Test Report No. TR-713341611-00 (Revision 0) 2024-08-06

Applicant	ABUS Security Center GmbH & Co. KG Linker Kreuthweg 5 86444 Affing Germany
Manufacturer	ABUS Security Center GmbH & Co. KG Linker Kreuthweg 5 86444 Affing Germany
Type of device	RFID-Reader unit outdoor
Type designation	TTWL10067S - TECTIQ Reader unit outdoor IP67 black TTWL10067W - TECTIQ Reader unit outdoor IP67 white
Serial number	TTWL10067S TTWL10067W
Order No.	B24-0638
Receipt of DUT	2024-07-22 Return of DUT 2024-08-06
Test standards	EN 60529: 1991 + A1:2000 + A2:2013 Degrees of protection provided by enclosures (IP67)

Accredited test laboratory
Deutsche Akkreditierungsstelle GmbH (DAkkS):

Reg.Nr.
D-PL-11321-11-02

Conclusion

Test Results	Order No. **B24-0638**

Tests were performed according to:

EN 60529:2014-09 Degrees of protection provided by enclosures (IP67)

Tests performed		**Operating mode**			**Test result**		
	Location	Operating	Non Operating	Storage	Passed	Not Passed	No Evaluation
degree of protection (IP-code)	Straubing						
IP6X	Straubing	☐	☒	☐	☒	☐	☐
IPX7	Straubing	☐	☒	☐	☒	☐	☐

The test results relate only to the individual item which has been tested. Without the written approval of the test laboratory this report may not be reproduced in extracts.

Date	Tested by	Checked by	**Test Result**
2024-08-06	*SIGN-ID 948440* **Stephan Kubitschek**	*SIGN-ID 951883* **Kai Roidt**	☒ **Passed** ☐ **Not passed** ☐ **No Evaluation**

Content table

1 General information

Order information	
Client:	ABUS Security Center GmbH & Co. KG
	Linker Kreuthweg 5
	86444 Affing
	Germany
Contact person:	Mr. Lukas Keller
Order No.:	B24-0638
Receipt of the DUT:	2024-07-22
Return of the DUT to customer:	2024-08-06
Date of testing:	2024-07-25 till 2024-08-02
Location:	Straubing (further information, see Pos. 2)
Remarks:	---
Responsible for the testing:	Mr. Stephan Kubitschek
Responsible for the test report:	Mr. Stephan Kubitschek
Test report approved by:	Mr. Kai Roidt

Test report information	
Test report No.:	TR-713341611-00 (Revision 0)
Date of Issue:	2024-08-06

2 Information about the test laboratory

Information about the test laboratory located in Straubing	
Company name:	TÜV SÜD Product Service GmbH
Adress:	Carl-Zeiss-Str. 3 D-94315 Straubing Germany
Accreditation:	DAkkS registration No.: D-PL-11321-11-02
Contact:	Mr. Reinhold Markl Phone: +49 9421 5682-0 Fax: +49 9421 5682-199

3 Information about the Device under Test (DUT)

Information about the DUT	
Type designation:	TTWL10067S - TECTIQ Reader unit outdoor IP67 black TTWL10067W - TECTIQ Reader unit outdoor IP67 white
Type of device:	RFID-Reader unit outdoor
System components:	TECTIQ reader unit incl. 6 m cable, rear of housing, metal frame
Number of DUT	2
Serial number	TTWL10067S TTWL10067W
Manufacturer:	ABUS Security Center GmbH & Co. KG Linker Kreuthweg 5 86444 Affing Germany
State of the DUT:	HW-Version 10.02.01.B / 05.01.01.A
State of the DUT at receipt:	No visible damages

