TEST REPORT

IEC 61557-8

Electrical safety in low voltage distribution systems up to 1 000 V a.c. and 1 500 V d.c. – Equipment for testing, measuring or monitoring of protective measures

Part 8: Insulation monitoring devices for IT systems

Report Number. ..... :	48.533.25.0072.00 Part 1 of 3
Date of issue ..... :	2026-01-20
Total number of pages ..... :	55
Name of Testing Laboratory preparing the Report ..... :	TÜV SÜD Certification and Testing (China) Co., Ltd.
Applicant's name ..... :	Acrel Co., Ltd.
Address ..... :	No.253 Yulv Road, Jiading District, Shanghai, China
Test specification:	
Standard ..... :	IEC 61557-8:2014 (ed. 3) for use in conjunction with IEC 61557-1:2007 (ed. 2)
Test procedure ..... :	CE_LVD
Non-standard test method ..... :	none
Test Report Form No. ..... :	IEC61557_8A
Test Report Form(s) Originator .....:	VDE Prüf- und Zertifizierungsinstitut
Master TRF ..... :	Dated 2016-08

Copyright © 2016 IEC System of Conformity Assessment Schemes for Electrotechnical Equipment and Components (IECEE System). All rights reserved.

This publication may be reproduced in whole or in part for non-commercial purposes as long as the IECEE is acknowledged as copyright owner and source of the material. IECEE takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context.

If this Test Report Form is used by non-IECEE members, the IECEE/IEC logo and the reference to the CB Scheme procedure shall be removed.

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.

General disclaimer:

The test results presented in this report relate only to the object tested.
This report shall not be reproduced, except in full, without the written approval of the Issuing CB Testing Laboratory. The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report.

www.tuvsud.com
Telephone : +86 510 8820 3737
Telefax : +86 510 8820 3636

TÜV SÜD Certification and Testing (China) Co., Ltd.

1-4/F., Building B, No.37, Tuanjie Middle Road, Xishan Economic and Technological Development Zone, Wuxi, Jiangsu, China

Test item description ..... :	Insulation monitoring devices for IT systems
Trade Mark ..... :	N/A
Manufacturer ..... :	Acrel Co., Ltd.
Model/Type reference ..... :	AIM-D500-CA(DC System Insulation Monitoring Device) ACPD300(Coupling Device for Insulation Monitoring)
Ratings ..... :	Us: 100-277VAC, rated power: ≤5W, Un: 50-1000VDC, Ran: 1kΩ-2MΩ, DC IMD

www.tuvsud.com
Telephone : +86 510 8820 3737
Telefax : +86 510 8820 3636

TÜV SÜD Certification and Testing (China) Co., Ltd.

1-4/F., Building B, No.37, Tuanjie Middle Road,
Xishan Economic and Technological Development
Zone, Wuxi, Jiangsu, China

Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):			
☒	**Testing Laboratory:**	TÜV SÜD Certification and Testing (China) Co., Ltd.	
Testing location/ address.....:		1-4/F., Building B, No.37, Tuanjie Middle Road, Xishan Economic and Technological Development Zone, Wuxi, Jiangsu, China	
☐	**Associated CB Testing Laboratory:**		
Testing location/ address.....:			
Tested by (name, function, signature).....:		**San Huang / Wang Qinrui (Project handler)**	Wang Qinrui San Huang
Approved by (name, function, signature)...:		**Martin Ma (Designated reviewer)**	Martin Ma
☐	**Testing procedure: CTF Stage 1:**		
Testing location/ address.....:			
Tested by (name, function, signature).....:			
Approved by (name, function, signature)...:			
☐	**Testing procedure: CTF Stage 2:**		
Testing location/ address.....:			
Tested by (name + signature) .....:			
Witnessed by (name, function, signature)..:			
Approved by (name, function, signature)...:			
☐	**Testing procedure: CTF Stage 3:**		
☐	**Testing procedure: CTF Stage 4:**		
Testing location/ address.....:			
Tested by (name, function, signature).....:			
Witnessed by (name, function, signature)..:			
Approved by (name, function, signature)...:			
Supervised by (name, function, signature) :			

www.tuvsud.com
Telephone : +86 510 8820 3737
Telefax : +86 510 8820 3636
TÜV®

TÜV SÜD Certification and Testing (China) Co., Ltd.
1-4/F., Building B, No.37, Tuanjie Middle Road, Xishan Economic and Technological Development Zone, Wuxi, Jiangsu, China

List of Attachments (including a total number of pages in each attachment):

Attachment No. 1- Photo Documentation (6 pages).

Summary of testing:

Tests performed (name of test and test clause):	**Testing location:**
AIM-D500-CA and ACPD300 were subjected to full test of EN 61557-8:2015 and EN 61557-1:2007. All results were found to comply with the applicable requirements of EN 61557-8:2015, EN 61557-1:2007. EN 61010-1 refer to part 2, EN 61010-2-030 refer to part 3. EMC result can refer to the report 48.999.25.0064.00.	6.2.16.1 Shock and vibration test: Guangdong Sushi Guangbo Testing Technology Co., Ltd Building No.4, Modern Enterprise Accelerator, No.24 Industrial East Road, Songshan Lake, Dongguan, PEOPLE'S REPUBLIC OF CHINA Others: TÜV SÜD Certification and Testing (China) Co., Ltd. Guangzhou Branch B1F&2F of A4, D1 Buildings, No. 63 Chuangqi Road, Shilou Town, Panyu District, Guangzhou 511447, China

Summary of compliance with National Differences (List of countries addressed):

The standard EN 61557-8:2015 is identical to IEC 61557-8:2014.

The standard EN 61557-1:2007 is identical to IEC 61557-1:2007.

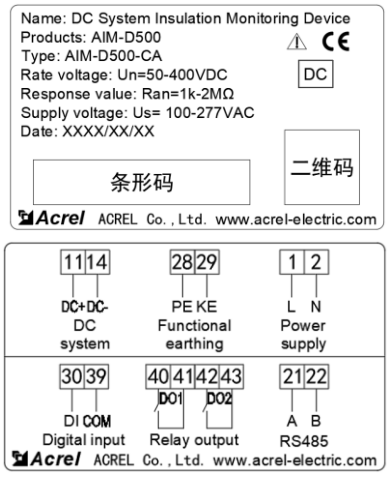
www.tuvsud.com
Telephone : +86 510 8820 3737
Telefax : +86 510 8820 3636

TÜV SÜD Certification and Testing (China) Co., Ltd.

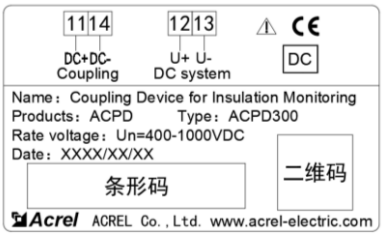
1-4/F., Building B, No.37, Tuanjie Middle Road, Xishan Economic and Technological Development Zone, Wuxi, Jiangsu, China

Copy of marking plate:

AIM-D500-CA(DC System Insulation Monitoring Device):



ACPD300(Coupling Device for Insulation Monitoring):



www.tuvsud.com
Telephone : +86 510 8820 3737
Telefax : +86 510 8820 3636

TÜV SÜD Certification and Testing (China) Co., Ltd.

1-4/F., Building B, No.37, Tuanjie Middle Road, Xishan Economic and Technological Development Zone, Wuxi, Jiangsu, China

Test item particulars.....:	
Classification of installation and use	Indoor installation
Supply Connection.....	Terminal block
.....	
Type of item tested:	Measurement
Description of equipment function.....	Insulation monitoring devices for IT systems
Model and/or type reference	For DC System Insulation Monitoring Device: AIM-D500-CA For Coupling Device for Insulation Monitoring: ACPD300
Serial number	N/A
Rating(s)	Us: 100-277VAC, rated power: ≤5W
Measurement (Installation) category.....	Measurement category II
Pollution degree	PD2
Protection class.....	~~Class 1 /~~ Class 2
Environmental rating.....	~~standard /~~ extended (specify): -20 °C to +60 °C
Equipment mobility	~~portable / hand-held / floorstanding / fixed~~ /-built in
Connection to mains supply	Permanent~~/detachable cord set/ non-detachable cord set/none~~
Operating conditions.....	continuous / ~~short-time / intermittent~~
Overall size of the equipment (W x D x H).....	AIM-D500-CA :72mm*70mm*110mm ACPD300: 36mm*70mm*110mm
Mass of the equipment (kg).....	/
Marked degree of protection to IEC 60529.....	IP30 applies only to the front
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.....	2025-09-28
Date (s) of performance of tests.....	2025-10-09 to 2025-11-25
General remarks:	

www.tuvsud.com
Telephone : +86 510 8820 3737
Telefax : +86 510 8820 3636

TÜV SÜD Certification and Testing (China) Co., Ltd.

1-4/F., Building B, No.37, Tuanjie Middle Road, Xishan Economic and Technological Development Zone, Wuxi, Jiangsu, China

"(See Enclosure #)" refers to additional information appended to the report.
"(See appended table)" refers to a table appended to the report.
List of test equipment must be kept on file and available for review.

Throughout this report a ☐ comma / ☒ point is used as the decimal separator.

This report should be used injunction with test report part 2 of 3, part 3 of 3:

Test report No.: 48.533.25.0072.00 Part 2 of 3 (Dated 2026-01-20, 89 pages)

Test report No.: 48.533.25.0072.00 Part 3 of 3 (Dated 2026-01-20, 28 pages)

www.tuvsud.com
Telephone : +86 510 8820 3737
Telefax : +86 510 8820 3636

TÜV SÜD Certification and Testing (China) Co., Ltd.

1-4/F., Building B, No.37, Tuanjie Middle Road,
Xishan Economic and Technological Development
Zone, Wuxi, Jiangsu, China

Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 02:	
The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided ..... :	☐ **Yes** ☒ **Not applicable**
When differences exist; they shall be identified in the General product information section.	
Name and address of factory (ies) ..... :	Jiangsu Acrel Electrical Manufacturing Co., Ltd. No.5 Dongmeng Road, Dongmeng industrial Park, Nanzha Street, Jiangyin City, Jiangsu Province, China
General product information: Insulation monitoring devices, Us: 100-277VAC, rated power: ≤5W, Un: 50-1000VDC, Ran: 1kΩ-2MΩ, DC IMD.	

www.tuvsud.com
Telephone : +86 510 8820 3737
Telefax : +86 510 8820 3636

TÜV SÜD Certification and Testing (China) Co., Ltd.

1-4/F., Building B, No.37, Tuanjie Middle Road, Xishan Economic and Technological Development Zone, Wuxi, Jiangsu, China

IEC 61557-8			
Clause	Requirement - Test	Result - Remark	Verdict

4	**REQUIREMENTS**		P
4.1	**General**		P
	requirements of Clause 4 apply additional to IEC 61557-1, clause 4		P
	IMD's capable of monitoring of insulation resistance between:		—
	system and earth or		N/A
	system and PE connection or		N/A
	system and another reference point for equipotential bonding and		P
4.2	**Types of IMDs**		P
4.2.1	type AC IMD or		N/A
	type AC / DC IMD or		N/A
	type DC IMD	DC IMD	P
4.2.2	Mandatory functions provided by IMDs		P
4.2.2.1	comprise a visual warning device with:		—
	local insulation warning (LIW) and/or		P
	remote insulation warning (RIW).		P
	no switch off device used at IMD		P
	fault indication not resettable		P
	audible signalling device provide resetting facility		P
	warning signal issued if $R_F < R_a$		P
	insulation resistance indication not regarded for visual signalling	Indicator: pilot lamp	P
4.2.2.2	Local insulation warning (LIW)		P
	IMD provide:		—
	a function for measurement of the insulation resistance R_F	1kΩ-2MΩ	P
	an assessment of this resistance and		P
	a local warning		P
	the local insulation warning (LIW) should be made:		—
	by visual indicators and/or	Indicator: pilot lamp	P
	audible signals		N/A
4.2.2.3	Remote insulation warning (RIW)	Remote communication	P

www.tuvsud.com
Telephone : +86 510 8820 3737
Telefax : +86 510 8820 3636

TÜV SÜD Certification and Testing (China) Co., Ltd.

