

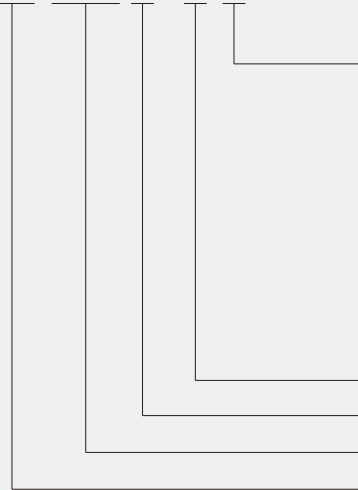
GYPC2-C/S AC Charging Station Controller

Standard: IEC61851, SAEJ1772



Naming rules

GY PC □ - □ □



- Blank: No additional and communication function
- Additional function
 - 1 : RCMU leakage monitoring mode
 - 2 : Non-contact IC card
 - 3 : DLB current balance mode
 - 4 : Current sensor access mode
 - 5 : With LCD display
- Communication function
 - 1way RS485
- C : Cable type S : Socket type
- Design version No.2-x
- EV charging controller
- Company code

Brief description

Control the communication of the electric vehicle AC charging process complies with IEC 61851 or SAEJ1772 standards. Conform to DIN EN60715 installation requirements.

The output of the relay is used to connect the AC contactor that switches on/off the load.

The operating status of the EV interface is indicated by three-color LED lights.

The controller additional functions include: non-contact IC card connection module, DC leakage detection module (RCMU), RS485 communication interface equipment, plug lock device, external emergency stop button, etc. These functions must be NOTED when ordering.

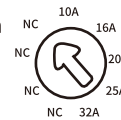
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Function specification

Technical date	Model specification	GYPC2-C/S
Operating voltage		AC230V±10% 50Hz
Output the PWM signal		10A、16A、20A、25A、32A、63A
Output control AC contactor		Passive contacts
Additional connection function (optional)		1.RCMU leakage monitoring mode (0-20mA/0-200mA) 2.Non-contact IC Card 3.DLB current balance mode 4.Current sensor access mode (DC+12V Output 0-5V) 5.With LCD display
Communication function (optional)		1 way RS485(Modebus-RTU)/RS232
Output auxiliary voltage		DC12V/100mA、DC5V/100mA
Ambient temperature		-40°C-+50°C
Humidity		≤85%
IP degree		IP22
Cooling method		Natural cooling
Installation method		DIN rail standard
Weight		40g
Overall dimension		

Maximum charging capacity indication 10A, 16A, 20A, 25A, 32A, Through the internal dial switch



Controller connection status

No.	State Code	LED Color	LED State	PE、CP、PP state	Controller state	Remark
0	K	Red	5Hz flashing	Power self detect failed	Fault--1#	Power self-check failed! Please turn the power back on!
1	A	Blue	1Hz flashing	CP disconnection	Ready	
2	I	Blue	2Hz flashing	Waiting for IC card	RFID Waiting	
3	B	Blue	Stabilization	CP connect to diode+2.7KΩ	Connected	
4	B	Blue	Stabilization	CP connect to diode+1.3KΩ	Connected	
5	C	Green	Green brightening	CP connect to diode+2.7KΩ parallelconnect1.3KΩ	Charging	
6	D	Red	Stabilization	CP connect to diode+2.7KΩparallelconnect1.3KΩ parallel connect 270R Or CP connect to diode+270R Or CP connect to diode+270R parallel connect 2.7KΩ Or CP connect to diode+270R parallel connect 1.3KΩ	Fault--2#	Need Ventilation!
7	F	Red	1Hz flashing	CP line short circuit with PE line	Fault--3#	CP- PE short circuit! Please check the CP line
8	H	Red	5 Hz flashing	RCMU occurs residual current or self detect failed	Fault--4#	RCMU leakage or self-inspection failure
9	E	Red	2Hz flashing	Diode short circuit (Requirement waiting the CP disconnected)	Fault--5#	EV-Charing Socket Fault
10	G	Blue+Red	2Hz flashing	PP line disconnection	Fault--6#	SPLIT PP wire, Please check the PP line
11	J	Red+Green+Blue	2Hz flashing	Electromagnetic Lock failed	Fault--7#	Electronic Lock Disabled
12	L	Blue	5Hz flashing	IC card failed	Fault--8#	RFID card is not valid
13	M	Red+Green	1Hz flashing	Circuit overload, DLB Mode activated	Fault--9#	Circuit overload, DLB Mode activated