3.1 Pictures of the DUT

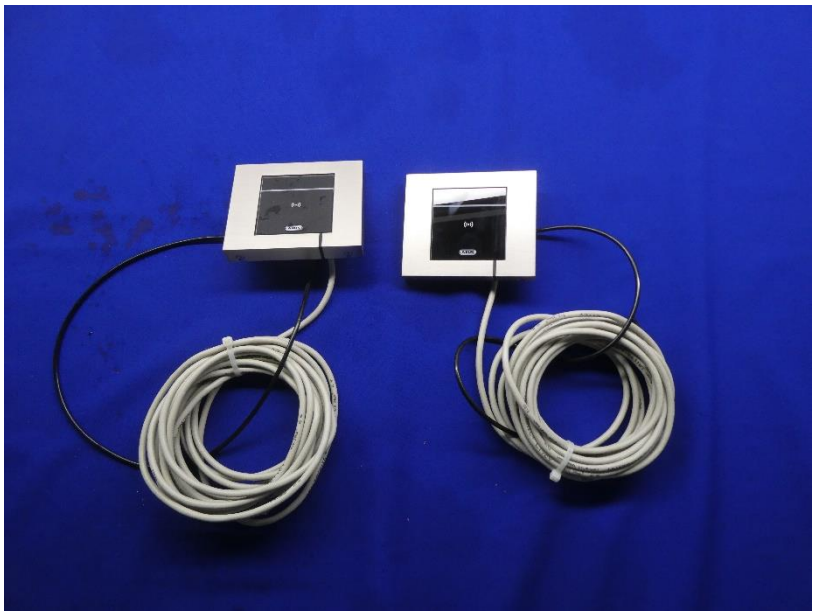


Figure 1

TTWL10067S - TECTIQ Reader unit outdoor IP67 black
TTWL10067W - TECTIQ Reader unit outdoor IP67 white

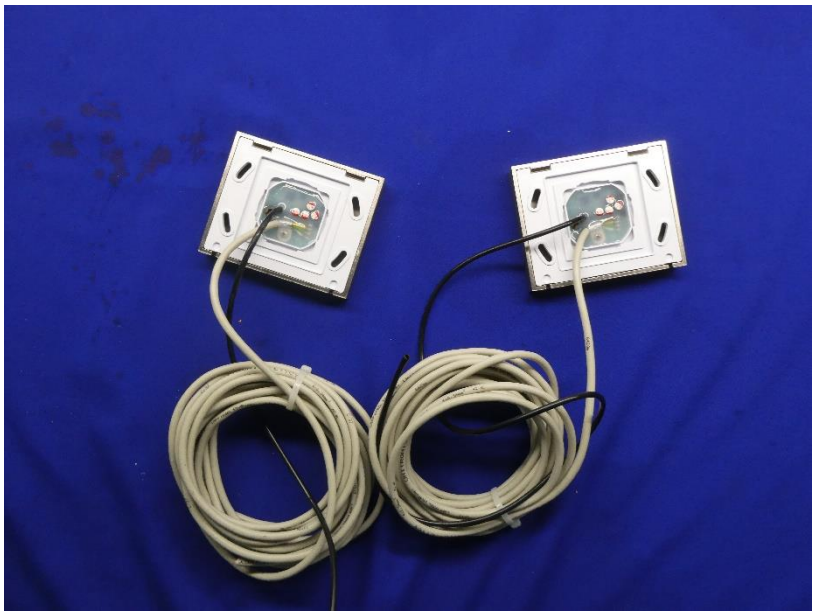


Figure 2

TTWL10067S - TECTIQ Reader unit outdoor IP67 black
TTWL10067W - TECTIQ Reader unit outdoor IP67 white

4 Operation mode and configuration of the DUT

Operation mode(s)
passive

5 Evaluation criteria and monitoring of the DUT

Monitoring of the DUT			
Function	*Monitored parameter*	*Permissible criteria / limits*	*Monitoring method*
Liquid ingress resistance	Ingress of water	No water	Visual Opened housing
Mechanical impact resistance	Ingress of dust	No dust	Visual Opened housing
Access	Access to dangerous parts	No Access allowed	Test probe

