	Product Name	YG1143AC charging interface	Docu NO.	
	Part NO.	YG1143AC charging interface	Version	A 0.2

YG1143 AC charging interface


Technical Specification

Edited by/Date Xianjing Liu 2022.4.14

Audited by/Date Tong Yu 2022.4.14

Approved by/Date Xiaodong Xiang 2022.4.14

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Changes & Revisions

<input type="checkbox"/> Change <input type="checkbox"/> Revision	Date	Main items	Revised by	Approved by
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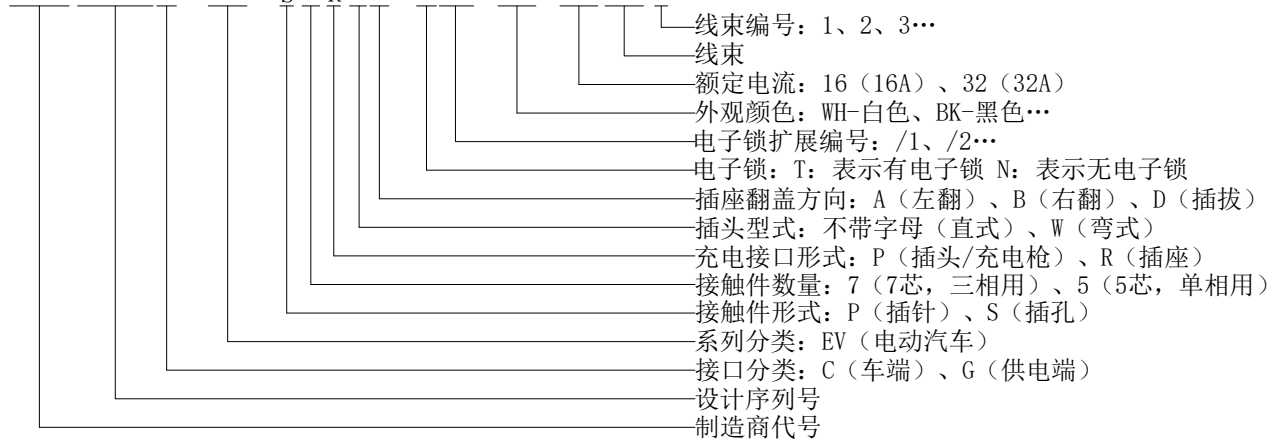
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1.YG1143 AC charging interface model and details

1.1.YG1143 Naming rules for AC charging interface models:

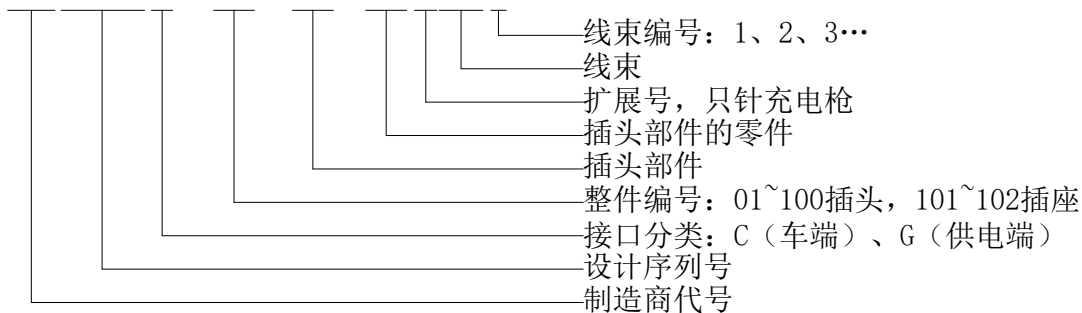
1.1.1.Naming conventions:

YGC 1143C - EV - ^P/_S 7 ^P/_R WA - T/1 - WH - 16 XL 1



1.1.2.Product number naming convention:


YG1143C - 01 - 00 - 00 AXL 1



1.2.YG1143AC charging interface model details (this specification **only** applies to the models in the table below):

1.2.1.Vehicle charging connector:

