Test Report issued under the responsibility of:

TEST REPORT
IEC 62116
Test procedure of islanding prevention measures for utility-interconnected photovoltaic inverters

Report Number. .....:	GZES201103204502
Date of issue .....:	09 / 12 / 2020
Total number of pages.....	16
Name of Testing Laboratory preparing the Report.....:	SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch
Applicant's name.....:	EVOLVE ENERGY GROUP CO., LIMITED
Address .....:	RM 702,7/F FU FAI COMM CTR 27 HILLIER ST SHEUNG WAN,HK
Test specification:	
Standard.....:	IEC/EN 62116: 2014 (Second Edition)
Test procedure .....:	Characteristic Examination
Non-standard test method .....:	N/A
Test Report Form No.....:	IEC62116B
Test Report Form(s) Originator ....:	TÜV SÜD Product Service GmbH
Master TRF.....:	Dated 2014-10

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.

Test item description	Solar Grid-tied Inverter (Three Phase)
Trade Mark	EVVO
Manufacturer	EVOLVE ENERGY GROUP CO., LIMITED
Address	RM 702,7/F FU FAI COMM CTR 27 HILLIER ST SHEUNG WAN,HK
Model/Type reference	E- 75KTL, E- 80KTL, E- 100KTL, E- 110KTL E- 100KTL-HV, E- 125KTL-HV, E- 136KTL-HV
Ratings	See model list in Page 7 and Page 8. **Serial Number:** SQ1ES1A0L85001 **Firmware version:** ARM V020010 DSPS V020010 DSPM V020010

Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):			
☐	~~CB Testing Laboratory:~~		
~~Testing location/ address.....:~~			
☐	~~Associated CB Testing Laboratory:~~		
☒	**Testing procedure: TMP/CTF Stage 1:**	Shenzhen BALUN Technology Co., Ltd.	
Testing location/ address.....:		Room 104, 204, 205, Building 1, No. 6, Industrial South Road, Songshan Lake District, Dongguan, Guangdong, China	
Tested by (name, function, signature).....:		Hugo zhang (Project Engineer)	Hugo zhang
Approved by (name, function, signature.....:		Roger Hu (Project Engineer)	Roger Hu
☐	~~Testing procedure: WMT/CTF Stage 2:~~		
☐	~~Testing procedure: SMT/CTF Stage 3 or 4:~~		

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

50Hz/60Hz		
Attachment #	Description	Pages
Attachment I	Pictures of the EUT and Electrical Schemes	18 pages
Attachment II	Graphics of the Test Results	4 pages
Attachment III	Graphics of the Islanding Behavior Detection	35 pages
Attachment IV	Testing Information	9 pages

Summary of testing:

Tests performed (name of test and test clause):

All clauses except:

- Sub-clause d) of the Table 5 of the point 6.1. Voltage and frequency trips shall be adjusted according to National Standards and/or local codes.

From the result of inspection and tests performed on the submitted sample we conclude that it complies with the requirements of the Standard

Remarks: All the test results are from the report below:

- IEC/EN 62116: 2014 (Second Edition)

Test Report No: GZES201203336802

Testing location:

Shenzhen BALUN Technology Co., Ltd.

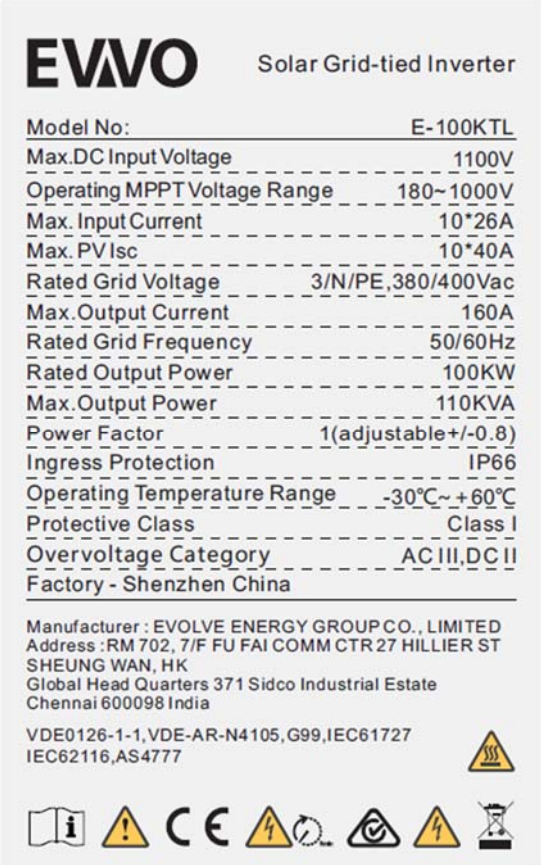
Room 104, 204, 205, Building 1, No. 6, Industrial South Road, Songshan Lake District, Dongguan, Guangdong, China

(All clauses)

Summary of compliance with National Differences:

No National Differences are addressed to this test report

Copy of marking plate(representative):



Note:

1. The above markings are the minimum requirements required by the safety standard. For the final production samples, the additional markings which do not give rise to misunderstanding may be added.
2. Label is attached on the side surface of enclosure and visible after installation
3. Labels of other models are as the same with E- 100KTL's except the parameters of rating.

Test item particulars ..... :	Solar Grid-tied Inverter (Three Phase Inverter)
Classification of installation and use ..... :	Fixed (permanent connection)
Supply Connection ..... :	DC; PV
..... :	AC; Grid connection
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 ..... :	CTF Stage 1 procedure
Date of receipt of test item ..... :	N/A
Date (s) of performance of tests ..... :	From 21/07/2020 to 23/07/2020

General remarks:

"(See Enclosure #)" refers to additional information appended to the report.
"(See appended table)" refers to a table appended to the report.

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

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) ..... :	Dongguan SOFARSOLAR Co., Ltd. 1F - 6F, Building E, No. 1 JinQi Road, Bihu Industrial Park, Wulian Village, Fenggang Town, Dongguan, Guangdong, China.

General product information:

Product covered by this report is grid-connected PV inverter for indoor or outdoor installation. The connection to the DC input and AC output are through connectors.

The Solar inverter converts DC voltage into AC voltage.
The input and output are protected by varistors to Earth. The unit is providing EMC filtering at the output toward mains. The unit does not provide galvanic separation from input to output (transformerless). The output is switched off redundant by the high power switching bridge and a two relays. This assures that the opening of the output circuit can operate in case of one error.

Equipment Under Testing:

- E- 100KTL

Variant models:

- E- 75KTL
- E- 80KTL
- E- 110KTL
- E- 100KTL-HV
- E- 125KTL-HV
- E- 136KTL-HV

Model	E- 75KTL	E- 80KTL	E- 100KTL	E- 110KTL	E- 100KTL -HV	E- 125KTL -HV	E- 136KTL -HV
DC Input							
Max. DC voltage	1100V						
Rated input voltage	625V	625V	625V	625V	725V	725V	785V
Start-up operating voltage	200V						
MPPT voltage range	180V~1000V						
Full power MPPT voltage range	500V-850V				550V-850V		
Max. input current	8*26A	8*26A	10*26A	10*26A	10*26A	10*26A	12*26A
Max. input short circuit current	8*40A	8*40A	10*40A	10*40A	10*40A	10*40A	12*40A
AC Output							
Rated power	75kW	80kW	100kW	110kW	100kW	125kW	136kW
Max. AC power	75kVA	88kVA	110kVA	121kVA	110kVA	137kVA	150kVA
Max. output current	113A	128A	160A	175A	128A	160A	160A

Nominal grid voltage	3/N/PE, 380V/400Vac	3/PE, 500Vac	3/PE, 540Vac
Nominal output freqency	50Hz/60Hz		
Output power factor	1 default (adjustable +/-0.8)		
Operating temperature range	-30ºC ~60ºC		
Ingress protection	IP66		
Protective class	Class I		

The variants models have been included in this test report without tests because the following features don´t change regarding to the tested model:

- Same connection system and hardware topology
- Same control algorithm.
- Output power within 1/√10 and 2 times of the rated output power or the EUT or Modular inverters.
- Same Firmware Version

IEC 62116			
Clause	Requirement + Test	Result - Remark	Verdict
4	**Testing circuit**		
	The testing circuit shown in Figure 1 is employed.		P
	Similar circuits are used for three-phase output.		P
	Parameters to be measured are shown in Table 1 and Figure 1. Parameters to be recorded in the test report are discussed in Clause 7.		P
5	**Testing equipment**		
5.1	**Measuring instruments**		**P**
	The waveform measurement/capture device is able to record the waveform from the beginning of the islanding test until the EUT ceases to energize the island.	Oscillograph and Power analyzer equipped with memory function Waveform caught from the switch open and the EUT cease to energize	P
	For multi-phase EUT, all phases are monitored.		P
	A waveform monitor designed to detect and calculate the run-on time may be used.	See Annex IV for testing equipment information	P
	For multi-phase EUT, the test and measurement equipment is recorded each phase current and each phase-to-neutral or phase-to-phase voltage, as appropriate, to determine fundamental frequency active and reactive power flow over the duration of the test.		P
	A sampling rate of 10 kHz or higher is recommended. The minimum measurement accuracy is 1 % or less of rated EUT nominal output voltage and 1 % or less of rated EUT output current	Less than 1% of the rated EUT output current	P
	Current, active power, and reactive power measurements through switch S1 used to determine the circuit balance conditions report the fundamental (50 Hz or 60 Hz) component.		P
5.2	**DC power source**		
5.2.1	**General**		**P**
	A PV array or PV array simulator (preferred) may be used. If the EUT can operate in utility-interconnected mode from a storage battery, a DC power source may be used in lieu of a battery as long as the DC power source is not the limiting device as far as the maximum EUT input current is concerned.	Chroma PV simulator used	P
	The DC power source provides voltage and current necessary to meet the testing requirements described in Clause 6.		P
5.2.2	**PV array simulator**		P
	The tests are conducted at the input voltage defined in Table 2 below, and the current is limited to 1,5 times the rated photovoltaic input current, except when specified otherwise by the test requirements.		P
	A PV array simulator is recommended, however, any type of power source may be used if it does not influence the test results.		P
5.2.3	**Current and voltage limited DC power supply with series resistance**		N/A

IEC 62116			
Clause	Requirement + Test	Result - Remark	Verdict

	A DC power source used as the EUT input source is capable of EUT maximum input power (so as to achieve EUT maximum output power) at minimum and maximum EUT input operating voltage.		N/A
	The power source provides adjustable current and voltage limit, set to provide the desired short circuit current and open circuit voltage when combined with the series and shunt resistance described below.		N/A
	A series resistance (and, optionally, a shunt resistance) is selected to provide a fill factor within the range: Output power: Sufficient to provide maximum EUT output power and other levels specified by test conditions of table 5. Response speed: The response time of a simulator to a step in output voltage, due to a 5% load change, results in a settling of the output current to within 10% of its final value in less than 1ms. Stability: Excluding the variations caused by the EUT MPPT, simulator output power remains stable within 2 % of specified power level over the duration of the test: from the point where load balance is achieved until the island condition is cleared or the allowable run-on time is exceeded. Power factor: 0.25 to 0.8		N/A
5.2.4	**PV array**		N/A
	A PV array used as the EUT input source is capable of EUT maximum input power at minimum and maximum EUT input operating voltage.		N/A
	Testing is limited to times when the irradiance varies by no more than 2 % over the duration of the test as measured by a silicon-type pyranometer or reference device. It may be necessary to adjust the array configuration to achieve the input voltage and power levels prescribed in 6.1.		N/A
5.3	**AC power source**		
	The utility grid or other AC power source may be used as long as it meets the conditions specified in Table 4. **Table 4 – AC power source requirements** Items: Voltage — Conditions: Nominal ±2,0 % Items: Voltage THD — Conditions: < 2,5 % Items: Frequency — Conditions: Nominal ±0,1 Hz Items: Phase angle distance [1] — Conditions: 120 ° ± 1,5 ° [1] Three-phase case only	AC power source used meets the conditions specified	P
5.4	**AC loads**		

IEC 62116			
Clause	Requirement + Test	Result - Remark	Verdict
	On the AC side of the EUT, variable resistance, capacitance, and inductance are connected in parallel as loads between the EUT and the AC power source. Other sources of load, such as electronic loads, may be used if it can be shown that the source does not cause results that are different than would be obtained with passive resistors, inductors, and capacitors.	Passive loads (variable resistance, capacitance and inductance) have been connected.	P
	All AC loads are rated for and adjustable to all test conditions. The equations for Qf are based upon an ideal parallel RLC circuit. For this reason, non-inductive resistors, low loss (high Qf) inductors, and capacitors with low effective series resistance and effective series inductance are utilized in the test circuit. Iron core inductors, if used, are not exceed a current THD of 2 % when operated at nominal voltage. Load components are conservatively rated for the voltage and power levels expected. Resistor power ratings are chosen so as to minimize thermally-induced drift in esistance values during the course of the test.		P
	Active and reactive power is calculated (using the measurements provided in Table 1) in each of the R, L and C legs of the load so that these parasitic parameters (and parasitics introduced by variacs or autotransformers) are properly accounted for when calculating Qf.		P
6	**Test for single or multi-phase inverter**		
6.1	**Test procedure**	**(see appended table)**	**P**
	The test uses an RLC load, resonant at the EUT nominal frequency (50 Hz or 60 Hz) and matched to the EUT output power.		P
	For multi-phase EUT, the load is balanced across all phases and the switch S1 as in Figure 1 opens all phases		P
	This test is performed with the EUT conditions as in Table 5, where power and voltage values are given as a percent of EUT full output rating.		P
	a)..Determine EUT test output power		P
	b) .Adjusting the DC input source		P
	c)..Turn off the EUT and open S1		P
	d) .Adjust the RLC circuit to have Qf = 1.0 ±0.05		P
	e)..Connect the RLC load configured in step d) to the EUT by closing S2		P
	f)...Open the utility-disconnect switch S1 to initiate the test, Run-on time is recorded.		P
	g)..For test condition A, adjust the real load and only one of the reactive load components to each of the load imbalance conditions shown in the shaded portion of table 6. If any of the recorded run-on times are longer than the one recorded for the rated balance condition, then the non-shaded parameter combinations also require testing.		P

IEC 62116			
Clause	Requirement + Test	Result - Remark	Verdict
	h) For test condition B and C, adjust the only one reactive load components by approximately 1,0% per test, within a total range of 95% to 105% of the operating point. If run-on times are still increasing at the 95% or 105% points, additional 1% increments have to be taken until run-on times begin decreasing.		P
6.2	**Pass/fail criteria**		
	An EUT is considered to comply with the requirements for islanding protection when each case of recorded run-on time is less than 2 s or meets the requirements of local codes.	Run-on time is less than 2s in any case	P
7	**Documentation**		
	At a minimum, the following information is recorded and maintained in the test report.		P
	a) Specifications of EUT. Table 8 provides an example of the type of information that is provided.		P
	b) Measurement results. Table 9 provides an example of the type of information that is provided. Actual measured values is to be recorded.		P
	c) Block diagram of test circuit.		P
	d) Specifications of the test and measurement equipment. Table 10 provides an example of the type of information that is provided.		P
	e) Any test configuration or procedure details such as methods of achieving specified load and EUT output conditions.		P
	f) Any additional information required by the testing laboratory's accreditation.		P
	g) Specify the evaluation criterion from clause 6.2 that was utilized to determine if the product passed or failed the test.		P
Annex A	Islanding as it applies to PV systems(Informative)		--
A.1	General		--
A.2	Impact of distortion on islanding		--
Annex B	Test for independent islanding detection device (relay)(Informative)		--
B.1	Introduction		--
B.2	Testing circuit		--
B.3	Testing equipment		--
B.4	Testing procedure		--
B.5	Documentation		--

IEC 62116			
Clause	Requirement + Test	Result - Remark	Verdict

6.1	Table: tested condition and run-on time								P
50Hz									
No.	P_{EUT} (% of EUT rating)	Reactive load (% of normial)	P_{AC}	Q_{AC}	Run-on time(ms)	P_{EUT} (KW)	Actual Q_f	V_{DC} (d.c.V)	Which load is selected to be adjusted (R or L)
Test condtion A									
1	100	100	0	0	488	102.1	1.00	796.1	--
2	100	100	-5	-5	367	101.8	1.02	796.2	R/L
3	100	100	-5	0	437	101.5	1.04	797.1	R
4	100	100	-5	+5	353	101.4	1.05	797.5	R/L
5	100	100	0	-5	431	101.7	0.97	797.2	L
6	100	100	0	+5	395	101.0	1.02	797.4	L
7	100	100	+5	-5	381	102.0	0.95	798.5	R/L
8	100	100	+5	0	419	101.9	0.95	797.3	R
9	100	100	+5	+5	404	101.6	0.97	798.2	R/L
10	100	100	-10	+10	--	--	--	--	R/L
11	100	100	-5	+10	--	--	--	--	R/L
12	100	100	0	+10	--	--	--	--	L
13	100	100	+10	+10	--	--	--	--	R/L
14	100	100	+10	+5	--	--	--	--	R/L
15	100	100	+10	0	--	--	--	--	R
16	100	100	+10	-5	--	--	--	--	R/L
17	100	100	+10	-10	--	--	--	--	R/L
18	100	100	+5	-10	--	--	--	--	R/L
19	100	100	+5	10	--	--	--	--	R/L
20	100	100	0	-10	--	--	--	--	L
21	100	100	-5	-10	--	--	--	--	R/L
22	100	100	-10	-10	--	--	--	--	R/L
23	100	100	-10	-5	--	--	--	--	R/L
24	100	100	-10	0	--	--	--	--	R/L

IEC 62116			
Clause	Requirement + Test	Result - Remark	Verdict

25	100	100	-10	+5	--	--	--	--	R/L
Test condtion B									
10	66	66	0	0	460	65.2	1.00	588.8	--
11	66	66	0	-5	105	65.4	0.98	588.3	L
12	66	66	0	-4	278	65.8	0.98	588.5	L
13	66	66	0	-3	397	65.6	0.99	588.7	L
14	66	66	0	-2	471	65.0	0.99	589.1	L
15	66	66	0	-1	460	65.4	1.00	589.5	L
16	66	66	0	1	460	65.3	1.00	588.6	L
17	66	66	0	2	468	65.7	0.99	589.4	L
18	66	66	0	3	142	65.5	0.98	589.2	L
19	66	66	0	4	318	65.4	0.98	589.8	L
20	66	66	0	5	70	65.6	0.98	589.3	L
21	66	66	0	6	--	--	--	--	L
Test condition C									
22	33	33	0	0	390	32.7	1.00	335.4	--
23	33	33	0	-5	197	32.9	0.98	335.2	L
24	33	33	0	-4	259	33.1	0.98	335.7	L
25	33	33	0	-3	487	33.2	0.99	335.1	L
26	33	33	0	-2	394	32.8	0.99	335.0	L
27	33	33	0	-1	387	32.5	1.00	334.9	L
28	33	33	0	1	493	32.9	1.01	335.5	L
29	33	33	0	2	356	33.0	1.01	335.8	L
30	33	33	0	3	466	33.4	1.02	334.8	L
31	33	33	0	4	488	33.1	1.02	335.5	L
32	33	33	0	5	409	32.8	1.03	335.2	L
33	33	33	0	6	--	--	--	--	L

IEC 62116			
Clause	Requirement + Test	Result - Remark	Verdict

60Hz									
No.	P_{EUT} (% of EUT rating)	Reactive load (% of normial)	P_{AC}	Q_{AC}	Run-on time(ms)	P_{EUT} (KW)	Actual Q_f	V_{DC} (d.c.V)	Which load is selected to be adjusted (R or L)
Test condtion A									
1	100	100	0	0	417	101.1	1.00	796.5	--
2	100	100	-5	-5	325	101.0	1.03	796.8	R/L
3	100	100	-5	0	363	100.9	1.05	797.0	R
4	100	100	-5	+5	343	100.5	1.05	797.3	R/L
5	100	100	0	-5	289	101.0	0.98	796.7	L
6	100	100	0	+5	393	101.4	1.03	797.1	L
7	100	100	+5	-5	330	101.5	0.95	797.2	R/L
8	100	100	+5	0	352	100.6	0.95	797.4	R
9	100	100	+5	+5	324	101.7	0.98	798.1	R/L
10	100	100	-10	+10	--	--	--	--	R/L
11	100	100	-5	+10	--	--	--	--	R/L
12	100	100	0	+10	--	--	--	--	L
13	100	100	+10	+10	--	--	--	--	R/L
14	100	100	+10	+5	--	--	--	--	R/L
15	100	100	+10	0	--	--	--	--	R
16	100	100	+10	-5	--	--	--	--	R/L
17	100	100	+10	-10	--	--	--	--	R/L
18	100	100	+5	-10	--	--	--	--	R/L
19	100	100	+5	10	--	--	--	--	R/L
20	100	100	0	-10	--	--	--	--	L
21	100	100	-5	-10	--	--	--	--	R/L
22	100	100	-10	-10	--	--	--	--	R/L
23	100	100	-10	-5	--	--	--	--	R/L
24	100	100	-10	0	--	--	--	--	R/L
25	100	100	-10	+5	--	--	--	--	R/L

IEC 62116			
Clause	Requirement + Test	Result - Remark	Verdict

Test condtion B									
10	66	66	0	0	308	66.2	1.00	588.4	--
11	66	66	0	-5	309	66.4	0.97	588.8	L
12	66	66	0	-4	365	66.3	0.98	589.1	L
13	66	66	0	-3	333	65.8	0.99	588.6	L
14	66	66	0	-2	332	65.7	0.99	589.3	L
15	66	66	0	-1	284	65.9	1.00	589.1	L
16	66	66	0	1	374	66.3	1.01	588.5	L
17	66	66	0	2	349	65.9	1.01	589.7	L
18	66	66	0	3	390	66.3	1.02	589.0	L
19	66	66	0	4	396	66.4	1.02	589.4	L
20	66	66	0	5	329	65.8	1.02	589.9	L
21	66	66	0	6	--	--	--	--	L
Test condition C									
22	33	33	0	0	416	33.2	1.00	334.8	--
23	33	33	0	-5	327	33.2	0.97	334.6	L
24	33	33	0	-4	345	33.2	0.98	335.2	L
25	33	33	0	-3	407	33.2	0.99	335.4	L
26	33	33	0	-2	296	33.2	0.99	334.9	L
27	33	33	0	-1	390	33.2	1.00	334.7	L
28	33	33	0	1	351	33.2	1.00	335.3	L
29	33	33	0	2	354	33.2	1.01	335.5	L
30	33	33	0	3	428	33.2	1.02	334.6	L
31	33	33	0	4	324	33.2	1.02	335.3	L
32	33	33	0	5	163	33.2	1.03	335.1	L
33	33	33	0	6	--	--	--	--	L

Remark:
For test condition A:
If any of the recorded run-on times are longer than the one recorded for the rated balance condition, then the non-shaded parameter combinations also require testing.
For test condition B and C:
If run-on times are still increasing at the 95 % or 105 % points, additional 1 % increments is taken until run-on times begin decreasing.

--- End of test report---

ATTACHMENT I

(Pictures of the EUT and Electrical Schemes)

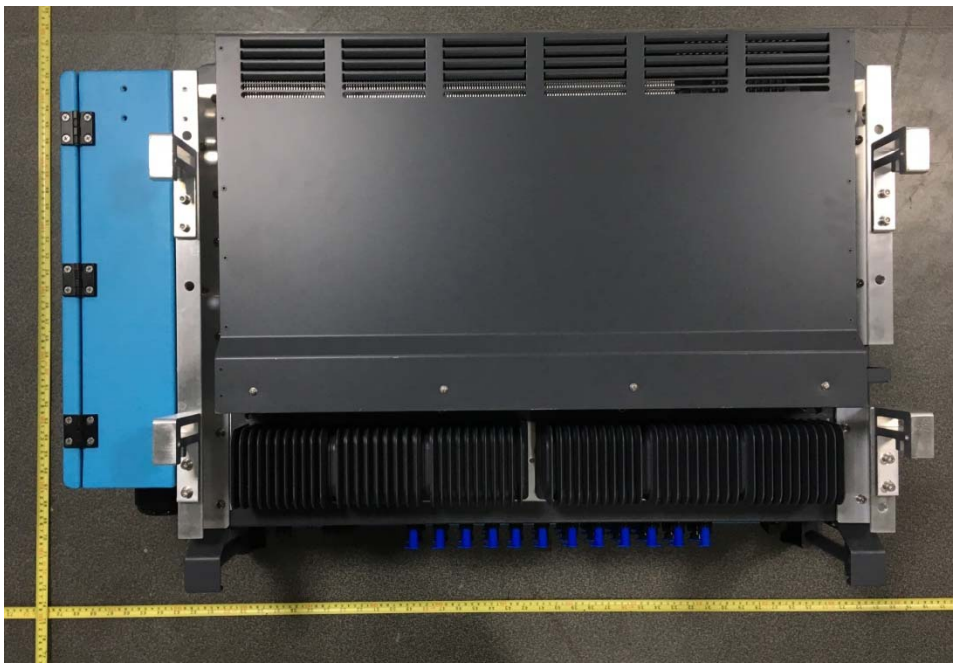
1 PICTURES

Front view

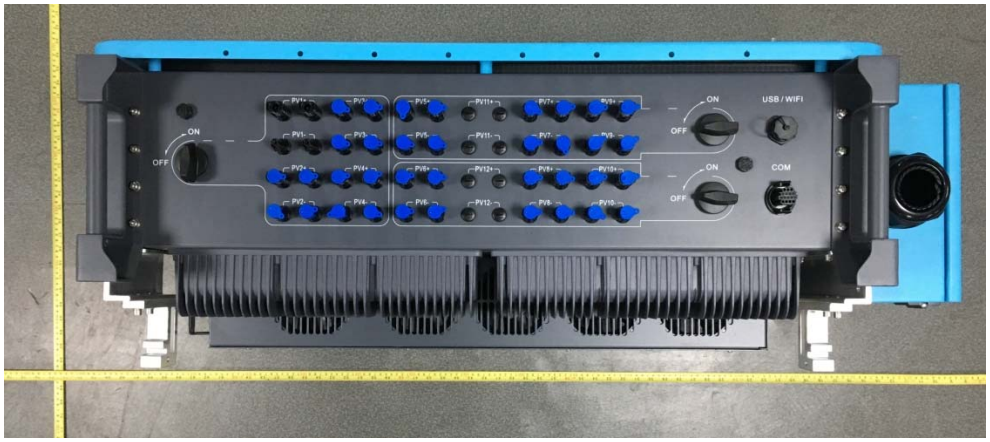
Back view (E-75KTL, E-80KTL)


Back view (E- 100KTL, E- 100KTL-HV, E-110KTL, E- 125KTL-HV)

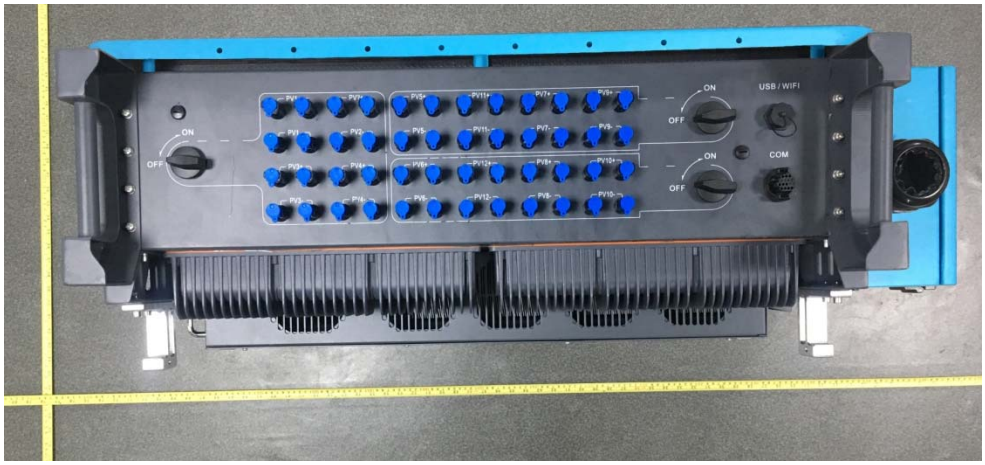
Back view (E- 136KTL-HV)



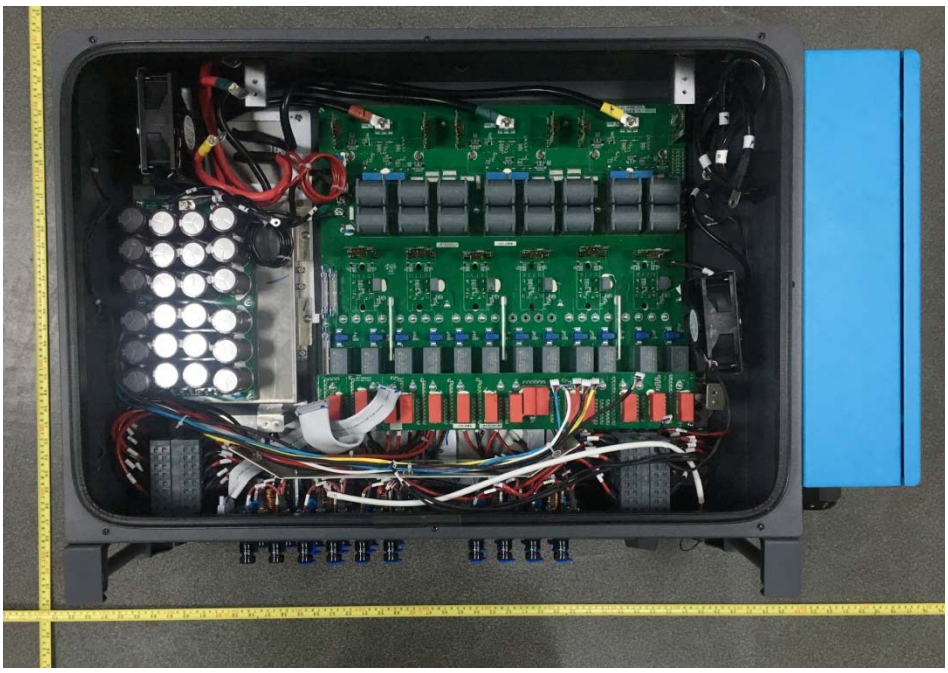
DC Connection interface (E-75KTL, E-80KTL)

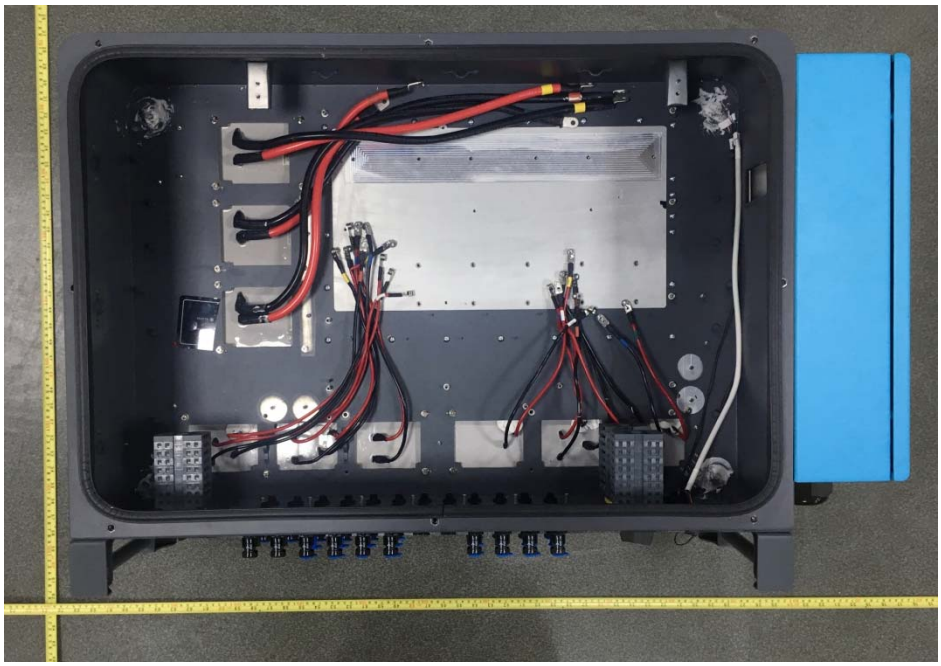

DC Connection interface (E-100KTL, E-100KTL-HV, E-110KTL, E-125KTL-HV)


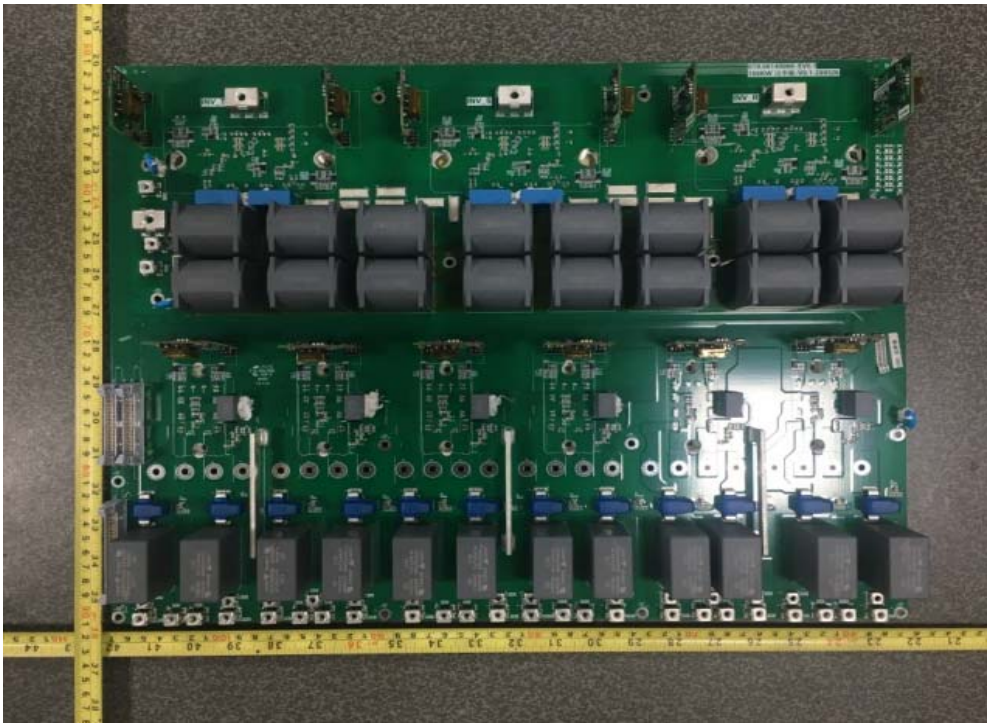
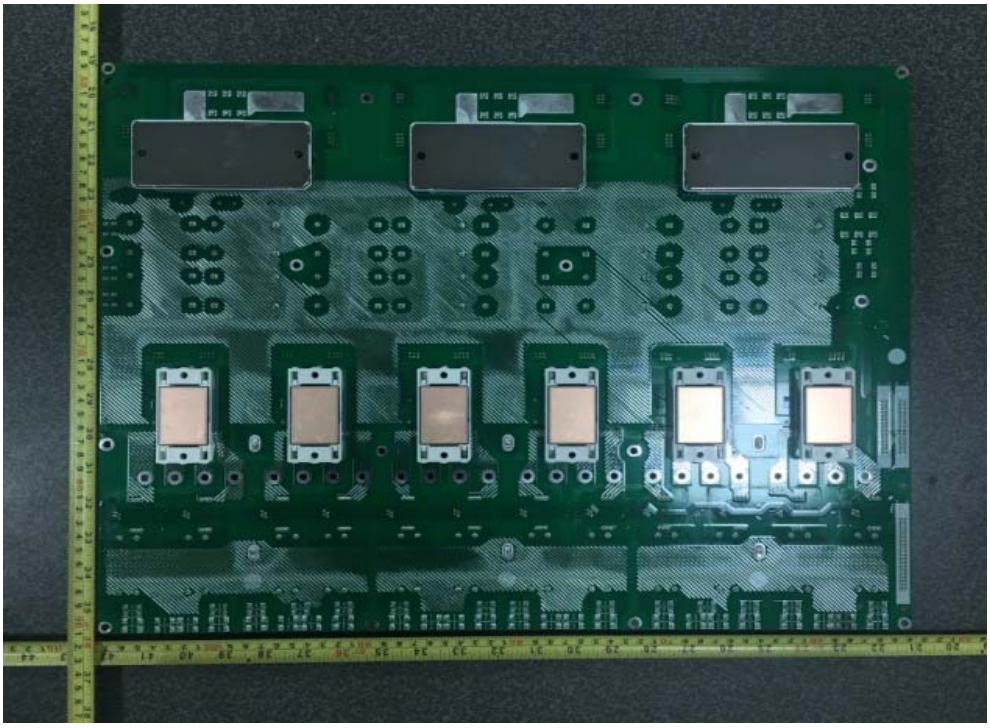
DC Connection interface (E-136KTL-HV)