1-4/F., Building B, No.37, Tuanjie Middle Road, Xishan Economic and Technological Development Zone, Wuxi, Jiangsu, China

IEC 61557-8			
Clause	Requirement - Test	Result - Remark	Verdict

	IMD provide:		—
	a function for measurement of the insulation resistance R_F	1kΩ-2MΩ	P
	an assessment of this resistance and		P
	a warning output		P
	the warning output reported remotely with an output signal, generated by:		—
	relay contact, or		N/A
	electronic switching output, or		N/A
	data communication		P
	warning output used for other functions ..... :	for switching	P
4.2.3	Mandatory service function provided by the IMD – Test function		P
	connection to a test device provided		P
	no negative influence to IMD and the IT system		P
	indication provided to show capability to issue an insulation warning		P
	reaction shown by:		—
	an indication on a display, or	Remote communication	N/A
	on another visual indication, or		N/A
	via a remote output signal.		P
	During the test the response time t_{an} extended		P
4.3	**Optional functions provided by IMD**		N/A
4.3.1	optional functions are not mandatory according to the annexes of this standard		—
4.3.2	Local transformer monitoring warning (LTMW)		N/A
	local warning signal is issued when the isolating transformer for IT systems is working in abnormal conditions of:		—
	current at the secondary side of the transformer or		N/A
	the temperature of the transformer		N/A
	Function includes:		—
	monitoring of the rated output current, or		N/A
	monitoring of the temperature of the transformer, and		N/A

www.tuvsud.com
Telephone : +86 510 8820 3737
Telefax : +86 510 8820 3636

TÜV SÜD Certification and Testing (China) Co., Ltd.

1-4/F., Building B, No.37, Tuanjie Middle Road, Xishan Economic and Technological Development Zone, Wuxi, Jiangsu, China

IEC 61557-8			
Clause	Requirement - Test	Result - Remark	Verdict
	an assessment of these measurements and		N/A
	a local warning		N/A
	The local warning should made by:		—
	visual indicators and/or		N/A
	audible signals		N/A
4.3.3	Remote transformer monitoring warning (RTMW)		N/A
	Remote warning signal is issued when the isolating transformer for IT systems is working in abnormal conditions of:		—
	current at the secondary side of the transformer or		N/A
	the temperature of the transformer		N/A
	Function includes:		—
	monitoring of the rated output current, or		N/A
	monitoring of the temperature of the transformer, and		N/A
	an assessment of these measurements and		N/A
	a remotely warning		N/A
	The warning output reported remotely with an output signal, generated by:		—
	relay contact, or		N/A
	electronic switching output, or		N/A
	data communication		N/A
	warning output used for other functions ..... :		N/A
4.3.4	Remote enabling and disabling command (REDC)		N/A
	insulation resistance measurement enabled or disabled by:		—
	input contact, or		N/A
	electronic input signal or		N/A
	data communication.		N/A
4.4	**Performance requirements**		P
4.4.1	Specified response value R_{an}		P
	the response value of an IMD shall be:		—
	permanently set as a fixed value or		N/A
	adjustable within a response range.	1kΩ-2MΩ	P

www.tuvsud.com
Telephone : +86 510 8820 3737
Telefax : +86 510 8820 3636

TÜV SÜD Certification and Testing (China) Co., Ltd.

1-4/F., Building B, No.37, Tuanjie Middle Road, Xishan Economic and Technological Development Zone, Wuxi, Jiangsu, China

IEC 61557-8			
Clause	Requirement - Test	Result - Remark	Verdict
	if adjustable, modification of the settings, possible only by the use of a key, a tool or a password ..... :	Password	P
	response value of R_{an}:	1kΩ-2MΩ	—
	continuously, or ..... :	Continuously	P
	stepwise..... :		N/A
4.4.2	System leakage capacitance C_e		P
	capable of monitoring the insulation resistance R_F as specified:		P
	at the standard, or	1uF	P
	by manufacturer ..... :		N/A
4.4.3	Relative percentage uncertainty A of the specified response value R_{an}		P
	The max. operating uncertainty shall apply under the following standard operating conditions:	±15%	P
	-temperature range from -5 °C to 45 °C;	-20 °C to +60 °C	—
	-at nominal voltage U_n between 0 % to 115 %,	0 % to 115 %	—
	-at supply voltage U_s between 85 % and 110 %,	85 % and 110 %	—
	-at nominal frequency f_n of the nominal voltage,	DC IMD	—
	-at system leakage capacitance C_e of 1 µF.	1uF	—
	or at different specification of the manufacturer:		N/A
	-at a frequency f = < f_n > ..... :		—
	-at system leakage capacitance C_e >1 µF ..... :		—
	Different operating conditions included in documentation		N/A
4.4.4	Response time t_{an}		P
	the response time t_{an} shall be:		—
	≤ 10 s for type AC IMD, or		N/A
	≤ 100 s for type AC/DC IMD and for type DC IMD.	≤ 100 s	P
	reference conditions considered:		P
	-temperature range from -5 °C to 45 °C;	-20 °C to +60 °C	—
	-at nominal voltage U_n between 0 % to 115 %,	0 % to 115 %	—
	-at supply voltage U_s between 85 % and 110 %,	85 % and 110 %,	—
	-at nominal frequency f_n of the nominal voltage,		—
	-at system leakage capacitance C_e of 1 µF.	1uF	—

www.tuvsud.com
Telephone : +86 510 8820 3737
Telefax : +86 510 8820 3636

TÜV SÜD Certification and Testing (China) Co., Ltd.

1-4/F., Building B, No.37, Tuanjie Middle Road, Xishan Economic and Technological Development Zone, Wuxi, Jiangsu, China

IEC 61557-8			
Clause	Requirement - Test	Result - Remark	Verdict

	Information about the response time t_{an} over the range of system leakage capacitances C_e and over the specified range of frequencies f_n included in the documentation.	≤ 100 s	N/A
	system leakage capacitance *C*e of 1 µF considered as reference, and (if applicable)	1uF	N/A
	max. system leakage capacitance *C*e selected, as stated by manufacturer ..... :		—
	If max. system leakage capacitance selected, the max. value response time t_{an} shall be:		—
	≤ 30 min for all types of IMDs		N/A
	reference conditions considered:		N/A
	-same as for 1 µF and	1uF	N/A
	-system leakage capacitance as stated by manufacturer ..... :		N/A
4.4.5	Measuring voltage U_m and measuring current I_m		P
	For all waveforms and for positive and negative values, the peak value of the measuring voltage U_m and the peak value of the measuring current I_m shall:	U_S is connected separately, Un de-energized	—
	-U_m ≤ 120 V ..... :	1.46V	P
	-I_m ≤ 10 mA (at R_F = 0 Ω) ..... :	3.13mA	P
4.4.6	Internal d.c. resistance R_I and internal impedance Z_I		P
	the internal d.c. resistance *R*i of the IMD shall be:		—
	≥ 30 Ω/V (of nominal system voltage) and ..... :		P
	≥ 15 kΩ ..... :		P
	the internal d.c. resistance *Z*i of the IMD shall be:		—
	≥ 30 Ω/V (of nominal system voltage) and ..... :	DC IMD	N/A
	≥ 1,8 kΩ (for type AC, AC / DC IMD)..... :		N/A
4.4.7	Indication of the value of the insulation resistance R_F		P
	IMD include indication of the value of the insulation resistance:		—
	-percentage uncertainty stated in accompanying documents ..... :	±15%	P
4.4.8	Permanently admissible nominal voltage U_n		P

www.tuvsud.com
Telephone : +86 510 8820 3737
Telefax : +86 510 8820 3636

TÜV SÜD Certification and Testing (China) Co., Ltd.

1-4/F., Building B, No.37, Tuanjie Middle Road, Xishan Economic and Technological Development Zone, Wuxi, Jiangsu, China

IEC 61557-8			
Clause	Requirement - Test	Result - Remark	Verdict
	U_n ≥ 110 % applied or	110 %	P
	U_n ≥ 105 % (specific system) ..... :		N/A
	U_n applied between:		—
	- system connections of the IMD and		P
	- the system connections and earth		P
	Type AC / DC IMDs tested with:		—
	- a.c. voltages with superimposed d.c. components		N/A
	- d.c. voltage with superimposed a.c. components		N/A
	Type AC IMDs and type AC / DC IMDs working with frequencies different from main nominal frequency:		—
	- manufacturer provide information..... :		N/A
	- stated in operating instruction..... :		N/A
4.4.9	Permanently admissible extraneous d.c. voltage U_{fg}	DC IMD	N/A
	Type AC / DC IMDs tested with:		—
	115 % of the highest nominal a.c. voltage U_n or		N/A
	not used in pure d.c. IT systems		N/A
	Operating instructions indicate:		—
	- U_{fg} for type AC IMDs, and		N/A
	- influence of Ufg on the measurement.		N/A
4.4.10	Supply voltage U_S		P
	If U_S is taken out of the system voltage U_n:		—
	- the working range of U_S is equal to U_n		N/A
	If U_S is connected separately		—
	- manufacturer provide information..... :	Us: 100-277VAC, Un: 50-1000VDC	P
4.5	**Electromagnetic compatibility (EMC)**		P
	EMC requirements of IEC 61326-2-4 apply ..... :	Details refer to the report 48.999.25.0064.00	P
4.6	**Safety requirements**		P
4.6.1	Safety requirements of		—
	IEC 61010-1, and..... :	(see part 2)	P
	IEC 61010-2-030, and ..... :	(see part 3)	P

www.tuvsud.com
Telephone : +86 510 8820 3737
Telefax : +86 510 8820 3636

TÜV SÜD Certification and Testing (China) Co., Ltd.

1-4/F., Building B, No.37, Tuanjie Middle Road, Xishan Economic and Technological Development Zone, Wuxi, Jiangsu, China

IEC 61557-8			
Clause	Requirement - Test	Result - Remark	Verdict
	of clause 4.6 to 4.8 apply		P
4.6.2	Clearances and creepage distances		P
	comply with:		—
	IEC 61010-1 and IEC 61010-2-030, or	See annex table 4.6.2	P
	IEC 60664 series ..... : (for fixed equipment, acc. table 3)	Can be covered by IEC 61010-2-030	N/A
	are selected for:		—
	- overvoltage / measurement category III, or		N/A
	- overvoltage / measurement category II, and		P
	- pollution degree 2, or		P
	- pollution degree 3 (for accessible parts on outside of the housing)		N/A
	A division into circuits with different nominal insulation voltages is permissible, if:		—
	- the electrical connection is made via resistive, capacitive or inductive voltage dividers, and		N/A
	- inadmissibly high touch voltage or high currents to earth prevented by circuit design features		N/A
	Circuit design features (see IEC 61140) can be:	(see corresponding IEC61010-1 Test Report, also)	—
	- reliable voltage dividers, or		P
	- protective impedance, or		N/A
	- other reliable feature ..... :		N/A
4.6.3	Protection class and earth connection of an IMD		P
	protection class I, or		N/A
	protection class II,		P
	earth connection of IMDs with protection class II treated as a functional earth connection (FE)		P
	protective impedances used in functional earth connection	No protective impedance used	N/A
	if protection class I, protective conductor connection treated as protective earth connection		N/A
4.7	**Climatic environmental conditions**		P
	IMD operate under climatic conditions according to		—

www.tuvsud.com
Telephone : +86 510 8820 3737
Telefax : +86 510 8820 3636

TÜV SÜD Certification and Testing (China) Co., Ltd.

1-4/F., Building B, No.37, Tuanjie Middle Road,
Xishan Economic and Technological Development
Zone, Wuxi, Jiangsu, China

IEC 61557-8			
Clause	Requirement - Test	Result - Remark	Verdict
	- IEC 60721-3-3, class 3K5 (operation: 5 °C to +45 °C)	Operation	P
	- IEC 60721-3-2, class 2K3 (transport: -25 °C to +70 °C)	Transport	P
	- IEC 60721-3-1, class 1K4 (storage: -25 °C to +55 °C)	Storage	P
4.8	**Mechanical requirements**		P
4.8.1	instead of the requirements of IEC 61557-1, clause 4.10 the requirements of clause 4.8.2 and 4.8.3 apply		—
4.8.2	Product mechanical robustness		P
	requirement of table 2 tested ..... :	Behaviour to vibrations: IEC 60068-2-6, Test Fc; Behaviour to shocks: IEC 60068-2-27, Test Ea	P
4.8.3	IP protection class requirements		P
	protection class, according IEC 60529..... :	IP00 This IMD is a built-in component, electric shock depends on the final product	P
	described in operating instructions, and..... :	in operating instructions	N/A
	minimum requirements of Table 3 applied.....	IP00 This IMD is a built-in component, electric shock depends on the final product.	N/A

5	**Marking and operating instructions**		P
5.1	**Marking**		P
	Different to the marking in Clause 5 of IEC 61557-1:2007, the following information shall be provided on the IMD:		—
	- type of IT system to be monitored (if designed for a specific type of IT system), or . :	IT system	P
	- type of the IMD ..... :	DC	P
	- nominal system voltage or voltage range (U_n) .. :	50-1000VDC	P
	- nominal supply voltage or voltage range (U_S) ... :	100-277VAC	P
	- nominal frequency f_n (of supply voltage(U_S)) ..... :		N/A

www.tuvsud.com
Telephone : +86 510 8820 3737
Telefax : +86 510 8820 3636

TÜV SÜD Certification and Testing (China) Co., Ltd.