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No.	Name	Product No.	Port wiring specifications (unit: mm2)							Phase number/color
			L1	L2	L3	N	PE	CC	CP	
1	YGC1143C-EV-P7(5)P-WH-10	YG1143C-01-00-00	1.5	/	/	1.5	1.5	0.75	0.75	1phase/white
2	YGC1143C-EV-P7(5)P-BK-10	YG1143C-02-00-00	1.5	/	/	1.5	1.5	0.75	0.75	1phase/black
3	YGC1143C-EV-P7(5)P-WH-16	YG1143C-03-00-00	2.5	/	/	2.5	2.5	0.75	0.75	1phase/white
4	YGC1143C-EV-P7(5)P-BK-16	YG1143C-04-00-00	2.5	/	/	2.5	2.5	0.75	0.75	1phase/black
5	YGC1143C-EV-P7(5)P-WH-32	YG1143C-05-00-00	6	/	/	6	6	0.75	0.75	1phase/white
6	YGC1143C-EV-P7(5)P-BK-32	YG1143C-06-00-00	6	/	/	6	6	0.75	0.75	1phase/black
7	YGC1143C-EV-P7P-WH-10	YG1143C-07-00-00	1.5	1.5	1.5	1.5	1.5	0.75	0.75	1phase/white
8	YGC1143C-EV-P7P-BK-10	YG1143C-08-00-00	1.5	1.5	1.5	1.5	1.5	0.75	0.75	1phase/black
9	YGC1143C-EV-P7P-WH-16	YG1143C-09-00-00	2.5	2.5	2.5	2.5	2.5	0.75	0.75	1phase/white
10	YGC1143C-EV-P7P-BK-16	YG1143C-10-00-00	2.5	2.5	2.5	2.5	2.5	0.75	0.75	1phase/black
11	YGC1143C-EV-P7P-WH-32	YG1143C-11-00-00	6	6	6	6	6	0.75	0.75	1phase/white
12	YGC1143C-EV-P7P-BK-32	YG1143C-12-00-00	6	6	6	6	6	0.75	0.75	1phase/black

Adaptation cable

No.	Specification	Adaptation cable specifications	Number of pins	OD (unit: mm)	Phase number
1	10A	TPE(3x1.5mm ² +0.75mm ²)	4	Φ13±1	1phase
2	16A	TPE(3x2.5mm ² +0.75mm ²)	4	Φ13±1	1phase
3	10A	TPE(5x1.5mm ² +0.75mm ²)	6	Φ15.5±1	3phases
4	16A	TPE(5x2.5mm ² +0.75mm ²)	6	Φ15.5±1	3phases
5	32A	TPE(3x6mm ² +0.75mm ²)	4	Φ15.5±1	1phase
6	32A	TPE(5x6mm ² +0.75mm ²)	6	Φ19.8±1	3phases


Note

- ★The above are general product models. Please select the wiring according to the wire diameter requirements. If you have any customized needs, please consult our company;
- ★The wiring harness is a customized product and requires specific models based on actual applications. Please contact our company for details;
- ★For 10A charging gun and 16A charging gun wiring harness requirements with 4mm² cable, please contact our company for details.

1.2.2.Vehicle Inlet:

No.	Name	Product No.	Port wiring specifications (unit: mm2)							Ingredients coding
			L1	L2	L3	N	PE	CC	CP	
1	YGC1143C-EV-S5RA-T-10 AC Vehicle Inlet	YG1143C-101-00-00	2.5	/	/	2.5	2.5	0.75	0.75	113990001208
2	YGC1143C-EV-S5RB-T-10 AC Vehicle Inlet	YG1143C-102-00-00	2.5	/	/	2.5	2.5	0.75	0.75	113990001208
3	YGC1143C-EV-S5RA-T-16 AC Vehicle Inlet	YG1143C-103-00-00	2.5	/	/	2.5	2.5	0.75	0.75	113990001243
4	YGC1143C-EV-S5RB-T-16 AC Vehicle Inlet	YG1143C-104-00-00	2.5	/	/	2.5	2.5	0.75	0.75	113990001243
5	YGC1143C-EV-S5RA-T-32 AC Vehicle Inlet	YG1143C-105-00-00	6	/	/	6	6	0.75	0.75	/
6	YGC1143C-EV-S5RB-T-32 AC Vehicle Inlet	YG1143C-106-00-00	6	/	/	6	6	0.75	0.75	/
7	YGC1143C-EV-S7RA-T-16 AC Vehicle Inlet	YG1143C-107-00-00	2.5	2.5	2.5	2.5	2.5	0.75	0.75	/
8	YGC1143C-EV-S7RB-T-16 AC Vehicle Inlet	YG1143C-108-00-00	2.5	2.5	2.5	2.5	2.5	0.75	0.75	/
9	YGC1143C-EV-S7RA-T-32 AC Vehicle Inlet	YG1143C-109-00-00	6	6	6	6	6	0.75	0.75	/
10	YGC1143C-EV-S7RB-T-32 AC Vehicle Inlet	YG1143C-110-00-00	6	6	6	6	6	0.75	0.75	/
11	YGC1143C-EV-S5RAH-T-10 AC Vehicle Inlet	YG1143C-111-00-00	2.5	/	/	2.5	2.5	0.75	0.75	/
12	YGC1143C-EV-S5RBH-T-10 AC Vehicle Inlet	YG1143C-112-00-00	2.5	/	/	2.5	2.5	0.75	0.75	/
13	YGC1143C-EV-S5RAH-T-16 AC Vehicle Inlet	YG1143C-113-00-00	2.5	/	/	2.5	2.5	0.75	0.75	/

