AC-DC Power Converters

Product Range

Power Conversion

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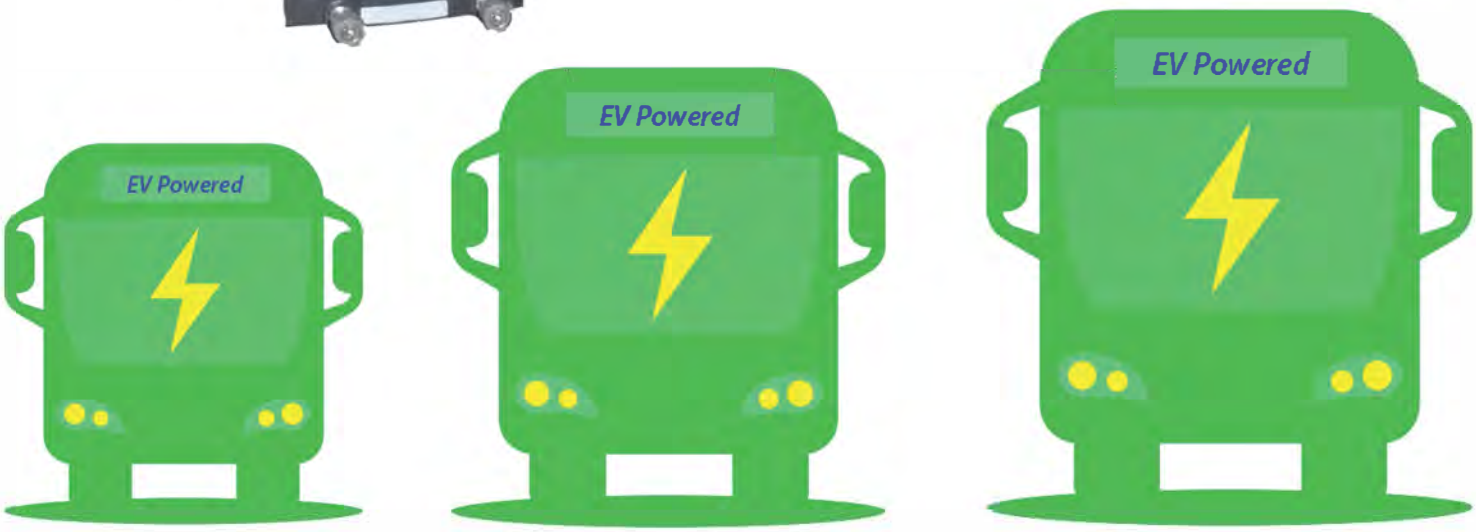
EV Powered
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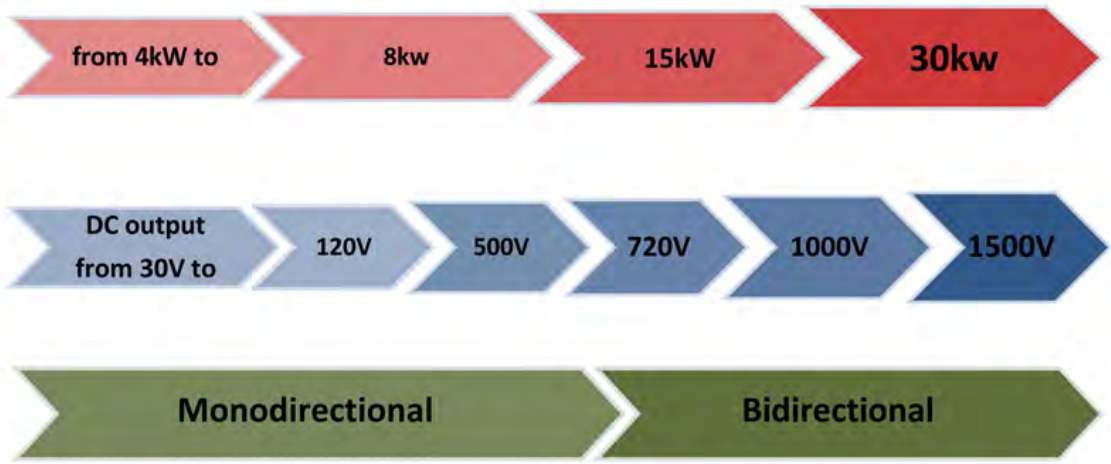
The new OAKSUM range of state-of-the art AC/DC Power Converters suitable for fast DC charging.

