

Electric vehicle locking connector (MINI-S50/MINI-S70)

MINI-S50-1Z-M10-TW (Positive Pole) (50 Square)

MINI-S50-1F-M10-TW (Negative Pole) (50 Square)

MINI-S70-1Z-M10-TW (Positive) (70 Square)

MINI-S70-1F-M10-TW (Negative Pole) (70 Square)

Specification Sheet



Change
Record

Version	Content	Date (YYYY/MM/DD)	Producer	Approver
V1	1. Suggested dimensions for the newly added waterproof ring / shielding ring (P. 4)2. Explanation of the coding principle for the newly added traceability code (P.8)	February 15, 2024	You Zhiyuan	Chen Qiuyu



1. Ordering model

Positive electrode model: MINI-S50-1Z-M10-TW (50 square positive electrode), MINI-S70-1Z-M10-TW (70 square positive electrode)

Negative electrode model: MINI-S50-1F-M10-TW (50 square negative electrode), MINI-S70-1F-M10-TW (70 square negative electrode)

1.1 Adapted contact parts

Table 1 Adaptable
Contact Pieces

Serial Number	Name	Model number	Adapter terminal	Adaptive mask retaining r
1	Positive terminal of locking connector 50 square MINI-S50-1Z-M10-TW Z41-JCMB-50-10, negative terminal of locking connector 50 square MINI-S50-1F-M10-TW.			Z41-JCM-5001(16.5)
2				Z41-JCM-5001 (17.0)
3				Z41-JCM-5001(17.5)
4	Locking connector, positive pole, 70 square, MINI-S70-1Z-M10-TW, Z41-JCMB-70-10			Z41-JCM-7001(18.3)
5	Locking connector negative pole 70 square MINI-S70-1F-M10-TW			Z41-JCM-7001 (19.0)
6				Z41-JCM-7001 (19.5)

1.2 Adapter Cable

Table 2 Adapter
Cables

Serial Number	Locking connector model	Adapter cable	Outer diameter of cable (mm)
1	MINI-S50-1Z-M10-TW MINI-S50-1F-M10-TW	50-square millimeter irradiation cross-linked wire with shielding cover	16.5±0.3
2			17.5±0.3
3			17.5±0.3
4	MINI-S70-1Z-M10-TW MINI-S70-1F-M10-TW	70-square millimeter irradiation cross-linked wire with shielding cover	18.3±0.4
5			19.5±0.4
6			19.5±0.4

2. Product Description

Basic information: The MINI-S locking connector is used for power (output/input) connection in electric vehicles, and is suitable for terminal harness connection in high-voltage boxes, battery boxes, etc. It features quick installation and low cost. The product has positive and negative pole markings, with 1Z and 1F in the model corresponding to the positive and negative poles respectively.

Protection grade:
IP67

Operating temperature: -
40 to +125°C

Material flame retardancy:
UL94 V0

The terminals are fixed to the internal threaded section with M10 bolts (with anti-loosening spring washers and flat washers added). The tightening torque for M10 bolts is 23-25 N·m. For connection with the box, cross recessed hexagon M4 bolts are recommended (the suggested upper limit of the tightening torque

3. Product performance

3.1 Electrical Characteristics

Item number	Specification	Parameter
1	Rated current	250A; (Different cable sizes have different currents.)
2	Working voltage	750V DC
3	Withstand voltage	3000V DC
4	Insulation resistance	≥ 5000 MΩ (at normal temperature); ≥ 50 MΩ (under damp heat)

3.2 Materials and Surface Treatment

Item number	Specification	Parameter
1	Shell material	Nylon PA66 + GF25
2	Production process	Compression molding
3	Sealing ring	Silicone rubber
4	Production process	Compression molding

3.3 工作環境

Item number	Specification	Parameter
1	ambient temperature	-40°C to 125°C
2	Humidity	At 40°C, relative humidity 95% (RH)

