

## DC charging controller - EV-PLCC-AC1-DC1 - 1624130

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Programmable charging controller for DC and AC charging of electric vehicles in accordance with IEC 61851-1,-23, DIN SPEC 70121 with integrated 3G mobile network modem

### Product Description


EV Charge Control Professional is an IEC 61131 programmable charging controller for electromobility for AC charging in accordance with IEC 61851-1 and DC charging according to the Combined Charging System (CCS) in accordance with IEC 61851-23 and DIN SPEC 70121. It integrates all the necessary interfaces of a charging station in a single device – TCP/IP communication, GSM/UMTS, serial communication, digital I/Os, and vehicle interfaces.

### Your advantages

- ✓ Programmable charging controller for AC and DC charging stations
- ✓ Programmable with PC Worx in accordance with IEC 61131
- ✓ Function blocks for vehicle communication in accordance with DIN SPEC 70121
- ✓ Extensive I/Os and serial interfaces for system peripherals
- ✓ Remote access via integrated mobile network modem



### Key Commercial Data

Packing unit	1 pc
GTIN	 4 055626 240572
GTIN	4055626240572
Weight per Piece (excluding packing)	1,100.000 g
Custom tariff number	85371091
Country of origin	Germany

### Technical data

#### Note

# DC charging controller - EV-PLCC-AC1-DC1 - 1624130

## Technical data

### Note

Utilization restriction	EMC: class A product, see manufacturer's declaration in the download area
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### Product definition

Product type	Programmable charging controller for DC and AC charging of electric vehicles in accordance with IEC 61851-1,-23, DIN SPEC 70121 with integrated 3G mobile network modem
Type	in housing
Number of charging points	2

### Dimensions

Height	158.00 mm
Width	285.00 mm
Depth	70.00 mm

### Ambient conditions

Ambient temperature (operation)	-25 °C ... 55 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Permissible humidity (operation)	10 % ... 95 % (according to DIN EN 61131-2, non-condensing, no ice formation)
Permissible humidity (storage/transport)	10 % ... 95 % (according to EN 61131-2)
Air pressure (operation)	70 kPa ... 106 kPa (up to 3000 m above mean sea level)
Air pressure (storage/transport)	70 kPa ... 106 kPa (up to 3000 m above mean sea level)
Degree of protection	IP20
Vibration (operation)	5g
Vibration (storage/transport)	5g
Shock (operation)	25g (Criterion 1, according to IEC 60068-2-27)

### DC charging interface

Standards/regulations	IEC 61851-1
	IEC 61851-23
Charging mode	Mode 4
Communication	DIN SPEC 70121
Cable length	max. 10 m
Proximity	Analog input, reserved for future applications
Temperature sensors	2x Pt 1000
Temperature range	-20 °C ... 120 °C
Relay output	DC charging enabled
Maximum switching voltage	30 V (External supply)
Max. switching current	6 A (External supply)

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## Technical data

### AC charging interface

Standards/regulations	IEC 61851-1, Annex A+B
Charging mode	Mode 3, Case B + C
Locking control	Relay output, supplied internally
Voltage	± 12 V
Maximum current for locking actuators	2 A
Activation time	Can be set via application program
Behavior in the event of voltage drop	Automatic unlocking
Locking feedback	Resistance measurement
Switching thresholds	Can be set via application program
Temperature sensors	1x Pt 1000 (evaluation via application program)
Temperature range	-20 °C ... 120 °C
Relay output	AC charging enabled
Maximum switching voltage	30 V (External supply)
Max. switching current	6 A (External supply)

### IEC 61131 runtime system

Number of control tasks	8
Processing speed	1.3 ms (1 K mix instructions)
	90 µs (1 K bit instructions)
Program memory	1 Mbyte (86 K instructions (IL))
Battery	Integrated (rechargeable battery buffered)
Retentive mass storage	48 kByte (NVRAM)
Mass storage	1 Mbyte
Parameterization memory	min. 4 Mbyte (depending on storage media)
Diagnostics tool	DIAG+
Programming tool	PC WORX
Runtime system	eCLR
Realtime clock	Yes

### Digital inputs

Number inputs	16
Connection method	COMBICON connectors
Description of the input	EN 61131-2 type 1
Input voltage range	-0.5 V DC ... 30 V DC
	-0.5 V DC ... 5 V DC ("0" signal)
	15 V DC ... 30 V DC ("1" signal)
Typical response time	min. 3 ms
Cable length	max. 30 m

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## Technical data

### Digital outputs

Number outputs	16
Connection method	COMBICON connectors
Output voltage	24 V DC
Maximum output current per channel	500 mA
Resistance to permanent reverse voltage	max. 500 mA

### Ethernet data interfaces

Number of interfaces	2
Connection method	RJ45 jack
Transmission speed	100 Mbps
Transmission length	max. 100 m

### RS-485 data interfaces

Number of interfaces	2
Connection method	COMBICON connectors
Transmission length	max. 3 m (with shielded cable max. 30 m)
Termination resistor	120 Ω (Can be connected internally)

### RS-232 data interfaces

Number of interfaces	2
Connection method	COMBICON connectors
Transmission length	max. 3 m (with shielded cable max. 30 m)

