


Charging controllers

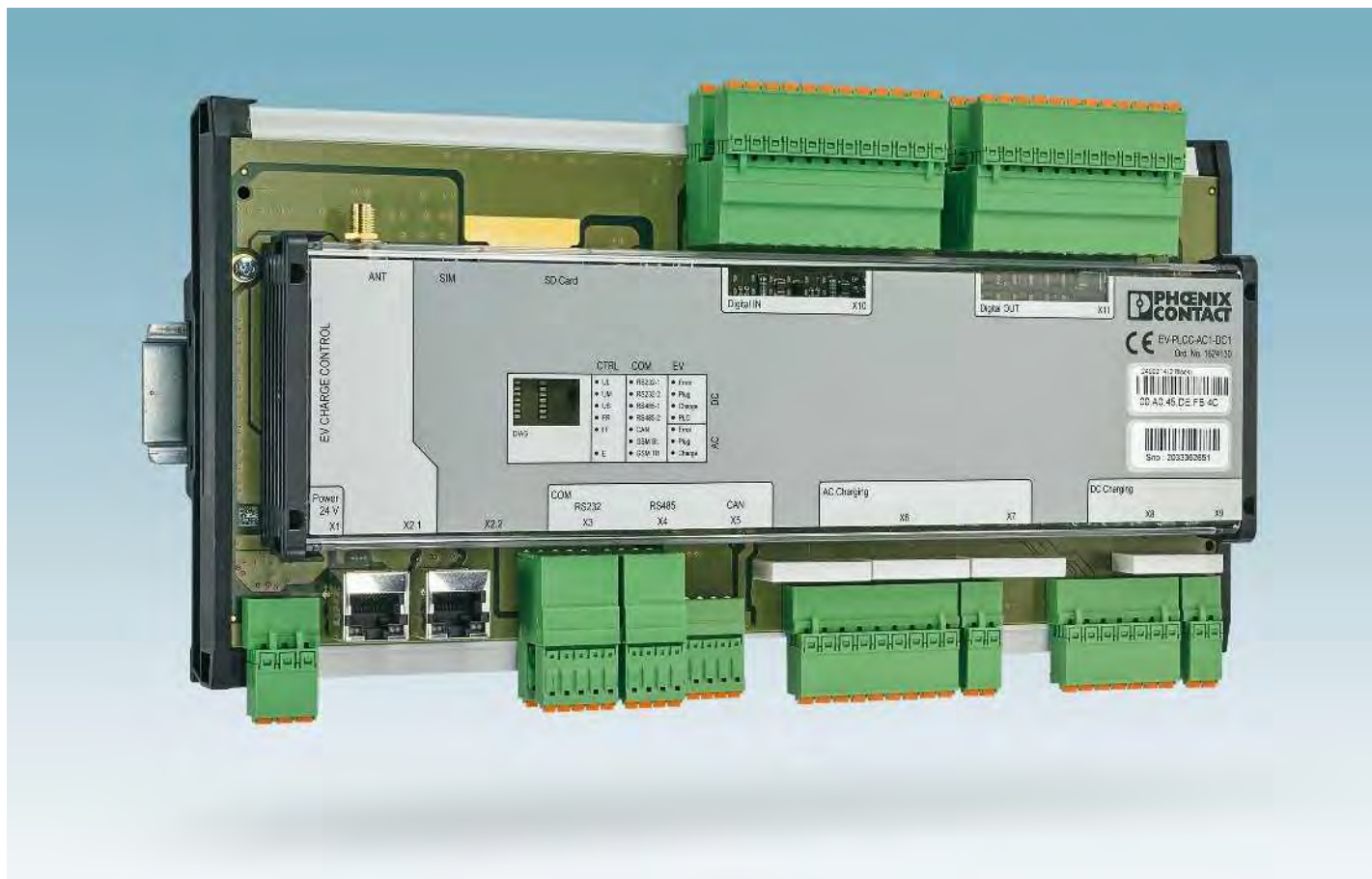
Safe and reliable vehicle charging: you can operate any charging station with our flexible charging controllers – from a single domestic AC wall box, right through to HPC charging station facilities on highways.

These devices monitor and control the electric vehicle charging process in accordance with internationally applicable norms and standards, such as IEC, GB/T, and SAE.

Thanks to our wide range of products, you can realize a vast array of infrastructure concepts tailored to your individual requirements.