The high efficiency, high power density converters are specifically designed for fast charging applications including :

E-Bus & Service vehicle operators, EV manufacturing lines, EV workshops, EV Fleet Operators



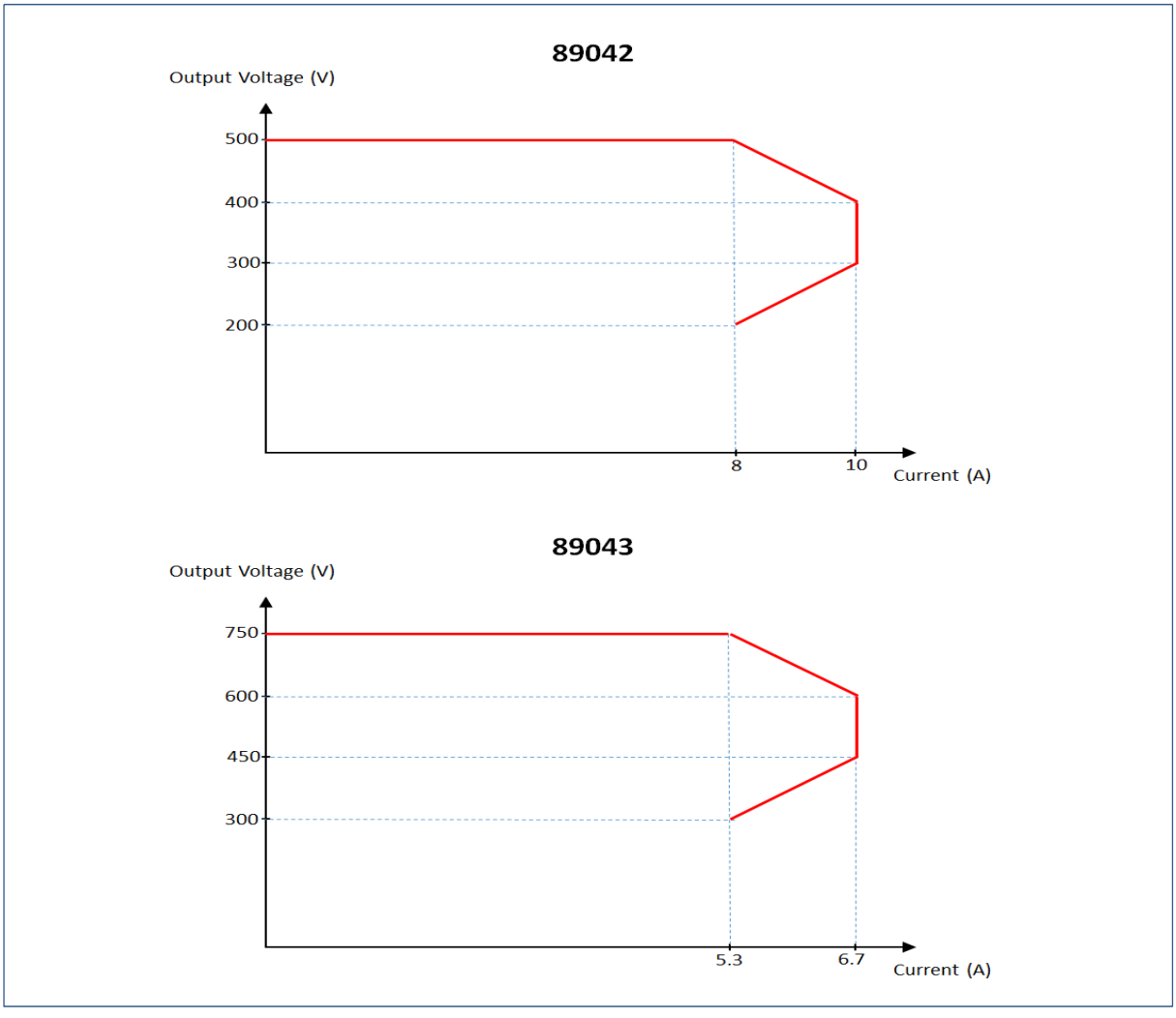
- ✓ Wide Output Voltage Ranges
- ✓ Power Converters can be connected in parallel to create high total power systems
- ✓ High efficiency >= 95%
- ✓ Compact design
- ✓ High power density
- ✓ Power factor >= 0.99
- ✓ Input/output Low & Over Voltage Protection, Short Circuit Protection, Over Temperature Protection
- ✓ Supports CAN and RS-485 bus communication
- ✓ Rack-mountable