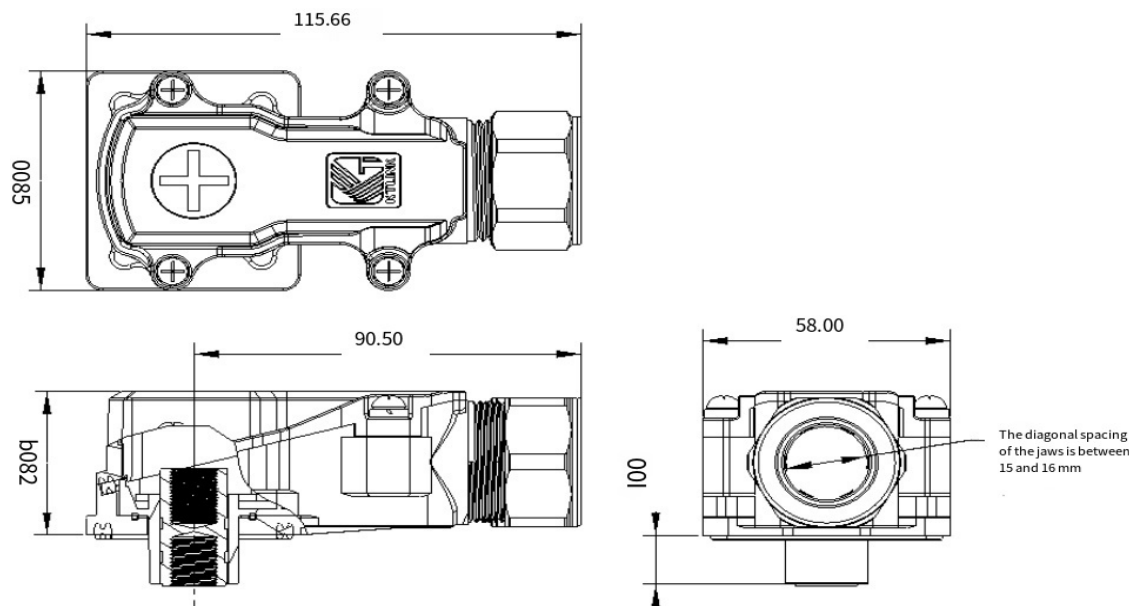
4. Product-related images



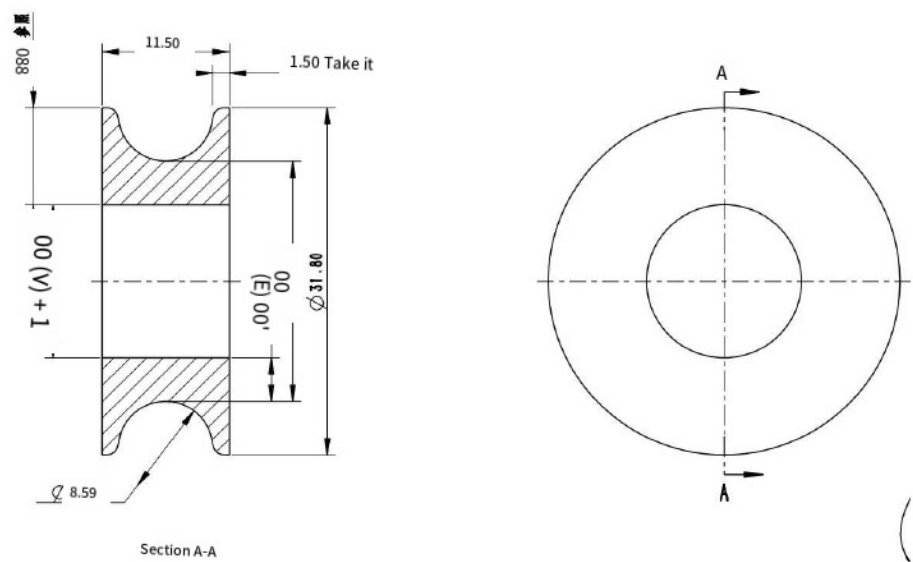
Figure 1 Appearance
Diagram of Terminal
Connector

(The left picture shows MINI-S -1Z-M10-TW (positive pole), and the right picture shows MINI-S -1F-M10-TW (negative pole).)

5. Dimensions



The following figure shows the inner diameter dimensions of the tail waterproof rings of different models in their uncompressed state.