 Your web code: **#0501**

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The solution for state-of-the-art fast charging stations

Our freely programmable EVCC Professional DC charging controller is the powerful control solution for your state-of-the-art fast charging station.

It supports both fast DC charging and conventional AC charging, and at the same time takes care of all control and communication tasks, including visualization on the operator panel.

Wide range of possible applications, thanks to free programmability

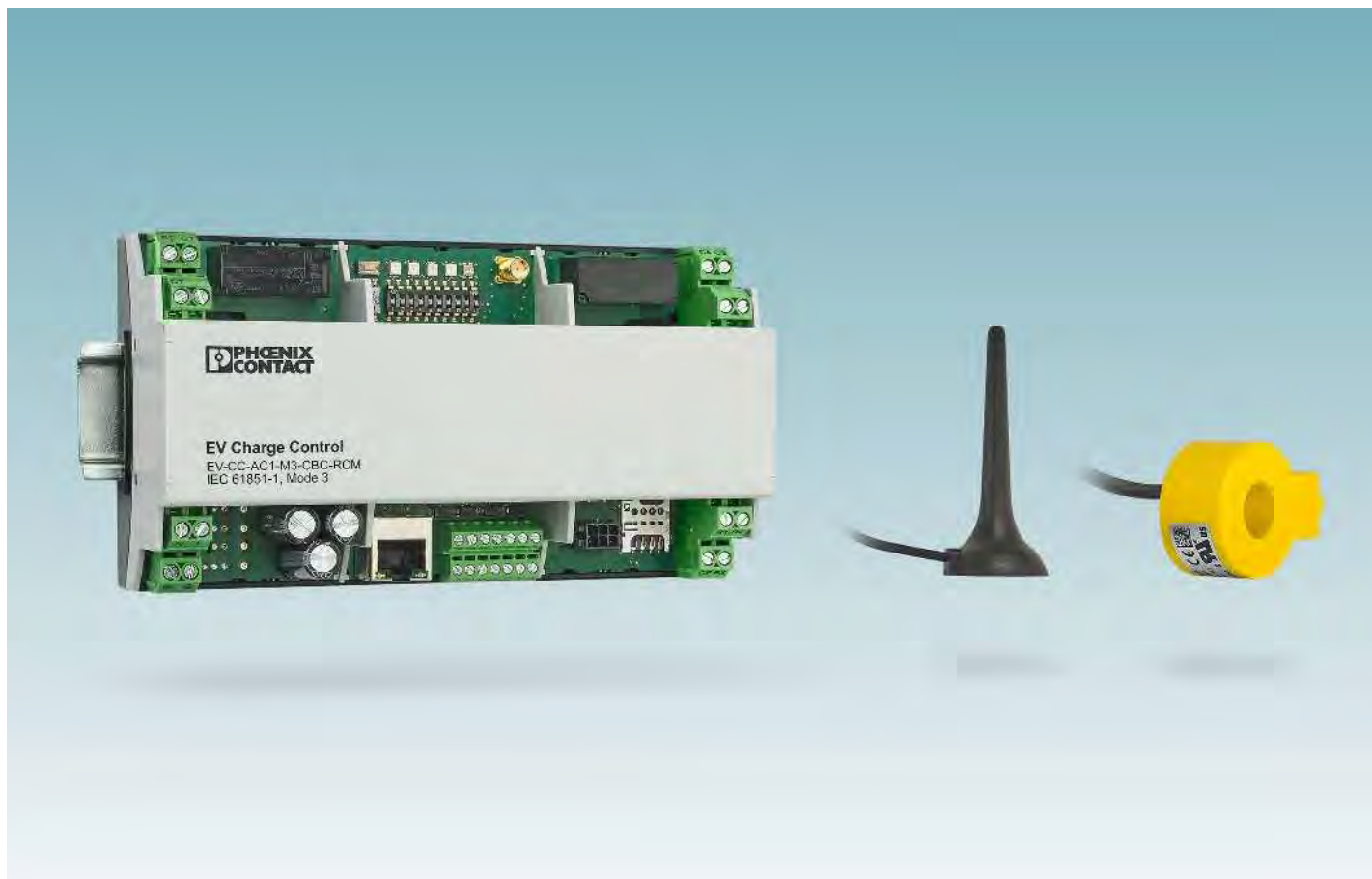
The EV Charge Control Professional charging controller can be programmed for your individual charging application in accordance with IEC 61131. This makes it a versatile charging controller for the widest possible range of applications.

