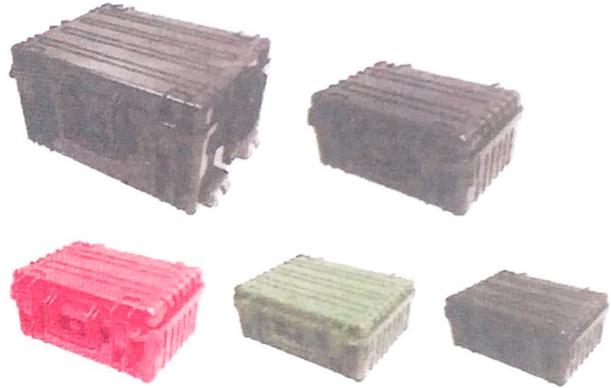


Prüfbericht-Nr.: Test Report No.:	15075425 001	Auftrags-Nr.: Order No.:	154067529	Seite 1 von 7 Page 1 of 7
Kunden-Referenz-Nr.: Client Reference No.:	N/A	Auftragsdatum: Order date:	23.09.2014	
Auftraggeber: Client:				
Prüfgegenstand: Test item:	Waterproof Plastic Case			
Bezeichnung / Typ-Nr.: Identification / Type No.:	FS01; FS02; FS03; FS04; FS05			
Auftrags-Inhalt: Order content:	IPX7 Tesing			
Prüfgrundlage: Test specification:	EN 60529:1991+A1:2000			
Wareneingangsdatum: Date of receipt:	23.09.2014			
Prüfmuster-Nr.: Test sample No.:	Engineering sample			
Prüfzeitraum: Testing period:	23.09.2014 - 29.09.2014			
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:			
28.09.2014 Xu Dong / PE Datum Name / Stellung Date Name / Position	 Unterschrift Signature	28.09.2014 Yonggang Li / TC Datum Name / Stellung Date Name / Position	 Unterschrift Signature	
Sonstiges / Other: This test report was created for waterproof plastic case tested under EN 60529:1991+A1:2000 No deviation exists between EN 60529:1991+A1:2000 and IEC 60529:1989+A1:1999, the test report template of IEC 60529:1989+A1:1999 was used in this report.				
Zustand des Prüfgegenstandes bei Anlieferung: Condition of the test item at delivery:		Prüfmuster vollständig und unbeschädigt Test item complete and undamaged		
<p>* 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</p> <p>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</p>				
<p>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. 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.</p>				

v04



Test Report issued under the responsibility of:



IEC/EN 60529

Degrees of protection provided by enclosures (IP Code)

Report Reference No.: See cover page

Date of issue: See cover page

Total number of pages: See cover page

Testing Laboratory: TÜV Rheinland (Shanghai) Co., Ltd.

Test specification:

Standard: IEC 60529:1989+A1:1999 / EN 60529:1991+A1:2000

Test procedure.....: N/A

Non-standard test method.....: N/A

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This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

Test item description.....: Waterproof plastic case

Trade Mark: N/A

Manufacturer.....:

Address of manufacturer

Factory.....:

Address of Factory.....:

Model/Type reference: FS01; FS02; FS03; FS04; FS05

IEC 60529			
Clause	Requirement + Test	Result - Remark	Verdict

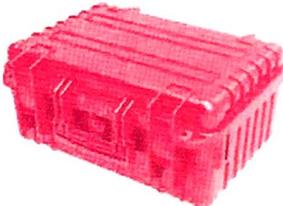
<p>Testing procedure and testing location:</p> <p><input checked="" type="checkbox"/> Testing Laboratory: Testing location/ address</p> <p><input type="checkbox"/> Associated CB Test Laboratory: Testing location/ address Tested by (name + signature)..... Approved by (+ signature)</p> <p><input type="checkbox"/> Testing procedure: TMP Tested by (name + signature)..... Approved by (+ signature)</p> <p>Testing location/ address</p> <p><input type="checkbox"/> Testing procedure: WMT Tested by (name + signature)..... Witnessed by (+ signature)..... Approved by (+ signature)</p> <p>Testing location/ address</p> <p><input type="checkbox"/> Testing procedure: SMT Tested by (name + signature)..... Approved by (+ signature)</p> <p>Supervised by (+ signature)..... Testing location/ address</p> <p><input type="checkbox"/> Testing procedure: RMT Tested by (name + signature)..... Approved by (+ signature)</p> <p>Supervised by (+ signature)..... Testing location/ address</p>
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IEC 60529			
Clause	Requirement + Test	Result - Remark	Verdict

Summary of testing:	
Tests performed (name of test and test clause): -14.2.7 Test for second characteristic numeral 7: temporary immersion between 0,15 m and 1 m	Testing location: TÜV Rheinland (Shanghai) Co., Ltd.

