EV-PLCC-AC1-DC1 - DC charging controller

1624130

https://www.phoenixcontact.com/us/products/1624130

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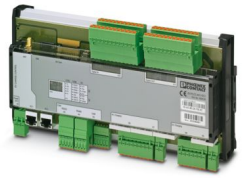

Programmable charging controller for DC and AC charging of electric vehicles in accordance with IEC 61851-1,-23, DIN SPEC 70121, and CHAdeMO, with integrated cellular modem

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 and CHAdeMO
- Extensive I/Os and serial interfaces for system peripherals
- Remote access via integrated mobile network modem

Commercial data

Item number	1624130
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	EM01
Product key	XWBBDA
Catalog page	Page 57 (C-7-2019)
GTIN	4055626240572
Weight per piece (including packing)	1,139 g
Weight per piece (excluding packing)	1,131 g
Customs tariff number	85371091
Country of origin	DE

Technical data

Notes

Utilization restriction

EMC note	EMC: class A product, see manufacturer's declaration in the download area

Input data

Digital

Number of digital 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

Output data

Resistance to permanent reverse voltage	max. 500 mA

Digital

Connection method	COMBICON connectors
Number outputs	16
Output voltage	24 V DC
Maximum output current per channel	500 mA

Switching

Output name	AC charging locking system
Maximum output current	max. 2 A
Maximum output voltage	12 V DC (Internal supply)

Energy storage

Battery	integrated (rechargeable battery buffered)

Connection data

Conductor connection

Connection method	COMBICON connectors
Conductor cross section rigid	0.08 mm² ... 1.5 mm²
Conductor cross section flexible	0.08 mm² ... 1.5 mm²
Conductor cross section AWG	28 ... 16

Interfaces

Interface	Ethernet (2x)

Wireless

Interface description	3G / 2G
Note	Hardware revision 02 or later
Frequency	900 MHz (GSM/GPRS/EDGE)
	1800 MHz (GSM/GPRS/EDGE)
	850 MHz (UMTS/HSPA (Class 3))
	1900 MHz (UMTS/HSPA (Class 3))
	2100 MHz (UMTS/HSPA (Class 3))
Connection method	SMA (female)
Impedance	50 Ω
Antenna	max. cable length of 30 m
SIM Interface	1.8 volt and 3 volt SIM card
GPRS	Class 12, Class B
EDGE	Multislot Class 10
UMTS	HSPA 3GPP R6
Protocols supported	OCPP 1.6J (Core-Profile)

Wireless

Interface description	4G / 2G
Note	Hardware revision 04 or later
Frequency	900 MHz (GSM/GPRS/EDGE)
	1800 MHz (GSM/GPRS/EDGE)
	800 MHz (LTE B20)
	900 MHz (LTE B8)
	1800 MHz (LTE B3)
	2100 MHz (LTE B1)
	2600 MHz (LTE B7)
	700 MHz (LTE B28)
Connection method	SMA (female)
Impedance	50 Ω
Antenna	max. cable length of 30 m
SIM Interface	1.8 volt and 3 volt SIM card
GPRS	Class 12, Class B
EDGE	Multislot Class 10
LTE	CAT1, CAT4
Protocols supported	OCPP 1.6J (Core-Profile)

DC charging

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)

AC charging

Standards/regulations	IEC 61851-1, Annex A+B
Charging mode	Mode 3, Case B + C
Locking control	Relay output, supplied internally
Locking feedback	Resistance measurement
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
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)

RS-485

Interface	RS-485 2-wire
Connection method	COMBICON connectors
Number of interfaces	2
Transmission length	max. 3 m (with shielded cable max. 30 m)
Termination resistor	120 Ω (Can be connected internally)

RS-232

Interface	RS-232
Connection method	COMBICON connectors
Number of interfaces	2
Transmission length	max. 3 m (with shielded cable max. 30 m)

Ethernet

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

CAN-Bus

Interface	CAN bus
Connection method	COMBICON connectors

Number of interfaces	1 (Transparent mode, CAN 2.0a, 11 Bit Object Identifier, CAN 2. 0b, 29 Bit Object Identifier)
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)

System properties

Configuration memory	min. 4 Mbyte (depending on storage media)

IEC 61131 runtime system

Program memory	1 Mbyte (86 K instructions (IL))
Data storage system	1 Mbyte
Retentive data storage	48 kByte (NVRAM)
Number of control tasks	8
Processing speed	1.3 ms (1 K mix instructions)
	90 µs (1 K bit instructions)

Charging controllers

Application	Programmable charging controller for DC and AC charging of electric vehicles in accordance with IEC 61851-1,-23, DIN SPEC 70121, and CHAdeMO, with integrated cellular modem
Type	in housing
Number of charging points	2

System requirements

Engineering tool	PC Worx
Diagnostics tool	DIAG+
Runtime system	eCLR

Electrical properties

Supply

Supply voltage U_L	24 V DC
Supply voltage range U_M	24 V DC -15 % / +20 % (in accordance with EN 61131-2)
Residual ripple, in reference to the measured value	5 %
Segment circuit supply U_S	24 V DC -15 % / +20 % (in accordance with EN 61131-2)
Current consumption from U_M	max. 8 A DC
Current consumption from U_S	max. 8 A DC
Power supply at U_L	max. 0.8 A DC
Power supply at U_M	max. 8 A DC (sum of $U_M + U_S$)
Power supply at U_S	max. 8 A DC (sum of $U_M + U_S$)