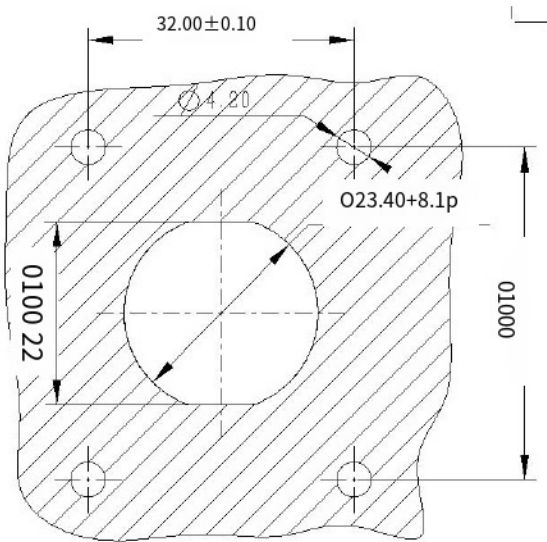


序号(S/N)	A	B	料号(Material number)	压接大小(Crimp size)	颜色(colour)
1	21.3	3.5	F52-SJP-7004	压接70平方(Crimp 70 square)	橙色(orange)
2	20.0	3.5	F52-SJP-0004	压接50平方(Crimp 50 square)	黑色(black)
3	14.0	4.0	F52-SJP-3504	压接35平方(Crimp 35 square)	蓝色(blue)



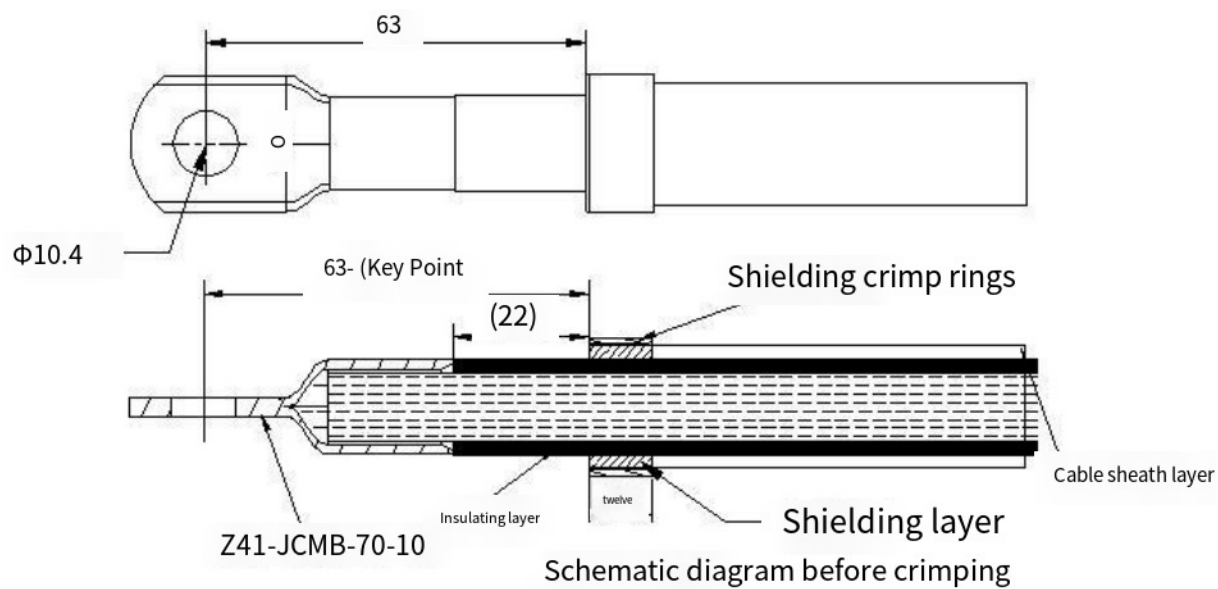
6. Installation
hole position

The recommended dimensions for the relative position of the opening are: 40mm in diameter and 32mm in length. The bolt is a cross recessed hexagon socket M4. The surface roughness of the box body is recommended to be Ra1.6μm.