1-4/F., Building B, No.37, Tuanjie Middle Road, Xishan Economic and Technological Development Zone, Wuxi, Jiangsu, China

IEC 61557-8			
Clause	Requirement - Test	Result - Remark	Verdict

	- serial number:	AIM-D500-CA(DC System Insulation Monitoring Device) ACPD300(Coupling Device for Insulation Monitoring)	—
	outside, or..... :		P
	inside ..... :		N/A
	- specified response value $R_{an,}$ or ..... :	1kΩ-2MΩ	P
	minimum and maximum specified response value:		N/A
5.2	**Operating instructions**		P
	additional to IEC 61557-1:2007, clause 5.2, the following instructions shall be included:		—
	- internal impedance Z_i (as a function of f_n) ..... :	DC IMD	N/A
	- peak value of the measuring voltage U_m ..... :	<120V	P
	- internal d.c. resistance R_i ..... :	1200kΩ	P
	- maximum value of the measuring current I_m ..... :	/	P
	For IMDs with remote insulation warning (RIW):		—
	- technical data of the interface..... :		P
	- rated voltage, ... :	Us: 100-277VAC, Un: 50-1000VDC	P
	- rated current, ... :	Rated power: ≤5W	P
	- rated insulation voltage, ... :		N/A
	- explanation of the interface function		N/A
	if contact circuit used, data reference to:		—
	- IEC 61810-2, or		N/A
	- IEC 60947-5-1, and		N/A
	- IEC 60947-5-4.		N/A
	Information that:		—
	- IMDs not connected in parallel, or		N/A
	- information on the interaction between IMDs		N/A
	Wiring diagram:		—
	- marked on the equipment, or		N/A
	- kept in operating instructions		P
	Effects of the system leakage capacitances C_e		—

www.tuvsud.com
Telephone : +86 510 8820 3737
Telefax : +86 510 8820 3636

TÜV SÜD Certification and Testing (China) Co., Ltd.

1-4/F., Building B, No.37, Tuanjie Middle Road, Xishan Economic and Technological Development Zone, Wuxi, Jiangsu, China

IEC 61557-8			
Clause	Requirement - Test	Result - Remark	Verdict
	- response value (Ω), and ..... :	1kΩ-2MΩ	P
	- response time (s), and ..... :	<100s	P
	- permissible maximum value of the system leakage capacitance (µF) ..... :	1uF	P
	Extraneous d.c. voltage (U_{fg}) of any polarity..... :		N/A
	Test voltage (see 6.2.13) ..... :	(see appended Form E)	P
	Conformity to relevant EMC-standards ..... :	IEC 61326-2-4	P
	Range of specified response values ..... :	1kΩ-2MΩ	P
	IP protection class ..... :	IP30 applies only to the front	P
	Percentage uncertainty of the insulation resistance R_f (if applicable) ..... :	±15%	P
6.	**Tests**		P
6.1	**General**		P
	tests according to Clause 6 of IEC 61557-1:2007 and the tests detailed in 6.2 and 6.3 performed		P
6.2	**Type tests**		P
6.2.1	General		P
	Equipment operated under climatic environmental conditions according to Table 5, and		P
	Equipment storage under climatic environmental conditions according to Table 6		P
6.2.2	Test of response values		P
	Response values shall be tested at:		—
	- lowest and highest value of U_N, and..... :	(see appended Form A)	P
	- lowest and highest value of supply voltage U_S. ..... :	(see appended Form A)	P
	For IMDs with continuously variable specified response value, or digital setting:		—
	- compliance with the requirements of clause 4.4.2, 4.4.3 and 4.4.4 checked..... :	(see appended Form A)	P
	For IMDs with response value adjusted by means of a mechanical switch:		—
	- each step tested ..... :	(see appended Form A)	N/A

www.tuvsud.com
Telephone : +86 510 8820 3737
Telefax : +86 510 8820 3636

TÜV SÜD Certification and Testing (China) Co., Ltd.

1-4/F., Building B, No.37, Tuanjie Middle Road, Xishan Economic and Technological Development Zone, Wuxi, Jiangsu, China

IEC 61557-8			
Clause	Requirement - Test	Result - Remark	Verdict
	If the measuring method is affected by the magnitude of the system leakage capacitance C_e:		—
	- tested by insertion of capacitors,		N/A
	- limits of 4.4.3 met		N/A
	- relative percentage uncertainty determined.		N/A
	Insulation warning function tested according 4.2.2		P
6.2.3	Test of response time t_{an}		P
	Test performed with:		—
	- symmetrical system leakage capacitance C_e of 1 µF	1uF	P
	- nominal system voltage U_N ..... :	Un: 50-1000VDC	P
	Compliance with clause 4.4.4. ..... :	(see appended Form B)	P
6.2.4	Test of peak value of the measuring voltage U_m		P
	requirements given in 4.4.5 are met		P
	internal resistance ≥ 20x R_i ..... :	(see appended Form C)	P
	measuring uncertainty ≤ 5 %..... :	(see appended Form C)	P
6.2.5	Test of the peak value of the measuring current I_m		P
	requirements given in 4.4.5 are met		P
	internal resistance ≤ 5% of R_i..... :	(see appended Form C)	P
	measuring uncertainty ≤ 5 %..... :	(see appended Form C)	P
6.2.6	Test of internal d.c. resistance R_i and internal impedance Z_i		P
6.2.6.1	requirements given in 4.4.6 are met		P
	tests performed with or without rated supply voltage U_S ..... :	(see appended Form C)	P
	measuring voltage applied ..... :	(see appended Form C)	P
	measuring uncertainty ≤ 5 %..... :	(see appended Form C)	P
6.2.6.2	Test of internal impedance Z_i	DC IMD	N/A
	requirements given in 4.4.6 are met		N/A
	impedance measuring voltage source U_n..... :		N/A
	frequency of the measuring is identical to the nominal system frequency f_n		N/A
	distortion factor ≤ 5 %..... :	(see appended Form C)	N/A
	internal resistance ≤ 10 Ω ..... :	(see appended Form C)	N/A

www.tuvsud.com
Telephone : +86 510 8820 3737
Telefax : +86 510 8820 3636
TÜV®

TÜV SÜD Certification and Testing (China) Co., Ltd.

1-4/F., Building B, No.37, Tuanjie Middle Road, Xishan Economic and Technological Development Zone, Wuxi, Jiangsu, China

IEC 61557-8			
Clause	Requirement - Test	Result - Remark	Verdict

	For IMDs with frequency range, the internal impedance Z_i measured at:		—
	- lowest nominal frequency f_n		N/A
	- highest nominal frequency f_n		N/A
	Z_i calculated $Z_i = \frac{2\sqrt{2}\,U_n}{I_{pp}}$ ..... :		N/A
6.2.6.3	Test of internal d.c. resistance R_i		P
	requirements given in 4.4.6 are met		P
	d.c. voltage have a magnitude of U_n ..... :	Un: 50-1000VDC	P
	limited to maximum extraneous d.c. voltage U_{fg} ..... :		N/A
	internal resistance ≤ 10 Ω ..... :	<10 Ω	P
	R_i calculated $R_i = \frac{U_n}{I}\left(U_n \le U_{fg}\right)$ ..... :	(see appended Form C)	P
6.2.7	Test of facilities for indicating the insulation resistance RF		P
	percentage uncertainty limit [%] ..... :	≤ ± 15 %	P
6.2.8.	Test of effectiveness of the test device		P
	The internal test function, and	Test function instructions send from the upper MCU	—
	the external test function are		—
	compliant with the requirements given in 4.2.3. ..... :	See 4.2.3	P
6.2.9	Test of permanently admissible nominal voltage U_n	Un: 50-1000VDC	P
	requirements of 4.4.8 tested ..... :	4.4.8 tested	P
6.2.10	Test of permanently admissible extraneous d.c. voltage U_{fg}		N/A
	type AC IMDs tested according 4.4.9 ..... :	(see appended Form D)	N/A
6.2.11	Test of supply voltage U_S	Us: 100-277VAC	P
	requirements of 4.4.10 tested ..... :	4.4.10 tested	P
6.2.12	Test of optional functions		N/A
6.2.12.1	Test of the performance of the remote enabling/disabling command (REDC)		N/A
	requirements of 4.3.4 validated by tests ..... :		N/A
	One or all of the IMDs shall respond		N/A
	None of the IMDs shall erroneously respond		N/A

www.tuvsud.com
Telephone : +86 510 8820 3737
Telefax : +86 510 8820 3636

TÜV SÜD Certification and Testing (China) Co., Ltd.

1-4/F., Building B, No.37, Tuanjie Middle Road, Xishan Economic and Technological Development Zone, Wuxi, Jiangsu, China

IEC 61557-8			
Clause	Requirement - Test	Result - Remark	Verdict
6.2.12.2	Test of the local transformer monitoring warning (LTMW)		N/A
	requirements of 4.3.2 validated by tests ..... :		N/A
	local transformer warning function respond		N/A
6.2.12.3	Test of the remote transformer monitoring warning (RTMW)		N/A
	requirements of 4.3.3 validated by tests ..... :		N/A
	local transformer warning function respond		N/A
6.2.13	Voltage tests		P
	requirements of 4.6 considered		P
	voltage tests according Annex F of IEC 61010-1:2010 performed	(see appended Form E)	P
6.2.14	Test of electromagnetic compatibility (EMC)	Details refer to the report 48.999.25.0064.00	P
	requirements of 4.5 considered		P
6.2.15	Inspection of the marking and operating instructions		P
	requirements of clause 5 checked		P
6.2.16	Mechanical tests		P
6.2.16.1	Shock and vibration test according 4.8.2. performed		P
6.2.16.2	IP requirements checked by visual inspection	IP30 applies only to the front	P
6.3	**Routine tests**		N/A
6.3.1	each IMD subjected to routine test, except		N/A
	technical failure analysis and/or ..... :		—
	statistical analysis, show that ..... :		—
	routine tests can be limited to ..... :		N/A
	Routine tests carried out:		—
	during the manufacturing process, or		N/A
	at the end of the manufacturing process		N/A
6.3.2	Test of response values		—
	Routine tests of the relative percentage uncertainty of the response values shall be performed:		N/A
	- room temperature (23 ± 3) °C		N/A
	- at 1,0 times U_n and 1,0 times U_S, or		N/A
	the lowest and highest rated value of U_n and U_S, or		N/A

www.tuvsud.com
Telephone : +86 510 8820 3737
Telefax : +86 510 8820 3636

TÜV SÜD Certification and Testing (China) Co., Ltd.

1-4/F., Building B, No.37, Tuanjie Middle Road, Xishan Economic and Technological Development Zone, Wuxi, Jiangsu, China

IEC 61557-8			
Clause	Requirement - Test	Result - Remark	Verdict
	with a range of rated voltages		N/A
	- at a minimum of three settings, including minimum, maximum and centre, or		N/A
	- at each step (for devices with stepwise adjustments, only)		N/A
	During this test, the limits reduced a degree that the requirements are met.		N/A
	Insulation warning function according to 4.2.2.2 and 4.2.2.3 tested		N/A
6.3.3	Test of effectiveness of the test function		N/A
	correct operation tested for:		—
	- the internal test device		N/A
	- the external test device (of provided),		N/A
6.3.4	Test of facility for indicating the insulation resistance R_F		N/A
	IMD with facilities for indicating the insulation resistance R_F:		—
	- the relative percentage uncertainty limits are determined		N/A
6.3.5	Voltage tests		N/A
	- tested according IEC61010-1:2010, Annex F	(see appended Form E)	N/A
6.3.6	Compliance with tests of 6.3		N/A
	- tests of 6.3 should be recorded		N/A
Annex A	**Medical insulation monitoring devices (MED-IMD)**		N/A
A.1	**Scope and object**		N/A
	applicable for		—
	- devices permanently monitor medical a.c. IT systems, and		N/A
	- used in group 2 medical locations according to 710.413.1.5 of IEC 60364-7-710:2002.		N/A
A.2	**Requirements**		N/A
	Additional to Clause 4, the requirements or modifications detailed in A.2.2 to A.2.5 apply.		N/A

www.tuvsud.com
Telephone : +86 510 8820 3737
Telefax : +86 510 8820 3636

TÜV SÜD Certification and Testing (China) Co., Ltd.

