



# 检测报告

## Test Report

**Submitting Company:** Huizhou Zhongcheng Electronic Technology Co., Ltd.

**Sample Name:** Three-phase Four-wire Smart Meter

**Inspection Type:** Commissioned Test



厦门泓益检测有限公司

**Xiamen Hongyi Testing Technology Co., Ltd.**

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厦门泓益检测有限公司

Xiamen Hongyi Testing Co., Ltd.

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<b>Sample Name</b>	: Three-phase Four-wire Smart Meter	<b>Model Specification</b>	: DTSY1398 230V 5(100)A 50Hz
<b>Trademark</b>	: <b>ZCET</b>	<b>Sample Quantity</b>	: 3 pcs
<b>Entrust Unit</b>	: Huizhou Zhongcheng Electronic Technology Co., Ltd.		
<b>Entrust Unit Address</b>	: No.7 Hechang East Fourth Road, Zhongkai High-tech Zone, Huizhou City, Guangdong Province		
<b>Manufacturer</b>	: Huizhou Zhongcheng Electronic Technology Co., Ltd.		
<b>Manufacturer Address</b>	: No.7 Hechang East Fourth Road, Zhongkai High-tech Zone, Huizhou City, Guangdong Province		
<b>Test Type</b>	: Commissioned Test	<b>Test Date</b>	: August 01, 2025 - September 30, 2025
<b>Issuance Date</b>	: September 30, 2025		
<b>Test Basis</b>	: IEC 62053-21:2003 AC Electrical Measuring Equipment - Special Requirements - Part 21: Static Active Energy Meters (Class 1 and 2) IEC 62053-23:2003 AC Electrical Measuring Equipment - Special Requirements - Part 23: Static Reactive Energy Meters (Class 2 and 3) IEC 62052-11:2003 AC Electrical Measuring Equipment - General Requirements, Tests and Test Conditions - Part 11: Measuring Equipment		
<b>Test Items</b>	: Refer to the following section		
<b>Sample Characteristics and Status</b>	: Intact upon receipt		
<b>Ambient Temperature</b>	: 24.6°C	<b>Ambient Humidity</b>	: 62%
<b>Test Results</b>	: The three-phase four-wire smart meter complies with the requirements of IEC 62053-21:2003, IEC 62053-23 and IEC 62052-11:2003 standards.		


 报告编制: 张华伟

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- 37. Test of protection against penetration of water
- 36. Test of protection against penetration of dust
- 37. Test of protection against penetration of water
- 38. Test of protection against penetration of dust

### Test condition:

Ambient temperature: (21 ~ 24)°C      Relative humidity: (40 ~ 60) %

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## 1. Test of limits of errors due to variation of the current

1. Requirement: IEC62053-21:2003 IEC62053-23:2003 IEC62052-11:2003
2. Test method: When the meter is under the reference conditions, the percentage errors shall not exceed the limits.
3. Test equipment: Meter calibration device ST9001D5 (7131019)
4. Test result:

Reference frequency :50Hz Current :5(100)A Reference voltage: 3×230/400V

Current	Power factor (cosΦ)	Percentage error limits (%)	Test result (%)		
			№25073400043	№25073400044	№25073400045
0.05I <sub>b</sub>	1.0	±1.5	0.1	0.1	0.0
0.1I <sub>b</sub>	1.0	±1.0	0.1	0.1	0.0
0.5I <sub>b</sub>	1.0	±1.0	0.2	0.2	0.1
I <sub>b</sub>	1.0	±1.0	0.1	0.1	0.1
0.5I <sub>max</sub>	1.0	±1.0	0.1	0.1	0.0
I <sub>max</sub>	1.0	±1.0	0.1	0.2	0.0
0.1I <sub>b</sub>	0.5L	±1.5	0.0	0.0	0.1
0.2I <sub>b</sub>	0.5L	±1.0	-0.1	0.0	0.0
0.5I <sub>b</sub>	0.5L	±1.0	0.1	0.1	0.1
I <sub>b</sub>	0.5L	±1.0	0.1	0.1	0.2
0.5I <sub>max</sub>	0.5L	±1.0	0.1	0.0	0.1
I <sub>max</sub>	0.5L	±1.0	0.2	0.0	0.1
0.1I <sub>b</sub>	0.8C	±1.5	0.1	0.1	0.0
0.2I <sub>b</sub>	0.8C	±1.0	0.1	0.1	0.1
0.5I <sub>b</sub>	0.8C	±1.0	0.2	0.1	0.1
I <sub>b</sub>	0.8C	±1.0	0.1	0.2	0.1
I <sub>max</sub>	0.8C	±1.0	0.2	0.1	0.2
Test conclusion			<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

