

Prüfbericht-Nr.: Test Report No.:	15093413 001	Auftrags-Nr.: Order No.:	154142605	Seite 1 von 9 Page 1 of 9																								
Kunden-Referenz-Nr.: Client Reference No.:	452349	Auftragsdatum: Order date:	04.01.2015																									
Auftraggeber: Client:	Jiangxi Jinko PV Material Co., Ltd. Xuri Area, Shangrao Economic Development Zone, Jiangxi Province 334100, P.R. China																											
Prüfgegenstand: Test item:	Connector for Photovoltaic systems (DC)																											
Bezeichnung / Typ-Nr.: Identification / Type No.:	PV-JK03M-1																											
Auftrags-Inhalt: Order content:	Other tests																											
Prüfgrundlage: Test specification:	IEC 62852:2014-11 Connectors for DC-application in photovoltaic systems - Safety requirements and tests																											
Wareneingangsdatum: Date of receipt:	10.10.2015	Not required																										
Prüfmuster-Nr.: Test sample No.:	154142605-1#-154142605-20#																											
Prüfzeitraum: Testing period:	05.01.2016 - 15.01.2016																											
Ort der Prüfung: Place of testing:	TÜV Rheinland (Shanghai) Co., Ltd.																											
Prüflaboratorium: Testing laboratory:	TÜV Rheinland (Shanghai) Co., Ltd.																											
Prüfergebnis*: Test result*:	Pass																											
geprüft von / tested by:		kontrolliert von / reviewed by:																										
18.01.2016 Datum Date King Li / PE Name / Stellung Name / Position  Unterschrift Signature		25.01.2016 Datum Date Andy Hong / TC Name / Stellung Name / Position  Unterschrift Signature																										
Sonstiges / Other: As required by Jiangxi Jinko PV Material Co., Ltd. Certified product's combination had been tested. See page 3 for details. Measurement Devices List: See page 2. Attachment I: Photo Documentation																												
Zustand des Prüfgegenstandes bei Anlieferung: Condition of the test item at delivery:		Prüfmuster vollständig und unbeschädigt Test item complete and undamaged																										
<table style="width: 100%; font-size: small;"> <tr> <td>* Legende:</td> <td>1 = sehr gut</td> <td>2 = gut</td> <td>3 = befriedigend</td> <td>4 = ausreichend</td> <td>5 = mangelhaft</td> </tr> <tr> <td></td> <td>P(ass) = entspricht o.g. Prüfgrundlage(n)</td> <td></td> <td>F(ail) = entspricht nicht o.g. Prüfgrundlage(n)</td> <td>N/A = nicht anwendbar</td> <td>N/T = nicht getestet</td> </tr> <tr> <td>Legend:</td> <td>1 = very good</td> <td>2 = good</td> <td>3 = satisfactory</td> <td>4 = sufficient</td> <td>5 = poor</td> </tr> <tr> <td></td> <td>P(ass) = passed a.m. test specification(s)</td> <td></td> <td>F(ail) = failed a.m. test specification(s)</td> <td>N/A = not applicable</td> <td>N/T = not tested</td> </tr> </table>					* Legende:	1 = sehr gut	2 = gut	3 = befriedigend	4 = ausreichend	5 = mangelhaft		P(ass) = entspricht o.g. Prüfgrundlage(n)		F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	N/A = nicht anwendbar	N/T = nicht getestet	Legend:	1 = very good	2 = good	3 = satisfactory	4 = sufficient	5 = poor		P(ass) = passed a.m. test specification(s)		F(ail) = failed a.m. test specification(s)	N/A = not applicable	N/T = not tested
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Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. <i>This test report only relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.</i>																												

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Liste der verwendeten Prüfmittel
List of used test equipment

TÜV Rheinland LGA Products GmbH · Tillystraße 2 · D - 90431 Nürnberg · Tel.: +49 911 655 5225 · Fax: +49 911 655 5226
Mail: service@de.tuv.com · Web: www.tuv.com