Controller charging procedure

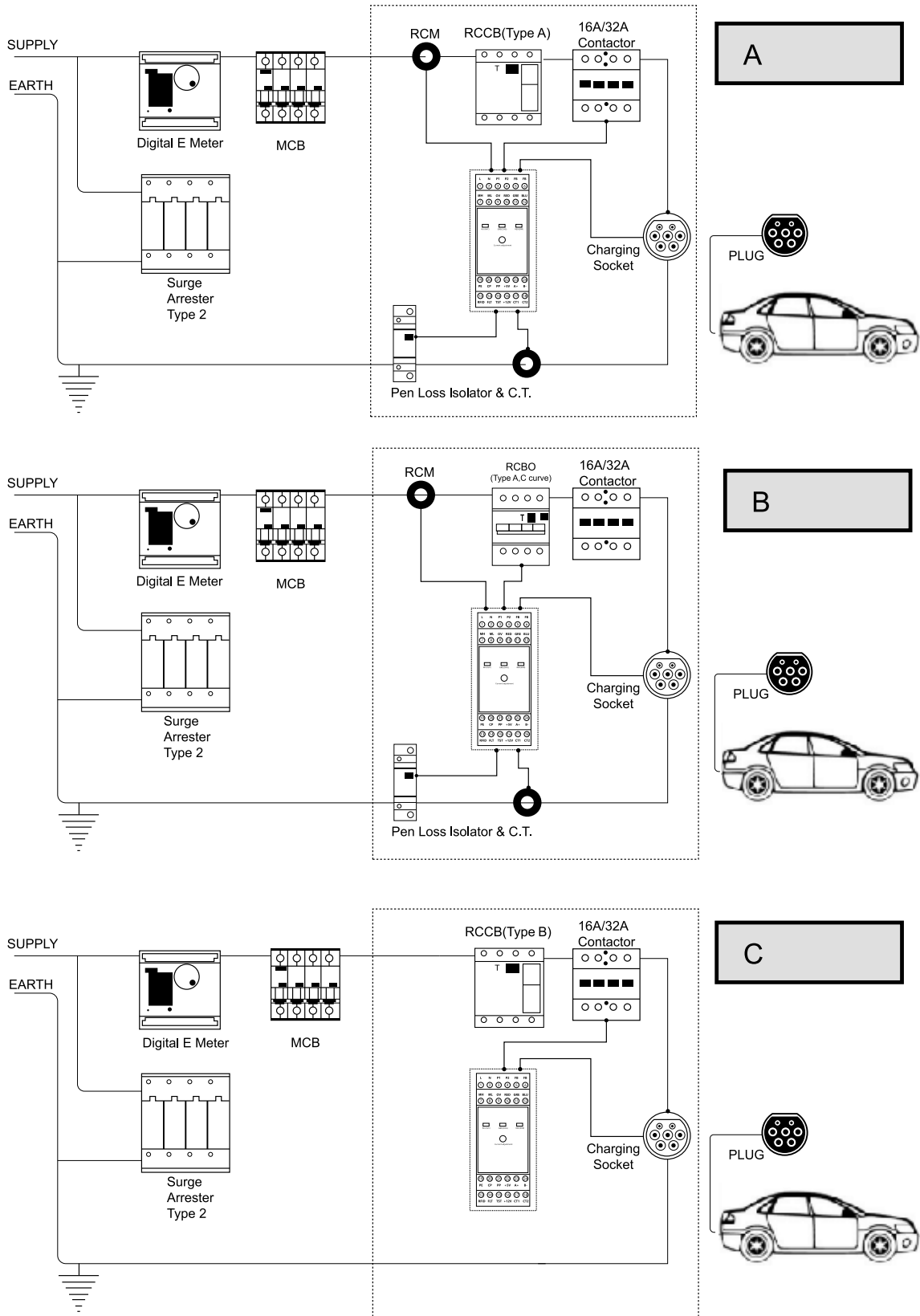
After connected on the working voltage, the controller starts to initialize (self - detection procedure on the RCMU module) and conduct self - detection function (LED cycle flashing), waiting for the car to connect. The controller waits for the charging cable and the vehicle connection (status A), and the LED keeps flashing blue light, and this process requires about 6s waiting. If this controller connected the matched cable (status B), LED becomes stable blue light (and opens the electromagnetic lock switch).

