
T-Power

SECC HW Manual

Version 1.0



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1. Introduction

This document describes the external interface of Tp100, which is suitable for AC/DC Charger. The physical interfaces to the external controller is either RS-232 or RS-485 and CAN.

1.1 SECC



Fig. 1 View for SECC

2. Architecture

This section outlines the system and hardware architecture design of the system.

2.1 Reference Model

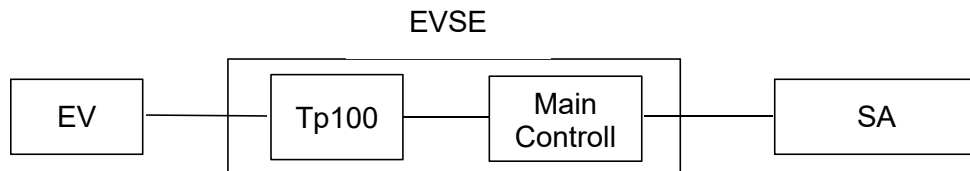


Fig. 2 Reference Model

2.2 System Board Diagram

A hardware terminal of Tp100 is depicted in Fig.5.

2.2.1 Function diagram

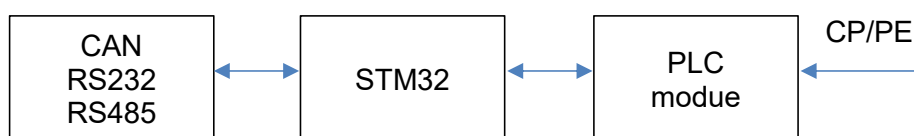


Fig. 3 Function diagram for Tp100

2.2.2 Pin configuration

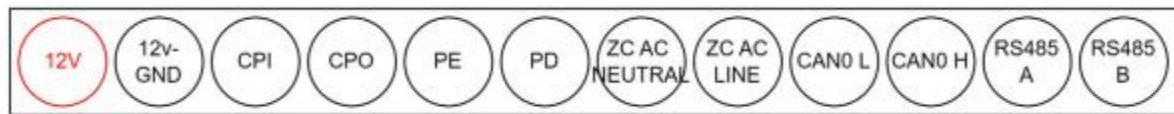
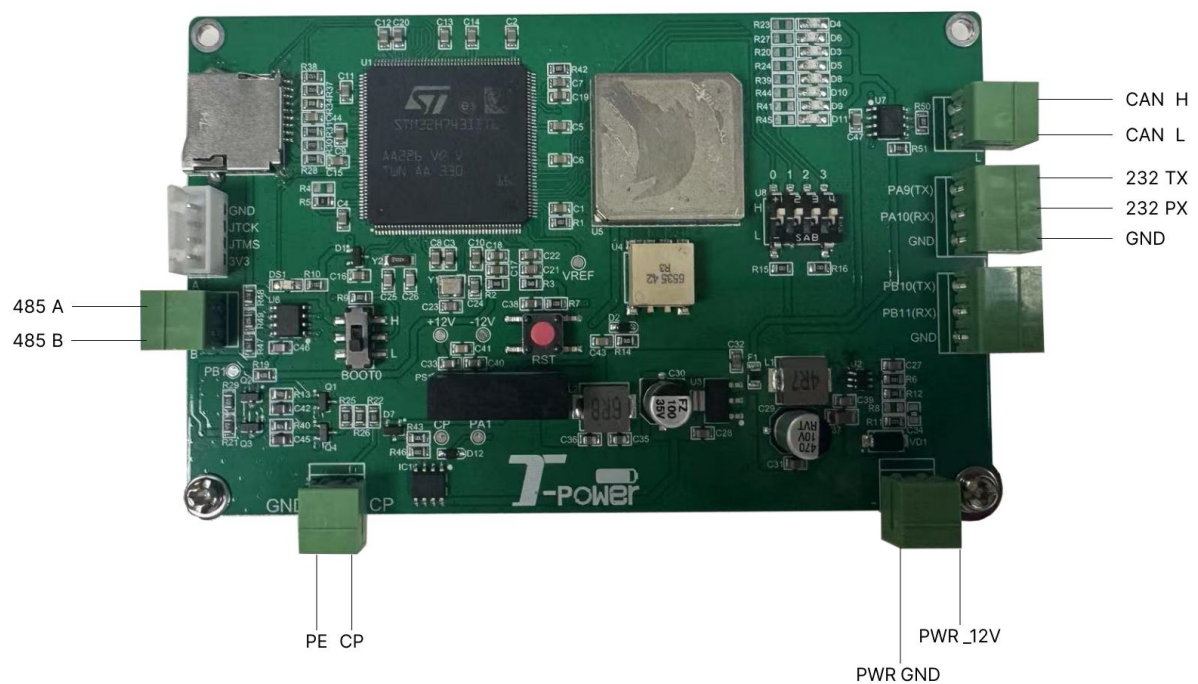


Fig. 4 Pin configuration for Tp100



Connect	Description
RS485 B	A(TxD) and B(RxD) pins are used for UART. The serial communication protol is either RS-232 or RS-485. Default serial communication protocol is RS-232.
RS485 A (RS232_TX)	Tp100 serial communication uses a boad rate of 115200bps, no parity bit, and no flow control.
RS232_RX	
RS232_TX	
CAN H	CAN High
CAN L	CAN Low
PE	PE line is connected to PE pin
CP	PWM signal from MC is connected to CPI pin. This PWM signal is multiplexed with PLC signal and then output on CPO pin. PWM Input Port
PWR_GND	Power Ground
PWR_12V	Supply voltage of 12V is connected to 12V

2.2.3 Option

Can be select a shield can as an option.

3. Hardware characteristic

Indicates the hardware electrical features and interface items.

3.1 Features

CPU	STM32H743
SD Card	
PLC Modem	QCA7005, Qualcomm HomePlug GreenPHY, EVSE
External Interface	CAN 2.0B
	RS232 115200bps
	RS485
Operation temperature	-25. C ~ 85. C
Operation voltage	DC12V($\pm 10\%$)
Weight	37g
Dimension	55mmX80mm
Current Consumption	<200mA Min 115mA Max 150mA AVG 121mA

3.2 Interface

PLC Modem	• QCA7005 • Qualcomm HomePlug GreenPHY • EVSE
CAN	• Compatible with ISO11898 High speed CAN • Specified for data rates up to 1Mbps • Bus fault voltage (V)-14 to 14
RS485	• Specified for data rates up to 5Mbps • Low quiescent current : 300uA • -7V to +12V common mode input voltage range
RS232	• Meets EIA/TIA-232-F standards from 3.0V to 5.5V Power supply • Interoperable with RS232 down to 2.7V power source

Appendix A: Record of Changes

Table 1 - Record of Changes

Version Number	Date	Author/Owner	Description of Change
1.0	05/24/2024	SH LEE	Initial Release
1.1	06/03/2024	SH LEE	Add HW spec
1.2	06/12/2024	SH LEE	Add interface