1-4/F., Building B, No.37, Tuanjie Middle Road, Xishan Economic and Technological Development Zone, Wuxi, Jiangsu, China

IEC 61557-8			
Clause	Requirement - Test	Result - Remark	Verdict
A.2.1	Types of MED-IMDs		N/A
	type AC MED- IMD, or		N/A
	type AC / DC MED-IMD.		N/A
A.2.3	Mandatory functions provided by MED-IMD		N/A
A.2.3.1	The following functions shall be provided:		—
	- warning indication if R_F has decreased to 50 kΩ,		N/A
	- test device according to 4.2.3 provided,		N/A
	- lowest setting shall be ≥ 50 kΩ.		N/A
A.2.3.2	Local insulation warning (LIW)		N/A
	This function include:		—
	- the measurement of the insulation resistance R_F,		N/A
	- an assessment of this resistance R_F, and		N/A
	- a local warning.		N/A
	Acoustic and visual alarm system provided, which:		—
	- can placed that it can be permanently monitored,		N/A
	- provide green signal lamp (normal operation);		N/A
	- provide yellow signal lamp (warning indication)		N/A
	- signal lamp not to be cancelled or disconnected;		N/A
	- an audible alarm		N/A
	- audible alarm may to be silenced (alarm);		N/A
	- yellow signal and the audible alarm shall be cancelled only after removal of the fault		N/A
A.2.3.3	Remote insulation warning (RIW)		N/A
	This function include:		—
	- the measurement of the insulation resistance R_F,		N/A
	- an assessment of this resistance R_F, and		N/A
	- a warning output.		N/A
	Warning output reported remotely with an output signal:		—
	- by relay contact output, or		N/A
	- an electronic switching output, or		N/A
	- a communication protocol		N/A

www.tuvsud.com
Telephone : +86 510 8820 3737
Telefax : +86 510 8820 3636

TÜV SÜD Certification and Testing (China) Co., Ltd.

1-4/F., Building B, No.37, Tuanjie Middle Road,
Xishan Economic and Technological Development
Zone, Wuxi, Jiangsu, China

IEC 61557-8			
Clause	Requirement - Test	Result - Remark	Verdict
	External of the MED-IMD, for each medical IT system following components are incorporated:		—
	Acoustic and visual alarm system provided, which:		N/A
	- can placed that it can be permanently monitored,		N/A
	- provide green signal lamp (normal operation);		N/A
	- provide yellow signal lamp (warning indication);		N/A
	- signal lamp not to be cancelled or disconnected;		N/A
	- an audible alarm		N/A
	- audible alarm may to be silenced (alarm);		N/A
	- yellow signal and the audible alarm shall be cancelled only after removal of the fault		N/A
A.2.3.4	Indication for the interruption to the system to be monitored		N/A
	Indication provided of the loss of:		—
	- the connection to the system,		N/A
	- the connection between the IMD and earth		N/A
A.2.3.5	Information about the value of the insulation resistance		N/A
	value of the insulation resistance indicated by:		—
	- a meter, or		N/A
	- a display, or		N/A
	- data communication.		N/A
A.2.4	Performance requirements		N/A
A.2.4.1	Specified response value R_{an}		N/A
	specified response value of a MED-IMD shall be:	(see appended Form A)	—
	- permanently set as a fixed value of 50 kΩ, or;		N/A
	- adjustable within a response range with a lowest value of 50 kΩ.		N/A
	If adjustable, modification of the settings, possible only by the use of a key, a tool or a password ..... :		N/A
	response value of R_{an}:		—
	continuously, or ..... :		N/A
	stepwise..... :		N/A
A.2.4.2	Response time t_{an}		N/A

www.tuvsud.com
Telephone : +86 510 8820 3737
Telefax : +86 510 8820 3636

TÜV SÜD Certification and Testing (China) Co., Ltd.

1-4/F., Building B, No.37, Tuanjie Middle Road, Xishan Economic and Technological Development Zone, Wuxi, Jiangsu, China

IEC 61557-8			
Clause	Requirement - Test	Result - Remark	Verdict
	at system leakage capacitance of 0,5µF the response time t_{an} and alarm-off time shall be:	(see appended Form B)	—
	≤ 5 s for an insulation resistance R_F ≤ 25 kΩ.		N/A
	alarm off-time clearing the fault:		—
	≤ 5 s for an insulation resistance 25 kΩ ≤ R_F ≤ 10 MΩ		N/A
	For MED-IMD with automatic , periodic self-test:		—
	- response time tan can be extended		N/A
	Indication provided of the loss of:		—
	- the connection to the system,		N/A
	- the connection between the IMD and earth.		N/A
	Response time for the indication of loss of the connection shall be indicated in the operating instructions. ..... :		N/A
A.2.4.3	Measuring voltage U_m and measuring current I_m		N/A
	- U_m ≤ 25 V peak, and..... :	(see appended Form C)	N/A
	- I_m ≤ 1 mA..... :	(see appended Form C)	N/A
A.2.4.4	Internal impedance (Z_i)		N/A
	- Zi ≥ 100 kΩ. ..... :	(see appended Form C)	N/A
A.2.5	Electromagnetic compatibility (EMC)		N/A
	IEC 61326-2-4 applies		N/A
A.3	**Marking and operating instructions**		N/A
	additional information provided by MED-IMD:		—
	- marked with the pictogram Figure A.1, and		N/A
	- pictogram for the type of IMD (5.1, Table 4).		N/A
	- operating instructions according to Clause B.3		N/A

A.4	**Tests**		N/A
A.4.1	Additional to Clause 6, the tests detailed in Clause A.4 and A.5 shall be performed.		N/A
A.4.2	Type tests		N/A
A.4.2.1	Test of the maximum value of the measuring voltage U_m and of the measuring current I_m		N/A

www.tuvsud.com
Telephone : +86 510 8820 3737
Telefax : +86 510 8820 3636

TÜV SÜD Certification and Testing (China) Co., Ltd.

1-4/F., Building B, No.37, Tuanjie Middle Road,
Xishan Economic and Technological Development
Zone, Wuxi, Jiangsu, China

IEC 61557-8			
Clause	Requirement - Test	Result - Remark	Verdict
	tests of 6.2.4 and 6.2.5 shall be performed with the requirements of A.2.4	(see appended Form C)	N/A
A.4.2.2	Test of the function of the indication of the interruption to the system to be monitored		N/A
	connection to the system and to the earth tested		N/A
	alarm take place if connection to the system and to the earth is lost		N/A
Annex C	**Insulation monitoring devices for photovoltaic systems (PV-IMD)**		N/A
C.2	**Requirements for PV-IMDs for PV installations**		N/A
C.2.1	PV-IMDs capable of monitoring the insulation resistance R_F		N/A
	Insulation fault location (IFLS) equipment integrated		N/A
	Warning given if R_F falls below a predetermined level		N/A
C.2.2	Types of PV-IMDs		N/A
	type AC / DC PV-IMD or		N/A
	type DC PV-IMD		N/A
	Shall be capable of monitoring the insulation resistance R_F,		N/A
	- including symmetric and asymmetric allocation, and		N/A
	- give a warning		N/A
C.2.3	Mandatory functions provided by IMDs		N/A
C.2.3.1	Local insulation monitoring warning (LIW) and remote insulation monitoring warning (RIW)		N/A
	comprise a visual warning device with:		—
	local insulation warning (LIW) or		N/A
	remote insulation warning (RIW) or		N/A
	remote output is used (RIW)		N/A
C.2.3.2	Test function		N/A
	The requirements of 4.2.3 apply, and additional:		—
	an automatic self-test function is provided, with		N/A

www.tuvsud.com
Telephone : +86 510 8820 3737
Telefax : +86 510 8820 3636

TÜV SÜD Certification and Testing (China) Co., Ltd.

1-4/F., Building B, No.37, Tuanjie Middle Road, Xishan Economic and Technological Development Zone, Wuxi, Jiangsu, China

IEC 61557-8			
Clause	Requirement - Test	Result - Remark	Verdict
	warning indication on the device, and / or		N/A
	as an electronic signal for remote indication.		N/A
C.2.4	Performance requirements		N/A
C.2.4.1	Specified response values R_{an}		N/A
	response values of PV-IMDs adjustable..... :		N/A
	adjustment possible only by a tool, a key or a password. ..... :		N/A
C.2.4.2	System leakage capacitance C_e		N/A
	Range of system leakage capacitance C_e..... :		N/A
	No alarm due to fluctuations of the system leakage capacitance C_e		N/A
C.2.4.3	Permanently admissible nominal voltage U_n and characteristics of the d.c. PV system voltage		N/A
	addition to 4.4.8:		—
	PV-IMD operates under dynamic reference characteristics of the d.c. voltage of the PV system.		N/A
	no alarm stated due to voltage changes, shown in figure C.1		N/A
	PV-IMD operate normally under reference characteristics of Figure C.1:		—
	- not switch to alarm state under no fault conditions.		N/A
	- not switch to no-alarm state under fault conditions		N/A
	- detect an insulation fault within the specified response time, and		N/A
	switch to alarm state		N/A
	- switch to no-alarm state when the alarm disappears		N/A
C.3	**Marking and operating instructions**		N/A
C.3.1	Marking		N/A
	additional to requirements of clause 5.1:		—
	PV-IMD shall be marked with the pictogram according to Figure C.2.		N/A
C.3.2	Operating instructions		N/A

www.tuvsud.com
Telephone : +86 510 8820 3737
Telefax : +86 510 8820 3636

TÜV SÜD Certification and Testing (China) Co., Ltd.

1-4/F., Building B, No.37, Tuanjie Middle Road, Xishan Economic and Technological Development Zone, Wuxi, Jiangsu, China

IEC 61557-8			
Clause	Requirement - Test	Result - Remark	Verdict
	additional to requirements of clause 5.2, the following advises shall be included:		—
	- explanation of the function of the automatic self-test included..... :		N/A
	- the time intervals in which the automatic self-test :		N/A
	- the warnings which are generated..... :		N/A
	- explanation of the remote warning function ..... :		N/A
C.4	**Tests**		N/A
C.4.1	additional to the requirements of clause 6, the following apply:		—
C.4.2	Additional type tests		N/A
C.4.2.1	The tests of 6.2 of this standard apply and additionally or alternatively the following type tests apply.		—
C.4.2.2	Test of the warning function		N/A
	the test of clause 6.2.2 applies, and		—
	the remote warning function is verified.		N/A
C.4.2.3	Test of the test function		N/A
	the test of clause 6.2.8 applies, and		—
	the function of the automatic self-test according to C.2.3.2 shall be verified		N/A
C.4.2.4	Test of the permanently admissible nominal voltage U_n and of the characteristics of the d.c. PV system voltage		N/A
	additional to the tests of clause 6.2.9 and 6.2.10:	(see appended Form D)	—
	PV-IMD not switch to the alarm state during the voltage changes, acc. to figure C.1, and		N/A
	system leakage capacitance C_e = $C_{e\text{-}max,}$ and ..... :		N/A
	insulation resistance R_F= 2 x R_{an}.		N/A
C.4.2.5	Inspection of marking and operating instructions		N/A
	requirements of Clauses 5 and C.3 shall be verified		N/A
C.4.3	Additional routine tests		N/A
C.4.3.1	Test of the warning function		N/A
	tests of 6.3.3 apply, and		N/A

www.tuvsud.com
Telephone : +86 510 8820 3737
Telefax : +86 510 8820 3636

TÜV SÜD Certification and Testing (China) Co., Ltd.