Furthermore, you can reduce the engineering work required with the ready-made PC Worx function blocks for vehicle communication in accordance with DIN SPEC 70121.

Your advantages

- Two independent charging points (AC and DC) with just one controller
- Highly flexible, thanks to the free programmability in accordance with IEC 61131
- Easy to program, thanks to ready-made function blocks for vehicle communication in accordance with DIN SPEC 70121
- Easy system integration, thanks to comprehensive interfaces
- Convenient remote access via integrated mobile network modem

i Your web code: **#1024**



Electric charging – Worldwide

With our AC charging controllers, you can charge electric vehicles in accordance with international standards. The portfolio addresses the entire spectrum of AC charging stations:

- Our EVCC Basic AC charging controller is ideal for simple, private charging points such as wall boxes in garages and carports
- The EVCC Advanced and EVCC Advanced Plus controllers are the perfect solution for public and commercial AC applications with several charging points, load and energy management, remote access, and billing

From a single charging point through to networked charging infrastructure

Phoenix Contact charging controllers can be operated both autonomously and in networks. Status data is acquired via the integrated communication interfaces, and controlled intervention in the charging process is supported.

Here, we focus on the use of standardized communication interfaces and protocols, therefore providing easy connection options to a variety of automation systems.

Your advantages

- Standard-compliant AC charging in accordance with IEC 61851-1, SAE J1772, and GB/T 20234
- High flexibility, thanks to extensive configuration options
- Easy realization of intelligent charging infrastructures with charging management
- Easy integration into management systems via standardized communication interfaces

i Your web code: #2102



EV Charge Control Basic for private applications

This product is a compact, cost-effective controller solution specifically for simple charging points. The charging controller is available as a DIN rail device and as a coated PCB version for harsh environments. An additional version with Push-in connection technology is available for compact, quick installation in charging station housings.



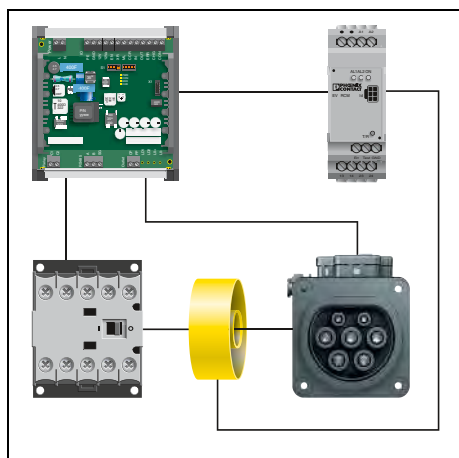
EV Charge Control Advanced for commercial applications

This charging controller integrates all the necessary control functions for commercial charging points, and features comprehensive configuration options via DIP switch. Furthermore, it supports load and energy management on company premises and in parking lots, thanks to its Ethernet interface. Energy meters can also be integrated via the RS-485 interface.



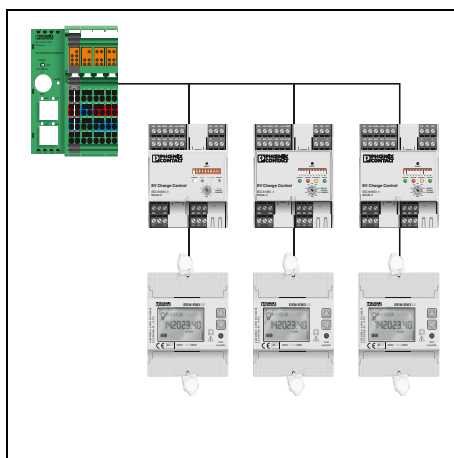
EV Charge Control Advanced Plus for public applications

This charging controller combines all relevant control, communication, and monitoring functions in one compact housing. Along with Ethernet and RS-485 interfaces, the controller features DC residual current monitoring, an automatic connector release mechanism in the event of voltage failure, convenient user authorization via RFID, and convenient configuration via web interface.



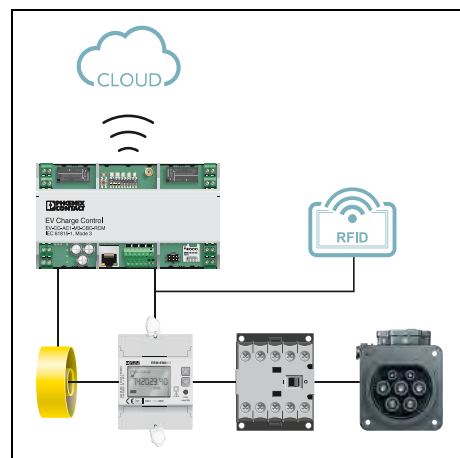
Application example: single charging point

The Basic AC charging controller can be used to install simple charging stations with just a few components quickly – whether at home or in a commercial environment. Thanks to the optional connection of RCM modules for residual current detection, you can increase the voltage protection level of the charging station in accordance with normative specifications. Maximum system availability is thereby achieved.



