



# **Supply Equipment Communication Controller**

**DB-SECC-601**

**Datasheet**

**Rev 1.0.3, July 2025**

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## 1 Overview

The DB-SECC-601 is an ISO 15118-compliant Supply Equipment Communication Controller (SECC) designed for DC fast Electric Vehicle Supply Equipment (EVSE) applications. It manages communication between the DC charging station and electric vehicles (EVs) that comply with ISO 15118 or DIN 70121 standards. For EVSE-to-PEV communication, it supports Control Pilot (CP), Proximity Pilot (PP), and PWM signaling, as well as Green PHY-based communication.

Powered by a Qualcomm QCA7005 and a robust MCU running RTOS, the DB-SECC-601 integrates a full ISO 15118-2/-20 and IEC 61851 software stack, enabling seamless communication and control for DC fast charging.



Figure 1: Image of DB-SECC-601 Product

### 1.1 Features

- HomePlug Green PHY™ compatible QCA7005 Chip for control pilot communication
- Supported Charging Standards: IEC 61851-1/23/24
- Supported Charging Communication Standards: ISO 15118 / DIN 70121 / SAE2847-2
- Ethernet (IEEE 802.3) for network connectivity
- CAN2.0B with Communication protocol with Charge Controller
- Debug Interface: RS232 and Ethernet
- Digital Output for emergency event signaling

## 1.2 CE Certificates

- EN 61000-6-2:2009
- EN 61000-6-4:2012
- EN 62368-1:2014
- RoHS V2.0

## 2 Interface



Figure 2: Interfaces of DB-SECC-601 Product

### 2.1 CAN

| Pin                                                                         | Name | Description         |
|-----------------------------------------------------------------------------|------|---------------------|
| 1                                                                           | H    | CAN2.0B High        |
| 2                                                                           | L    | CAN2.0B Low         |
| 3                                                                           | GND  | CAN isolated Ground |
| Notes: A 120-ohm termination resistor is populated between CAN_H and CAN_L. |      |                     |

## 2.2 Power Supply Control and Proximity 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                                                                            |

## 2.3 RS232

| Pin                                                                          | Name | Description        |
|------------------------------------------------------------------------------|------|--------------------|
| 1                                                                            | TX   | RS232 Transmitter; |
| 2                                                                            | RX   | RS232 Receiver;    |
| 3                                                                            | GND  | Ground             |
| Notes: Speed 115200bps; Data bits 8; Stop bits 1; No parity; No Flow Control |      |                    |

## 2.4 ETH 10/100Mbps

| Pin | Name     | Description                |
|-----|----------|----------------------------|
| 1   | Ethernet | Ethernet for backend, 100M |

## 2.5 Digital Output

| Pin | Name | Description                                                                                               |
|-----|------|-----------------------------------------------------------------------------------------------------------|
| 1   | GND  | Ground                                                                                                    |
| 2   | DO   | Digital Output: Disabled as default.<br>CP/PP lost triggers Emergency shutdown, Active High while enable. |

## 2.6 Power Supply

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

### 3 Mechanical Dimensions

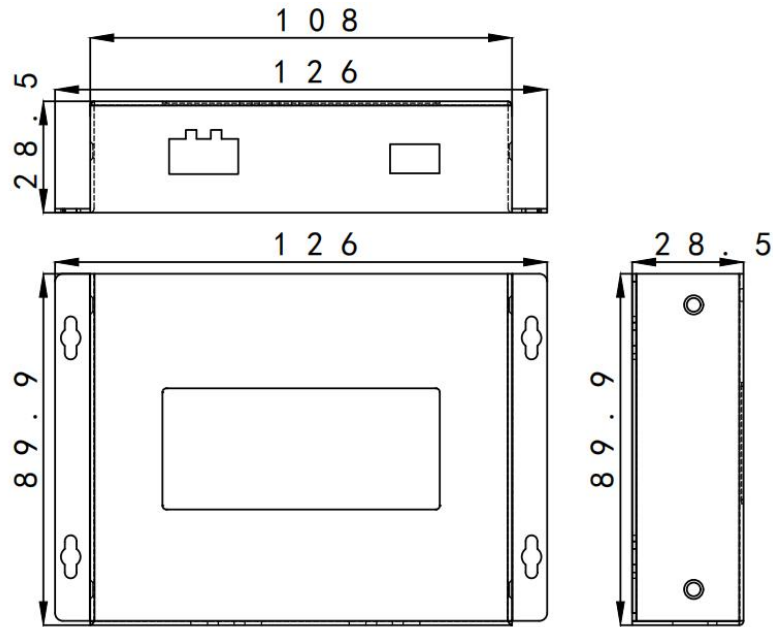


Figure 3: DB-SECC-601 Dimensions

#### Notes:

1. All dimensions are in mm.

### 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 | 260mA@12V |

### 4.3 Physical Feature

| Feature               | Description                                |
|-----------------------|--------------------------------------------|
| Operation Temperature | -40 <sup>0</sup> C .... +85 <sup>0</sup> C |
| Dimensions (L*W*H)    | 126 * 89.9 * 28.5mm                        |
| Protection Class      | Housing IP40                               |
| Assembly              | Wall-Mounted                               |