4kW Mono Directional AC/DC Converter

A family of 4KW AC/DC Converters specifically designed for EV DC charging.

AC single phase input with a wide range of output voltages (200V to 750V DC).

- Very High Efficiency
- Compact size
- High Power Density
- Single phase input 85-300V AC
- Wide Output Voltage Range
- Low Standby Power Consumption ≤6W
- Total Protection with alarm functions: input over/under voltage, output over voltage, over temperature protection, output over current & short circuit protection.
- Supports CAN bus communication, power modules can be grouped together by controller
- Hot swap
- Discharge circuit inside



4kW Mono Directional

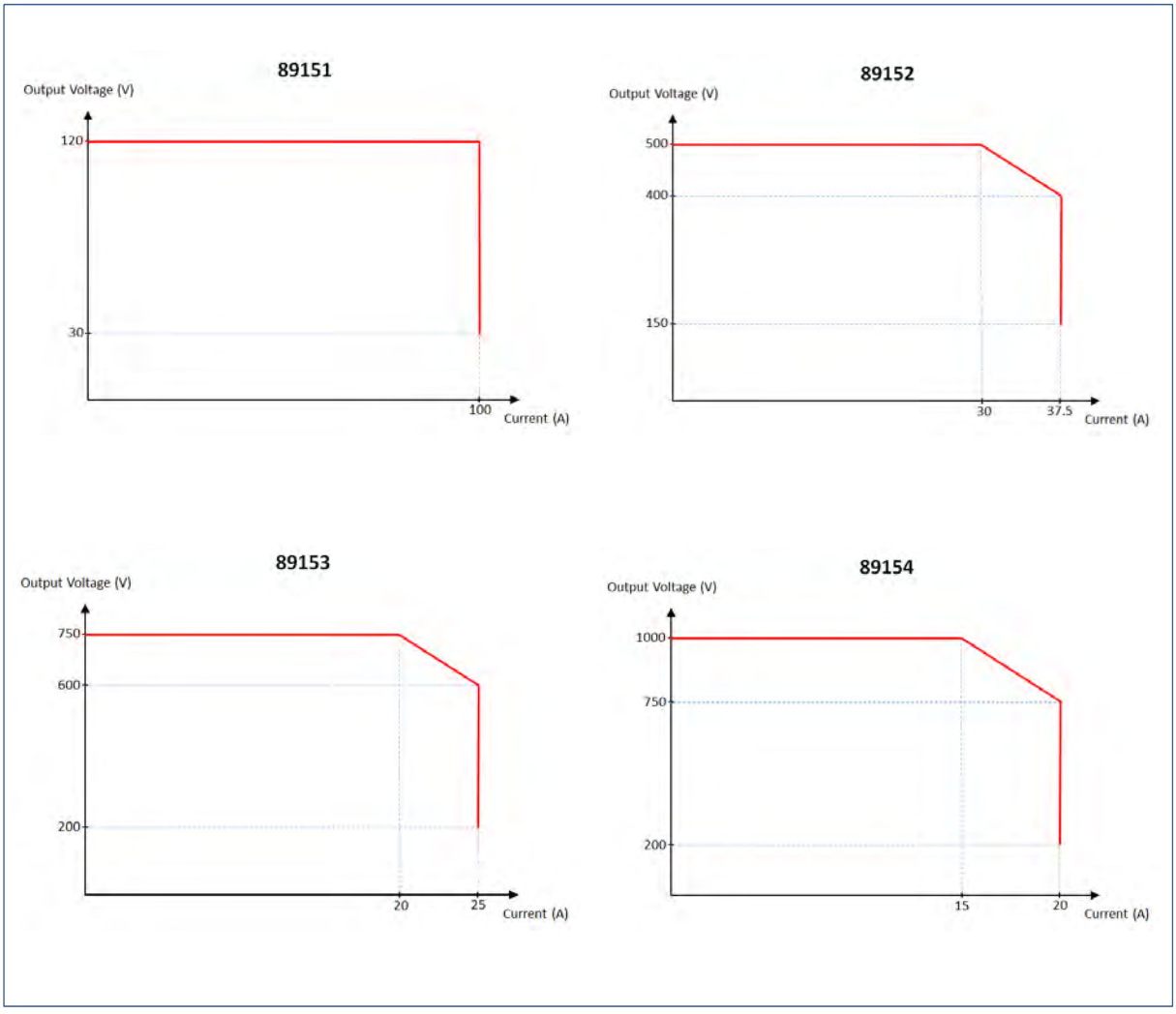
	Part Number	89042	89043
AC Input	Input Voltage	85VAC ~ 300VAC Single	
	Input Frequency	45Hz ~ 65Hz	45Hz ~ 65Hz
	Max. Input Current	< 30A	< 30A
	Power Factor	Rated output load ≥ 0.99	
	THD	≤ 5%	≤ 5%
	Input Under Voltage Protection		
	Input Overvoltage Protection		
	Input Power Derating	From 55°C to 75°C derate power linearly from 100% to 0%	
