

Components for AC and DC EV Chargers

We make
the electric
revolution
work*



Powering Business Worldwide

EV



CHARGING

Driving towards a sustainable future with expertise and innovation

Electric vehicles (EVs) are rapidly transforming the landscape of modern transportation. With the increasing adoption of EVs, the demand for efficient, reliable, and safe charging solutions has never been higher. Eaton, a global leader in power management solutions, offers a comprehensive range of components specifically designed for AC and DC EV chargers.



Quality and Reliability

High standards

Eaton's components are engineered to meet the highest standards of quality and reliability. These components undergo rigorous testing and certification processes to ensure they can withstand the demanding conditions of EV charging. Whether for residential, commercial, or public charging stations, Eaton's components deliver consistent performance and longevity.

Durability

The durability of Eaton components ensures minimal downtime and reduced maintenance costs. This reliability is crucial for maintaining the confidence of EV users and operators, as it directly impacts the availability and efficiency of charging infrastructure.



Efficiency and Performance

Optimized power conversion

Eaton's power conversion solutions are designed to optimize energy efficiency. For both AC and DC chargers, Eaton components ensure that the maximum amount of energy is transferred from the grid to the vehicle's battery with minimal losses. This efficiency not only reduces energy costs but also contributes to the overall sustainability of the EV ecosystem.

Advanced thermal management

Effective thermal management is essential for the performance and safety of EV chargers. Eaton's components feature advanced thermal management technologies that prevent overheating and ensure stable operation under varying environmental conditions. This capability is particularly important for DC fast chargers, which handle significantly higher power levels.



Safety and Compliance

Comprehensive protection

Eaton places a strong emphasis on safety, incorporating comprehensive protection mechanisms into their components. These include overcurrent protection, short-circuit protection, and ground fault detection. Such features are critical for safeguarding both the charging equipment and the EVs being charged.

Regulatory compliance

Eaton components comply with all relevant international standards and regulations. This compliance ensures that the chargers built with Eaton components are safe, reliable, and legally permitted for use in various regions. Adherence to these standards also simplifies the certification process for manufacturers and operators.



Cyber security

Eaton's "secure-by-design" philosophy assures that our products comply with rigorous cybersecurity process, requirements and testing standards ([Link to Eaton.com/cybersecurity](https://www.eaton.com/cybersecurity))



Scalability and Flexibility

Modular design

Eaton's components are designed with scalability and flexibility in mind. The modular design allows for easy integration and expansion of charging infrastructure. This adaptability is particularly advantageous for commercial and public charging stations, where demand can vary and infrastructure needs to be scalable.

Customizable solutions

Eaton offers customizable solutions to meet the specific needs of different customers and applications. Whether it is a small residential charger or a large-scale public charging network, Eaton can provide components tailored to deliver optimal performance and efficiency.



Innovative technologies

Future-proofing

Eaton is committed to innovation and future-proofing their products. By staying ahead of technological advancements and market trends, Eaton ensures that their components remain relevant and effective in the evolving landscape of EV charging.



Environmental Sustainability

Energy efficiency

Eaton's focus on energy efficiency extends to all aspects of their components. By reducing energy losses and optimizing power conversion, Eaton contributes to lower overall energy consumption. This efficiency is vital for the sustainability of EV charging infrastructure and the broader goal of reducing carbon emissions.

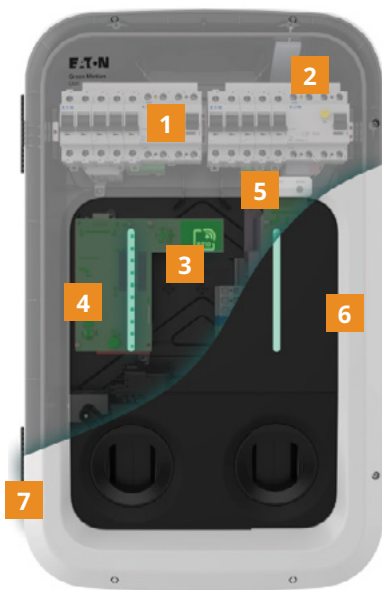


Eaton's components for AC and DC EV chargers offer compelling value for manufacturers, operators, and users alike. Their quality, reliability, efficiency, safety, scalability, and innovative technologies position them as leaders in the EV charging industry.

