



TEST REPORT



KERI



한국전기연구원
KOREA ELECTROTECHNOLOGY
RESEARCH INSTITUTE

INFORMATION SHEET

KERI(Korea Electrotechnology Research Institute) issues a Type Test Certificate and a Test Report as below.

1. Type Test Certificate

A Certificate contains a record of a series of type tests carried out strictly in accordance with IEC, and/or regional standard and national standard that are identical to IEC standard. The test object has fulfilled the requirements of this standard and the relevant ratings assigned by the manufacturer are endorsed by KERI. The Certificate is applicable only to the test object. KERI is responsible for the validity and the contents of the Certificate. The responsibility for conformity of any apparatus having the same designation as the one tested rests with the manufacturer. The certificate contains the essential drawings and a description of the equipment tested. Detailed rules are given in KERI's Type Test Certification Procedure.

2. Test Report

2.1 Type Test Report

A Type Test Report contains a record of a series of type tests carried out strictly in accordance with a standard recognized by KERI. The test object has fulfilled the requirements of this standard and the relevant ratings assigned by the manufacturer are endorsed by KERI. The Type Test Report is applicable only to the test object. KERI is responsible for the validity and the contents of the Type Test Report. The responsibility for conformity of any apparatus having the same designation as the one tested rests with the manufacturer. The Type Test Report contains the essential drawings and a description of the equipment tested. Detailed rules are given in KERI's Test Procedure.

2.2 Performance Test Report

A Performance Test Report contains a record of one or more tests which have been carried out according to a recognized standard and/or the client's instructions. These tests are not necessarily in accordance with a recognized standard. The test results do not verify ratings of the test object. Detailed rules are given in KERI's Test Procedure.

KERI issues three types of Performance Test Report.

2.2.1 The tests have been carried out strictly in accordance with a recognized standard. The test object has complied with the relevant requirements.

This sentence will appear on the front page of Performance Test Report if the tests have been performed in accordance with a recognized standard, but the series of tests does not completely fulfil the requirements for a Certificate of Compliance (for example, if the number of test series is not a complete series of type tests). The Report contains verified drawings and a description of the test object. The condition of the test object after the tests is assessed and recorded in the Report.

2.2.2 The tests have been carried out in accordance with the client's instructions. Test procedure and test parameters were based on a recognized standard.

This sentence will appear on the front page of Performance Test Report if the number of test duties, the test procedure and the test parameters are based on a recognized standard and related to the ratings assigned by the manufacturer. Verification of the drawings (if submitted) and assessment of the condition after the tests is only done on the client's request.

2.2.3 The tests have been carried out according to the client's instructions.

This sentence will appear on the front page of Performance Test Report if the test shots, test procedure and/or test parameters are not in accordance with a recognized standard.

3 KERI is a member of STL(Short-circuit Testing Liaison) and the accredited testing laboratory under Clause 2 of Article 2 in "Guidelines on certified testing criteria and methods for electrical equipment" (Public Notice No. 2008-120, Ministry of Knowledge Economy, Korea).



TEST REPORT

2013TS03269

1/16

CLASSIFICATION Type Test

TEST OBJECT Heat shrinkable cable termination

DESIGNATION THSY-1/4(3+1).4
0.6/1.0(1.2) kV 3C×300 mm² + 1C×150 mm² Type I

RECEIPT No. TRD13S00643 (February 18, 2013)

APPLICANT SHANGHAI JIAMENG INTERNATIONAL TRADING Co., Ltd.
No.346 Qinwan Road, Jinshanwei Town, Jinshan District, Shanghai,China

MANUFACTURER JIANGSU JIAMENG ELECTRICAL EQUIPMENT Co., Ltd.
No.5 Zhongli Road,Binhai Industrial Zone, Qidong City, Jiangsu Province, China

DATE OF TESTS May 13, 2013 ~ October 10, 2013

DATE OF ISSUE November 13, 2013

The test object, constructed in accordance with the description, essential drawings and photographs incorporated in this Type Test Report has been subjected to the series of proving tests in accordance with

BS EN 50393:2006

This Type Test Report has been issued by KERI.

