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Legal Information

Patents

The technology discussed in this document is protected by one or more of the following patent grants:
U.S. Patent No. x,xxx,xxx, y,yyy,yyy. Canadian Patent No. xx,xxx,xxx, and so on. Other relevant patent grants may also exist.

REVISION	DATE ISSUED (DD/MM/YY)	DESCRIPTION	PM
V0	19/08/2021	First edition	ALISA CHEN

Communication Controller for Charger CAN & PLC

MODEL NO. DB-SECC-200

Table of Contents

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1 OVERVIEW

DB-SECC-200 is an ISO 15118 Compliant Charging **Communication Controller** for Electric Vehicle Supply Equipment (EVSE). It enables the charge controller to communicate with electric vehicles (EVs) that are ISO 15118 / DIN 70121 compliant. For communication between EVSE and PEV, it supports CP (control pilot), PP (proximity pilot) as well as PWM signaling including Green PHY communication.

Figure 1: Image of DB-SECC-200 Product

LABEL

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1.1 Features

- HomePlug Green PHY™ compatible QCA7000 Chip for control pilot communication
- Supported Standards: ISO 15118 / DIN 70121 / GBT 27930
- IEC61851-1
- Ethernet (IEEE 802.3)
- CAN2.0B
- Backend Connectivity: Fast Ethernet 100 Mbit/s

1.2 Certifications

- EN 61000-6-2
- EN 61000-6-4
- EN 62368-1:2019
- RoHS V2.0

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2 INTERFACE

Figure 2: Interfaces of DB-SECC-200 Product

2.1 ETH 10/100Mbps

Pin	Name	Description
1	Ethernet	Ethernet for backend, 100M

2.2 Power Supply

Pin	Name	Description
1	DC+	10V~30V Power Supply
2	DC-	Ground of Power Supply

2.3 RS232

Pin	Name	Description
1	TX	RS232 Transmitter;
2	RX	RS232 Receiver;
3	GND	Ground

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Notes: Speed 115200bps; Data bits 8; Stop bits 1; No parity; No Flow Control

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2.4 CAN

Pin	Name	Description
1	L	CAN2.0B Low
2	H	CAN2.0B High
3	GND	CAN Isolated Ground

2.5 Control Pilot

Pin	Name	Description
1	PP	Proximity Pilot; used in case of Socket outlet (Case B).
2	CP	Control Pilot; Connect to CP of Socket Outlet in case of Case B, or Connector in case of C.
3	PE	Protected Ground

2.6 LEDs

Pin	Name	Description
1	Power LED	Red; It will be ON when Power is supplied.
2	HLC LED	Green; It will be ON when High level Communication is set up.
3	PLC LED	Green; It will be ON when PLC Communication is set up.
4	Error LED	Yellow; It will be ON when system meets error.
Notes: HLC LED Behaviors illustrated in next table.		

HLC LED operating condition definition:

Status	Flash Frequency		Description
	On	Off	
Always On	N/A	N/A	The charging management application is running.
Very Slow Flashing	3000ms	3000ms	System self-checking is passed, the SECC is ready.
Slow Flashing	1000ms	1000ms	Plugged-in is detected.
Very Fast Flashing	50ms	50ms	SLAC is ongoing.
Fast Flashing	300ms	300ms	Charging is ongoing.