Application example: networked charging points

The configurable RS-485 interface can be used to connect various energy meters to the Advanced AC charging controller, making it possible to record the charging point performance data. Using the integrated Ethernet interface, you can configure the charging controller and establish an intelligent connection to higher-level control systems.



Application example: charging point with back-end integration

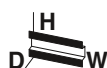
As an option, the Advanced Plus charging controller is available with an integrated 3G modem and OCPP interface. This allows you to link a charging station to cloud-based billing systems via mobile network and OCPP. A MID energy meter can be integrated into the application for precise billing. This makes the controller an ideal solution for public applications.

Charging controllers

AC charging controllers

For public and commercial applications

- For charging cases B and C
- AC charging in accordance with IEC 61851-1
- Ethernet interface for charging and energy management
- RS-485 interface for connection to power meters
- Optional 3G mobile network interface (OCPP 1.6J), DC residual current detection, connector release in the event of mains failure



EV Charge Control Advanced Plus 3G
For charging cases B and C



EV Charge Control Advanced Plus
For charging cases B and C

			Technical data			Technical data		
Technical data								
Standards			IEC 61851-1			IEC 61851-1		
Charging mode			Mode 3, Case B + C			Mode 3, Case B + C		
Number of charging points			1			1		
Data interfaces								
Interface			RS-485 2-wire			RS-485 2-wire		
			1			1		
			Number of supported devices			2		
			Protocol			Modbus/RTU (master)		
Interface			Ethernet			Ethernet		
			Number of interfaces			1		
			Protocol			Modbus/TCP		
Wireless interface								
Frequency			900 MHz (HSPA) / 2100 MHz (HSPA) / 850 MHz (GSM/GPRS/EDGE) / 900 MHz (GSM/GPRS/EDGE) / 1800 MHz (GSM/GPRS/EDGE) / 1900 MHz (GSM/GPRS/EDGE)			-		
SIM Interface			Micro-SIM			-		
Protocols supported			OCPP 1.6J			-		
Residual current measuring range								
Residual current I _{Δn}			30 mA (AC) 6 mA (DC)			30 mA (AC) 6 mA (DC)		
Tripping time for I _{Δn}			< 180 ms			< 180 ms		
Rated current I _n			32 A (three-phase, 4x6 mm²) 48 A (single-phase)			32 A (three-phase, 4x6 mm²) 48 A (single-phase)		
Measuring current transducer								
Diameter of measuring coil			15 mm			15 mm		
Digital inputs/outputs								
Number inputs			5			5		
			Nominal input voltage U _N			12 V		
Number outputs			4 digital outputs			4 digital outputs		
			Minimum output voltage			4 V		
			Maximum output voltage			30 V		
			Maximum output current			0.2 A (total current for all outputs; internally supplied)		
			Maximum output current per channel			0.6 A (per output; externally supplied)		
Switching outputs								
Relay output			Relay output C _{1,2}			Relay output C _{1,2}		
			Maximum switching voltage			250 V AC (external supply)		
			Maximum switching current			16 A		
Relay output			Motor switching output			Motor switching output		
			Maximum switching voltage			12 V (internal supply)		
			Maximum switching current			1 A (maximum)		
Locking release in the event of mains failure			Integrated release function of the locking actuator for disconnection of infrastructure charging plug and infrastructure socket outlet			Integrated release function of the locking actuator for disconnection of infrastructure charging plug and infrastructure socket outlet		
Device supply								
Supply voltage			230 V			230 V		
General data								
Degree of protection			IP20			IP20		
Ambient temperature (operation)			-25°C ... 60°C			-25°C ... 60°C		
Mounting position			any			any		
Dimensions W/H/D			162 / 90 / 61 mm			162 / 90 / 61 mm		
Compliance/approvals								
Compliance			CE-compliant			CE-compliant		
			Ordering data			Ordering data		
Description			Type	Order No.	Pcs./Pkt.	Type	Order No.	Pcs./Pkt.
AC charging controller, DIN rail housing			EV-CC-AC1-M3-CBC-RCM-ETH-3G	1018702	1	EV-CC-AC1-M3-CBC-RCM-ETH	1018701	1
Locking release module								