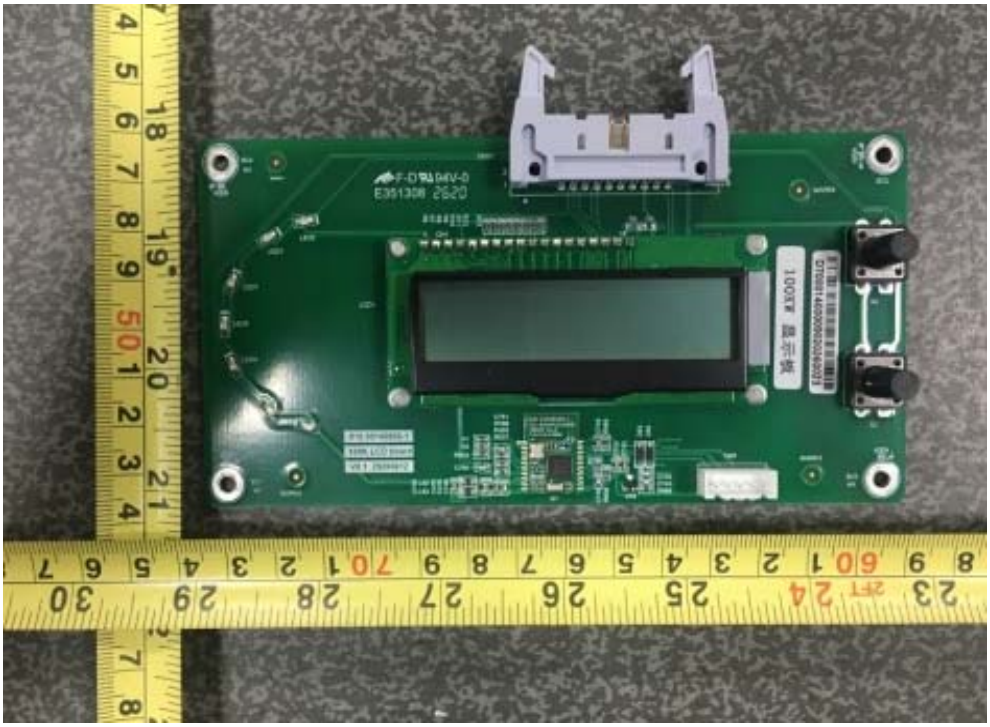


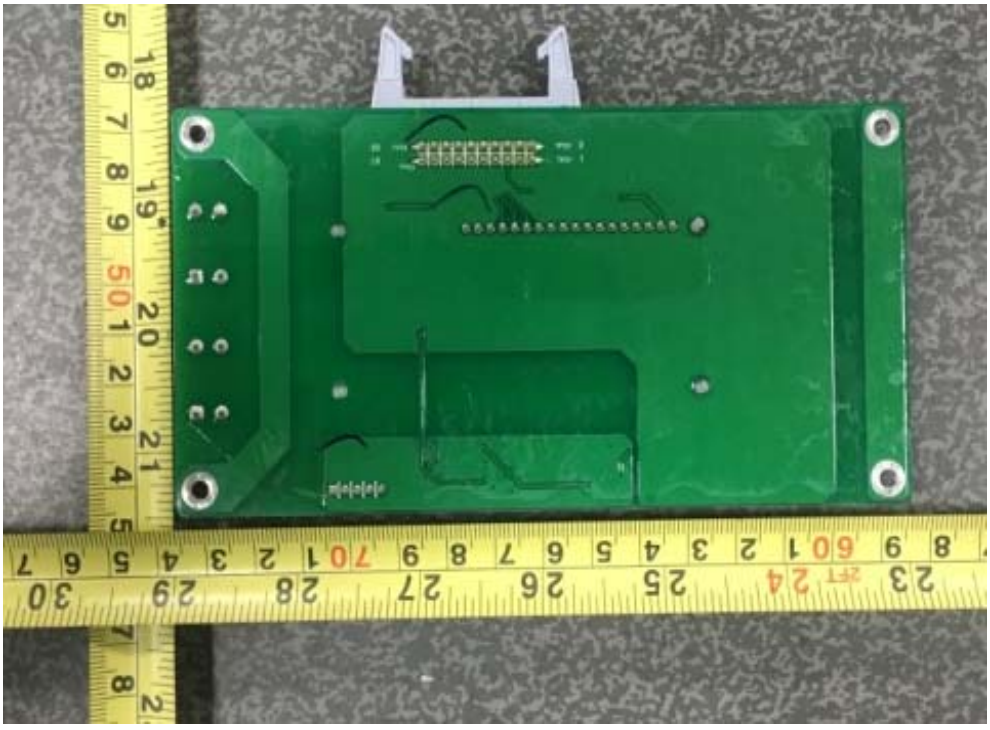
Internal View 1

Internal View 2


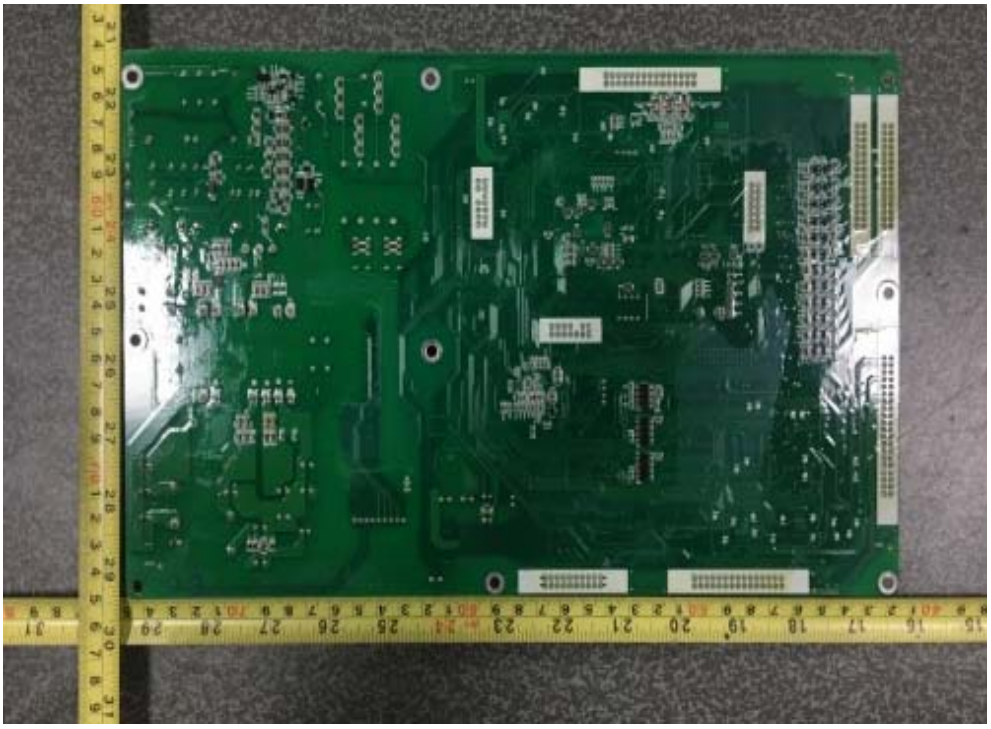
Internal View 3


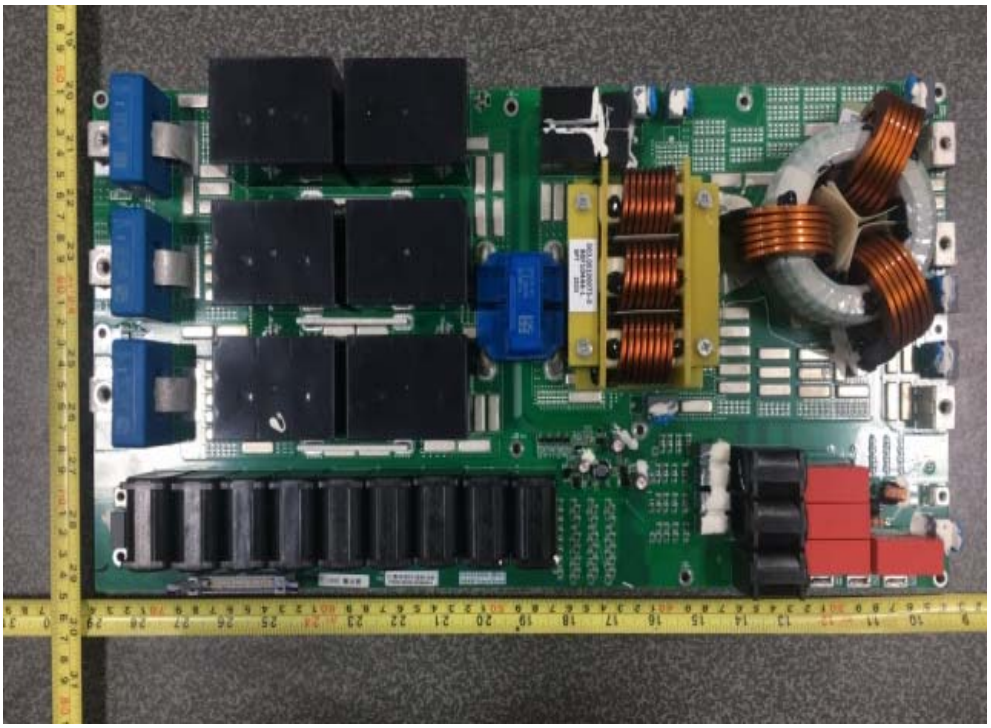
Front side of Power board

Back side of Power board


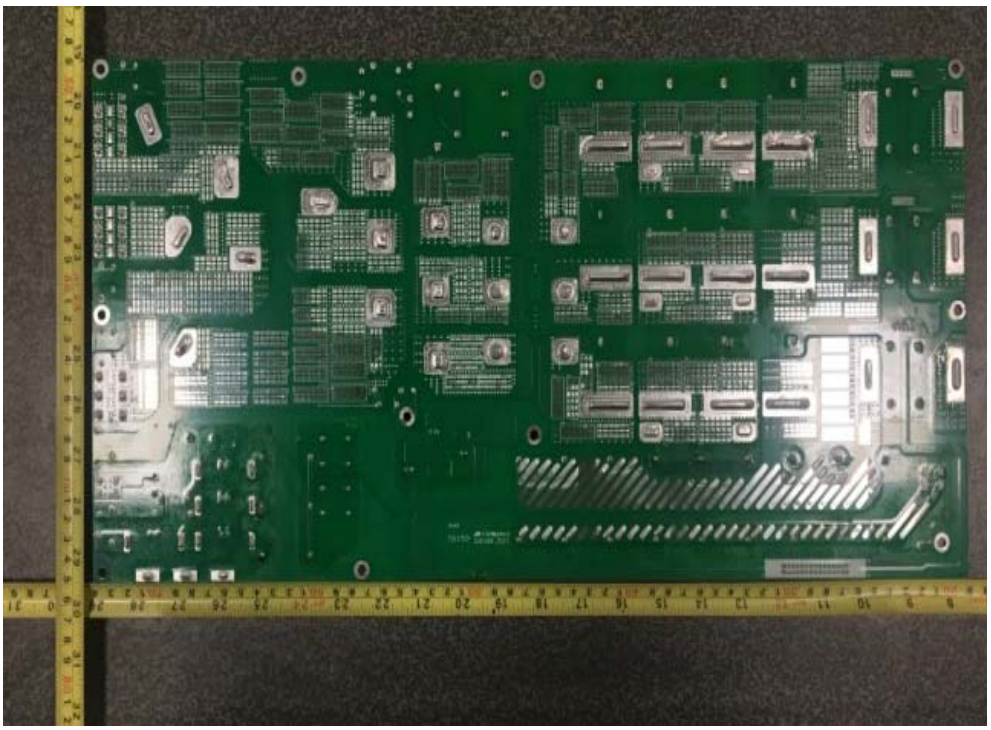
Front side of Display board


Back side of Display board


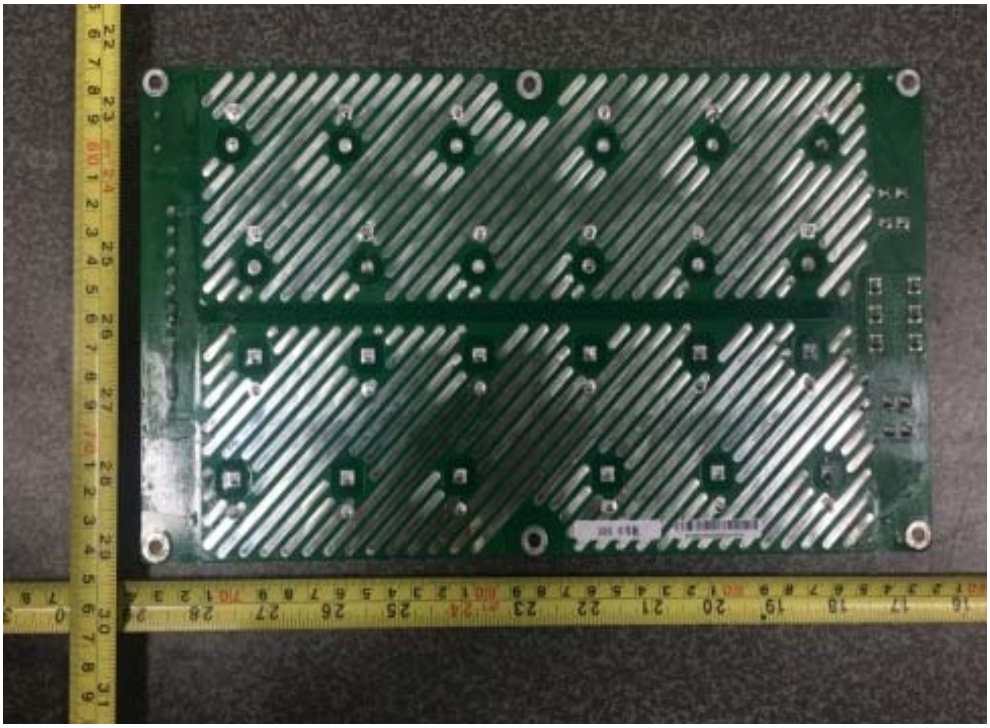
Front side of Control board

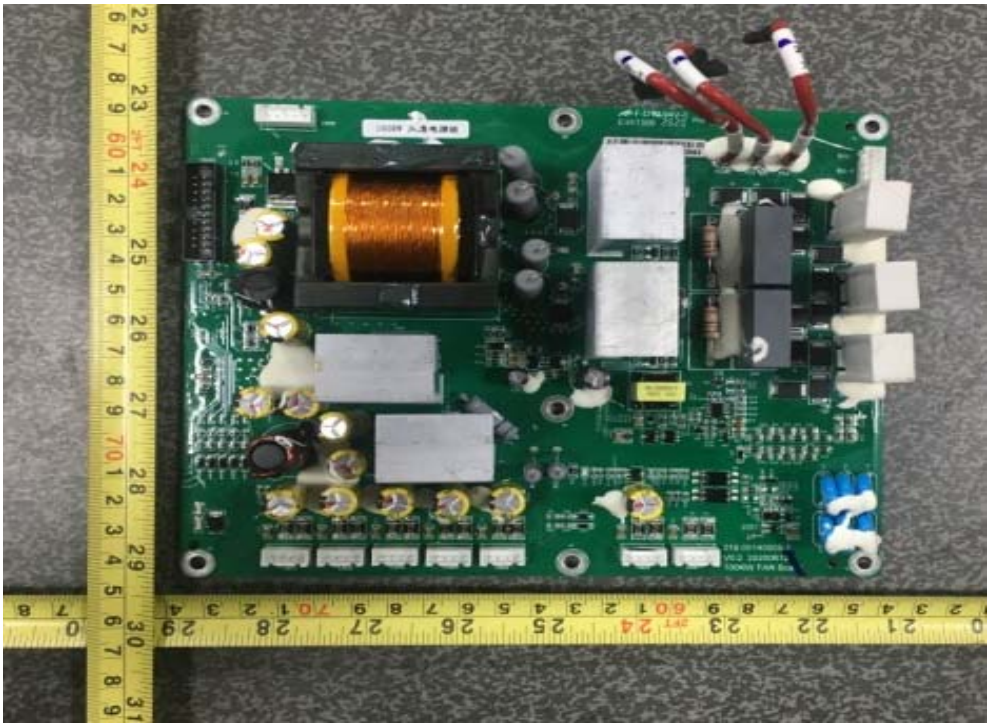

Back side of Control board


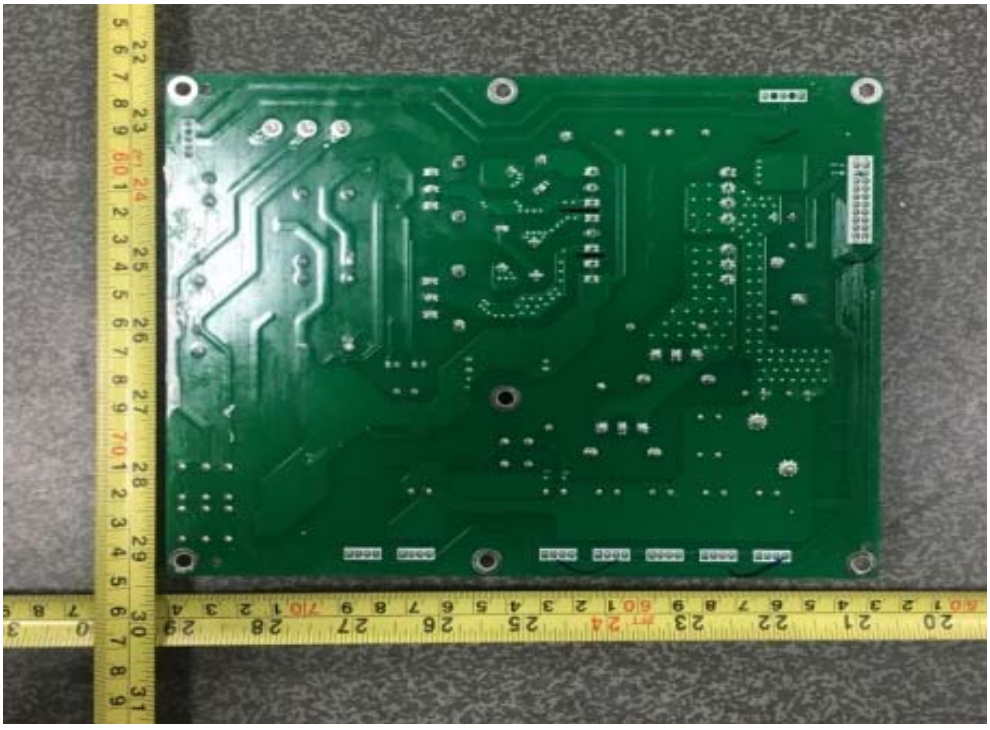
Front side of output board


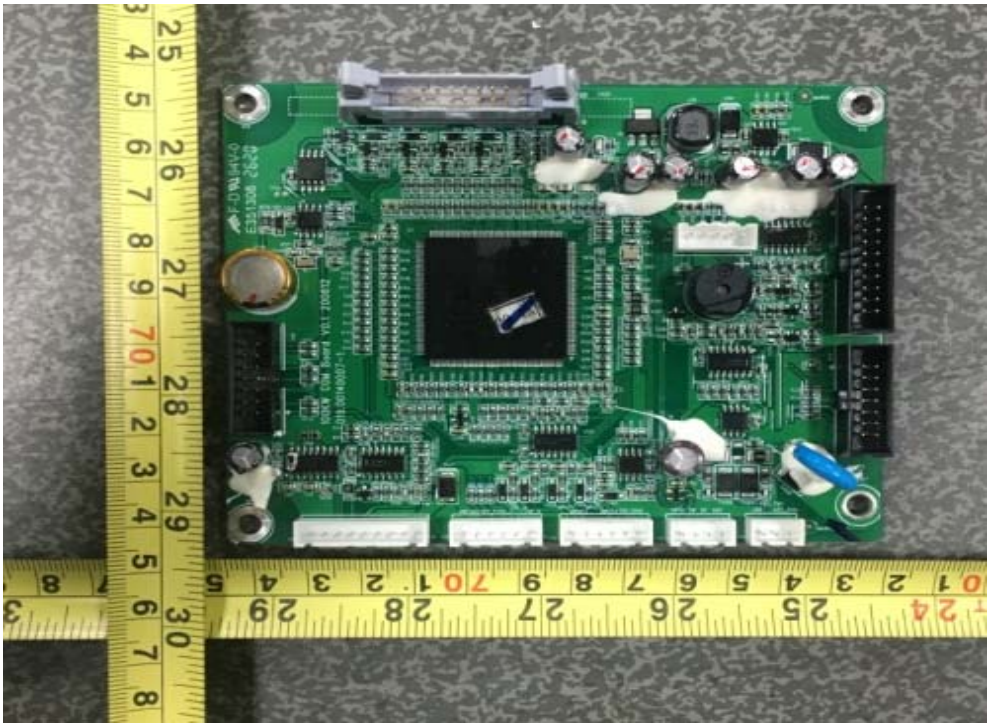
Back side of output board


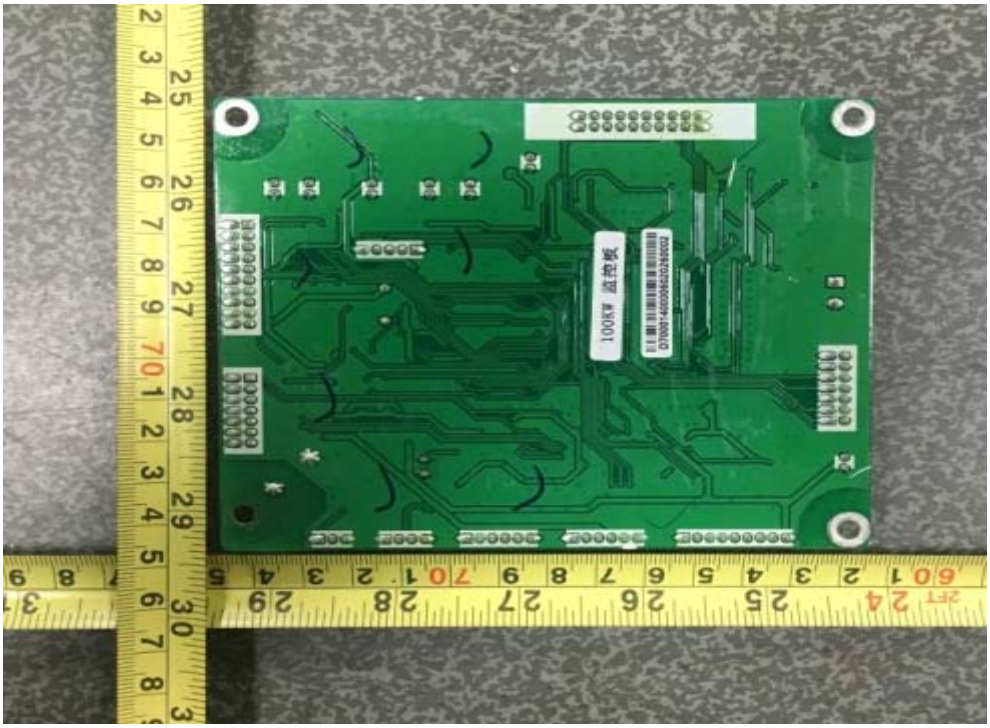
Front side of BUS Capacitor plate

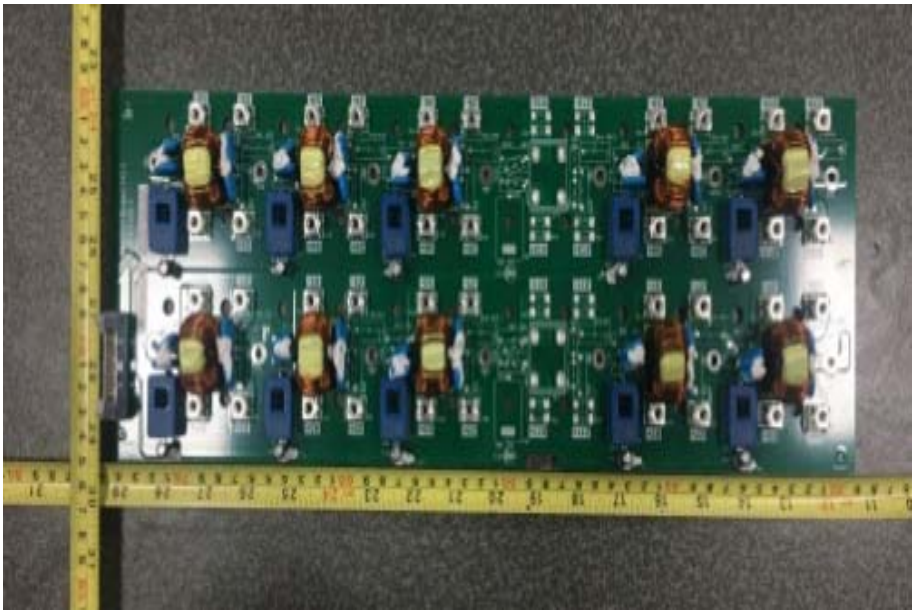
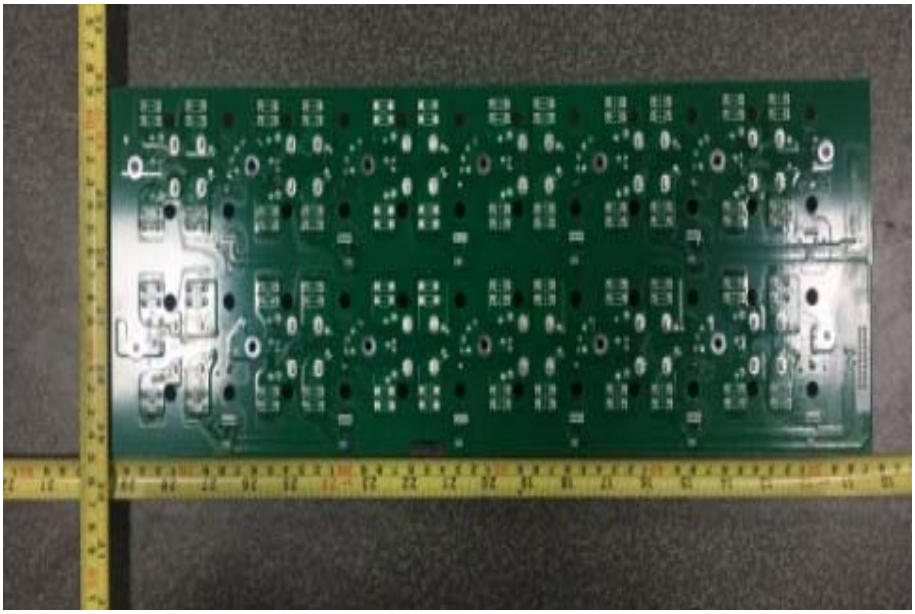

Back side of BUS Capacitor plate


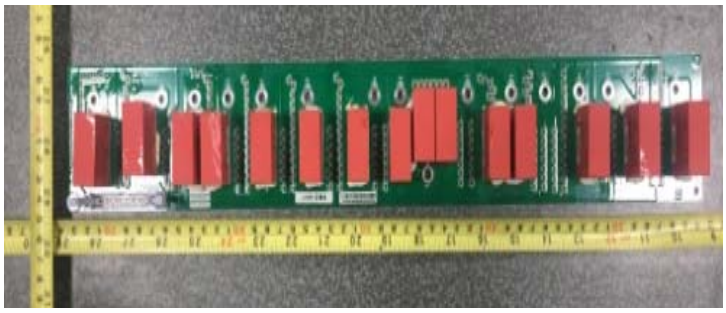
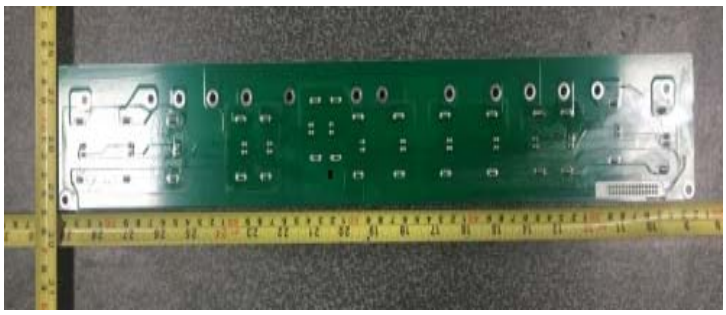
Front side of power supply board


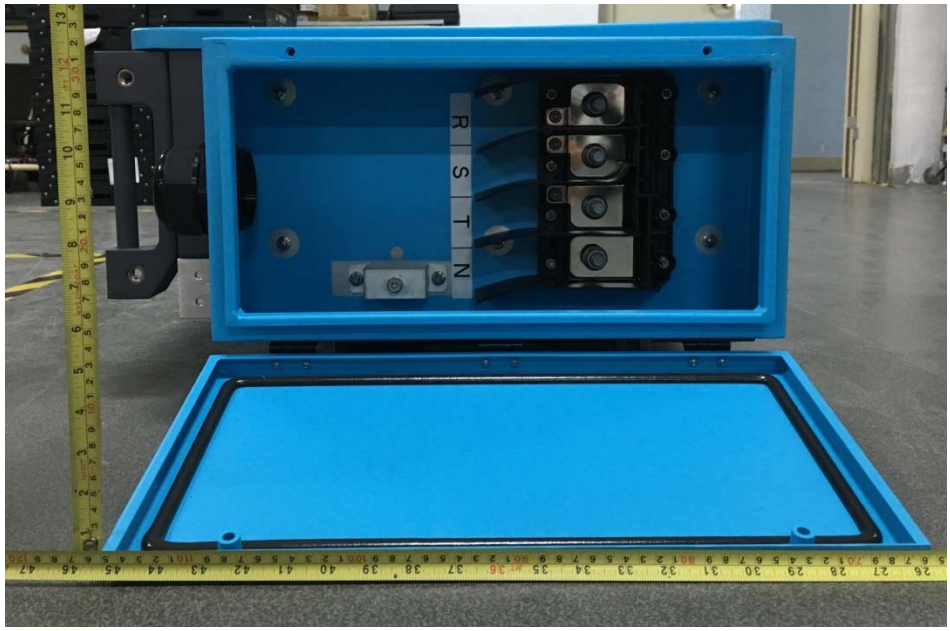
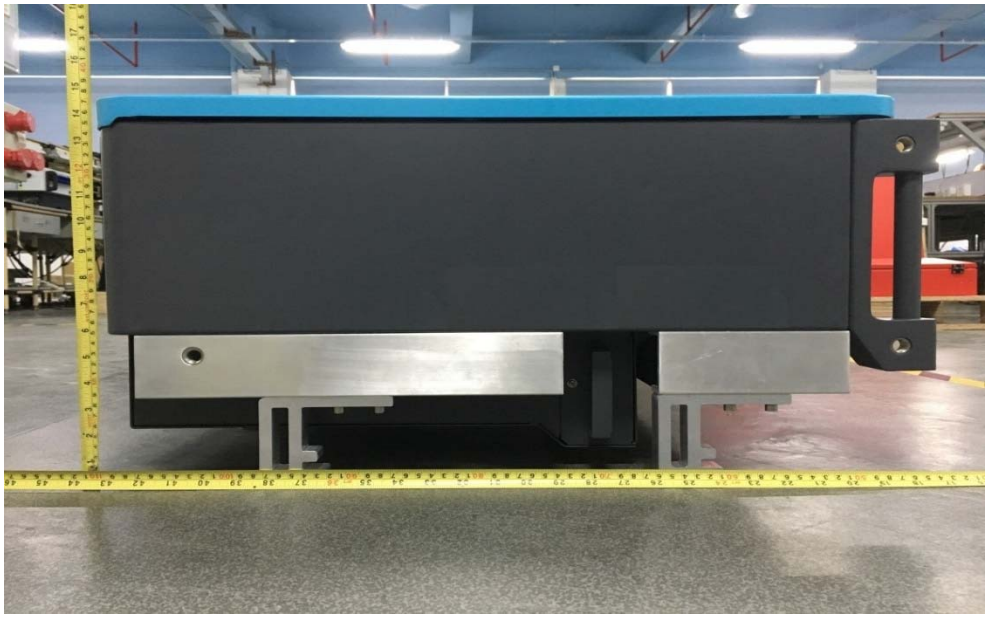
Back side of power supply board


Front side of Communication board


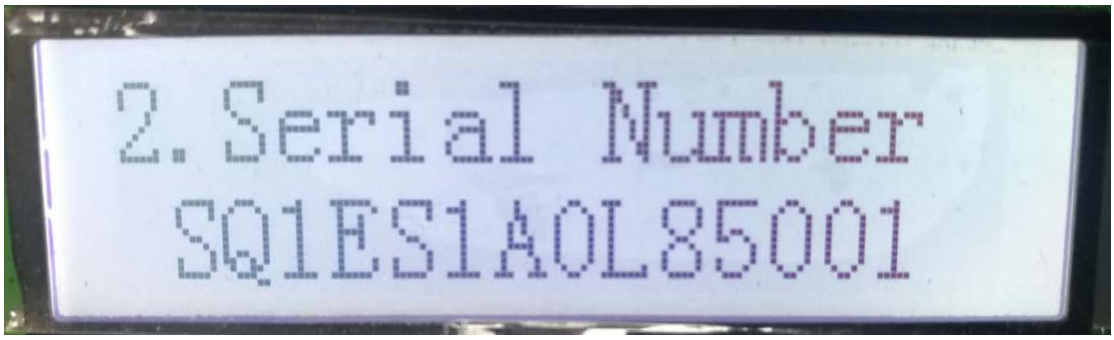
Back side of Communication board


Front side of EMI input filter board

Back side of EMI input filter board


Front side of Lightning protection board

Back side of Lightning protection board


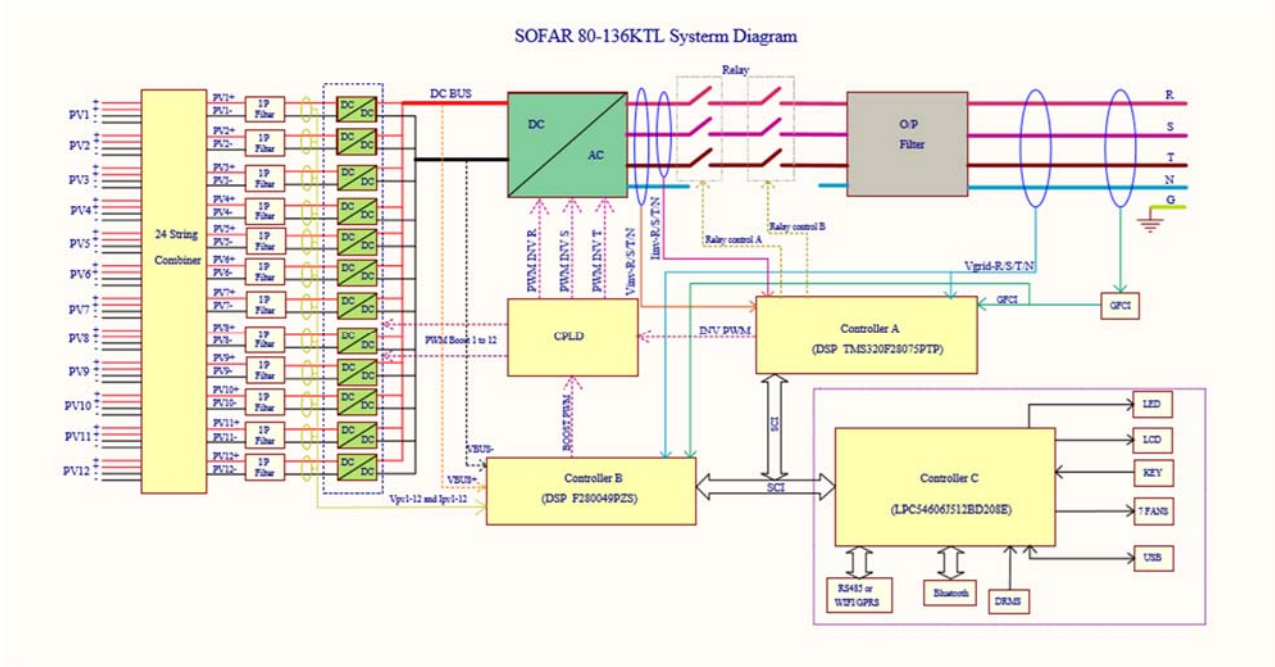
AC Connection interface

Side view


Serial Number



Software Version

2 ELECTRICAL SCHEMES

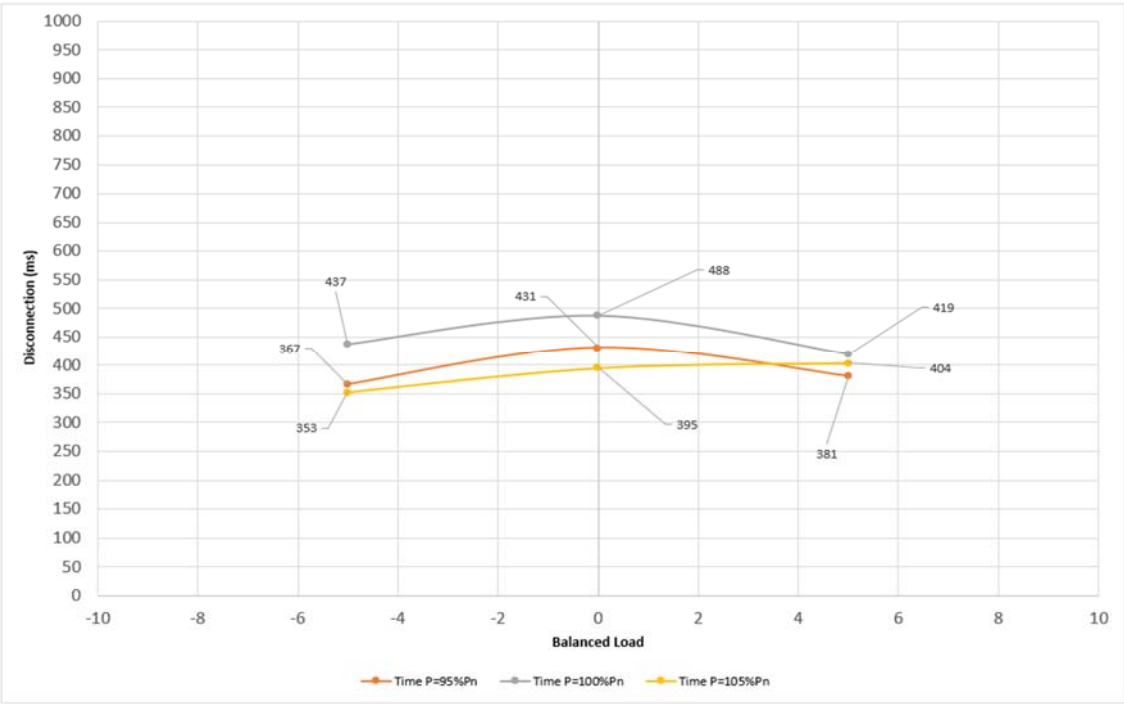


ATTACHMENT II

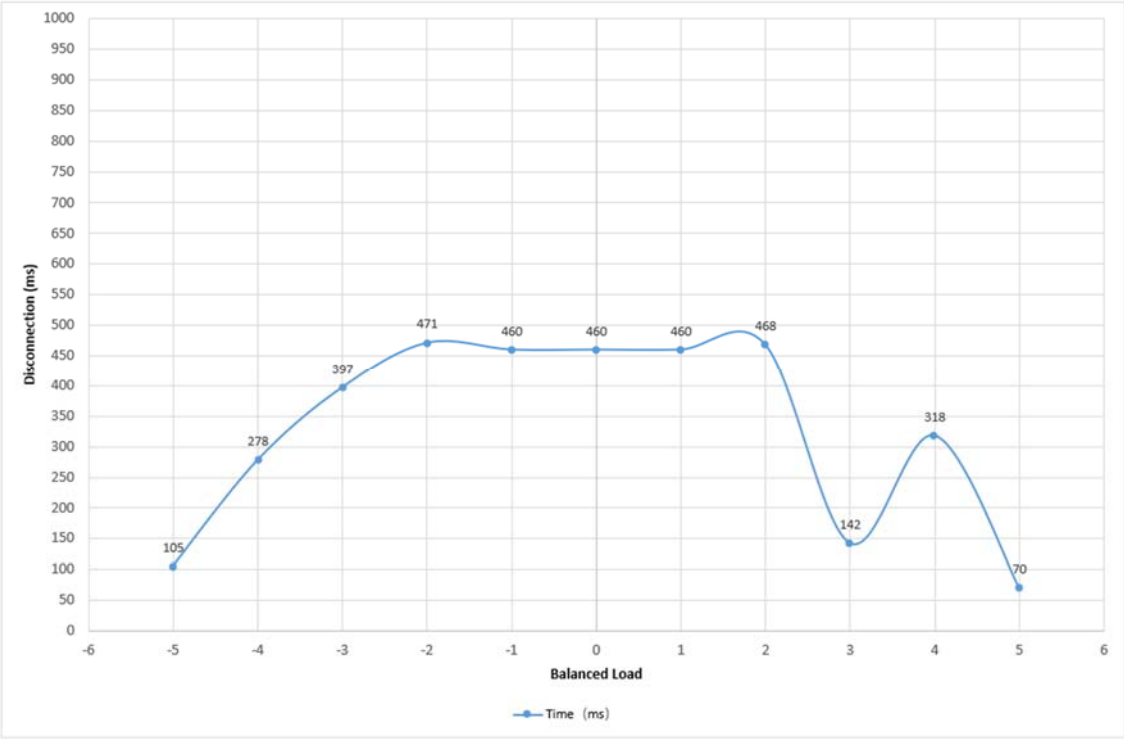
(GRAPHICS OF THE TEST RESULTS)