After the charging plug linkage, and if the vehicle is in state C, the controller keeps the P1/P2 closed (charger connected), the LED becomes stable green, and the EV starts into charging mode. If the display status D(requires ventilation), because the controller does not have the heat dissipation function, the controller puts the P1/P2 on (charger off) simultaneously (close the electromagnetic lock switch), the head interlock fails and the controller turns off the charging program, the LED becomes stable red.

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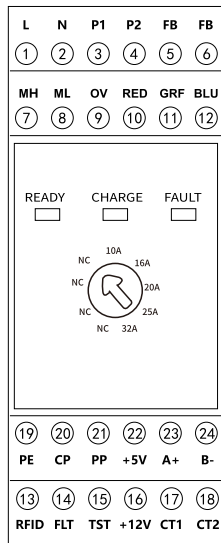
Function application



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Terminal description of the controller



Terminal function description

Serial number	Mark	function	Specification
1	L	Live line	Product working power supply:AC230V±10% 50Hz
2	N	Neutral line	
3	P1	Relay coil A1	AC contactor connected to the connection load of charging station
4	P2	Relay coil A2	
5	FB	Reflect signal of the electromagnetic lock	This is the feedback signal on the electromagnetic lock directly to the passive contact output terminal of the electromagnetic lock
6	FB		
7	LK+	Electromagnetic lock positive voltage	Provide positive and negative pulse voltage of electromagnetic lock, duty cycle of output pulse (1: 3) and total pulse output maximum driving capacity of 500ms
8	LK-	Electromagnetic lock negative voltage	
9	0V	Earth terminal	External indicator light, DC5V/10mA drive capability
10	RED	Red LED	
11	GRE	Blue LED	
12	BLU	Green LED	
13	IC	IC card - controlled input signal	The signal of external non-contact IC card reading module,input is TTL voltage signal,DC 3.3V/5V
14	FLT	RCMU fault signal(DC3.3V/5V), output terminal	When the controller detects this end signal, means this line occur fault (including≥DC6mA leakage signal), the controller will cut off the charging power, untill this fault signal is solved, the controller will automatic resumes the charging state.
15	TST	RCMU test signal(DC3.3V/5V), the input terminal	The controller outputs the test signal before each charging, using to check that the working of the RCMU whether normal
16	+12V	+12V Power Supply	DC+12V/100mA Power output
17	CT1	Current transformer	When the controller requires DLB function, it requires connect to current transformer signal, the signal is: AC0- 1.0V/0-50A.This function can dynamically balance the power load, adjust the output in time, control the charging current, and protect the safety of the power supply line.
18	CT2		
19	PE	Power supply	Earth terminal
20	CP	Connect to the vehicle CP	Communication connection with electric vehicle, output PWM wave
21	PP	Charging cable current identification	When this end is a socket type charging station, it identify the current specification of charging cable
22	+5V	+5V Power Supply	Supply DC 5V/100mA power output
23	A+	A+ for RS485 Communications	It can communicate with RS485 equipment. The communication standard conforms to Modbus-RTU slave mode. Baud rate: 38400, N, 8, 1 address number default: 255(Broadcast address)See Table A for details
24	B-	B- for RS485 Communications	