1-4/F., Building B, No.37, Tuanjie Middle Road, Xishan Economic and Technological Development Zone, Wuxi, Jiangsu, China

IEC 61557-8			
Clause	Requirement - Test	Result - Remark	Verdict
	the requirements of C.2.3.1 are tested		N/A
C.4.3.2	Test of the test function		N/A
	tests of 6.3.3 apply, and		N/A
	the requirements of C.2.3.2 are tested		N/A
Annex D	**Insulation monitoring function of a photovoltaic inverter (PV-IMF) or in a charge controller**		N/A
D.1	**Scope and object**		N/A
	This annex applies for the insulation monitoring function that is integrated in a PV inverter (PV-IMF) according to IEC 62109-2.		N/A
	PV-IMF monitors the insulation resistance to earth of unearthed d.c. PV arrays.		N/A
D.2	**Requirements for PV-IMFs**		N/A
	the requirements of Clause 4, Clause 5 and Clause 6 apply, and additional:		—
	PV-IMFs capable of monitoring the insulation resistance R_F		N/A
	The PV-IMF provide output signals:		—
	- about the measured insulation resistance RF, and / or		N/A
	- the response of the insulation monitoring function		N/A
D2.2	Types of PV-IMFs		N/A
	type AC / DC PV-IMF or		N/A
	type DC PV-IMF		N/A
	Shall be capable of monitoring the insulation resistance $R_{F,}$		N/A
	- including symmetric and asymmetric allocation, and		N/A
	- give a signal to the PV-inverter		N/A
	The relevant output information is:		—
	- analogue or digital signal (for R_F), and / or		N/A
	- digital signal (for response)		N/A
D2.3	Mandatory functions provided by PV-IMFs		N/A
D.2.3.1	Remote insulation warning (RIW)		N/A

www.tuvsud.com
Telephone : +86 510 8820 3737
Telefax : +86 510 8820 3636

TÜV SÜD Certification and Testing (China) Co., Ltd.

1-4/F., Building B, No.37, Tuanjie Middle Road, Xishan Economic and Technological Development Zone, Wuxi, Jiangsu, China

IEC 61557-8			
Clause	Requirement - Test	Result - Remark	Verdict
	insulation faults to be signalled :		—
	- digital warning signal (if R_F < response value) (relay contact or electronic output); and/or		N/A
	- analogue signal (for the value of R_F),		N/A
	- signalling of warning via bus interface (for the value of R_F),		N/A
	The warning function according to 4.2.2.2 and 4.2.2.3 is performed by the inverter.		N/A
	PV-IMF provide the following warning function:		—
	- a visible or audible indication, and		N/A
	- an electrical or electronic indication.		N/A
D.2.3.2	Self-test function		N/A
	- initiated by an electronic signal from the inverter; and/or		N/A
	- automatic execution, by the PV-IMF		N/A
	Warning indicated by the inverter, if failure during the self-test is detected.		N/A
D.2.4	Performance requirements for PV-IMFs		N/A
D.2.4.1	Specified response values R_{an}		N/A
	- fixed value set inside PV-IMF, and / or..... :		N/A
	- variable value set by an interface signal, and / or :		N/A
	- analogue or digital signal		N/A
	Adjustment at inverter possible only by a tool, a key or a password. ..... :		N/A
D.2.4.2	System leakage capacitance C_e		N/A
	requirements of C.2.4.2 apply		N/A
D.2.4.3	Indication of the value of the insulation resistance R_F		N/A
	The performance requirements of 4.4.7 apply, but		N/A
	indication provided at inverter		N/A
D.2.4.4	Permanently admissible nominal voltage U_n and characteristics of the d.c. PV system voltage		N/A
	requirements of C.2.4.3 apply, except:		—
	U_n corresponds to the permanently admissible nominal voltage U_n of the inverter		N/A
D.2.4.5	Supply voltage U_S		N/A

www.tuvsud.com
Telephone : +86 510 8820 3737
Telefax : +86 510 8820 3636

TÜV SÜD Certification and Testing (China) Co., Ltd.

1-4/F., Building B, No.37, Tuanjie Middle Road, Xishan Economic and Technological Development Zone, Wuxi, Jiangsu, China

IEC 61557-8			
Clause	Requirement - Test	Result - Remark	Verdict
	sub clause 4.4.10 applies, except:		—
	supply voltage is provided internally from the inverter, and		N/A
	the working range of the supply voltage is equal to the internal voltage range..... :		N/A
D.2.5	Electromagnetic compatibility (EMC)		N/A
	sub clause 4.5 applies, except:		—
	- requirements compatible for the inverter, and		N/A
	- performance criteria of IEC 61324-2-4 applies .... :		N/A
D.2.6	Safety requirements		N/A
D.2.6.1	Clearances and creepage distances		N/A
	requirements of 4.6.2 of this standard apply with the following differences:		—
	- inverter includes overvoltage limitation device..... :		N/A
	- the pollution degree corresponds to the degree inside the inverter. ..... :		N/A
D.2.7	Climatic environmental conditions		N/A
	sub clause 4.7 applies, except:		—
	climatic classes inside of the inverter adapted		N/A
D.2.8	Mechanical requirements		N/A
	sub clause 4.8 applies, except:		—
	- product mechanical robustness adapted to the protection class required inside the inverter..... :		N/A
	- IP protection class shall be adapted to the protection class required inside of the inverter. ... :		N/A
D.3	**Marking and operating instructions**		N/A
D.3.1	Marking		N/A
	additional to requirements of clause 5.1:		—
	PV-IMF shall be marked with:		—
	- type designation, and ..... :		N/A
	- manufacturer identification code, or ..... :		N/A
	- no marking, (if integrated into inverter)		N/A
D.3.2	Operating instructions		N/A

www.tuvsud.com
Telephone : +86 510 8820 3737
Telefax : +86 510 8820 3636

TÜV SÜD Certification and Testing (China) Co., Ltd.

1-4/F., Building B, No.37, Tuanjie Middle Road, Xishan Economic and Technological Development Zone, Wuxi, Jiangsu, China

IEC 61557-8			
Clause	Requirement - Test	Result - Remark	Verdict
	sub clause 5.1 applies, except:		N/A
	- part of the operating instructions of the inverter ... :		N/A
D.4	**Tests**		N/A
D.4.1	Type tests of clause 6, performed with following changes:		—
	- the PV-IMF is integrated in the inverter, or alternatively		N/A
	- without the inverter (if simulated)		N/A
D.4.2	Type tests		N/A
D.4.2.1	Test of the response values R_{an}		N/A
	performed according clause 6.2.2:	(see appended Form A)	N/A
	- for fixed response values, or ..... :		N/A
	- variable response values ..... :		N/A
D.4.2.2	Test of the warning function		N/A
	requirements of D.2.3.1 verified ..... :		N/A
D.4.2.3	Test of the test function		N/A
	requirements of D.2.3.2 verified ..... :		N/A
D.4.2.4	Test of the permanently admissible nominal voltage Un and characteristics of the PV system voltage		N/A
	tests of C.4.2.4 performed under consideration of D.2.4.4. ..... :		N/A
D.4.2.5	Test of the supply voltage U_S		N/A
	test of 6.2.11 performed under consideration of the requirements of D.2.4.5. ..... :		N/A
D.4.2.6	Voltage test		N/A
	tests of 6.2.13 performed under consideration of D.2.6.1. ..... :	(see appended Form E)	N/A
D.4.2.7	Test of the electromagnetic compatibility (EMC)		N/A
	test of 6.2.14 performed under consideration of D.2.5. ..... :		N/A
D.4.2.8	Test under the specified environmental climatic conditions		N/A

www.tuvsud.com
Telephone : +86 510 8820 3737
Telefax : +86 510 8820 3636

TÜV SÜD Certification and Testing (China) Co., Ltd.

1-4/F., Building B, No.37, Tuanjie Middle Road, Xishan Economic and Technological Development Zone, Wuxi, Jiangsu, China

IEC 61557-8			
Clause	Requirement - Test	Result - Remark	Verdict
	test under specific environmental climatic conditions performed under consideration of the requirements of D.2.7. ..... :		N/A
D.4.2.9	Inspection of marking and operating instructions		N/A
	test of 6.2.15 performed under consideration of the requirements of Clause D.3. ..... :		N/A
D.4.2.10	Mechanical test		N/A
	performed with the PV-IMF integrated in the inverter		—
	requirements of D.2.8 verified ..... :		N/A
D.4.3	Routine tests		N/A
D.4.3.1	Test of the response values		N/A
	tested according 6.2.2 under consideration of the requirements of D.4.2.1.		N/A
D.4.3.2	Test of the warning function		N/A
	tested according D.4.2.2		N/A
D.4.3.3	Test of the test function		N/A
	tested according D.4.2.3		N/A
D.4.3.4	Voltage test		N/A
	tested according D.4.2.6		N/A

www.tuvsud.com
Telephone : +86 510 8820 3737
Telefax : +86 510 8820 3636

TÜV SÜD Certification and Testing (China) Co., Ltd.

1-4/F., Building B, No.37, Tuanjie Middle Road,
Xishan Economic and Technological Development
Zone, Wuxi, Jiangsu, China

IEC 61557-8			
Clause	Requirement + Test	Result - Remark	Verdict

6.2.2	**TABLE: percentage uncertainty A of the specified response value R_{an}**	**Form A (Part 8)**	P

U_N [V]	U_S [V]	f_N [Hz]	C_e [µF]	R_{AN} soll [kΩ]	Ta [-5°C]	Ta [+45°C]	R_{AN} IST [kΩ]	A [U / C] [%]	A [U / Ta -5°C] [%]	A [U/Ta +45°C] [%]
50Vdc	100Vac	50Hz	1 µF	1/100/ 200/ 300/ 500/ 1000/2000	-20.0°C	--	+/- to PE: 1/97/201/304 /506/1005/19 75	≤ ± 15 %	+/- to PE: 0%/-3%/ 0.5%/ 1.3%/ 1.2%/ 0.5%/- 1.25%	--
50Vdc	100Vac	50Hz	1 µF	1/100/ 200/ 300/ 500/ 1000/2000	-20.0°C	--	+ to PE: 1/100/ 200/ 299/ 496/ 1008/1966	≤ ± 15 %	+ to PE: 0%/0%/ 0%/ -0.3%/ - 0.8%/ 0.8%/ - 3.4%	--
50Vdc	100Vac	50Hz	1 µF	1/100/ 200/ 300/ 500/ 1000/2000	-20.0°C	--	- to PE: 1/99/ 196/ 306/ 504/ 986/1964	≤ ± 15 %	- to PE: 0%/ -1%/ - 2%/ 2%/ 0.8%/ -1.4%/ -1.8%	--

www.tuvsud.com
Telephone : +86 510 8820 3737
Telefax : +86 510 8820 3636

TÜV SÜD Certification and Testing (China) Co., Ltd.

1-4/F., Building B, No.37, Tuanjie Middle Road,
Xishan Economic and Technological Development
Zone, Wuxi, Jiangsu, China

IEC 61557-8			
Clause	Requirement + Test	Result - Remark	Verdict

6.2.2	**TABLE: percentage uncertainty A of the specified response value R_{an}**	**Form A (Part 8)**	P

U_N [V]	U_S [V]	f_N [Hz]	C_e [µF]	R_{AN} soll [kΩ]	Ta [-5°C]	Ta [+45°C]	R_{AN} IST [kΩ]	A [U / C] [%]	A [U / Ta -5°C] [%]	A [U/Ta +45°C] [%]
1150Vdc	277Vac	50Hz	1 µF	1/100/ 200/ 300/ 500/ 1000/2000	-20.0°C	--	+/- to PE: 1/97/200/297 /499/1004/19 90	≤ ± 15 %	+/- to PE: 0%/-3%/ 0 %/ -1%/ -0.2%/ 0.4%/-0.5%	--
1150Vdc	277Vac	50Hz	1 µF	1/100/ 200/ 300/ 500/ 1000/2000	-20.0°C	--	+ to PE:1/ 99/ 203/ 303/ 492/ 976/1954	≤ ± 15 %	+ to PE: 0%/-1%/ 1.5%/ 1%/ -1.6%/ -2.4%/ -2.3%	--
1150Vdc	277Vac	50Hz	1 µF	1/100/ 200/ 300/ 500/ 1000/2000	-20.0°C	--	- to PE:1/ 99/ 198/ 297/ 494/ 978/1926	≤ ± 15 %	- to PE: 0%/-1%/ -1 %/ -1 %/ -0.8%/ -2.2%-3.7%	--
50Vdc	100Vac	50Hz	1 µF	1/100/ 200/ 300/ 500/ 1000/2000	--	60.0°C	+/- to PE: 1/95/ 200/ 296/ 491/ 969/1942	≤ ± 15 %	--	+/- to PE: 0%/-5%/ 0%/ -1.3%/ -1.8%/ -3.1%/-2.9%

www.tuvsud.com
Telephone : +86 510 8820 3737
Telefax : +86 510 8820 3636

TÜV SÜD Certification and Testing (China) Co., Ltd.

