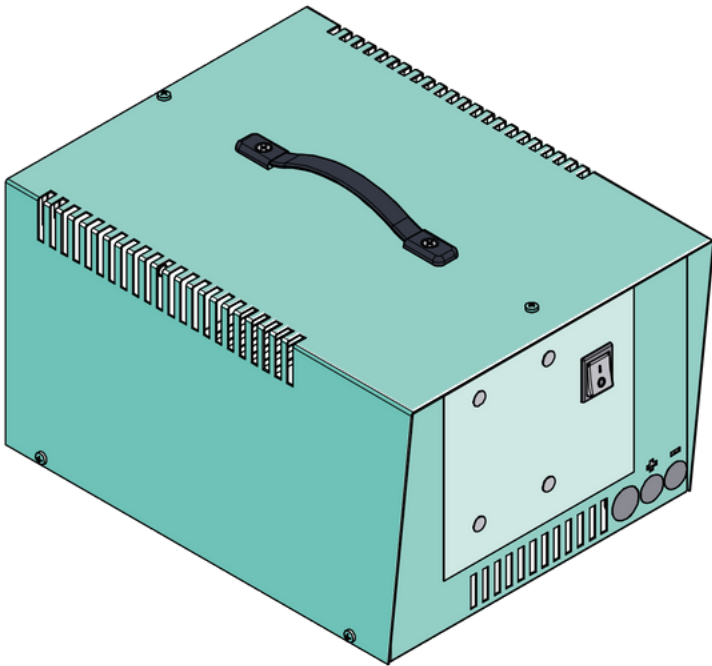
FRC Series

Ferro
Resonant
Chargers

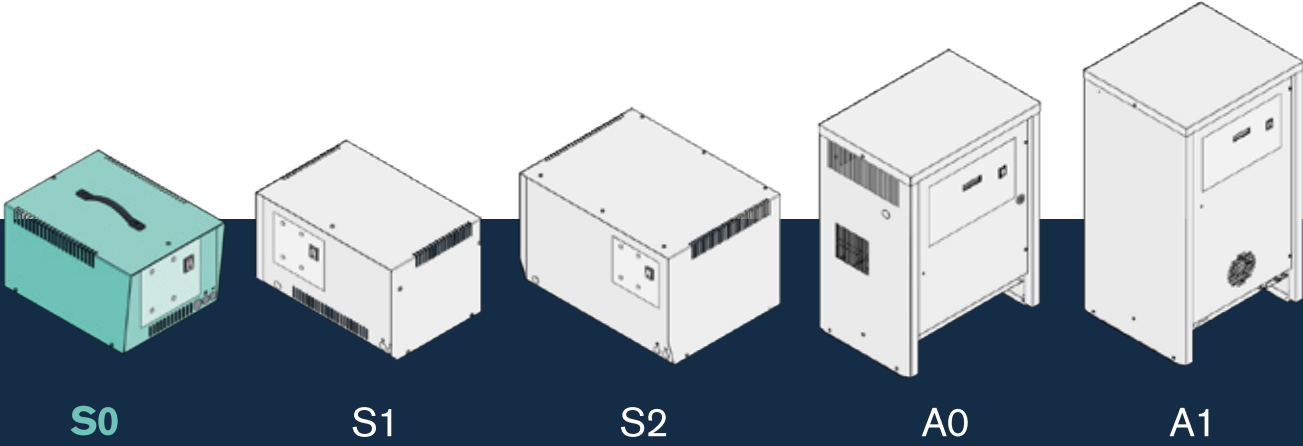
S0

Technical Features

- Full automatic operation
- Robust and reliable construction
- Standard Wa-curve, WoWa-curve available



GENERIC CODE	BATTERY VOLTAGE [V]	CHARGING CURRENT [A]	MAX POWER [W]
FRC-012-015-S0	12	15	180
FRC-012-020-S0	12	20	240
FRC-012-025-S0	12	25	300
FRC-012-030-S0	12	30	360
FRC-024-015-S0	24	15	360
FRC-024-020-S0	24	20	480
FRC-024-025-S0	24	25	600
FRC-024-030-S0	24	30	720
FRC-024-040-S0	24	40	960