6 Uncertainty of measurement

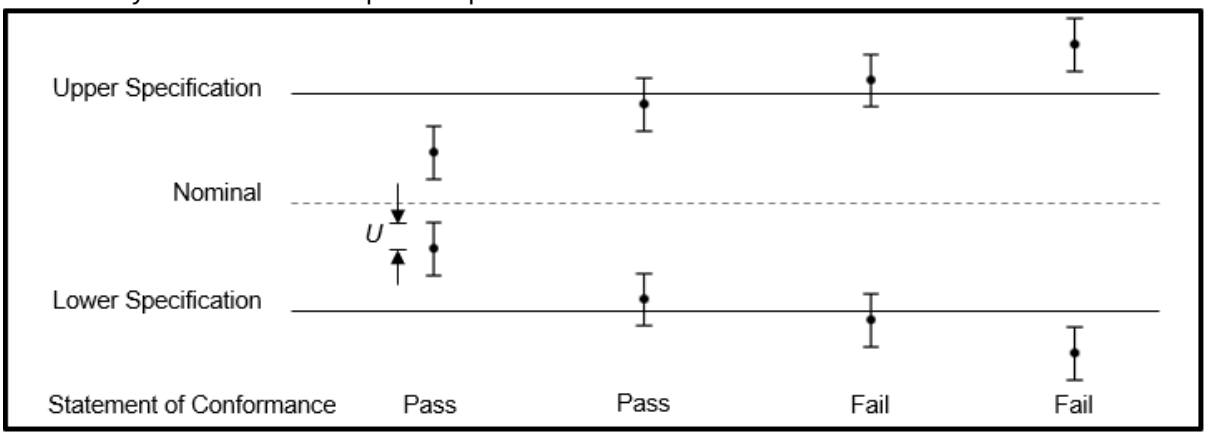
Uncertainty of measurement environmental simulation			
Test	k_p	Extended uncertainty of measurement	Remarks
Force measurements with Almemo K25 force testing device	2	± 0.52 %	1
Voltage measurements < 7000 V	2	± 1.08 %	1
Current measurements	2	± 1.2 %	1
Power measurements up to 1800 W (45 – 66 Hz)	2	± 1.67 %	1
Time measurements	2	± 0.58 s	1
Insulation resistance measurements	2	± 3.72 %	1
Electro-dynamic vibration system (Shaker)	2	± 9.09 %	2
Temperature measurements	2	± 2.00 K	2
Temperature in temperature- / climatic test chamber	2	± 1.98 K	2
Relative humidity in temperature test chamber	2	± 2.81 % r.h.	2

remark 1:
The after GUMS (1995) described extended measurement uncertainty is based on the standard measurement uncertainty multiplicated by the extension factor of kp = 2 for a confidence level of p = 95,45 %.
remark 2:
The after UKAS LAB 34 (Edition 1, 2002-08) described extended measurement uncertainty is based on the standard measurement uncertainty multiplicated by the extension factor of kp = 2 for a confidence level of p = 95,45 %.

7 Rule of decision

The decision rule and statements of conformity in the laboratory are based on ILAC-G8:09/2019 in clause 4.2.1 Binary Statement for Simple Acceptance Rule.
This normative regulation means that the measured value is also the value to be assessed in relation to the limit value.

ILAC-G8:09/2019
Guidlines on Decision Rules and Statements of Conformity
4.2.1 Binary Statement for Simple Acceptance Rule



U = 95% expanded measurement uncertainty

8 Referenced regulations

Publication	*Title*
DIN EN 60529:2014-09	Degrees of protection provided by enclosures (IP Code) (IEC 60529:1989 + A1:1999 + A2:2013); German version EN 60529:1991 + A1:2000 + A2:2013

9 Degrees of protection provided by enclosures

Location Straubing

Type	*Designation*	*Inv.-no.*	*Manufacturer*
IP4x Test Probe d = 1 mm; 1 N	P10.27	2178	PTL Dr. Grabenhorst
IP5x/IP6x Dust Test Chamber	DST 2100	2277	Primus & Brandt
Pressure transformer	S-10	2278	WIKA
Flowmeter	FMA1718A	2279	Omega
Flowmeter	FMA1728A	2280	Omega
IPx7/x8 Immersion Basin	IT1500-400	2204	KUS Kunststofftechnik
Stop Watch	HiTRAX Go	2203	TFA Dostmann

9.1 Protection against access

9.1.1 EN 60529:1991 + A1:2000 + A2:2013 Degrees of protection by enclosures

IP4x			
Environmental conditions	24 °C / 50 % r.h. / 978 hPa		
Operation mode	no operation		
Test	2024-07-25	Test Result	Note
Test sample	TTWL10067S - TECTIQ Reader unit outdoor IP67 black	Test passed	no possible access of test probe into housing
Test probe	1,0 mm		
Test force	1 N ±10%		

9.2 Protection against foreign objects

9.2.1 EN 60529:1991 + A1:2000 + A2:2013 Degrees of protection by enclosures

IP6X			
Environmental conditions	24 °C / 50 % r.h. / 978 hPa		
Operation mode	no operation		
Test	2024-08-02		
No. of Test sample(s)	TTWL10067S - TECTIQ Reader unit outdoor IP67 black	Test passed	no ingress of dust detected
Test duration	8 h		
Category of housing	category 2		
Low pressure	no low pressure if cat. 2		
Test dust	talcum, 2kg / m^3		

