

YG1404 European Standard AC And DC Integrated Charging Receptacle

Technical Specifications

1. Product Overview

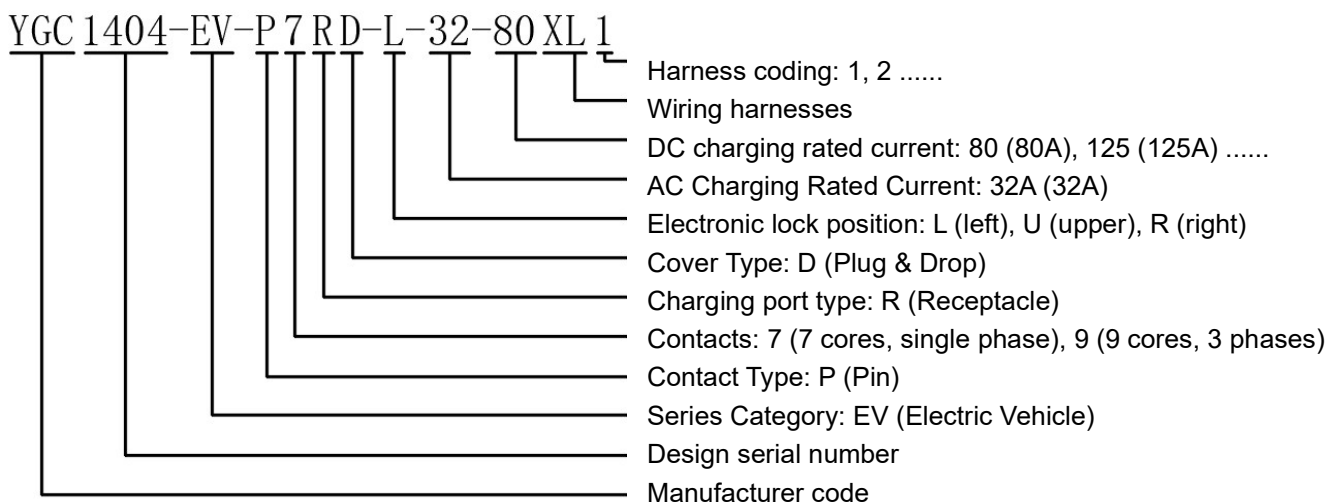
YG1404 series European standard AC and DC integrated charging receptacles, installed on electric vehicles, through the European standard AC charging plug in accordance with IEC 62196-2-2022 or in accordance with IEC 62196-3-2022 The European standard DC charging plug is used to realize the charging function and meet the interchange requirements. Adopt direct plug-in quick connect system, easy to operate and labor-saving, power terminal silver-plated, 50mm² and below in crimping form, 70mm² and above in ultrasonic welding form, low temperature rise and strong stability. Due to the complexity of the assembly process, to ensure the overall performance of the product, it is recommended that the assembly of the cable assembly be completed by Yonggui.

2. Product Illustration



3. Product Model and Details

3.1. Model naming conventions:



For example: YGC1404-EV-P7RD-L-32-80 means, YG1404 European standard DC 80AAC 32A single-phase, electronic lock arrangement on the left side of the integrated charging receptacle.