Prüfmittel <i>Test equipment</i>	Prüfmittel-Nr. / ID-Nr. <i>Equipment No. / ID-No.</i>	Nächste Kalibrierung <i>Next calibration</i>
Electronic Multimeter	PVC-002	04.06.2016
Digital Force Gauge	PVC-003	14.09.2016
Torsion test meter	PVC-005	14.09.2016
Electronic universal testing machine	PVC-012	12.06.2016
Electronic digital vernier caliper	PVC-025	14.09.2016
Torque Screwdriver	PVC-026	14.09.2016
Withstanding Voltage Tester	PVC-031	04.06.2016
IP X5,X6 Tester	E073	01.02.2016
Dust Test Unit	Z328	14.10.2016

Remark: All the tests done before the equipments' valid calibration date.

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Produktbeschreibung
Product description

1	Produktdetails <i>Product details</i>	Connector for Photovoltaic systems (DC) Type: PV-JK03M-1
2	Maße / Gewicht <i>Dimensions / Weight</i>	107,50mm x 19,50mm / 29,75g
3	Bedienelemente <i>Operating elements</i>	Rated voltage: 1000VDC for PV-JK03M-1
4	Ausstattung / Zubehör <i>Equipment / Accessories</i>	Opening tools
5	Verwendete Materialien <i>Used materials</i>	Support live parts: m-PPE, PV40Z(f1) Screw Cap: PA66, A3XZG5
6	Sonstiges <i>Other</i>	N/A

Remark: As required by Jiangxi Jinko PV Material Co., Ltd. Below certified product's combination had been tested.

(Type 1: PV-JK03M-1, manufactured by Jiangxi Jinko PV Material Co., Ltd. And Type 2 see attachment I page 2 for reference.)

In the report, Model 1 and Model 2 see attachment 1 page 3 for reference.

According to client's requirement, test items A5, A10, B1, B2, B3, C1, C2, D2, F2 and F3 had been tested.

All the samples provided by Jiangxi Jinko PV Material Co., Ltd.

This report is only for reference for quality control and research using.

It is not allowed to be used as certificate or confirmation letter.

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Absatz	IEC 62852:2014-11	Messergebnisse - Bemerkungen	Bewertung
Clause	Anforderungen - Prüfungen / Requirements - Tests	Measuring results - Remarks	Evaluation

A	MECHANICAL TEST GROUP A (TABLE 6)		
A5	CONTACT RETENTION IN INSERT: IEC 60512 / Test [15a]		
	Test load is three times the specified insertion force (mating) of one contact or the specified insertion force of one contact plus 50N, whichever is less.	60 [N]	
5.15.2	Contacts safety retained		P ☒ F ☐ N/A ☐ N/T ☐
	No axial displacement likely to impair normal operation:	No visual displacement on the samples	P ☒ F ☐ N/A ☐ N/T ☐
A10	CONNECTOR WITH LOCKING DEVICE: IEC 60512 [15f]		
6.3.14	Connectors with locking device or with snap-in device withstand a load of at least 80N with a rate of 10N/sec. <i>withdrawl force [N]</i>	80N	
	No disengagement of the connectors is possible.		P ☒ F ☐ N/A ☐ N/T ☐
5.17	No damage occurred which could impair normal use		P ☒ F ☐ N/A ☐ N/T ☐
B	SERVICE LIFE TEST GROUP B (TABLE 7)		
B1	INITIAL MEASUREMENTS (CONTACT RESISTANCE): IEC 60512 / Test [2b]		

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	Reference value for subsequent measurement	For model 1 0,63 [mohm] 0,62 [mohm] 0,61 [mohm] For model 2 0,56 [mohm] 0,62 [mohm] 0,58 [mohm]	
	Test current:	1 A	
B2	MECHANICAL OPERATIONS: IEC 60512 / Test [9a]		
6.3.5	Operating cycles :	100	
	Insertion speed :	0,01 m/s	
	Rest :	30 s	
	VISUAL EXAMINATION: IEC 60512 / Test [1a]		
5.11.1	No damage occurred which could impair normal use		P ☒ F ☐ N/A ☐ N/T ☐
B3	FINAL MEASUREMENTS (CONTACT RESISTANCE): IEC 60512 / Test [2b]		
	Test current	1A	

