

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	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

Version: V0



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

	Number Name	Model number	Adapter terminal	Adaptive mask retaining ri
1	Positive terminal of locking connection	tor 50 square MINI-S50-1Z-	M10-	Z41-JCM-5001(16.5)
2	Positive terminal of locking connec TW Z41-JCMB-50-10, negative t square MINI-S50-1F-M10-TW.	erminal of locking connecto	1 50	Z41-JCM-5001 (17.0)
3				Z41-JCM-5001(17.5)
4	Locking connector, positive pole, 7	0 square, MINI-S70-1Z-M10	-TW, Z41-JCMB-70-10	Z41-JCM-7001(18.3)
5	Locking connector negative pole 7	square MINI-S70-1F-M10-	rw	Z41-JCM-7001 (19.0)
6				Z41-JCM-7001 (19.5)

1.2 Adapter Cable

Table 2 Adapter Cables

Serial NumberLocking connector model		Adapter cable	Outer diameter of cable (m	
1	MAINIL CEO 17 MAIO TWA		16.5±0.3	
2	MINI-S50-1Z-M10-TW MINI-S50-1F-M10-TW	50-square millimeter irradiation cross-lin	ked wire wi thy shile blin g cover	
3			17.5±0.3	
4	MINI 670 17 M10 TW		18.3±0.4	
5	MINI-S70-1Z-M10-TW MINI-S70-1F-M10-TW	70-square millimeter irradiation cross-li	nked wire w ith % ∺i⊗e ing cover	
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 nun	nbSeprecification	Parameter
1	Rated current	250A; (Different cable sizes have different currents.)
2	Working voltage	750V DC
3	Withstand voltage	3000V DC
4	Insulation resistance	\geqslant 5000 M Ω (at normal temperature); \geqslant 50 M Ω (under damp heat)

Version: V0



3.2 Materials and Surface Treatment

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

4. Product-related images



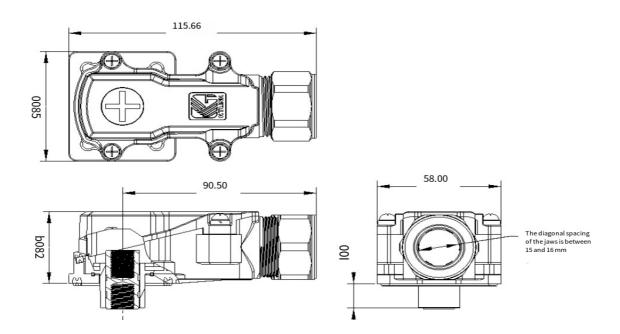


Figure 1 Appearance Diagram of Terminal Connector

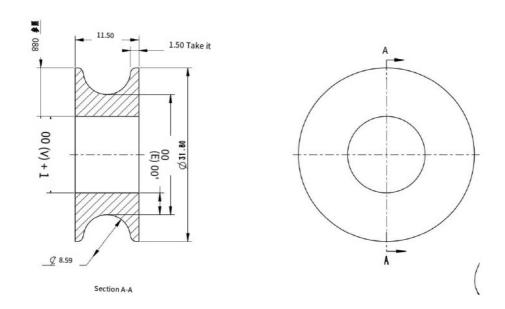
(The left picture shows MINI-S -1Z-M10-TW (positive pole), and the right picture shows MINI-S -1F-M10-TW (negative pole).)

Version: V0

5. Dimensions



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

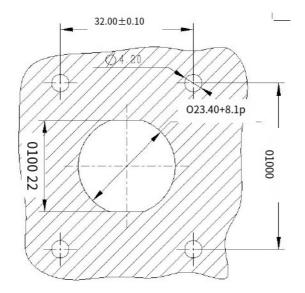


序号(3/N)	A	В	料号(Material number)	压接大小(Crimp size)	顏色(colour)
1	21.3	3.5	F52-8JP-7004	压接70平方(Crimp 70 square)	橙色(orange)
2	20.0	3.5	F52-SJP-0004	压接50平方(Crimp 50 square)	黑色(black)
3	14.0	4.0	F52-SJP-3504	压接35平方(Crimp 35 square)	蓝色(blue)

Version: V0

6. **Installation** hole position

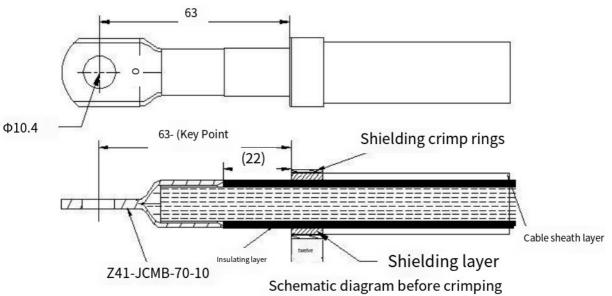
The recommended dimensions for the relative position of the opening are: 40mm in diameter and 32mm in length. The bolt is a cross recessed hexagon socket M4. The surface roughness of the box body is recommended to be Ra1.6µm.