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Current	Power factor (cosΦ)	Percentage error limits (%)	Test result (%)		
			№25073400043	№25073400044	№25073400045
0.05I <sub>b</sub>	1.0	±1.5	0.1	0.2	0.1
0.1I <sub>b</sub>	1.0	±1.0	0.2	0.1	0.1
0.5I <sub>b</sub>	1.0	±1.0	0.2	0.2	0.2
I <sub>b</sub>	1.0	±1.0	0.1	0.0	0.1
0.5I <sub>max</sub>	1.0	±1.0	0.0	0.1	0.1
I <sub>max</sub>	1.0	±1.0	0.2	0.0	0.1
0.1I <sub>b</sub>	0.5L	±1.5	0.2	0.2	0.2
0.2I <sub>b</sub>	0.5L	±1.0	0.1	0.2	0.1
0.5I <sub>b</sub>	0.5L	±1.0	0.2	0.1	0.2
I <sub>b</sub>	0.5L	±1.0	0.2	0.2	0.1
0.5I <sub>max</sub>	0.5L	±1.0	0.0	0.1	0.1
I <sub>max</sub>	0.5L	±1.0	0.1	0.0	0.1
0.1I <sub>b</sub>	0.8C	±1.5	0.2	0.1	0.2
0.2I <sub>b</sub>	0.8C	±1.0	0.2	0.2	0.1
0.5I <sub>b</sub>	0.8C	±1.0	0.1	0.0	0.2
I <sub>b</sub>	0.8C	±1.0	0.1	0.1	0.1
I <sub>max</sub>	0.8C	±1.0	0.1	0.2	0.1
Test conclusion			<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

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**B. Error limits of poly meters carrying a single-phase load**

Reference frequency :50Hz Current :5(100)A Reference voltage: 3×230/400V

Phase number	Current	Power factor (cosΦ)	Percentage error limits (%)	Test result (%)		
				№25073400043	№25073400044	№25073400045
A	0.1I <sub>b</sub>	1.0	±2.0	0.0	0.1	0.1
	0.5I <sub>b</sub>	1.0	±2.0	0.1	0.1	0.0
	I <sub>b</sub>	1.0	±2.0	0.0	0.1	0.0
	0.5I <sub>max</sub>	1.0	±2.0	0.1	0.0	0.2
	I <sub>maxx</sub>	1.0	±2.0	0.0	0.1	0.1
	0.2I <sub>b</sub>	0.5L	±2.0	-0.1	0.0	0.0
	0.5I <sub>b</sub>	0.5L	±2.0	0.0	0.1	0.0
	I <sub>b</sub>	0.5L	±2.0	0.1	0.0	0.0
	0.5I <sub>max</sub>	0.5L	±2.0	0.1	0.1	0.1
	I <sub>max</sub>	0.5L	±2.0	0.1	0.0	0.1
B	0.1I <sub>b</sub>	1.0	±2.0	0.0	0.0	0.0
	0.5I <sub>b</sub>	1.0	±2.0	-0.1	0.1	0.0
	I <sub>b</sub>	1.0	±2.0	0.0	-0.1	0.0
	0.5I <sub>max</sub>	1.0	±2.0	0.1	0.0	0.0
	I <sub>maxx</sub>	1.0	±2.0	0.1	-0.1	-0.1
	0.2I <sub>b</sub>	0.5L	±2.0	0.1	0.1	0.0
	0.5I <sub>b</sub>	0.5L	±2.0	-0.1	0.0	0.0
	I <sub>b</sub>	0.5L	±2.0	-0.1	0.0	0.0
	0.5I <sub>max</sub>	0.5L	±2.0	0.0	0.0	-0.1
	I <sub>max</sub>	0.5L	±2.0	0.0	0.0	-0.1
C	0.1I <sub>b</sub>	1.0	±2.0	0.1	0.1	0.0
	0.5I <sub>b</sub>	1.0	±2.0	0.1	-0.1	0.0
	I <sub>b</sub>	1.0	±2.0	0.0	0.1	-0.2
	0.5I <sub>max</sub>	1.0	±2.0	0.2	0.0	0.1
	I <sub>maxx</sub>	1.0	±2.0	0.1	0.0	0.1
	0.2I <sub>b</sub>	0.5L	±2.0	0.0	0.1	0.0
	0.5I <sub>b</sub>	0.5L	±2.0	0.0	-0.1	0.1
	I <sub>b</sub>	0.5L	±2.0	0.1	0.0	-0.1
	0.5I <sub>max</sub>	0.5L	±2.0	0.1	0.0	0.1
	I <sub>max</sub>	0.5L	±2.0	0.1	0.1	0.2
Test conclusion				Pass	Pass	Pass