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Absatz	IEC 62852:2014-11	Messergebnisse - Bemerkungen	Bewertung
Clause	Anforderungen - Prüfungen / Requirements - Tests	Measuring results - Remarks	Evaluation
	R2 < 1,5 R1 or R2 < 5 mohm + R1	For model 1 0,64 [mohm] (R2) ≤ 5[mohm]+0,63[mohm] (R1) 0,62 [mohm] (R2) ≤ 5[mohm]+0,62[mohm] (R1) 0,65 [mohm] (R2) ≤ 5[mohm]+0,61[mohm] (R1) For model 2 0,59 [mohm] (R2) ≤ 5[mohm]+0,56[mohm] (R1) 0,65 [mohm] (R2) ≤ 5[mohm]+0,62[mohm] (R1) 0,61 [mohm] (R2) ≤ 5[mohm]+0,58[mohm] (R1)	P ☒ F ☐ N/A ☐ N/T ☐
6.3.8.b	DIELECTRIC STRENGTH: IEC 60512 / Test [4a]		
	Testvoltage:[kV/a.c.] [kV/d.c.]	6kV	
5.10	No breakdown or flashover of the Testvoltage		P ☒ F ☐ N/A ☐ N/T ☐
C	SERVICE LIFE TEST GROUP C (TABLE 8)		
C1	BENDING TEST: IEC 60309-1, 24.4 modified		
6.3.6	Only non-rewireable connectors		
	Rated current.....: [A]	30	
	Wire cross section: [mm²]	1x4,0 mm²	
	Mass: > 0,75mm² / 20N; < 0,75mm² / 10N	0,75mm² / 20N	
	Numbers of Bendings	100	
	During the test, no interruption of the test current		P ☒ F ☐ N/A ☐ N/T ☐

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Absatz	IEC 62852:2014-11	Messergebnisse - Bemerkungen	Bewertung
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C2	FINAL MEASUREMENT		
	The cable support sleeve has not be loosened from the body		P ☒ F ☐ N/A ☐ N/T ☐
	The insulation doesn't show any signs of abrasion or of wear and tear		P ☒ F ☐ N/A ☐ N/T ☐
5.11.2	Broken strands not pierce the insulation		P ☒ F ☐ N/A ☐ N/T ☐
	No damage occurred which could impair normal use		P ☒ F ☐ N/A ☐ N/T ☐
6.3.8.b	DIELECTRICAL STRENGTH: IEC 60512/ TEST [4a]		
	Testvoltage:[kV/a.c.][kV/d.c.]	6kV	
D	THERMAL TEST GROUP D (TABLE 9)		
D2	TEMPERATURE RISE TEST: IEC 60512 / Test [5A]		
	Test conductor length.....: [mm]	500mm	
	Test conductor: [mm ²]	1x4,0 mm ²	
	Test current.....: [A]	30A	

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Absatz	IEC 62852:2014-11	Messergebnisse - Bemerkungen	Bewertung
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	Ambient temperature – components.....: [°C]	85,0°C	
	Upper limit temperature – components: [°C]	100°C	
5.13	The upper limiting temperature specified for the specimen is not exceeded	For model 1 89,2°C For model 2 89,2°C	P ☒ F ☐ N/A ☐ N/T ☐
F	DEGREE OF PROTECTION TEST GROUP F (TABLE 11)		
F2	DEGREE OF PROTECTION IP CODE: IEC 60529		
6.3.3.2	IP-Degree of protection.....: IP	IP67	
5.9	Maximum and minimum cross- section connected [mm²]	1x4,0mm²	
	No ingress of dust	IP6X	P ☒ F ☐ N/A ☐ N/T ☐
	No ingress of water	IPX7	P ☒ F ☐ N/A ☐ N/T ☐
F3	DIELECTRIC STRENGTH: IEC 60512 / Test [4a]		
6.3.8.b	Testvoltage:[kV/a.c.]	6kV	
5.10	No breakdown or flashover of the testvoltage		P ☒ F ☐ N/A ☐ N/T ☐