DC Output	Rated Output Power	4kW @ output voltage > 400VDC	4kW @ output voltage > 600VDC
	Output Voltage Range	200 ~ 500VDC	300 ~ 750VDC
	Max Output Current	10A	6.7A
	Current sharing	Average current ± 0.5A	Average current ± 0.5A
	Voltage Accuracy	≤±0.5%	≤±0.5%
	Current Accuracy	≤± 1% (output power between 20% to 100%)	
	Efficiency	>95%	>95%
Communication & Alarm	Communication	CAN	CAN
	Max number of parallel converters	20 converters	20 converters
	Alarm & Status	Display on LED panel	Display on LED panel
Operating Environment	Operating Temperature	-20°C ~ 75°C derating from 55°C	-20°C ~ 75°C derating from 55°C
	Overtemperature Protection	Automatic shutdown with auto restart	
	Storage Temperature	-40°C ~ 75°C	-40°C ~ 75°C
	Humidity	≤ 95% RH without condensation	≤ 95% RH without condensation
	Altitude	Up to 2000m	Up to 2000m
Mechanical Characteristics	Cooling	Fan cooling	Fan cooling
	Dimensions	41.2mm (H) x 125mm (W) x 300mm (L)	
	Weight	≤ 2.75kg	≤ 2.75kg
	MTBF	> 500,000 hours (40°C)	> 500,000 hours (40°C)