EV Charge Control Advanced
For charging cases B and C



**Module for release in the event of
a mains failure in charging case B**
For EV Charge Control Advanced

Technical data
IEC 61851-1
Mode 3, Case B + C
1
RS-485 2-wire
1
1
Modbus/RTU (slave)
Ethernet
1
Modbus/TCP
-
-
-
-
-
-
-
4
24 V
4 digital outputs
12 V
30 V
0.2 A (total current for all outputs; internally supplied)
0.6 A (per output; externally supplied)
Relay output C _{1,2}
250 V AC (external supply)
6 A
Relay output R _{1,3} and R _{2,4}
30 V AC/DC (external supply)
6 A
With EM-EV-CLR-12V locking release module (Order No. 2903246) as an option
230 V
IP20
-25°C ... 60°C
any
71.6 / 90 / 61 mm
CE-compliant

Ordering data		
Type	Order No.	Pcs./Pkt.
EM-CP-PP-ETH	2902802	1

Technical data
IEC 61851-1 / EN 61000-6-2 / EN 61000-6-3
Mode 3
1
-
-
-
-
-
-
-
-
-
-
1
12 V
-
-
-
-
Relay output OUT+/-
Approx. 11.5 V (operating/capacitor voltage minus the diode voltage of ~ 0.5 V)
4 A
-
-
Integrated release function of the locking actuator for disconnection of infrastructure charging plug and infrastructure socket outlet
12 V DC
IP20
-25°C ... 60°C
any
35.6 / 90 / 61 mm
CE-compliant

Ordering data		
Type	Order No.	Pcs./Pkt.
EM-EV-CLR-12V	2903246	1

Charging controllers

AC charging controllers

For private applications, in a DIN rail housing

- For charging cases B and C
- AC charging in accordance with IEC 61851-1
- Comprehensive configuration options
- Adjustable current
- RS-485 interface
- Push-in or screw connection



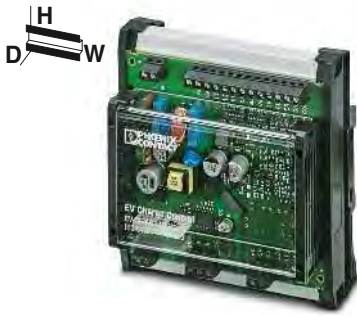
EV Charge Control Basic
For charging case B
With screw connection



EV Charge Control Basic
For charging case B
With Push-in connection

Technical data		
Technical data		
Standards		
IEC 61851-1 / GB/T 18487.1-2015 / SAE J1772		
Charging mode		
Mode 3, Case B + C		
Number of charging points		
1		
Data interfaces		
Interface		
RS-485 2-wire		
Number of interfaces		
1		
Protocol		
Modbus/RTU (slave)		
Digital inputs/outputs		
Number inputs		
5		
Nominal input voltage U_N		
12 V		
Number outputs		
4 digital outputs		
Minimum output voltage		
5 V		
Maximum output voltage		
30 V		
Maximum output current		
0.5 A (total current for all outputs; internally supplied)		
Switching outputs		
Relay output		
Relay output $C_{1,2}$		
250 V AC (external supply)		
Maximum switching voltage		
6 A		
Maximum switching current		
Relay output LO+/-		
12 V (internal supply)		
Maximum switching voltage		
2 A		
Maximum switching current		
Integrated release function of the locking actuator for disconnection of infrastructure charging plug and infrastructure socket outlet		
Locking release in the event of mains failure		
Device supply		
Supply voltage		
230 V		
General data		
Degree of protection		
IP20		
Ambient temperature (operation)		
-35°C ... 70°C		
Mounting position		
any		
Dimensions W/H/D		
124 / 128 / 64 mm		
Compliance/approvals		
CE-compliant		
Ordering data		
Description		
AC charging controller, DIN rail housing		
Type	Order No.	Pcs./Pkt.
EV-CC-AC1-M3-CBC-SER-HS	1622452	1