50Hz

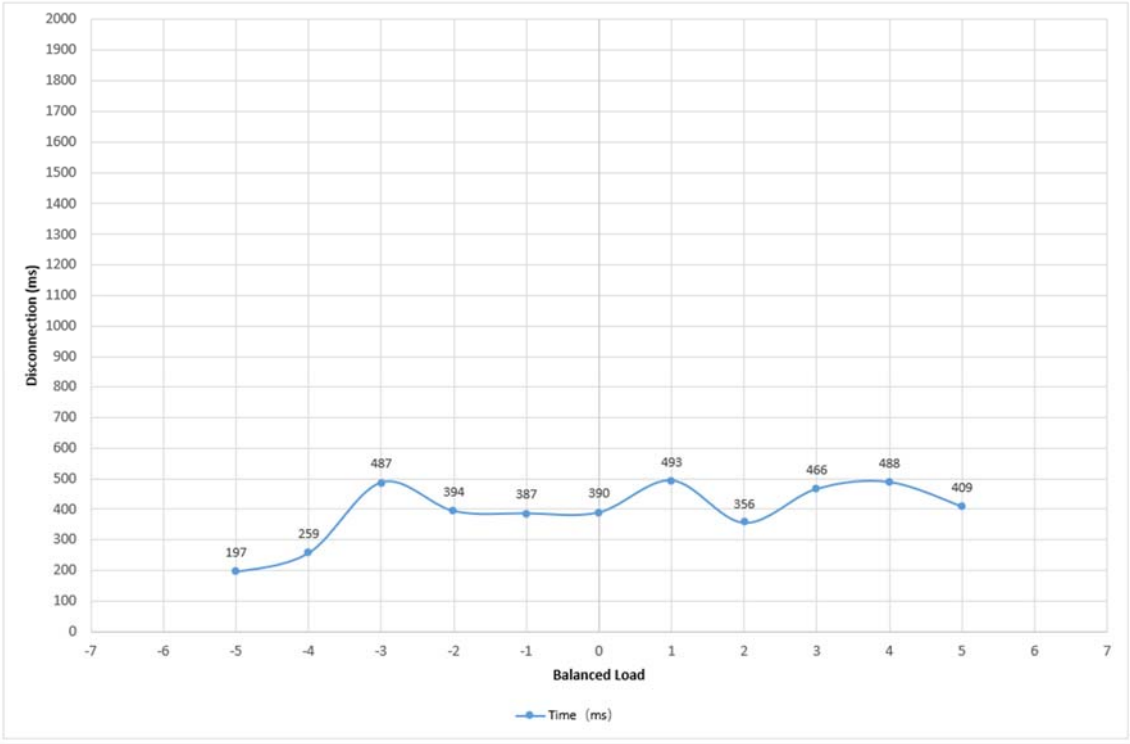
Test Condition A



Test Condition B

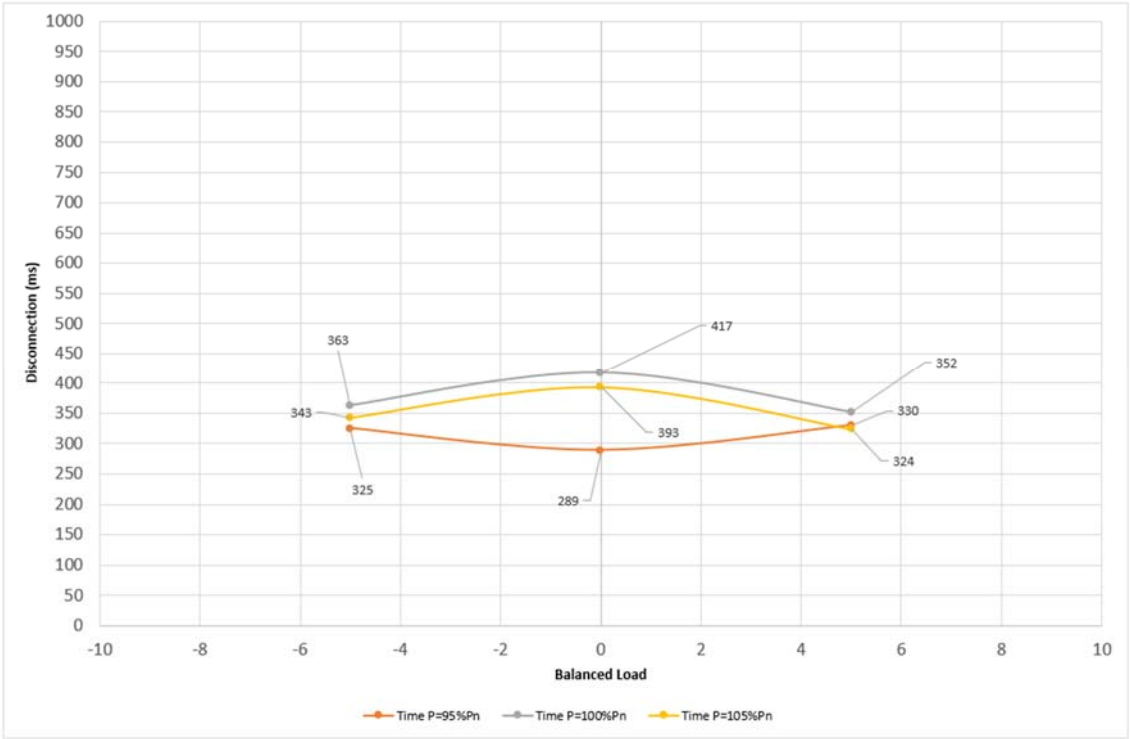


Test Condition C

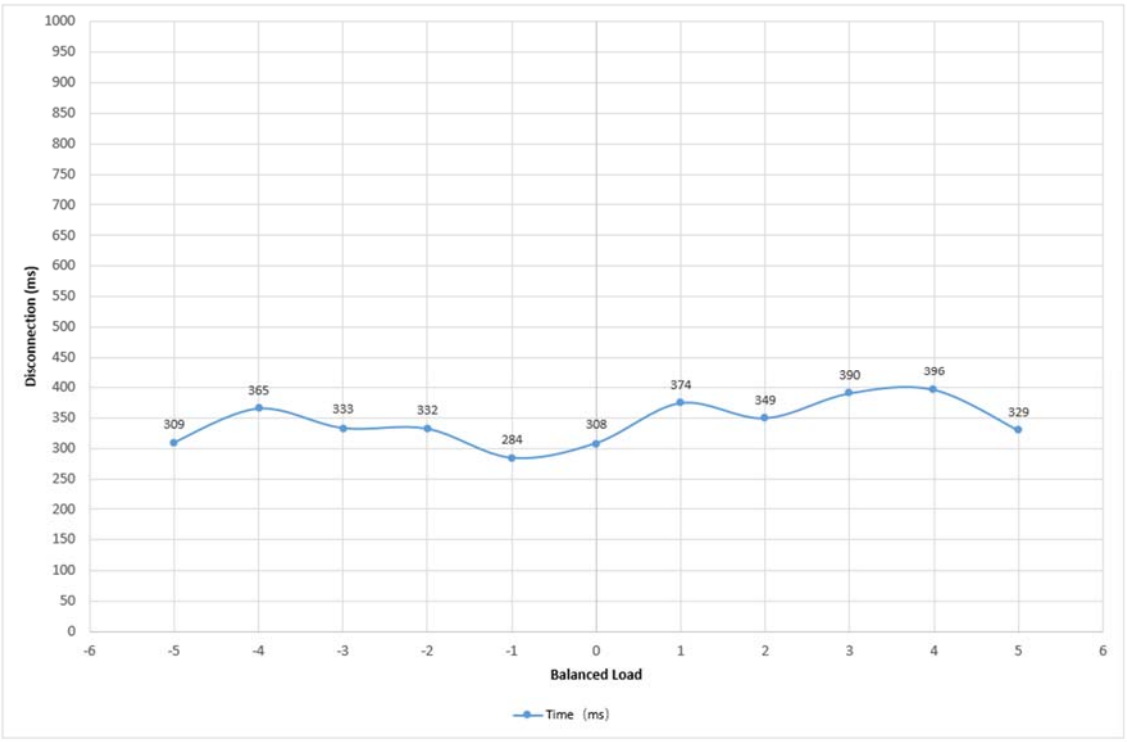


60Hz

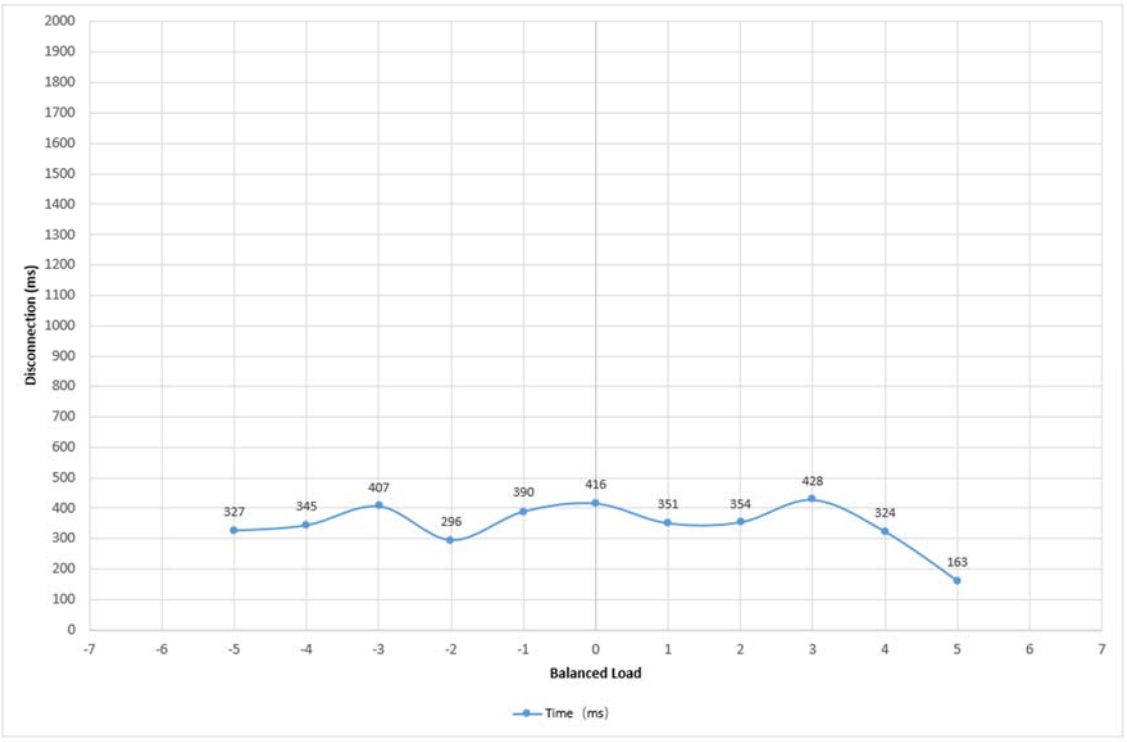
Test Condition A



Test Condition B



Test Condition C



ATTACHMENT III

(GRAPHICS OF THE ISLANDING BEHAVIOR DETECTION)

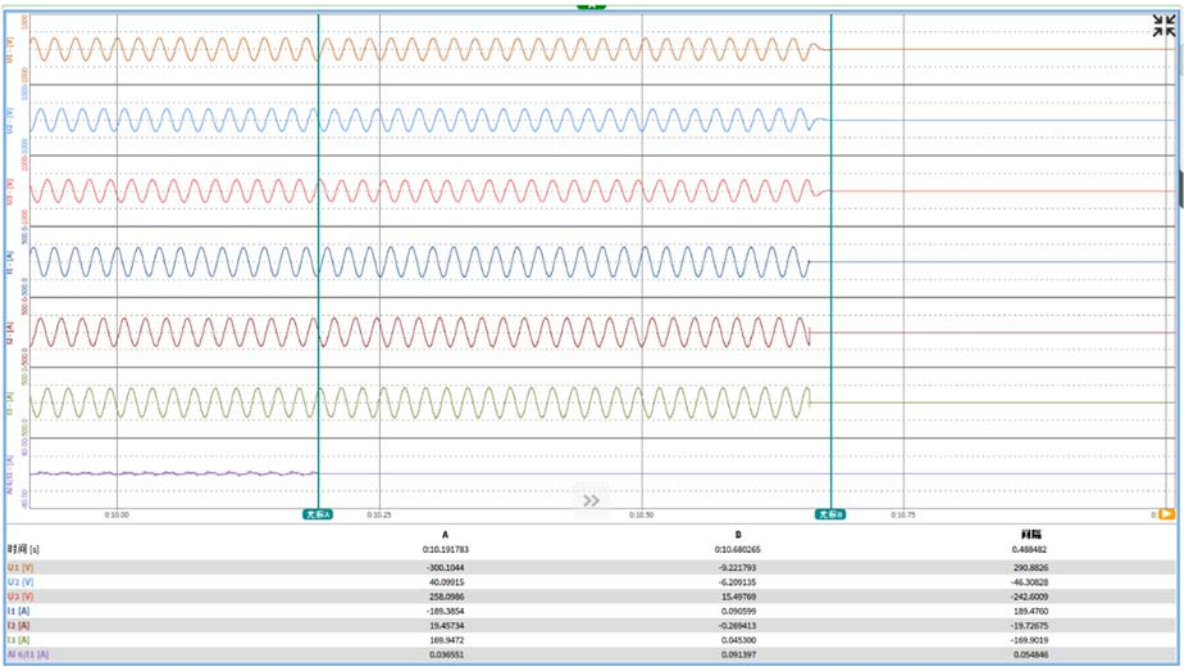
1 DEFINITIONS

M It represents the % change in active load from nominal output power

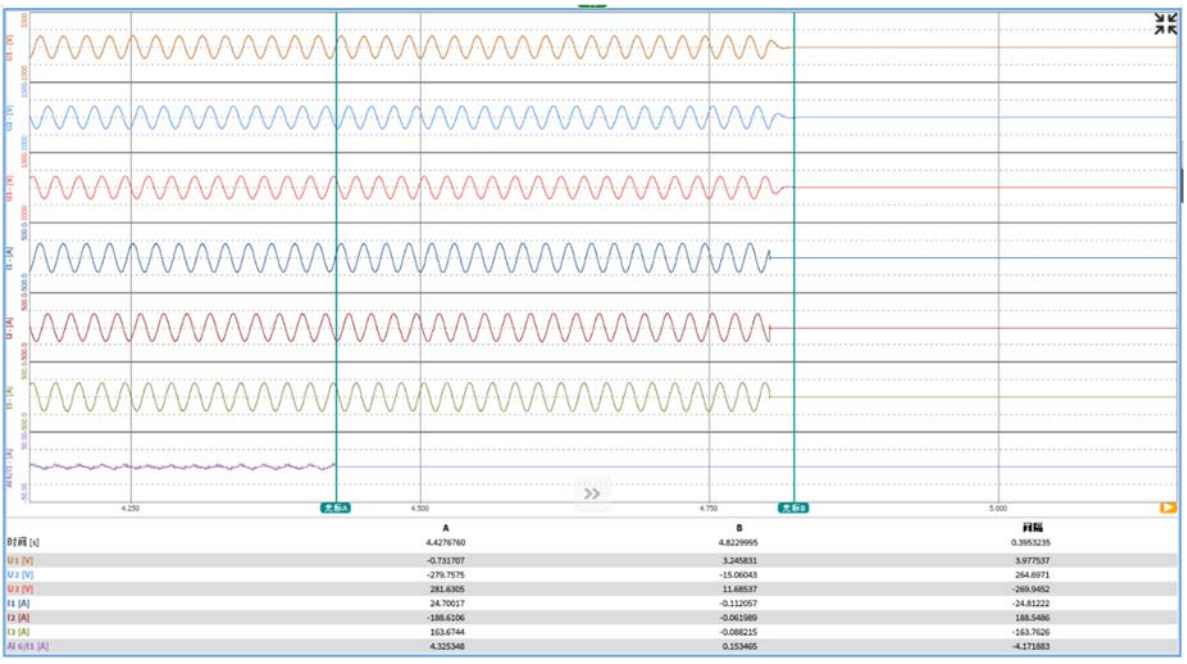
N It represents the % change in reactive load from nominal output power

2 LEGEND

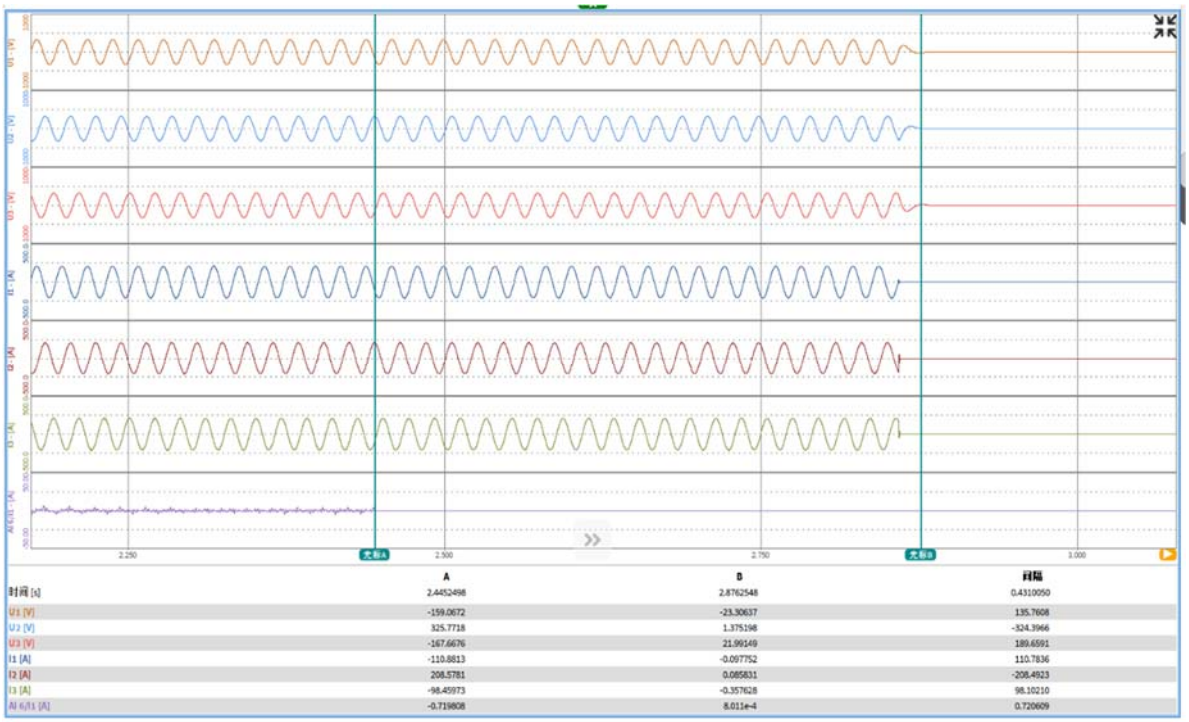
Test A(50Hz)	M(%)=0 & N(%)=0



Test A(50Hz)	M(%)=0 & N(%)=+5

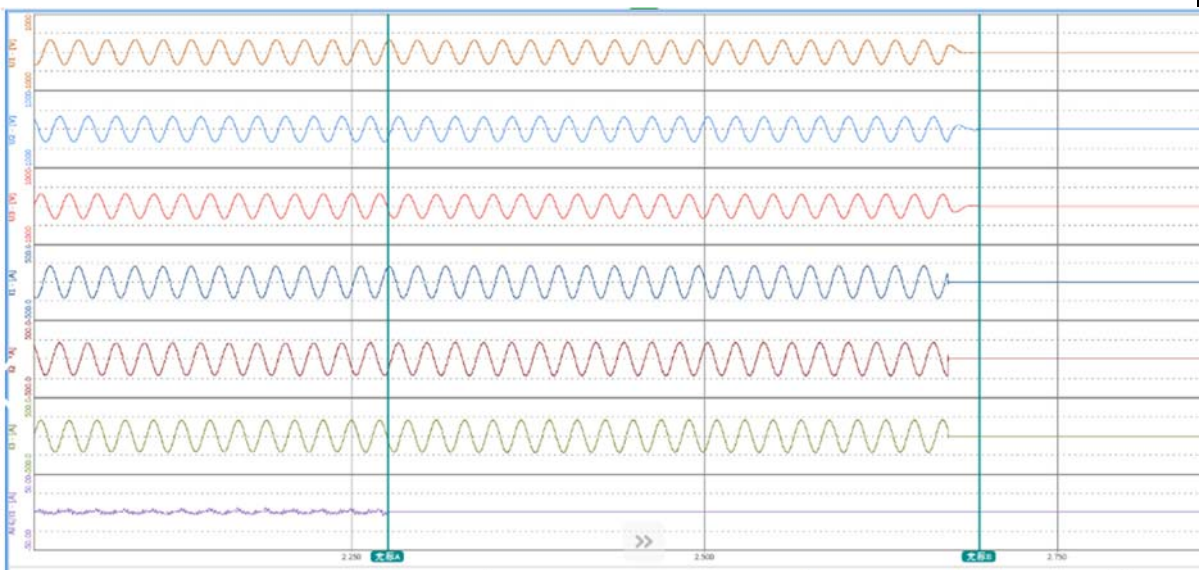


Test A(50Hz)	M(%)=0 & N(%)=-5



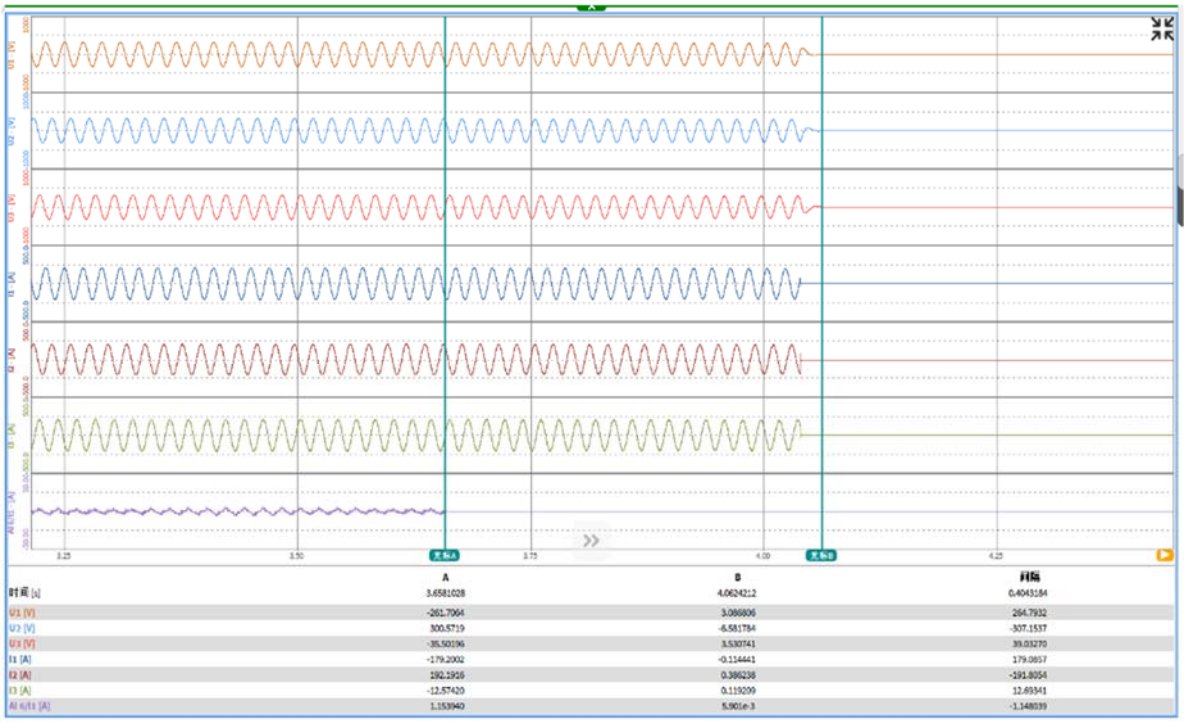
	A	B	间隔
时间 [s]	2.4452498	2.8762548	0.4310050
U1 [V]	-159.0672	-23.30637	135.7608
U2 [V]	325.7718	1.375198	-324.3966
U3 [V]	-167.6676	21.99149	189.6591
I1 [A]	-110.8813	-0.097752	110.7836
I2 [A]	208.5781	0.085831	-208.4923
I3 [A]	-98.45973	-0.357628	98.10210
AI 6/I1 [A]	-0.719808	8.011e-4	0.720609

Test A(50Hz)	M(%)=+5 & N(%)=0

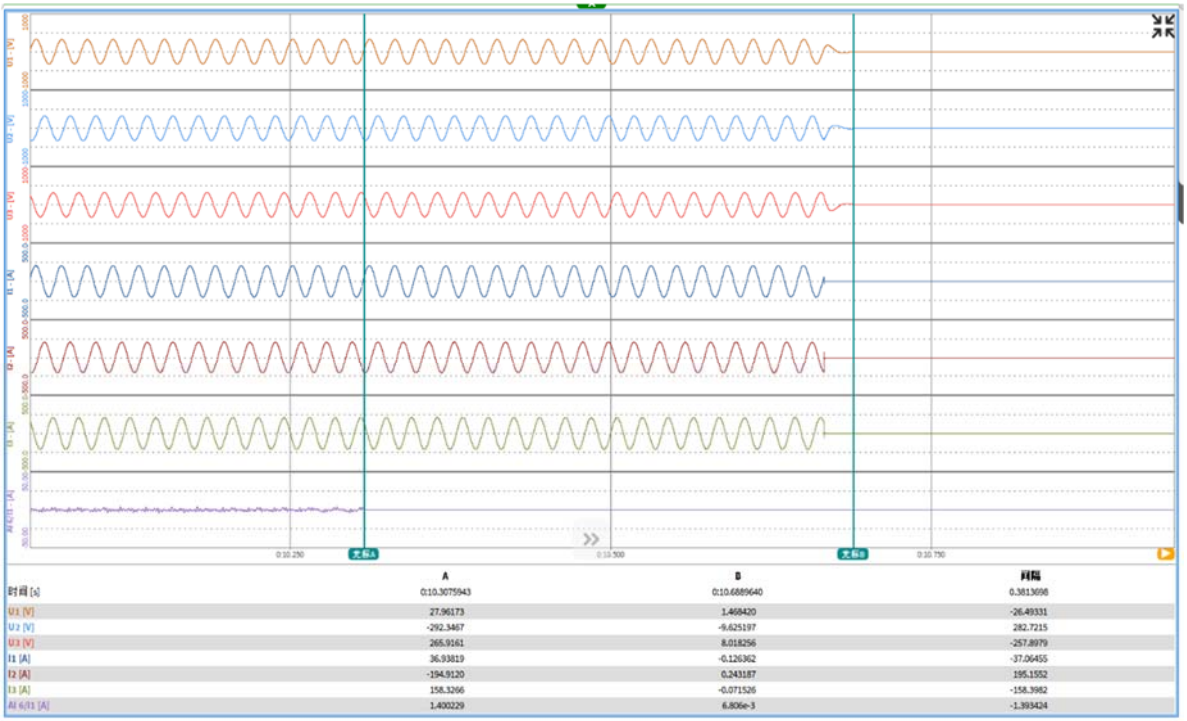


	A	B	间隔
时间 [s]	2.2753471	2.6942758	0.4189288
U1 [V]	298.2979	2.189358	-296.1085
U2 [V]	-262.0721	-10.53238	251.5397
U3 [V]	-42.46569	8.335591	50.80128
I1 [A]	188.6797	-0.038147	-188.7179
I2 [A]	-165.9036	0.267424	166.1710
I3 [A]	-21.66271	9.537e-3	21.67225
AI 6/I1 [A]	-3.045362	0.031371	3.076734

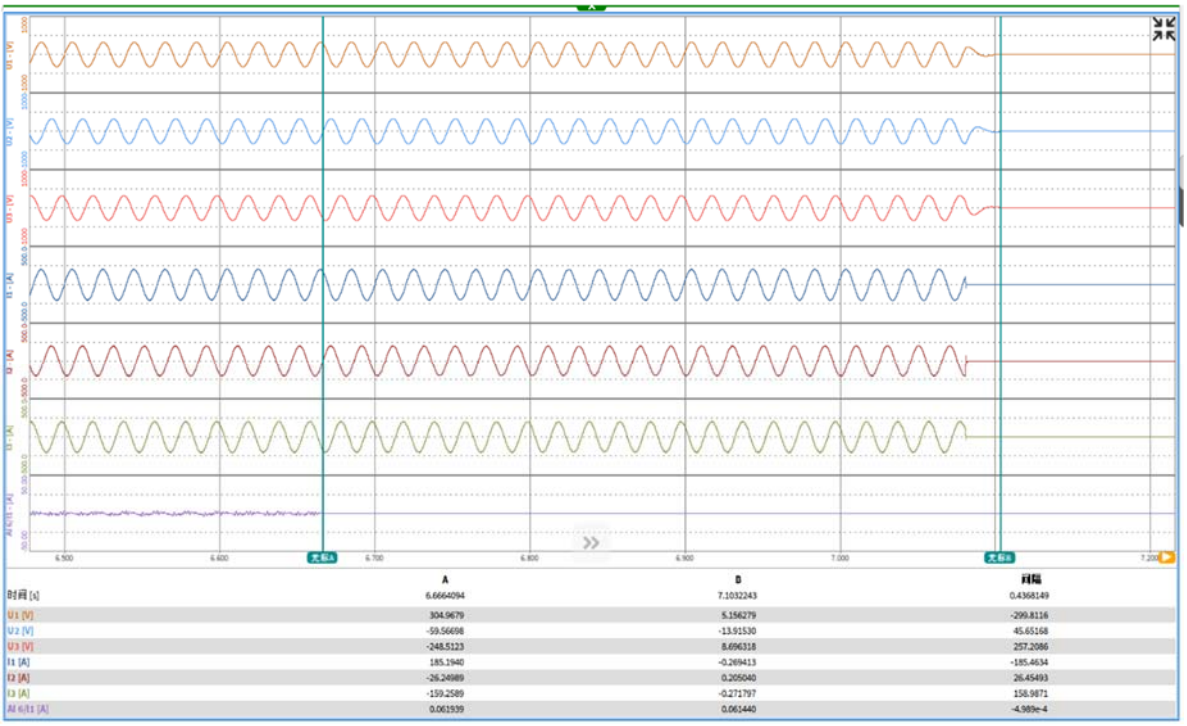
Test A(50Hz)	M(%)=+5 & N(%)=+5



Test A(50Hz)	M(%)=+5 & N(%)=-5

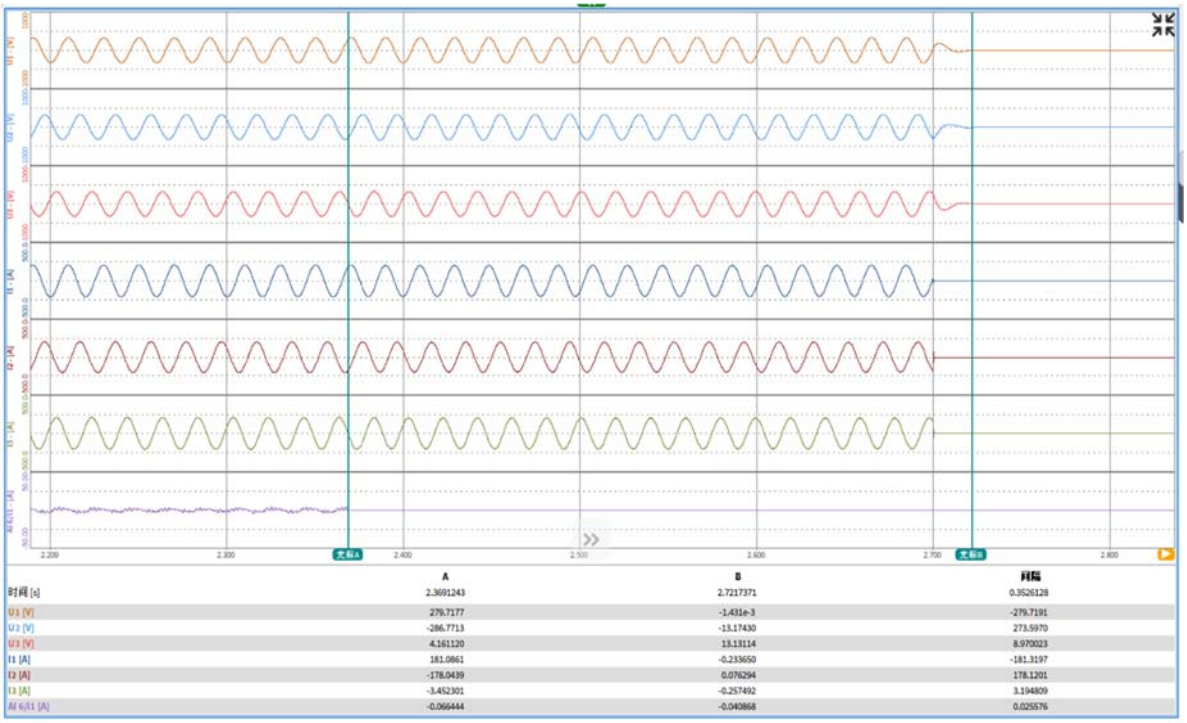


Test A(50Hz)	M(%)=-5 & N(%)=0



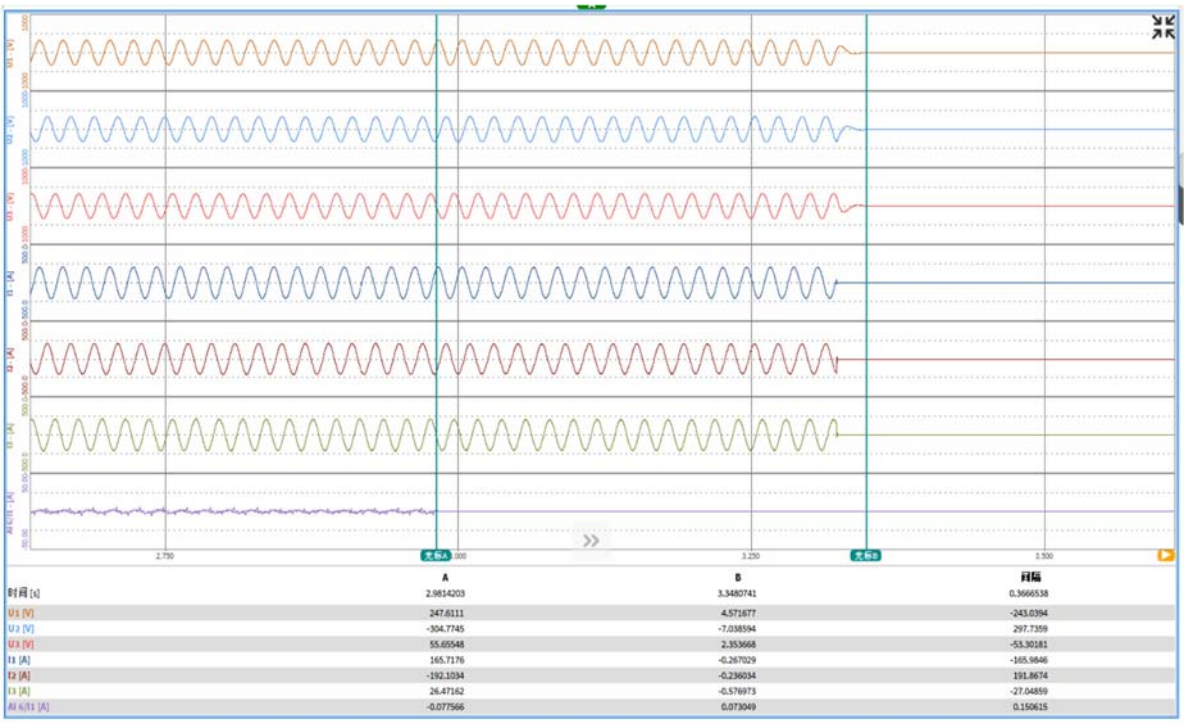
	A	B	间隔
时间 [s]	6.6664094	7.1032243	0.4368149
U1 [V]	304.9679	5.156279	-299.8116
U2 [V]	-59.56698	-13.91530	45.65168
U3 [V]	-248.5123	8.696318	257.2086
I1 [A]	185.1940	-0.269413	-185.4634
I2 [A]	-26.24989	0.205040	26.45493
I3 [A]	-159.2589	-0.271797	158.9871
AI 6/11 [A]	0.061939	0.061440	-4.989e-4

Test A(50Hz)	M(%)=-5 & N(%)=+5



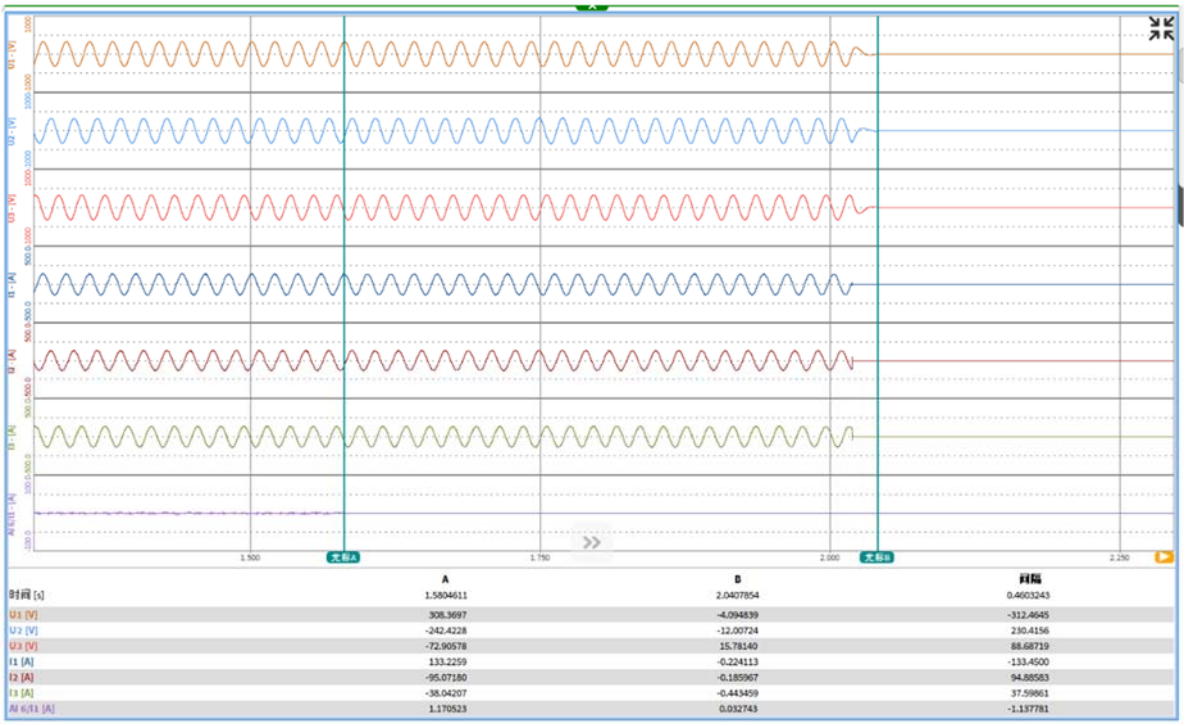
	A	B	间隔
时间 [s]	2.3691243	2.7217371	0.3526128
U1 [V]	279.7177	-1.431e-3	-279.7191
U2 [V]	-286.7713	-13.17430	273.5970
U3 [V]	4.161120	13.13114	8.970023
I1 [A]	181.0861	-0.233650	-181.3197
I2 [A]	-178.0439	0.076294	178.1201
I3 [A]	-3.452301	-0.257492	3.194809
AI 6/11 [A]	-0.066444	-0.040868	0.025576