FRC Series

S0

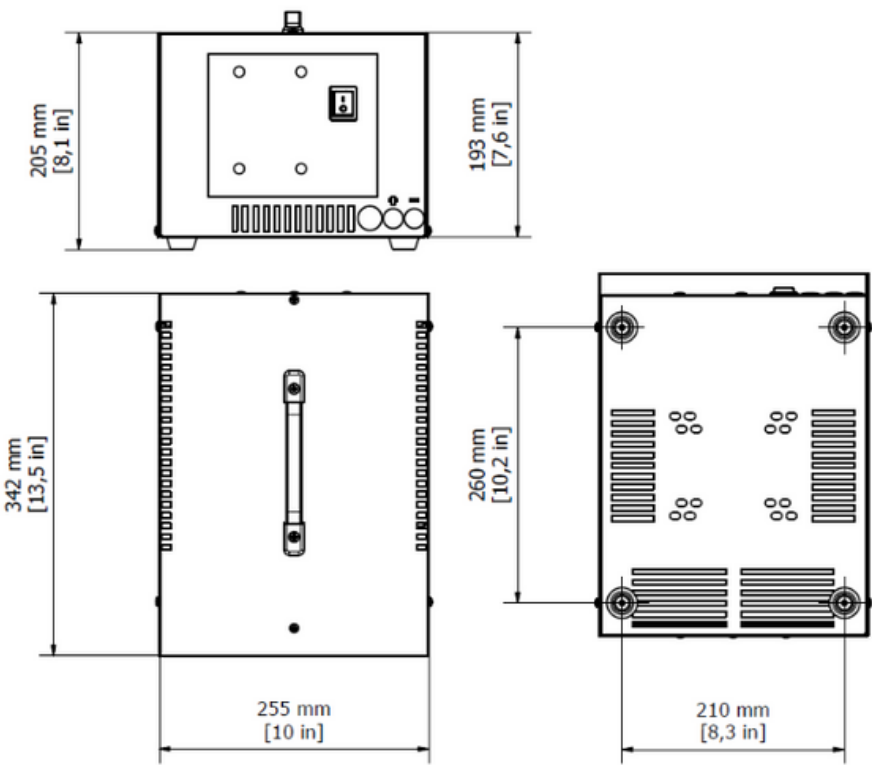
Ferro Resonant Chargers

STANDARDS	
Quality	ISO 9001:2008
Marking	CE
EMC	IEC EN 61000-6-2, IEC EN 61000-6-4
Safety	IEC EN 50178, IEC EN 062040-1
Test and Performance	IEC EN 62040-3
North American Standards	UL 1564, CSA 22.2 107.2-01

MECHANICAL	
Cooling	Air Cooled
IP level	IP21 (Standard)
Ambient Temperature	-10°C to +50°C
Storage Temperature	-20°C to +70°C
Humidity	<75%
Altitude (m)	>2000m according to EN62040-3

SPECIFICATIONS	
Line Voltage (VAC) ±10%	Single Phase: 120, 230
Frequency (Hz)	50/60 Hz ±5%
Power Factor	>90%
Efficiency	>90%