By choosing Eaton components, you can ensure the success and sustainability of your EV charging projects, contributing to the broader adoption of electric mobility and the reduction of environmental impact.

Eaton's components for AC EV Chargers

AC EV Chargers



- 1 Input protection
- 2 Output control and protection
- 3 Power measurement for load balancing and energy management
- 4 Communication
- 5 Safety and control
- 6 HMI
- 7 Cables and connection

Input protection						
	AC Fuses - gG		AC Fuses - aR and gR			
						
Product type	BS88 LV Fuses	NH LV Fuses	BS88 HS Fuses	FWH HS Fuses	FWP HS Fuses	170M HS Fuses
Fuse body size	A1, A2, A3, A4, B1, B2, B3, B4, C1, C2, C3, D1,	000, 00, 01, 1, 02, 2, 03, 4	BS88-4 standard	North American round body	North American round body	European square body size
Rated voltage	415 VAC / 690 VAC	500 VAC / 690 VAC	690 VAC	500 VAC	700 VAC	690 VAC
Rated current	2 A to 1250 A	2 A to 1250 A	6 A to 710 A	35 A to 1600 A	5 A to 1200 A	Up to 1000 A
Breaking capacity	80 kA	120 kA	200 kA	200 kA	200 kA	200 kA
Operating class	gG	gG	aR	aR	aR	aR and gR
Standards	BS88 / IEC 60269	IEC 60269	BS88-4	UL248-13	UL248-13	IEC 60269-4 & UL248-13
Catalog (EN)	CA134002EN	CA132063EN	CA135001EN			

LV = Low voltage / HS = High speed

Input protection		
	Surge Protection Devices (SPD)	
		
Product type	SPBT12	SPCT2
Number of poles	Up to 4-pole	Up to 4-pole
Supply systems	TT, TN-C, TN-S	TT, TN-C, TN-S
SPD Type	T1 and T2 according to IEC 61643-11	T2 according to IEC 61643-11
Standard	IEC 60364-5-53 Clause 534	IEC 60364-5-53 Clause 534
Catalog	CA01001EN	

Input protection	
	Miniature circuit breaker
	
Product type	FAZ
Rated currents	Up to 63 A
Rated voltage	Up to 400 VAC
Number of poles	Up to 3-pole
Degree of protection	IP20
Standard	IEC/EN 60947-2
Catalog	CA003002EN

Output control			
	Contactor	4-pole contactor DILMP	Installation contactor
			
	DILM	DILMP	Z-SCH
Rated voltage	Up to 500 VAC	Up to 250 VAC	Up to 230 VAC
Rated current	Up to AC-3 1600 A	Up to 200 A	Up to 63 A
Degree of protection	IP00	IP00	Up to IP40
Standard	IEC/EN 60947, VDE 0660, UL, CSA	IEC/EN 60947, VDE 0660, UL, CSA	IEC 60947-4-1 and IEC 61095
Catalog (EN)	CA08103003Z		CA019015EN

Power measurement for load balancing and energy management		
	Energy meter	
		
	EMI3P-Y2R0	EMD3P
Nominal voltage (L-L)	277 V min / 415 V max	147 V min / 433 V max
Nominal voltage (N-L)	160 V min / 240 V max	85 V min / 250 V max
Frequency rating	45 Hz min / 65 Hz max	50 Hz min / 65 Hz max
Number of poles	3 or 4	2, 3 or 4
Interface	Modbus-RTU	Modbus-TCP/RTU
Degree of protection	IP40	IP2X
Approvals	RoHS compliant	RoHS compliant