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	6AC Vehicle Inlet	0								
14	YGC1143C-EV-S5RBH-T-1 6AC Vehicle Inlet	YG1143C-114-00-0 0	2.5	/	/	2.5	2.5	0.75	0.75	/
15	YGC1143C-EV-S5RAH-T-3 2AC Vehicle Inlet	YG1143C-115-00-0 0	6	/	/	6	6	0.75	0.75	/
16	YGC1143C-EV-S5RBH-T-3 2AC Vehicle Inlet	YG1143C-116-00-0 0	6	/	/	6	6	0.75	0.75	/

Adaptation cable

No.	Cable Specification	Cable core number	OD (unit: mm)				Standard
1	0.75mm ² Unshielded	1	Φ 1.8±0.1				DIN72551-6/ISO6722
2	1mm ² Unshielded	1	Φ 2±0.1				DIN72551-6/ISO6722
3	2.5mm ² Unshielded	1	Φ 3.5±0.15				Q/CT1037-2016
4	6mm ² Unshielded	1	Φ 4.9±0.15				Q/CT1037-2016

Note

- ★The vehicle inlet and the ingredients can be ordered together, the matching ratio is: 1:1;
- ★The above are general product models. Please select the wiring according to the wire diameter requirements. If you have any customized needs, please consult our company;
- ★When CC/CP uses 0.75mm² wire, it can be replaced with 1mm²;
- ★The wiring harness is a customized product and requires specific models based on actual applications. Please contact our company for details.

2. Technical Parameters

2.1. Electrical parameters

Port definition	L1/L2/L3/N				PE				CC	CP
	Wiring specifications (unit: mm ²)	2.5	4	6	16	2.5	4	6	16	0.75
Contact terminal diameter (unit: mm)	Φ 6				Φ 6				Φ 3	Φ 3
Rated working voltage (AC)	250V/440V				/				0~30V	0~30V
Rated working current(AC)	16A	16A	32A	63A	/				2A	2A
Contact resistance	≤0.4m Ω				≤0.4m Ω				≤3m Ω	
Insulation resistance	YG1143 AC plug test after wiring: L1/N/PE/CP are ≥500M Ω (500VDC) between each other; Test the YG1143 AC vehicle inlet after wiring: L1/N/PE/CC/CP are ≥500M Ω (500VDC) between each other;									
Withstand voltage (leakage current: ≤10mA)	YG1143 AC plug test after wiring: L1/N mutually ≥2000V AC 1min; ≥2000V AC 1min between L1/N and PE respectively; ≥1500V AC 1min between L1/N/PE and CP respectively; Test the YG1143 AC vehicle inlet after wiring: ①L1/L2/L3/N/PE mutual withstand voltage ≥2000V AC 1min; ②The withstand voltage between L1/L2/L3/N/PE and CC/CP respectively is ≥1500V AC 1min.									