15kW Mono Directional AC/DC Converter

A family of 15KW AC/DC Converters specifically designed for EV DC charging.

AC 3 phase input with a wide range of output voltages (30V to 1000V DC).

- Very High Efficiency
- Compact size
- Ultra-High Power Density
- Wide Output Voltage Range Small Output Ripple voltage ≤2V p-p
- Low Standby Power Consumption ≤10W
- Total Protection with alarm functions: input over/under voltage, output over voltage, over current, over temperature protection, output under voltage alarm, output short circuit protection.
- LED Display
- Supports CAN, 485 bus communication, power modules can be grouped together by controller
- Battery current reverse protection
- Hot swap
- Discharge circuit inside



15kW Mono Directional

	Part Number	89151	89152	89153	89154
AC Input	Input Voltage	260VAC ~ 485VAC 3 Phase without neutral			
	Input Frequency	45Hz ~ 65Hz	45Hz ~ 65Hz	45Hz ~ 65Hz	45Hz ~ 65Hz
	Max. Input Current	< 31A	< 31A	< 31A	< 31A
	Power Factor	Rated output load ≥ 0.99			
	THD	≤ 5%	≤ 5%	≤ 5%	≤ 5%
	Input Under Voltage Protection	255V ±5V	255V ±5V	255V ±5V	255V ±5V
	Input Overvoltage Protection	490V ±5V	490V ±5V	490V ±5V	490V ±5V
	Input Power Derating	260V ±5V < Vin <304V ±5V			
		Linear power derating from 100% to 50%			
DC Output	Rated Output	120V/100A	500V/30A	750V/20A	1000V/15A
	Constant Power Range	120V	400 ~ 500V	600 ~ 750V	750 ~ 1000V
	Output Voltage Range	30 ~ 120V	150 ~ 500V	200 ~ 750V	200 ~ 1000V
	Output Current Range	0 ~ 100A	0 ~ 37.5A	0 ~ 25A	0 ~20A
	Output Overvoltage Protection	130V ±5V	510V ±5V	760V ±5V	1010V ±5V
	Output Under Voltage Alarm	25V ±2V	140V ±2V	190V ±2V	190V ±2V
	Short Circuit Protection	Output current decreases when short circuit occurs			
	Voltage Stabilised Accuracy	≤±0.5%	≤±0.5%	≤±0.5%	≤±0.5%
	Load sharing	≤±3%	≤±3%	≤±3%	≤±3%
	Max Startup Overshoot	≤± 1%	≤± 1%	≤± 1%	≤± 1%
	Current Stabilised Accuracy	≤± 1%	≤± 1%	≤± 1%	≤± 1%
	Start Up Time	normally 3s≤t≥8s			
	Efficiency	Highest efficiency >96%, Rated efficiency >95%			
Communication & Alarm	Communication	CAN & 485	CAN & 485	CAN & 485	CAN & 485
	Max number of parallel converters	60 converters	60 converters	60 converters	60 converters
	Alarm & Status	Report to monitor via CAN bus or 485 bus, Display on LED panel			
Operating Environment	Operating Temperature	-30°C ~ 70°C derating from 55°C			
	Overtemperature Protection	At temperature > 70°C ±4°C or < -40°C ±4°C power converter will shut down automatically			
	Storage Temperature	-40°C ~ 85°C	-40°C ~ 85°C	-40°C ~ 85°C	-40°C ~ 85°C
	Humidity	≤ 95% RH without condensation			
	Altitude	79kPa ~ 106kPa/2000m			
Mechanical Characteristics	Acoustic Noise	< 55dB	< 55dB	< 55dB	< 55dB
	Cooling	Fan cooling	Fan cooling	Fan cooling	Fan cooling
	Dimensions	219.5mm (H) x 84mm (W) x 395mm (L)			
	Weight	< 10Kg	< 10Kg	< 10Kg	< 10Kg
	MTBF	> 500,000 hours (40°C)			