Output protection					
	Residual Current Circuit Breaker RCCB				Residual Current Operated Circuit Breaker with Overcurrent Protection RCBO
					
	xEffect FRCmM type A	xEffect FRCmM type F	xEffect FRCmM Type B	xEffect FRCdM type B	xEffect FRBmM Typ A/F
Product type	Mechanical RCCB			Digital RCCB	Mechanical RCBO
Rated voltage	240/415 VAC, 50/60 Hz		230/400 VAC, 50 Hz	240/415 VAC, 50 Hz	240/415 VAC
Nominal current	16 A to 100 A	16 A to 100 A	80 A	Up to 80 A	Up to 40 A
Number of poles	1+N and 3+N	1+N and 3+N	2 and 4	2 and 4	1N, 2, 3, 3N
Residual current	30, 100 and 300 mA		30 mA	30 and 300 mA	30, 100 and 300 mA
Designed according to	IEC/EN 61008	IEC/EN 62423	IEC/EN 61008 A and IEC/EN 62423	IEC/EN 61008 IEC/EN 62423	IEC/EN 61009, IEC/EN 60947-2 EN 45545, IEC 61373
Link to catalog (EN)	CA003002EN				

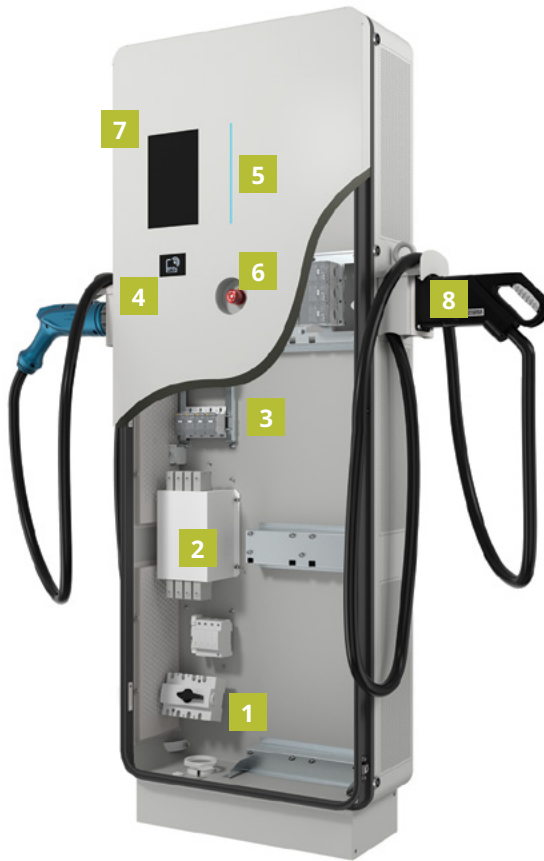
Communication	
	Programmable relays
	
Product type	easyE4
Supply voltage	Up to 240 VAC/VDC
Communication module	easyNetModbus TCP, modbus RTU
Cloud platforms	AWS Amazon Web Services
Programming languages	easySoft: EDP,LD,FBD,ST
Catalog (EN)	CA08103003Z

Safety & control	
	Emergency pushbutton
	
Product type	RMQ Titan M22 and C22 stop button
Mounting hole	22 mm
Button shape	Mushroom shape Ø 30 mm or 38 mm Palm shape Ø 45 mm or 60 mm
Reset function	Pull or turn-to
IP Protection	IP67 and IP69K
Standard	IEC/EN 60947-5-5
Catalog (EN)	CA08103003Z

Safety & control	
	Auxiliary power supply
	
Product type	PSG
Output voltage	24 VDC
Output current	75 to 960 W
Operation	1 or 3-phase
Mounting	DIN-Rail
Catalog (EN)	CA08103003Z

Eaton's components for DC EV Chargers

DC Chargers



- 1 Input protection
- 2 Surge and rectifier protection
- 3 Output control and protection
- 4 Power measurement for load balancing and energy management
- 5 Communication
- 6 Safety and control
- 7 HMI
- 8 Cables and connection