CHARGING APPLICATION SCENARIO
Sealed Battery: Flooded



HOUSING DIMENSION		
L (front) mm	W (side) mm	H mm
255	342	205



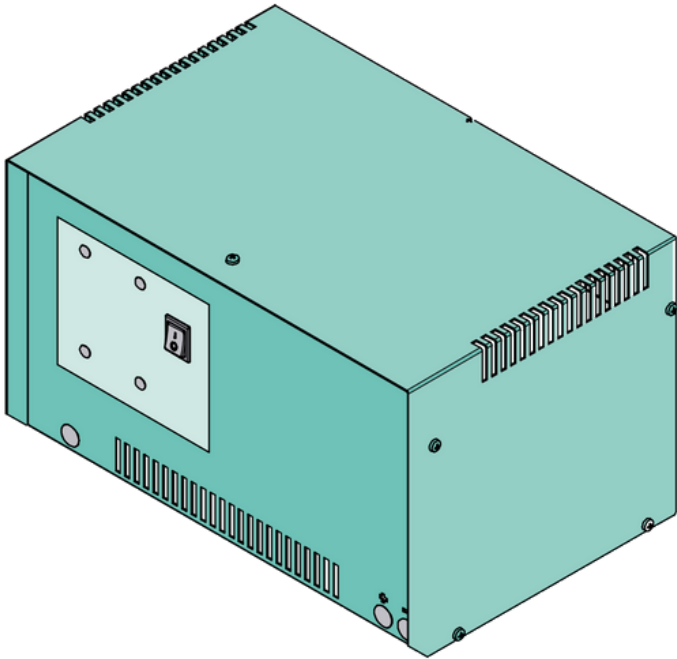
FRC Series

Ferro
Resonant
Chargers

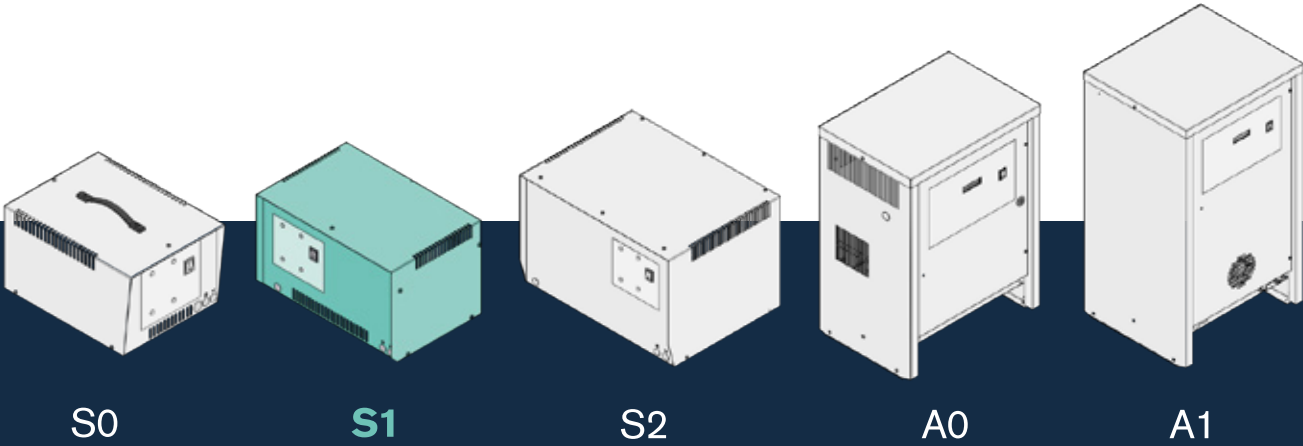
S1

Technical Features

- Full automatic operation
- Robust and reliable construction
- Standard Wa-curve, WoWa-curve available



GENERIC CODE	BATTERY VOLTAGE [V]	CHARGING CURRENT [A]	MAX POWER [W]
FRC-012-050-S1	12	50	600
FRC-012-060-S1	12	60	720
FRC-024-050-S1	24	50	1200
FRC-024-060-S1	24	60	1440
FRC-036-030-S1	36	30	1080
FRC-036-040-S1	36	40	1440
FRC-036-050-S1	36	50	1800
FRC-048-040-S1	48	40	1920



FRC Series S1

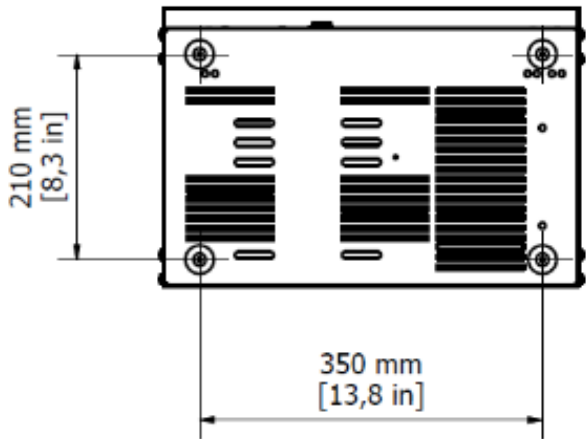
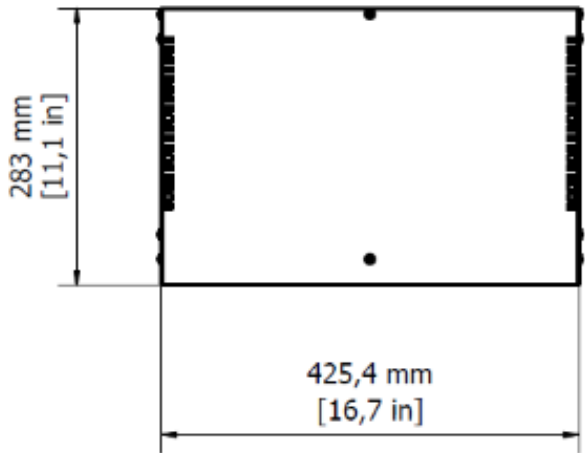
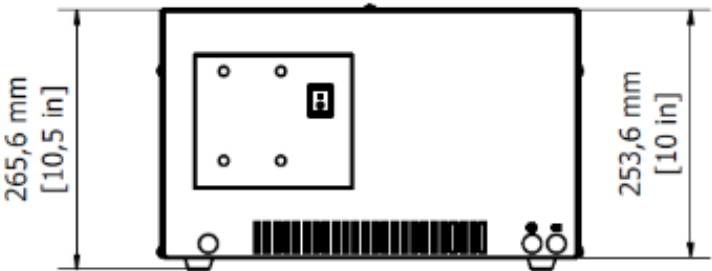
Ferro Resonant Chargers

STANDARDS	
Quality	ISO 9001:2008
Marking	CE
EMC	IEC EN 61000-6-2, IEC EN 61000-6-4
Safety	IEC EN 50178, IEC EN 062040-1
Test and Performance	IEC EN 62040-3
North American Standards	UL 1564, CSA 22.2 107.2-01

MECHANICAL	
Cooling	Air Cooled
IP level	IP21 (Standard)
Ambient Temperature	-10°C to +50°C
Storage Temperature	-20°C to +70°C
Humidity	<75%
Altitude (m)	>2000m according to EN62040-3

SPECIFICATIONS	
Line Voltage (VAC) ±10%	Single Phase: 120, 230
Frequency (Hz)	50/60 Hz ±5%
Power Factor	>90%
Efficiency	>90%