Technical data		
Technical data		
Standards		
IEC 61851-1 / GB/T 18487.1-2015 / SAE J1772		
Charging mode		
Mode 3, Case B + C		
Number of charging points		
1		
Data interfaces		
Interface		
RS-485 2-wire		
Number of interfaces		
1		
Protocol		
Modbus/RTU (slave)		
Digital inputs/outputs		
Number inputs		
5		
Nominal input voltage U_N		
12 V		
Number outputs		
4 digital outputs		
Minimum output voltage		
5 V		
Maximum output voltage		
30 V		
Maximum output current		
0.5 A (total current for all outputs; internally supplied)		
Switching outputs		
Relay output		
Relay output $C_{1,2}$		
250 V AC (external supply)		
Maximum switching voltage		
6 A		
Maximum switching current		
Relay output LO+/-		
12 V (internal supply)		
Maximum switching voltage		
2 A		
Maximum switching current		
Integrated release function of the locking actuator for disconnection of infrastructure charging plug and infrastructure socket outlet		
Locking release in the event of mains failure		
Device supply		
Supply voltage		
230 V		
General data		
Degree of protection		
IP20		
Ambient temperature (operation)		
-35°C ... 70°C		
Mounting position		
any		
Dimensions W/H/D		
124 / 128 / 67 mm		
Compliance/approvals		
CE-compliant		
Ordering data		
Description		
AC charging controller, DIN rail housing		
Type	Order No.	Pcs./Pkt.
EV-CC-AC1-M3-CBC-SER-HS-MSTB	1081341	1



EV Charge Control Basic
For charging case C
With screw connection



EV Charge Control Basic
For charging case C
With Push-in connection

Technical data
IEC 61851-1 / GB/T 18487.1-2015 / SAE J1772 Mode 3, Case C 1
RS-485 2-wire 1 Modbus/RTU (slave)
5 12 V 4 digital outputs 5 V 30 V 0.5 A (total current for all outputs; internally supplied)
Relay output C _{1,2} 250 V AC (external supply) 6 A - - -
230 V
IP20 -35°C ... 70°C any 124 / 128 / 64 mm CE-compliant

Ordering data		
Type	Order No.	Pcs./Pkt.
EV-CC-AC1-M3-CC-SER-HS	1622459	1

Technical data
IEC 61851-1 / GB/T 18487.1-2015 / SAE J1772 Mode 3, Case C 1
RS-485 2-wire 1 Modbus/RTU (slave)
5 12 V 4 digital outputs 5 V 30 V 0.5 A (total current for all outputs; internally supplied)
Relay output C _{1,2} 250 V AC (external supply) 6 A - - -
230 V
IP20 -35°C ... 70°C any 124 / 128 / 67 mm CE-compliant

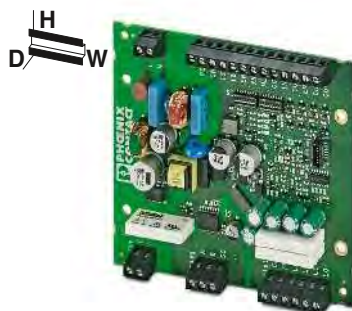
Ordering data		
Type	Order No.	Pcs./Pkt.
EV-CC-AC1-M3-CC-SER-HS-MSTB	1081335	1

Charging controllers

AC charging controllers

For private applications as a PCB

- For charging cases B and C
- AC charging in accordance with IEC 61851-1
- Comprehensive configuration options
- Adjustable current
- RS-485 interface
- Push-in or screw connection
- With coated PCB as an option



EV Charge Control Basic
For charging case B
With screw connection



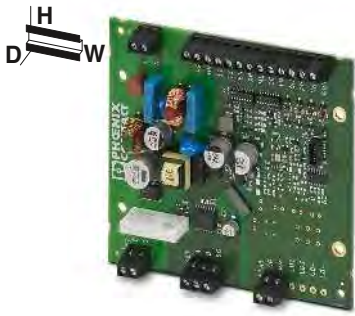
EV Charge Control Basic
For charging case B
With Push-in connection

Technical data		
Technical data		
Standards		
IEC 61851-1 / GB/T 18487.1-2015 / SAE J1772		
Charging mode		
Mode 3, Case B + C		
Number of charging points		
1		
Data interfaces		
Interface		
RS-485 2-wire		
Number of interfaces		
1		
Protocol		
Modbus/RTU (slave)		
Digital inputs/outputs		
Number inputs		
5		
Nominal input voltage U_N		
12 V		
Number outputs		
4 digital outputs		
Minimum output voltage		
5 V		
Maximum output voltage		
30 V		
Maximum output current		
0.5 A (total current for all outputs; internally supplied)		
Switching outputs		
Relay output		
Relay output $C_{1,2}$		
250 V AC (external supply)		
Maximum switching voltage		
6 A		
Maximum switching current		
Relay output LO+/-		
12 V (internal supply)		
Maximum switching voltage		
2 A		
Maximum switching current		
Integrated release function of the locking actuator for disconnection of infrastructure charging plug and infrastructure socket outlet		
Locking release in the event of mains failure		
Device supply		
Supply voltage		
230 V		
General data		
Degree of protection		
IP00		
Ambient temperature (operation)		
-35°C ... 70°C		
Mounting position		
any		
Dimensions W/H/D		
120 / 108 / 20 mm		
Compliance/approvals		
CE-compliant		