Input protection			
	AC Fuses - gG, aR and gR		
			
Product type	BS88 LV Fuses	NH LV Fuses	170M HS Fuses
Fuse body size	A1, A2, A3, A4, B1, B2, B3, B4, C1, C2, C3, D1	000, 00, 01, 1, 02, 2, 03, 4	European Square body size
Rated voltage	415 VAC / 690 VAC	500 VAC / 690 VAC	690 VAC
Rated current	2 A to 1250 A	2 A to 1250 A	Up to 1000 A
Breaking capacity	80 kA	120 kA	200 kA
Operating class	gG	gG	aR and gR
Standards	BS88 / IEC 60269	IEC 60269	IEC 60269-4 UL248-13
Catalog (EN)	CA134002EN	CA132063EN	CA135001EN

Input protection		
	Switch-disconnectors	
		
Product type	P switch	QSA fused switch
Switch rating	25 A to 315 A	40 A to 800 A
Number of poles	Up to 3+N	3
Fuse type	N/A	BS88 and NH
Mounting type	Enclosed, flush or rear	Screw mounted
Standard	IEC 60947-1 and -3, CE, UKCA, UL, CSA	IEC 60947-3, EAC, KEMA-KEUR, Lloyd's register
Catalog (EN)	CA042001EN	CA080011EN

LV = Low voltage / HS = High speed

Input protection	
	Molded case circuit breakers
	
Product type	NZM
Rated current	20 A to 1600 A
Number of poles	Up to 4-pole
Breaking capacity	150 kA
Mounting option	Vertical and 90° in all directions
Standard	IEC 60947-2, UL 488 and CSA 22.2 No 5-09
Catalog (EN)	CA013003EN

Input protection	
	Miniature circuit breaker
	
Product type	FAZ
Rated current	Up to 63A
Number of poles	Up to 400 VAC
Breaking capacity	Up to 3-pole
Mounting option	IP20
Standard	IEC/EN 60947-2
Catalog (EN)	CA003002EN

Input protection				
	AC Fuses - aR and gR			
				
Product type	BS88 HS Fuses	FWH HS Fuses	FWP HS Fuses	170M HS Fuses
Fuse body size	BS88-4 standard	North American round body	North American round body	European Square body size
Rated voltage	690 VAC	500 VAC	700 VAC	690 VAC
Rated current	6 A to 710 A	35 A to 1600 A	5 A to 1200 A	up to 1000 A
Breaking capacity	200 kA	200 kA	200 kA	200 kA
Operating class	aR	aR	aR	aR and gR
Standards	BS88-4	UL248-13	UL248-13	IEC 60269-4 UL248-13
Catalog (EN)	CA135001EN			

Surge and rectifier protection		
	Surge Protection Devices (SPD)	
		
Product type	SPBT12	SPCT2
Number of poles	Up to 4-pole	Up to 4-pole
Supply systems	TT, TN-C, TN-S	TT, TN-C, TN-S
Test class	I and II according to IEC 61643-11	II according to IEC 61643-11
SPD Type	T1 and T2 according to I EN 61643-11	T2 according to I EN 61643-11
Standard	IEC 60364-5-53 Clause 534	IEC 60364-5-53 Clause 534
Catalog (EN)	CA01001EN	

Output protection						
	DC Fuses - aR and gR					
						
Product type	BS88 HS Fuses	FWH HS Fuses	CHSF	FWP HS Fuses	FWE	180D / 170M HS Fuses
Fuse body size	BS88-4 standard	North American round body	North American round body	North American round body	North American round body and Ferrule	Various body sizes
Rated voltage	Up to 500 VDC	500 VDC	500 VDC	700 VDC	1000 VDC	Up to 1500 VDC
Rated current	6 A to 200 A	35 A to 900 A	50 A to 400 A	5 A to 800 A	1 A to 600 A	Up to 3000 A
Breaking capacity	50 kA	50 kA	50 kA	50 kA	Up to 100kA	Up to 250kA
Operating class	aR	aR	aR	aR	aR and gR	aR and gR
Standards	BS88-4	UL248-13	UL248-13	UL248-13	IEC 60269-4 UL248-13	IEC 60269-4 UL248-13
Catalog (EN)	CA135001EN					