Real-time clock

Realtime clock	yes

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)

Product properties

Product type	DC charging controller
Product family	CHARX control professional
Application	Programmable charging controller for DC and AC charging of electric vehicles in accordance with IEC 61851-1,-23, DIN SPEC 70121, and CHAdeMO, with integrated cellular modem
Operating mode	Stand-Alone
	Client
	Server

Data management status

Article revision	06

Dimensions

Width	285.00 mm
Height	158.00 mm
Depth	70.00 mm

Mounting

Mounting type	DIN rail mounting
Assembly note	DIN rail mounting
Mounting position	horizontal

Environmental and real-life conditions

Ambient conditions

Degree of protection	IP20
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 % (in accordance with EN 61131-2)
Shock (operation)	25g (Criterion 1, according to IEC 60068-2-27)
Vibration (operation)	5g
Vibration (storage/transport)	5g
Air pressure (operation)	70 kPa ... 106 kPa (up to 3000 m above mean sea level)
Air pressure (storage/transport)	58 kPa ... 106 kPa (up to 4500 m above mean sea level)

Standards and regulations

Standards

Standards/regulations	IEC 61851-23
	DIN SPEC 70121
	CHAdeMO V1.1

EMC data

Conformance with EMC directives	Immunity test in accordance with EN 61000-6-2/IEC 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 test in accordance with EN 61000-6-2/IEC 61000-6-2 Electromagnetic fieldsEN 61000-4-3/IEC 61000-4-3 Criterion A, Field intensity: 10 V/m
	Immunity test in accordance with EN 61000-6-2/IEC 61000-6-2 Fast transients (burst)EN 61000-4-4/IEC 61000-4-4 Criterion B, ±2 kV
	Immunity test in accordance with EN 61000-6-2/IEC 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 test in accordance with EN 61000-6-2/IEC 61000-6-2 Conducted interferenceEN 61000-4-6/IEC 61000-4-6 Criterion A, Test voltage 10 V
	Noise emission test in accordance with EN 61000-6-4/IEC 61000-6-4 EN 55011 Class A

Classifications

ECLASS

ECLASS-11.0	27144703
ECLASS-12.0	27144703
ECLASS-13.0	27144703

ETIM

ETIM 9.0	EC002889

UNSPSC

UNSPSC 21.0	39121800

Environmental product compliance

EU RoHS

Fulfills EU RoHS substance requirements	Yes
Exemption	6(c), 7(a), 7(c)-I

China RoHS

Environment friendly use period (EFUP)	EFUP-10
	An article-related China RoHS declaration table can be found in the download area for the respective article under "Manufacturer declaration". For all articles with EFUP-E, no China RoHS declaration table issued and required.

EU REACH SVHC

REACH candidate substance (CAS No.)	Lead(CAS: 7439-92-1)
SCIP	1bd972d9-9ece-4d0f-ab25-732e97c3ad60

Accessories

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

1624092

https://www.phoenixcontact.com/us/products/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

TC ANT MOBILE WALL 5M - Antenna

2702273

https://www.phoenixcontact.com/us/products/2702273

Multiband omnidirectional antenna for wall or mast mounting, 0.6 GHz ... 6 GHz, gain: 3 dBi ... 7 dBi, degree of protection: IP66, connection: SMA (male), incl. 5 m connecting cable, mounting bracket, and mast clamps

EEM-PM157-SLP - Measuring device

1269236

https://www.phoenixcontact.com/us/products/1269236

Direct current energy meter with direct measurement up to 1000 V / 650 A, with RS-485 interfaces for the programming software and the DC charging controller, correction of charging cable losses, operating temperature up to +80°C, certified in accordance with measuring and calibration law

CHARX PS-M2/3AC/1000DC/30KW - DC power module

1232243

https://www.phoenixcontact.com/us/products/1232243

CHARX power basic, Fast charging module for setting up DC charging stations, 19" rack mounting, input: 3-phase, output: 30 V DC...1000 V DC / 0 A...100 A

EV-T2M4CC-DC250A-5,0M70ESBK11 - DC charging cable

1107339

https://www.phoenixcontact.com/us/products/1107339

CHARX connect standard, DC charging cable, with vehicle charging connector and open cable end, for charging electric vehicles (EV) with direct current (DC), with connected PP contact, with replaceable mating face frame, with analog temperature sensors, CCS type 2, IEC 62196-3, 250 A / 1000 V (DC), PHOENIX CONTACT logo, cable: 5 m, black, straight

CHARX PT2C-DC375-5,0MES00P1 - DC charging cable

1538066

https://www.phoenixcontact.com/us/products/1538066

CHARX connect professional, HPC DC charging cable, with vehicle charging connector and open cable end, Functional prototype, for charging electric vehicles (EV) with direct current (DC), supports four-conductor measurement technology, with analog temperature sensors, with replaceable mating face frame, with replaceable DC power contacts, with connected PP contact, CCS type 2, based on IEC 62196-3, 375 A / 1000 V (DC), PHOENIX CONTACT logo, cable: 5 m, black, straight

EV-RFID-ELT-IP65 - RFID device

1309687

https://www.phoenixcontact.com/us/products/1309687

CHARX control modular, RFID device, for connection to CHARX control modular AC charging controllers, in housing

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