Version: V0

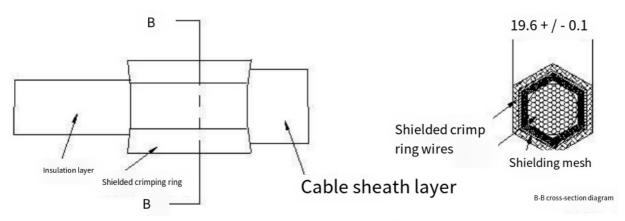
7. Install the mask

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

Space - Mingliu 12

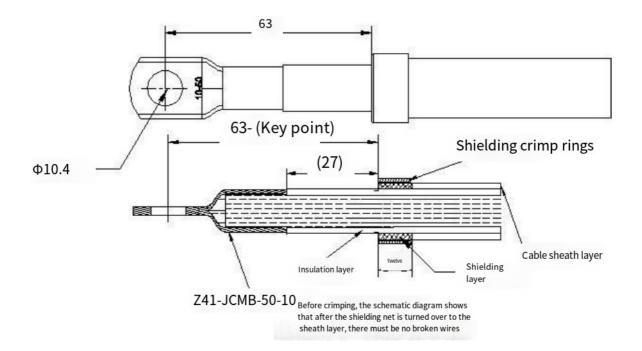


Schematic diagram after crimping

Version: V0



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.



Shielding crimped wire shielding mesh

Cable sheath layer

B

17.8+/-0.1

Shielded crimp rings

Cable sheath layer

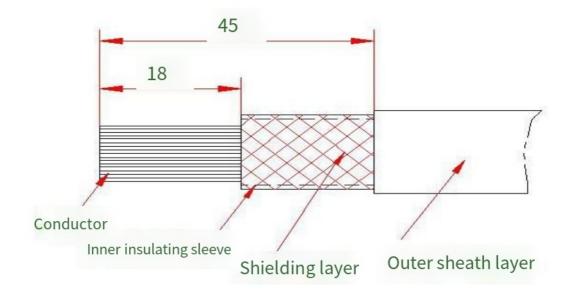
B-B cross-section diagram

Schematic diagram after crimping

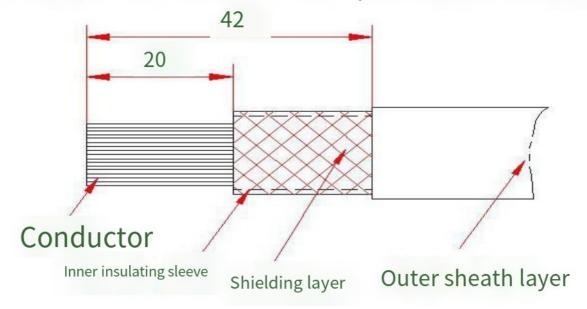
Version: V0



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 $19.5\pm0.4,\,19\pm0.4,\,18.3\pm0.3$ are optional



Version: V0



8. Finished product traceability code encoding principles:

Company abbreviation + production date code + batch production number + place of origin



Year	Code	Year	Code	Year	Code	Year	Code	Year	Code
2020	1	2021	2	2022	3	2023	4	2024	5
2025	6	2026	7	2027	8	2028	9	2029	Α
Month	Code	Month	Code	Month	Code	Month	Code	Month	Code
January	1	April	4	July	7	October	A		
February	2	May	5	August	8	November	В		
March	3	June	6	September	9	December	С		
Date	Code	Date	Code	Date	Code	Date	Code	Date	Code
1	1	8	8	15	F	22	M	29	Т
2	2	9	9	16	G	23	N	30	U
3	3	10	Α	17	Н	24	0	31	V
4	4	11	В	18	1	25	Р		
5	5	twelve	С	19	۷	26	Q		
6	6	13	D	20	К	27	R		
7	7	fourteen	E	21	L	28	S		

8.1 Date Coding Principles:

This code consists of three digits or letters. It is compiled with reference to the date code reference table listed above, and the composition rule is as follows: year code + month code + date code. For example, "12A" represents February 10, 2020.

8.2 Coding marking method: Laser engraving

8.3 Note Location:



Version: V0