

5014000070

Main Control Board

for

AC Charging Station

with Double Charging Gun

V4.2 10/10/2023

Interface Definition Description:

This product has multiple functional interfaces for controlling the operation of each component of the charging pile. All pins are defined as follows:

Port Group Name	Full Port Label	Port Definition / Connection	Function Description
CT-1	CT-1	External 50 Hz current transformer; L-wire of Gun-A passes through this CT.	Current-transformer interface for Gun-A.
CT-2	CT-2	External 50 Hz current transformer; L-wire of Gun-B passes through this CT.	Current-transformer interface for Gun-B.
METER	485 A	RS-485 A line to external revenue-grade meter (DL/T645-2007 protocol).	External meter port (RS-485).
	485 B	RS-485 B line to external revenue-grade meter (DL/T645-2007 protocol).	
LED	3V3	3.3 V power output to external LED strip.	External indicator-light strip port.
	R	Red LED (alarm indicator).	
	B1	Blue LED 1 (Gun-A charging indicator).	
	B2	Blue LED 2 (Gun-B charging indicator).	
	G	Green LED (stand-by indicator).	
SWD	3V3	3.3 V reference for SWD programmer.	Local firmware-upgrade port (SWD).
	GND	Ground for SWD.	
	IO	SWD I/O (data).	
	CLK	SWD clock.	
SCREEN	5V	5 V power output to external TTL UART display.	External display port (TTL UART).
	GND	Ground for display.	
	TX	Main-board TX → display RX.	
	RX	Main-board RX ← display TX.	
	NC	No connection.	
NET	NET	Network module interface	Reserved external networking module (optional 4G or Ethernet)
RF	5V	5 V power output to external RS-232 RFID card reader.	External RFID card-reader port (RS-232).
	GND	Ground for card reader.	
	NC	No connection.	
	NC	No connection.	
	RX	Main-board RX ← card-reader TX.	
	TX	Main-board TX → card-reader RX.	
CPA	CPA	CP line of Gun-A (connected to vehicle inlet).	CP interface for Gun-A.
	PE	Protective-earth line of Gun-A.	
CPB	CPB	CP line of Gun-B (connected to vehicle inlet).	CP interface for Gun-B.
	PE	Protective-earth line of Gun-B.	
DI1	DI1	Normally-open digital input 1.	Emergency-stop switch; closure triggers alarm.
	GND	Ground reference for DI1.	
DI2	DI2	Normally-open digital input 2.	Door-open detector; closure triggers alarm.
	GND	Ground reference for DI2.	
DEBUG	5V	5 V power for local config / debug tool.	Debug / configuration UART (local).
	TXD	Debug TX (main-board → PC).	
	RXD	Debug RX (main-board ← PC).	
	GND	Ground for debug port.	
L-IN	L-IN	Incoming line (live) from grid.	AC mains input (live).
N-IN	N-IN	Incoming line (neutral) from grid.	AC mains input (neutral).
L-OUT1	L-OUT1	Outgoing live to Gun-A.	AC output for Gun-A (live).
N-OUT1	N-OUT1	Outgoing neutral to Gun-A.	AC output for Gun-A (neutral).
L-OUT2	L-OUT2	Outgoing live to Gun-B.	AC output for Gun-B (live).
N-OUT2	N-OUT2	Outgoing neutral to Gun-B.	AC output for Gun-B (neutral).
PE	PE	Protective-earth bus; bonds grid earth and both gun earths.	System protective-earth terminal.

Technical Parameter:

Model	5014000070
Power	14 kW (1P)
Input voltage	220V±10%
Input current	0~32A
Card reader interface	RS 232 Support /customized agreement
Display interface	The TTL supports a 4.3-inch color touch display
Indicator light interface	RGB Green (standby) Blue (charging) Red (fault)
Emergency stop DI interface	Normally open
Threshold DI interface	Normally open
Board-mounted metering	Support, accuracy level 2.0
External meter interface	Support, RS 485, DL/T645-2007 communication protocol
Network communication interface	Optional Ethernet /4G/ Bluetooth/WiFi
Working temperature	-20°C~ +60°C
Storage temperature	-40°C~ +85°C
Motherboard size	158 mm*107 mm
The compliance of the lead-free requirements	Lead free/conforms to Directive (RoHS 3) on the restriction of hazardous substances

Parameter Configuration:

- Use USB to 232 serial cable to connect the computer and motherboard, through the configuration tool software " ParamConfigTool. "exe" to configure local parameters;
- In the case of networking, remote parameter configuration is carried out through the first power "master control board full life cycle management platform".

Typical Applications:

As the main control board in automotive AC charging piles, it is widely used in wall-mounted, portable and column-mounted AC dual-gun charging piles.

Installation Instructions:

Installed in a waterproof plastic or sheet metal housing.

Disclaimer:

The product will be continuously upgraded and iterated, as well as make technical modifications. Subsequent product assembly and technical parameters will have corresponding changes. This document is an introduction to the main control board; the images, data, and descriptions contained herein are not used as the basis for order acceptance. OSWELL reserves the final right of interpretation for this document.