2.2. Mechanical performance parameters

Mechanical Life: ≥10000 cycle;

Insertion and separation forces: ≤ 100N;


Locking force: ≥200N

2.3. Environmental performance parameters

Before insertion: IP54

After insertion: IP55

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IP67 (Inside the plug, except for the dust cover)

IP67 (At the end of the socket, please be careful to avoid the bending radius of the tail wiring <6x cable OD)

Operating environment temperature: -30℃~+50℃

2.4.Material

Shell: engineering plastic (temperature-resistant PA66 or temperature-resistant PC)

Terminal: copper, surface silver plated

Seal: silicone rubber or elastic

Flame retardant grade of insulation material: UL94 V-0

2.5.Implementation standards

"GB/T 18487.1-2015 Electric Vehicle Conductive Charging System Part 1: General Requirements"

"GB/T 20234.1-2015 Connection devices for conductive charging of electric vehicles - Part 1: General requirements"


"GB/T 20234.3-2015 Connection devices for conductive charging of electric vehicles Part 2: AC charging interface"

3.Electrical principles

3.1.Function definition of each terminal:

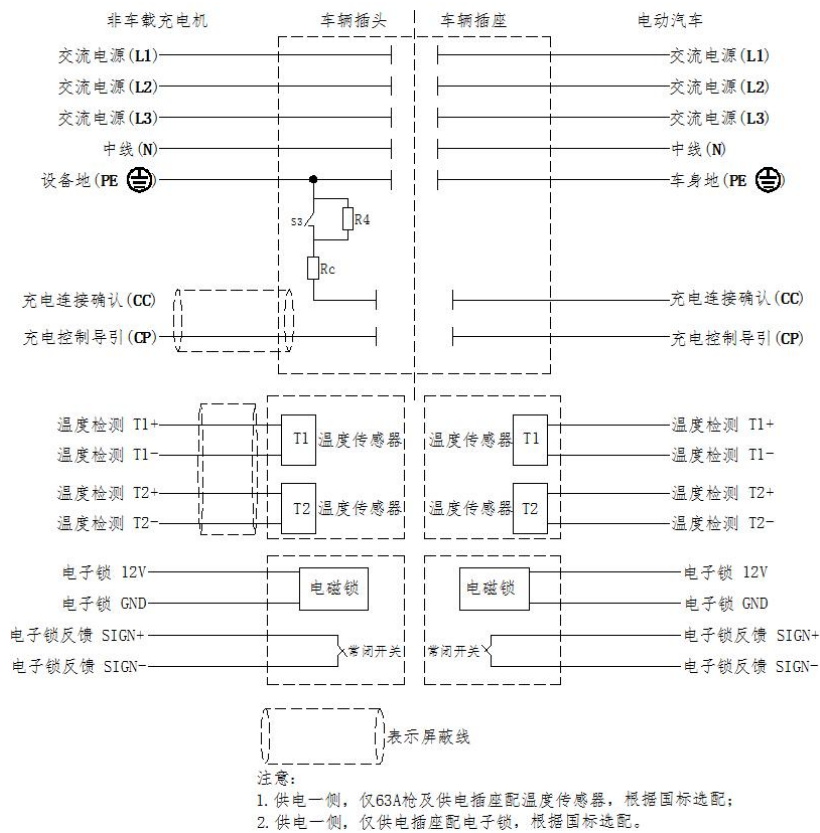
No.	Terminal identification	Function definition
1	L1	AC Power, Live Wire 1
2	L2	AC power, Live Wire 2
3	L3	AC power, Live Wire 3
4	N	AC power, neutral
5	⊕	Protective earth (PE), connect the power supply equipment ground wire and the vehicle body ground wire
6	CC	Charging connection confirmation
7	CP	Control guidance
8	T1+	The temperature sensor on L1 (L1 and L2, if there is L2) side is positive
9	T1-	The temperature sensor on one side of L1 (L1 and L2, if there is L2) is negative.
10	T2+	The temperature sensor on the N (N and L3, if there is L3) side is positive
11	T2-	The temperature sensor on one side of N (N and L3, if there is L3) is negative
★T1- and T2- can be shared		
14	Electronic lock 12V	The electronic lock in the vehicle inlet is positive
15	Electronic lock GND	The electronic lock in the vehicle inlet is negative
16	Electronic lock feedback SIGN+	The electronic lock working (unlocking/locking) feedback in the charging connector is positive
17	Electronic lock	The electronic lock working (unlocking/locking) feedback in the

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feedback SIGN-	charging connector is negative.
★Electronic lock GND and electronic lock feedback SIGN-can be shared	

3.2.Electrical schematic:




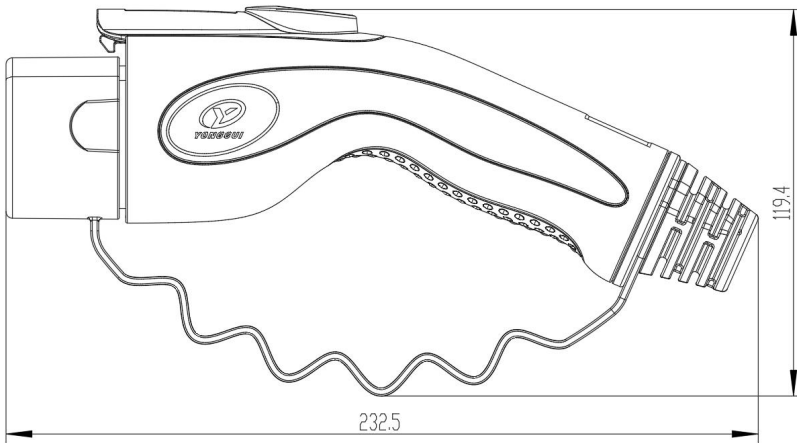
4.Outline drawing and installation opening size

4.1.Vehicle charging connector:




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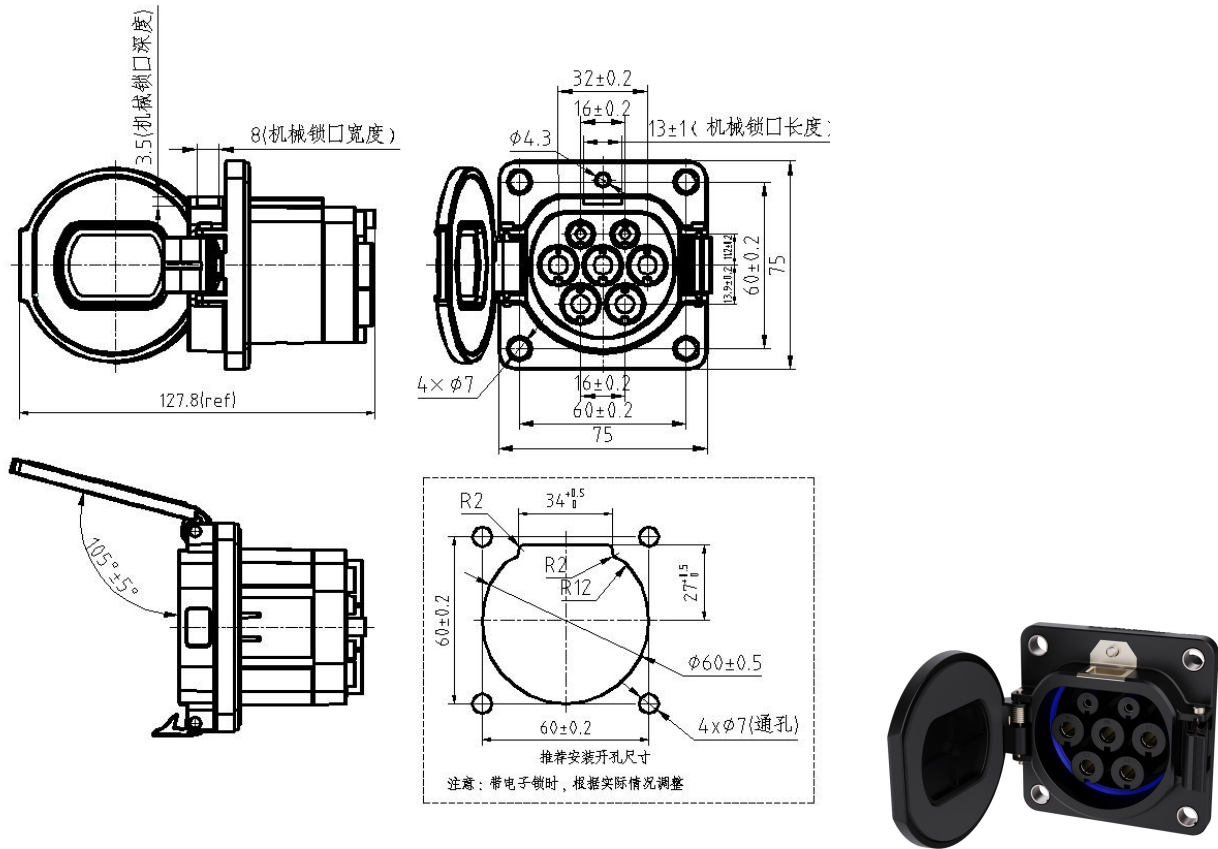
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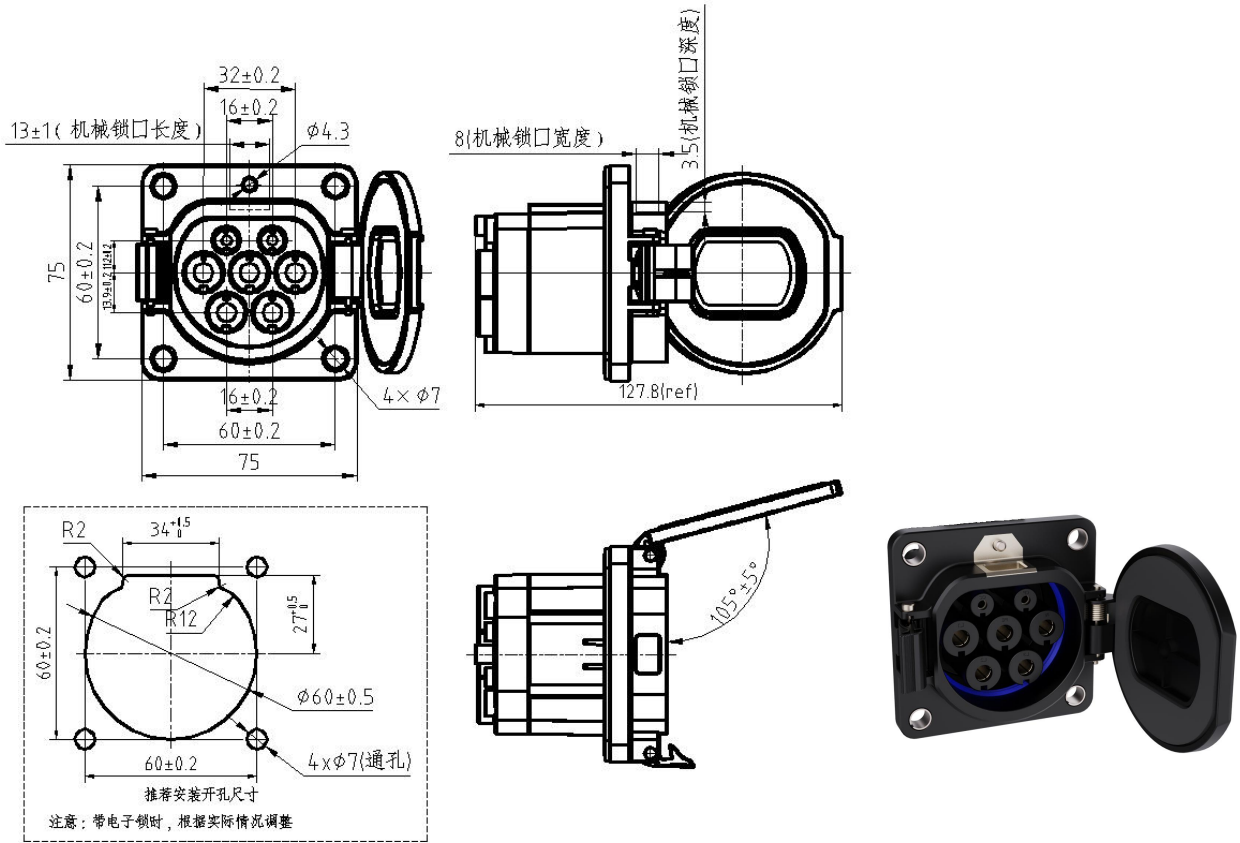
4.2.A C Vehicle inlet (Front loading, left flip cover) :




4.3.A C Vehicle inlet (Front loading, right flip cover) :

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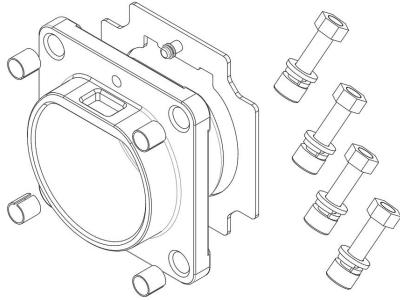
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5. Accessories