## 5 Application Example

### 5.1 Wiring with External DC Charging Control Unit

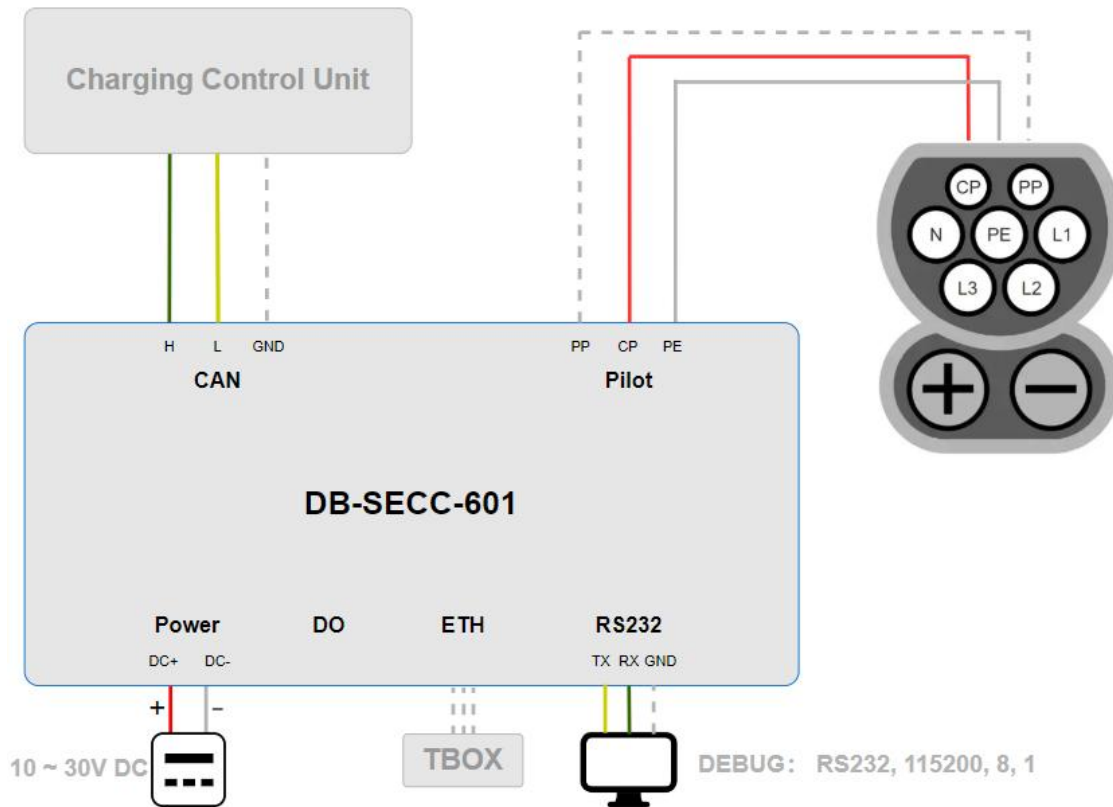


Figure 5: Wiring with External DC Charging Control Unit

**Note:**

- The IEC 61851-1 Functionality is enabled in DB-SECC-601.
- The CAN interface is the main communication way between DB-SECC-601 and Charging Control Unit. The communication protocol is now supported as:
  - **Dropbeats' Communication Matrix**
- The ETH interface is optionally wired to device, which has uplink capability, such as, 4G gateway, TBOX. By using ETH, more advance feature could be gotten, such the firmware updating, log file uploading, certificate installing and updating, and etc.
- The DO (Digital Output) interface is optionally used to report emergency event.

## 6 Order Information

| Order Code  | HW    | SW                                 |
|-------------|-------|------------------------------------|
| DB-SECC-601 | 1.1.0 | ISO15118 DC + DIN70121 Combo Stack |

## Legal Information

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### Contacting Dropbeats Technology

**Dropbeats Technology**

123 Juli Road, Building 4, Shanghai, China

Tel: +86 (21) 5085-0752

Fax: +86 (21) 5085-0753

Document Information: [document@drop-beats.com](mailto:document@drop-beats.com)

Corporate Information: [info@drop-beats.com](mailto:info@drop-beats.com)

Technical Support: [apps@drop-beats.com](mailto:apps@drop-beats.com)

Web Site: <https://www.drop-beats.com>

### Revision History

| Revision | Date      | Descriptions                   |
|----------|-----------|--------------------------------|
| 1.0.0    | 2025.3.31 | Initial                        |
| 1.0.1    | 2025.5.31 | Updated Product Images         |
| 1.0.2    | 2025.6.31 | Updated Product Images         |
| 1.0.3    | 2025.7.15 | Added CAN terminal information |
|          |           |                                |