1-4/F., Building B, No.37, Tuanjie Middle Road,
Xishan Economic and Technological Development
Zone, Wuxi, Jiangsu, China

IEC 61557-8			
Clause	Requirement + Test	Result - Remark	Verdict

6.2.2	**TABLE: percentage uncertainty A of the specified response value R_{an}**	**Form A (Part 8)**	P

U_N [V]	U_S [V]	f_N [Hz]	C_e [µF]	R_{AN} soll [kΩ]	Ta [-5°C]	Ta [+45°C]	R_{AN} IST [kΩ]	A [U / C] [%]	A [U / Ta -5°C] [%]	A [U/Ta +45°C] [%]
50Vdc	100Vac	50Hz	1 µF	1/100/ 200/ 300/ 500/ 1000/2000	--	60.0°C	+ to PE: 1/99/ 197/ 305/ 498/ 987/1936	≤ ± 15 %	--	+ to PE: 0%/ -1%/ -1.5%/ 1.7%/ -0.4%/ -1.3%/-3.2%
50Vdc	100Vac	50Hz	1 µF	1/100/ 200/ 300/ 500/ 1000/2000	--	60.0°C	- to PE: 1/96/ 206/ 297/ 497/ 974/1938	≤ ± 15 %	--	- to PE: 0%/-4%/ 3%/ -1%/ -0.6%/ -3.1%
1150Vdc	277Vac	50Hz	1 µF	1/100/ 200/ 300/ 500/ 1000/2000	--	60.0°C	+/- to PE: 1/96/ 202/ 298/ 490/ 968/1943	≤ ± 15 %	--	+/- to PE: 0%/-4%/ 1%/ -0.7%/ -2%/ -3.2%/-2.85%
1150Vdc	277Vac	50Hz	1 µF	1/100/ 200/ 300/ 500/ 1000/2000	--	60.0°C	+ to PE: 1/98/ 200/ 301/ 499/ 981/1941	≤ ± 15 %	--	+ to PE: 0%/ -2%/ 0%/0.3%/ -0.2%/ -1.9%/-2,95%

www.tuvsud.com
Telephone : +86 510 8820 3737
Telefax : +86 510 8820 3636

TÜV SÜD Certification and Testing (China) Co., Ltd.

1-4/F., Building B, No.37, Tuanjie Middle Road,
Xishan Economic and Technological Development
Zone, Wuxi, Jiangsu, China

IEC 61557-8			
Clause	Requirement + Test	Result - Remark	Verdict

6.2.2	**TABLE: percentage uncertainty A of the specified response value R_{an}**							**Form A (Part 8)**		P
U_N [V]	U_S [V]	f_N [Hz]	C_e [µF]	R_{AN} soll [kΩ]	Ta [-5°C]	Ta [+45°C]	R_{AN} IST [kΩ]	A [U / C] [%]	A [U / Ta -5°C] [%]	A [U/Ta +45°C] [%]
1150Vdc	277Vac	50Hz	1 µF	1/100/ 200/ 300/ 500/ 1000/2000	--	60.0°C	- to PE: 1/97/ 199/ 298/ 498/ 972/1942	≤ ± 15 %	--	- to PE: 0%/- 3%/ -0.5%/ - 0.7 %/ -0.4%/ -2.8%/-2.8%
After 6.2.1(product powered):										
50Vdc	100Vac	50Hz	1 µF	1/100/ 200/ 300/ 500/ 1000/2000	-20.0°C	--	+/- to PE: + to PE: 1/98/ 198/ 304/ 507/ 1007/1978	≤ ± 15 %	+/- to PE: 0%/-2%/ - 1%/ 1.3%/ 1.4%/ 0.7%/ - 1.1%	--
50Vdc	100Vac	50Hz	1 µF	1/100/ 200/ 300/ 500/ 1000/2000	-20.0°C	--	+ to PE: 1/97/ 201/ 302/ 498/ 1004/1970	≤ ± 15 %	+ to PE: 0%/- 3%/ 0.5%/ 0.7%/ -0.4%/ 0.4%/ -1.5%	--
50Vdc	100Vac	50Hz	1 µF	1/100/ 200/ 300/ 500/ 1000/2000	-20.0°C	--	- to PE: 1/98/ 197/ 304/ 502/ 994/1972	≤ ± 15 %	- to PE: 0%/ - 2%/ -1.5%/ 1.3%/0.4%/ - 0.6%/ -1.4%	--

www.tuvsud.com
Telephone : +86 510 8820 3737
Telefax : +86 510 8820 3636

TÜV SÜD Certification and Testing (China) Co., Ltd.

1-4/F., Building B, No.37, Tuanjie Middle Road,
Xishan Economic and Technological Development
Zone, Wuxi, Jiangsu, China

IEC 61557-8			
Clause	Requirement + Test	Result - Remark	Verdict

6.2.2	**TABLE: percentage uncertainty A of the specified response value R_{an}**	**Form A (Part 8)**	P

U_N [V]	U_S [V]	f_N [Hz]	C_e [µF]	R_{AN} soll [kΩ]	Ta [-5°C]	Ta [+45°C]	R_{AN} IST [kΩ]	A [U / C] [%]	A [U / Ta -5°C] [%]	A [U/Ta +45°C] [%]
1150Vdc	277Vac	50Hz	1 µF	1/100/ 200/ 300/ 500/ 1000/2000	-20.0°C	--	+/- to PE: + to PE:1/ 97/ 198/ 298/ 501/ 1001/2004	≤ ± 15 %	+/- to PE: 0%/-3%/ -1%/ -0.6%/ 0.2%/ 0.1%/ 0.2%	--
1150Vdc	277Vac	50Hz	1 µF	1/100/ 200/ 300/ 500/ 1000/2000	-20.0°C	--	+ to PE: 1/97/ 201/ 301/ 495/ 995/1960	≤ ± 15 %	+ to PE: 0%/-3%/ 0.5%/ 0.3%/ -1%/ -0.5%/ -2%	--
1150Vdc	277Vac	50Hz	1 µF	1/100/ 200/ 300/ 500/ 1000/2000	-20.0°C	--	- to PE: 1/102/ 197/ 299/ 497/ 996/1937	≤ ± 15 %	- to PE: 0%/ 2%/ -1.5%/ -0.3%/ -0.6%/ -0.4%/ -3.15%	--
50Vdc	100Vac	50Hz	1 µF	1/100/ 200/ 300/ 500/ 1000/2000	--	60.0°C	+/- to PE: 1/97/ 201/ 298/ 495/ 972/1981	≤ ± 15 %	--	+/- to PE: 0%/-3%/ 0.5%/ -0.7%/ -1%/ -2.8%/ -0.95%

www.tuvsud.com
Telephone : +86 510 8820 3737
Telefax : +86 510 8820 3636

TÜV SÜD Certification and Testing (China) Co., Ltd.

1-4/F., Building B, No.37, Tuanjie Middle Road,
Xishan Economic and Technological Development
Zone, Wuxi, Jiangsu, China

IEC 61557-8			
Clause	Requirement + Test	Result - Remark	Verdict

6.2.2	**TABLE: percentage uncertainty A of the specified response value R_{an}**	**Form A (Part 8)**	P

U_N [V]	U_S [V]	f_N [Hz]	C_e [µF]	R_{AN} soll [kΩ]	Ta [-5°C]	Ta [+45°C]	R_{AN} IST [kΩ]	A [U / C] [%]	A [U / Ta -5°C] [%]	A [U/Ta +45°C] [%]
50Vdc	100Vac	50Hz	1 µF	1/100/ 200/ 300/ 500/ 1000/2000	--	60.0°C	+ to PE:1/ 98/ 199/ 302/ 496/ 980/1948	≤ ± 15 %	--	+ to PE: 0%/-2%/ -0.5%/ 0.7%/ -0.8%/ -2%/-2.6%
50Vdc	100Vac	50Hz	1 µF	1/100/ 200/ 300/ 500/ 1000/2000	--	60.0°C	- to PE: 1/98/ 204/ 298/ 498/ 976/1941	≤ ± 15 %	--	- to PE: 0%/-2%/ 2%/ -0.7%/ -0.4%/ -2.4%/ -2.95%
1150Vdc	277Vac	50Hz	1 µF	1/100/ 200/ 300/ 500/ 1000/2000	--	60.0°C	+/- to PE: 1/97/ 201/ 297/ 493/ 972/1947	≤ ± 15 %	--	+/- to PE: 0%/-3%/ 0.5%/ -1%/ -1.4%/ -2.8%/ -2.65%
1150Vdc	277Vac	50Hz	1 µF	1/100/ 200/ 300/ 500/ 1000/2000	--	60.0°C	+ to PE: 1/96/ 203/ 302/ 498/ 983/1947	≤ ± 15 %	--	+ to PE: 0%/-4%/ 1.5%/ 0.7%/ -0.4%/ -1.7%/ -2.65%

www.tuvsud.com
Telephone : +86 510 8820 3737
Telefax : +86 510 8820 3636

TÜV SÜD Certification and Testing (China) Co., Ltd.

1-4/F., Building B, No.37, Tuanjie Middle Road,
Xishan Economic and Technological Development
Zone, Wuxi, Jiangsu, China

IEC 61557-8			
Clause	Requirement + Test	Result - Remark	Verdict

6.2.2	**TABLE: percentage uncertainty A of the specified response value R_{an}**								**Form A (Part 8)**	P
U_N [V]	U_S [V]	f_N [Hz]	C_e [µF]	R_{AN} soll [kΩ]	Ta [-5°C]	Ta [+45°C]	R_{AN} IST [kΩ]	A [U / C] [%]	A [U / Ta -5°C] [%]	A [U/Ta +45°C] [%]
1150Vdc	277Vac	50Hz	1 µF	1/100/ 200/ 300/ 500/ 1000/2000	--	60.0°C	- to PE: 1/98/ 200/ 297/ 496/ 981/1946	≤ ± 15 %	--	- to PE: 0%/ -2%/ 0%/ -1 %/ -0.8%/ -1.9%/ -2.7%
After 6.2.1(product not powered):										
50Vdc	100Vac	50Hz	1 µF	1/100/ 200/ 300/ 500/ 1000/2000	-20.0°C	--	+/- to PE: 1/99/199/302 /506/1002/1977	≤ ± 15 %	+/- to PE: 0%/-1%/ -0.5%/ 0.7%/ 1.2%/ 0.2%/ 1.15%	--
50Vdc	100Vac	50Hz	1 µF	1/100/ 200/ 300/ 500/ 1000/2000	-20.0°C	--	+ to PE: 1/98/200/301 /497/1003/1972	≤ ± 15 %	+ to PE: 0%/-2%/ 0%/ 0.3%/ -0.6%/0.3%/ -1.4%	--
50Vdc	100Vac	50Hz	1 µF	1/100/ 200/ 300/ 500/ 1000/2000	-20.0°C	--	- to PE: 1/99/201/302 /501/998/1980	≤ ± 15 %	- to PE: 0%/-1%/ 0.5%/ 0.7%/ 0.2%/ -0.2%/-1%	--

www.tuvsud.com
Telephone : +86 510 8820 3737
Telefax : +86 510 8820 3636

TÜV SÜD Certification and Testing (China) Co., Ltd.

1-4/F., Building B, No.37, Tuanjie Middle Road,
Xishan Economic and Technological Development
Zone, Wuxi, Jiangsu, China

IEC 61557-8			
Clause	Requirement + Test	Result - Remark	Verdict

6.2.2	**TABLE: percentage uncertainty A of the specified response value R_{an}**	**Form A (Part 8)**	P

U_N [V]	U_S [V]	f_N [Hz]	C_e [µF]	R_{AN} soll [kΩ]	Ta [-5°C]	Ta [+45°C]	R_{AN} IST [kΩ]	A [U / C] [%]	A [U / Ta -5°C] [%]	A [U/Ta +45°C] [%]
1150Vdc	277Vac	50Hz	1 µF	1/100/ 200/ 300/ 500/ 1000/2000	-20.0°C	--	+/- to PE: 1/98/197/303 /502/1002/20 01	≤ ± 15 %	+/- to PE: 0%/-2%/ - 1.5%/ 1%/ 0.4%/ 0.2%/ 0.05%	--
1150Vdc	277Vac	50Hz	1 µF	1/100/ 200/ 300/ 500/ 1000/2000	-20.0°C	--	+ to PE: 1/99/199/302 /499/999/197 0	≤ ± 15 %	+ to PE: 0%/- 1%/ -0.5%/ 0.7%/ -0.2%/ -1.5%/ -1.5%	--
1150Vdc	277Vac	50Hz	1 µF	1/100/ 200/ 300/ 500/ 1000/2000	-20.0°C	--	- to PE: 1/103/198/29 8/498/997/19 49	≤ ± 15 %	- to PE: 0%/ 3%/ -1%/ - 0.7%/ -0.4%/ -0.3%/ - 2.55%	--
50Vdc	100Vac	50Hz	1 µF	1/100/ 200/ 300/ 500/ 1000/2000	--	60.0°C	+/- to PE: 1/96/201/297 /490/972/194 5	≤ ± 15 %	--	+/- to PE: 0%/-4%/ 0.5%/ -1%/ - 2%/ -2.8%/ - 2.75%

www.tuvsud.com
Telephone : +86 510 8820 3737
Telefax : +86 510 8820 3636

TÜV SÜD Certification and Testing (China) Co., Ltd.