Test A(50Hz)	M(%)=-5 & N(%)=-5



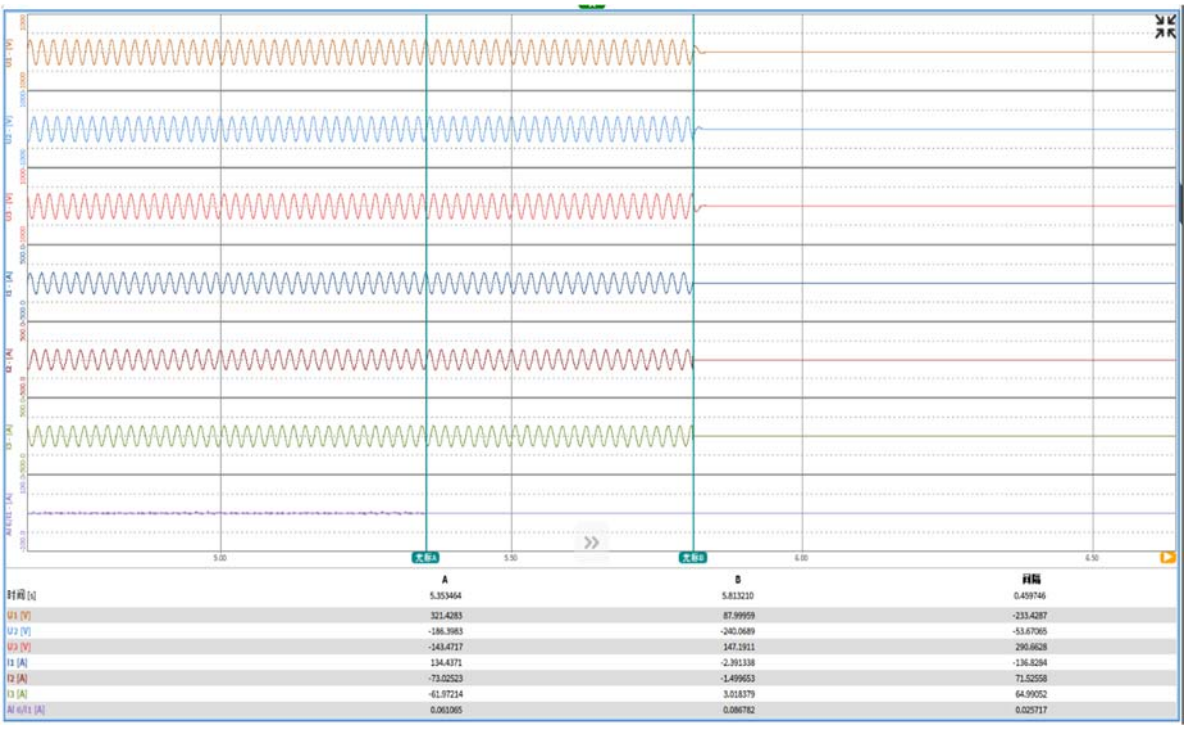
	A	B	间隔
时间 [s]	2.9814203	3.3480741	0.3666538
U1 [V]	247.6111	4.571677	-243.0394
U2 [V]	-304.7745	-7.038594	297.7359
U3 [V]	55.65548	2.353668	-53.30181
I1 [A]	165.7176	-0.267029	-165.9846
I2 [A]	-192.1034	-0.236034	191.8674
I1 [A]	26.47162	-0.576973	-27.04859
AI 6/I1 [A]	-0.077566	0.073049	0.150615

Test B(50Hz)	M(%)=0 & N(%)=0



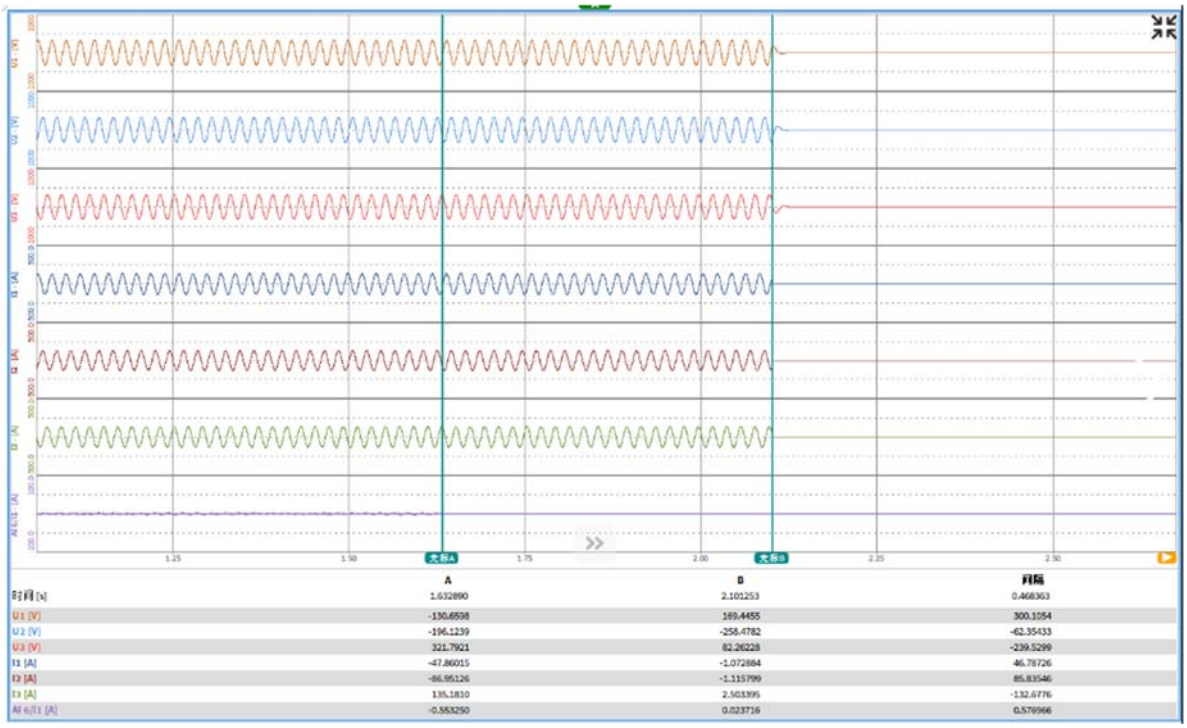
	A	B	间隔
时间 [s]	1.5804611	2.0407854	0.4603243
U1 [V]	308.3697	-4.094839	-312.4645
U2 [V]	-242.4228	-12.00724	230.4156
U3 [V]	-72.90578	15.78140	88.68719
I1 [A]	133.2259	-0.224113	-133.4500
I2 [A]	-95.07180	-0.185967	94.88583
I3 [A]	-38.04207	-0.443459	37.59861
AI 6/I1 [A]	1.170523	0.032743	-1.137781

Test B(50Hz)	M(%)=0 & N(%)=+1



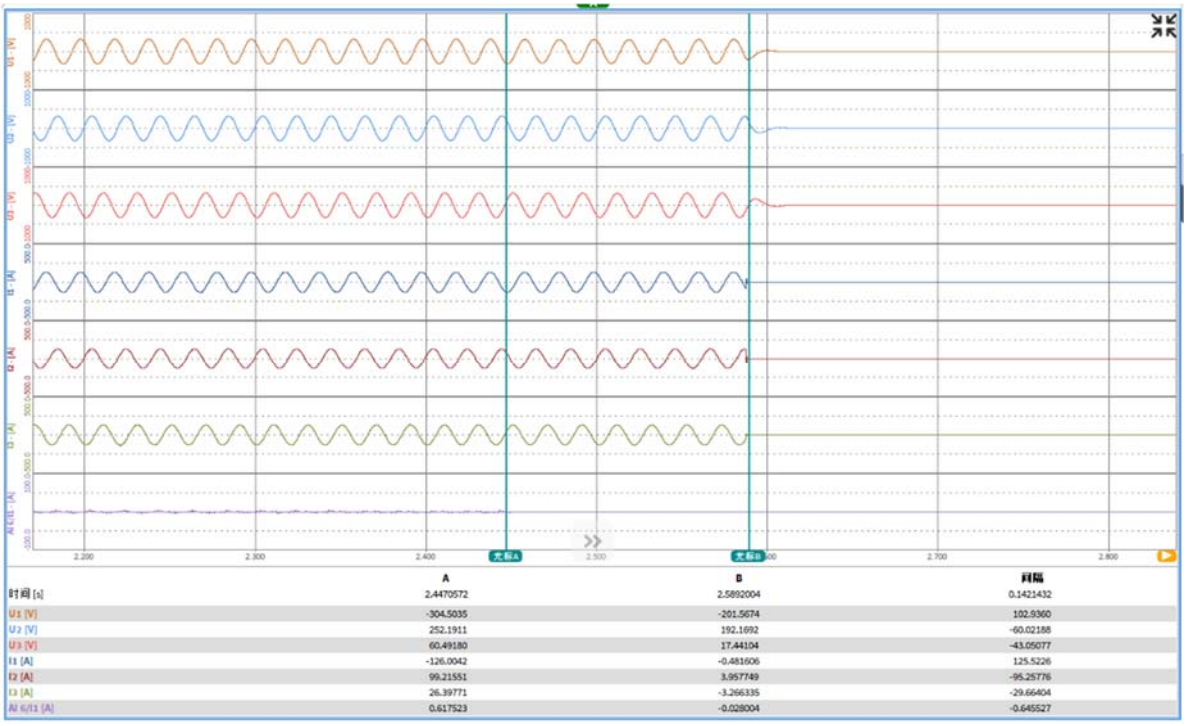
	A	B	间隔
时间 [s]	5.353464	5.813210	0.459746
U1 [V]	321.4283	87.99959	-233.4287
U2 [V]	-186.3983	-240.0689	-53.67065
U3 [V]	-143.4717	147.1911	290.6628
I1 [A]	134.4371	-2.391338	-136.8284
I2 [A]	-73.02523	-1.499653	71.52558
I3 [A]	-61.97214	3.018379	64.99052
AI 6/I1 [A]	0.061065	0.086782	0.025717

Test B(50Hz)	M(%)=0 & N(%)=+2



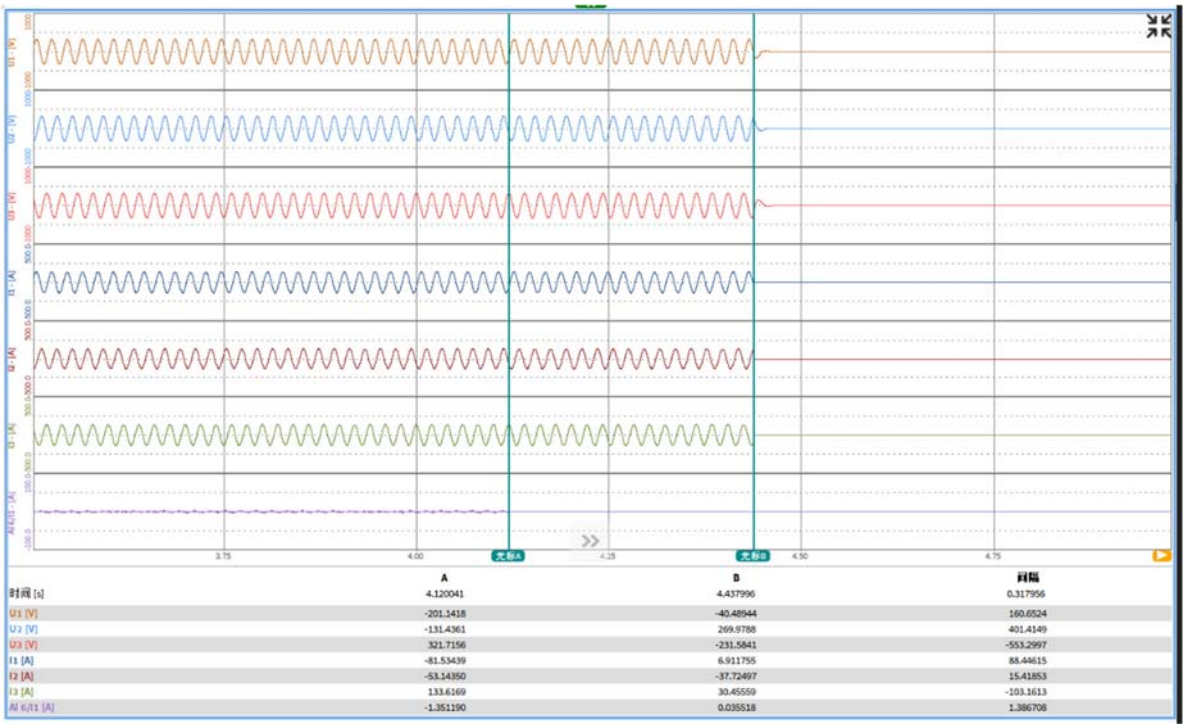
	A	B	间隔
时间 [s]	1.632890	2.101253	0.468363
U1 [V]	-130.6598	169.4455	300.1054
U2 [V]	-196.1239	-258.4782	-62.35433
U3 [V]	321.7921	82.26228	-239.5299
I1 [A]	-47.86015	-1.072884	46.78726
I2 [A]	-86.95126	-1.115799	85.83546
I3 [A]	135.1810	2.503395	-132.6776
AI 6/I1 [A]	-0.553250	0.023716	0.576966

Test B(50Hz)	M(%)=0 & N(%)=+3



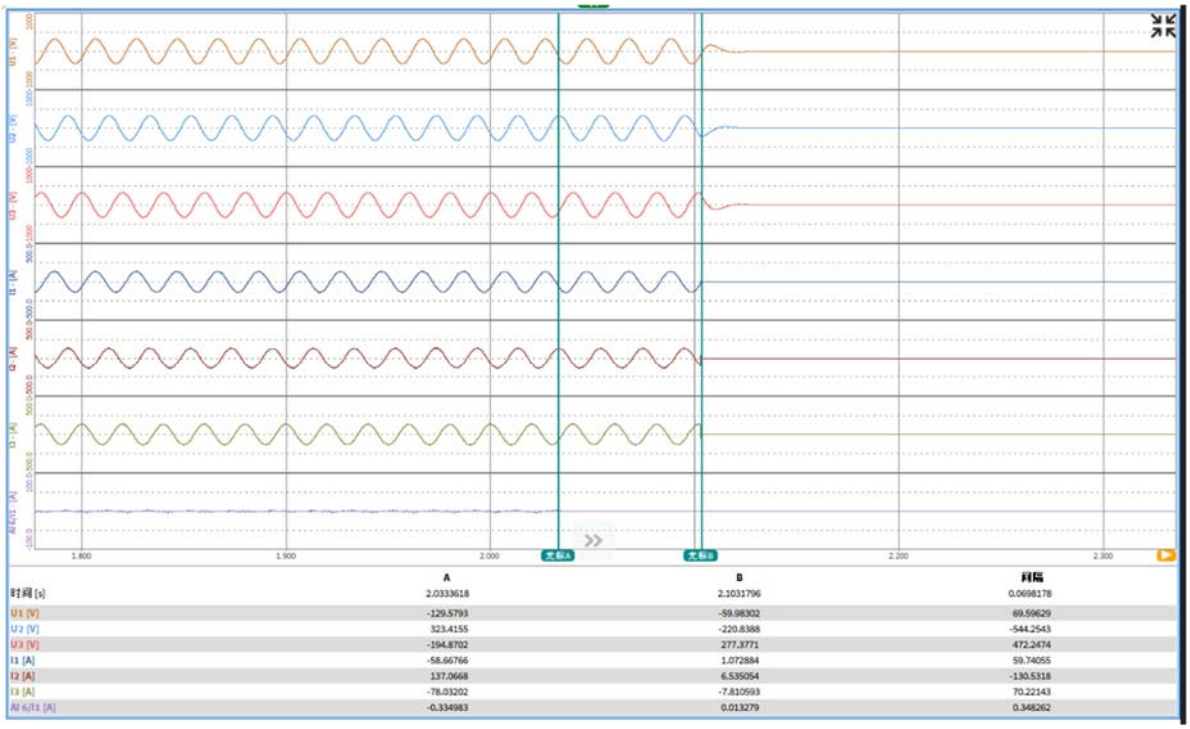
	A	B	间隔
时间 [s]	2.4470572	2.5892004	0.1421432
U1 [V]	-304.5035	-201.5674	102.9360
U2 [V]	252.1911	192.1692	-60.02188
U3 [V]	60.49180	17.44104	-43.05077
I1 [A]	-126.0042	-0.481606	125.5226
I2 [A]	99.21551	3.957749	-95.25776
I3 [A]	26.39771	-3.266335	-29.66404
AI 6/I1 [A]	0.617523	-0.028004	-0.645527

Test B(50Hz)	**M(%)=0 & N(%)=+4**



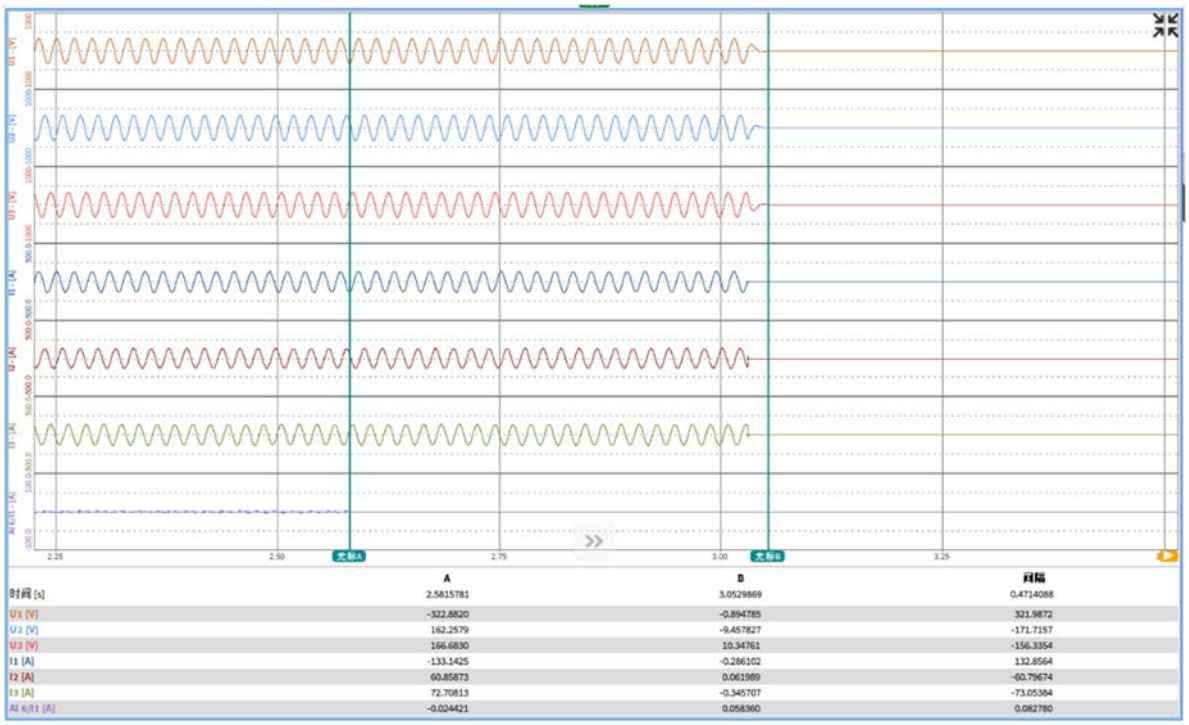
	A	B	间隔
时间 [s]	4.120041	4.437996	0.317956
U1 [V]	-201.1418	-40.48944	160.6524
U2 [V]	-131.4361	269.9788	401.4149
U3 [V]	321.7156	-231.5841	-553.2997
I1 [A]	-81.53439	6.911755	88.44615
I2 [A]	-53.14350	-37.72497	15.41853
I3 [A]	133.6169	30.45559	-103.1613
AI 6/11 [A]	-1.351190	0.035518	1.386708

Test B(50Hz)	**M(%)=0 & N(%)=+5**



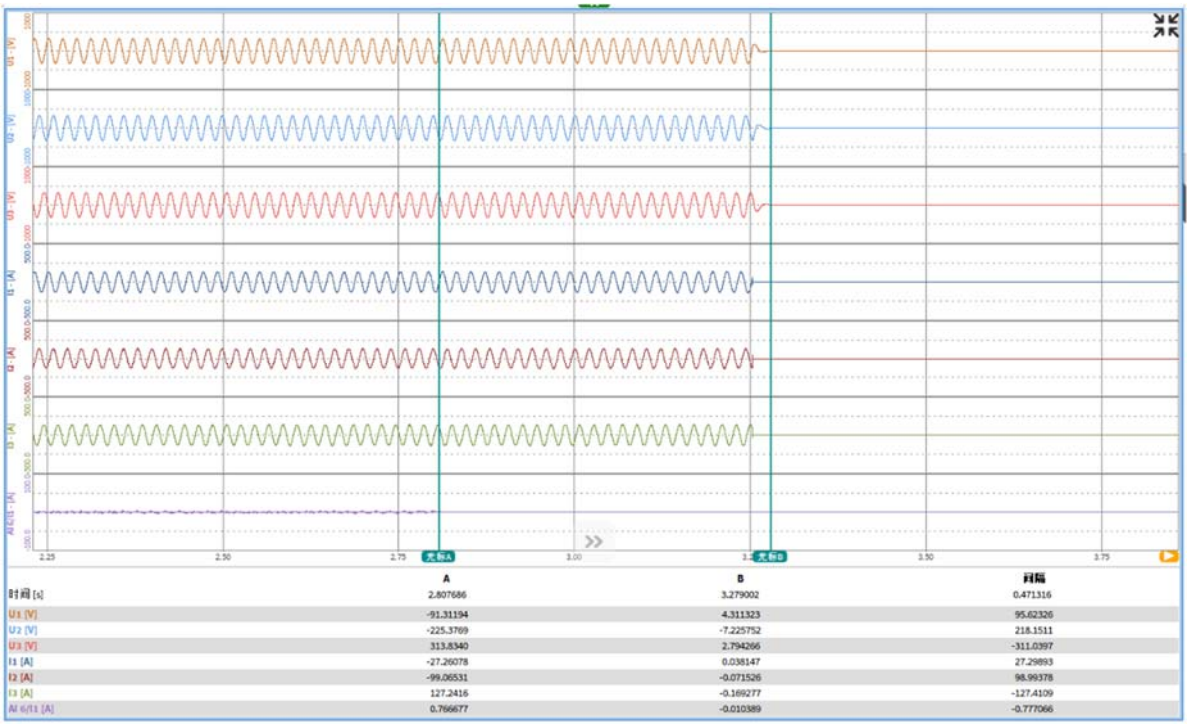
	A	B	间隔
时间 [s]	2.033618	2.1031796	0.0698178
U1 [V]	-129.5793	-59.98302	69.59629
U2 [V]	323.4155	-220.8388	-544.2543
U3 [V]	-194.8702	277.3771	472.2474
I1 [A]	-58.66766	1.072884	59.74055
I2 [A]	137.0668	6.535054	-130.5318
I3 [A]	-78.03202	-7.810593	70.22143
AI 6/11 [A]	-0.334983	0.013279	0.348262

Test B(50Hz)	**M(%)=0 & N(%)=-1**



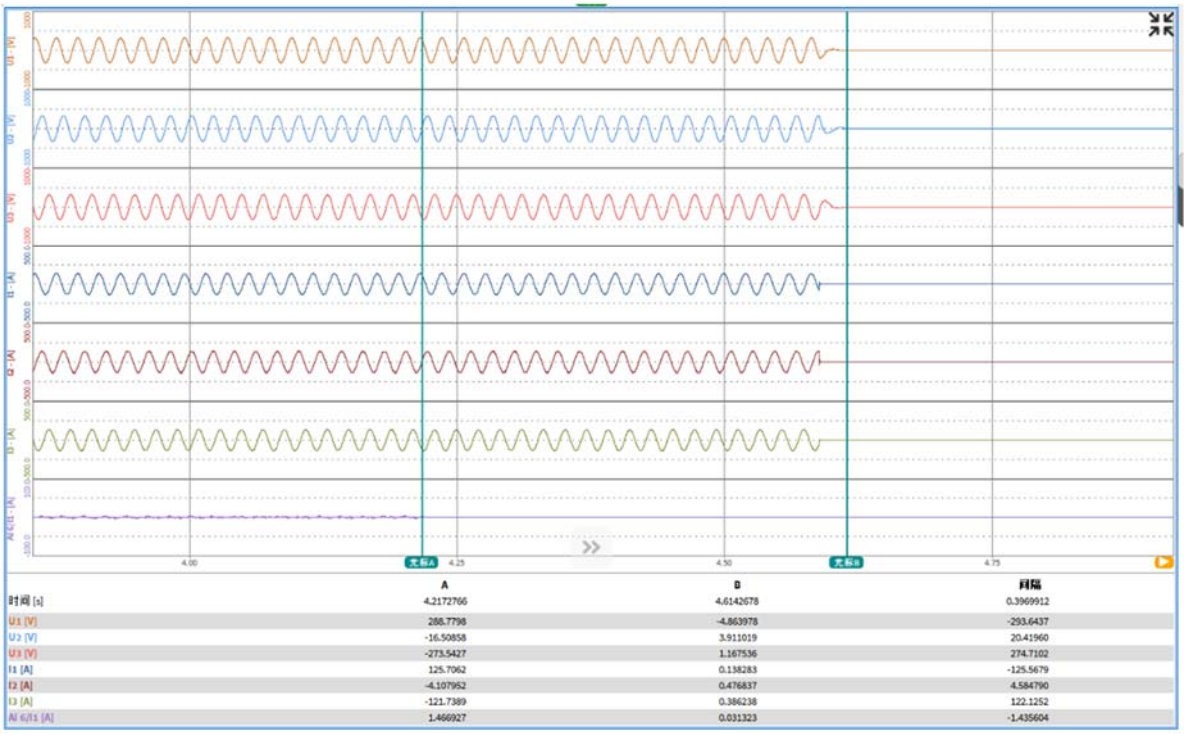
	A	B	间隔
时间 [s]	2.5815781	3.0529869	0.4714088
U1 [V]	-322.8820	-0.894785	321.9872
U2 [V]	162.2579	-9.457827	-171.7157
U3 [V]	166.6830	10.34761	-156.3354
I1 [A]	-133.1425	-0.286102	132.8564
I2 [A]	60.85873	0.061989	-60.79674
I3 [A]	72.70813	-0.345707	-73.05384
AI 6/I1 [A]	-0.024421	0.058360	0.082780

Test B(50Hz)	**M(%)=0 & N(%)=-2**



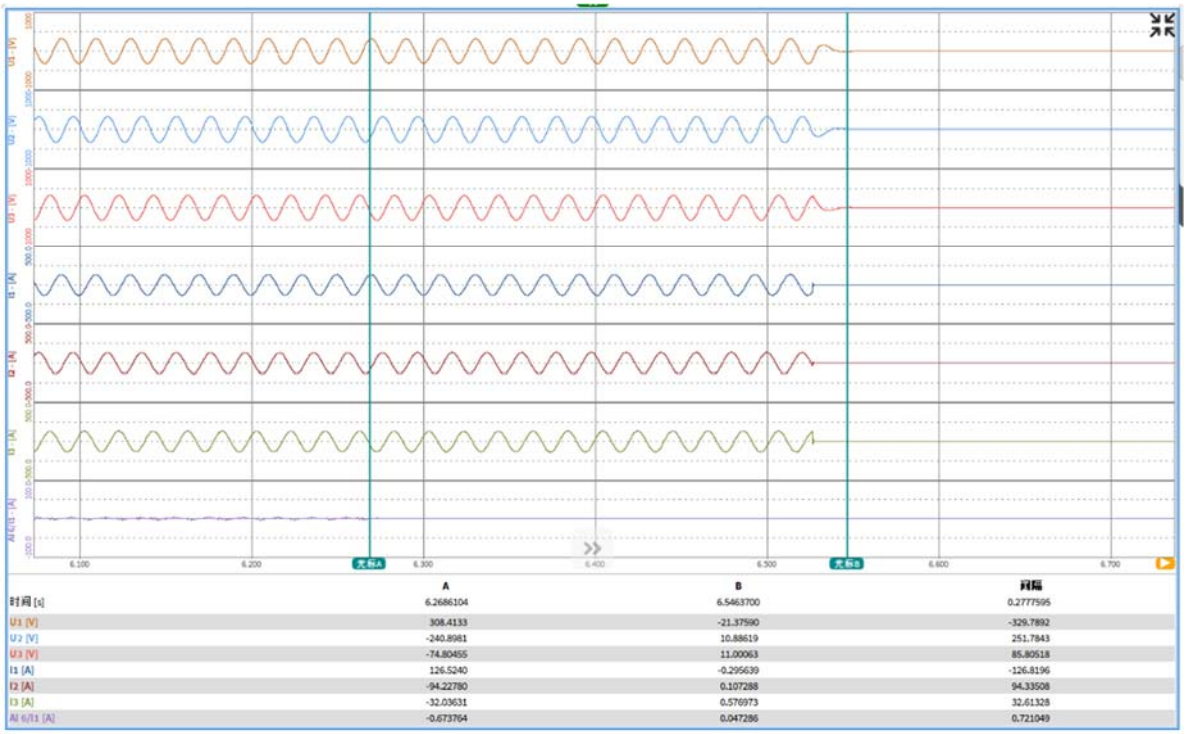
	A	B	间隔
时间 [s]	2.807686	3.279002	0.471316
U1 [V]	-91.31194	4.311323	95.62326
U2 [V]	-225.3769	-7.225752	218.1511
U3 [V]	313.8340	2.794266	-311.0397
I1 [A]	-27.26078	0.038147	27.29893
I2 [A]	-99.06531	-0.071526	98.99378
I3 [A]	127.2416	-0.169277	-127.4109
AI 6/I1 [A]	0.766677	-0.010389	-0.777066

Test B(50Hz)	M(%)=0 & N(%)=-3



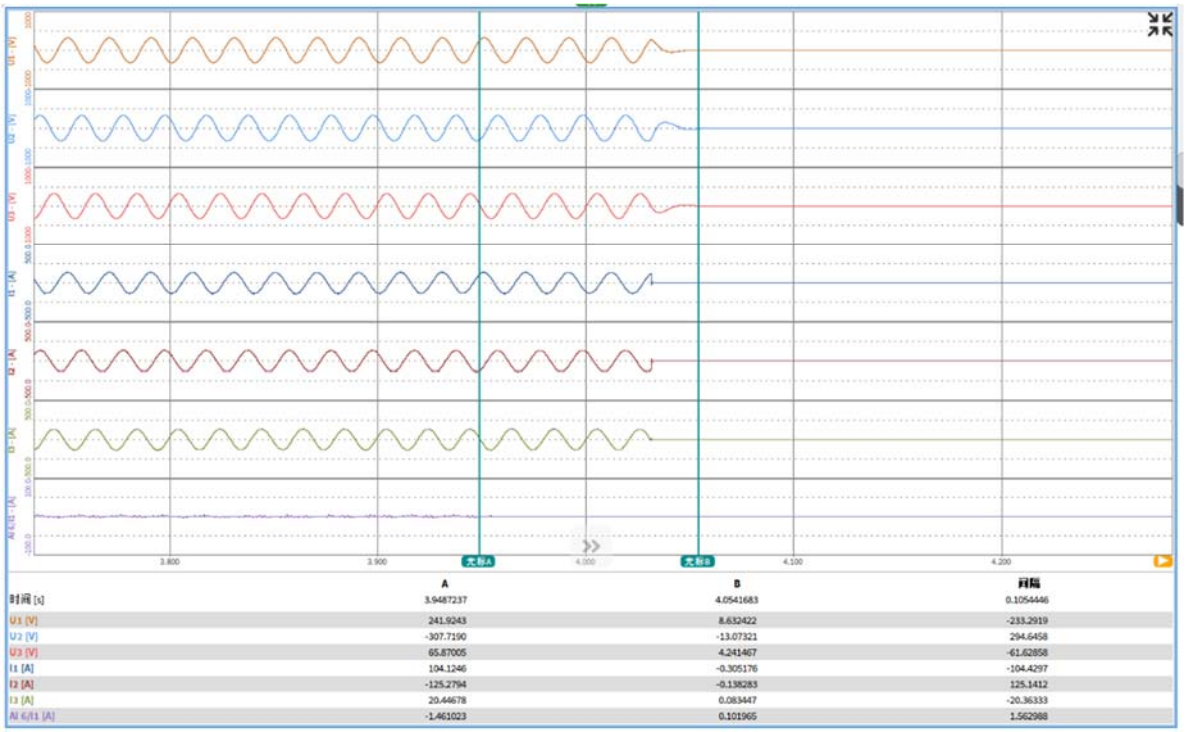
	A	B	间隔
时间 [s]	4.2172766	4.6142678	0.3969912
U1 [V]	288.7798	-4.863978	-293.6437
U2 [V]	-16.50858	3.911019	20.41960
U3 [V]	-273.5427	1.167536	274.7102
I1 [A]	125.7062	0.138283	-125.5679
I2 [A]	-4.107952	0.476837	4.584790
I3 [A]	-121.7389	0.386238	122.1252
AI 6/11 [A]	1.466927	0.031323	-1.435604

Test B(50Hz)	M(%)=0 & N(%)=-4



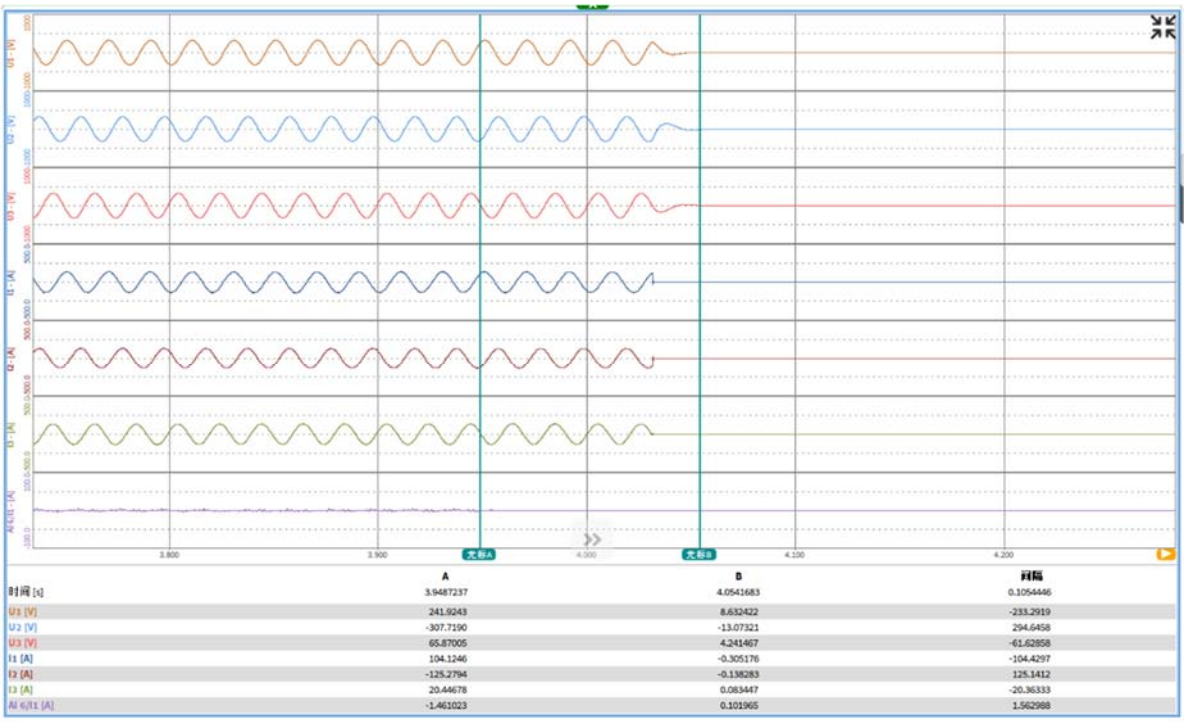
	A	B	间隔
时间 [s]	6.2686104	6.5463700	0.2777595
U1 [V]	308.4133	-21.37590	-329.7892
U2 [V]	-240.8981	10.88619	251.7843
U3 [V]	-74.80455	11.00063	85.80518
I1 [A]	126.5240	-0.295639	-126.8196
I2 [A]	-94.22780	0.107288	94.33508
I3 [A]	-32.03631	0.576973	32.61328
AI 6/11 [A]	-0.673764	0.047286	0.721049

Test B(50Hz)	M(%)=0 & N(%)=-5



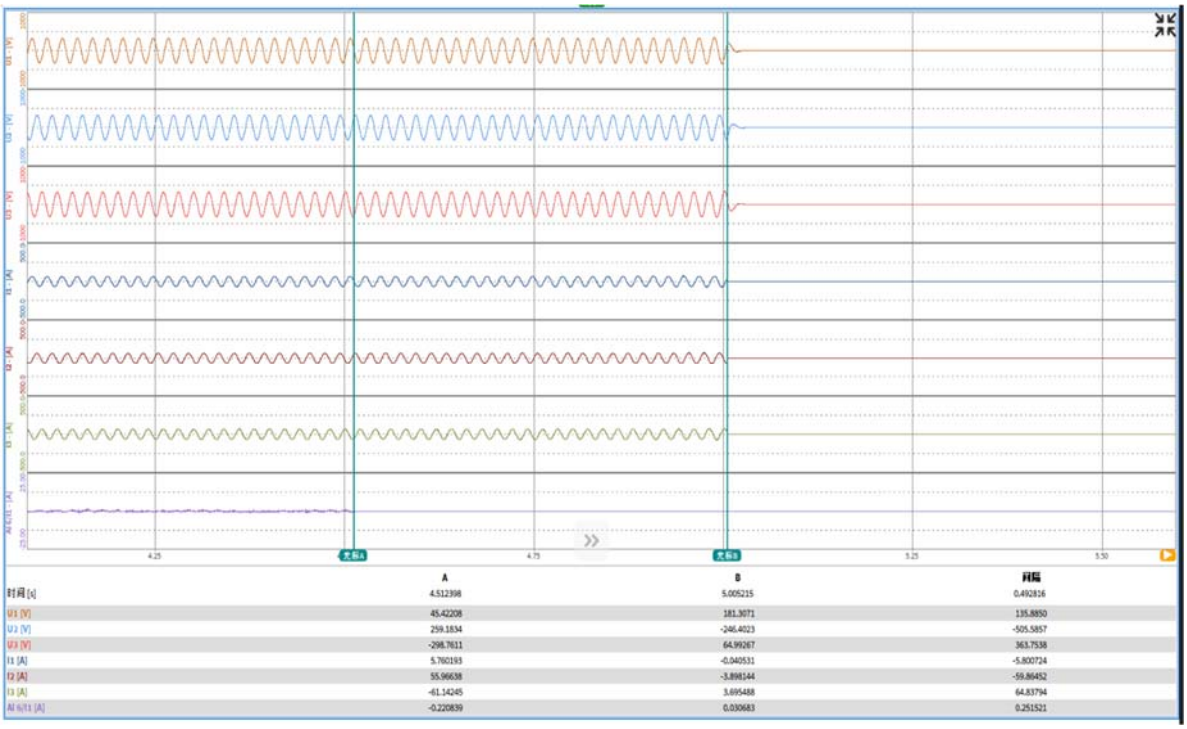
	A	B	间隔
时间 [s]	3.9487237	4.0541683	0.1054446
U1 [V]	241.9243	8.632422	-233.2919
U2 [V]	-307.7190	-13.07321	294.6458
U3 [V]	65.87005	4.241467	-61.62858
I1 [A]	104.1246	-0.305176	-104.4297
I2 [A]	-125.2794	-0.138283	125.1412
I3 [A]	20.44678	0.083447	-20.36333
AI 6/11 [A]	-1.461023	0.101965	1.562988

