

## Technical Report No.: 64.105.23.30286.01

Date: 2023-05-06

Client: Report holder's name: Shenzhen Forman Precision Industry Co., Ltd

Report holder's Address: No.39-101, Taixing Factory, Gongchang Rd 250 Loucun Community, Xihu Street Guangming District 518107 Shenzhen PEOPLE'S REPUBLIC OF CHINA

Contact person of report holder: Jianming Yao

Manufacturer's name: Same as report holder

Manufacturer's address: Same as report holder

Factory: Factory's name: Same as report holder

Factory's address: Same as report holder

Test object: Product: Connector (Energy storage system connector)

Model: A083 series

Trade mark: **FPIC**

Test specification: PPP 51090B:2023

Purpose of examination:

- Testing (visual / partial) for compliance with specified requirements to assess conformity with the essential safety and health requirements of the following European Directives
  - Low Voltage Directive 2014/35/EU
- Testing and evaluation (visual / partial) according to the test specification

Test result: The test results show that the presented product is in compliance with the above listed test specifications.

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## 1. Description of the test object

### 1.1 Function

Energy storage system connector

Manufacturer's specification for predictive use:

The foreseeable use by manufacturer according to user manual.

### 1.2 Consideration of the foreseeable use

- Not applicable
- Covered through the applied standard
- Covered by the following comment\*
- Covered by attached risk analysis

### 1.3 Technical Data

Item	Specification
Rated current (At 25°C):	See table 1
Rated voltage:	1500VDC
Rated insulation voltage:	1500V
Number of poles:	1
Rated impulse voltage:	10kV
Overvoltage category:	III
Pollution degree:	3
IP code:	IP67(after proper mated)
Temperature range (LLT-ULT):	-40°C to +125°C
Type of terminals:	See table 1
Connectable conductors:	flexible
Number of bendings /flexings:	10
Wire cross-section area:	See table 1
Number of operating cycles/mechanical endurance:	100

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Number of operating cycles/electrical endurance:	N/A
Glow-wire test:	850°C
Ball-pressure test:	125°C
PTI:	175V
Classification:	
According to protection against electric shock:	<input type="checkbox"/> unenclosed connector <input checked="" type="checkbox"/> enclosed connector
According to the style:	<input checked="" type="checkbox"/> fixed connector (male connectors) <input checked="" type="checkbox"/> free connector (female connectors)
According to additional characteristics:	<input type="checkbox"/> with protective earthing contact <input checked="" type="checkbox"/> without protective earthing contact
	<input type="checkbox"/> with breaking capacity (CBC) <input checked="" type="checkbox"/> without breaking capacity (COC)
	<input type="checkbox"/> with interlock <input checked="" type="checkbox"/> without interlock
	<input checked="" type="checkbox"/> non-rewirable connector for female connector and male connectors with crimped terminal. <input checked="" type="checkbox"/> rewirable connector for Male connector without crimped terminal product
	<input type="checkbox"/> with cable clamp <input checked="" type="checkbox"/> without cable clamp

Remark:

Table 1: Detail information for different models

Female connector	Rated current (A)	Connect wire (mm <sup>2</sup> )	Mated Male connector	Rated current (A)	Connect wire (mm <sup>2</sup> )	Type of terminal for male connectors
A083-1F10-C035N-0A01	150	35	A083-2M10-A010B-0A01	150/	35/ 50/	Screw
A083-1F10-C050N-0A01	200	50	A083-2M10-A010F-0A01 A083-2M10-B010B-0A01 A083-2M10-B010F-0A01 A083-2M10-D010B-0A01	200/ 300	70	
A083-1F10-C070N-0A01	300	70	A083-2M10-D010F-0A01 A083-2M10-E010B-0A01 A083-2M10-E010F-0A01			Crimped
A083-1F10-C070N-0A01	300	70	A083-2M10-C070B-0A01 A083-2M10-C070F-0A01	300	70	

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A083-1F10-C035N-5A01	150	35	A083-2M10-A010B-5A01 A083-2M10-A010F-5A01	150/ 200/	35/50/ 70	Screw
A083-1F10-C050N-5A01	200	50	A083-2M10-B010B-5A01 A083-2M10-B010F-5A01	300		
A083-1F10-C070N-5A01	300	70	A083-2M10-D010B-5A01 A083-2M10-D010F-5A01 A083-2M10-E010B-5A01 A083-2M10-E010F-5A01			
A083-1F10-C070N-5A01	300	70	A083-2M10-C070B-5A01 A083-2M10-C070F-5A01	300	70	Crimped
A083-1F10-C035N-6A01	150	35	A083-2M10-A010B-6A01 A083-2M10-A010F-6A01	150/ 200/	35/50/ 70	Screw
A083-1F10-C050N-6A01	200	50	A083-2M10-B010B-6A01 A083-2M10-B010F-6A01	300		
A083-1F10-C070N-6A01	300	70	A083-2M10-D010B-6A01 A083-2M10-D010F-6A01 A083-2M10-E010B-6A01 A083-2M10-E010F-6A01			
A083-1F10-C070N-6A01	300	70	A083-2M10-C070B-6A01 A083-2M10-C070F-6A01	300	70	Crimped
Remark: The type of terminals for female connectors is crimped terminal.						