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ZUSATZ-DOKUMENTATION
ADDITIONAL DOCUMENTATION

- End of Test Report -

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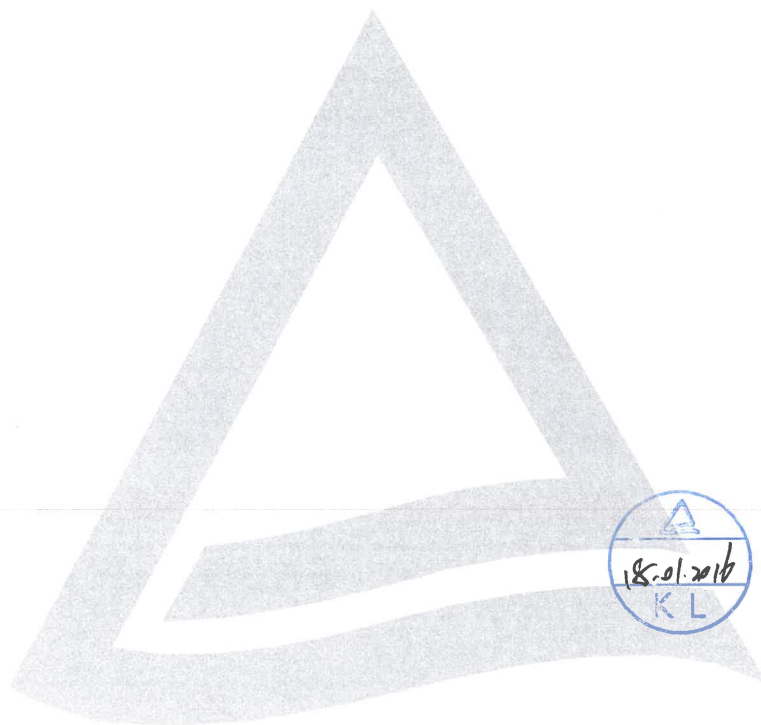
PHOTO DOCUMENTATION

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for

**Connector for Photovoltaic System
Type 1; Type 2; Model 1; Model 2**

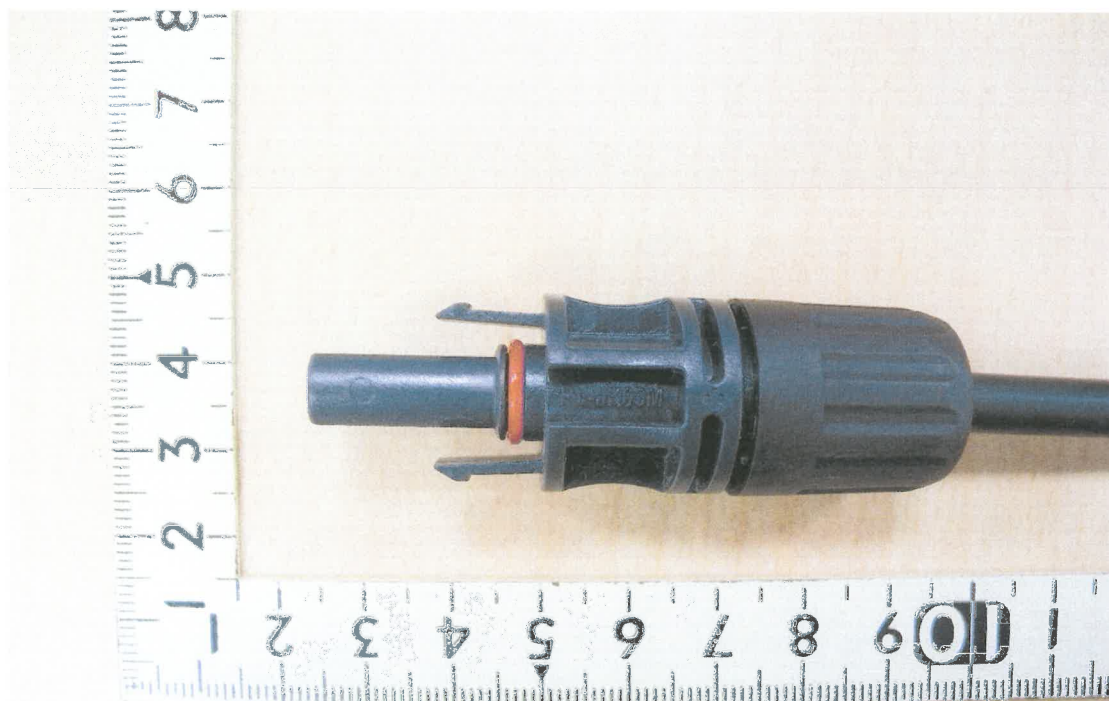
Jiangxi Jinko PV material Co., Ltd.