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RS485 Communication description

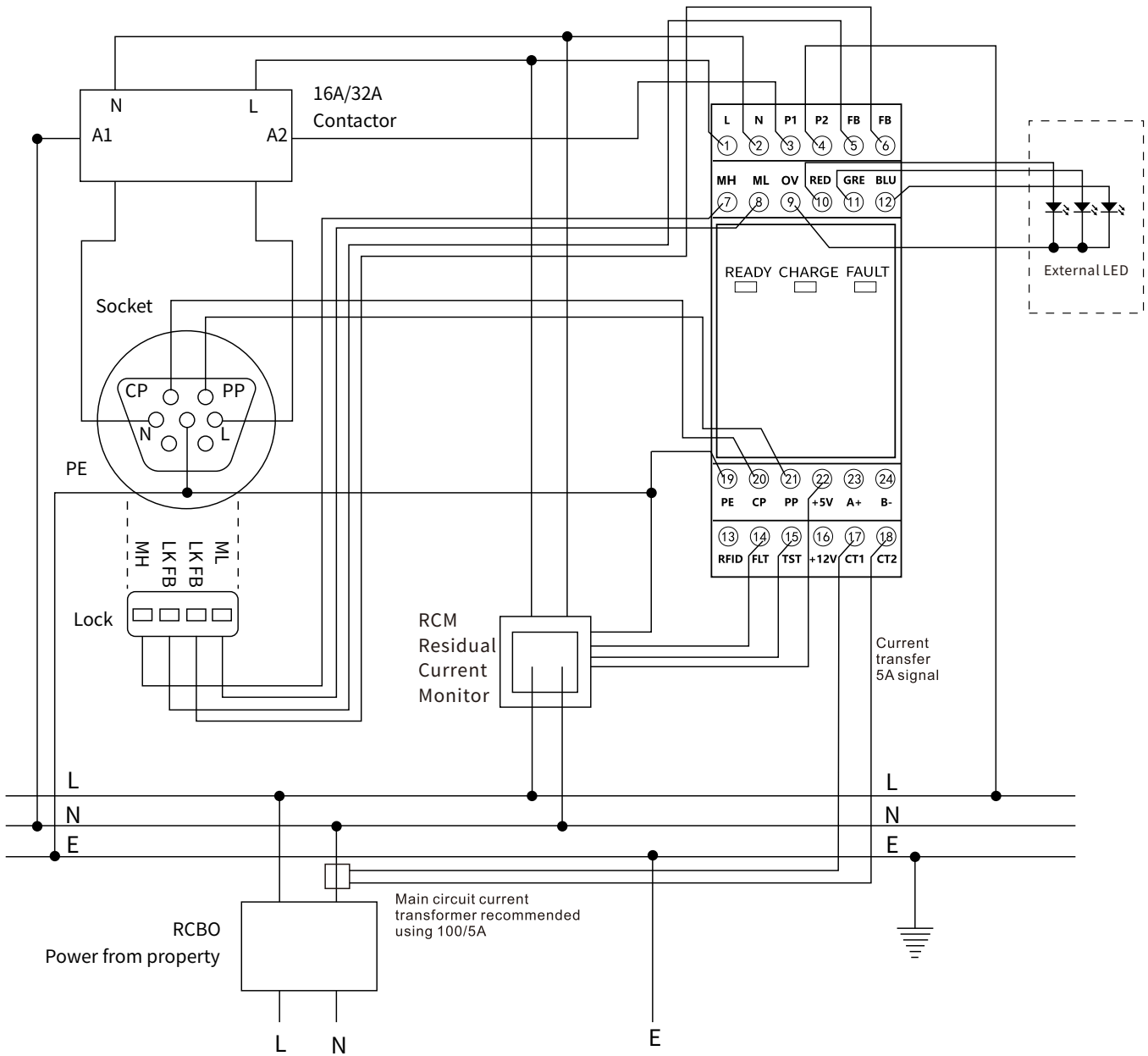
Modbus-RTU model, Baud rate: 38400, fixed, address: 1-255 default: 255 (Broadcast address)