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Phase number	Current	Power factor (cosΦ)	Percentage error limits (%)	Test result (%)		
				№25073400043	№25073400044	№25073400045
A	0.1I <sub>b</sub>	1.0	±3.0	-0.1	0.0	0.0
	0.5I <sub>b</sub>	1.0	±3.0	0.0	-0.1	-0.1
	I <sub>b</sub>	1.0	±3.0	0.1	0.0	-0.1
	0.5I <sub>max</sub>	1.0	±3.0	-0.1	0.1	-0.1
	I <sub>maxx</sub>	1.0	±3.0	-0.1	0.0	0.0
	0.2I <sub>b</sub>	0.5L	±3.0	-0.1	0.0	0.0
	0.5I <sub>b</sub>	0.5L	±3.0	0.0	0.0	0.0
	I <sub>b</sub>	0.5L	±3.0	0.0	0.0	0.1
	0.5I <sub>max</sub>	0.5L	±3.0	-0.1	-0.1	0.1
	I <sub>max</sub>	0.5L	±3.0	0.0	-0.1	0.1
B	0.1I <sub>b</sub>	1.0	±3.0	0.0	0.0	0.1
	0.5I <sub>b</sub>	1.0	±3.0	-0.2	-0.1	0.0
	I <sub>b</sub>	1.0	±3.0	-0.2	0.0	0.1
	0.5I <sub>max</sub>	1.0	±3.0	0.0	0.0	0.0
	I <sub>maxx</sub>	1.0	±3.0	-0.2	-0.1	-0.1
	0.2I <sub>b</sub>	0.5L	±3.0	-0.1	0.1	-0.1
	0.5I <sub>b</sub>	0.5L	±3.0	-0.1	0.1	0.0
	I <sub>b</sub>	0.5L	±3.0	0.1	0.0	0.0
	0.5I <sub>max</sub>	0.5L	±3.0	0.2	0.0	-0.1
	I <sub>max</sub>	0.5L	±3.0	0.1	0.1	0.0
C	0.1I <sub>b</sub>	1.0	±3.0	0.0	-0.1	-0.2
	0.5I <sub>b</sub>	1.0	±3.0	0.1	-0.1	-0.1
	I <sub>b</sub>	1.0	±3.0	-0.1	0.0	-0.2
	0.5I <sub>max</sub>	1.0	±3.0	-0.2	0.1	-0.1
	I <sub>maxx</sub>	1.0	±3.0	0.0	0.1	-0.1
	0.2I <sub>b</sub>	0.5L	±3.0	0.0	0.0	0.0
	0.5I <sub>b</sub>	0.5L	±3.0	-0.1	-0.1	-0.1
	I <sub>b</sub>	0.5L	±3.0	0.0	-0.1	-0.2
	0.5I <sub>max</sub>	0.5L	±3.0	0.1	0.1	-0.1
	I <sub>max</sub>	0.5L	±3.0	0.2	-0.1	0.0
Test conclusion				Pass	Pass	Pass