Test C(50Hz)	M(%)=0 & N(%)=0



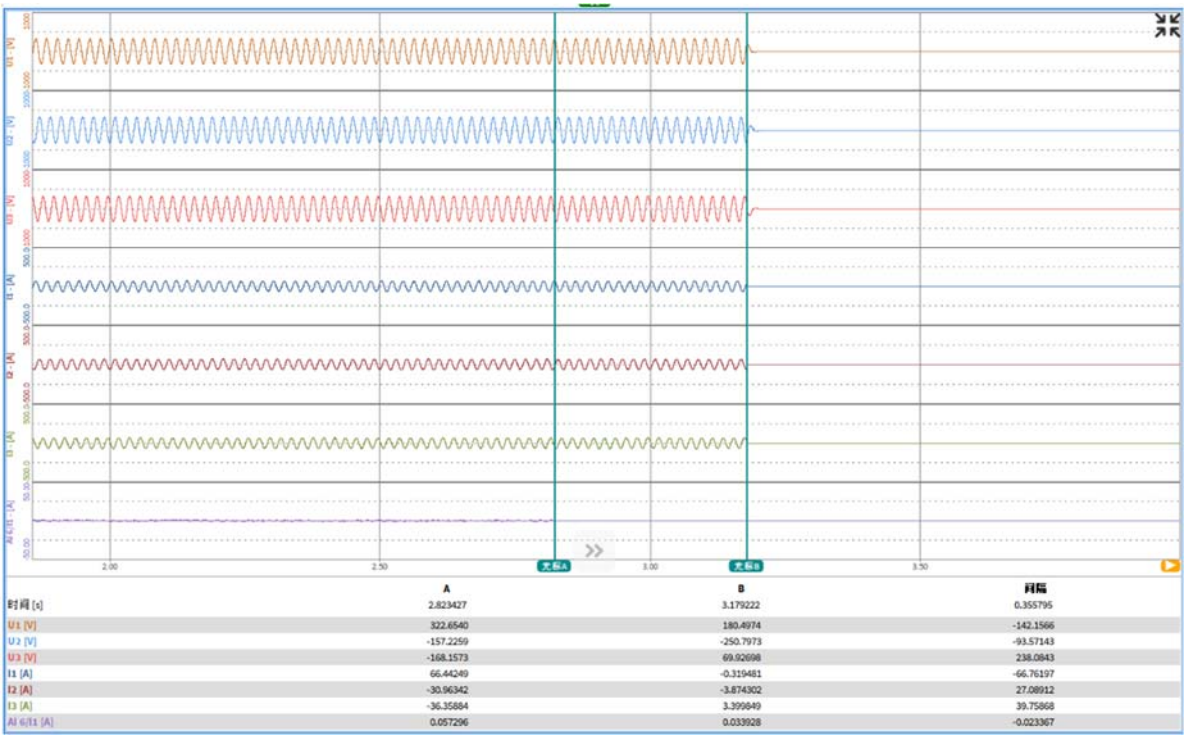
	A	B	间隔
时间 [s]	3.9487237	4.0541683	0.1054446
U1 [V]	241.9243	8.632422	-233.2919
U2 [V]	-307.7190	-13.07321	294.6458
U3 [V]	65.87005	4.241467	-61.62858
I1 [A]	104.1246	-0.305176	-104.4297
I2 [A]	-125.2794	-0.138283	125.1412
I3 [A]	20.44678	0.083447	-20.36333
AI 6/11 [A]	-1.461023	0.101965	1.562988

Test C(50Hz)	M(%)=0 & N(%)=+1



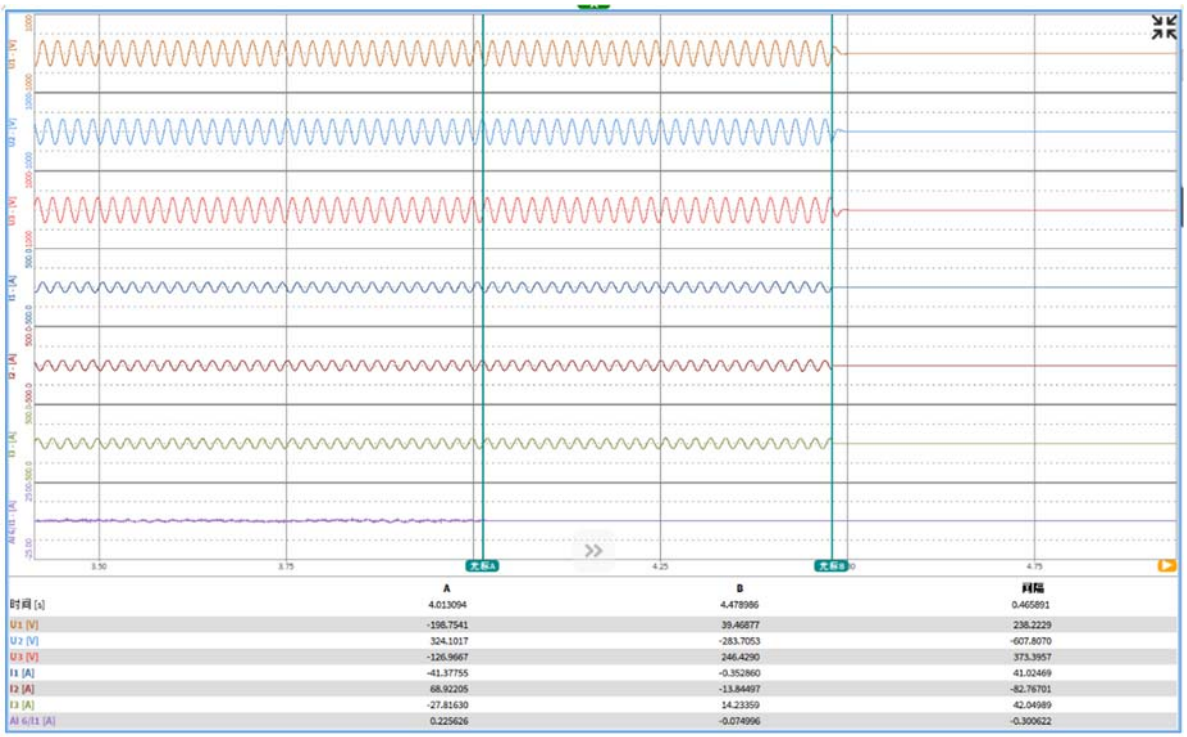
	A	B	间隔
时间 [s]	4.512398	5.005215	0.492816
U1 [V]	45.42208	181.3071	135.8850
U2 [V]	259.1834	-246.4023	-505.5857
U3 [V]	-298.7611	64.99267	363.7538
I1 [A]	5.760193	-0.040531	-5.800724
I2 [A]	55.96638	-3.898144	-59.86452
I3 [A]	-61.14245	3.695488	64.83794
AI 6/11 [A]	-0.220839	0.030683	0.251521

Test C(50Hz)	M(%)=0 & N(%)=+2



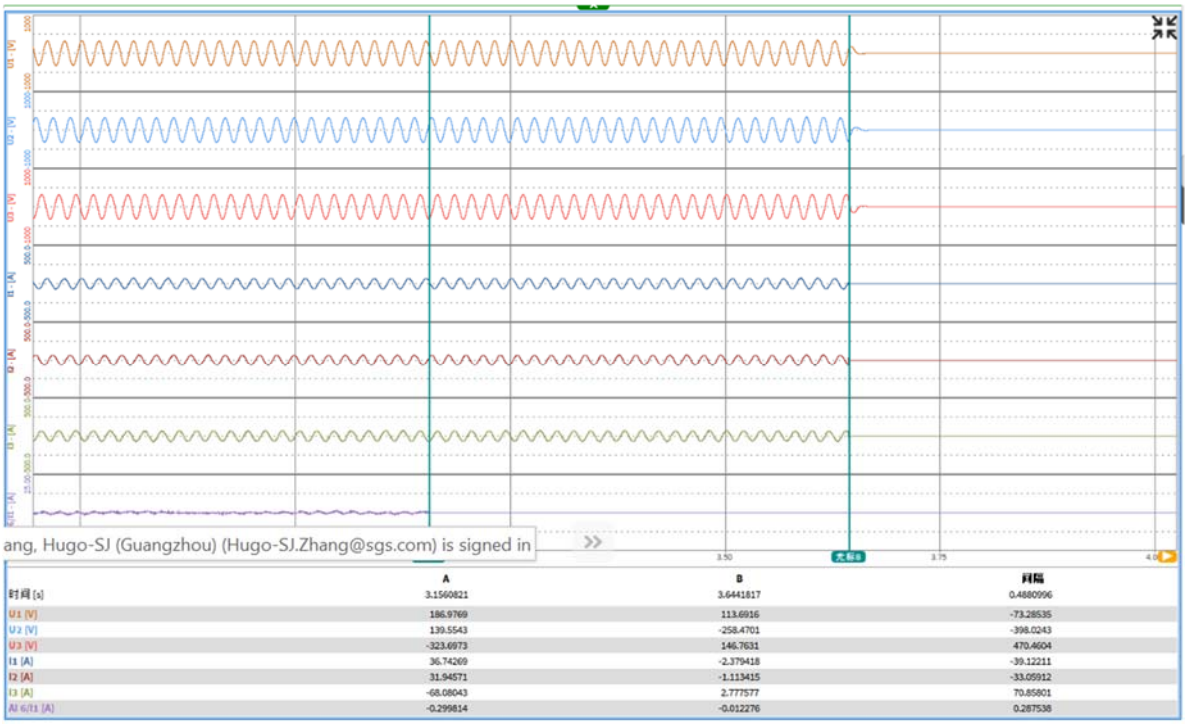
	A	B	间隔
时间 [s]	2.823427	3.179222	0.355795
U1 [V]	322.6540	180.4974	-142.1566
U2 [V]	-157.2259	-250.7973	-93.57143
U3 [V]	-168.1573	69.92698	238.0843
I1 [A]	66.44249	-0.319481	-66.76197
I2 [A]	-30.96342	-3.874302	27.08912
I3 [A]	-36.35884	3.399849	39.75868
AI 6/11 [A]	0.057296	0.033928	-0.023367

Test C(50Hz)	M(%)=0 & N(%)=+3



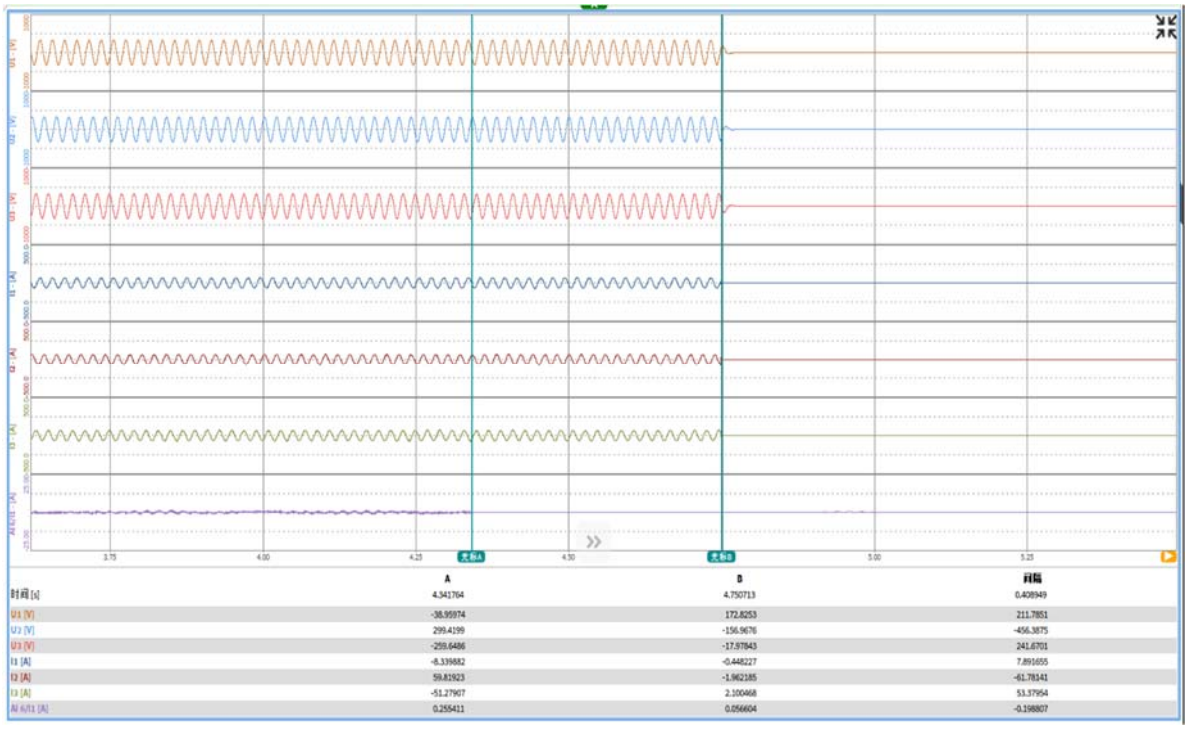
	A	B	间隔
时间 [s]	4.013094	4.478986	0.465891
U1 [V]	-198.7541	39.46877	238.2229
U2 [V]	324.1017	-283.7053	-607.8070
U3 [V]	-126.9667	246.4290	373.3957
I1 [A]	-41.37755	-0.352860	41.02469
I2 [A]	68.92205	-13.84497	-82.76701
I3 [A]	-27.81630	14.23359	42.04989
AI 6/11 [A]	0.225626	-0.074996	-0.300622

Test C(50Hz)	M(%)=0 & N(%)=+4



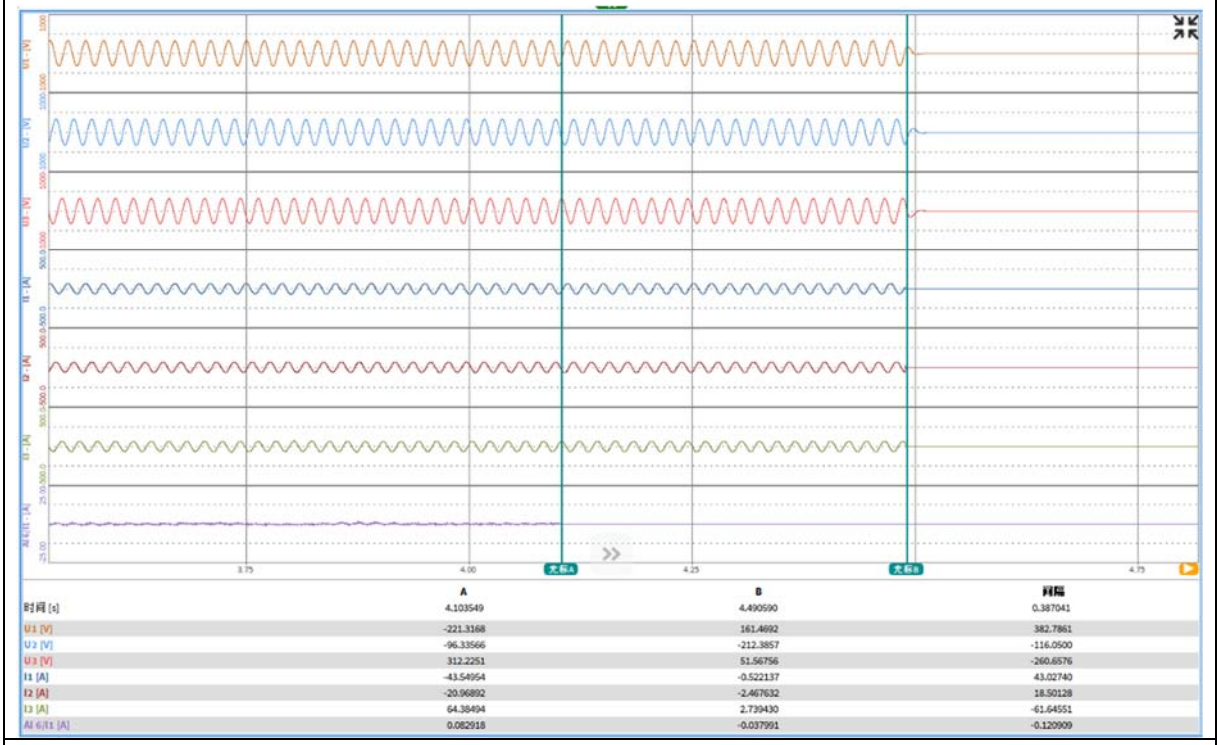
	A	B	间隔
时间 [s]	3.1560821	3.6441817	0.4880996
U1 [V]	186.9769	113.6916	-73.28535
U2 [V]	139.5543	-258.4701	-398.0243
U3 [V]	-323.6973	146.7631	470.4604
I1 [A]	36.74269	-2.379418	-39.12211
I2 [A]	31.94571	-1.113415	-33.05912
I3 [A]	-68.08043	2.777577	70.85801
AI 6/11 [A]	-0.299814	-0.012276	0.287538

Test C(50Hz)	M(%)=0 & N(%)=+5



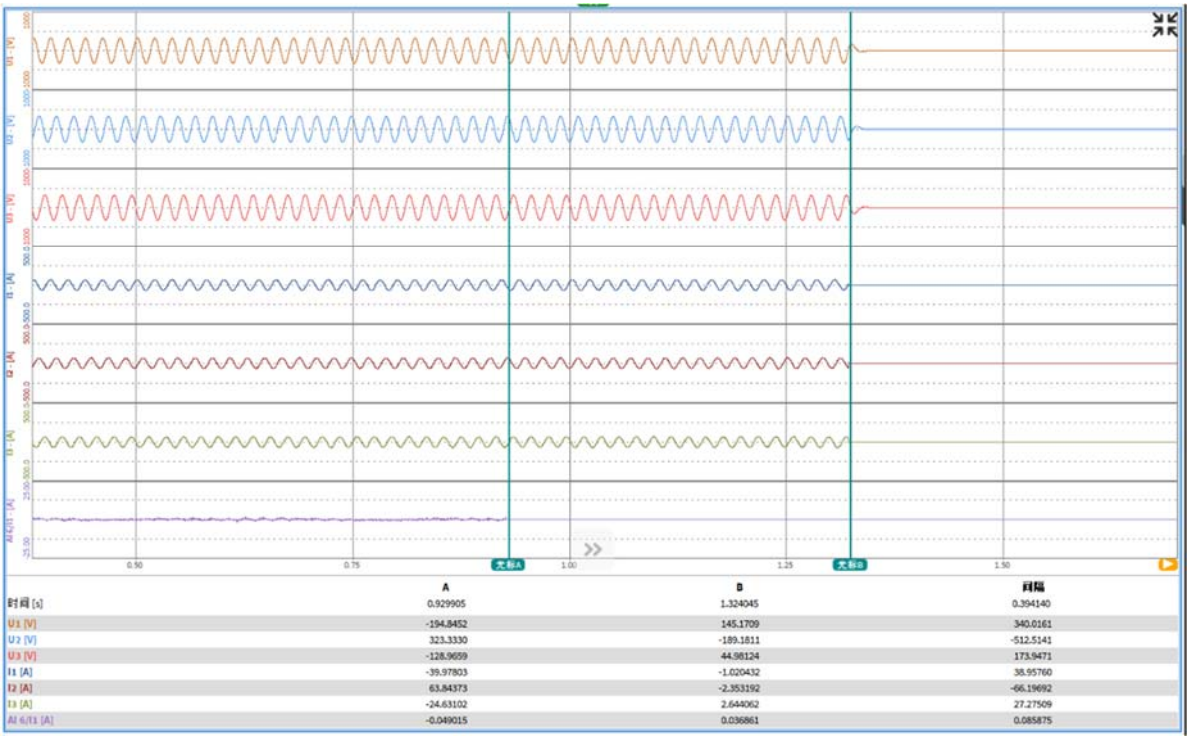
	A	B	间隔
时间 [s]	4.341764	4.750713	0.408949
U1 [V]	-38.95974	172.8253	211.7851
U2 [V]	299.4199	-156.9676	-456.3875
U3 [V]	-259.6486	-17.97843	241.6701
I1 [A]	-8.339682	-0.448227	7.891455
I2 [A]	59.81923	-1.962185	-61.78141
I3 [A]	-51.27907	2.100468	53.37954
AI 6/11 [A]	0.255411	0.056604	-0.198807

Test C(50Hz)	M(%)=0 & N(%)=-1



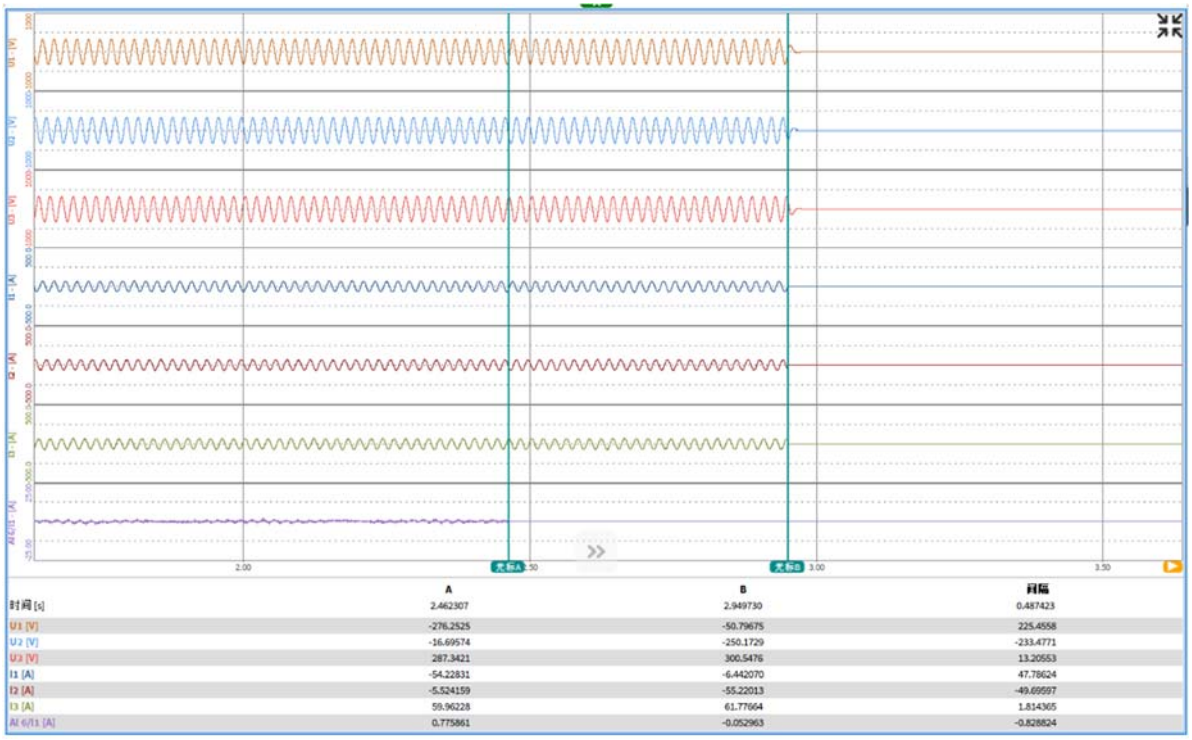
	A	B	间隔
时间 [s]	4.103549	4.490590	0.387041
U1 [V]	-221.3168	161.4692	382.7861
U2 [V]	-96.33566	-212.3857	-116.0500
U3 [V]	312.2251	51.56756	-260.6576
I1 [A]	-43.54954	-0.522137	43.02740
I2 [A]	-20.96892	-2.467632	18.50128
I3 [A]	64.38494	2.739430	-61.64551
AI 6/I1 [A]	0.082918	-0.037991	-0.120909

Test C(50Hz)	M(%)=0 & N(%)=-2



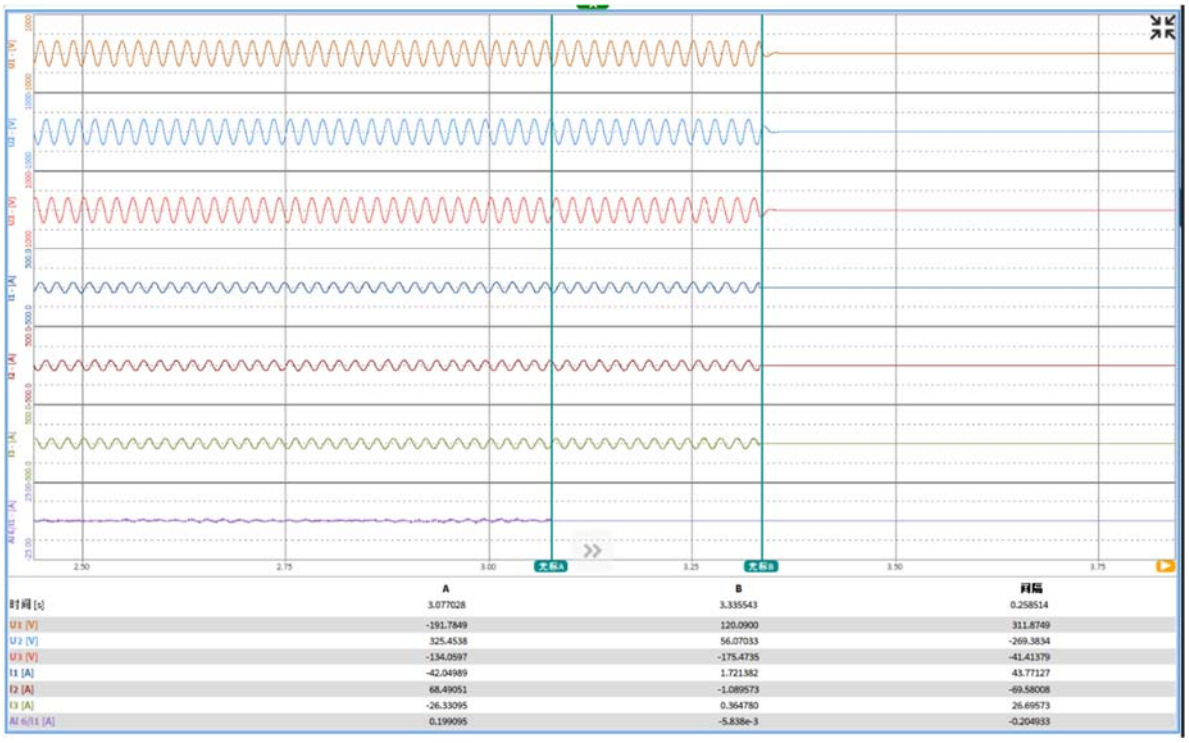
	A	B	间隔
时间 [s]	0.929905	1.324045	0.394140
U1 [V]	-194.8452	145.1709	340.0161
U2 [V]	323.3330	-189.1811	-512.5141
U3 [V]	-128.9659	44.98124	173.9471
I1 [A]	-39.97803	-1.020432	38.95760
I2 [A]	63.84373	-2.353192	-66.19692
I3 [A]	-24.63102	2.644062	27.27509
AI 6/I1 [A]	-0.049015	0.036861	0.085875

Test C(50Hz)	M(%)=0 & N(%)=-3



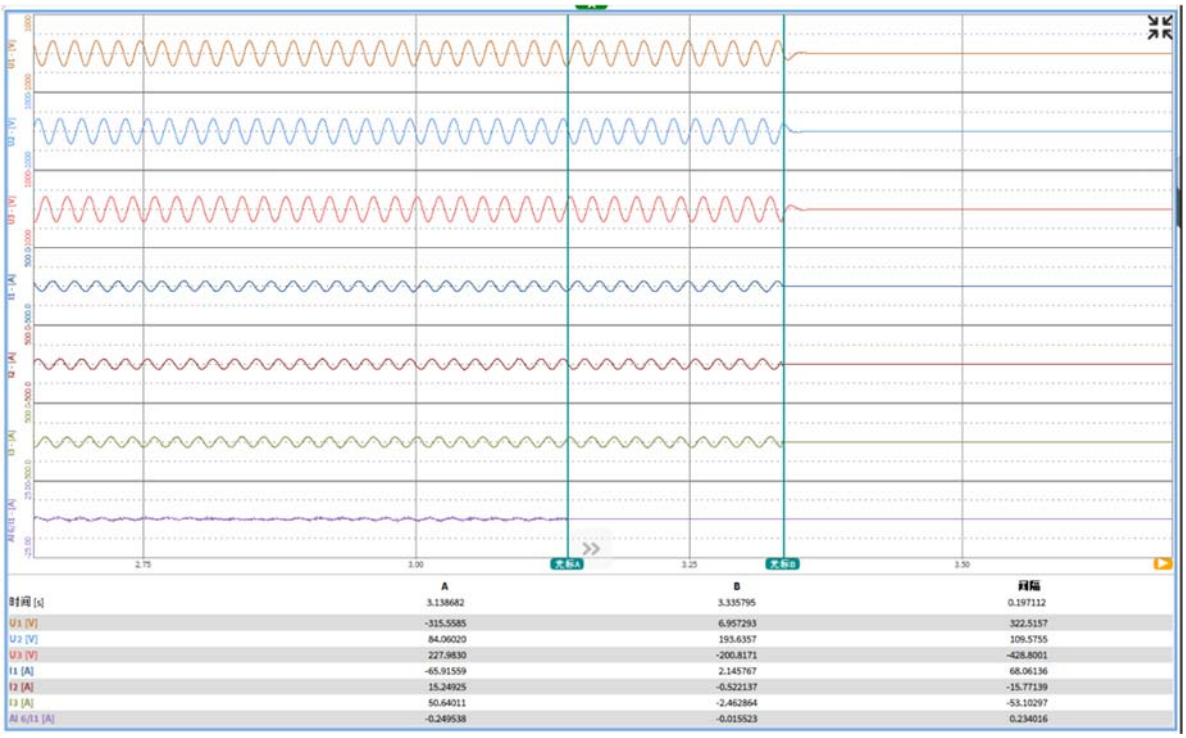
	A	B	间隔
时间 [s]	2.462307	2.949730	0.487423
U1 [V]	-276.2525	-50.79675	225.4558
U2 [V]	-16.69574	-250.1729	-233.4771
U3 [V]	287.3421	300.5476	13.20553
I1 [A]	-54.22831	-6.442070	47.78624
I2 [A]	-5.524159	-55.22013	-49.69597
I3 [A]	59.96228	61.77664	1.814365
Al 6/11 [A]	0.775861	-0.052963	-0.828824

Test C(50Hz)	M(%)=0 & N(%)=-4



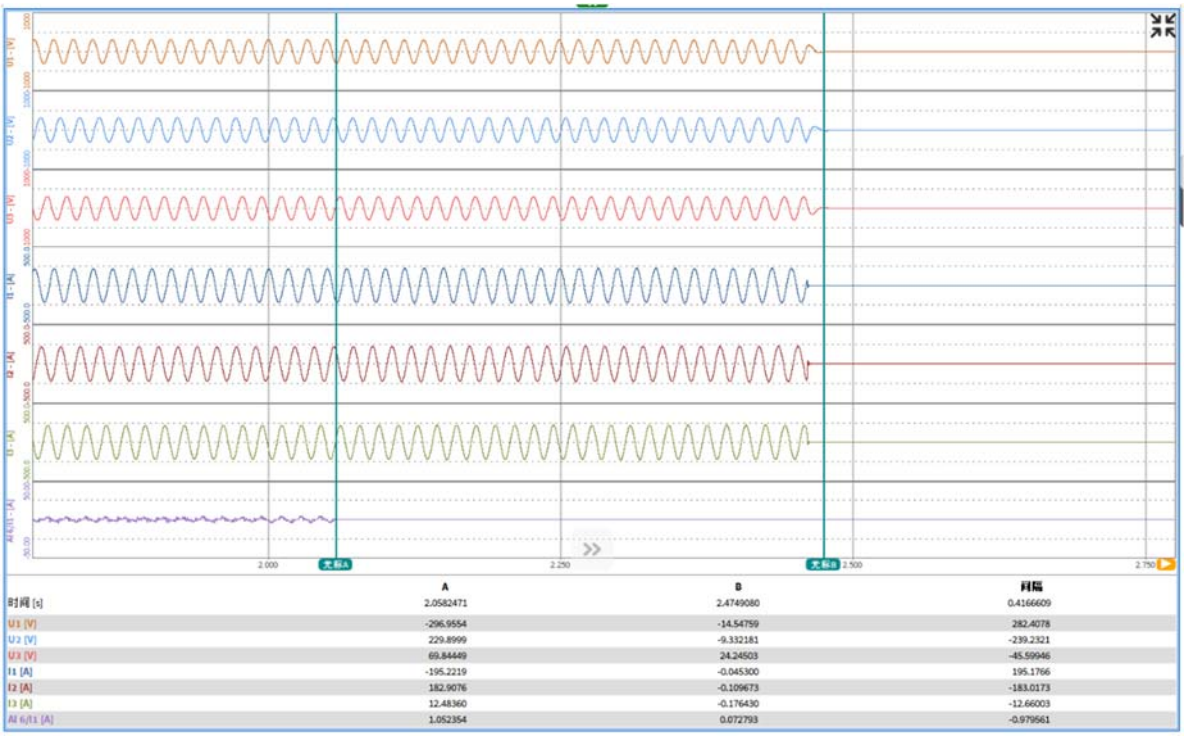
	A	B	间隔
时间 [s]	3.077028	3.335543	0.258514
U1 [V]	-191.7849	120.0900	311.8749
U2 [V]	325.4538	56.07033	-269.3834
U3 [V]	-134.0597	-175.4735	-41.41379
I1 [A]	-42.04989	1.721382	43.77127
I2 [A]	68.49051	-1.089573	-69.58008
I3 [A]	-26.33095	0.364780	26.69573
Al 6/11 [A]	0.199095	-5.838e-3	-0.204933

Test C(50Hz)	M(%)=0 & N(%)=-5



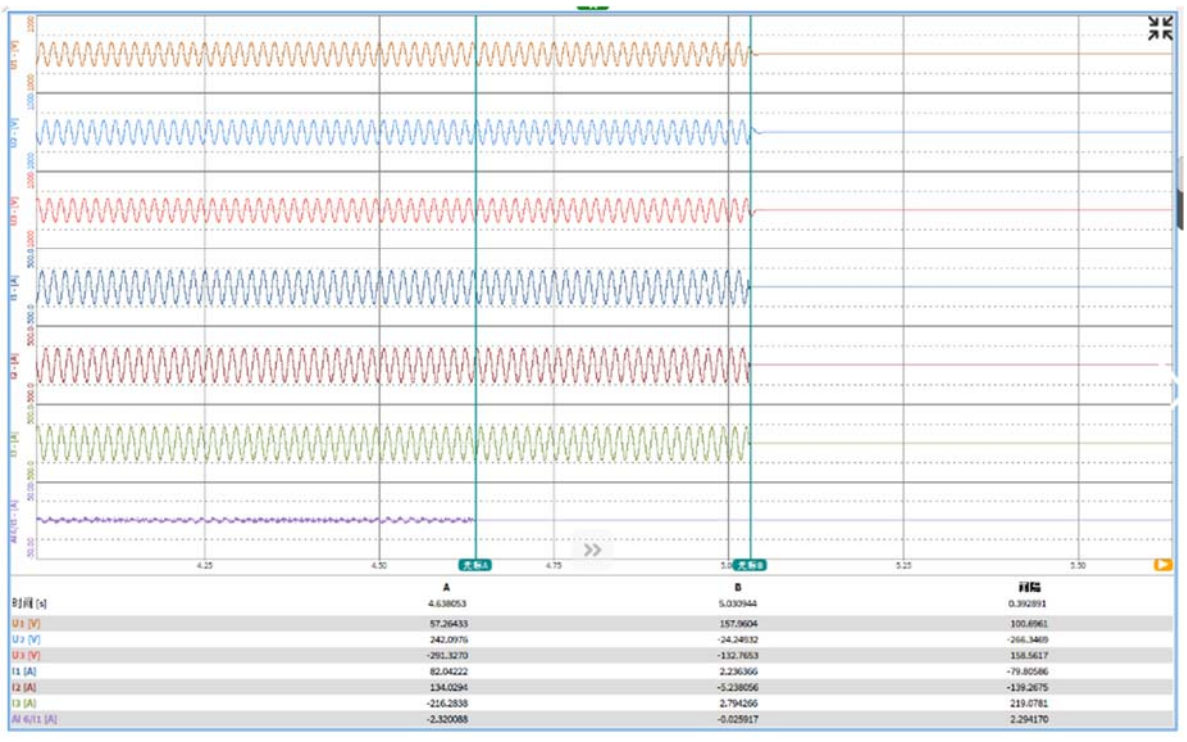
	A	B	间隔
时间 [s]	3.138682	3.335795	0.197112
U1 [V]	-315.5585	6.957293	322.5157
U2 [V]	84.06020	193.6357	109.5755
U3 [V]	227.9830	-200.8171	-428.8001
I1 [A]	-65.91559	2.145767	68.06136
I2 [A]	15.24925	-0.522137	-15.77139
I3 [A]	50.64011	-2.462864	-53.10297
AI 6/11 [A]	-0.249538	-0.015523	0.234016

Test A(60Hz)	M(%)=0 & N(%)=0



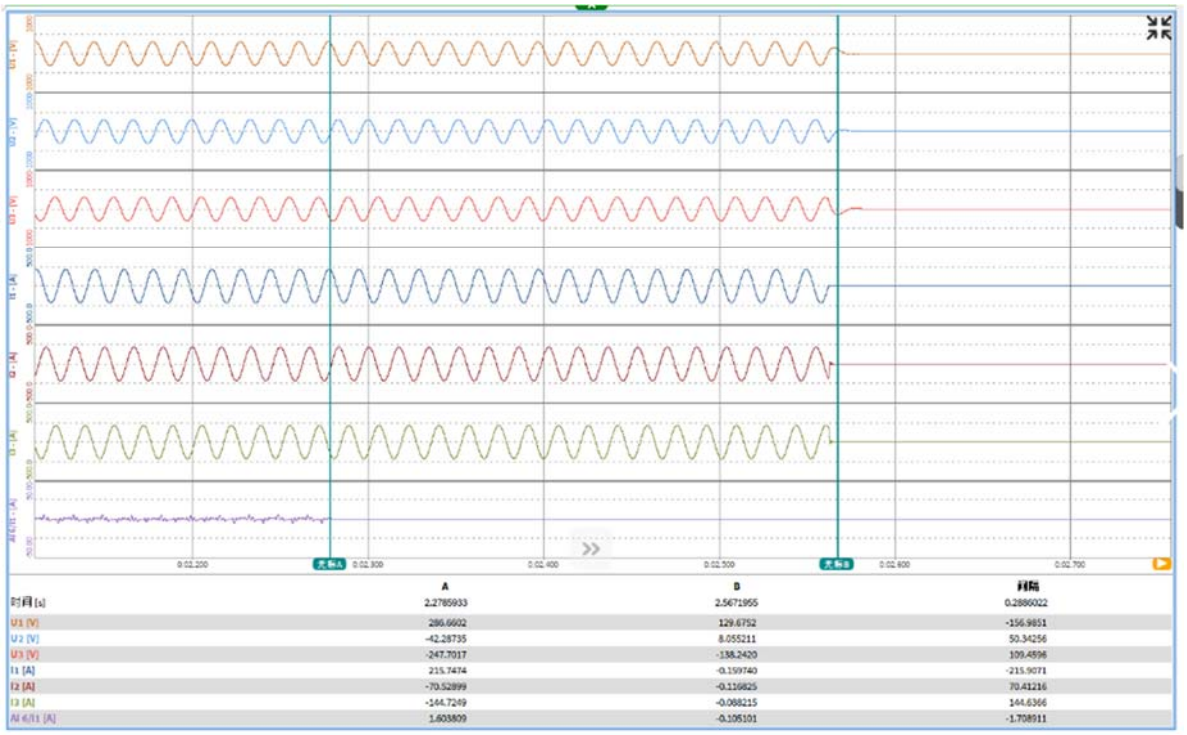
	A	B	间隔
时间 [s]	2.0582471	2.4749080	0.4166609
U1 [V]	-296.9554	-14.54759	282.4078
U2 [V]	229.8999	-9.332181	-239.2321
U3 [V]	69.84449	24.24503	-45.59946
I1 [A]	-195.2219	-0.045300	195.1766
I2 [A]	182.9076	-0.109673	-183.0173
I3 [A]	12.48360	-0.176430	-12.66003
AI 6/11 [A]	1.052354	0.072793	-0.979561