CHARGING APPLICATION SCENARIO
Sealed Battery: Flooded



HOUSING DIMENSION		
L (front) mm	W (side) mm	H mm
425	283	266



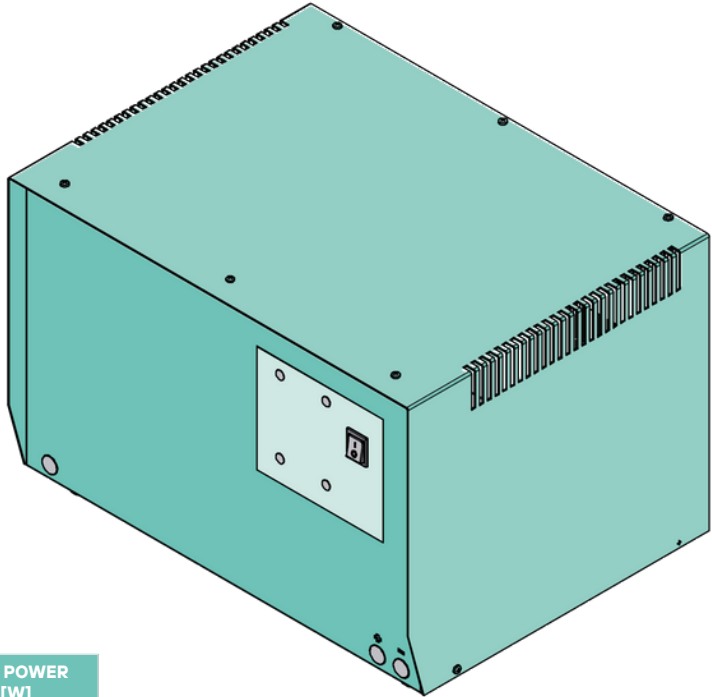
FRC Series

Ferro
Resonant
Chargers

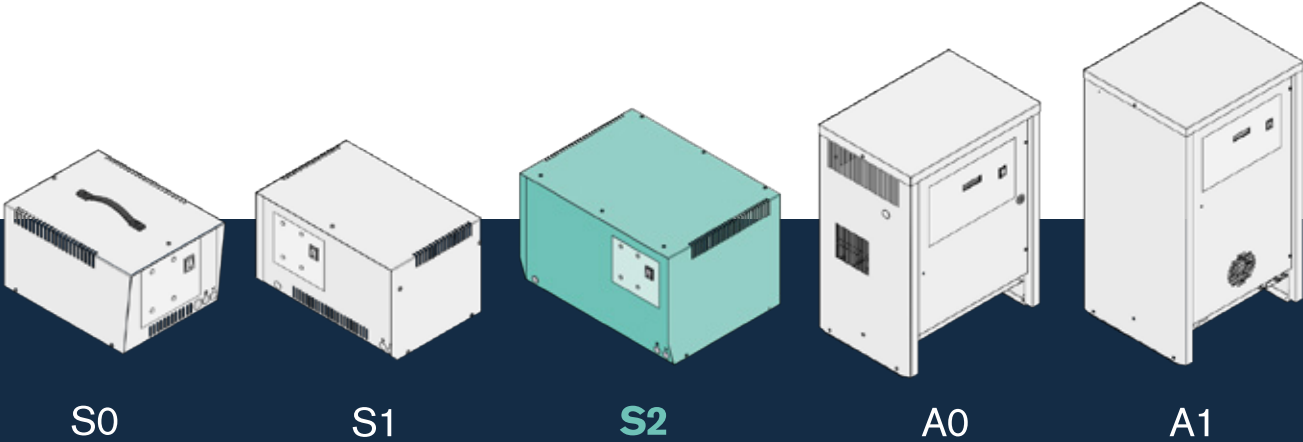
S2

Technical Features

- Full automatic operation
- Robust and reliable construction
- Standard Wa-curve, WoWa-curve available



GENERIC CODE	BATTERY VOLTAGE [V]	CHARGING CURRENT [A]	MAX POWER [W]
FRC-024-080-S2	24	80	1.9
FRC-024-100-S2	24	100	2.4
FRC-036-060-S2	36	60	2.2
FRC-036-080-S2	36	80	2.9
FRC-048-050-S2	48	50	2.4
FRC-048-060-S2	48	60	2.9