The results are shown in the record of Proving Tests and the oscillograms attached hereto. The values obtained and the general performances are considered to comply with the above Standard and to justify the ratings assigned by the manufacturer as listed on page No. 3.

The Type Test Report applies only to the test object. The responsibility for conformity of any apparatus having the same designations with that tested rests with the Manufacturer.

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TOTAL No. OF PAGES(16) : records (8), photographs (2), circuit diagrams (0), drawings & descriptions (2), attachments(2), oscillograms (2)



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Tested by :

Kim Ji-hwan

KERI

Witnessed by :

Zhangjie Tang

SHANGHAI JIAMENG INTERNATIONAL TRADING Co., Ltd.

Kristall Liu

JIANGSU JIAMENG ELECTRICAL EQUIPMENT Co., Ltd.

Drawings :

The manufacturer guarantees that the test object submitted is manufactured in accordance with the following drawings. KERI verified that these drawings adequately represented the test object.

The following drawing is included in this test report.

Reference No.	Drawing No.	Revision No.	Date
001	CAK-300BS-12	B1	2013.05.14
002	CAK-150A-12	B1.0	2013.03.27

**Heat shrinkable cable termination**

Applied standard BS EN 50393:2006
Manufacturer JIANGSU JIAMENG ELECTRICAL EQUIPMENT Co., Ltd.
Designation THSY-1/4(3+1).4
Date of manufacture May 1, 2013

Cable used for testing

Conductor Stranded aluminium
Insulation XLPE
Rated voltage $U_0/U(U_m)$ 0.6/1.0(1.2) kV
Nominal cross-sectional area $3C \times 300 \text{ mm}^2 + 1C \times 150 \text{ mm}^2$
Number of cores 4

Ratings of the test object assigned by manufacturer and proved by tests :

Rated voltage $U_0/U(U_m)$ 0.6/1.0(1.2) kV
Nominal cross-sectional area $3C \times 300 \text{ mm}^2 + 1C \times 150 \text{ mm}^2$
Number of cores 4
Type of termination I

Ratings of the test object assigned by manufacturer :

Terminal lug material Bimetal (Al / Cu)

**List of the tests**

Test items	Standard and clauses	Test date	Sheet No.
1 AC voltage withstand test in air	BS EN 50393 8.3	May 13, 2013	5/16
2 Insulation resistance test in air	BS EN 50393 8.4	May 13, 2013	5/16
3 Heating cycle test in air	BS EN 50393 8.6	July 12, 2013 ~ Aug. 3, 2013	6/16
4 Heating cycle test in water	BS EN 50393 8.6	Aug. 5, 2013 ~ Sep. 4, 2013	6/16
5 AC voltage withstand test in water	BS EN 50393 8.3	Oct. 10, 2013	7/16
6 Insulation resistance test in water	BS EN 50393 8.4	Oct. 10, 2013	7/16
7 Examination (for information only)	BS EN 50393 8.8	Oct. 10, 2013	7/16
8 Description of tests	-	-	8/16



1 AC voltage withstand test in air

Test voltage kV	Test frequency Hz	Test duration min	Requirement	Voltage applied to	Earth connected to	Test result
4 kV	60	1	No failure	R Y G B	Metallic sheath	No failure
				R	Y G B Metallic sheath	No failure
				Y	R G B Metallic sheath	No failure
				G	R Y B Metallic sheath	No failure
				B	R Y G Metallic sheath	No failure
* Atmospheric condition : 26.5 °C, 44 % RH, 1 011 hPa * Phase conductor : R, Y, G * Neutral conductor : B						

2 Insulation resistance test in air

Test voltage kV	Test duration min	Requirement	Measuring points		Test result
DC 1 kV	1	≥ 50 MΩ	R Y G B	Metallic sheath	≥ 99.9 GΩ
			R	Y G B Metallic sheath	≥ 99.9 GΩ
			Y	R G B Metallic sheath	≥ 99.9 GΩ
			G	R Y B Metallic sheath	≥ 99.9 GΩ
			B	R Y G Metallic sheath	≥ 99.9 GΩ
* Atmospheric condition : 26.5 °C, 44 % RH, 1 011 hPa * Phase conductor : R, Y, G * Neutral conductor : B					