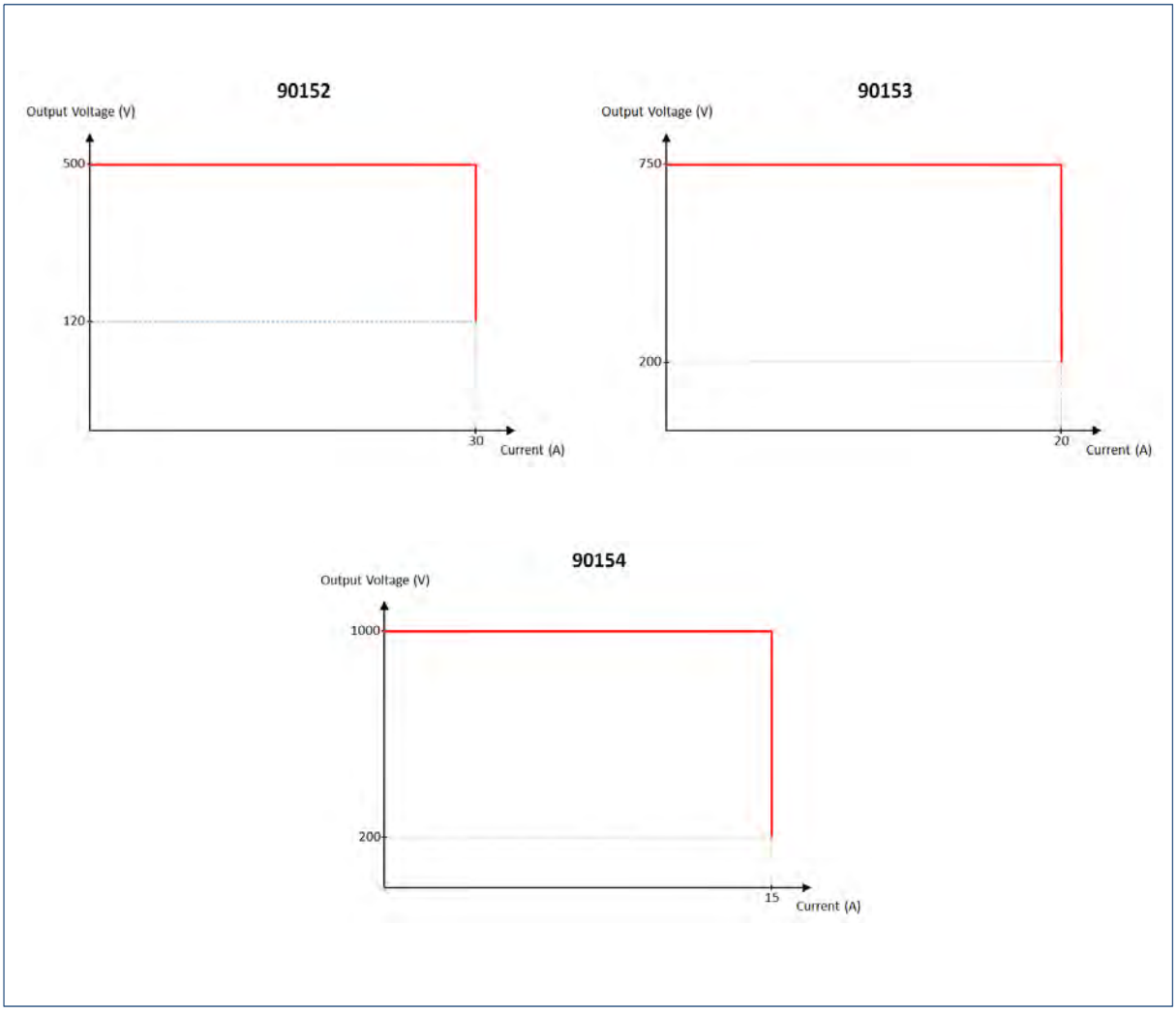
15kW Bi-Directional AC/DC Converter

A family of isolated 15KW Bi-Directional AC/DC Converters.

AC 3 phase input with a wide range of output voltages (200V to 1000V DC) for supplying the battery pack or DC load.

Reverse operation for discharge mode for converting and supplying the voltage of the battery pack or DC source back to the grid

- Very High Efficiency
- Compact size
- Ultra-High Power Density
- Wide Output Voltage Range
- Islanding Protection
- High power factor
- Total Protection with alarm functions: input over/under voltage, output over voltage, over current, over temperature protection, output under voltage alarm, output short circuit protection.
- LED Display
- Supports CAN bus communication, power modules can be grouped together by controller