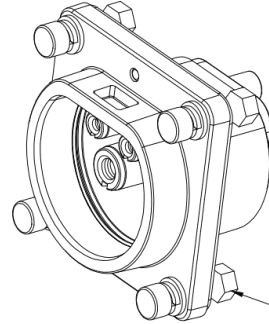
5.1. Vehicle charging connector accessories:

5.1.1. YG1143AC empty seats without electromagnetic lock:



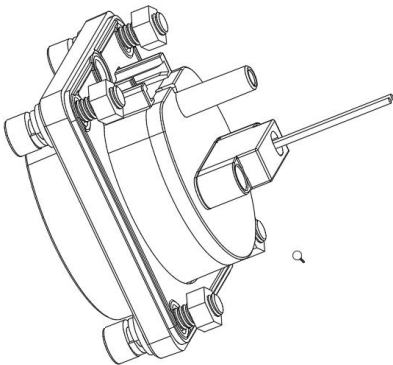
★Part No.: YG1143-201-00-00KR/03
(111000201158)

5.1.2. YG691AC empty seats without electromagnetic lock (optional):



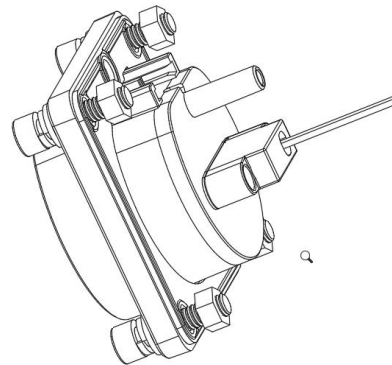
★Part No.: YG691-50-00-00KR
(111000500676)

5.1.3. YG691AC empty seat with detection (normally closed):




★Part No.: YG691-51-00-00/01KR
(112040105191)

5.1.4. YG691AC empty seats with detection (normally open):



★Part No.: YG691-50-00-00/01KR
(111000501693)

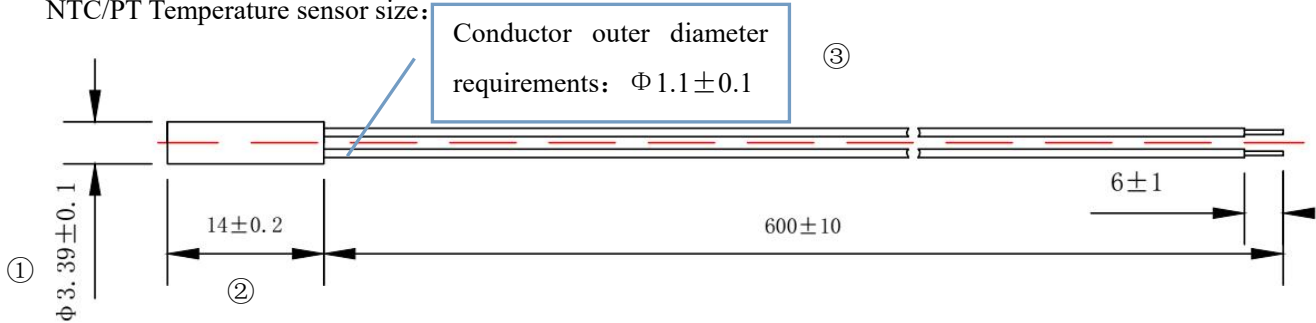
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5.2. Vehicle inlet accessories:

5.2.1. Sensor:

NTC/PT Temperature sensor size:



★Note: ①②③ are required sizes, the other sizes can be customized

★Recommended MT19.NTC01.L202 600 thermal temperature sensor (501021702656), the resistance values of the 4 temperature points are as follows:

温度	对应阻值	精度
0℃	32.75KΩ	±1.0%
25℃	10.00KΩ	
75℃	1.47KΩ	
100℃	0.67KΩ	

★推荐 MT19 PT1000A LA300 200 PT1000 Temperature Sensor(501021702659), The resistance values of the 4 temperature points are as follows:


温度	对应阻值	精度
0℃	1000.00Ω	±0.1%
25℃	1097.34Ω	
75℃	1289.85Ω	
100℃	1385.03Ω	

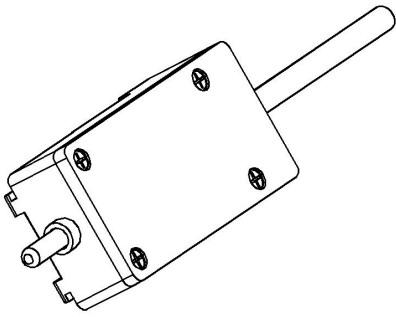
★For details on the performance of the above sensors, please refer to their specifications.:

★According to the standard, the vehicle inlet selects two sensors and places them on the side of L1 (L1 and L2, if there is L2)/N (N and L3, if there is L3). They are ordered together with the vehicle inlet, and the ordering ratio is 1:2 (vehicle inlet: temperature sensor)。

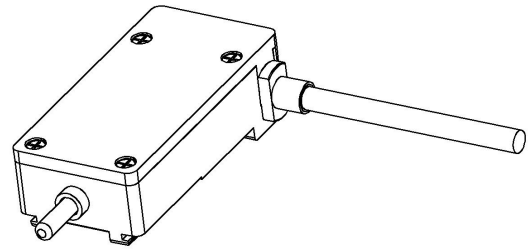
5.2.2. Electronic locks:

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YG196-00-406-00A



YG196-00-406-00B

★Please see the specification for details;

★YG196-00-406-00A and YG196-00-406-00B are ordered together with the vehicle inlet, the ordering ratio is 1:1 (vehicle inlet: electronic lock)。

6. Notes on use:



交流充电接口维护
及检测方法 (通用)


Attached announcement information:

Note:

★The announcement mark corresponds to the "name" of the model table

Announcement mark	Vehicle end or pile end	Electromagnetic lock device	Inspection report number	CQC report number
YGC1143C-EV-P7 (5) P-WH-10	Vehicle	No	QA19EE1XA3301 QA19EF1XA3301	QA20XX1XCK002
YGC1143C-EV-P7 (5) P-BK-10	Vehicle	No		
YGC1143C-EV-P7 (5) P-WH-16	Vehicle	No		
YGC1143C-EV-P7 (5) P-BK-16	Vehicle	No		
YGC1143C-EV-P7 (5) P-WH-32	Vehicle	No		
YGC1143C-EV-P7 (5) P-BK-32	Vehicle	No		
YGC1143C-EV-P7P-WH-16	Vehicle	No	QA21EE1X70071 QA21EF1X70071	/
YGC1143C-EV-P7P-BK-16	Vehicle	No		
YGC1143C-EV-P7P-WH-32	Vehicle	No		
YGC1143C-EV-P7P-BK-32	Vehicle	No		
YGC1143C-EV-S5RA-T-10	Vehicle (front installation)	Yes	QA21EE1X56682 QA21EF1X56682	/
YGC1143C-EV-S5RB-T-10	Vehicle (front installation)	Yes		
YGC1143C-EV-S5RA-T-16	Vehicle (front installation)	Yes		
YGC1143C-EV-S5RB-T-16	Vehicle (front	Yes		

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	installation)			
YGC1143C-EV-S7RA-T-16	Vehicle (front installation)	Yes		
YGC1143C-EV-S7RB-T-16	Vehicle (front installation)	Yes		
YGC1143C-EV-S5RA-T-32	Vehicle (front installation)	Yes		
YGC1143C-EV-S5RB-T-32	Vehicle (front installation)	Yes		
YGC1143C-EV-S7RA-T-32	Vehicle (front installation)	Yes		
YGC1143C-EV-S7RB-T-32	Vehicle (front installation)	Yes		
YGC1143C-EV-S5RAH-T-10	Vehicle (rear installation)	Yes		
YGC1143C-EV-S5RBH-T-10	Vehicle (rear installation)	Yes		
YGC1143C-EV-S5RAH-T-16	Vehicle (rear installation)	Yes	QA18EE1XX9531	/
YGC1143C-EV-S5RBH-T-16	Vehicle (rear installation)	Yes	QA18EF1XX9531	
YGC1143C-EV-S5RAH-T-32	Vehicle (rear installation)	Yes		
YGC1143C-EV-S5RBH-T-32	Vehicle (rear installation)	Yes		

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