Test A(60Hz)	M(%)=0 & N(%)=+5



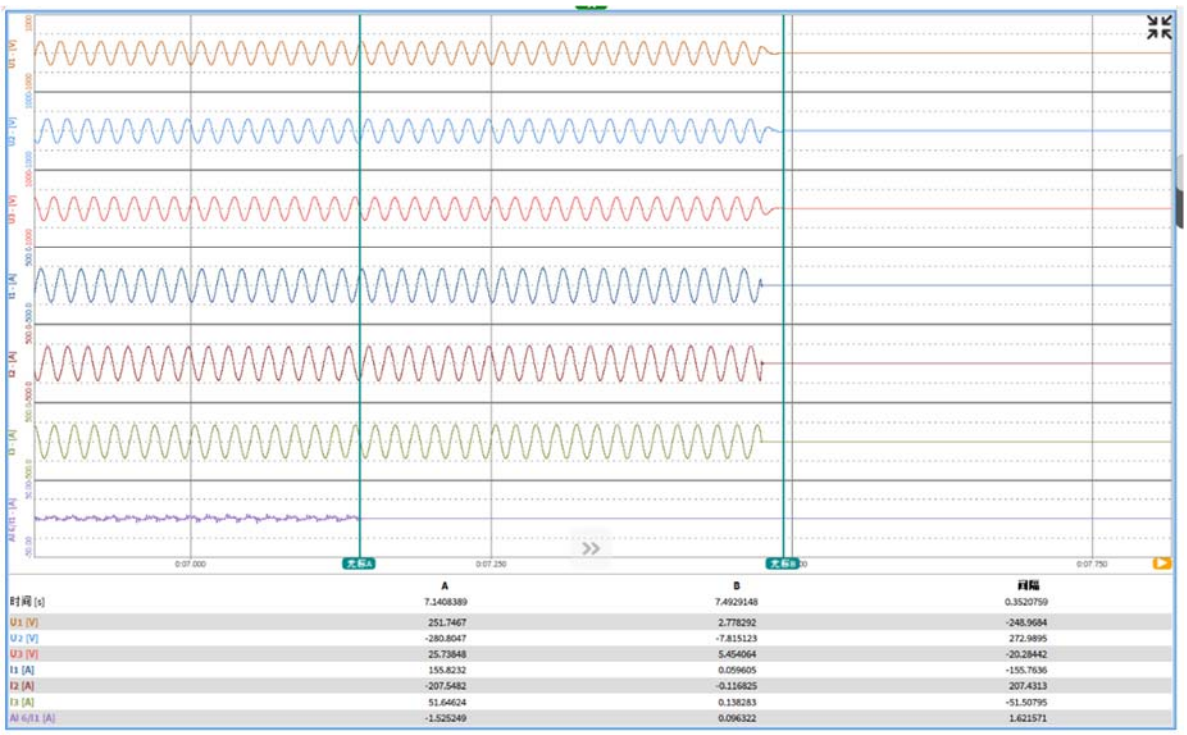
	A	B	间隔
时间 [s]	4.638053	5.030944	0.392891
U1 [V]	57.26433	157.9604	100.6961
U2 [V]	242.0976	-24.24932	-266.3469
U3 [V]	-291.3270	-132.7653	158.5617
I1 [A]	82.04222	2.236366	-79.80586
I2 [A]	134.0294	-5.238056	-139.2675
I3 [A]	-216.2838	2.794266	219.0781
AI 6/11 [A]	-2.320088	-0.025917	2.294170

Test A(60Hz)	M(%)=0 & N(%)=-5



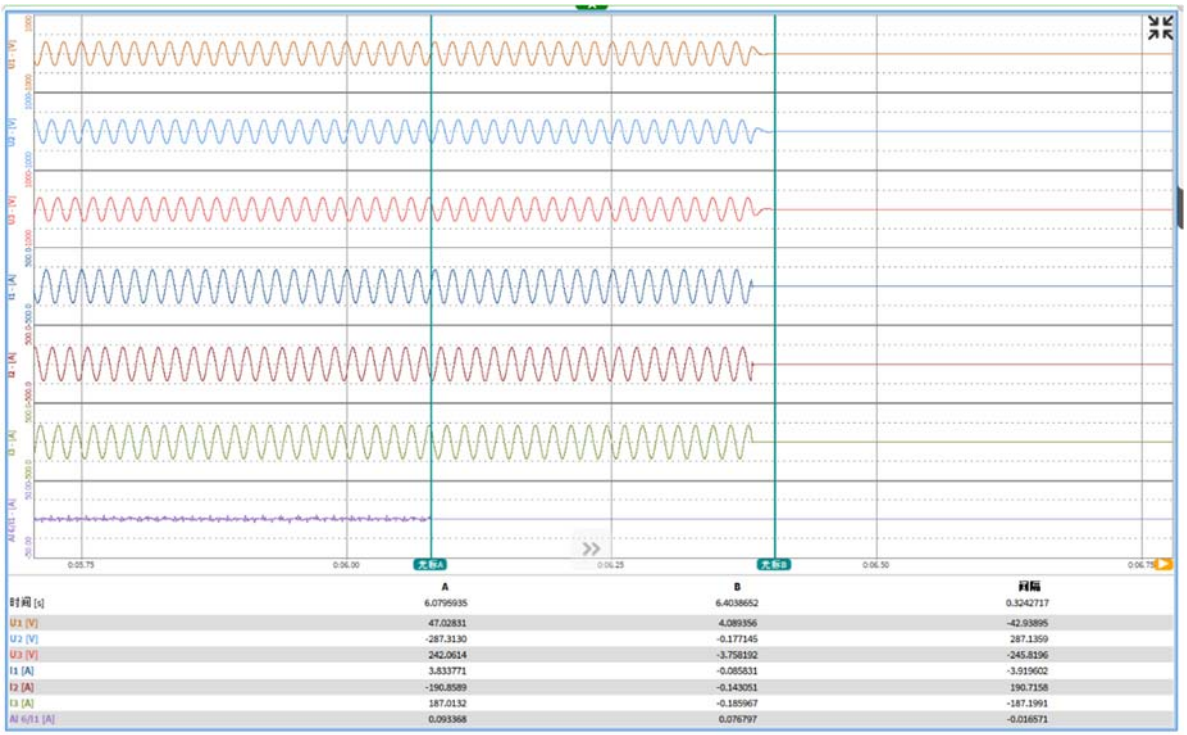
	A	B	间隔
时间 [s]	2.2785933	2.5671955	0.2886022
U1 [V]	286.6602	129.6752	-156.9851
U2 [V]	-42.28735	8.055211	50.34256
U3 [V]	-247.7017	-138.2420	109.4596
I1 [A]	215.7474	-0.159740	-215.9071
I2 [A]	-70.52899	-0.116825	70.41216
I3 [A]	-144.7249	-0.088215	144.6366
AI 6/11 [A]	1.603809	-0.105101	-1.708911

Test A(60Hz)	M(%)=+5 & N(%)=0



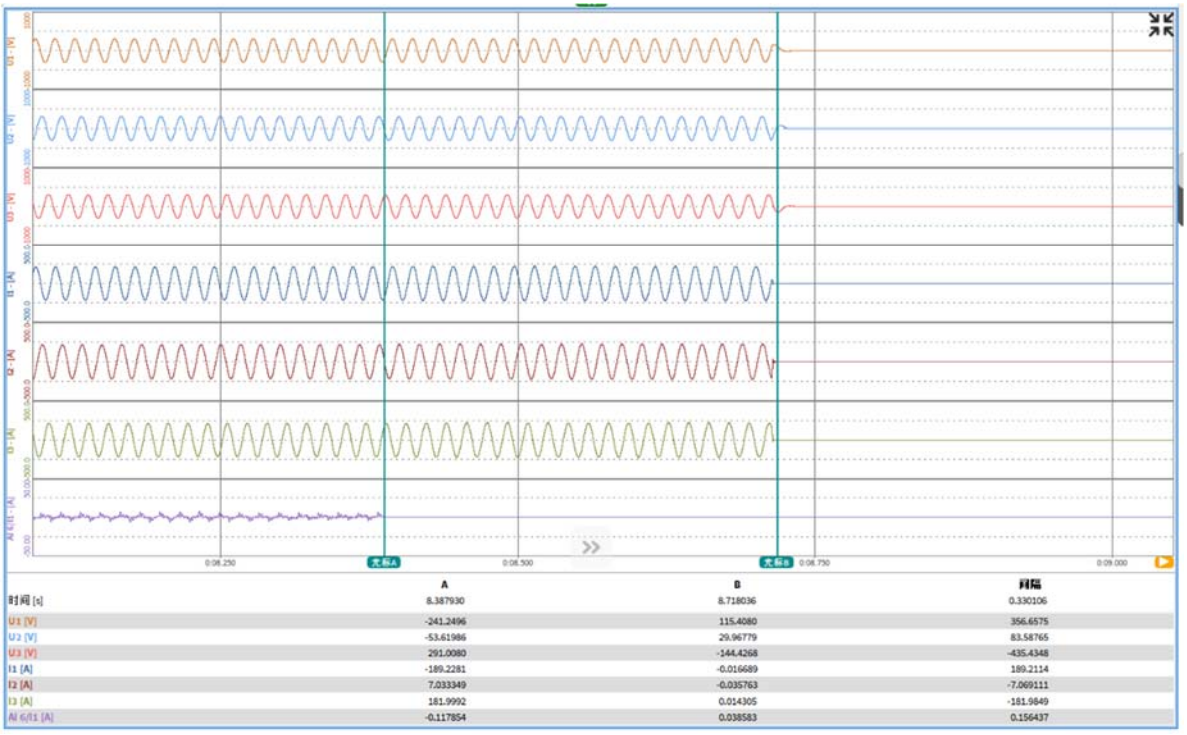
	A	B	间隔
时间 [s]	7.1408389	7.4929148	0.3520759
U1 [V]	251.7467	2.778292	-248.9684
U2 [V]	-280.8047	-7.815123	272.9895
U3 [V]	25.73848	5.454064	-20.28442
I1 [A]	155.8232	0.059605	-155.7636
I2 [A]	-207.5482	-0.116825	207.4313
I3 [A]	51.64624	0.138283	-51.50795
AI 6/11 [A]	-1.525249	0.096322	1.621571

Test A(60Hz)	M(%)=+5 & N(%)=+5



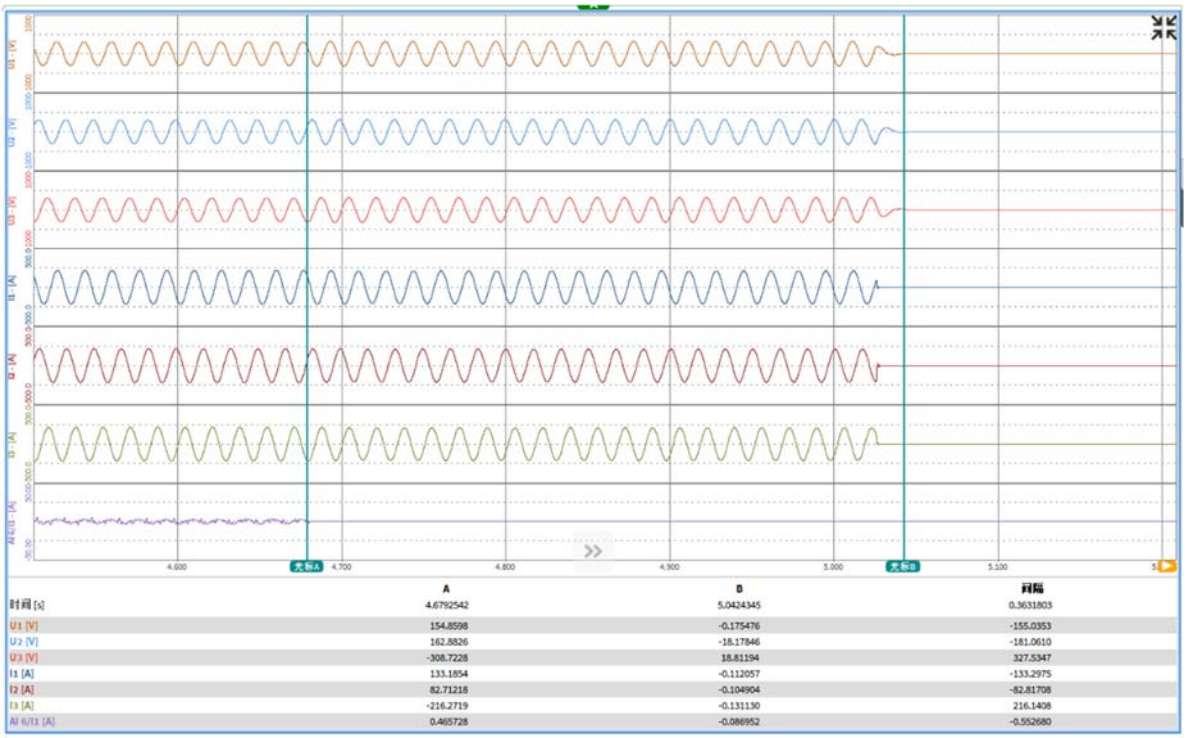
	A	B	间隔
时间 [s]	6.0795935	6.4038652	0.3242717
U1 [V]	47.02831	4.089356	-42.93895
U2 [V]	-287.3130	-0.177145	287.1359
U3 [V]	242.0614	-3.758192	-245.8196
I1 [A]	3.833771	-0.085831	-3.919602
I2 [A]	-190.8589	-0.143051	190.7158
I3 [A]	187.0132	-0.185967	-187.1991
AI 6/11 [A]	0.093368	0.076797	-0.016571

Test A(60Hz)	M(%)=+5 & N(%)=-5



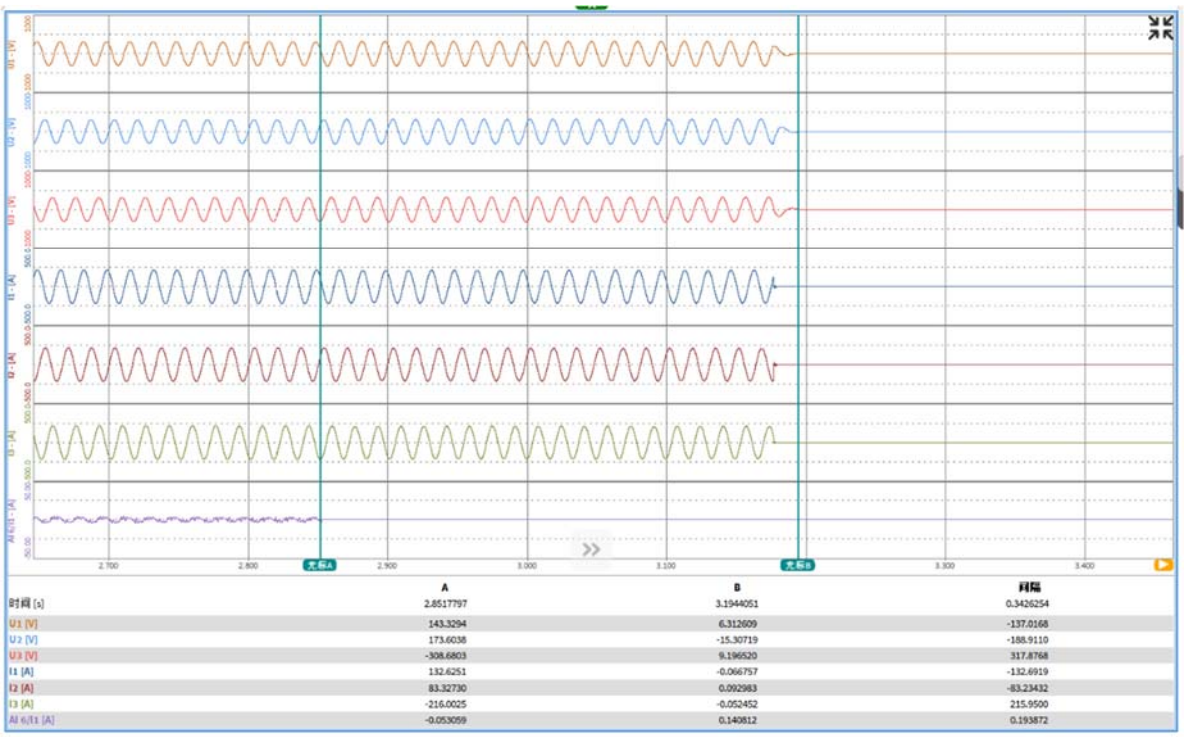
	A	B	间隔
时间 [s]	8.387930	8.718036	0.330106
U1 [V]	-241.2496	115.4080	356.6575
U2 [V]	-53.61986	29.96779	83.58765
U3 [V]	291.0080	-144.4268	-435.4348
I1 [A]	-189.2281	-0.016689	189.2114
I2 [A]	7.033349	-0.035763	-7.069111
I3 [A]	181.9992	0.014305	-181.9849
AI 6/11 [A]	-0.117854	0.038583	0.156437

Test A(60Hz)	M(%)=-5 & N(%)=0



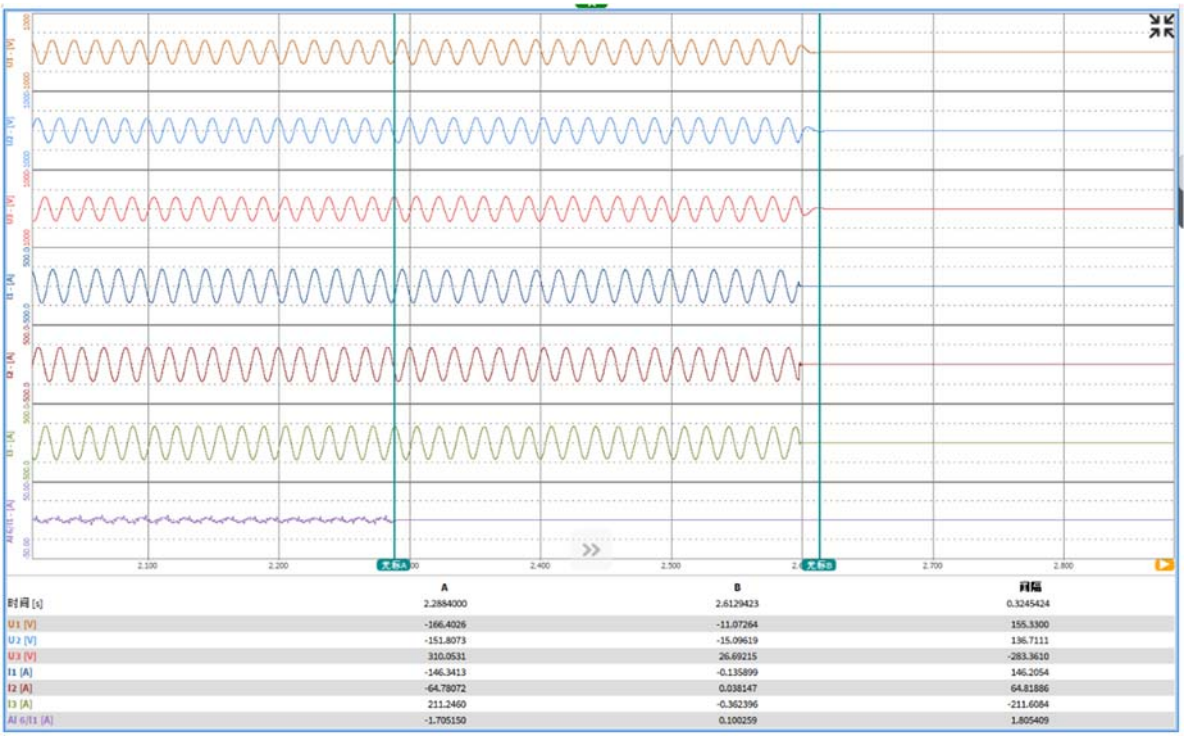
	A	B	间隔
时间 [s]	4.6792542	5.0424345	0.3631803
U1 [V]	154.8598	-0.175476	-155.0353
U2 [V]	162.8826	-18.17846	-181.0610
U3 [V]	-308.7228	18.81194	327.5347
I1 [A]	133.1854	-0.112057	-133.2975
I2 [A]	82.71218	-0.104904	-82.81708
I3 [A]	-216.2719	-0.131130	216.1408
AI 6/I1 [A]	0.465728	-0.086952	-0.552680

Test A(60Hz)	M(%)=-5 & N(%)=+5



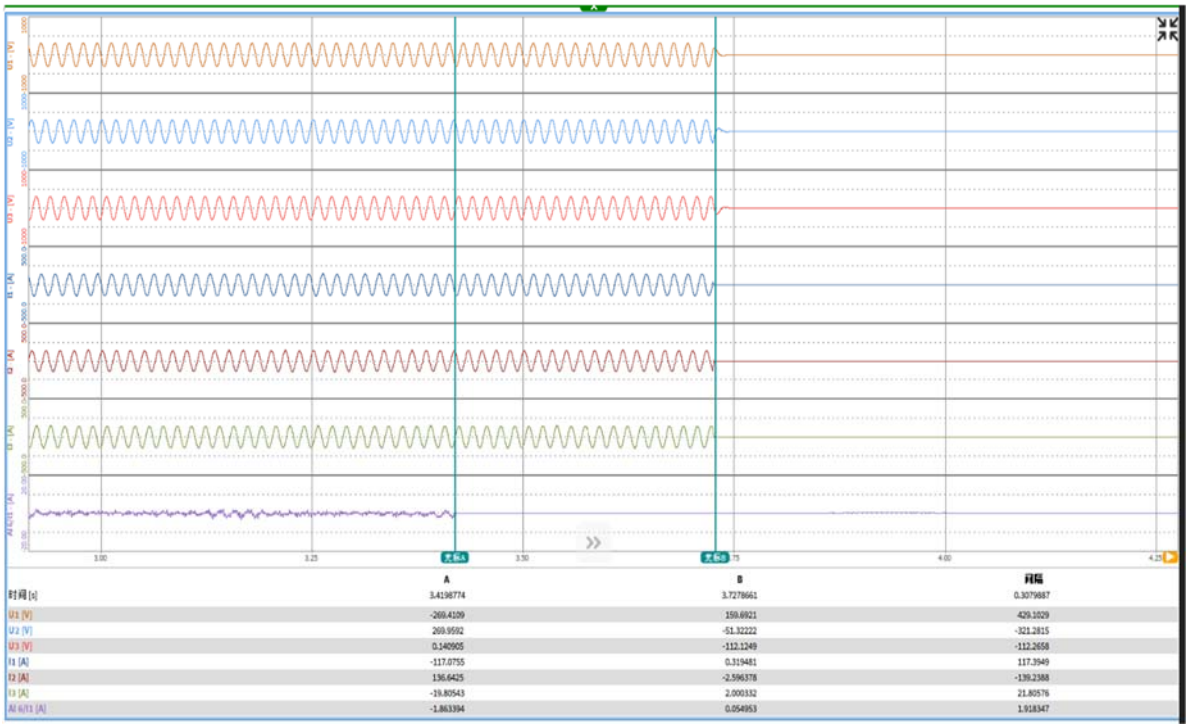
	A	B	间隔
时间 [s]	2.8517797	3.1944051	0.3426254
U1 [V]	143.3294	6.312609	-137.0168
U2 [V]	173.6038	-15.30719	-188.9110
U3 [V]	-308.6803	9.196520	317.8768
I1 [A]	132.6251	-0.066757	-132.6919
I2 [A]	83.32730	0.092983	-83.23432
I3 [A]	-216.0025	-0.052452	215.9500
AI 6/I1 [A]	-0.053059	0.140812	0.193872

Test A(60Hz)	M(%)=-5 & N(%)=-5



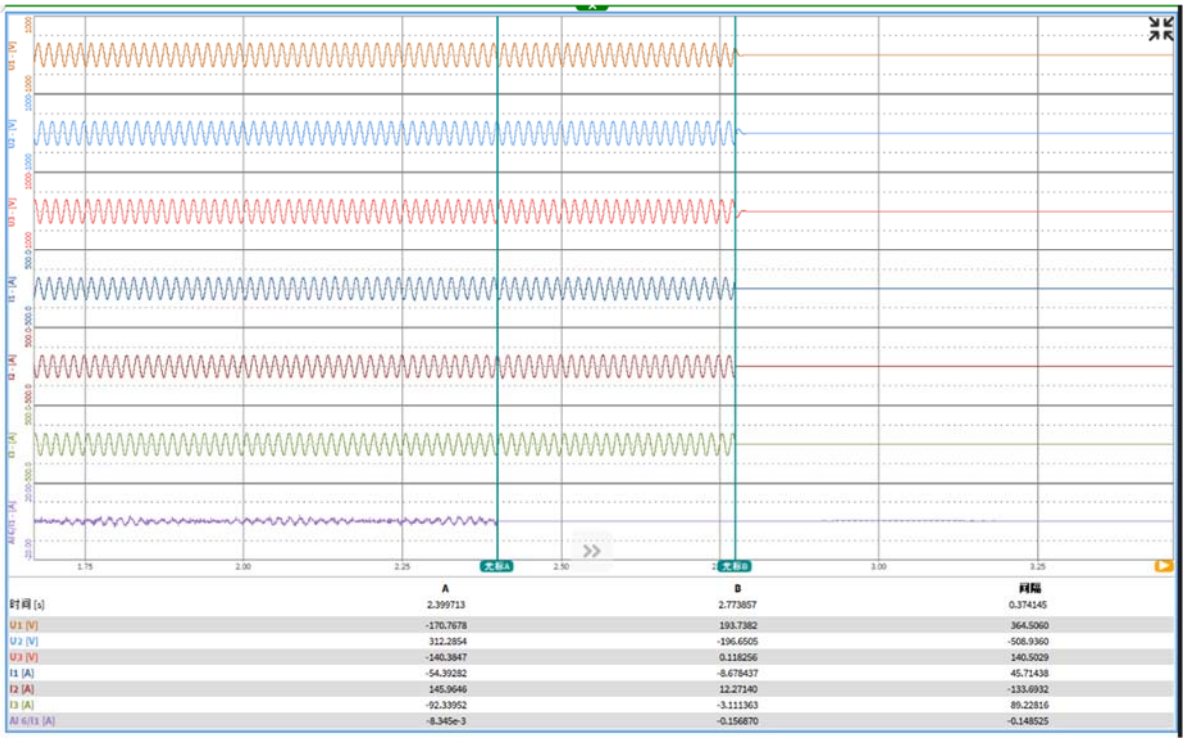
	A	B	间隔
时间 [s]	2.2884000	2.6129423	0.3245424
U1 [V]	-166.4026	-11.07264	155.3300
U2 [V]	-151.8073	-15.09619	136.7111
U3 [V]	310.0531	26.69215	-283.3610
I1 [A]	-146.3413	-0.135899	146.2054
I2 [A]	-64.78072	0.038147	64.81886
I3 [A]	211.2460	-0.362396	-211.6084
AI 6/I1 [A]	-1.705150	0.100259	1.805409

Test B(60Hz)	M(%)=0 & N(%)=0



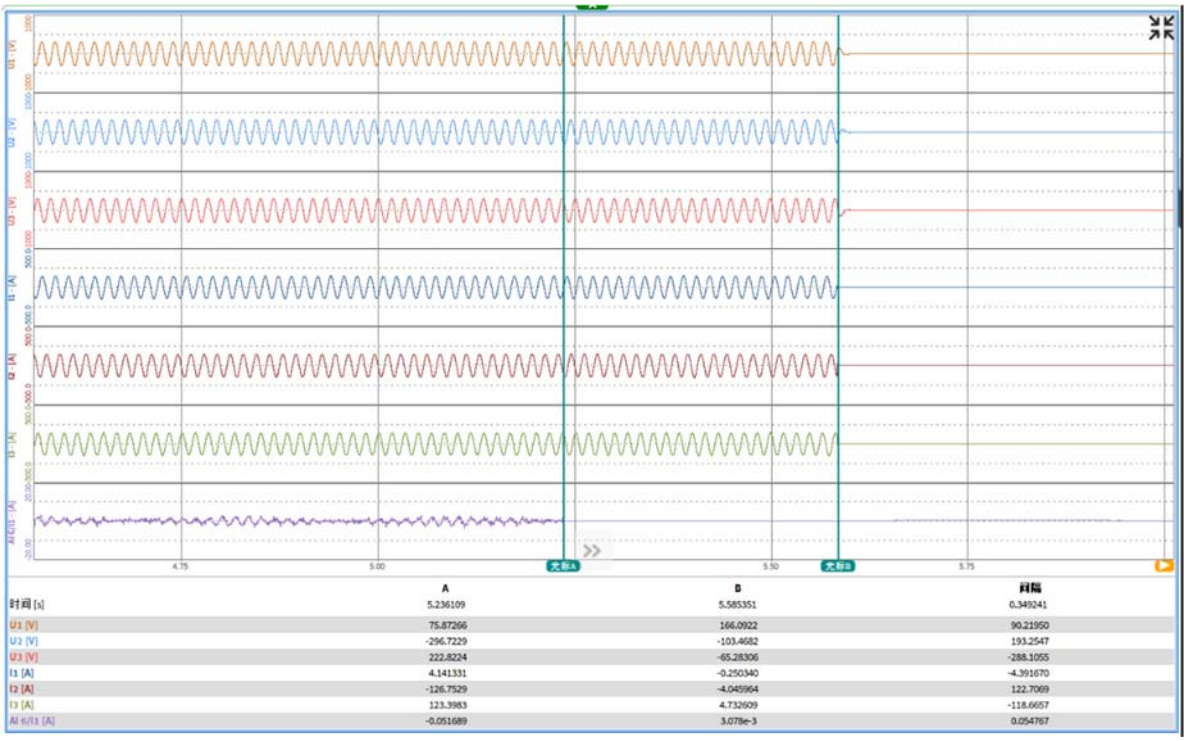
	A	B	间隔
时间 [s]	3.419774	3.727866	0.307987
U1 [V]	-269.4109	159.6921	429.1029
U2 [V]	269.9592	-51.32222	-321.2815
U3 [V]	0.140905	-112.1249	-112.2658
I1 [A]	-117.0755	0.319481	117.3949
I2 [A]	136.6425	-2.596378	-139.2388
I3 [A]	-19.80543	2.000332	21.80576
AI 6/I1 [A]	-1.863394	0.054953	1.918347

Test B(60Hz)	M(%)=0 & N(%)=+1



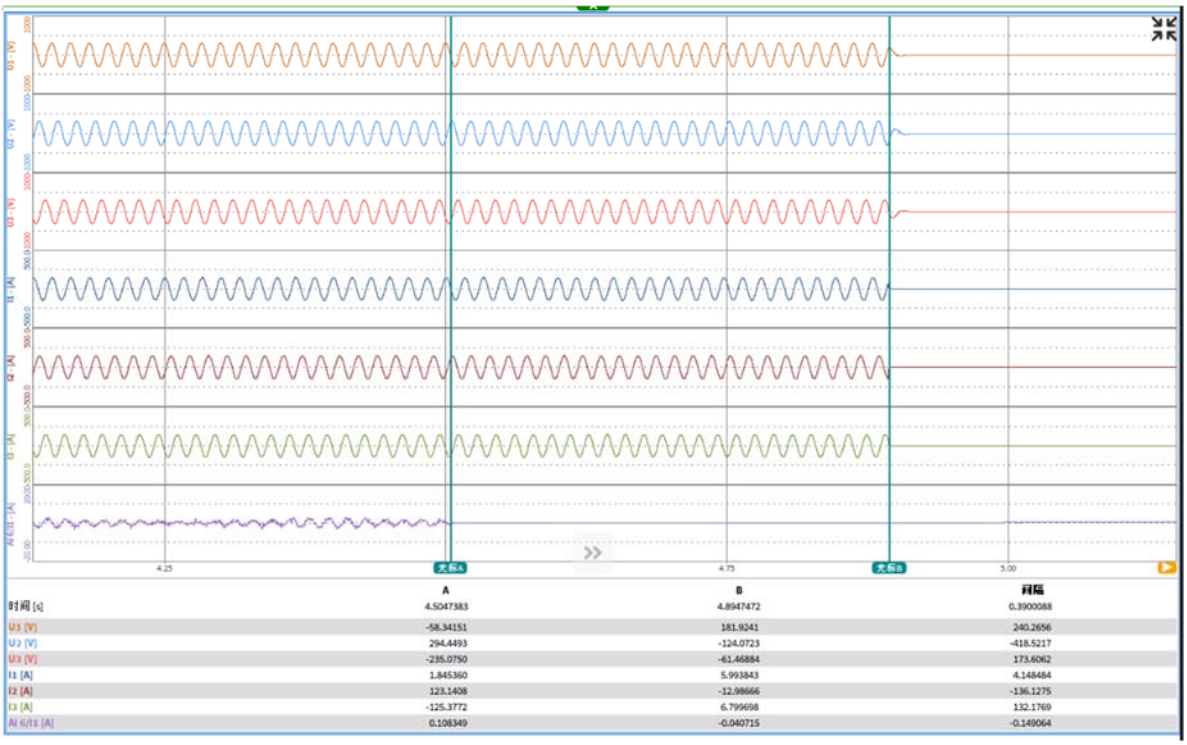
	A	B	间隔
时间 [s]	2.399713	2.773857	0.374145
U1 [V]	-170.7678	193.7382	364.5060
U2 [V]	312.2854	-196.6505	-508.9360
U3 [V]	-140.3847	0.118256	140.5029
I1 [A]	-54.39282	-8.678437	45.71438
I2 [A]	145.9646	12.27140	-133.6932
I3 [A]	-92.33952	-3.111363	89.22816
AI 6/I1 [A]	-8.345e-3	-0.156870	-0.148525

Test B(60Hz)	M(%)=0 & N(%)=+2



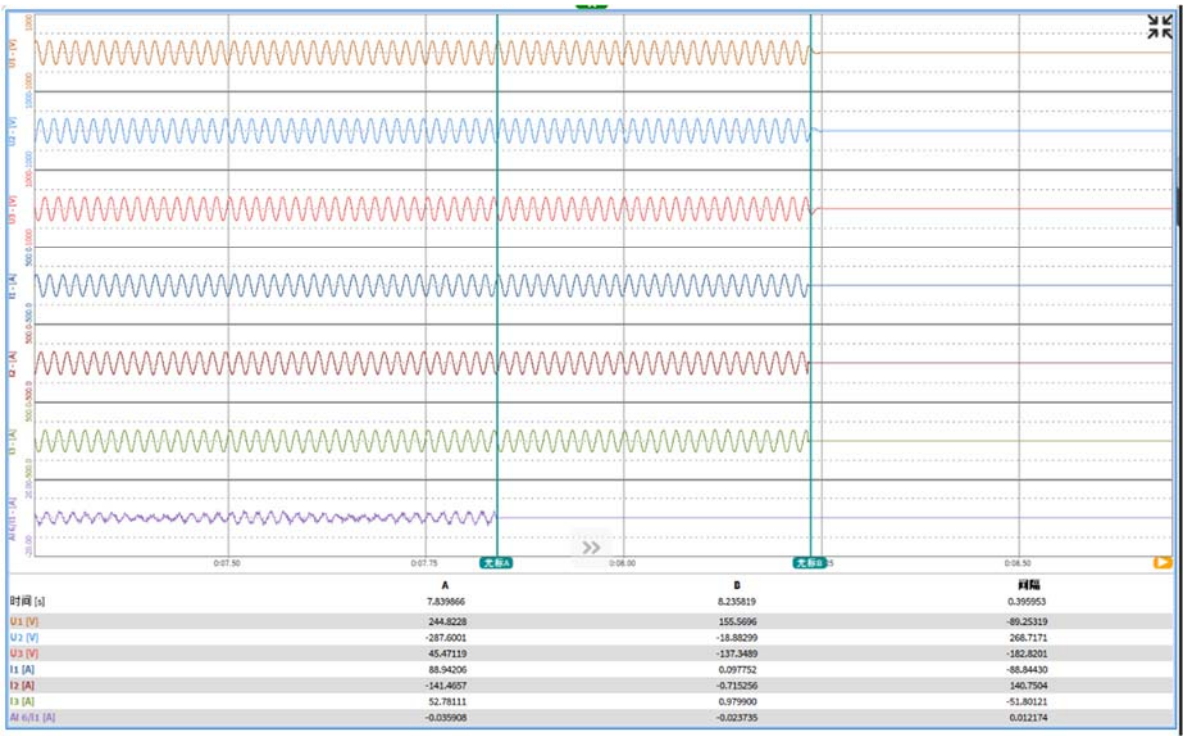
	A	B	间隔
时间 [s]	5.236109	5.585351	0.349241
U1 [V]	75.87266	166.0922	90.21950
U2 [V]	-296.7229	-103.4682	193.2547
U3 [V]	222.8224	-65.28306	-288.1055
I1 [A]	4.141331	-0.250340	-4.391670
I2 [A]	-126.7529	-4.045964	122.7069
I3 [A]	123.3983	4.732609	-118.6657
AI 6/I1 [A]	-0.051689	3.078e-3	0.054767

Test B(60Hz)	M(%)=0 & N(%)=+3



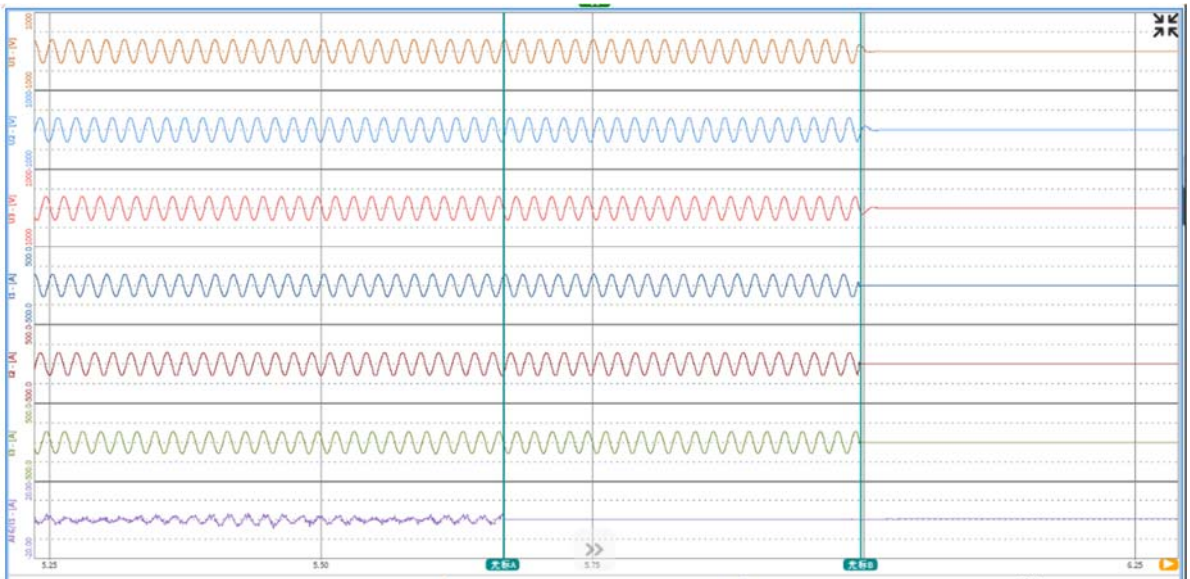
	A	B	间隔
时间 [s]	4.5047383	4.8947472	0.3900088
U1 [V]	-58.34151	181.9241	240.2656
U2 [V]	294.4493	-124.0723	-418.5217
U3 [V]	-235.0750	-61.46884	173.6062
I1 [A]	1.845360	5.993843	4.148484
I2 [A]	123.1408	-12.98666	-136.1275
I3 [A]	-125.3772	6.799698	132.1769
AI 6/I1 [A]	0.108349	-0.040715	-0.149064