Serial	Model	Phases	Lock Position	Current Rating		Rated Voltage		Port Wiring Specification (Unit: Mm2)								
				DC (A)	AC (A)	DC(V)	AC (V)	DC+	DC-	L1	L2	L3	N	ON	PP	CP
1	YGC1404-EV-P7RD-L-32-80	Single	left	80	32A	1000V	250V	25	25	6	/	/	6	25	0.5	0.5
2	YGC1404-EV-P7RD-L-32-125			125				35	35	6	/	/	6	25	0.5	0.5
3	YGC1404-EV-P7RD-L-32-200			200				50	50	6	/	/	6	25	0.5	0.5
4	YGC1404-EV-P7RD-L-32-250			250				70	70	6	/	/	6	25	0.5	0.5
5	YGC1404-EV-P7RD-L-32-350			350				95	95	6	/	/	6	25	0.5	0.5
6	YGC1404-EV-P7RD-U-32-80		above	80				25	25	6	/	/	6	25	0.5	0.5
7	YGC1404-EV-P7RD-U-32-125			125				35	35	6	/	/	6	25	0.5	0.5
8	YGC1404-EV-P7RD-U-32-200			200				50	50	6	/	/	6	25	0.5	0.5
9	YGC1404-EV-P7RD-U-32-250			250				70	70	6	/	/	6	25	0.5	0.5
10	YGC1404-EV-P7RD-U-32-350			350				95	95	6	/	/	6	25	0.5	0.5
11	YGC1404-EV-P7RD-R-32-80		right	80				25	25	6	/	/	6	25	0.5	0.5
12	YGC1404-EV-P7RD-R-32-125			125				35	35	6	/	/	6	25	0.5	0.5
13	YGC1404-EV-P7RD-R-32-200			200				50	50	6	/	/	6	25	0.5	0.5
14	YGC1404-EV-P7RD-R-32-250			250				70	70	6	/	/	6	25	0.5	0.5
15	YGC1404-EV-P7RD-R-32-350			350				95	95	6	/	/	6	25	0.5	0.5
16	YGC1404-EV-P9RD-L-32-80	Three	left	80	480V	25	25	6	6	6	6	25	0.5	0.5		
17	YGC1404-EV-P9RD-L-32-125			125		35	35	6	6	6	6	25	0.5	0.5		
18	YGC1404-EV-P9RD-L-32-200			200		50	50	6	6	6	6	25	0.5	0.5		
19	YGC1404-EV-P9RD-L-32-250			250		70	70	6	6	6	6	25	0.5	0.5		
20	YGC1404-EV-P9RD-L-32-350			350		95	95	6	6	6	6	25	0.5	0.5		
21	YGC1404-EV-P9RD-U-32-80		above	80		25	25	6	6	6	6	25	0.5	0.5		
22	YGC1404-EV-P9RD-U-32-125			125		35	35	6	6	6	6	25	0.5	0.5		
23	YGC1404-EV-P9RD-U-32-200			200		50	50	6	6	6	6	25	0.5	0.5		
24	YGC1404-EV-P9RD-U-32-250			250		70	70	6	6	6	6	25	0.5	0.5		

25	YGC1404-EV-P9RD-U-32-350	right	350	95	95	6	6	6	6	25	0.5	0.5
26	YGC1404-EV-P9RD-R-32-80		80	25	25	6	6	6	6	25	0.5	0.5
27	YGC1404-EV-P9RD-R-32-125		125	35	35	6	6	6	6	25	0.5	0.5
28	YGC1404-EV-P9RD-R-32-200		200	50	50	6	6	6	6	25	0.5	0.5
29	YGC1404-EV-P9RD-R-32-250		250	70	70	6	6	6	6	25	0.5	0.5
30	YGC1404-EV-P9RD-R-32-350		350	95	95	6	6	6	6	25	0.5	0.5

Precautions

- ★ The position of the electronic lock is arranged to be directly facing the orientation indicated by the receptacle opening.
- ★ 350A charging power needs to be used with liquid-cooled charging gun.
- ★ The wiring specifications are the general specifications of the platform, if you have any customization needs, please consult our company.

4. Technical Parameters

4.1. Electrical Parameters

Port definition	DC+/DC-					L1/L2/L3/N	ON	PP	CP
Wiring specification (unit: mm ²)	25	35	50	70	95	6	25	0.5	0.5
Contact terminal diameter (unit: mm)	Φ8					Φ6	Φ6	Φ3	Φ3
Rated Operating Voltage (V)	1000					250/480	/	0~30V	0~30V
Rated Operating Current(A)	80	125	200	250	350	32	/	2	2
Insulation resistance	≥200MΩ(1000V DC)								
Withstand voltage	Test after the plug is wired: (1) 2500VAC between DC+, DC-, PE and between them and other holes≥ for 1min (2) Between L1, L2, L3, N, PE and between them and the signal hole PP and CP, ≥ 2500V AC for 1min (3) Between PP and CP, ≥ 500V AC for 1min The leakage current of the above test ≤ 10mA								

4.2. Mechanical Property Parameters

Service life: plugging and unplugging ≥ 10,000 times

Plugging force: ≤100N

Locking force: ≥750N

4.3. Environmental Performance Parameters

Before mating: IP54

After plugging: IP55 (plug and receptacle connection position) IP67 (at the end of the receptacle, please pay attention to avoid the tail wiring bending radius <6x cable OD)).