Summary of compliance with National Differences: N/A
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Copy of marking plate N/A

Product information		
 FS01	 FS02	 FS03
 FS04	 FS05	

Test item particulars	
Classification of installation and use	N/A
Supply Connection	N/A
.....	
.....	

IEC 60529

Clause	Requirement + Test	Result - Remark	Verdict
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Possible test case verdicts:

- test case does not apply to the test object : N/A
- test object does meet the requirement..... : P (Pass)
- test object does not meet the requirement..... : F (Fail)

Testing..... :

Date of receipt of test item : 2014-09-23

Date (s) of performance of tests : 2014-09-29

11	General requirements for tests		P
11.1	Atmospheric conditions for water or dust tests Unless otherwise specified in the relevant product Standard, the tests should be carried out under the Standard atmospheric conditions described in IEC 60068-1.		P
	The recommended atmospheric conditions during the tests are as follows:		P
	Temperature range: 15°C to 35°C	25°C	P
	Relative humidity: 25 % to 75 %	65%	P
	Air pressure: 86 kPa to 106 kPa (860 mbar to 1 060 mbar).	95kPa	P

13	Tests for protection against solid foreign objects indicated by the first characteristic numeral		P
13.1	Test means Test means and the main test conditions are given in table 7.		P
	Table 7 - Test means for the tests for protection against solid foreign objects		P

14	Tests for protection against water indicated by the second characteristic numeral		P
14.1	Test means The test means and the main test conditions are given in table 8.		P
	Table 8 - Test means and main test conditions for the tests for protection against water		P

IEC 60529

Clause	Requirement + Test	Result - Remark	Verdict
14.2	Test conditions Test means and main test conditions are given in table 8. Details concerning compliance of degrees of protection - in particular for second characteristic numerals 5/6 (water jets) and numerals 7/8 (immersion) - are given in clause 6.	IPX7	P
	The tests are conducted with fresh water.		P
	During the tests for IPX1 to IPX6 the water temperature should not differ by more than 5 K from the temperature of the specimen under test. If the water temperature is more than 5 K below the temperature of the specimen a pressure balance shall be provided for the enclosure. For IPX7 details of the water temperature are given in 14.2.7.		P
	During the test, the moisture contained inside the enclosure may partly condense. The dew which may thus deposit shall not be mistaken for an ingress of water.		P
	For the purpose of the tests, the surface area of the enclosure is calculated with a tolerance of 10%.		P
	Adequate safety precautions should be taken when testing the equipment in the energized condition.		P
14.2.7	Test for second characteristic numeral 7: temporary immersion between 0,15 m and 1 m The test is made by completely immersing the enclosure in water in its service position as specified by the manufacturer so that the following conditions are satisfied:		P
	a) the lowest point of enclosures with a height less than 850 mm is located 1 000 mm below the surface of the water;	max. height of case :80mm	P
	b) the highest point of enclosures with a height equal to or greater than 850 mm is located 150 mm below the surface of the water;		N/A
	c) the duration of the test is 30 min;	30 min	P
	d) the water temperature does not differ from that of the equipment by more than 5 K. However, a modified requirement may be specified in the relevant product standard if the tests are to be made when the equipment is energized and/or its parts in motion.		P

IEC 60529			
Clause	Requirement + Test	Result - Remark	Verdict
14.3	Acceptance conditions After testing in accordance with the appropriate requirements of 14.2.1 to 14.2.8 the enclosure shall be inspected for ingress of water.	No water inside the case	P
	It is the responsibility of the relevant technical committee to specify the amount of water which may be allowed to enter the enclosure and the details of a dielectric strength test, if any.	No electric device	N/A
	In general, if any water has entered, it shall not:		N/A
	- be sufficient to interfere with the correct operation of the equipment or impair safety;		N/A
	- deposit on insulation parts where it could lead to tracking along the creepage distances;		N/A
	- reach live parts or windings not designed to operate when wet;		N/A
	- accumulate near the cable end or enter the cable if any.		N/A
	If the enclosure is provided with drain-holes, it should be proved by inspection that any water which enters does not accumulate and that it drains away without doing any harm to the equipment.		N/A
	For enclosures without drain-holes, the relevant product standard shall specify the acceptance conditions if water can accumulate to reach live parts.		N/A

--End of Test Report--