FRC Series S2

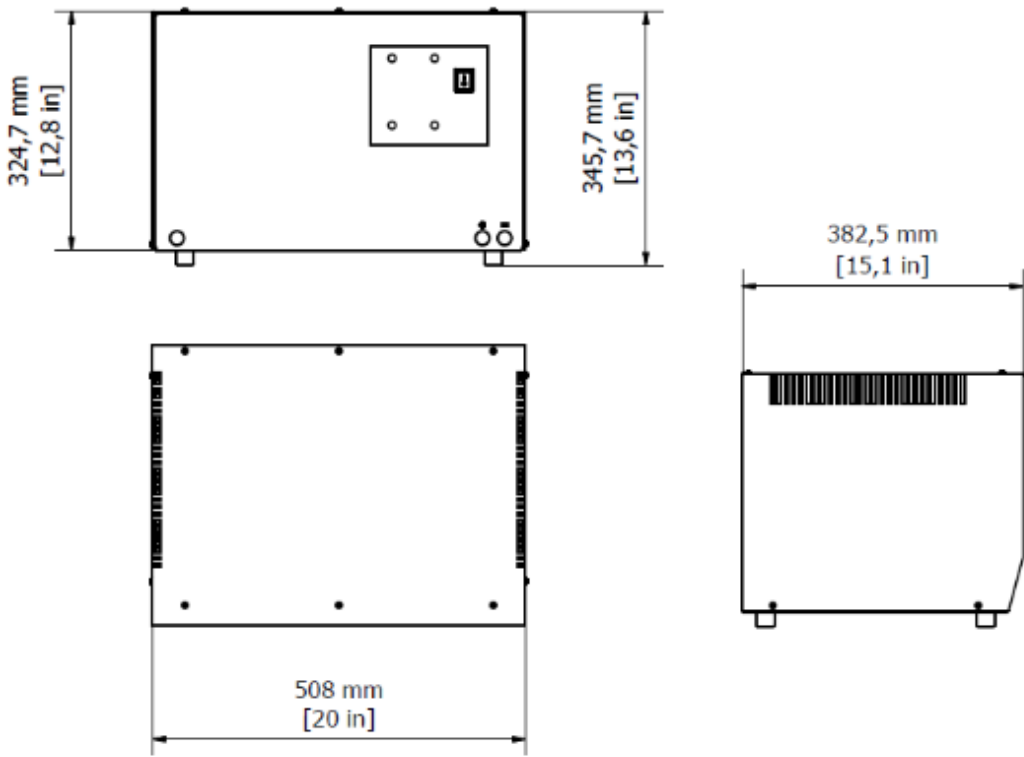
Ferro Resonant Chargers

STANDARDS	
Quality	ISO 9001:2008
Marking	CE
EMC	IEC EN 61000-6-2, IEC EN 61000-6-4
Safety	IEC EN 50178, IEC EN 062040-1
Test and Performance	IEC EN 62040-3
North American Standards	UL 1564, CSA 22.2 107.2-01

MECHANICAL	
Cooling	Air Cooled
IP level	IP21 (Standard)
Ambient Temperature	-10°C to +50°C
Storage Temperature	-20°C to +70°C
Humidity	<75%
Altitude (m)	>2000m according to EN62040-3

SPECIFICATIONS	
Line Voltage (VAC) ±10%	Single Phase: 120, 230
Frequency (Hz)	50/60 Hz ±5%
Power Factor	>90%
Efficiency	>90%