3 Heating cycle in air

Test method and requirement	Test result
<p>The temperature of the phase conductor shall be raised to (95 ~ 100) °C by heating the assembly, by passing current through the cables.</p> <p>A steady conductor temperature shall be maintained for not less than 2 h. After the 2 h minimum steady temperature period the current shall be switched off and the cable allowed to cool naturally to within 10 K of ambient within a period not less than 3 h.</p> <p>The test assembly shall be subjected to 63 cycles in air.</p>	Refer to the test results of 5 and 6
* Refer to the Osc. ET01	

4 Heating cycle in water

Test method	Test result
<p>The assembly shall be placed in a water bath and the water height over the crutch shall be (300 ± 100) mm.</p> <p>During the heating cycle temperature of the water shall be (20 ± 15) °C.</p> <p>The temperature of the phase conductor shall be raised to (95 ~ 100) °C by heating the assembly, by passing current through the cables.</p> <p>A steady conductor temperature shall be maintained for not less than 2 h. After the 2 h minimum steady temperature period the current shall be switched off and the cable allowed to cool naturally to within 10 K of ambient within a period not less than 3 h.</p> <p>The test assembly shall be subjected to 63 cycles in water.</p>	Refer to the test results of 5 and 6
* Refer to the Osc. ET02	



5 AC voltage withstand test in water

Test voltage	Test frequency	Test duration	Requirement	Voltage applied to	Earth connected to	Test result
4 kV	60 Hz	1 min	No failure	R Y G B	Metallic sheath & Water	No failure
				R	Y G B Metallic sheath & Water	No failure
				Y	R G B Metallic sheath & Water	No failure
				G	R Y B Metallic sheath & Water	No failure
				B	R Y G Metallic sheath & Water	No failure
* Atmospheric condition : 25.3 °C, 62 % RH, 1 014 hPa * Phase conductor : R, Y, G * Neutral conductor : B						

6 Insulation resistance test in water

Test voltage	Test duration	Requirement	Measuring points		Test result
DC 1 kV	1 min	≥ 50 MΩ	R Y G B	Metallic sheath & Water	254 MΩ
			R	Y G B Metallic sheath & Water	33.3 GΩ
			Y	R G B Metallic sheath & Water	24.4 GΩ
			G	R Y B Metallic sheath & Water	2.9 GΩ
			B	R Y G Metallic sheath & Water	436 MΩ
* Atmospheric condition : 25.3 °C, 62 % RH, 1 014 hPa * Phase conductor : R, Y, G * Neutral conductor : B					

7 Examination (for information only)

Test method	Test result
After completing the test, the assembly shall be dismantled. All components shall be examined for traces of moisture within water-proofing components. * Refer to the Photo. ET02	Trace of moisture



8 Description of tests

- 8.1 The above tests were carried out on the test objects submitted by the applicant in accordance with BS EN 50393:2006 (Test methods and requirements for accessories for use on distribution cables of rated voltage 0.6/1.0 (1.2) kV).
- 8.2 The above tests were carried out on one test sample in sequence.
- 8.3 When examined the joint after completing the tests, there was water inside crutch. The end.



Photographs



<Before assembling>



<After assembling>

Apparatus : Heat shrinkable cable termination

Designation : THSY-1/4(3+1).4

Ratings : 0.6/1.0(1.2) kV 3C × 300 mm² + 1C × 150 mm² Type I

Manufacturer : JIANGSU JIAMENG ELECTRICAL EQUIPMENT Co., Ltd.