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## 2. Test of starting condition

1. Requirement: IEC62053-21:2003 IEC62053-23:2003 IEC62052-11:2003
2. Test method: The meter shall start and continue to register  $0.004I_b$  and  $0.005I_b$ .
3. Test equipment: Meter calibration device ST9001D5 (7131019)
4. Test result:

Reference frequency :50Hz Current :5(100)A Reference voltage:  $3 \times 230/400V$

Power factor ( $\cos\Phi$ )	Current	Test Result		
		№25073400043	№25073400044	№25073400045
1.0	$0.004I_b$	Pass	Pass	Pass
Test conclusion		<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

Power factor ( $\sin\Phi$ )	Current	Test Result		
		№25073400043	№25073400044	№25073400045
1.0	$0.005I_b$	Pass	Pass	Pass
Test conclusion		<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

## 3. Test of no-load conditions

1. Requirement: IEC62053-21:2003 IEC62053-23:2003 IEC62052-11:2003
2. Test method: The current circuit shall be open circuit and a voltage of 115% of the reference voltage shall be applied to the voltage circuits.
3. Test equipment: Meter calibration device ST9001D5 (7131019)
4. Test result:

Power factor:  $\cos\Phi=1.0$  Reference frequency :50Hz Current :5(100)A Reference voltage:  $3 \times 230/400V$

Voltage	Test result		
	№25073400043	№25073400044	№25073400045
115% of the reference voltage	Pass	Pass	Pass
Test conclusion	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>



## 4. Test of meter constant

1. Requirement: IEC62053-21:2003 IEC62053-23:2003 IEC62052-11:2003
2. Test method: It shall be verified that the relation between the test output and the indication on the display complies with the marking on the name-plate.
3. Test equipment: Meter calibration device ST9001D5 (7131019)
4. Test result:

Reference frequency :50Hz Current :5(100)A Reference voltage: 3×230/400V

Power factor (cosΦ)	Test result (imp/kWh)		
	№25073400043	№25073400044	№25073400045
1.0	1000	1000	1000
Test conclusion	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

Power factor (sinΦ)	Test result (imp/kvarh)		
	№25073400043	№25073400044	№25073400045
1.0	1000	1000	1000
Test conclusion	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

## 5. AC voltage tests

1. Requirement: IEC62053-21:2003 IEC62053-23:2003 IEC62052-11:2003
2. Test method: The test voltage shall be substantially sinusoidal, having a frequency between 45Hz and 65Hz, and applied for 1 min. During this test no flashover, disruptive discharge or puncture shall occur.
3. Test equipment: Tester 860A (4540688)
4. Test result:

Test Voltage r.m.s	Test Result		
	№25073400043	№25073400044	№25073400045
Between circuit and earth:4kV	Pass	Pass	Pass
Test conclusion	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>



## 6. Impulse voltage test

1. Requirement: IEC62053-21:2003 IEC62053-23:2003 IEC62052-11:2003
2. Test method: The impulse voltage is applied ten times with one polarity and then repeated with the other polarity. The minimum time between the impulses shall be 3s.
3. Test equipment: Tester XTS-11A (03052)
4. Test result:

Impulse Voltage	Test result		
	№25073400043	№25073400044	№25073400045
Impulse waveform 1.2/50 $\mu$ s, 6kV	Pass	Pass	Pass
$\cos\phi=1.0$ , $I_b$ , error(%)	0.2	0.1	0.2
Test conclusion	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