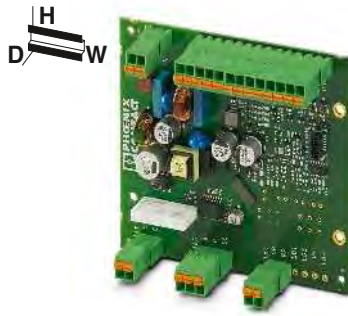
Ordering data		
Description		
Type	Order No.	Pcs./Pkt.
AC charging controller		
Uncoated PCB		
Coated PCB, Pcs./Pkt. 1		
Coated PCB, Pcs./Pkt. 25		
EV-CC-AC1-M3-CBC-SER-PCB	1622453	1
EV-CC-AC1-M3-CBC-SER-PCB-XC	1628393	1
EV-CC-AC1-M3-CBC-SER-PCB-XC-25	1627743	25

Technical data		
Technical data		
Standards		
IEC 61851-1 / GB/T 18487.1-2015 / SAE J1772		
Charging mode		
Mode 3, Case B + C		
Number of charging points		
1		
Data interfaces		
Interface		
RS-485 2-wire		
Number of interfaces		
1		
Protocol		
Modbus/RTU (slave)		
Digital inputs/outputs		
Number inputs		
5		
Nominal input voltage U_N		
12 V		
Number outputs		
4 digital outputs		
Minimum output voltage		
5 V		
Maximum output voltage		
30 V		
Maximum output current		
0.5 A (total current for all outputs; internally supplied)		
Switching outputs		
Relay output		
Relay output $C_{1,2}$		
250 V AC (external supply)		
Maximum switching voltage		
6 A		
Maximum switching current		
Relay output LO+/-		
12 V (internal supply)		
Maximum switching voltage		
2 A		
Maximum switching current		
Integrated release function of the locking actuator for disconnection of infrastructure charging plug and infrastructure socket outlet		
Locking release in the event of mains failure		
Device supply		
Supply voltage		
230 V		
General data		
Degree of protection		
IP00		
Ambient temperature (operation)		
-35°C ... 70°C		
Mounting position		
any		
Dimensions W/H/D		
120 / 108 / 34 mm		
Compliance/approvals		
CE-compliant		

Ordering data		
Description		
Type	Order No.	Pcs./Pkt.
EV-CC-AC1-M3-CBC-SER-PCB-MSTB	1627353	1



EV Charge Control Basic
For charging case C
With screw connection



EV Charge Control Basic
For charging case C
With Push-in connection

Technical data
IEC 61851-1 / GB/T 18487.1-2015 / SAE J1772 Mode 3, Case C 1
RS-485 2-wire 1 Modbus/RTU (slave)
5 12 V 4 digital outputs 5 V 30 V 0.5 A (total current for all outputs; internally supplied)
Relay output C _{1,2} 250 V AC (external supply) 6 A - - -
230 V
IP00 -35°C ... 70°C any 120 / 108 / 20 mm
CE-compliant

Ordering data		
Type	Order No.	Pcs./Pkt.
EV-CC-AC1-M3-CC-SER-PCB	1622460	1
EV-CC-AC1-M3-CC-SER-PCB-XC	1628394	1
EV-CC-AC1-M3-CC-SER-PCB-XC-25X	1627742	25

Technical data
IEC 61851-1 / GB/T 18487.1-2015 / SAE J1772 Mode 3, Case C 1
RS-485 2-wire 1 Modbus/RTU (slave)
5 12 V 4 digital outputs 5 V 30 V 0.5 A (total current for all outputs; internally supplied)
Relay output C _{1,2} 250 V AC (external supply) 6 A - - -
230 V
IP00 -35°C ... 70°C any 120 / 108 / 34 mm
CE-compliant

Ordering data		
Type	Order No.	Pcs./Pkt.
EV-CC-AC1-M3-CC-SER-PCB-MSTB	1627367	1



Universal residual current monitoring

With a residual current monitoring module from the EV-RCM series, AC and DC residual currents can be detected with a measurement sensor in accordance with the requirements of IEC 62752.