Test B(60Hz)	M(%)=0 & N(%)=+4



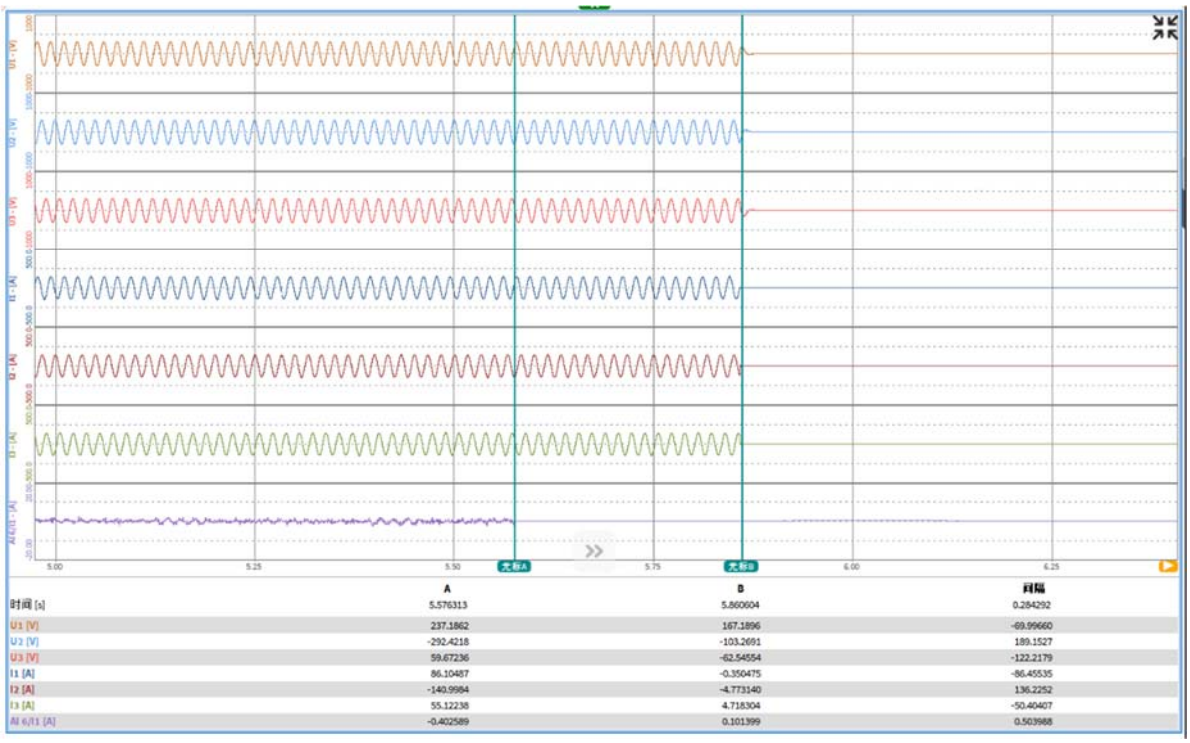
	A	B	间隔
时间 [s]	7.839866	8.235819	0.395953
U1 [V]	244.8228	155.5696	-89.25319
U2 [V]	-287.6001	-18.88299	268.7171
U3 [V]	45.47119	-137.3489	-182.8201
I1 [A]	88.94206	0.097752	-88.84430
I2 [A]	-141.4657	-0.715256	140.7504
I3 [A]	52.78111	0.979900	-51.80121
AI 6/11 [A]	-0.035908	-0.023735	0.012174

Test B(60Hz)	M(%)=0 & N(%)=+5



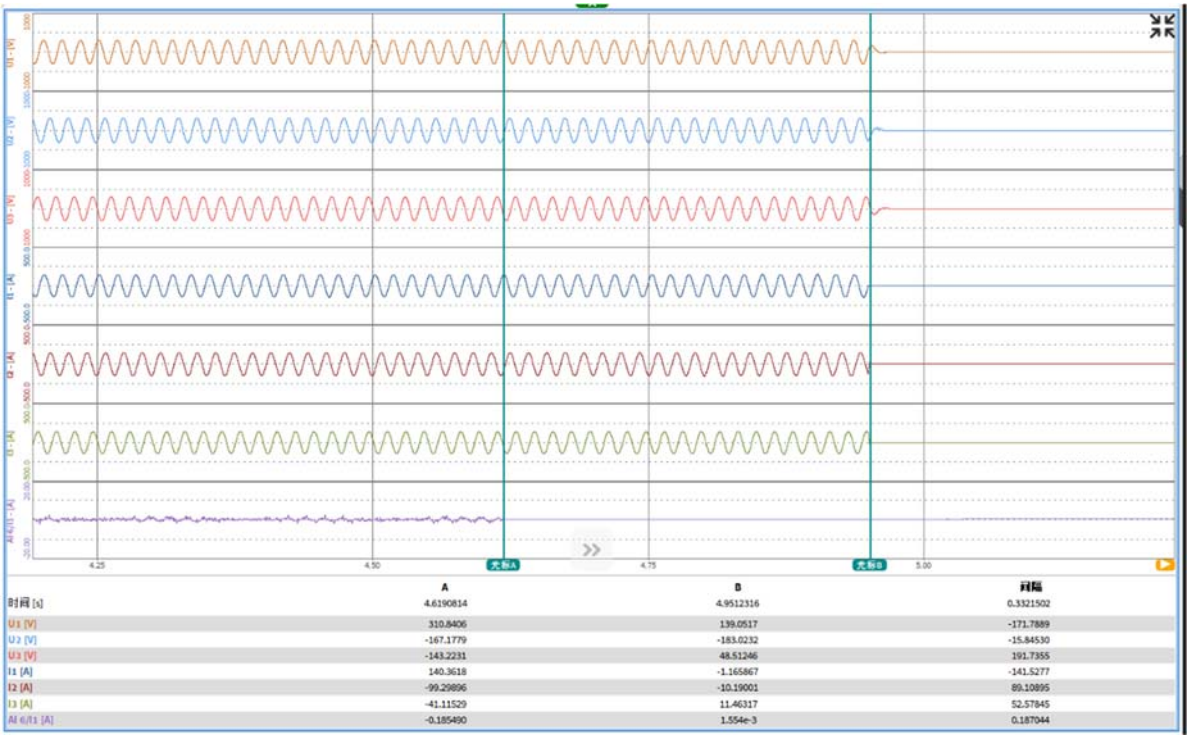
	A	B	间隔
时间 [s]	5.6680730	5.9975190	0.3294460
U1 [V]	264.2329	164.8541	-99.37883
U2 [V]	-272.0421	-49.86954	222.1725
U3 [V]	10.64849	-115.1335	-125.7820
I1 [A]	110.0111	1.502037	-108.5091
I2 [A]	-136.7021	-4.885197	131.8169
I3 [A]	27.05336	3.745556	-23.30780
AI 6/11 [A]	2.820492	0.167837	-2.652655

Test B(60Hz)	M(%)=0 & N(%)=-1



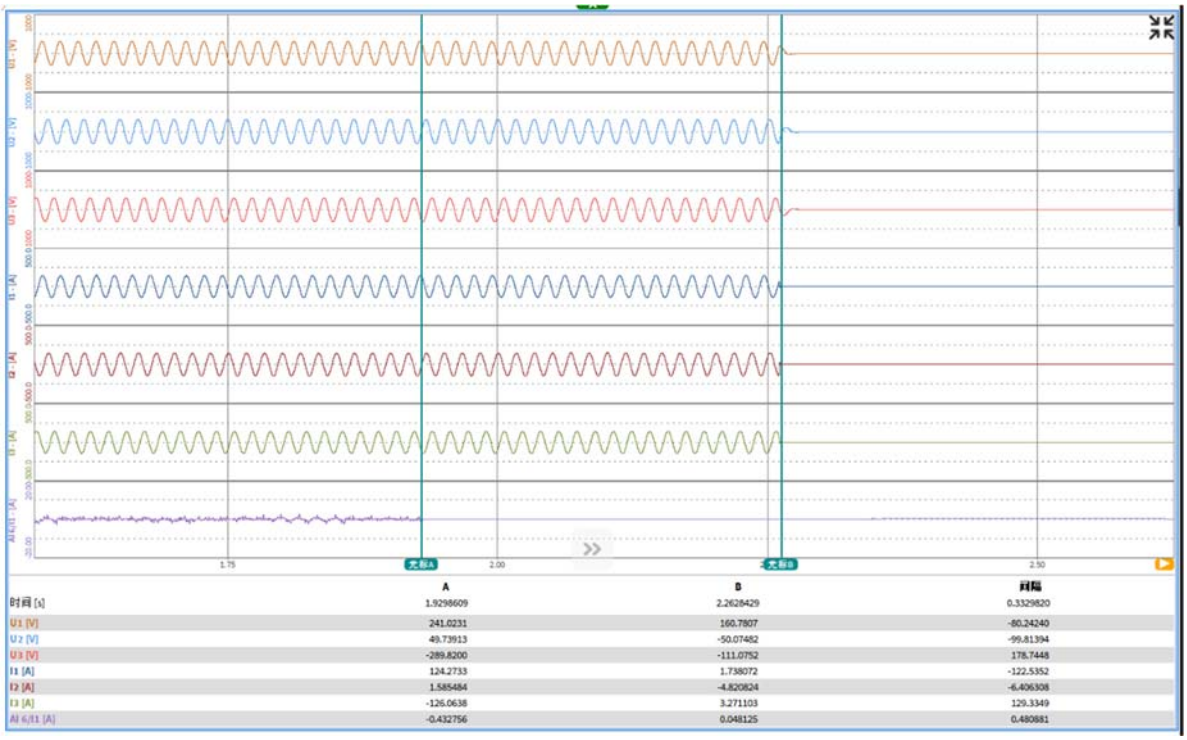
	A	B	间隔
时间 [s]	5.576313	5.860604	0.284292
U1 [V]	237.1862	167.1896	-69.99660
U2 [V]	-292.4218	-103.2691	189.1527
U3 [V]	59.67236	-62.54554	-122.2179
I1 [A]	86.10487	-0.350475	-86.45535
I2 [A]	-140.9984	-4.773140	136.2252
I3 [A]	55.12238	4.718304	-50.40407
AI 6/I1 [A]	-0.402589	0.101399	0.503988

Test B(60Hz)	M(%)=0 & N(%)=-2



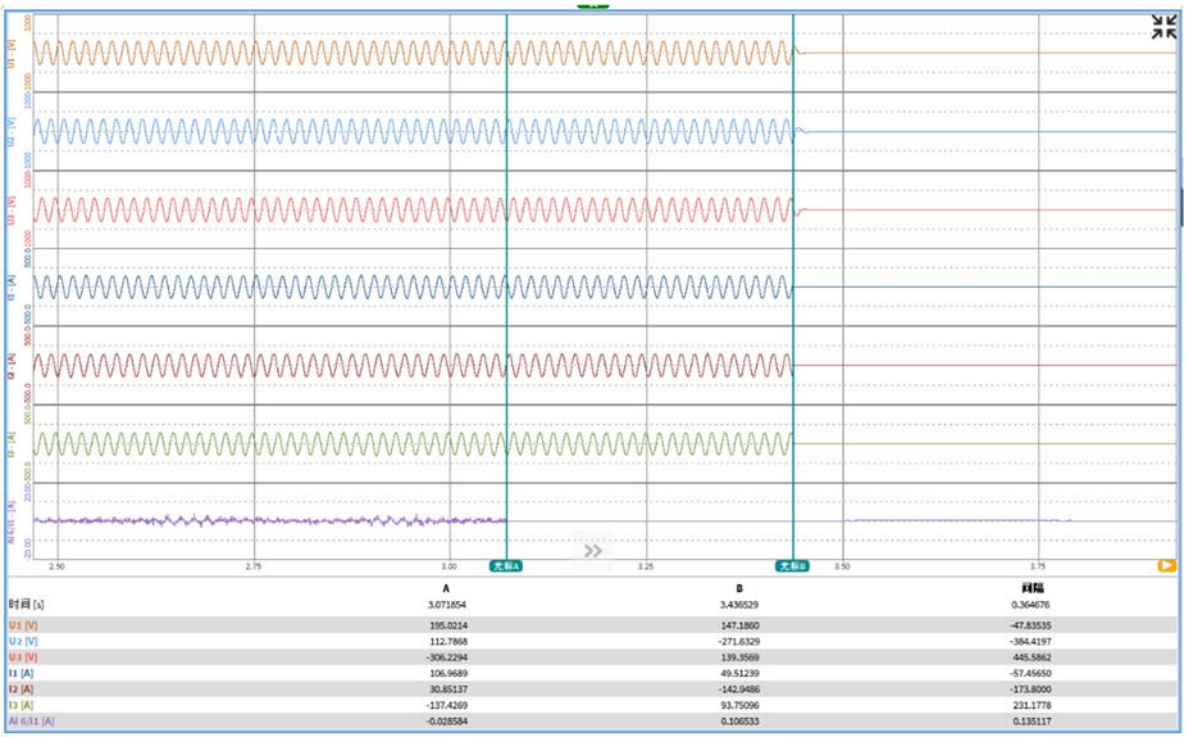
	A	B	间隔
时间 [s]	4.6190814	4.9512316	0.3321502
U1 [V]	310.8406	139.0517	-171.7889
U2 [V]	-167.1779	-183.0232	-15.84530
U3 [V]	-143.2231	48.51246	191.7355
I1 [A]	140.3618	-1.165867	-141.5277
I2 [A]	-99.29896	-10.19001	89.10895
I3 [A]	-41.11529	11.46317	52.57845
AI 6/I1 [A]	-0.185490	1.554e-3	0.187044

Test B(60Hz)	M(%)=0 & N(%)=-3



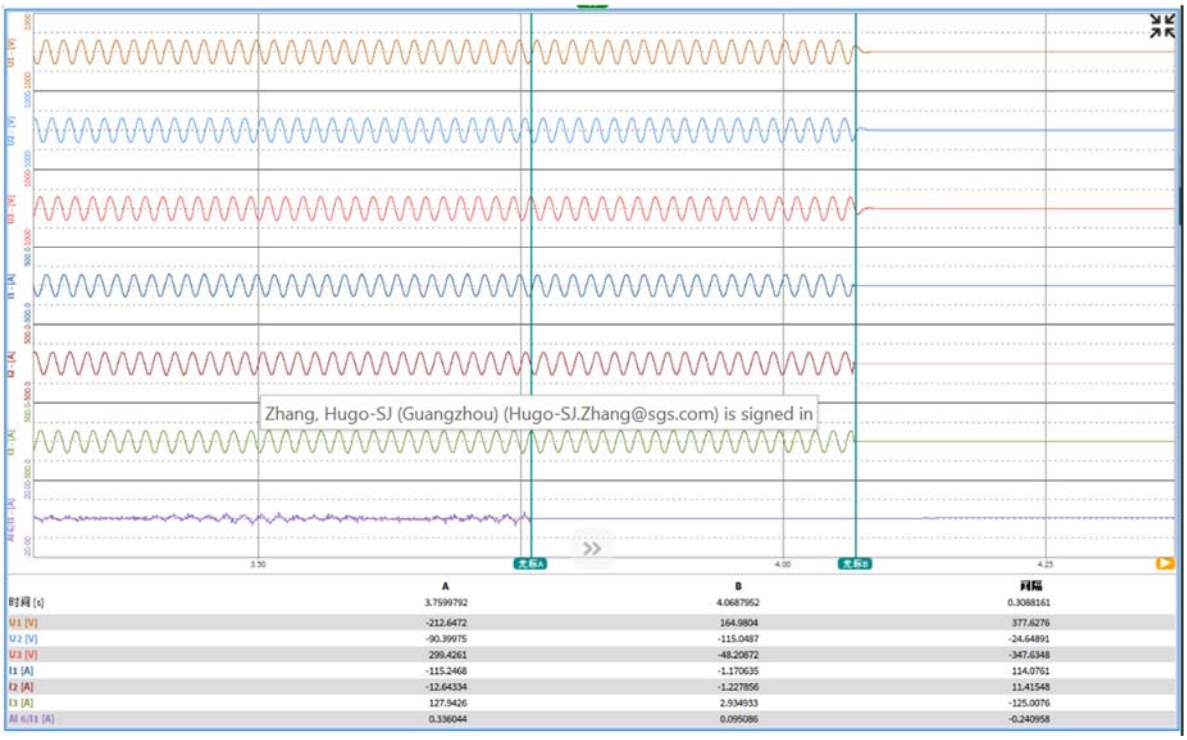
	A	B	间隔
时间 [s]	1.9298609	2.2628429	0.3329820
U1 [V]	241.0231	160.7807	-80.24240
U2 [V]	49.73913	-50.07482	-99.81394
U3 [V]	-289.8200	-111.0752	178.7448
I1 [A]	124.2733	1.738072	-122.5352
I2 [A]	1.585484	-4.820824	-6.406308
I3 [A]	-126.0638	3.271103	129.3349
AI 6/I1 [A]	-0.432756	0.048125	0.480881

Test B(60Hz)	M(%)=0 & N(%)=-4



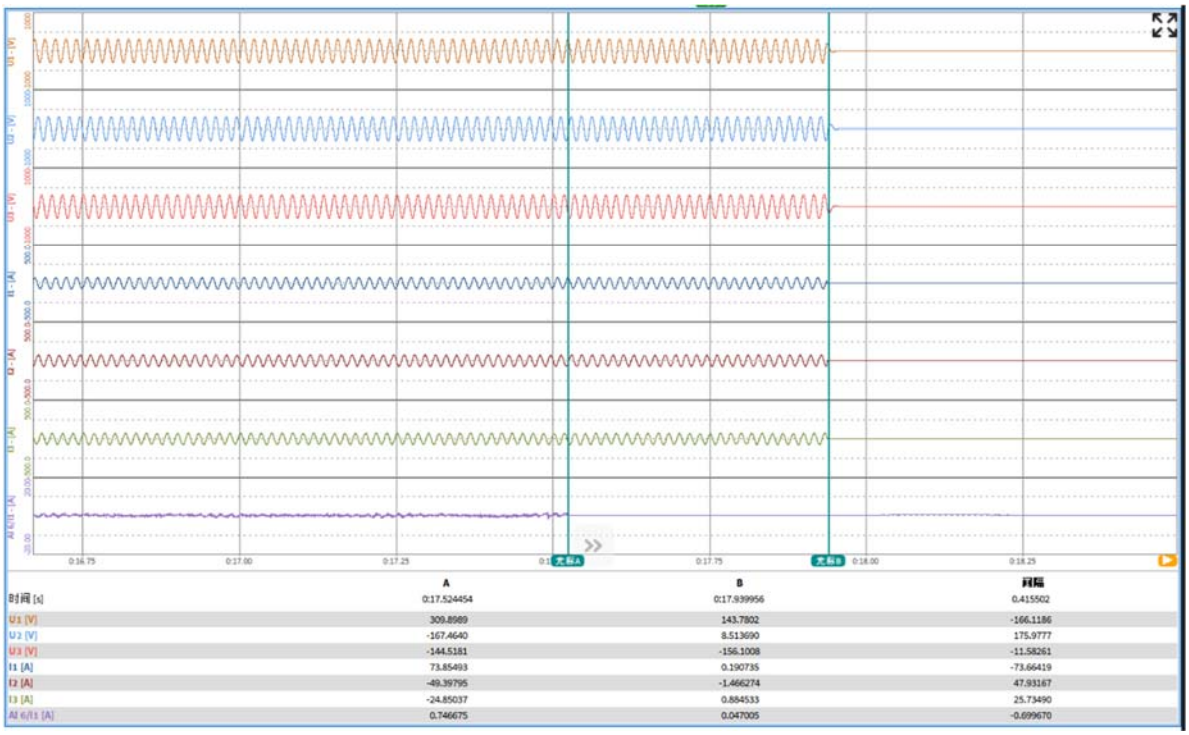
	A	B	间隔
时间 [s]	3.071854	3.436529	0.364676
U1 [V]	195.0214	147.1860	-47.83535
U2 [V]	112.7868	-271.6329	-384.4197
U3 [V]	-306.2294	139.3569	445.5862
I1 [A]	106.9689	49.51239	-57.45650
I2 [A]	30.85137	-142.9486	-173.8000
I3 [A]	-137.4269	93.75096	231.1778
AI 6/I1 [A]	-0.028584	0.106533	0.135117

Test B(60Hz)	M(%)=0 & N(%)=-5



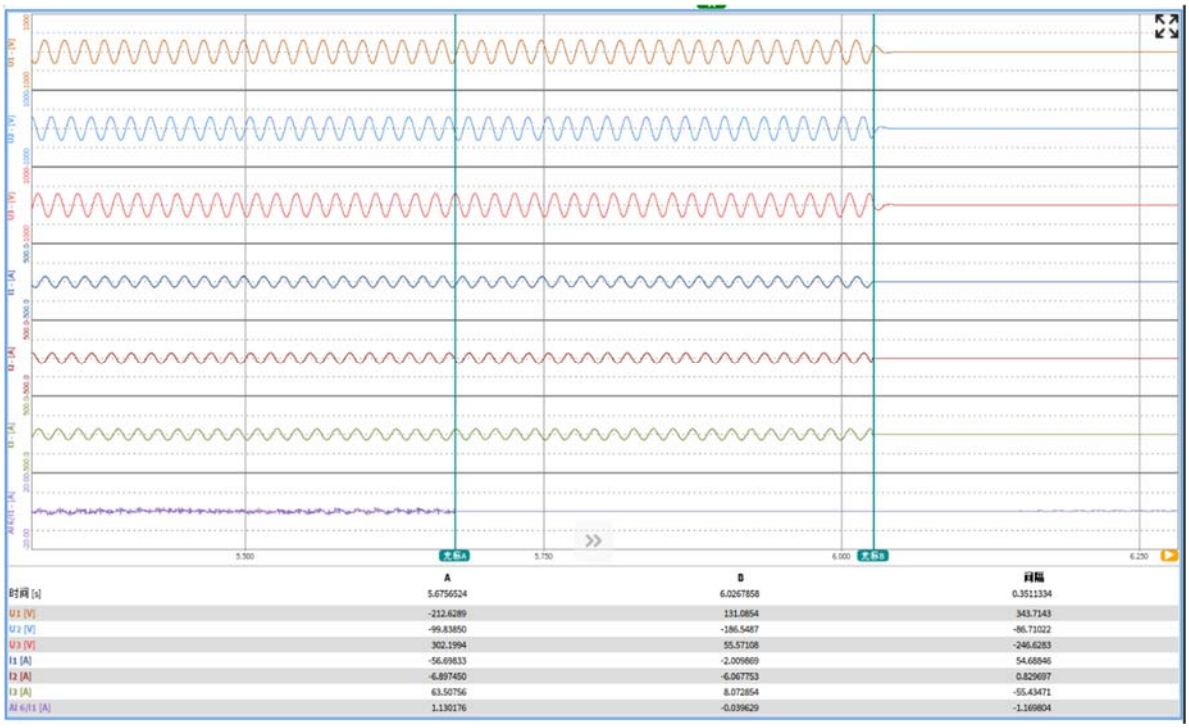
	A	B	间隔
时间 (s)	3.7599792	4.0687952	0.3088161
U1 [V]	-212.6472	164.9804	377.6276
U2 [V]	-90.39975	-115.0487	-24.64891
U3 [V]	299.4261	-48.20872	-347.6348
I1 [A]	-115.2468	-1.170635	114.0761
I2 [A]	-12.64334	-1.227856	11.41548
I3 [A]	127.9426	2.934933	-125.0076
AI 6/I1 [A]	0.336044	0.095086	-0.240958

Test C(60Hz)	M(%)=0 & N(%)=0



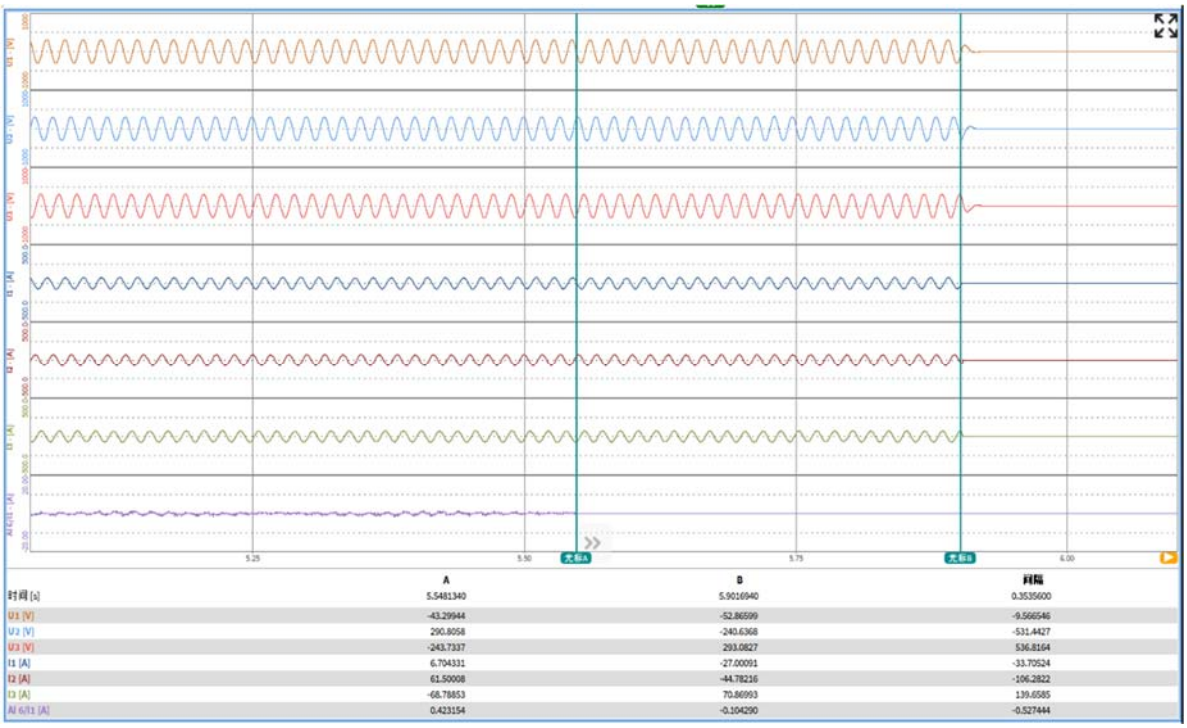
	A	B	间隔
时间 [s]	0:17.524454	0:17.939956	0.415502
U1 [V]	309.8989	143.7802	-166.1186
U2 [V]	-167.4640	8.513690	175.9777
U3 [V]	-144.5181	-156.1008	-11.58261
I1 [A]	73.85493	0.190735	-73.66419
I2 [A]	-49.39795	-1.466274	47.93167
I3 [A]	-24.85037	0.884533	25.73490
AI 6/I1 [A]	0.746675	0.047005	-0.699670

Test C(60Hz)	M(%)=0 & N(%)=+1



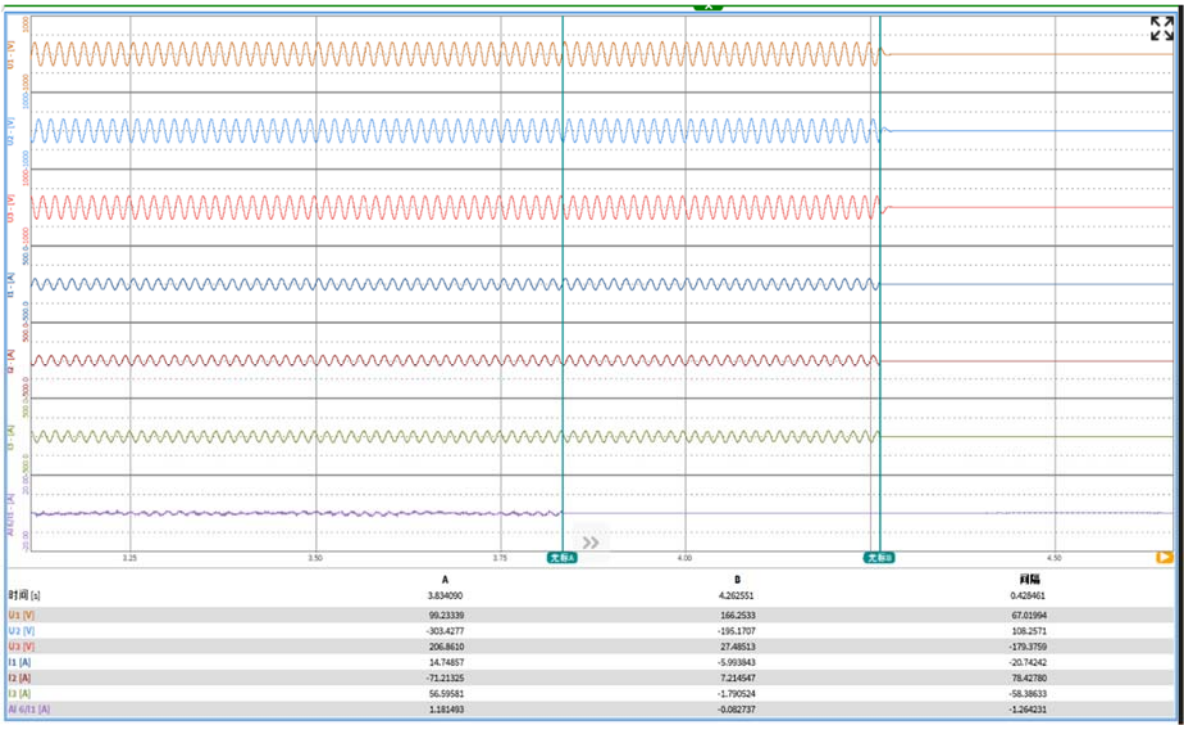
	A	B	间隔
时间 [s]	5.6756524	6.0267858	0.3511334
U1 [V]	-212.6289	131.0854	343.7143
U2 [V]	-99.83850	-186.5487	-86.71022
U3 [V]	302.1994	55.57108	-246.6283
I1 [A]	-56.69833	-2.009869	54.68846
I2 [A]	-6.897450	-6.067753	0.829697
I3 [A]	63.50756	8.072854	-55.43471
AI 6/I1 [A]	1.130176	-0.039629	-1.169804

Test C(60Hz)	M(%)=0 & N(%)=+2



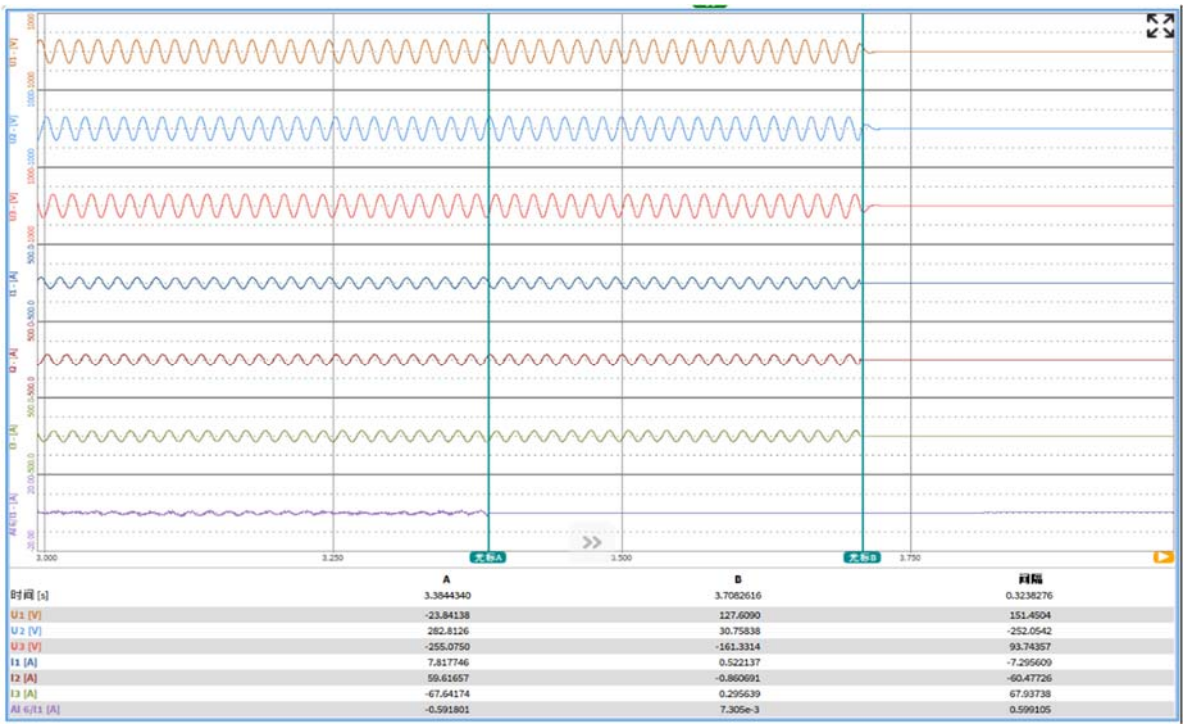
	A	B	间隔
时间 [s]	5.5481340	5.9016940	0.3535600
U1 [V]	-43.29944	-52.86599	-9.566546
U2 [V]	290.8058	-240.6368	-531.4427
U3 [V]	-243.7337	293.0827	536.8164
I1 [A]	6.704331	-27.00091	-33.70524
I2 [A]	61.50008	-44.78216	-106.2822
I3 [A]	-68.78853	70.86993	139.6585
AI 6/11 [A]	0.423154	-0.104290	-0.527444

Test C(60Hz)	M(%)=0 & N(%)=+3



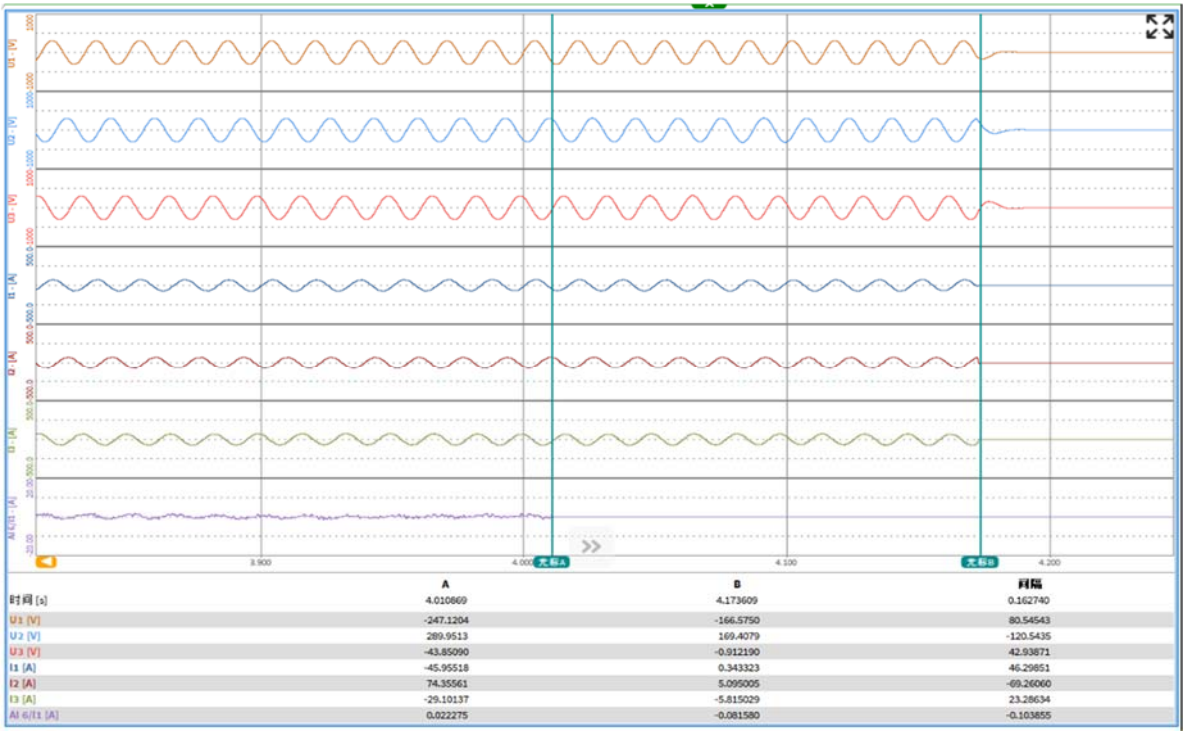
	A	B	间隔
时间 [s]	3.834090	4.262551	0.428461
U1 [V]	99.23339	166.2533	67.01994
U2 [V]	-303.4277	-195.1707	108.2571
U3 [V]	206.8610	27.48513	-179.3759
I1 [A]	14.74857	-5.993843	-20.74242
I2 [A]	-71.21325	7.214547	78.42780
I3 [A]	56.59581	-1.790524	-58.38633
AI 6/11 [A]	1.181493	-0.082737	-1.264231

Test C(60Hz)	M(%)=0 & N(%)=+4



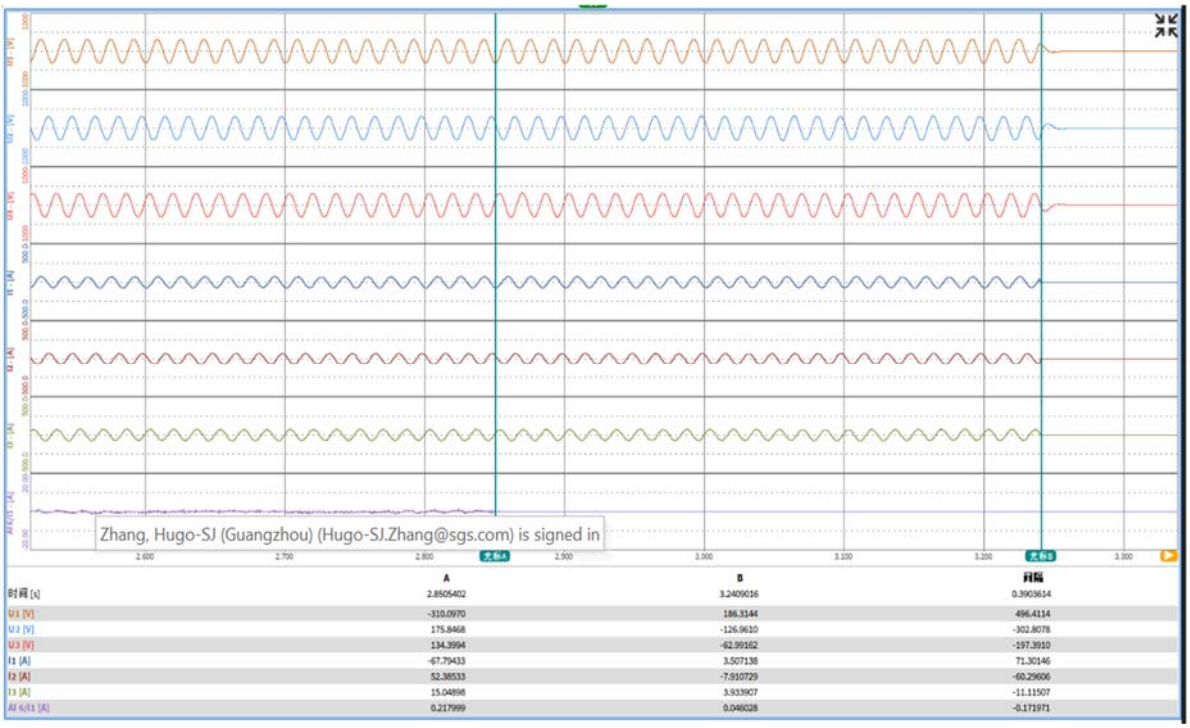
	A	B	间隔
时间 [s]	3.3844340	3.7082616	0.3238276
U1 [V]	-23.84138	127.6090	151.4504
U2 [V]	282.8126	30.75838	-252.0542
U3 [V]	-255.0750	-161.3314	93.74357
I1 [A]	7.817746	0.522137	-7.295609
I2 [A]	59.61657	-0.860691	-60.47726
I3 [A]	-67.64174	0.295639	67.93738
AI 6/I1 [A]	-0.591801	7.305e-3	0.599105