## 7. Test of ambient temperature influence

1. Requirement: IEC62053-21:2003 IEC62053-23:2003 IEC62052-11:2003
2. Test method: The determination of the mean temperature coefficient for a given temperature shall be made over a temperature range 10K above and 10 K below that temperature, but in no case shall the temperature be outside the specified operating temperature range.
3. Test equipment: High and low temperature test chambers PL-2GT(920218)and Meter calibration device ST9001D5 (7131019)
4. Test result:

Reference frequency :50Hz Current :5(100)A Reference voltage: 3 $\times$ 230/400V

Current	Power factor (cos $\Phi$ )	Temperature (K)	Limits of mean temperature coefficient (%/K)	Test result (%/K)		
				№25073400043	№25073400044	№25073400045
0.1 $I_b$	1.0	-25 $^{\circ}$ C~5 $^{\circ}$ C	0.05	0.012	-0.005	-0.008
$I_b$	1.0		0.05	0.010	0.011	0.007
$I_{max}$	1.0		0.05	0.012	0.010	-0.005
0.2 $I_b$	0.5L		0.07	0.008	-0.005	0.008
$I_b$	0.5L		0.07	-0.014	-0.012	0.010
$I_{max}$	0.5L		0.07	0.007	0.003	0.005
0.1 $I_b$	1.0	-5 $^{\circ}$ C~15 $^{\circ}$ C	0.05	0.010	-0.014	-0.003
$I_b$	1.0		0.05	0.008	0.013	-0.010
$I_{max}$	1.0		0.05	0.013	-0.016	-0.007
0.2 $I_b$	0.5L		0.07	-0.010	0.009	0.012
$I_b$	0.5L		0.07	0.012	0.015	0.006

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$I_{max}$	0.5L	15°C~35°C	0.07	-0.006	-0.007	-0.014
$0.1I_b$	1.0		0.05	0.014	0.012	0.010
$I_b$	1.0		0.05	-0.010	0.005	-0.005
$I_{max}$	1.0		0.05	0.009	-0.003	-0.006
$0.2I_b$	0.5L		0.07	0.012	0.015	0.009
$I_b$	0.5L		0.07	0.009	0.008	-0.008
$I_{max}$	0.5L	35°C~55°C	0.07	0.005	0.012	0.014
$0.1I_b$	1.0		0.05	0.008	-0.012	-0.007
$I_b$	1.0		0.05	-0.011	-0.008	-0.005
$I_{max}$	1.0		0.05	0.009	-0.006	0.004
$0.2I_b$	0.5L		0.07	-0.007	0.013	-0.010
$I_b$	0.5L		0.07	0.012	-0.005	0.004
$I_{max}$	0.5L		0.07	-0.012	0.009	0.008
Test conclusion				<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

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Current	Power factor (sinΦ)	Temperature e (K)	Limits of mean temperature coefficient (%/K)	Test result (%/K)		
				№2507340004 3	№2507340004 4	№2507340004 5
0.1I <sub>b</sub>	1.0	-25°C~-5°C	0.10	-0.007	-0.012	0.009
I <sub>b</sub>	1.0		0.10	0.005	-0.003	0.005
I <sub>max</sub>	1.0		0.10	0.012	-0.010	-0.008
0.2I <sub>b</sub>	0.5L		0.15	0.008	0.007	0.013
I <sub>b</sub>	0.5L		0.15	0.012	-0.012	-0.005
I <sub>max</sub>	0.5L		0.15	-0.008	-0.005	0.010
0.1I <sub>b</sub>	1.0	-5°C~15°C	0.10	0.013	-0.010	-0.004
I <sub>b</sub>	1.0		0.10	0.012	0.012	0.005
I <sub>max</sub>	1.0		0.10	-0.007	0.013	-0.008
0.2I <sub>b</sub>	0.5L		0.15	0.008	0.005	-0.006
I <sub>b</sub>	0.5L		0.15	-0.015	-0.007	-0.007
I <sub>max</sub>	0.5L		0.15	-0.008	-0.008	-0.005
0.1I <sub>b</sub>	1.0	15°C~35°C	0.10	0.008	-0.006	0.004
I <sub>b</sub>	1.0		0.10	0.006	0.008	-0.008
I <sub>max</sub>	1.0		0.10	0.012	-0.006	0.004
0.2I <sub>b</sub>	0.5L		0.15	0.009	0.008	-0.008
I <sub>b</sub>	0.5L		0.15	-0.013	-0.010	0.012
I <sub>max</sub>	0.5L		0.15	0.008	0.007	0.014
0.1I <sub>b</sub>	1.0	35°C~55°C	0.10	-0.007	0.010	-0.008
I <sub>b</sub>	1.0		0.10	0.011	-0.004	0.012
I <sub>max</sub>	1.0		0.10	0.014	-0.007	0.010
0.2I <sub>b</sub>	0.5L		0.15	-0.006	-0.008	-0.009
I <sub>b</sub>	0.5L		0.15	0.012	-0.008	0.007
I <sub>max</sub>	0.5L		0.15	-0.011	0.013	-0.005
Test conclusion				<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