Test setup

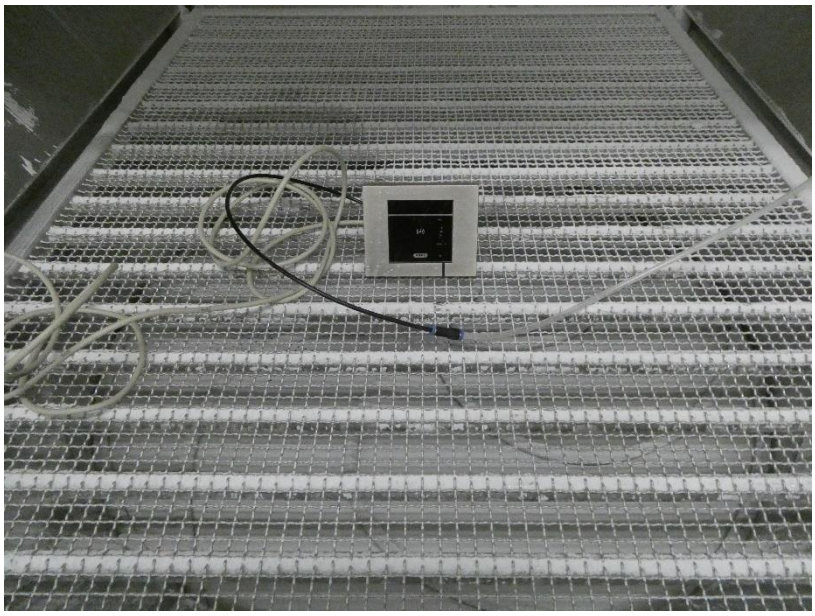


Figure 3

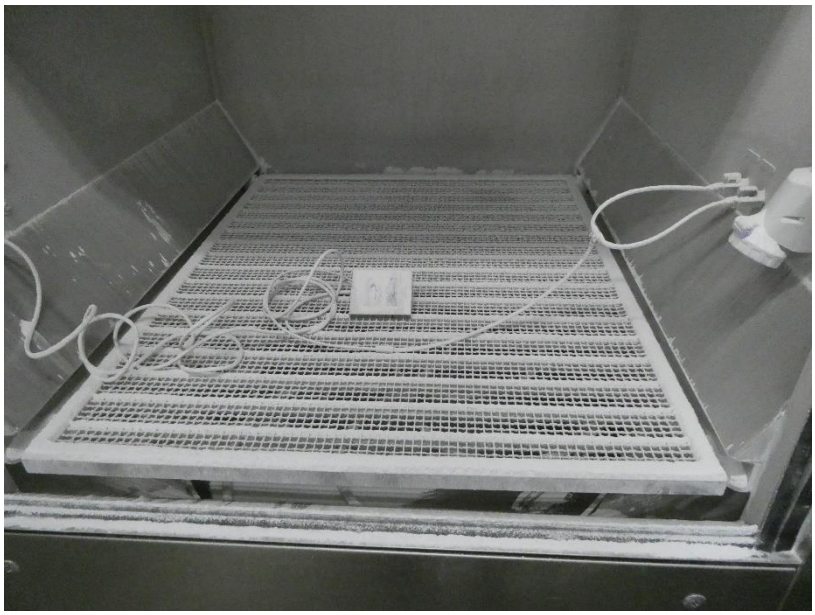


Figure 4

Test evaluation

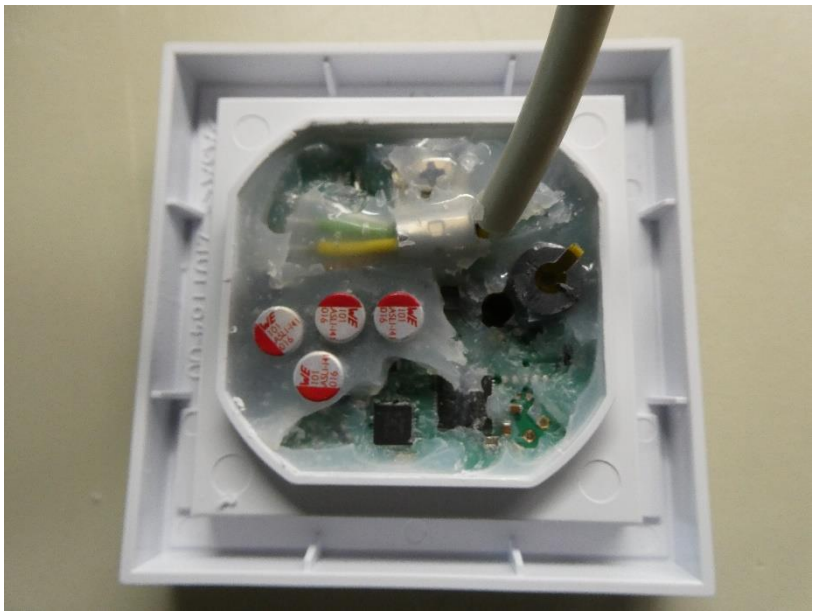


Figure 5

Figure 6

9.3 Protection against water

9.3.1 EN 60529:1991 + A1:2000 + A2:2013 Degrees of protection by enclosures

IPX7			
Environmental conditions	24 °C / 50 % r.h. / 978 hPa		
Operation mode	no operation		
Test period	2024-07-23	Test Result	Note