15kW Bi Directional

*Under Development

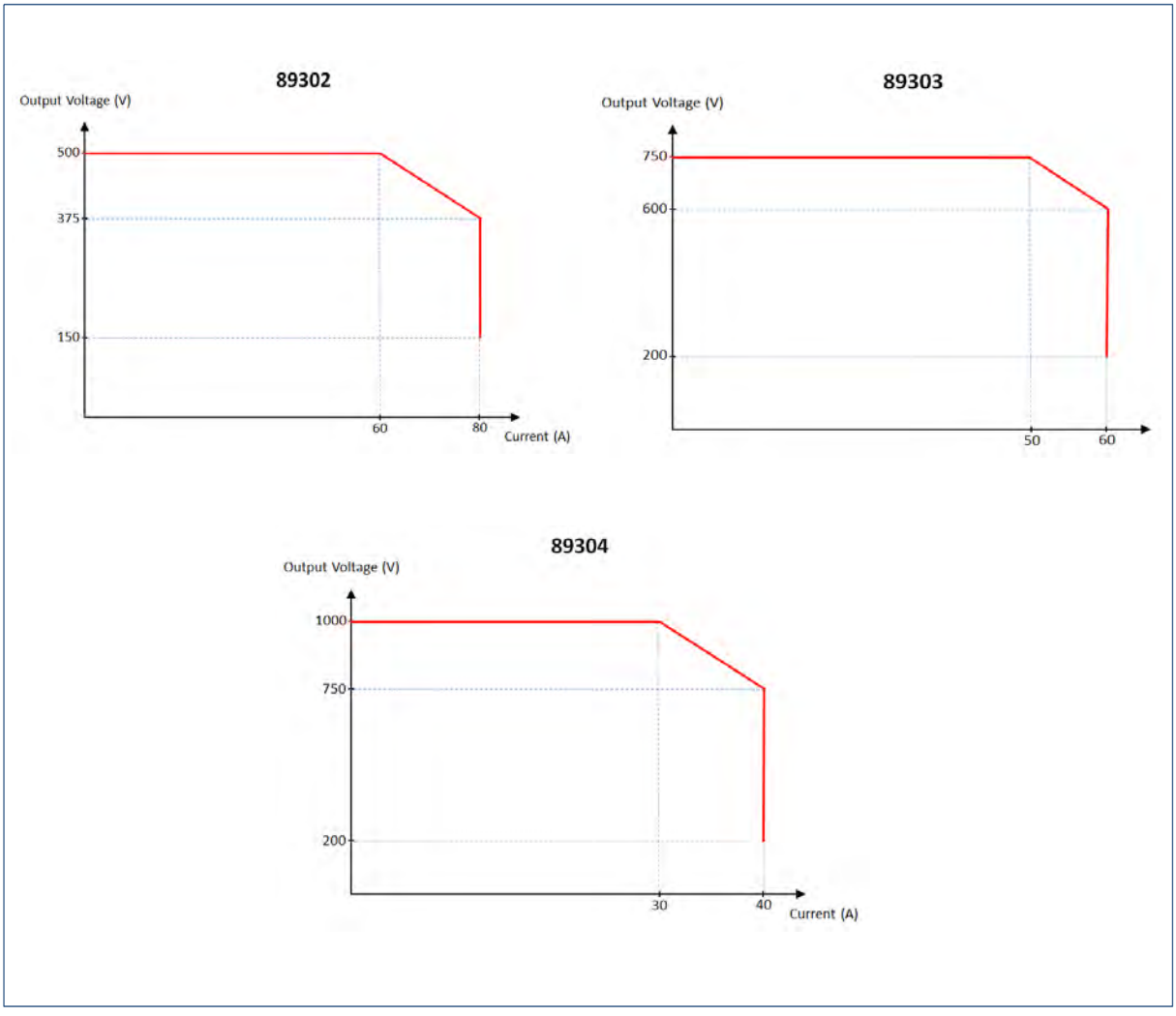
	Part Number	90152	90153	90154*
AC Side Characteristics	Input Voltage	323VAC ~ 437VAC 3 Phase without neutral		
	Input Frequency	45Hz ~ 65Hz	45Hz ~ 65Hz	45Hz ~ 65Hz
	Max. Input Current	< 30A	< 30A	< 30A
	Power Factor	Rated output load ≥ 0.99		
	THD	≤ 5%	≤ 5%	≤ 5%
	Input Under Voltage Protection	308V ±5V	308V ±5V	308V ±5V
	Input Overvoltage Protection	452V ±5V		
	Maximum Output Power	15000W	15000W	
	Islanding Protection	In Discharge mode	In Discharge mode	In Discharge mode
DC Side Characteristics	Maximum Output Power	15000W	15000W	15000W
	Output Voltage Range	200~500VDC	200~750VDC	200~1000VDC
	Output Current Range	0~30A	0~30A	
	Output Overvoltage Protection	Yes, protection level can be pre-programmed		
	Output Under Voltage Alarm	Yes, protection level can be pre-programmed		
	Short Circuit Protection	Short Circuit protection with auto recovery		
	Voltage Stabilised Accuracy	≤±1%	≤±1%	≤±1%
	Load sharing	≤±5%	≤±5%	≤±5%
	Efficiency	Charge ≥94%, Discharge ≥94%		
Communication & Alarm	Communication	CAN	CAN	CAN
	Max number of parallel converters	35	35	35
	Alarm & Status	Display on LED panel		
Operating Environment	Operating Temperature	-40°C ~ 60°C derating from 50°C t0 60°C linearly by 20%		
	Overtemperature Protection	Over temperature protection with auto recovery		
	Storage Temperature	-40°C ~ 70°C	-40°C ~ 70°C	-40°C ~ 70°C
	Humidity	≤ 90% RH without condensation		
	Altitude	0 ~ 2000m	0 ~ 2000m	0 ~ 2000m
Mechanical Characteristics	Acoustic Noise	< 55dB	< 55dB	< 55dB
	Cooling	Fan cooling	Fan cooling	Fan cooling
	Dimensions	306mm (H) x 84mm (W) x 427.7mm (L)		
	Weight	< 13Kg	< 13Kg	< 13Kg
	MTBF	> 500,000 hours (40°C)		