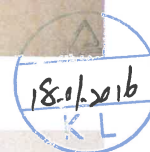
This documentation consists of 3 pages (excluding this cover page).

Report Number: 15093413 001

Model: Type 1; Type 2; Model 1; Model 2



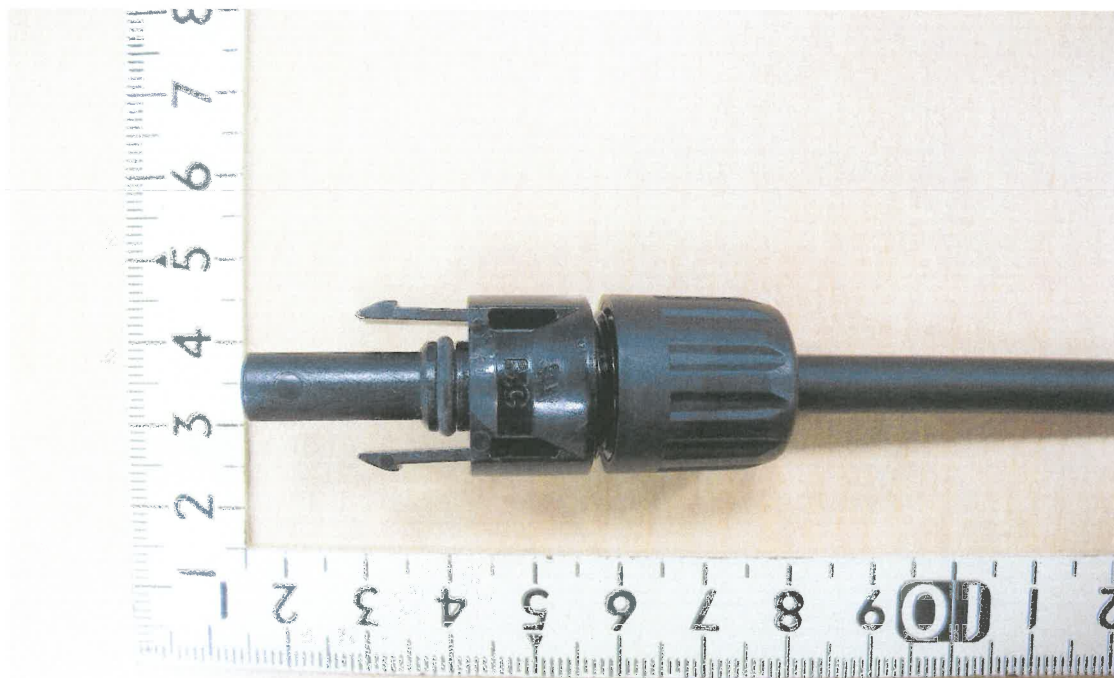
Type 1 (+ pole)



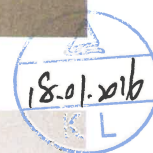
Type 1 (- pole)

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Model: Type 1; Type 2; Model 1; Model 2



Type 2 (+ pole)



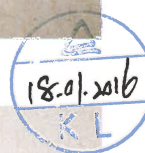
Type 2 (- pole)

Report Number: 15093413 001

Model: Type 1; Type 2; Model 1; Model 2



Model 1 (type 1 + pole match with type 2 - pole)



Model 2 (type 1 – pole match with type 2 + pole)