

REPORT

Report No.:	21128046_006
Ref. No.:	
Applicant:	Wieland Electric GmbH; Brennerstrasse 10-14 D-96052 Bamberg
Test object:	PV-Connector
Standard:	Clauses A10, B1, B2, B3, C1, C2, C4, E2, E3 according DIN V VDE V 0126-3: 2006
Test Conditions:	Testing the combination between Wieland Connector PST40i1... female with Multi-Contact Connector PV-KST4 and Wieland Connector PST40i1... male with Multi-Contact Connector PV-KBT4
Markings:	PST40i1
Miscellaneous:	This test report consists of 5 pages

It was tested if the above mentioned combinations comply with the relevant requirements of above mentioned standard.

Following tests have been performed:

A10	Connector with locking device
B	Service life test
B1	Initial measurement
B2	Mechanical operation
B3	Final measurement
C	Thermal test
C1	Initial measurement
C2	Temperature rise test
C4	Final measurement
E2	Degree of protection IP code
E3	Dielectric strength

A MECHANICAL TEST GROUP

A10 Connector with locking device

Connectors with locking device or with snap-in device shall withstand a load of at least 80N. Compliance shall be tested according to clause 6.3.14

Result:

The evaluation withdrawal force of the combination with PST40i1... male and PV-KBT4 is 514N
The evaluation withdrawal force of the combination with PST40i1... female and PV-KST4 is 512N

B SERVICE LIFE TEST GROUP

B1 Initial measurement for mechanical life

The contact resistance of the specimen was measured at the end of termination as reference value for subsequent measurement with a test current of 1A.

Wieland male – PV-KBT4
2,5mm² R= 0,92mΩ
4,0mm² R= 0,72mΩ
6,0mm² R= 0,59mΩ

Wieland female – PV-KST4
2,5mm² R= 0,87mΩ
4,0mm² R= 0,74mΩ
6,0mm² R= 0,59mΩ

B2 Mechanical Operation

The test was carried out without electrical load according to test 9a of IEC 60512, under the following conditions:

The specimens were engaged and disengaged by means of a device simulating normal operating conditions.

Operating cycles: 50
Insertion and withdrawal speed: 0,01m/s
Rest in unmated position: 30 s

After the test a visual examination should show no damages which impair safety or normal use.

Result:

No damages which could impair safety or normal use have been occurred.

B3 Final measurement

The test was performed under same conditions as in B.1
The evaluated deviation of the contact resistance should be not more than 50 % of the reference value or 5 mΩ
The higher value was permissible.

Result:

Wieland male – PV-KBT4
2,5mm² R= 1,07mΩ
4,0mm² R= 1,05mΩ
6,0mm² R= 0,95mΩ

Wieland female – PV-KST4
2,5mm² R= 1,04mΩ
4,0mm² R= 1,01mΩ
6,0mm² R= 0,74mΩ

The contact resistance was neither higher than 50% of the reference value nor 5 mΩ.

C THERMAL TEST GROUP

C1 Thermal test Initial measurement

Conditions: see also B1

Wieland male – PV-KBT4
2,5mm² R= 0,87mΩ
4,0mm² R= 0,80mΩ
6,0mm² R= 0,69mΩ

Wieland female – PV-KST4
2,5mm² R= 0,97mΩ
4,0mm² R= 0,72mΩ
6,0mm² R= 0,97mΩ

C2 Temperature rise test

The object of this test was to assess the ability of a connector to carry continuously the rated current without exceeding the upper limiting temperature.

The test was carried out according to test 5a of IEC 60512 under the following test conditions.

The test was carried out with rated current as specified by the manufacturer at ambient temperature.

The test was continued until a constant temperature was obtained.

Test conductor length:	500mm
Test conductor:	supplied by manufacturer
Test current:	40A
Ambient temperature:	+85°C
Upper limit temperature:	+110°C

Result:

Wieland male – PV-KBT4
T=98,9°C

Wieland female – PV-KST4
T=100,4°C

The evaluated temperatures do not exceed the specified upper limit temperature.

C4 Final measurement after temperature rise

The test was performed under same conditions as in C1.
The evaluated deviation of the contact resistance should be not more than 50 % of the reference value or 5 mΩ
The higher value was permissible.

Result:

Wieland male – PV-KBT4
2,5mm² R= 0,91mΩ
4,0mm² R= 0,74mΩ
6,0mm² R= 0,92mΩ

Wieland female – PV-KST4
2,5mm² R= 1,05mΩ
4,0mm² R= 0,89mΩ
6,0mm² R= 0,74mΩ

The contact resistance was neither higher than 50% of the reference value nor 5 mΩ.

E DEGREE OF PROTECTION TEST GROUP

E2 Degree of protection IP code

Specified IP code: IP 68 (3m, 2h)

The tests were performed according to IEC 60529 in mated position.

For testing the IP6X code the specimen was applied with rated current until it reached steady state condition inside the dust chamber. After reaching this condition the circuit was open and the conditioning with dust was started.

For testing the IP X8 code the sample was immersed into water with a depth of 3m for 2h.

After the test the high voltage test of E3 was applied and the samples were opened for a visual examination.

Result:

Neither ingress of dust nor ingress of water has been occurred after opening the sample.

E3 Dielectric strength

The voltage proof was performed by applying a r.m.s. withstand voltage (50/60 Hz) with a rms-value of 6000V (2000V + 4 times rated voltage). The test duration was 1 min.

During the test no breakdown or flashover should be occurred.

Result:

No breakdown or flashover was occurred.

Final Result:

The above mentioned combinations of Wieland PV-Connector PST40i1... 2,5mm²; 4,0mm² and 6,0mm² in conjunction to Multi-Contact Connector PV-KST4 and PV-KBT4 passed the specified tests according to the relevant clauses of DIN V VDE V 126-3/12.2006.

This report is the result of a singular test performance on the presented product. It does not authorize to use a GS mark or another mark on the product

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GF3.1-BBA / VO



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