CHARGING APPLICATION SCENARIO
Sealed Battery: Flooded



HOUSING DIMENSION		
L (front) mm	W (side) mm	H mm
508	383	346



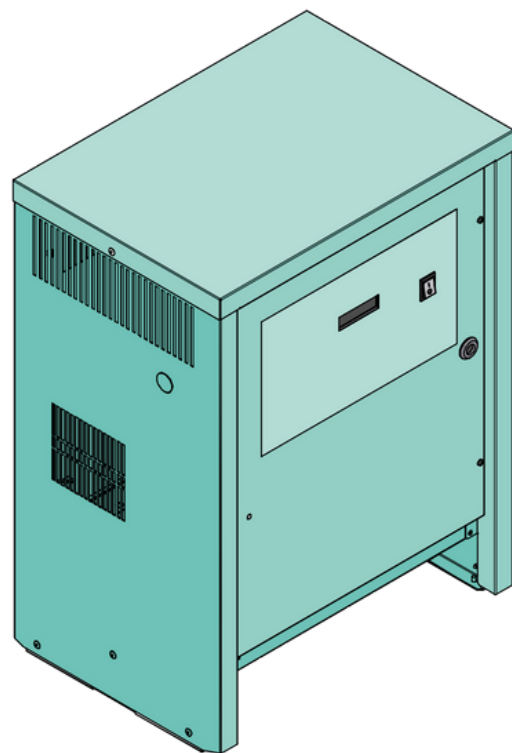
FRC Series

Ferro Resonant Chargers

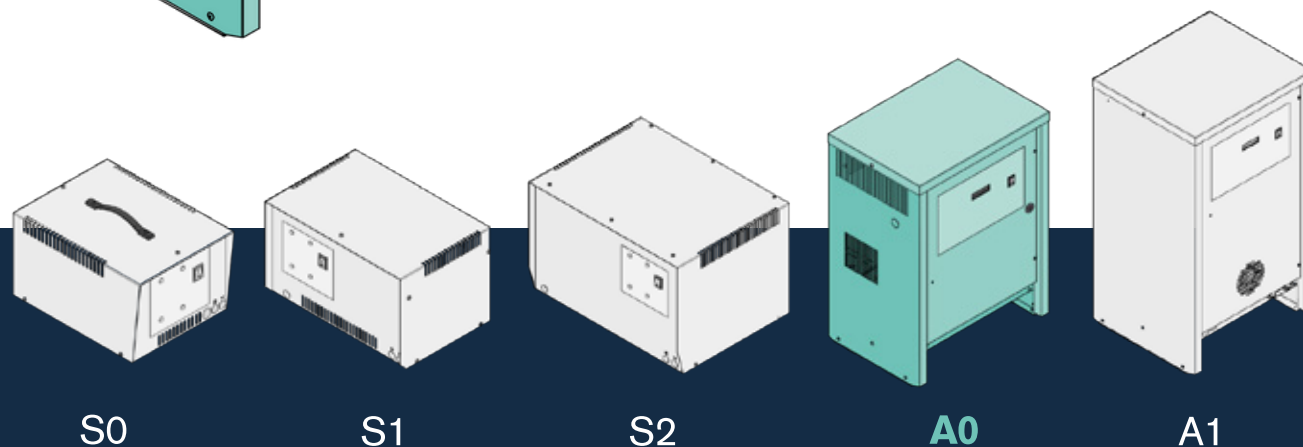
A0

Technical Features

- Full automatic operation
- Robust and reliable construction
- Standard Wa-curve, WoWa-curve available



GENERIC CODE	BATTERY VOLTAGE [V]	CHARGING CURRENT [A]	MAX POWER [W]
FRC-024-060-A0	24	60	1.4
FRC-024-080-A0	24	80	1.9
FRC-024-100-A0	24	100	2.4
FRC-024-120-A0	24	120	2.9
FRC-024-140-A0	24	140	3.4
FRC-036-060-A0	36	60	2.2
FRC-036-080-A0	36	80	2.9
FRC-036-100-A0	36	100	3.6
FRC-036-120-A0	36	120	4.3
FRC-036-140-A0	36	140	5
FRC-048-050-A0	48	50	2.4
FRC-048-060-A0	48	60	2.9
FRC-048-080-A0	48	80	3.8
FRC-048-100-A0	48	100	4.8
FRC-048-120-A0	48	120	5.8
FRC-048-140-A0	48	140	6.7
FRC-072-060-A0	72	60	4.3
FRC-072-080-A0	72	80	5.8
FRC-072-100-A0	72	100	7.2
FRC-080-060-A0	80	60	4.8
FRC-080-080-A0	80	80	6.4
FRC-080-100-A0	80	100	8
FRC-080-120-A0	80	120	9.6