30kW Mono Directional AC/DC Converter

A family of 30KW AC/DC Converters specifically designed for EV DC charging.

AC 3 phase input with a wide range of output voltages (150V to 1000V DC).

- Very High Efficiency
- Compact size
- Ultra-High Power Density
- Wide Output Voltage Range
- Small Output Ripple voltage ≤2V p-p
- Low Standby Power Consumption ≤11W
- Total Protection with alarm functions: input over/under voltage, output over voltage, over current, over temperature protection, output under voltage alarm, output short circuit protection.
- LED Display
- Supports CAN, 485 bus communication, power modules can be grouped together by controller
- Battery current reverse protection
- Hot swap
- Discharge circuit inside



30kW Mono Directional

	Part Number	89302	89303	89304
AC Input	Input Voltage	260VAC ~ 530VAC 3 Phase without neutral		
	Input Frequency	45Hz ~ 65Hz	45Hz ~ 65Hz	45Hz ~ 65Hz
	Max. Input Current	< 61A	< 61A	< 61A
	Power Factor	Rated output load ≥ 0.99		
	THD	≤ 5%	≤ 5%	≤ 5%
	Input Under Voltage Protection	255V ±5V	255V ±5V	255V ±5V
	Input Overvoltage Protection	535V ±5V	535V ±5V	535V ±5V
	Input Power Derating	260V ±5V < Vin <304V ±5V		
		Linear power derating from 100% to 50%		
DC Output	Rated Output	500V/60A	750V/40A	1000V/30A
	Constant Power Range	30KW@400~500V	30KW@600~750V	30KW@790~1000V
	Output Voltage Range	150 ~ 500V	200 ~ 750V	200 ~ 1000V
	Output Current Range	0 ~ 80A	0 ~ 50A	0 ~ 40A
	Output Overvoltage Protection	510V ±5V	760V ±5V	1010V ±5V
	Output Under Voltage Alarm	140V ±2V	190V ±2V	190V ±2V
	Short Circuit Protection	Output current decreases when short circuit occurs		
	Voltage Stabilised Accuracy	≤±0.5%	≤±0.5%	≤±0.5%
	Load sharing	≤±3%	≤±3%	≤±3%
	Max Startup Overshoot	≤± 1%	≤± 1%	≤± 1%
	Current Stabilised Accuracy	≤± 1%	≤± 1%	≤± 1%
	Start Up Time	normally 3s≤t≥8s	normally 3s≤t≥8s	normally 3s≤t≥8s
	Efficiency	Highest efficiency >96%, Rated efficiency >95%		
Communication & Alarm	Communication	CAN & 485	CAN & 485	CAN & 485
	Max number of parallel converters	60 converters	60 converters	60 converters
	Alarm & Status	Display with digital tubes and LED		
Operating Environment	Operating Temperature	-30°C ~ 70°C derating from 55°C		
	Overtemperature Protection	At temperature > 70°C ±4°C or < -40°C ±4°C power converter		
		will shut down automatically		
	Storage Temperature	-40°C ~ 85°C	-40°C ~ 85°C	-40°C ~ 85°C
	Humidity	≤ 95% RH without condensation		
	Altitude	79kPa ~ 106kPa/2000m		
Mechanical Characteristics	Acoustic Noise	< 60dB	< 60dB	< 60dB
	Cooling	Fan cooling	Fan cooling	Fan cooling
	Dimensions	300mm (H) x 84mm (W) x 437.5mm (L)		
	Weight	< 15Kg	< 15Kg	< 15Kg
	MTBF	> 500,000 hours (40°C)		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