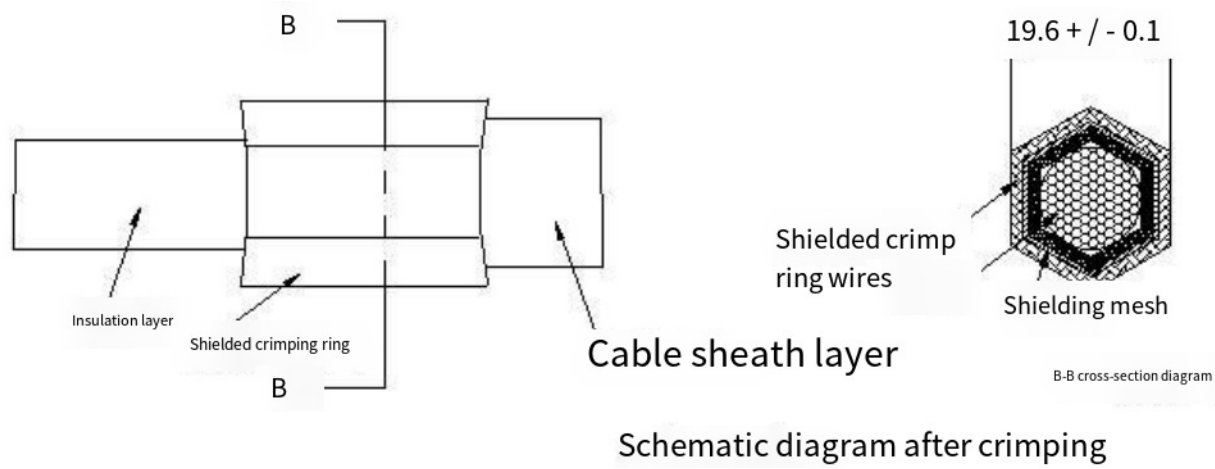
7. Install the mask

7.1 (70 square crimping dimension requirements) After crimping the terminal, it should be covered with a heat shrink tube of the corresponding color for protection.

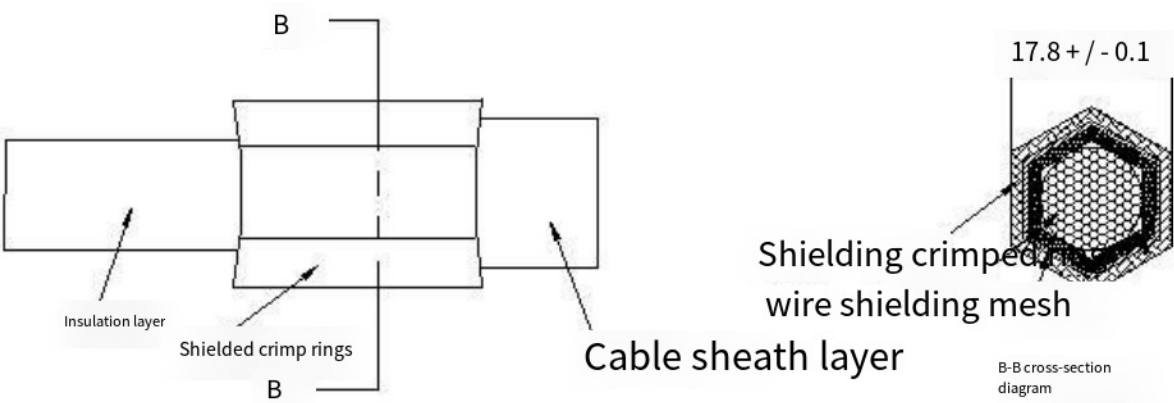
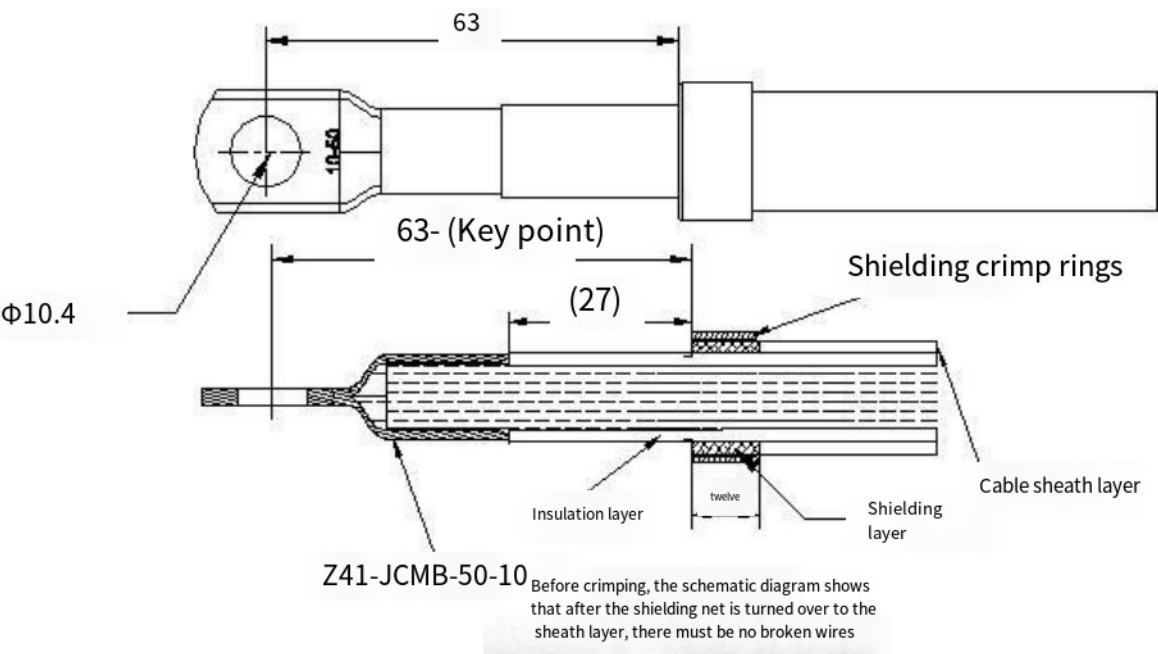