Output control	
	DC Contactor
	
Product type	DILDC
Rated impulse withstand voltage	8000 V
Rated operating voltage	1000 VDC (1500 VDC available upon request)
Rated current	300 A, 400 A, 500 A, 600 A
Number of poles	2
Operation	Bi-directional
Electrical lifespan	100,000 switching operation
Standards	EN60947-4-1, EN60947-5-1
Catalog (EN)	CA08103003Z

Output protection	
	Industrial breaker™
	
Product type	IBDC7D-250/1.6
Rated operating voltage	750 VDC
Rated current	250 A
Operation	Bi-directional and resettable
Mechanical lifespan	Up to 500,000 cycles
Standards	CE CuLus
Flyer (EN)	FL034014

Output protection	
	Earth fault relay
	
Product type	EMR6
Rated operational voltage	300 VDC
Power consumption	Up to 3.5 VA
Shock resistance	Class 2
Degree of protection	IP20 (Terminals) IP50 (Housing)
Standards	IEC/EN 60255-6 EN 61557, UL 508,
Catalog (EN)	CA08103003Z

Power measurement for load balancing and energy management

	Energy meter	
		
	EMI3P-Y2R0	EMD3P
Nominal voltage (L-L)	277 V min / 415 V max	147 V min / 433 V max
Nominal voltage (N-L)	160 V min / 240 V max	85 V min / 250 V max
Frequency rating	45 Hz min / 65 Hz max	50 Hz min / 65 Hz max
Number of poles	3 or 4	2, 3 or 4
Interface	Modbus-RTU	Modbus-TCP/RTU
Degree of protection	IP40	IP2X
Approvals	RoHS compliant	RoHS compliant

Safety and control

	Programmable relays
	
Product type	easyE4
Supply voltage	Up to 240 VAC/VDC
Communication module	easyNetModbus TCP, modbus RTU
Cloud platforms	AWS Amazon Web Services
Programming languages	easySoft: EDP,LD,FBD,ST
Connection	Screw or push-in terminals
Catalog (EN)	CA08103003Z

Safety & control

	Emergency pushbutton
	
Product type	RMQ Titan M22 and C22 stop button
Mounting hole	22 mm
Button shape	Mushroom shape Ø 30 mm or 38 mm Palm shape Ø 45 mm or 60 mm
Reset function	Pull or turn-to
IP Protection	IP67 and IP69
Standard	IEC/EN 60947-5-5
Catalog (EN)	CA08103003Z

Safety & control

	Auxiliary power supply
	
Product type	PSG
Output voltage	24 VDC
Output current	75 to 960 W
Operation	1 or 3-phase
Mounting	DIN-Rail
Catalog (EN)	CA08103003Z

HMI Panel

	HMI PLC	
		
Product type	XV100	XV300
Display size	3.5", 5.7" in 4:3 format, 7" in 16:9 format 5.7", 8.4" and 10.4" in 4:3 format	7", 10.1" and 15" in 16:9 format
Interface combinations	CAN, 1 x Ethernet interface 10/100 Mbps, RS485, RS232	1 or 2 x Ethernet, 1 x CAN, 1 x RS232, 1 x RS485
PLC Function	XSOFT-CODESYS V2 and V3	XSOFT-CODESYS V2 and V3
Visualization	GALILEO or XSOFT-CODESYS TargetVisu	GALILEO, XSOFT-CODESYS
Catalog (EN)	CA08103003Z	CA08103003Z



Eaton is an intelligent power management company dedicated to protecting the environment and improving the quality of life for people everywhere. We make products for the data center, utility, industrial, commercial, machine building, residential, aerospace and mobility markets. We are guided by our commitment to do business right, to operate sustainably and to help our customers manage power - today and well into the future. By capitalizing on the global growth trends of electrification and digitalization, we're accelerating the planet's transition to renewable energy sources, helping to solve the world's most urgent power management challenges, and building a more sustainable society for people today and generations to come.

For more information, visit www.eaton.com

Eaton addresses worldwide: **Eaton.com/contacts**



Eaton

EMEA Headquarters
Route de la Longeraie 7
1110 Morges
Switzerland
Eaton.com

Electrical Sector

Eaton Industries GmbH
Hein-Moeller-Str. 7-11
53115 Bonn
Germany

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