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3 MECHANICAL DIMENSIONS

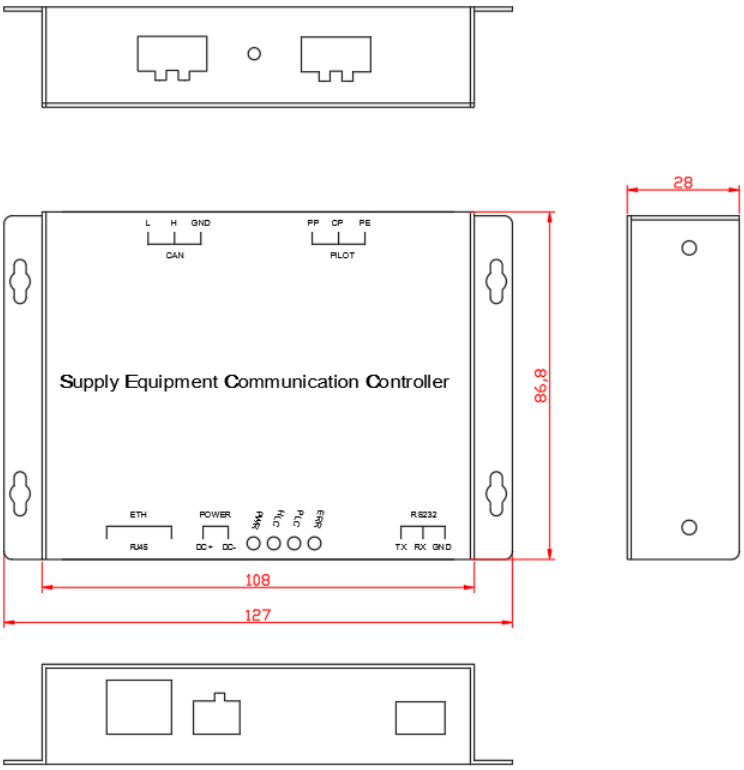

Figure 3: DB-SECC Dimensions

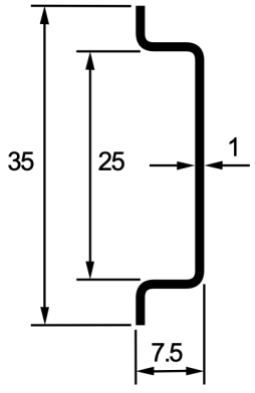

Figure 4: Recommended Din-Rails (EN 50022) Dimensions

Notes:

1. All dimensions are in mm.

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4 ELECTRICAL CHARACTERISTICS

4.1 Maximum Parameters

MAX PARAMETER	MIN	MAX	UNIT
DC supply voltage	+10	+30	V
Control pilot voltage	-12.6	+12.6	V
CANH, CANL	-12	12	V

4.2 Recommended operating conditions

SUPPLY PARAMETER	MIN	TYP	MAX	UNIT
DC supply voltage	+11	+12/24	+26	V

CP PARAMETER	MIN	TYP	MAX	UNIT
Control Pilot Voltage	-12.5		+12.5	V
Isolation voltage	500			V

Max PARAMETER	Value
Power Dissipation	8W

4.3 Physical Feature

Feature	Description
Operation Temperature	-20ºC …. +55 ºC
Dimensions (L*W*H)	127 * 86.8 * 25mm
Protection Class	Housing IP40
Assembly	DIN-Rails (EN 50022) or Wall-Mounted

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5 APPLICATION EXAMPLE

5.1 Wiring with External DC Charge Controller

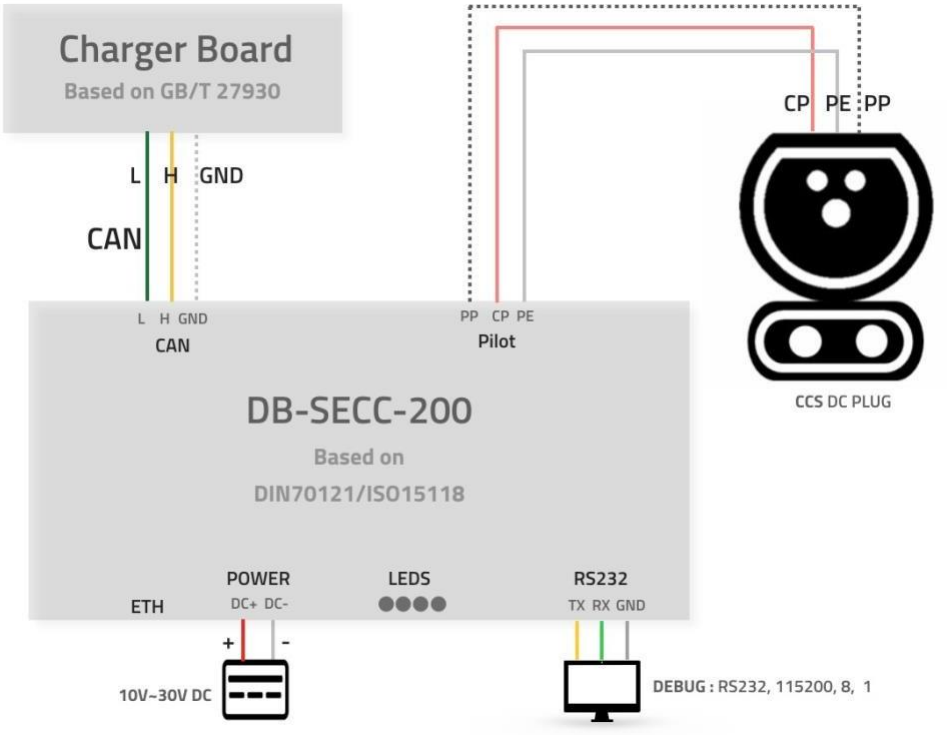

Figure 5: Wiring with External DC Charge Controller

Note:

- The IEC 61851-1 Functionality is enabled in DB-SECC-200.
- The CAN interface is the main communication way between DB-SECC-200 and Charger Board. The communication protocol is now supported as:
  - ***Enhanced GB/T 27930-2015.***

6 ORDER INFORMATION

Order Code	HW	SW
DB-SECC-200	2.0.0	ISO15118 ED1 DC + DIN70121 Combo Stack