1-4/F., Building B, No.37, Tuanjie Middle Road,
Xishan Economic and Technological Development
Zone, Wuxi, Jiangsu, China

IEC 61557-8			
Clause	Requirement + Test	Result - Remark	Verdict

6.2.2	**TABLE: percentage uncertainty A of the specified response value R_{an}**	**Form A (Part 8)**	P

U_N [V]	U_S [V]	f_N [Hz]	C_e [µF]	R_{AN} soll [kΩ]	Ta [-5°C]	Ta [+45°C]	R_{AN} IST [kΩ]	A [U / C] [%]	A [U / Ta -5°C] [%]	A [U/Ta +45°C] [%]
50Vdc	100Vac	50Hz	1 µF	1/100/ 200/ 300/ 500/ 1000/2000	--	60.0°C	+ to PE: 1/98/199/304 /495/985/194 8	≤ ± 15 %	--	+ to PE: 0%/- 2%/ -0.5%/ - 1.3%/ -1%/ - 1.5%/-2.6%
50Vdc	100Vac	50Hz	1 µF	1/100/ 200/ 300/ 500/ 1000/2000	--	60.0°C	- to PE: 1/97/205/296 /498/975/193 8	≤ ± 15 %	--	- to PE: 0%/- 3%/2.5%/ - 1.3%/ -0.4%/ -2.5%/ -3.1%
1150Vdc	277Vac	50Hz	1 µF	1/100/ 200/ 300/ 500/ 1000/2000	--	60.0°C	+/- to PE: 1/97/201/299 /491/973/195 3	≤ ± 15 %	--	+/- to PE: 0%/-3%/ 0.5%/ -0.3%/ -1.8%/ -2.7%/ -2.35%
1150Vdc	277Vac	50Hz	1 µF	1/100/ 200/ 300/ 500/ 1000/2000	--	60.0°C	+ to PE: 1/98/205/300 /498/985/195 6	≤ ± 15 %	--	+ to PE: 0%/- 2%/ 2.5%/ 0%/ -0.4%/ - 1.5%/ -2.2%

www.tuvsud.com
Telephone : +86 510 8820 3737
Telefax : +86 510 8820 3636

TÜV SÜD Certification and Testing (China) Co., Ltd.

1-4/F., Building B, No.37, Tuanjie Middle Road,
Xishan Economic and Technological Development
Zone, Wuxi, Jiangsu, China

IEC 61557-8			
Clause	Requirement + Test	Result - Remark	Verdict

6.2.2	**TABLE: percentage uncertainty A of the specified response value R_{an}**	**Form A (Part 8)**	P

U_N [V]	U_S [V]	f_N [Hz]	C_e [µF]	R_{AN} soll [kΩ]	Ta [-5°C]	Ta [+45°C]	R_{AN} IST [kΩ]	A [U / C] [%]	A [U / Ta -5°C] [%]	A [U/Ta +45°C] [%]
1150Vdc	277Vac	50Hz	1 µF	1/100/ 200/ 300/ 500/ 1000/2000	--	60.0°C	- to PE: 1/96/198/297 /496/975/196 7	≤ ± 15 %	--	- to PE: 0%/- 4%/ -1%/ - 1%/ -0.8%/ - 2.5%/ -1.65%

Notes:

Intrinsic error or influence quantity	Reference conditions or specified operating range	Designation code	Requirements or tests in accordance with relevant parts of IEC 61557	Type of test
operation temperature:	-5 °C to +45 °C,		Part 8, 4.4.1, 4.4.3	R
nominal voltage U_n	0 % to 115 %,		Part 8, 4.4.1, 4.4.3	R
supply voltage U_s	85 % and 110 %,		Part 8, 4.4.1, 4.4.3	R
nominal frequency f_n	at nominal voltage		Part 8, 4.4.1, 4.4.3	R
system leakage capacitance C_e	1 µF and designated by manufacturer		Part 8, 4.4.1, 4.4.2, 4.4.3	R
	R = routine test	T = type test		x 100 [%]

Supplementary information:
The equipment has no separate supply connection (U_S),

TESTED BY: Mark Zheng DATE: 2025-11-03 TEST EQUIPMENT LIST ITEM See TDS

www.tuvsud.com
Telephone : +86 510 8820 3737
Telefax : +86 510 8820 3636

TÜV SÜD Certification and Testing (China) Co., Ltd.

1-4/F., Building B, No.37, Tuanjie Middle Road,
Xishan Economic and Technological Development
Zone, Wuxi, Jiangsu, China

IEC 61557-8			
Clause	Requirement + Test	Result - Remark	Verdict

6.2.3	**TABLE: measurement of response value t_{an}**	**Form B (Part 8)**	P

U_N [V]	U_S [V]	f_N [Hz]	C_e [µF]	Range [kΩ]	t_{AN} IST [s]	Ta [-5°C]	Ta [+45°C]	t_{AN} soll [< 100 s]
50Vdc	100Vac	50Hz	1 µF	1/100/ 200/ 400/ 600/ 1000/1500/2000	+/- to PE: 28/20/19/24/21/ 26/24/26	-20.0°C	--	<100s
50Vdc	100Vac	50Hz	1 µF	1/100/ 200/ 400/ 600/ 1000/1500/2000	+ to PE: 33/46/44/44/54/ 46/44/44	-20.0°C	--	<100s
50Vdc	100Vac	50Hz	1 µF	1/100/ 200/ 400/ 600/ 1000/1500/2000	- to PE: 31/49/41/43/42/ 41/38/43	-20.0°C	--	<100s
1150Vdc	277Vac	50Hz	1 µF	1/100/ 200/ 400/ 600/ 1000/1500/2000	+/- to PE: 27/18/16/24/23/ 22/25/23	-20.0°C	--	<100s
1150Vdc	277Vac	50Hz	1 µF	1/100/ 200/ 400/ 600/ 1000/1500/2000	+ to PE: 31/45/44/41/42/ 52/36/42	-20.0°C	--	<100s
1150Vdc	277Vac	50Hz	1 µF	1/100/ 200/ 400/ 600/ 1000/1500/2000	- to PE: 34/51/40/45/41/ 38/37/40	-20.0°C	--	<100s

www.tuvsud.com
Telephone : +86 510 8820 3737
Telefax : +86 510 8820 3636

TÜV SÜD Certification and Testing (China) Co., Ltd.

1-4/F., Building B, No.37, Tuanjie Middle Road,
Xishan Economic and Technological Development
Zone, Wuxi, Jiangsu, China

IEC 61557-8			
Clause	Requirement + Test	Result - Remark	Verdict

6.2.3	**TABLE: measurement of response value t_{an}**	**Form B (Part 8)**	P

U_N [V]	U_S [V]	f_N [Hz]	C_e [µF]	Range [kΩ]	t_{AN} IST [s]	Ta [-5°C]	Ta [+45°C]	t_{AN} soll [< 100 s]
50Vdc	100Vac	50Hz	1 µF	1/100/ 200/ 400/ 600/ 1000/1500/2000	+/- to PE: 27/28/30/34/37/ 29/31/31	--	60.0°C	<100s
50Vdc	100Vac	50Hz	1 µF	1/100/ 200/ 400/ 600/ 1000/1500/2000	+ to PE: 38/36/40/40/44/ 33/34/44	--	60.0°C	<100s
50Vdc	100Vac	50Hz	1 µF	1/100/ 200/ 400/ 600/ 1000/1500/2000	- to PE: 40/40/39/41/44/ 37/39/41	--	60.0°C	<100s
1150Vdc	277Vac	50Hz	1 µF	1/100/ 200/ 400/ 600/ 1000/1500/2000	+/- to PE: 33/30/33/36/39/ 29/33/32	--	60.0°C	<100s
1150Vdc	277Vac	50Hz	1 µF	1/100/ 200/ 400/ 600/ 1000/1500/2000	+ to PE: 35/37/41/41/42/ 37/35/40	--	60.0°C	<100s
1150Vdc	277Vac	50Hz	1 µF	1/100/ 200/ 400/ 600/ 1000/1500/2000	- to PE: 39/43/41/39/43/ 35/39/42	--	60.0°C	<100s

www.tuvsud.com
Telephone : +86 510 8820 3737
Telefax : +86 510 8820 3636

TÜV SÜD Certification and Testing (China) Co., Ltd.

1-4/F., Building B, No.37, Tuanjie Middle Road,
Xishan Economic and Technological Development
Zone, Wuxi, Jiangsu, China

IEC 61557-8			
Clause	Requirement + Test	Result - Remark	Verdict

6.2.3	**TABLE: measurement of response value t_{an}**						**Form B (Part 8)**	P
U_N [V]	U_S [V]	f_N [Hz]	C_e [µF]	Range [kΩ]	t_{AN} IST [s]	Ta [-5°C]	Ta [+45°C]	t_{AN} soll [< 100 s]
After 6.2.1(product powered):								
50Vdc	100Vac	50Hz	1 µF	1/100/ 200/ 400/ 600/ 1000/1500/2000	+/- to PE: 28/21/23/25/23/ 25/26/22	-20.0°C	--	<100s
50Vdc	100Vac	50Hz	1 µF	1/100/ 200/ 400/ 600/ 1000/1500/2000	+ to PE: 33/46/45/47/44/ 50/46/42	-20.0°C	--	<100s
50Vdc	100Vac	50Hz	1 µF	1/100/ 200/ 400/ 600/ 1000/1500/2000	- to PE: 31/49/44/45/44/ 44/40/41	-20.0°C	--	<100s
1150Vdc	277Vac	50Hz	1 µF	1/100/ 200/ 400/ 600/ 1000/1500/2000	+/- to PE: 27/19/18/18/21/ 23/25/20	-20.0°C	--	<100s

www.tuvsud.com
Telephone : +86 510 8820 3737
Telefax : +86 510 8820 3636

TÜV SÜD Certification and Testing (China) Co., Ltd.

1-4/F., Building B, No.37, Tuanjie Middle Road,
Xishan Economic and Technological Development
Zone, Wuxi, Jiangsu, China

IEC 61557-8			
Clause	Requirement + Test	Result - Remark	Verdict

6.2.3	**TABLE: measurement of response value t_{an}**	**Form B (Part 8)**	P

U_N [V]	U_S [V]	f_N [Hz]	C_e [µF]	Range [kΩ]	t_{AN} IST [s]	Ta [-5°C]	Ta [+45°C]	t_{AN} soll [< 100 s]
1150Vdc	277Vac	50Hz	1 µF	1/100/ 200/ 400/ 600/ 1000/1500/2000	+ to PE: 31/42/49/48/45/ 45/40/40	-20.0°C	--	<100s
1150Vdc	277Vac	50Hz	1 µF	1/100/ 200/ 400/ 600/ 1000/1500/2000	- to PE: 34/48/40/39/41/ 42/40/41	-20.0°C	--	<100s
50Vdc	100Vac	50Hz	1 µF	1/100/ 200/ 400/ 600/ 1000/1500/2000	+/- to PE: 25/29/31/33/36/ 27/32/34	--	60.0°C	<100s
50Vdc	100Vac	50Hz	1 µF	1/100/ 200/ 400/ 600/ 1000/1500/2000	+ to PE: 39/37/42/41/43/ 33/34/40	--	60.0°C	<100s
50Vdc	100Vac	50Hz	1 µF	1/100/ 200/ 400/ 600/ 1000/1500/2000	- to PE: 41/38/40/41/42/ 39/40/42	--	60.0°C	<100s
1150Vdc	277Vac	50Hz	1 µF	1/100/ 200/ 400/ 600/ 1000/1500/2000	+/- to PE: 30/31/33/34/39/ 30/33/38	--	60.0°C	<100s

www.tuvsud.com
Telephone : +86 510 8820 3737
Telefax : +86 510 8820 3636

TÜV SÜD Certification and Testing (China) Co., Ltd.