There must be no broken wires after the shielding net is turned over to the sheath layer

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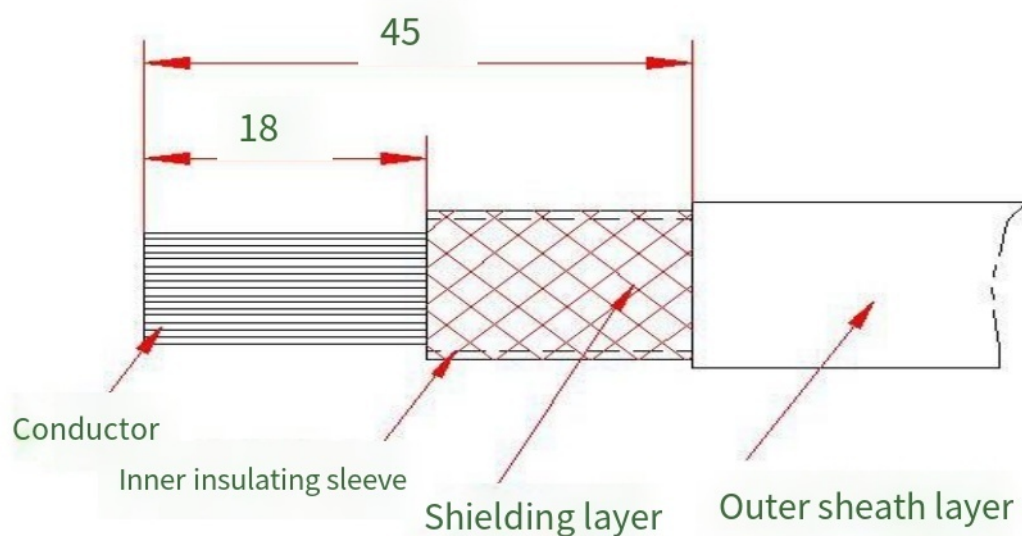


7.2 (50 square crimping dimension requirements) After crimping the terminal, a heat shrink tube of the corresponding color should be slipped over it for protection.



Schematic diagram after crimping

50 square stripping size (reference) suitable wire diameter
Optional: 17.5 ± 0.3 , 17.0 ± 0.3 , 16.5 ± 0.3



70 square stripping size (reference) suitable wire diameter
 19.5 ± 0.4 , 19 ± 0.4 , 18.3 ± 0.3 are optional