Test C(60Hz)	M(%)=0 & N(%)=+5

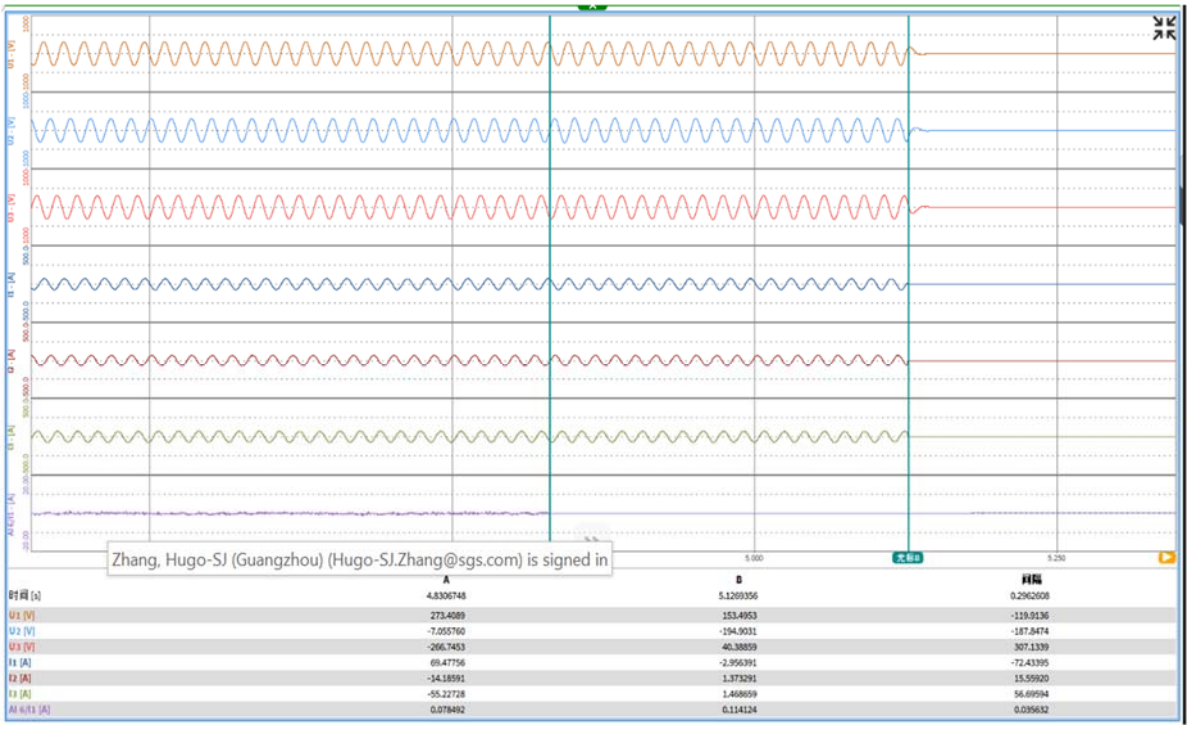


	A	B	间隔
时间 [s]	4.010869	4.173609	0.162740
U1 [V]	-247.1204	-166.5750	80.54543
U2 [V]	289.9513	169.4079	-120.5435
U3 [V]	-43.85090	-0.912190	42.93871
I1 [A]	-45.95518	0.343323	46.29851
I2 [A]	74.35561	5.095005	-69.26060
I3 [A]	-29.10137	-5.815029	23.28634
AI 6/I1 [A]	0.022275	-0.081580	-0.103855

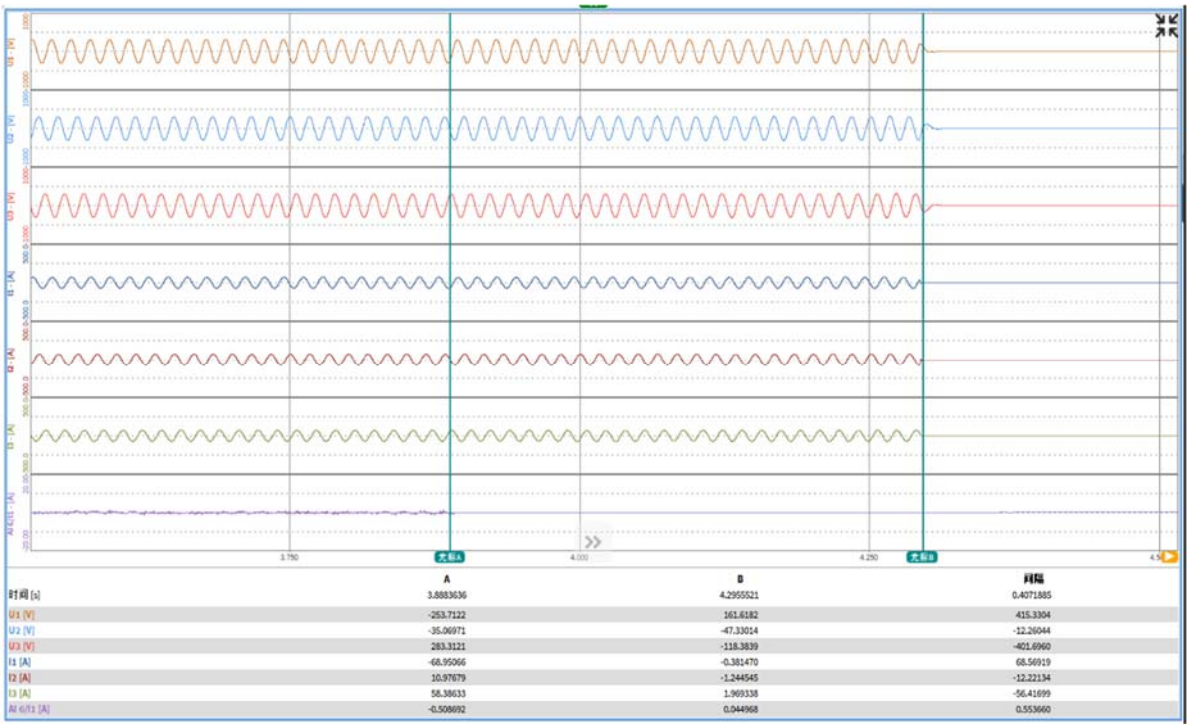
Test C(60Hz)	M(%)=0 & N(%)=-1



Test C(60Hz)	M(%)=0 & N(%)=-2

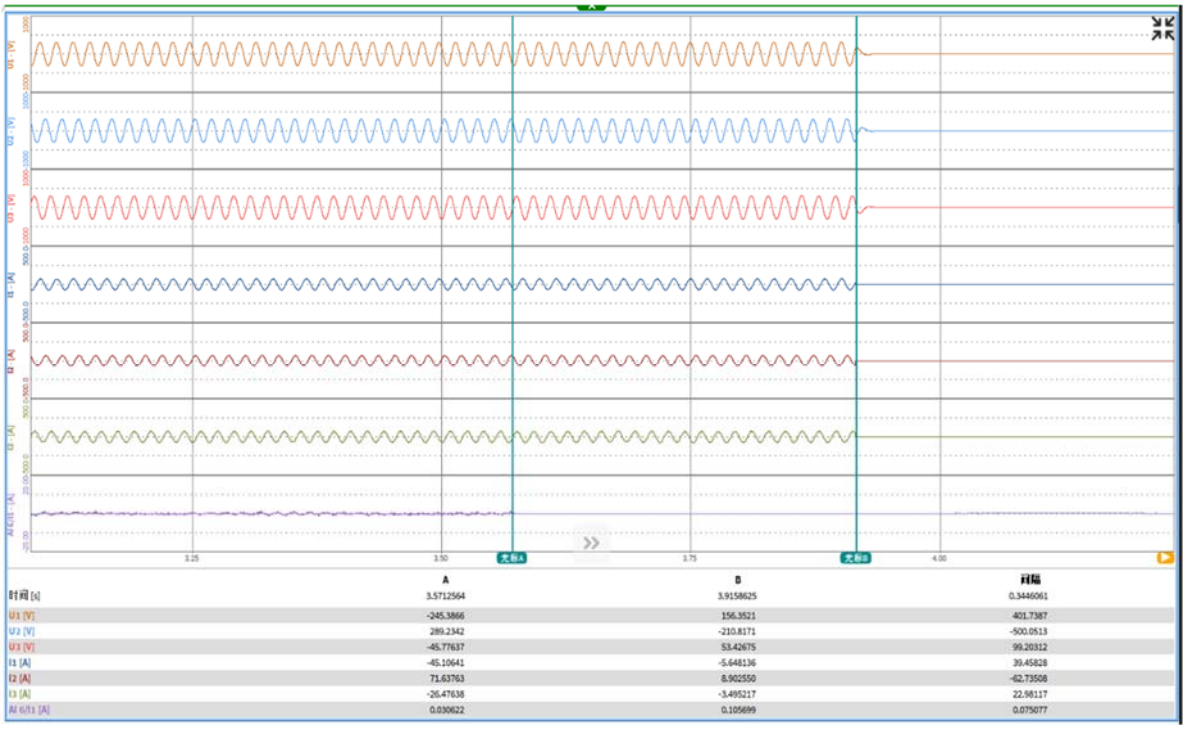


Test C(60Hz)	M(%)=0 & N(%)=-3



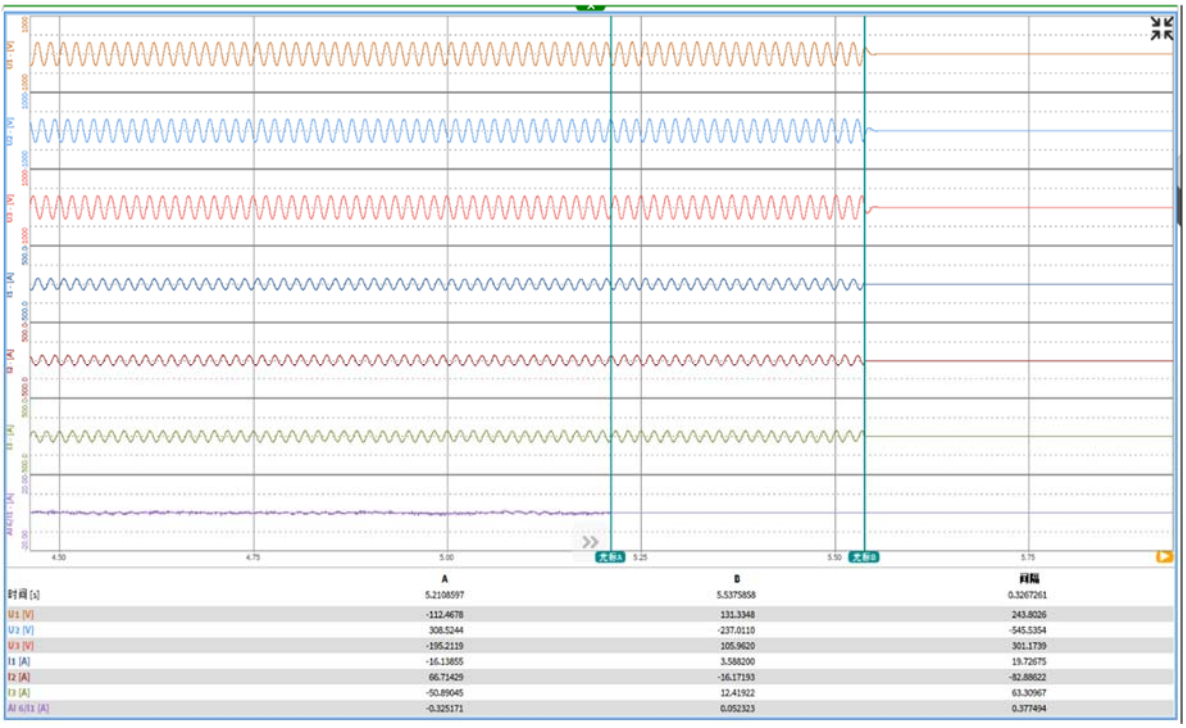
	A	B	间隔
时间 [s]	3.8883636	4.2955521	0.4071885
U1 [V]	-253.7122	161.6182	415.3304
U2 [V]	-35.06971	-47.33014	-12.26044
U3 [V]	283.3121	-118.3839	-401.6960
I1 [A]	-68.95066	-0.381470	68.56919
I2 [A]	10.97679	-1.244545	-12.22134
I3 [A]	58.38633	1.969338	-56.41699
AI 6/11 [A]	-0.508692	0.044968	0.553660

Test C(60Hz)	M(%)=0 & N(%)=-4



	A	B	间隔
时间 [s]	3.5712564	3.9158625	0.3446061
U1 [V]	-245.3866	156.3521	401.7387
U2 [V]	289.2342	-210.8171	-500.0513
U3 [V]	-45.77637	53.42675	99.20312
I1 [A]	-45.10641	-5.648136	39.45828
I2 [A]	71.63763	8.902550	-62.73508
I3 [A]	-26.47638	-3.495217	22.98117
AI 6/11 [A]	0.030622	0.105699	0.075077

Test C(60Hz)	M(%)=0 & N(%)=-5

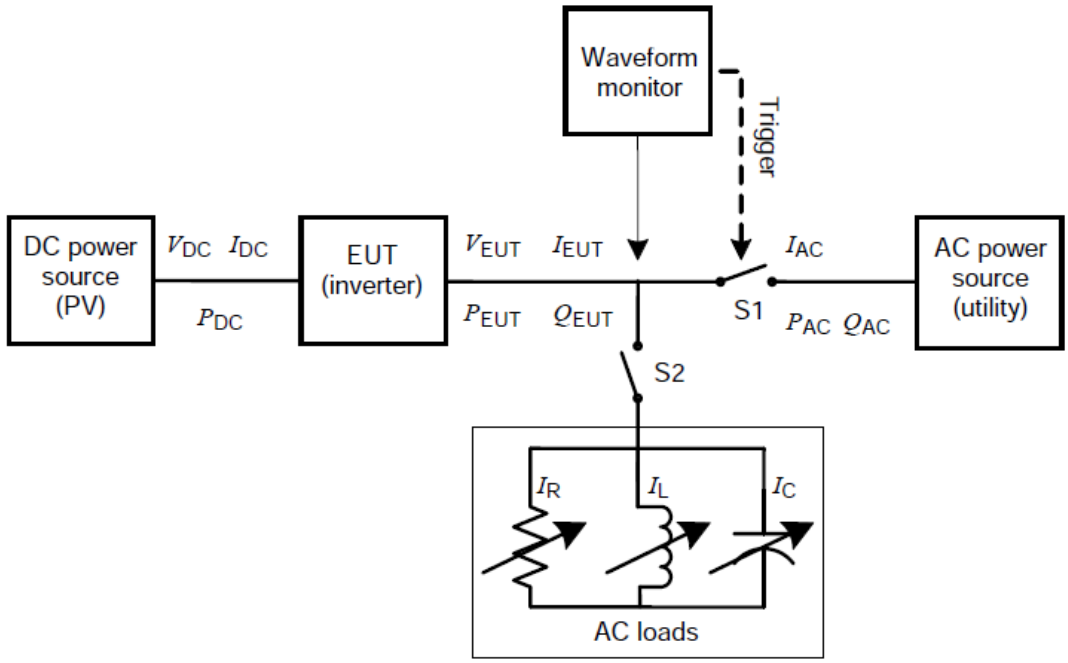


	A	B	间隔
时间 [s]	5.2108597	5.5375858	0.3267261
U1 [V]	-112.4678	131.3348	243.8026
U2 [V]	308.5244	-237.0110	-545.5354
U3 [V]	-195.2119	105.9620	301.1739
I1 [A]	-16.13855	3.588200	19.72675
I2 [A]	66.71429	-16.17193	-82.88622
I3 [A]	-50.89045	12.41922	63.30967
AI 6/11 [A]	-0.325171	0.052323	0.377494

ATTACHMENT IV

(Testing information)

1 TESTING CIRCUIT



Current and voltage clamps have been connected to the inverter input/output for all the tests.

All the tests and checks have been performed in accordance with the reference standard under testing.

2 TESTING EQUIPMENT

From	No.	Equipment Name	MARK/Model No.	Equipment No.	Equipment calibration due date
BALUN	1	Digital oscilloscope	Tektronix / MS04054B	BZ-DGD-L064	2020-03-04 to 2021-03-03
	2	Current clamp	HIOKI / CT6863-05	BZ-DGD-L026-1	2020-03-04 to 2021-03-03
	3	Current clamp	HIOKI / CT6863-05	BZ-DGD-L026-2	2020-03-04 to 2021-03-03
	4	Current clamp	HIOKI / CT6863-05	BZ-DGD-L026-3	2020-03-04 to 2021-03-03
	5	Current clamp	HIOKI / CT6863-05	BZ-DGD-L026-4	2020-03-04 to 2021-03-03
	6	Power analyzer	HIOKI / PW6001-16	BZ-DGD-L025	2020-03-04 to 2021-03-03
	7	Power analyzer	DEWETRON / DEWE2-A4	BZ-DGD-L119	2020-03-04 to 2021-03-03
	8	Chamber	OK/OK-TS-6000	BZ-DGB-L028	2019-10-22 to 2020-10-21
	9	Temperature and Humidity meter	HIOKI /DT-322	BZ-DGD-L005	2020-03-07 to 2021-03-06
	10	Power analyzer	ZhiYuan / PA6000H	BZ-DGD-L059	2019-11-07 to 2020-11-06
SGS	11	True RMS Multimeter	Fluke / 187	GZE012-8	2019-12-05 to 2020-12-04

Items	Specifications
1) PV array simulator	
a) Voltage range	0 – 1000Vdc (0.01V step)
b) Current range	0 – 40A (0.01A step)
2) AC power source	
a) Output wiring	Three phase
b) Output capacity	100KVA
c) Output voltage	10-300Vrms
d) Output frequency	45-65Hz
e) Voltage stability	± 100ppm/℃
f) Output voltage distortion	0.05% max.
3) Digital meter	
a) Voltage range	0 – 1000Vdc, 0 – 600Vrms
b) Current range	0 – 30A
c) Frequency range (accuracy)	0.2%
d) Measurement items	Voltage (V) Current (A) Active power (W) Reactive power (Var) Volt-ampere (VA) Power factor (PF) Frequency (Hz) Electric energy (Wh)
4) Waveform recorder	
a) Sampling speed	1M/s
b) Recording device	Memory record and USB reading
c) Time accuracy	± 500ppm
5) AC load	
a) Resistive load	Maximum voltage: 300Vrms Current range: 0 – 100A Capacity: 100KW
b) Inductive load	Maximum voltage: 300Vrms Current range: 0 – 100A Capacity: 100KVA
c) Capacitive load	Maximum voltage: 300Vrms Current range: 0 – 100A Capacity: 100KVA

3 MEASUREMENT UNCERTAINTY

	Voltage measurement uncertainty	±1.5 %
	Current measurement uncertainty	±2.0 %
	Frequency measurement uncertainty	±0.2 %
	Time measurement uncertainty	±0.2 %
	Power measurement uncertainty	±2.5 %
	Phase Angle	±1º
	cosφ	±0.01

Note1: Measurements uncertainties showed in this table are maximum allowable uncertainties. The measurement uncertainties associated with other parameters measured during the tests are in the laboratory at disposal of the solicitant.

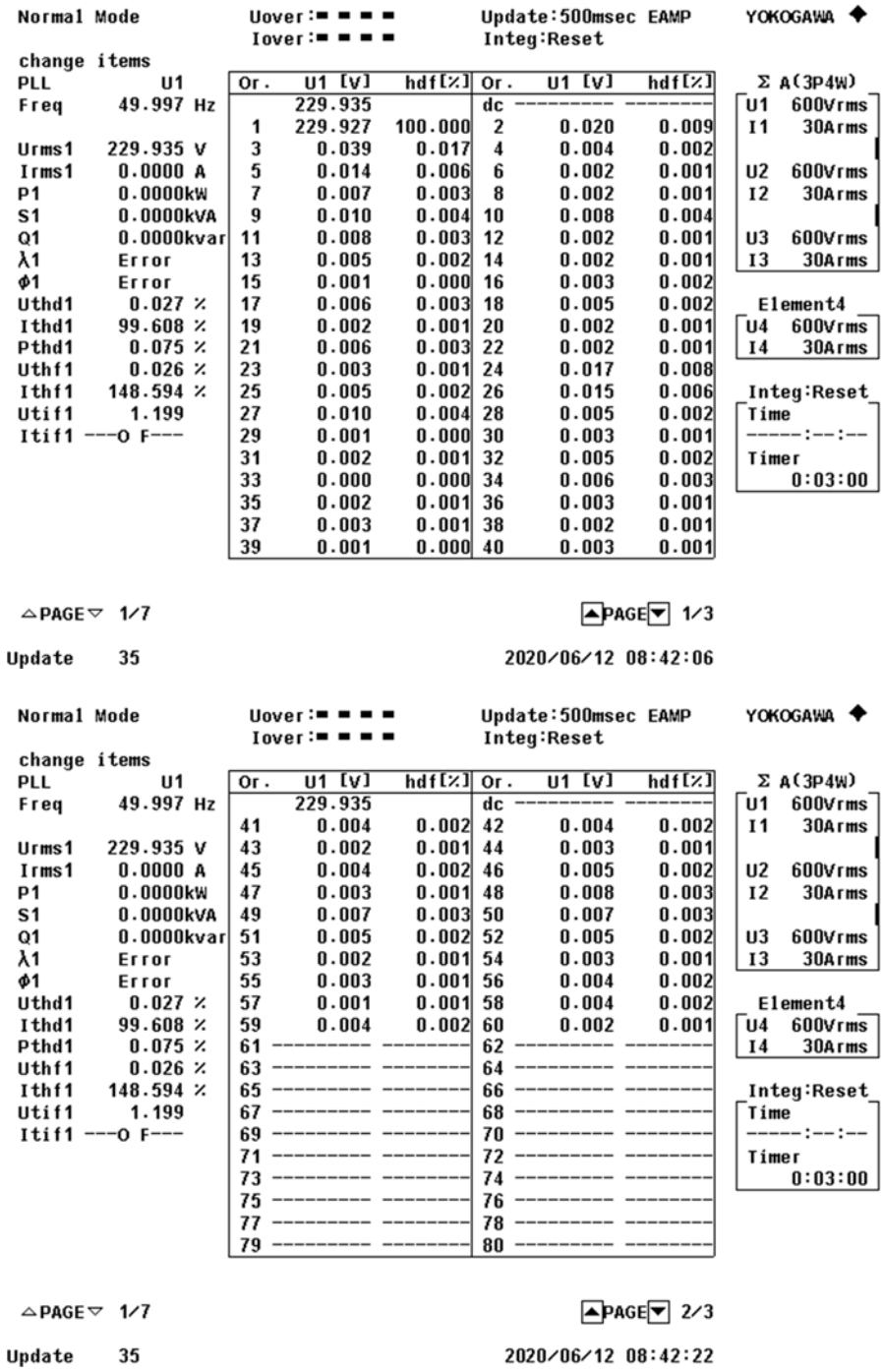
Note2: Where the standard requires lower uncertainties that those in this table. Most restrictive uncertainty has been considered.

4 MEASUREMENT OF AC SOURCE USED FOR TEST

Items	Desired	Measured	Deviation	Limited
Phase A Voltage(V)	230	229.8	0.2	±2%
Phase B Voltage(V)	230	229.8	0.2	±2%
Phase C Voltage(V)	230	230	0	±2%
Voltage THD (%)	<2.5%	0.03	2.47	<2.5%
Frequency	50	50	0	±0.1Hz
Phase angle distance Phase A to Phase B	120°	119.9°	0.1°	± 1.5°
Phase angle distance Phase A to Phase C	240°	240.0°	0.0°	± 1.5°

AC source voltage harmonics (Phase A)

(Phase A)



```
Normal Mode          Uover:■ ■ ■ ■        Update:500msec EAMP      YOKOGAWA ◆
                     Iover:■ ■ ■ ■        Integ:Reset
change items
PLL          U1
Freq      49.997 Hz
Urms1    229.935 V
Irms1      0.0000 A
P1         0.0000kW
S1         0.0000kVA
Q1         0.0000kvar
λ1         Error
φ1         Error
Uthd1       0.027 %
Ithd1      99.608 %
Pthd1       0.075 %
Uthf1       0.026 %
Ithf1     148.594 %
Utif1       1.199
Itif1  ---O F---
```

Or.	U1 [V]	hdf[%]	Or.	U1 [V]	hdf[%]
	229.935		dc	---------	--------
1	229.927	100.000	2	0.020	0.009
3	0.039	0.017	4	0.004	0.002
5	0.014	0.006	6	0.002	0.001
7	0.007	0.003	8	0.002	0.001
9	0.010	0.004	10	0.008	0.004
11	0.008	0.003	12	0.002	0.001
13	0.005	0.002	14	0.002	0.001
15	0.001	0.000	16	0.003	0.002
17	0.006	0.003	18	0.005	0.002
19	0.002	0.001	20	0.002	0.001
21	0.006	0.003	22	0.002	0.001
23	0.003	0.001	24	0.017	0.008
25	0.005	0.002	26	0.015	0.006
27	0.010	0.004	28	0.005	0.002
29	0.001	0.000	30	0.003	0.001
31	0.002	0.001	32	0.005	0.002
33	0.000	0.000	34	0.006	0.003
35	0.002	0.001	36	0.003	0.001
37	0.003	0.001	38	0.002	0.001
39	0.001	0.000	40	0.003	0.001

```
Σ A(3P4W)
U1  600Vrms
I1   30Arms

U2  600Vrms
I2   30Arms

U3  600Vrms
I3   30Arms

 Element4
U4  600Vrms
I4   30Arms

 Integ:Reset
Time
-----:--:--
Timer
    0:03:00

△PAGE▽ 1/7                          PAGE▼ 1/3

Update    35                  2020/06/12 08:42:06
```

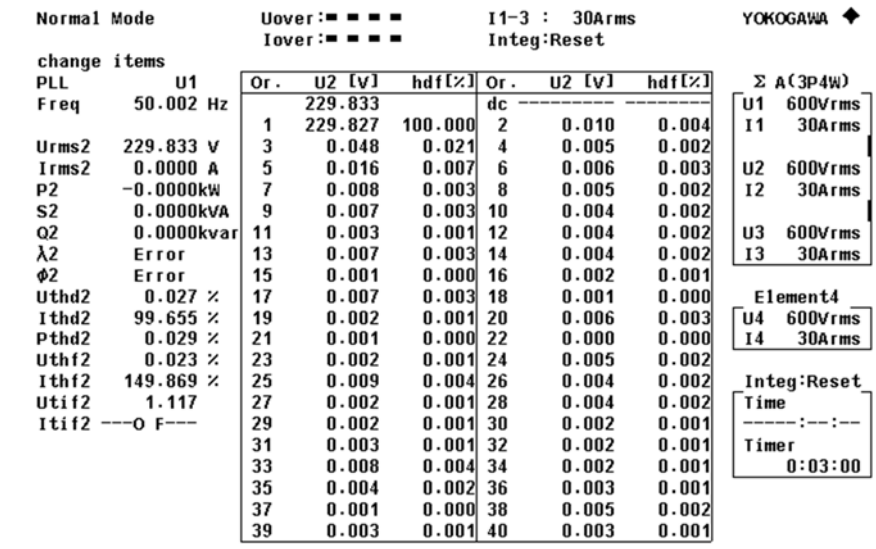


```
Normal Mode          Uover:■ ■ ■ ■        Update:500msec EAMP      YOKOGAWA ◆
                     Iover:■ ■ ■ ■        Integ:Reset
change items
PLL          U1
Freq      49.997 Hz
Urms1    229.935 V
Irms1      0.0000 A
P1         0.0000kW
S1         0.0000kVA
Q1         0.0000kvar
λ1         Error
φ1         Error
Uthd1       0.027 %
Ithd1      99.608 %
Pthd1       0.075 %
Uthf1       0.026 %
Ithf1     148.594 %
Utif1       1.199
Itif1  ---O F---
```

Or.	U1 [V]	hdf[%]	Or.	U1 [V]	hdf[%]
	229.935		dc	---------	--------
41	0.004	0.002	42	0.004	0.002
43	0.002	0.001	44	0.003	0.001
45	0.004	0.002	46	0.005	0.002
47	0.003	0.001	48	0.008	0.003
49	0.007	0.003	50	0.007	0.003
51	0.005	0.002	52	0.005	0.002
53	0.002	0.001	54	0.003	0.001
55	0.003	0.001	56	0.004	0.002
57	0.001	0.001	58	0.004	0.002
59	0.004	0.002	60	0.002	0.001
61	---------	--------	62	---------	--------
63	---------	--------	64	---------	--------
65	---------	--------	66	---------	--------
67	---------	--------	68	---------	--------
69	---------	--------	70	---------	--------
71	---------	--------	72	---------	--------
73	---------	--------	74	---------	--------
75	---------	--------	76	---------	--------
77	---------	--------	78	---------	--------
79	---------	--------	80	---------	--------

```
Σ A(3P4W)
U1  600Vrms
I1   30Arms

U2  600Vrms
I2   30Arms

U3  600Vrms
I3   30Arms

 Element4
U4  600Vrms
I4   30Arms

 Integ:Reset
Time
-----:--:--
Timer
    0:03:00

△PAGE▽ 1/7                          PAGE▼ 2/3

Update    35                  2020/06/12 08:42:22
```

(Phase B)



Normal Mode Uover:■ ■ ■ ■ I1-3 : 30Arms YOKOGAWA
Iover:■ ■ ■ ■ Integ:Reset

change items

PLL	U1
Freq	50.002 Hz
Urms2	229.833 V
Irms2	0.0000 A
P2	-0.0000kW
S2	0.0000kVA
Q2	0.0000kvar
λ2	Error
ϕ2	Error
Uthd2	0.027 %
Ithd2	99.655 %
Pthd2	0.029 %
Uthf2	0.023 %
Ithf2	149.869 %
Utif2	1.117
Itif2	---O F---

Or.	U2 [V]	hdf[%]	Or.	U2 [V]	hdf[%]
	229.833		dc	---------	--------
1	229.827	100.000	2	0.010	0.004
3	0.048	0.021	4	0.005	0.002
5	0.016	0.007	6	0.006	0.003
7	0.008	0.003	8	0.005	0.002
9	0.007	0.003	10	0.004	0.002
11	0.003	0.001	12	0.004	0.002
13	0.007	0.003	14	0.004	0.002
15	0.001	0.000	16	0.002	0.001
17	0.007	0.003	18	0.001	0.000
19	0.002	0.001	20	0.006	0.003
21	0.001	0.000	22	0.000	0.000
23	0.002	0.001	24	0.005	0.002
25	0.009	0.004	26	0.004	0.002
27	0.002	0.001	28	0.004	0.002
29	0.002	0.001	30	0.002	0.001
31	0.003	0.001	32	0.002	0.001
33	0.008	0.004	34	0.002	0.001
35	0.004	0.002	36	0.003	0.001
37	0.001	0.000	38	0.005	0.002
39	0.003	0.001	40	0.003	0.001

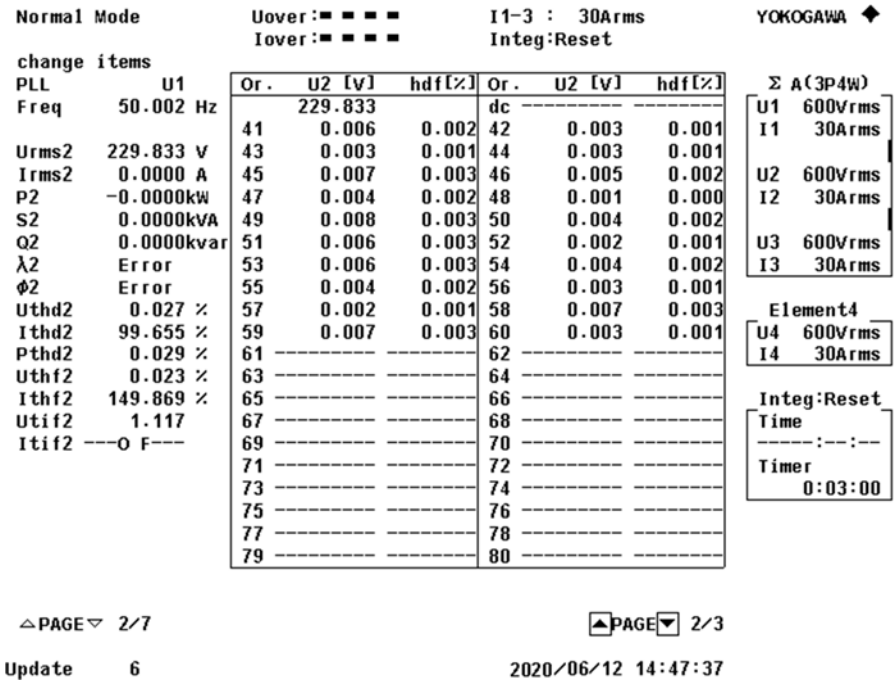
Σ A(3P4W)
U1 600Vrms
I1 30Arms
U2 600Vrms
I2 30Arms
U3 600Vrms
I3 30Arms

Element4
U4 600Vrms
I4 30Arms

Integ:Reset
Time
-----:--:--
Timer
0:03:00

△PAGE▽ 2/7 PAGE▼ 1/3

Update 6 2020/06/12 14:47:32



Normal Mode Uover:■ ■ ■ ■ I1-3 : 30Arms YOKOGAWA
Iover:■ ■ ■ ■ Integ:Reset

change items

PLL	U1
Freq	50.002 Hz
Urms2	229.833 V
Irms2	0.0000 A
P2	-0.0000kW
S2	0.0000kVA
Q2	0.0000kvar
λ2	Error
ϕ2	Error
Uthd2	0.027 %
Ithd2	99.655 %
Pthd2	0.029 %
Uthf2	0.023 %
Ithf2	149.869 %
Utif2	1.117
Itif2	---O F---

Or.	U2 [V]	hdf[%]	Or.	U2 [V]	hdf[%]
	229.833		dc	---------	--------
41	0.006	0.002	42	0.003	0.001
43	0.003	0.001	44	0.003	0.001
45	0.007	0.003	46	0.005	0.002
47	0.004	0.002	48	0.001	0.000
49	0.008	0.003	50	0.004	0.002
51	0.006	0.003	52	0.002	0.001
53	0.006	0.003	54	0.004	0.002
55	0.004	0.002	56	0.003	0.001
57	0.002	0.001	58	0.007	0.003
59	0.007	0.003	60	0.003	0.001
61	---------	--------	62	---------	--------
63	---------	--------	64	---------	--------
65	---------	--------	66	---------	--------
67	---------	--------	68	---------	--------
69	---------	--------	70	---------	--------
71	---------	--------	72	---------	--------
73	---------	--------	74	---------	--------
75	---------	--------	76	---------	--------
77	---------	--------	78	---------	--------
79	---------	--------	80	---------	--------

Σ A(3P4W)
U1 600Vrms
I1 30Arms
U2 600Vrms
I2 30Arms
U3 600Vrms
I3 30Arms

Element4
U4 600Vrms
I4 30Arms

Integ:Reset
Time
-----:--:--
Timer
0:03:00

△PAGE▽ 2/7 PAGE▼ 2/3

Update 6 2020/06/12 14:47:37

(PhaseC)

Normal Mode Uover:■ ■ ■ ■ I1-3 : 30Arms YOKOGAWA ◆
Iover:■ ■ ■ ■ Integ:Reset

change items

PLL	U1
Freq	50.002 Hz
Urms3	229.951 V
Irms3	0.0000 A
P3	0.0000kW
S3	0.0000kVA
Q3	0.0000kvar
λ3	Error
ϕ3	Error
Uthd3	0.027 %
Ithd3	98.724 %
Pthd3	0.010 %
Uthf3	0.024 %
Ithf3	155.307 %
Utif3	1.155
Itif3	---O F---

Or.	U3 [V]	hdf[%]	Or.	U3 [V]	hdf[%]
	229.951		dc	---------	--------
1	229.950	100.000	2	0.034	0.015
3	0.037	0.016	4	0.006	0.003
5	0.016	0.007	6	0.001	0.000
7	0.010	0.004	8	0.001	0.001
9	0.003	0.001	10	0.001	0.000
11	0.003	0.001	12	0.001	0.001
13	0.003	0.001	14	0.003	0.001
15	0.001	0.000	16	0.001	0.001
17	0.005	0.002	18	0.004	0.002
19	0.007	0.003	20	0.003	0.001
21	0.007	0.003	22	0.004	0.002
23	0.003	0.001	24	0.003	0.001
25	0.003	0.001	26	0.004	0.002
27	0.010	0.005	28	0.003	0.001
29	0.004	0.002	30	0.003	0.001
31	0.003	0.001	32	0.003	0.001
33	0.008	0.003	34	0.003	0.001
35	0.003	0.001	36	0.001	0.001
37	0.002	0.001	38	0.002	0.001
39	0.002	0.001	40	0.001	0.001

Σ A(3P4W)
U1 600Vrms
I1 30Arms
U2 600Vrms
I2 30Arms
U3 600Vrms
I3 30Arms

Element4
U4 600Vrms
I4 30Arms

Integ:Reset
Time
-----:--:--
Timer
0:03:00

△PAGE▽ 3/7 ▲PAGE▼ 1/3

Update 6 2020/06/12 14:47:51

Normal Mode Uover:■ ■ ■ ■ I1-3 : 30Arms YOKOGAWA ◆
Iover:■ ■ ■ ■ Integ:Reset

change items

PLL	U1
Freq	50.002 Hz
Urms3	229.951 V
Irms3	0.0000 A
P3	0.0000kW
S3	0.0000kVA
Q3	0.0000kvar
λ3	Error
ϕ3	Error
Uthd3	0.027 %
Ithd3	98.724 %
Pthd3	0.010 %
Uthf3	0.024 %
Ithf3	155.307 %
Utif3	1.155
Itif3	---O F---

Or.	U3 [V]	hdf[%]	Or.	U3 [V]	hdf[%]
	229.951		dc	---------	--------
41	0.004	0.002	42	0.003	0.001
43	0.004	0.002	44	0.007	0.003
45	0.010	0.004	46	0.003	0.001
47	0.007	0.003	48	0.006	0.002
49	0.005	0.002	50	0.003	0.001
51	0.003	0.001	52	0.005	0.002
53	0.002	0.001	54	0.006	0.003
55	0.003	0.001	56	0.001	0.000
57	0.005	0.002	58	0.008	0.003
59	0.004	0.002	60	0.003	0.001
61	---------	--------	62	---------	--------
63	---------	--------	64	---------	--------
65	---------	--------	66	---------	--------
67	---------	--------	68	---------	--------
69	---------	--------	70	---------	--------
71	---------	--------	72	---------	--------
73	---------	--------	74	---------	--------
75	---------	--------	76	---------	--------
77	---------	--------	78	---------	--------
79	---------	--------	80	---------	--------

Σ A(3P4W)
U1 600Vrms
I1 30Arms
U2 600Vrms
I2 30Arms
U3 600Vrms
I3 30Arms

Element4
U4 600Vrms
I4 30Arms

Integ:Reset
Time
-----:--:--
Timer
0:03:00

△PAGE▽ 3/7 ▲PAGE▼ 2/3

Update 6 2020/06/12 14:47:55

Phase angle distance