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## 8. Test of influence of self-heating

1. Requirement: IEC62053-21:2003 IEC62053-23:2003 IEC62052-11:2003
2. Test Method: After the voltage circuits have been energized at reference voltage for at least 2h for class 1, without any current in the current circuits, the maximum current shall be applied to the current circuits, the meter error shall be measured at unity power factor immediately after the current is applied.
3. Test Equipment: Meter calibration device ST9001D5 (7131019)
4. Test Result:

Reference frequency :50Hz Current :5(100)A Reference voltage: 3×230/400V

Current	Power factor (cosΦ)	Limits of variation (%)	Maximum change (%)		
			№25073400043	№25073400044	№25073400045
$I_{max}$	1.0	0.7	0.12	0.08	0.10
$I_{max}$	0.5L	1.0	0.11	0.10	0.08
Test conclusion			<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

Current	Power factor (sinΦ)	Limits of variation (%)	Maximum change (%)		
			№25073400043	№25073400044	№25073400045
$I_{max}$	1.0	1.0	0.10	0.08	0.11
$I_{max}$	0.5L	1.5	0.11	0.13	0.12
Test conclusion			<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

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## 9. Test of influence of voltage variation

1. Requirement: IEC62053-21:2003 IEC62053-23:2003 IEC62052-11:2003
2. Test method: Test the variation in percentage errors when voltage variation.
3. Test equipment: Meter calibration device ST9001D5 (7131019)
4. Test result:

Reference frequency :50Hz Current :5(100)A Reference voltage: 3×230/400V

Current	Power factor (cosΦ)	Voltage (V)	Limits of variation (%)	Test result (%)		
				№25073400043	№25073400044	№25073400045
0.05I <sub>b</sub>	1.0	207	0.7	0.09	-0.12	-0.03
I <sub>b</sub>	1.0	207	0.7	-0.07	0.10	0.07
I <sub>max</sub>	1.0	207	0.7	-0.12	0.12	0.12
0.1I <sub>b</sub>	0.5L	207	1.0	0.06	-0.05	-0.05
I <sub>b</sub>	0.5L	207	1.0	-0.05	-0.06	0.10
I <sub>max</sub>	0.5L	207	1.0	-0.08	0.03	0.06
0.05I <sub>b</sub>	1.0	253	0.7	0.04	0.03	0.03
I <sub>b</sub>	1.0	253	0.7	0.08	-0.08	-0.02
I <sub>max</sub>	1.0	253	0.7	-0.03	0.02	-0.04
0.1I <sub>b</sub>	0.5L	253	1.0	0.10	0.11	0.08
I <sub>b</sub>	0.5L	253	1.0	0.06	-0.10	-0.03
I <sub>max</sub>	0.5L	253	1.0	-0.03	0.10	0.07
0.05I <sub>b</sub>	1.0	184	2.1	-0.10	0.10	0.12
I <sub>b</sub>	1.0	184	2.1	-0.03	-0.02	-0.05
I <sub>max</sub>	1.0	184	2.1	0.04	-0.04	-0.03
0.1I <sub>b</sub>	0.5L	184	3.0	-0.07	-0.12	-0.02
I <sub>b</sub>	0.5L	184	3.0	0.07	0.20	-0.05
I <sub>max</sub>	0.5L	184	3.0	0.15	0.11	0.14
0.05I <sub>b</sub>	1.0	264.5	2.1	0.13	-0.02	0.10
I <sub>b</sub>	1.0	264.5	2.1	0.15	-0.12	0.04
I <sub>max</sub>	1.0	264.5	2.1	0.21	0.20	-0.15
0.1I <sub>b</sub>	0.5L	264.5	3.0	0.16	0.13	0.11
I <sub>b</sub>	0.5L	264.5	3.0	0.22	0.11	-0.17
I <sub>max</sub>	0.5L	264.5	3.0	0.18	0.27	0.15
0.05I <sub>b</sub>	1.0	< 184	-100 ~ 10	Pass	Pass	Pass
I <sub>b</sub>	1.0	< 184	-100 ~ 10	Pass	Pass	Pass
I <sub>max</sub>	1.0	< 184	-100 ~ 10	Pass	Pass	Pass
0.1I <sub>b</sub>	0.5L	< 184	-100 ~ 10	Pass	Pass	Pass
I <sub>b</sub>	0.5L	< 184	-100 ~ 10	Pass	Pass	Pass