FRC Series A0

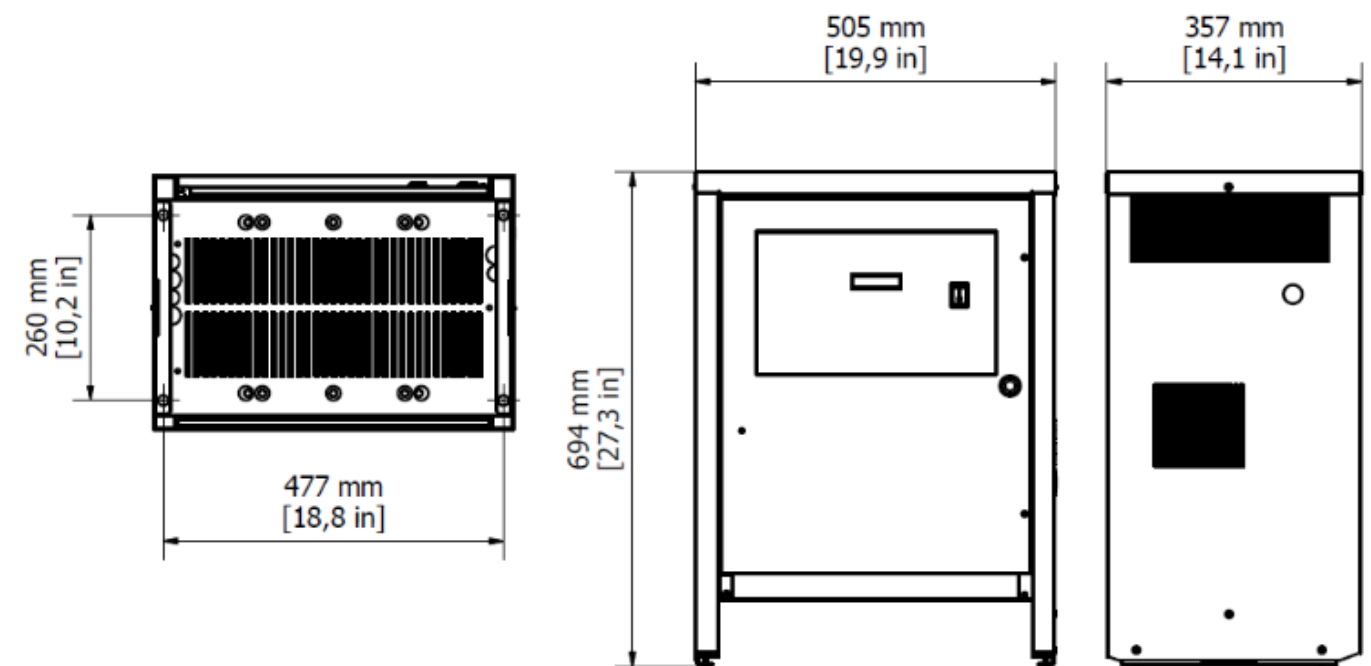
Ferro Resonant Chargers

STANDARDS	
Quality	ISO 9001:2008
Marking	CE
EMC	IEC EN 61000-6-2, IEC EN 61000-6-4
Safety	IEC EN 50178, IEC EN 062040-1
Test and Performance	IEC EN 62040-3
North American Standards	UL 1564, CSA 22.2 107.2-01

SPECIFICATIONS	
Line Voltage (VAC) $\pm 10\%$	Three Phase: 400,480
Frequency (Hz)	50/60 Hz $\pm 5\%$
Power Factor	$>80\%$
Efficiency	$>85\%$

MECHANICAL	
Cooling	Air Cooled
IP level	IP21 (Standard)
Ambient Temperature	-10°C to $+50^{\circ}\text{C}$
Storage Temperature	-20°C to $+70^{\circ}\text{C}$
Humidity	$<75\%$
Altitude (m)	$>2000\text{m}$ according to EN62040-3

CHARGING APPLICATION SCENARIO
Sealed Battery: Flooded



HOUSING DIMENSION		
L (front) mm	W (side) mm	H mm
505	357	694



FRC Series

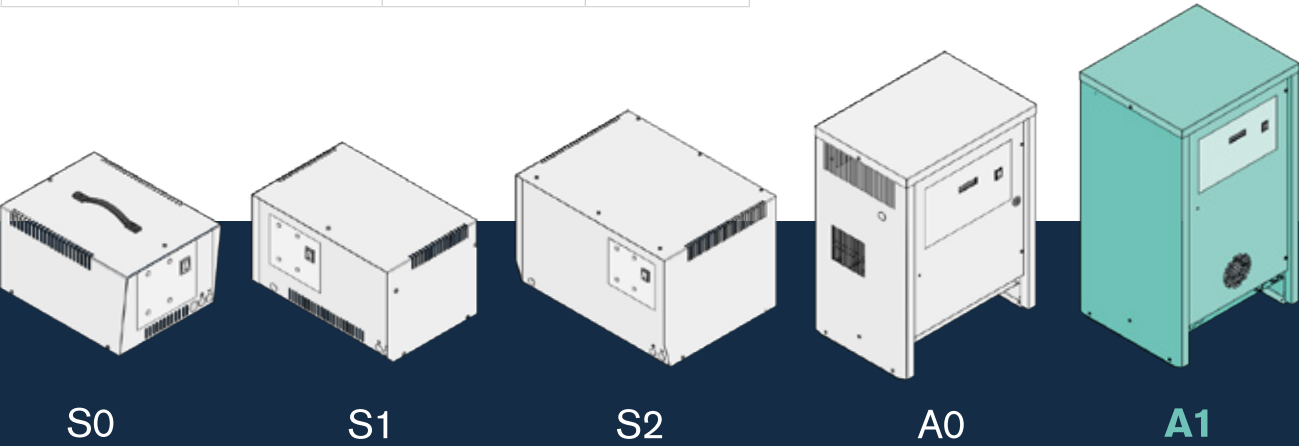
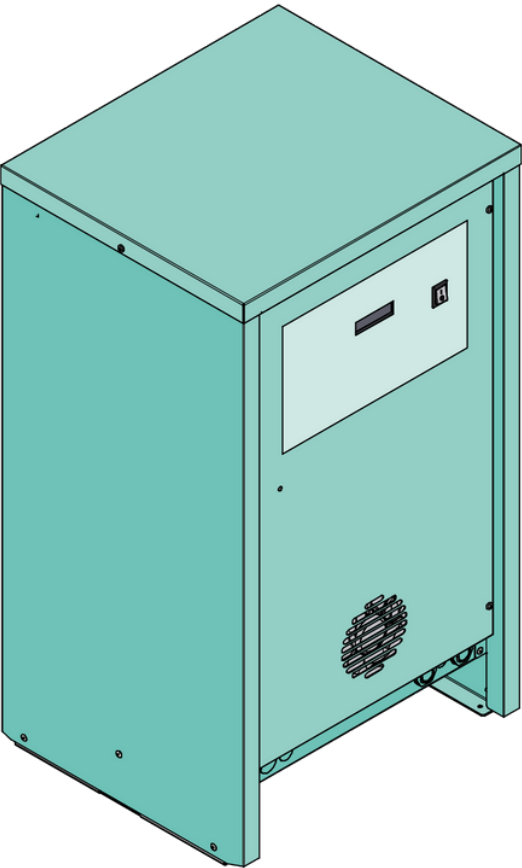
Ferro
Resonant
Chargers