1-4/F., Building B, No.37, Tuanjie Middle Road,
Xishan Economic and Technological Development
Zone, Wuxi, Jiangsu, China

IEC 61557-8			
Clause	Requirement + Test	Result - Remark	Verdict

6.2.3	**TABLE: measurement of response value t_{an}**						**Form B (Part 8)**	P
U_N [V]	U_S [V]	f_N [Hz]	C_e [µF]	Range [kΩ]	t_{AN} IST [s]	Ta [-5°C]	Ta [+45°C]	t_{AN} soll [< 100 s]
1150Vdc	277Vac	50Hz	1 µF	1/100/ 200/ 400/ 600/ 1000/1500/2000	+ to PE: 37/37/39/40/43/ 38/36/42	--	60.0°C	<100s
1150Vdc	277Vac	50Hz	1 µF	1/100/ 200/ 400/ 600/ 1000/1500/2000	- to PE: 36/41/42/40/41/ 37/38/44	--	60.0°C	<100s
After 6.2.1(product not powered):								
50Vdc	100Vac	50Hz	1 µF	1/100/ 200/ 400/ 600/ 1000/1500/2000	+/- to PE: 27/25/23/24/22/ 23/26/26	-20.0°C	--	<100s
50Vdc	100Vac	50Hz	1 µF	1/100/ 200/ 400/ 600/ 1000/1500/2000	+ to PE: 36/45/47/44/48/ 45/43/44	-20.0°C	--	<100s

www.tuvsud.com
Telephone : +86 510 8820 3737
Telefax : +86 510 8820 3636

TÜV SÜD Certification and Testing (China) Co., Ltd.

1-4/F., Building B, No.37, Tuanjie Middle Road,
Xishan Economic and Technological Development
Zone, Wuxi, Jiangsu, China

IEC 61557-8			
Clause	Requirement + Test	Result - Remark	Verdict

6.2.3	**TABLE: measurement of response value t_{an}**	**Form B (Part 8)**	P

U_N [V]	U_S [V]	f_N [Hz]	C_e [µF]	Range [kΩ]	t_{AN} IST [s]	Ta [-5°C]	Ta [+45°C]	t_{AN} soll [< 100 s]
50Vdc	100Vac	50Hz	1 µF	1/100/ 200/ 400/ 600/ 1000/1500/2000	- to PE: 35/46/45/44/47/ 45/45/43	-20.0°C	--	<100s
1150Vdc	277Vac	50Hz	1 µF	1/100/ 200/ 400/ 600/ 1000/1500/2000	+/- to PE: 20/21/24/23/22/ 19/24/25	-20.0°C	--	<100s
1150Vdc	277Vac	50Hz	1 µF	1/100/ 200/ 400/ 600/ 1000/1500/2000	+ to PE: 39/43/41/40/44/ 42/47/44	-20.0°C	--	<100s
1150Vdc	277Vac	50Hz	1 µF	1/100/ 200/ 400/ 600/ 1000/1500/2000	- to PE: 41/48/42/45/44/ 43/42/43	-20.0°C	--	<100s
50Vdc	100Vac	50Hz	1 µF	1/100/ 200/ 400/ 600/ 1000/1500/2000	+/- to PE: 25/31/30/28/31/ 30/29/33	--	60.0°C	<100s
50Vdc	100Vac	50Hz	1 µF	1/100/ 200/ 400/ 600/ 1000/1500/2000	+ to PE: 38/42/44/45/44/ 43/42/44	--	60.0°C	<100s

www.tuvsud.com
Telephone : +86 510 8820 3737
Telefax : +86 510 8820 3636

TÜV SÜD Certification and Testing (China) Co., Ltd.

1-4/F., Building B, No.37, Tuanjie Middle Road,
Xishan Economic and Technological Development
Zone, Wuxi, Jiangsu, China

IEC 61557-8			
Clause	Requirement + Test	Result - Remark	Verdict

6.2.3	**TABLE: measurement of response value t_{an}**	**Form B (Part 8)**	P

U_N [V]	U_S [V]	f_N [Hz]	C_e [µF]	Range [kΩ]	t_{AN} IST [s]	Ta [-5°C]	Ta [+45°C]	t_{AN} soll [< 100 s]
50Vdc	100Vac	50Hz	1 µF	1/100/ 200/ 400/ 600/ 1000/1500/2000	- to PE: 37/43/45/41/40/ 42/44/45	--	60.0°C	<100s
1150Vdc	277Vac	50Hz	1 µF	1/100/ 200/ 400/ 600/ 1000/1500/2000	+/- to PE: 20/23/24/22/21/ 23/24/25	--	60.0°C	<100s
1150Vdc	277Vac	50Hz	1 µF	1/100/ 200/ 400/ 600/ 1000/1500/2000	+ to PE: 40/45/44/48/44/ 50/46/43	--	60.0°C	<100s
1150Vdc	277Vac	50Hz	1 µF	1/100/ 200/ 400/ 600/ 1000/1500/2000	- to PE:39/45/44/45/ 44/45/43/42	--	60.0°C	<100s

Notes:

Intrinsic error or influence quantity	Reference conditions or specified operating range	Designation code	Requirements or tests in accordance with relevant parts of IEC 61557	Type of test
operation temperature:	-5 °C to +45 °C,	A_1	Part 8, 4.4.1, 4.4.3	T
nominal voltage U_n	0 % to 115 %,	A_2	Part 8, 4.4.1, 4.4.3	T
supply voltage U_s	85 % and 110 %,	A_3	Part 8, 4.4.1, 4.4.3	T
nominal frequency f_n	at nominal voltage	A_4	Part 8, 4.4.1, 4.4.3	T
system leakage capacitance C_e	1 µF and designated by manufacturer	A_5	Part 8, 4.4.1, 4.4.2, 4.4.3	T
T = type test				

www.tuvsud.com
Telephone : +86 510 8820 3737
Telefax : +86 510 8820 3636

TÜV SÜD Certification and Testing (China) Co., Ltd.

1-4/F., Building B, No.37, Tuanjie Middle Road,
Xishan Economic and Technological Development
Zone, Wuxi, Jiangsu, China

IEC 61557-8			
Clause	Requirement + Test	Result - Remark	Verdict

6.2.3	**TABLE: measurement of response value t_{an}**					**Form B (Part 8)**			P
U_N [V]	U_S [V]	f_N [Hz]	C_e [µF]	Range [kΩ]	t_{AN} IST [s]	Ta [-5°C]	Ta [+45°C]	t_{AN} soll [< 100 s]	
Supplementary information:									

TESTED BY: Mark Zheng DATE: 2025-11-04 TEST EQUIPMENT LIST ITEM See TDS

www.tuvsud.com
Telephone : +86 510 8820 3737
Telefax : +86 510 8820 3636

TÜV SÜD Certification and Testing (China) Co., Ltd.

1-4/F., Building B, No.37, Tuanjie Middle Road,
Xishan Economic and Technological Development
Zone, Wuxi, Jiangsu, China

IEC 61557-8			
Clause	Requirement + Test	Result - Remark	Verdict

A.2.4.2	**TABLE: measurement of response value t_{AUS}**	**Form B (Part 8)**	N/A

U_N [V]	U_S [V]	f_N [Hz]	C_e [µF]	Range [kΩ]	t_{AUS} IST [s]	Ta [-5°C] [s]	Ta [+45°C] [s]	t_{AUS} soll [< 5 s]

Notes:

Intrinsic error or influence quantity	Reference conditions or specified operating range	Designation code	Requirements or tests in accordance with relevant parts of IEC 61557	Type of test
operation temperature:	-5 °C to +45 °C,		Part 8, 4.4.1, 4.4.3, A.2.4.2	T
nominal voltage U_n	100 %		Part 8, 4.4.1, 4.4.3, A.2.4.2	T
supply voltage U_s	100 %		Part 8, 4.4.1, 4.4.3, A.2.4.2	T
nominal frequency f_n	at nominal voltage		Part 8, 4.4.1, 4.4.3, A.2.4.2	T
system leakage capacitance C_e	0,5 µF		Part 8, A.2.4.2	T
				T = type test

Supplementary information:

www.tuvsud.com
Telephone : +86 510 8820 3737
Telefax : +86 510 8820 3636

TÜV SÜD Certification and Testing (China) Co., Ltd.

1-4/F., Building B, No.37, Tuanjie Middle Road,
Xishan Economic and Technological Development
Zone, Wuxi, Jiangsu, China

TESTED BY:	Mark Zheng	DATE: 2025-10-30	TEST EQUIPMENT LIST ITEM	See TDS	

www.tuvsud.com
Telephone : +86 510 8820 3737
Telefax : +86 510 8820 3636

TÜV SÜD Certification and Testing (China) Co., Ltd.

1-4/F., Building B, No.37, Tuanjie Middle Road,
Xishan Economic and Technological Development
Zone, Wuxi, Jiangsu, China

IEC 61557-8			
Clause	Requirement + Test	Result - Remark	Verdict

6.2.4 / 6.2.5	TABLE: Measuring voltage, measuring current	Form C (Part 8)	P
Measuring voltage U_m [V, R_F ∞ Ω]	Measuring current I_m @ R_F = 0 Ω [mA]	Remark	Verdict
1.46V	--	<120V	P
--	3.13mA	<10mA	P
Supplementary information: Measuring uncertainty of the test equipment for voltage measurement [≤ 5 %]: Measuring uncertainty of the test equipment for current measurement [≤ 5 %]:			
6.2.6	**TABLE: Internal d.c. resistance R_i and internal impedance Z_i**		P
Internal d.c. resistance R_i [kΩ]	**internal impedance Z_i** [kΩ]	Remark	Verdict
DC+ to PE: 49.14kΩ DC- to PE: 49.14kΩ	--	≥ 30 Ω/V and 15 kΩ	P
--	--	≥ 30 Ω/V and 1.8 kΩ	N/A
Supplementary information:			

TESTED BY: Mark Zheng DATE: 2025-10-31 TEST EQUIPMENT LIST ITEM: See TDS

www.tuvsud.com
Telephone : +86 510 8820 3737
Telefax : +86 510 8820 3636

TÜV SÜD Certification and Testing (China) Co., Ltd.

1-4/F., Building B, No.37, Tuanjie Middle Road,
Xishan Economic and Technological Development
Zone, Wuxi, Jiangsu, China

IEC 61557-8			
Clause	Requirement + Test	Result - Remark	Verdict

6.3.5	**TABLE: Dielectric strength tests**	**Form E (part 8)**	P
4.6.2	Voltage test according Annex F of IEC 61010-1:2010		

[1] Record the fault, test or treatment applied before the dielectric strength test

Location or references	Clause or sub-clause	Working voltage V	Test voltage r.m.s./peak/d.cV	Comments	Verdict
All live part and enclosure	Table K.102 of 61010-2-030	50-1000VDC	3310	5 a.c.	P
Monitored terminal L/N/PE and separation circuit	Table K.102 of 61010-2-030	50-1000VDC	5400	5 a.c.	P
Monitored terminal L/N/PE and communication circuit(485)	Table K.102 of 61010-2-030	50-1000VDC	5400	5 a.c.	P
Monitored terminal L/N to PE	Table K.105 of 61010-2-030	50-1000VDC	3310	5 a.c.	P
All live part and enclosure	Table K.102 of 61010-2-030	50-1000VDC	2200	1min a.c.	P
Monitored terminal L/N/PE and separation circuit	Table K.102 of 61010-2-030	50-1000VDC	4400	1min a.c.	P
Monitored terminal L/N/PE and communication circuit(485)	Table K.102 of 61010-2-030	50-1000VDC	4400	1min a.c.	P
Monitored terminal L/N to PE	Table K.105 of 61010-2-030	50-1000VDC	2200	1min a.c.	P

Supplementary information: test for 6.2.13 Voltage tests

TESTED BY: Mark Zheng DATE: 2025-11-03 TEST EQUIPMENT LIST ITEM: See TDS

www.tuvsud.com
Telephone : +86 510 8820 3737
Telefax : +86 510 8820 3636

TÜV SÜD Certification and Testing (China) Co., Ltd.

1-4/F., Building B, No.37, Tuanjie Middle Road, Xishan Economic and Technological Development Zone, Wuxi, Jiangsu, China