Photo. ET01 : Test object



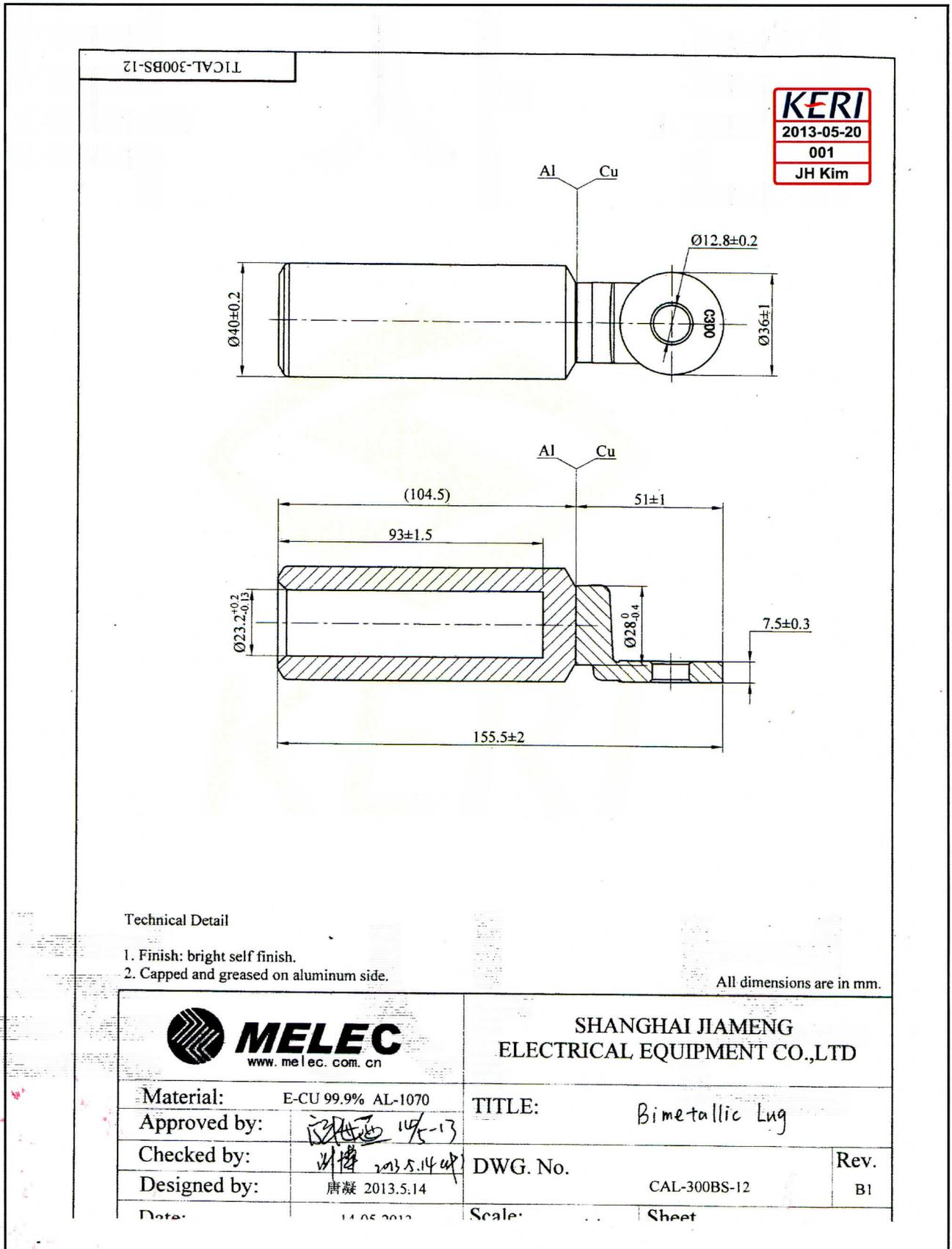
Photographs



Photo. ET02 : Examination after completing the test

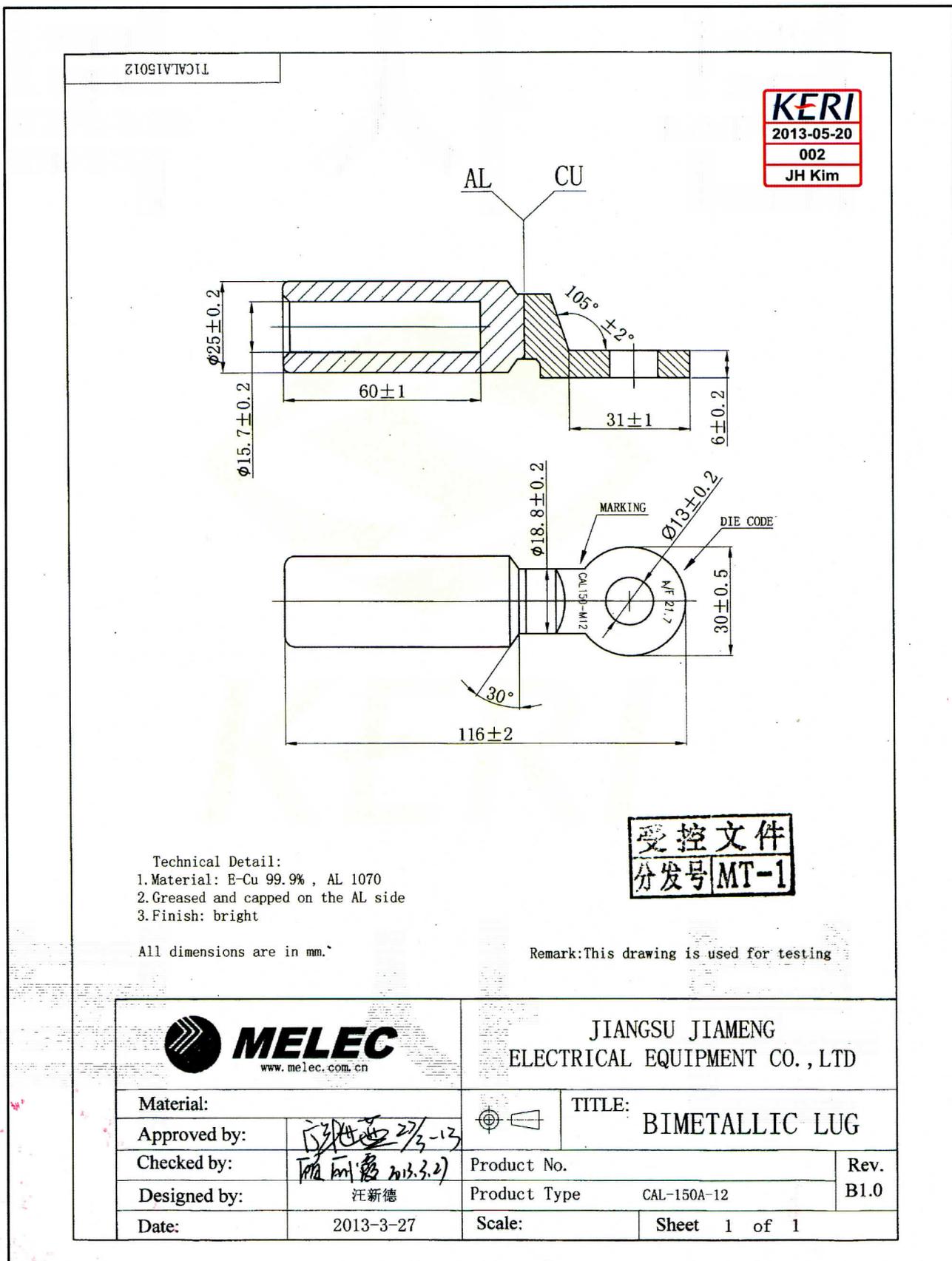


Drawings





Drawings



KERI
2013-05-20
002
JH Kim

21091V1W011

- Technical Detail:
1. Material: E-Cu 99.9% , AL 1070
 2. Greased and capped on the AL side
 3. Finish: bright

受控文件
分发号 MT-1

All dimensions are in mm.