**Description the rule of the designation of connectors:**

A083 - 1F10 - C035N- 0 A 01

I II III IV

I – Basic series designation

A083: A083 series

II – Type of connectors

1F: Female connectors

III – Connect wire

35: 35mm<sup>2</sup>

50: 50mm<sup>2</sup>

70: 70mm<sup>2</sup>

IV – The color of the connector

0: Black

5: Red

6: Orange

A083 - 2M10 - D010F- 0 A 01

I II III IV

I – Basic series designation
A083: A083 series
II – Type of connectors
2M: Male connectors
III – The type terminal and type for fix cover
A010B: Internal thread screw terminal and fix backward cover
A010F: Internal thread screw terminal and fix forward cover
B010B: External thread screw terminal and fix backward cover
B010F: External thread screw terminal and fix forward cover
C070B: 70mm <sup>2</sup> crimped terminal and fix backward cover
C070F: 70mm <sup>2</sup> crimped terminal and fix forward cover
D010B: Copper bar with thread hole and fix backward cover
D010F: Copper bar with thread hole and fix forward cover
E010B: Copper bar with hole and fix backward cover
E010F: Copper bar with hole and fix forward cover
IV – The color of the connector
0: Black
5: Red
6: Orange

## 2. Order

### 2.1 Date of Purchase Order, Customer's Reference

2023-01-04

### 2.2 Test Sample(s)

- Reception date(s): 2023-02-22  
TÜV SÜD Certification and Testing (China) Co., Ltd. Guangzhou Branch, TÜV SÜD Group 5F, Communication Building, 163 Pingyun Rd, Huangpu Ave. West, Guangzhou, 510656, P.R.China
- Location(s) of reception:
- Condition of test sample(s): Completed and can be normal operation

## 2.3 Date(s) of Testing

2023-02-22 to 2023-05-06

Only for the tests of AA4-AA6, DD1-DD4, D4, E3  
Guangdong U.K Standard Testing Co.,Ltd  
Building E, Nanpu Technology Innovation Center,  
Banshi, Changping, Dongguan, Guangdong, China  
All the tests except the tests of AA4-AA6, DD1-  
DD4, D4, E3

## 2.4 Location(s) of Testing

TüV SÜD Certification and Testing (China) Co.,  
Ltd. Guangzhou Branch  
TüV SÜD Testing Center, D1 building, No. 63  
Chuangqi Road, Shilou Town, Panyu District,  
Guangzhou 511447, China

## 2.5 Points of Non-Compliance or Exceptions of the Test Procedure

- None

## 3. Test Results

Decision rule according to [ILAC-G8:09/2019 clause 4.2.1](#) or IEC Guide 115:2021, clause 4.4.3, 4.5.1 was applied.

### 3.1 Positive Test Results

Test specification(s)	Report no. / Rev. No.	Date	Remark
Electrical safety:	64.105.23.30286.01 Rev.00	2023-05-06	N/A

### 3.2 Points of Non-Compliance according to the test specification

- None

## 4. Remarks

### 4.1 General

The user manual has been examined according to the minimum requirements described in the product standard. The manufacturer is responsible for the accuracy of further particulars as well as of the composition and layout.

## 4.2 Factory surveillance cycle

Your production facility is currently on a

- Annual (12 month)
  - Bi-Annual (6 month)
  - Quarterly (3 month)
- surveillance cycle.

## 4.3 Additional information for routine tests to be performed by the factory(ies)

### Routine tests for electrical appliances / equipment:

Routine test requirements for production are described in PPP 51090B:2023. Please refer to CDF for detailed information about routine test.

- 4.4 When the product is placed on the market, it must be accompanied with safety Instructions written in official language of the country. The instructions shall give information regarding safe operation, installation and maintenance.
- 4.5 When measurement results are close to limit value of specified requirement, manufacturer shall take actions during the production process to keep the limit, especially if the result of a measurement is in a bandwidth within  $\pm 10\%$  to the limit value.

## 5. Documentation

File	File name	Date
Data form (CDF):	64.105.23.30286.01_CDF	2023-05-06
Photo documentation:	64.105.23.30286.01_DOC	2023-05-06

## 6. Summary

“The test specification(s) is (are) met.

# Technical Report



Product Service

## TÜV SÜD Certification and Testing (China) Co., Ltd. Guangzhou Branch TÜV SÜD Group

Tested by:

Anna Wang, Product Tester

Approved by:

Guihua Yu, Reviewer



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