Ambient temperature: -30°C~+50°C

4.4. Materials

Housing: Engineering plastic (temperature resistant PA66)

Terminals: Copper, silver-plated surface

Seals: Silicone rubber

Flame retardant rating of insulating material: UL94 V-0

4.5. Implementation Standards

IEC 62196.1-2022 Conductive Charging for Electric Vehicles – Part 1: General Requirements

IEC 62196.3-2022 Conductive Charging of Electric Vehicles – Part 3: DC and AC/DC Integrated Interfaces

IEC 61851.1-2017 Conductive Charging Systems for Electric Vehicles – Part 1: General requirements

USCAR 38 Standard for Ultrasonic Wire Harness Welding for Automotive Vehicles

LV215.1 Electronic/Electrical Requirements for High Voltage Connectors

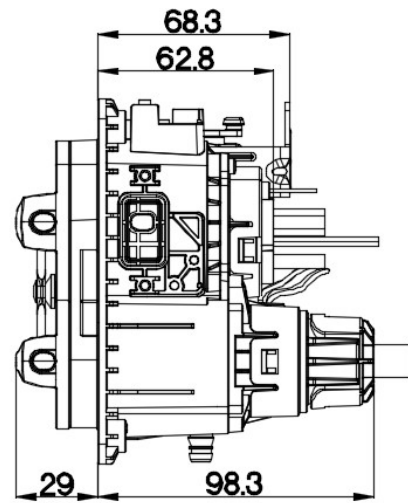
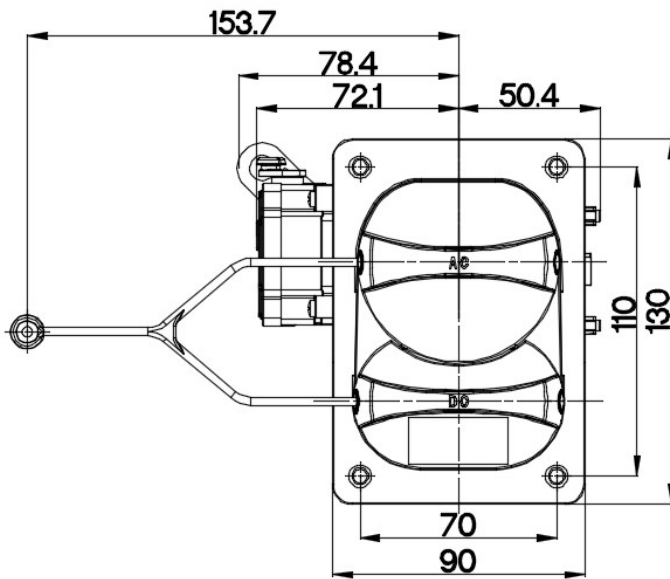
5. Electrical Principle