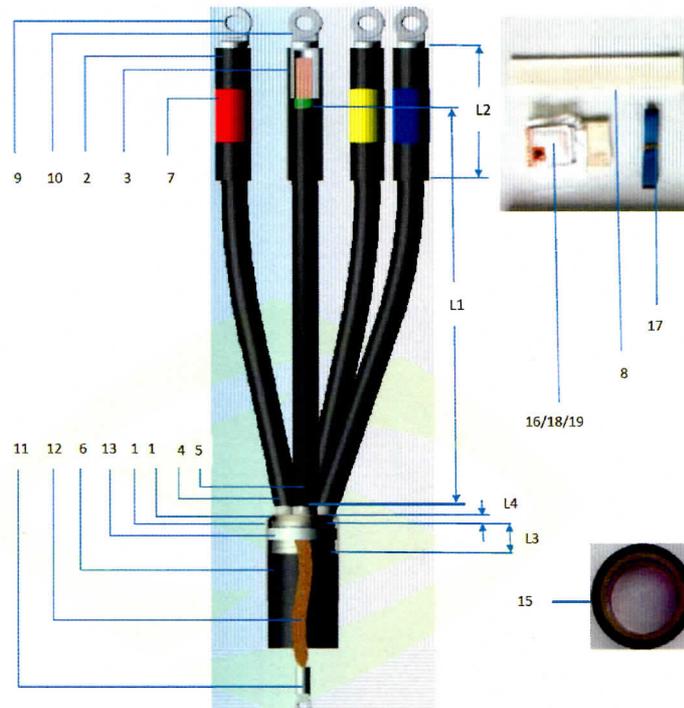
Remark: This drawing is used for testing

 <p>www.melec.com.cn</p>		<p>JIANGSU JIAMENG ELECTRICAL EQUIPMENT CO., LTD</p>	
Material:			TITLE: BIMETALLIC LUG
Approved by:	汪新德 2013.3.27		Product No. Product Type
Checked by:	汪新德 2013.3.27	Rev. B1.0	
Designed by:	汪新德	Product Type	CAL-150A-12
Date:	2013-3-27	Scale:	Sheet 1 of 1



Attachments

Diagram:

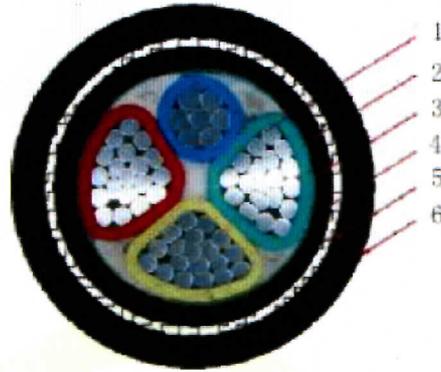


The Cable cross-sectional area		L1	L2	L3	L4
300mm ² *3+150mm ² *1		600mm	200mm	30mm	10mm
No	Description	Item	Length (mm)	Quantity (pcs)	
1	Insulation of four finger	MKBK4	Φ90/32	1	
2	Protective sleeve	MRA2	200	3	
3	Protective sleeve	MRA2	200	1	
4	Protective sleeve	MRA2	600	3	
5	Protective sleeve	MRA2	600	1	
6	Protective sleeve	MRA2	200	1	
7	Color tube	M1	30	3	
8	sealant	TAPE01	320	5	
9	connection terminal	CAL-300A-12	300mm ²	3	
10	connection terminal	CAL-150A-12	150mm ³	1	
11	Grounding terminal	JM(JGB)25-10	10mm ²	1	
12	Tinned copper braid	KZB01	500	1	
13	Constant force spring ring	KZB02	Φ12	1	
14	Copper binding wire	KZB03	1000	1	
15	PVC insulation tape	KZB04	5000	1	
16	Cleaning bag	QJB01	10ml	2	
17	Sand paper	QJB02	P80	2	
18	cleaning cloth	QJB03		1	
19	Glove	QJB04		1	
Date	Draw up	Auditing	Approve		
2013-3-22	Yunnan zhang	Zhangjie zhang	Zhile zhang		