In combination with a type A residual current device, the module saves you from having to use an expensive type B residual current device because it interrupts the charging process in the event of an error.

An optional connection to a charging controller from Phoenix Contact allows for convenient status monitoring as well as automatic resetting as soon as the residual current is no longer present. As a result, you avoid costly maintenance and ensure that the charging point is immediately available again for further charging processes.

Compatible charging controllers

Benefit from the status monitoring and automatic reset functions of the RCM modules by installing the EV Charge Control Basic or EV Charge Control Advanced charging controller from Phoenix Contact.

In this combination, they achieve the required protection against electric shock during the electric vehicle process in accordance with IEC 61851-1 and DIN VDE 0100-722.

Your advantages

- Universal residual current detection with a measuring transducer
- Use and continued operation of type A residual current circuit breaker possible
- High system availability, thanks to continuous residual current monitoring
- Status monitoring in conjunction with Phoenix Contact charging controllers
- Automatic reset via Phoenix Contact charging controllers in the event of errors

i Your web code: **#2103**

Residual current monitoring modules

- Universal residual current monitoring for AC and DC residual current detection
- Response values DC 6 mA and AC 30 mA
- Protection of higher-level safety equipment, such as type A residual current circuit breakers, against DC residual currents



Single-channel module for one charging point



Two-channel module for two charging points

	Technical data	Technical data
Input		
Measuring transducer input	Plug-in; front	Plug-in; front
Switching outputs		
Alarm relay	Alarm relay 1 $I_{\Delta n}$: DC residual currents Alarm relay 2 $I_{\Delta n}$: AC residual currents	Alarm relay 1 $I_{\Delta n}$: AC and DC residual currents Alarm relay 2 $I_{\Delta n}$: AC and DC residual currents
Maximum switching voltage	250 V	250 V
Maximum switching current	5 A (1 N/O contact each)	5 A (1 N/O contact each)
Method of operation	Closed-circuit current	Closed-circuit current
Residual current measuring range		
Rated frequency	≤ 2000 Hz	≤ 2000 Hz
Number of channels	1	2
Measuring range	± 300 mA (peak)	± 300 mA (peak)
Current measuring range	50 A (45 Hz ... 50 Hz)	50 A (45 Hz ... 50 Hz)
Residual current $I_{\Delta n1}$	30 mA	30 mA
Residual current $I_{\Delta n2}$	6 mA	6 mA
Load current	32 A	32 A
Response time at 1 x $I_{\Delta n}$	< 180 ms	< 180 ms
Response time at 2 x $I_{\Delta n}$	< 70 ms	< 70 ms
Response time at 5 x $I_{\Delta n}$	< 20 ms	< 20 ms
Response time at I_N	< 500 ms	< 500 ms
Reload function	3 switch-on attempts at intervals of 15 min	3 switch-on attempts at intervals of 15 min
Measuring current transducer		
Cable feed-through diameter	15 mm	15 mm
Supply	via RCM module	via RCM module
Connection method	Connector	Connector
Signal interfaces		
Number of interfaces	1 (measuring transducer)	2 (measuring transducer)
Device supply		
Supply voltage range	100 V AC ... 240 V AC (nominal voltage range)	100 V AC ... 240 V AC (nominal voltage range)
Nominal power consumption	< 0.5 W (no-load)	< 0.5 W (no-load)
Frequency range	45 Hz ... 60 Hz	45 Hz ... 60 Hz
General data		
Degree of protection	IP20 (terminal blocks)	IP20 (terminal blocks)
Operating elements	Test/reset button; 2 status LEDs	Test/reset button; 2 status LEDs
Ambient temperature (operation)	-25°C ... 80°C	-25°C ... 80°C
Dimensions W/H/D	36 / 90 / 70.5 mm	36 / 90 / 70.5 mm
Compliance/approvals		
Compliance	CE-compliant	CE-compliant
	Ordering data	Ordering data
Description	Type	Type
RCM module	EV-RCM-C1-AC30-DC6	EV-RCM-C2-AC30-DC6
	Order No.	Order No.
	1622450	1622451
	Pcs./Pkt.	Pcs./Pkt.
	1	1