5.1. Definition of each terminal function:

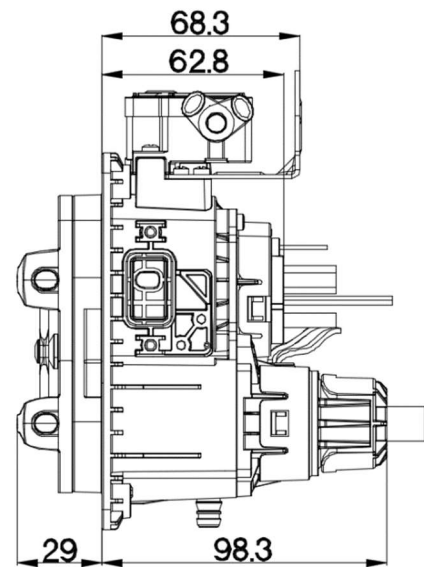
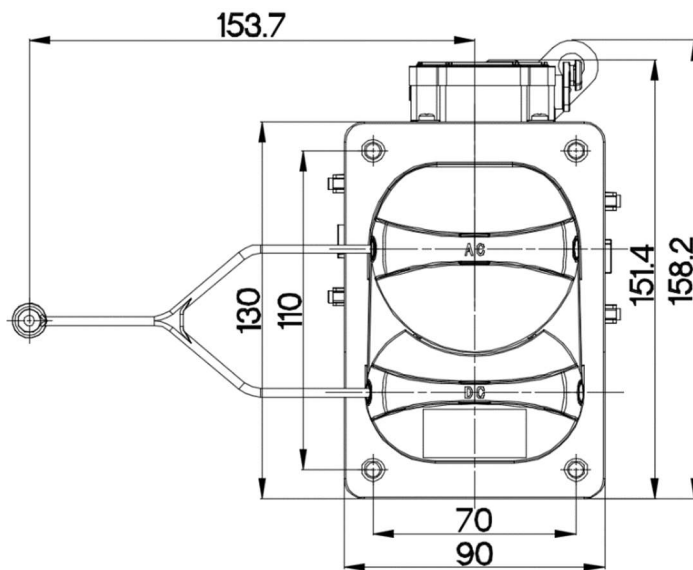
Serial	Terminal Identification	Functional Definitions
1	DC+	DC power supply, positive
2	DC-	DC power supply, negative
3	L1	AC power, FireWire 1
4	L2	AC power, FireWire 2
5	L3	AC power, FireWire 3
6	N	AC power, center line
7	ON ⊕	Protective Grounding (PE), connects the ground wire of the power supply equipment to the ground wire of the vehicle body
8	PP	Charging connection confirmed
9	CP	Charging control guidance
10	T1+	L1(L1 vs. L2, if there is L2) side temperature sensor positive
11	T1-	L1 (L1 vs. L2, if there is L2) side temperature sensor negative
12	T2+	N (N with L3, if there is L3) side of the temperature sensor positive
13	T2-	N (N with L3, if there is L3) side of the temperature sensor negative
14	T3+	DC+ side temperature sensor positive
15	T3-	DC+ side temperature sensor negative
16	T4+	DC-side temperature sensor positive
17	T4-	DC-side temperature sensor negative
★T1-, T2-, T3-, and T4- can be shared		
18	Electronic lock 12V	Electronic lock motor positive
19	Electronic lock GND	Electronic lock motor negative
20	Electronic lock feedback SIGN+	The electronic lock in the charging cable works (unlocking/locking) and has positive feedback
21	Electronic Lock Feedback SIGN-	The electronic lock in the charging cable works (unlocking/locking) and has negative feedback
★ The electronic lock GND and the electronic lock feedback SIGN can be shared		

6. Dimensions

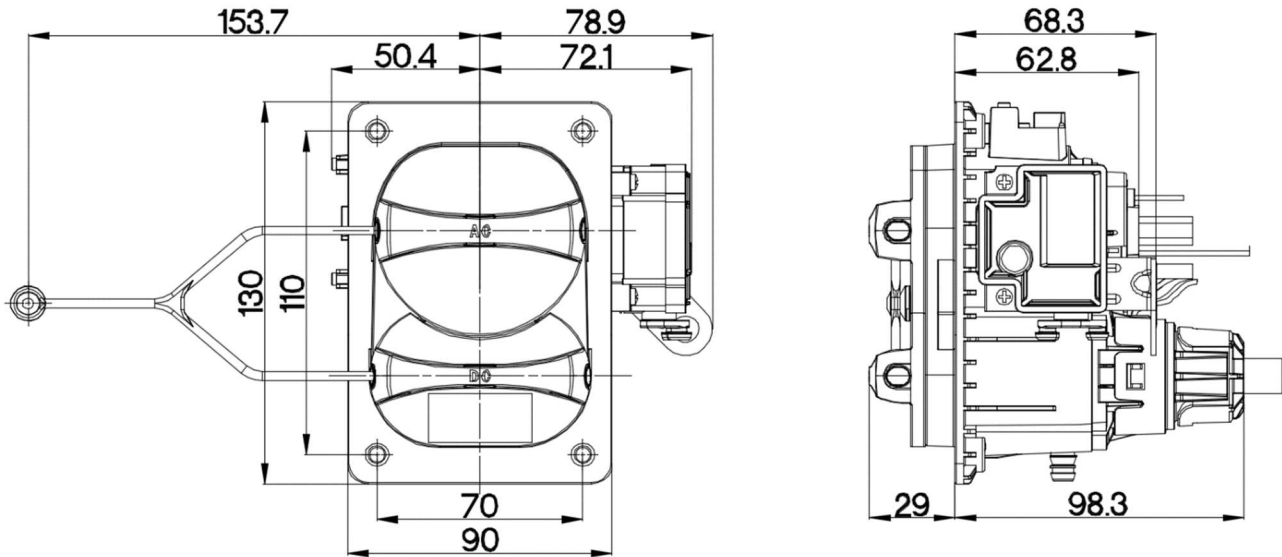
6.1. Left Side Electronic Lock:



6.2. Upper Side Electronic Lock:



6.3. Right Side Electronic Lock:



7. Supporting Accessories

7.1. Electronic locks:

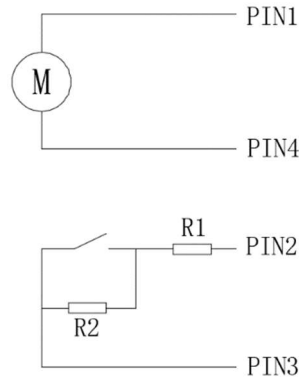
The receptacle is controlled by a motor-style electronic lock to realize the locking function of the vehicle-end plug and vehicle-side receptacle during the charging process.



7.1.1. Performance parameters:

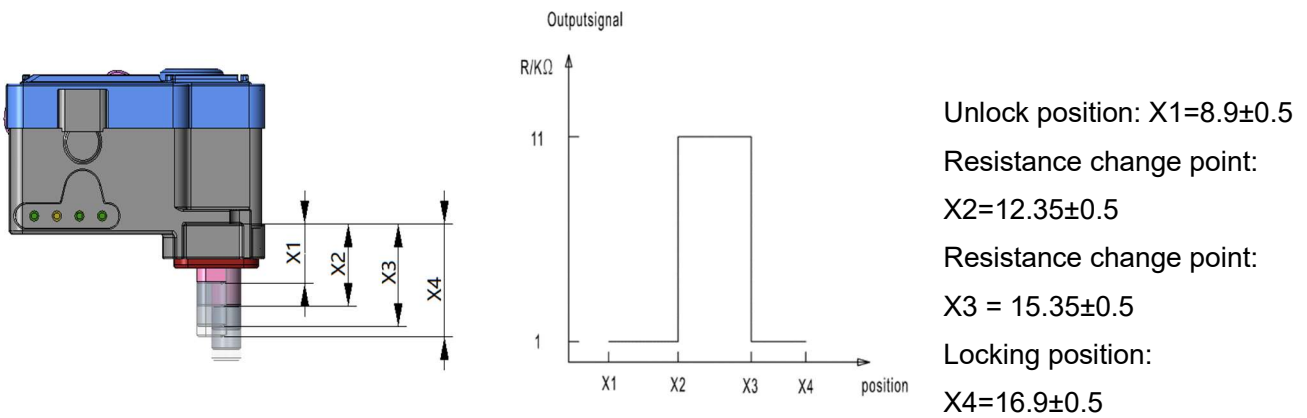
Serial Number	Performance Items	Parameter	Remark
1	Rated Voltage	12V	
2	Operating Voltage	9-16V	
3	Stall Current	≤3.5A	
4	Stall Time	>1min	
5	Lock Tongue Stroke	8mm	
6	Maximum Lockout/Unlock Time	0.6S	
7	Lock Tongue Ejection Force	>50N	
8	Lock Tongue Shear Force	>753N	Based on the installation in the charging dock, tested in with the charging gun
9	Emergency Unlock Pull	<30N	
10	Operating Temperature	-40℃~90℃	
11	Ingress Protection	IP6K9K	Tested together with charging dock assembly
12	Service Life	≥ 60,000 cycles	
13	Outlet Specifications	0.5mm ²	
14	Numbers of Outlet	4 cores or 3 cores	4 cores by default

7.1.2. Circuit Principle:



★ Note: Conventional switching feedback without resistance scheme can be selected according to customer needs.