No. of Test sample(s)	TTWL10067W - TECTIQ Reader unit outdoor IP67 white	Test passed	no water ingress detected
Immersion depth	1 m (deepest housing location) min. 0,15 m (highest housing location)		
Test duration	30 min		
Water temperature	20 ±5°C		

Test setup

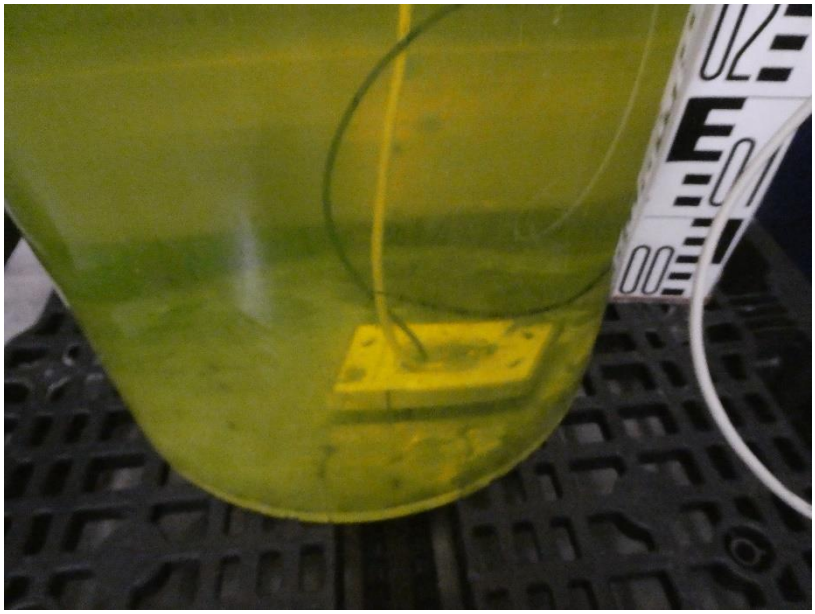


Figure 7

Figure 8

Test evaluation

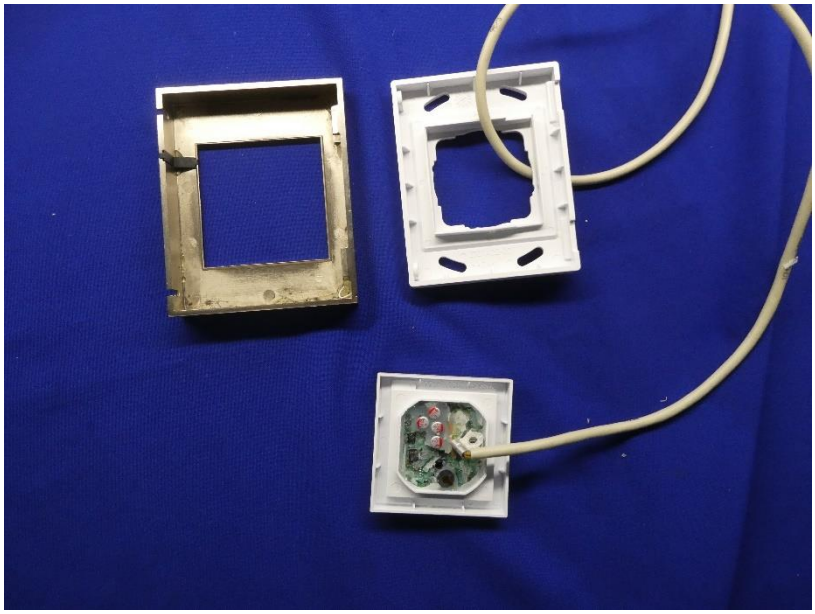


Figure 9

Figure 10

10 Revision history

Revision history			
Version	*Date*	*Author*	*Modifications*
0	2024-08-06	Stephan Kubitschek	First Edition