### CAN bus data interfaces

Number of interfaces	1 (Transparent mode, CAN 2.0a, 11 Bit Object Identifier, CAN 2.0b, 29 Bit Object Identifier)
Connection method	COMBICON connectors
Transmission speed	500 kbps (Default) 125 kbps, 250 kbps, 1000 kbps (adjustable)
Transmission length	max. 3 m (with shielded cable max. 30 m)
Termination resistor	120 Ω (Can be connected internally)

### Wireless interfaces

Frequency	850 MHz (0.25 W (UMTS)) 1900 MHz (0.25 W (UMTS)) 2100 MHz (0.25 W (UMTS))
Antenna	Max. cable length of 30 m
Impedance	50 Ω
Antenna connection	SMA (female)
SIM card	1.8 volt and 3 volt SIM card

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## Technical data

### Wireless interfaces

GPRS	Class 12, Class B
EDGE	Multislot Class 10
UMTS	HSPA 3GPP R6

### Connection data

Connection method	COMBICON connectors
Conductor cross section flexible	0.08 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Conductor cross section solid	0.08 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Conductor cross section AWG	28 ... 16

### Device supply

Supply voltage	24 V DC (Length of cable max. 30 m)
Supply voltage range	19.2 V DC ... 30 V DC (Incl. all tolerances, incl. residual ripple)
Residual ripple	5 %
Supply voltage $U_M$ of the digital inputs	24 V DC -15 % / +20 % (according to EN 61131-2)
Power supply at $U_M$	max. 8 A DC (sum of $U_M + U_S$ )
Current consumption from $U_M$	max. 8 A DC
Supply voltage $U_S$ of the digital outputs	24 V DC -15 % / +20 % (according to EN 61131-2)
Power supply at $U_S$	max. 8 A DC (sum of $U_M + U_S$ )
Current consumption from $U_S$	max. 8 A DC
Supply voltage $U_L$	24 V DC
Power supply at $U_L$	max. 0.8 A DC

### EMC data

Immunity to ESD	Noise immunity test in accordance with EN 61000-6-2 Electrostatic discharge (ESD) EN 61000-4-2/IEC 61000-4-2 Criterion B, 4 kV contact discharge, 8 kV air discharge
Immunity to EF	Noise immunity test in accordance with EN 61000-6-2 Electromagnetic fields EN 61000-4-3/IEC 61000-4-3 Criterion A, Field intensity: 10 V/m
Immunity to burst	Noise immunity test in accordance with EN 61000-6-2 Fast transients (burst) EN 61000-4-4/IEC 61000-4-4 Criterion B, 2 kV
Immunity to surge	Noise immunity test in accordance with EN 61000-6-2 Transient overvoltage (surge) EN 61000-4-5/IEC 61000-4-5 Criterion B, Supply lines: 1 kV, Signal/data lines: 0,5 kV
Immunity to conducted interference	Noise immunity test in accordance with EN 61000-6-2 Conducted interference EN 61000-4-6/IEC 61000-4-6 Criterion A, Test voltage 10 V
Interference emission	Noise emission test as per EN 61000-6-4 EN 55011 Class A

### Mounting

Mounting position	horizontal
Assembly instructions	DIN rail mounting

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### Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50
	For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"

## Classifications

### eCl@ss

eCl@ss 4.0	27210902
eCl@ss 4.1	27371105
eCl@ss 5.0	27371801
eCl@ss 5.1	27371810
eCl@ss 6.0	27371810
eCl@ss 7.0	27371810
eCl@ss 8.0	27242207
eCl@ss 9.0	27144703

### ETIM

ETIM 3.0	EC001505
ETIM 4.0	EC001599
ETIM 5.0	EC001413
ETIM 6.0	EC002889
ETIM 7.0	EC002889

### UNSPSC

UNSPSC 6.01	30211916
UNSPSC 7.0901	39121535
UNSPSC 11	39121535
UNSPSC 12.01	39121535
UNSPSC 13.2	39121801
UNSPSC 18.0	39121801
UNSPSC 19.0	39121801
UNSPSC 20.0	39121801
UNSPSC 21.0	39121801

## Accessories

Accessories

Antenna

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### Accessories

Antenna - TC ANT MOBILE WALL 5M - 2702273



Multiband cellular antenna with mounting bracket for outdoor installation, 5 m antenna cable with SMA circular connector, suitable for LTE/4G

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Antenna - PSI-GSM/UMTS-QB-ANT - 2313371



GSM UMTS antenna, with omnidirectional characteristic, 2 m antenna cable with SMA round connector

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### Parameterization memory

Program / configuration memory - SD-FLASH-2GB-EV-EMOB - 1624092



Program and configuration memory for storing the application program and other files in the file system of the PLC, plug-in, 2 GB with license key for the function block libraries for E-Mobility

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### Shield connection

Shield connection - AXL SHIELD SET - 2700518



Axoline shield connection set (contains 2 shield bus holders and 2 SK 5 shield connection clamps)

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### Shield connection clamp

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### Accessories

Shield connection clamp - SK 8 - 3025163



Shield connection clamp, for shield on busbars, contact resistance <math>< 1 \text{ m}\Omega</math>

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Shield connection clamp - SK 14 - 3025176



Shield connection clamp, for shield on busbars, contact resistance <math>< 1 \text{ m}\Omega</math>

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Shield connection clamp - SKS 8 - 3240210



Shield connection terminal block, for applying the shield to busbars

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Shield connection clamp - SKS 14 - 3240211



Shield connection terminal block, for applying the shield to busbars

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