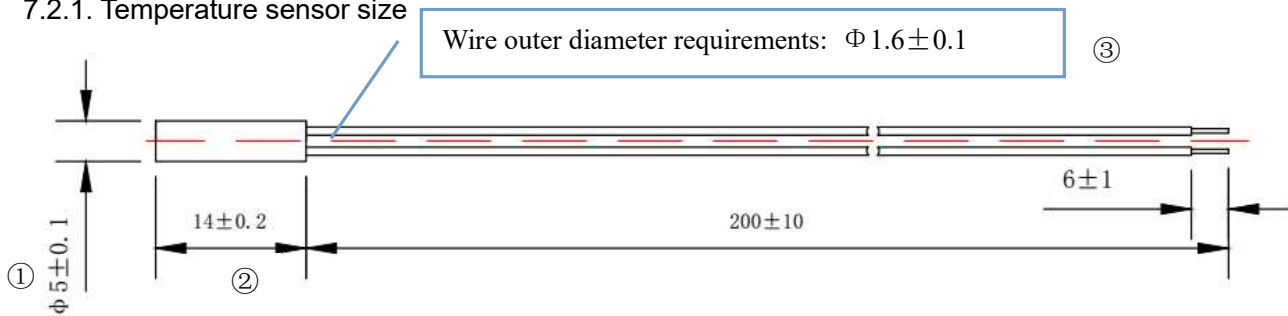
7.1.3. Signal output:



7.2. Temperature Sensors:

The receptacle can choose NTC or PT temperature sensor and cooperate with thermal conductive silica gel as the thermal conductive medium to achieve efficient monitoring of the hot spot temperature of the terminal.

7.2.1. Temperature sensor size



★ Note: (1), (2) and (3) are required sizes, and the rest of the sizes can be customized

7.2.2. Temperature sensor resistance parameters

The recommended NTC temperature sensor (B25/50=3950) has the following 4 temperature point resistances:

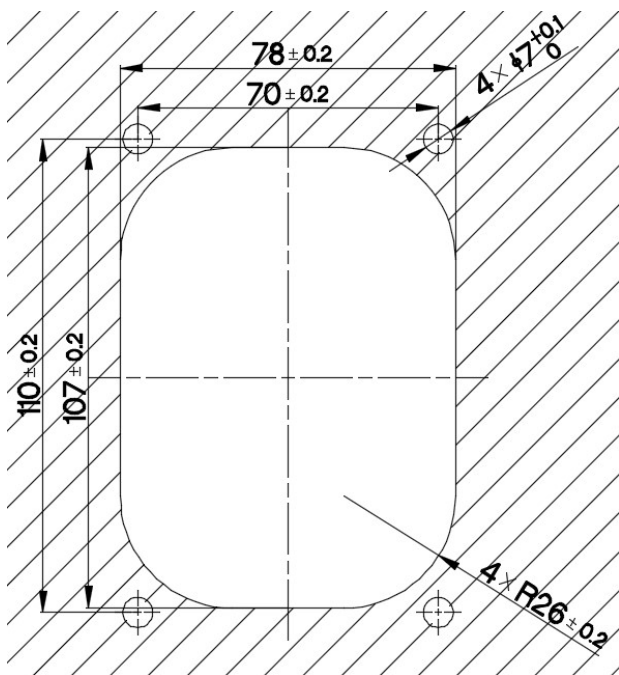
0°C	32.75KΩ	±1.0%
25°C	10.00KΩ	
75°C	1.47KΩ	
100°C	0.67KΩ	

The recommended PT temperature sensor (PT1000) has the following 4 temperature point resistances:

0°C	1000.00Ω	±0.1%
25°C	1097.34Ω	
75°C	1289.85Ω	
100°C	1385.03Ω	

- ★ The above sensor performance is detailed in its specifications.
- ★ The temperature sensor parameter value can be customized according to customer requirements.
- ★ According to the standard, the receptacle selects 4 sensors to be placed on the side of L1 (L1 and L2, if there is L2), N (N and L3, if there is L3), DC+, and DC-. Order with receptacle in a ratio of 1:4 (receptacle: temperature sensor).

8. Installation

Mounting hole size	
Installation:	Rear installation
Adapter screws	M6
Thickness	≤2.5mm
Flatness	0.1mm
Surface roughness	Ra3.2