A1

Technical Features

- Full automatic operation
- Robust and reliable construction
- Standard Wa-curve, WoWa-curve available

GENERIC CODE	BATTERY VOLTAGE [V]	CHARGING CURRENT [A]	MAX POWER [W]
FRC-024-160-A1	24	160	3.8
FRC-024-180-A1	24	180	4.3
FRC-036-160-A1	36	160	5.7
FRC-048-160-A1	48	160	7.7
FRC-048-180-A1	48	180	8.6
FRC-048-200-A1	48	200	9.6
FRC-072-120-A1	72	120	8.6
FRC-080-140-A1	80	140	11
FRC-080-160-A1	80	160	13
FRC-096-100-A1	96	100	9.6
FRC-096-120-A1	96	120	12



FRC Series

A1

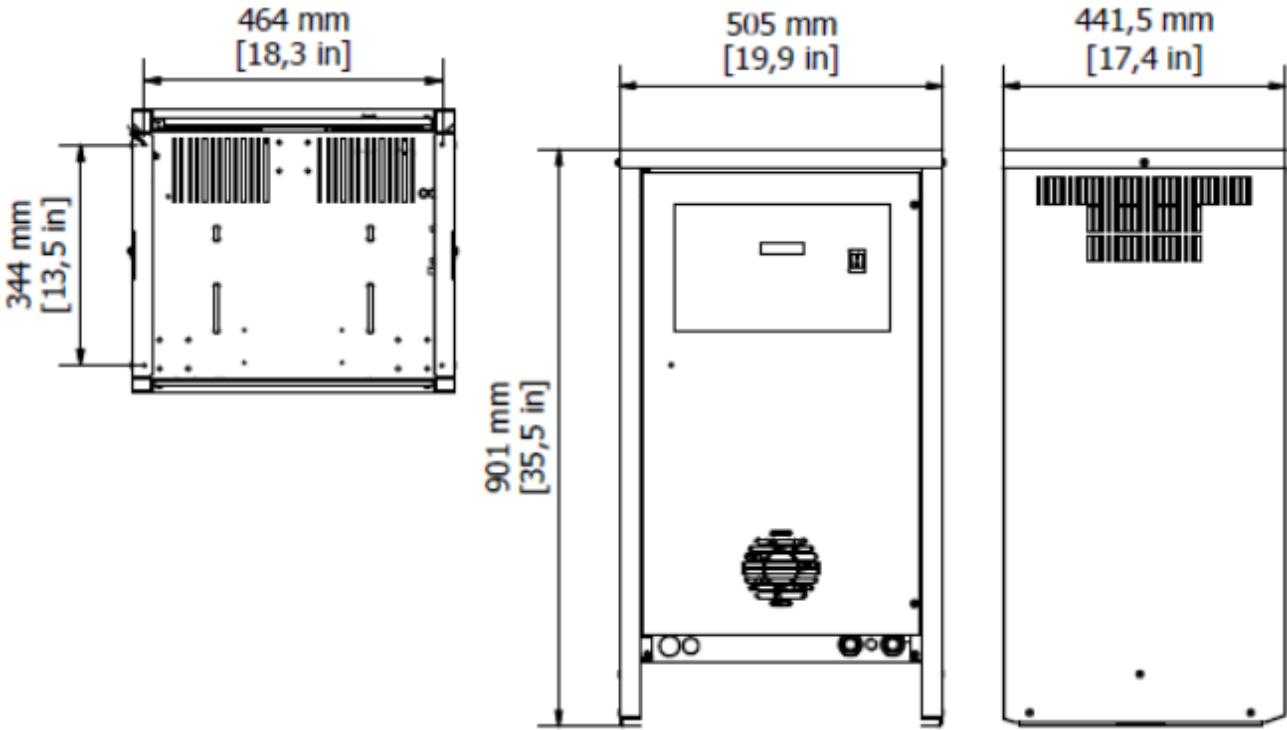
Ferro Resonant Chargers

STANDARDS	
Quality	ISO 9001:2008
Marking	CE
EMC	IEC EN 61000-6-2, IEC EN 61000-6-4
Safety	IEC EN 50178, IEC EN 062040-1
Test and Performance	IEC EN 62040-3
North American Standards	UL 1564, CSA 22.2 107.2-01

MECHANICAL	
Cooling	Air Cooled
IP level	IP21 (Standard)
Ambient Temperature	-10°C to +50°C
Storage Temperature	-20°C to +70°C
Humidity	<75%
Altitude (m)	>2000m according to EN62040-3

SPECIFICATIONS	
Line Voltage (VAC) ±10%	Three Phase: 400,480
Frequency (Hz)	50/60 Hz ±5%
Power Factor	>80%
Efficiency	>85%

CHARGING APPLICATION SCENARIO
Sealed Battery: Flooded



HOUSING DIMENSION		
L (front) mm	W (side) mm	H mm
505	442	901





*Recharging made smarter.
Solutions made stronger.*





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