Register address number	Data description (power failure protection)	Read and write	Type of data	Defaults
100	Device address number	Read and write	16-bit integer	255
101	DLB maximum starting current	Read and write	16-bit integer	9000
102	DLB maximum current (100.00A)	Read and write	16-bit integer	10000
103	Reference current: DLB/current transformation ratio (100.00A)	Read and write	16-bit integer	10000
104	Reference current calibration value input	Read and write	16-bit integer	1270
105	Charging pile current transformation ratio 50-200A	Read and write	16-bit integer	
106	Charging pile current value correction 0-100.0A	Read and write	16-bit integer	
107	Charging pile voltage value correction 0-500.0V	Read and write	16-bit integer	
108	Charging pile power value correction 0-22000W	Read and write	16-bit integer	
109	Maximum output PWM duty cycle of charging pile	Read and write	16-bit integer	90%
110	RCMU function selection 0 disabled 1 enabled, other values are selected by DIP switch	Read and write	16-bit integer	3
111	RFID function selection 0 disabled 1 enabled, other values are selected by DIP switch	Read and write	16-bit integer	3
112	Lock function selection 0 disabled 1 enabled, other values are selected by DIP switch	Read and write	16-bit integer	3
113	Cable function version selection 0 disable 1 enable, other values are selected by DIP switch	Read and write	16-bit integer	3
114	DLB function selection 0 disable 1 enable, other values are selected by DIP switch	Read and write	16-bit integer	3
115	PID control parameter P of DLB	Read and write	16-bit integer	100
116	PID control parameters of DLB I	Read and write	16-bit integer	1
117	DLB PID control parameter D	Read and write	16-bit integer	100
118-119	Controller ID number up to 9 digits	Read and write	32-bit integer	
120-139	spare	Read and write		
140	Software version	Read only	16-bit integer	1002
141	Current working status: Corresponding status 0-13	Read only	16-bit integer	
142	PWM value of cable specification	Read only	16-bit integer	
143	RCMU status 00 Not selected 01 Normal operation 02 Self-check failed 03 There is leakage in the charging circuit	Read only	16-bit integer	
144	RFID status 00 not selected 01 IC card not operating 02 IC card closed 03 IC card open	Read only	16-bit integer	
145	Lock status 00 not selected 01 locked 02 unlocked 03 fault	Read only	16-bit integer	
146	The current current, the decimal place is determined by the value of the reference current	Read only	16-bit integer	
147	Current value of charging pile 0-200.0A	Read only	16-bit integer	
148	Current voltage value of charging pile 0-500.0V	Read only	16-bit integer	
149	Current power value of charging pile 0-22000W	Read only	16-bit integer	
150	Calibration value AD value of reference current	Read only	16-bit integer	
151	The PWM duty cycle corresponding to the current set by the rotary switch	Read only	16-bit integer	
152	Current output PWM duty cycle	Read only	16-bit integer	
153-160	spare	Read only	16-bit integer	

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Application circuit diagram

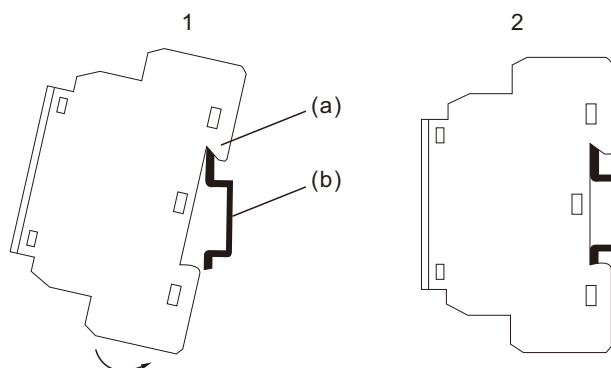


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Easy installation

1. Install the controller (a) vertically onto the horizontal DIN rail (b).
2. Rotate the controller down until the clip into the Din
(Note: DIN rail accordance with German industrial standards)



Overall dimension(mm)