Attachment ET01 : Assembling diagram



Attachments



Type: YJLV22

Voltage: 0.6/1kV

Standard: GB/T12706-2008

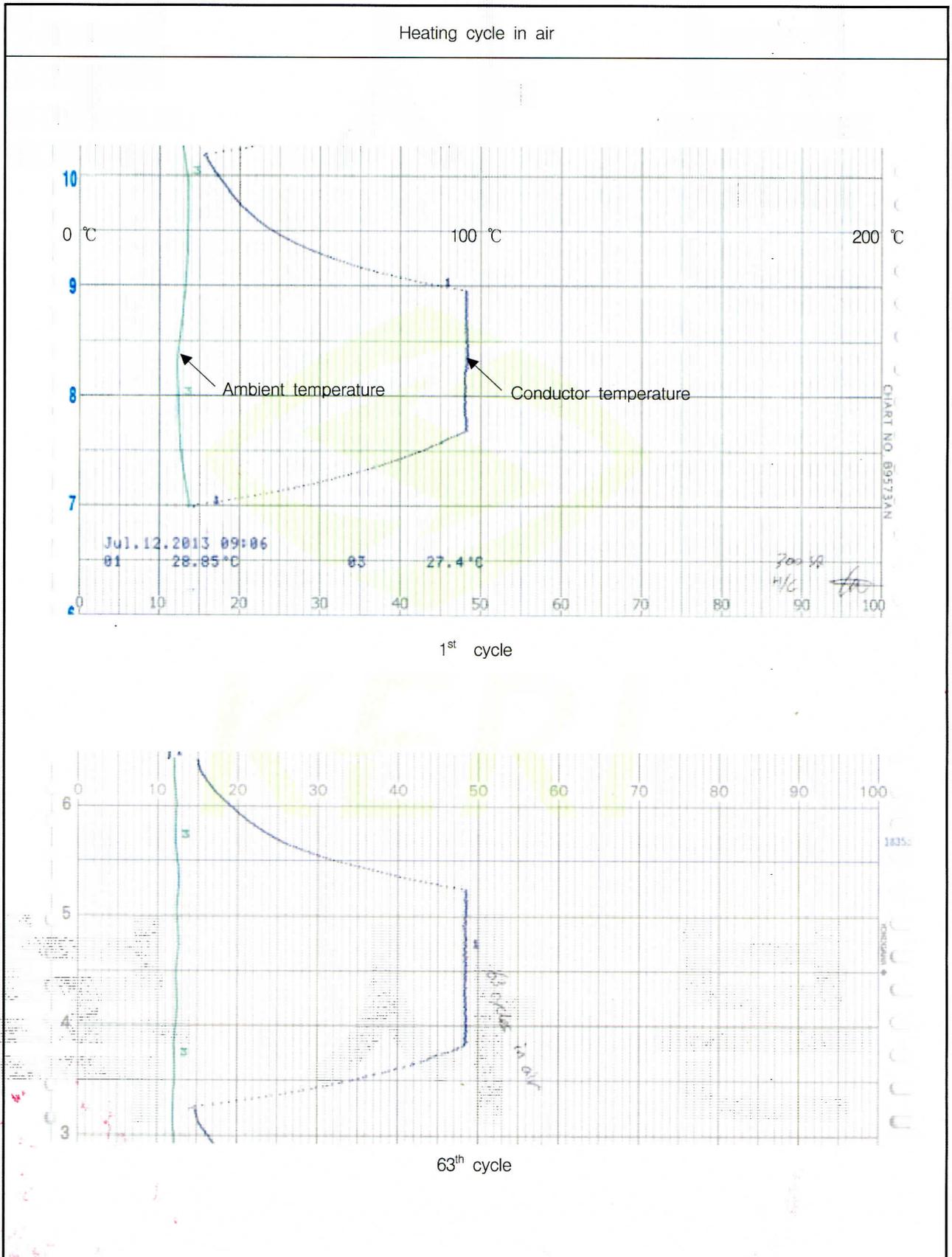
SN	STRUCTURE		UNIT	DATA	
1	conductor	size		3x300-1x150	
		nominal area	mm ²	300	150
		piece/single core diameter	NO./mm	61/2.5	37/2.25
		the max resistance at 20 C	Ω/km	0.0607	0.124
2	insulation	material	XLPE		
		nominal thickness	mm	1.8	1.4
3	laying up	wrapping material	non-woven fabrics		
		layers/thickness	NO./mm/mm	2/0.2	
		laying up thickness	mm	51.2	
4	bedding	material	PVC		
		nominal thickness	mm	1.70	
5	armor	material	galvanized steel strip		
		layers/thickness	mm	2/0.5	
6	sheath	material	PVC		
		nominal thickness	mm	3.1	
		cable diameter	mm	67.0	
		approximately weight	kg/km	5747.0	

Attachment ET02 : Construction of cable used for testing



Oscillograms

Osc. ET01





Oscillograms

Osc. ET02