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$I_{max}$	0.5L	< 184	-100 ~ 10	Pass	Pass	Pass
Test conclusion				<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

qCurrent	Power factor (sinΦ)	Voltage (V)	Limits of variation (%)	Test result (%)		
				№25073400043	№25073400044	№25073400045
0.05I <sub>b</sub>	1.0	207	1.0	0.15	-0.05	0.10
I <sub>b</sub>	1.0	207	1.0	0.03	0.08	-0.05
I <sub>max</sub>	1.0	207	1.0	0.12	0.15	-0.03
0.1I <sub>b</sub>	0.5L	207	1.5	0.10	0.14	-0.12
I <sub>b</sub>	0.5L	207	1.5	-0.08	0.07	-0.08
I <sub>max</sub>	0.5L	207	1.5	0.13	0.08	-0.12
0.05I <sub>b</sub>	1.0	253	1.0	-0.10	-0.14	-0.08
I <sub>b</sub>	1.0	253	1.0	0.21	-0.03	-0.14
I <sub>max</sub>	1.0	253	1.0	-0.16	0.08	0.09
0.1I <sub>b</sub>	0.5L	253	1.5	0.09	0.15	0.05
I <sub>b</sub>	0.5L	253	1.5	-0.17	-0.11	-0.12
I <sub>max</sub>	0.5L	253	1.5	-0.04	0.13	0.09
0.05I <sub>b</sub>	1.0	184	3.0	0.05	0.15	-0.12
I <sub>b</sub>	1.0	184	3.0	-0.10	-0.13	-0.18
I <sub>max</sub>	1.0	184	3.0	0.14	-0.20	-0.01
0.1I <sub>b</sub>	0.5L	184	4.5	0.05	-0.08	-0.05
I <sub>b</sub>	0.5L	184	4.5	0.13	0.10	-0.09
I <sub>max</sub>	0.5L	184	4.5	0.12	0.10	-0.05
0.05I <sub>b</sub>	1.0	264.5	3.0	0.14	0.13	-0.12
I <sub>b</sub>	1.0	264.5	3.0	0.13	0.08	-0.10
I <sub>max</sub>	1.0	264.5	3.0	0.10	-0.12	0.10
0.1I <sub>b</sub>	0.5L	264.5	4.5	0.12	0.21	-0.08
I <sub>b</sub>	0.5L	264.5	4.5	0.28	-0.10	0.15
I <sub>max</sub>	0.5L	264.5	4.5	0.33	0.28	0.30
0.05I <sub>b</sub>	1.0	< 184	-100 ~ 10	Pass	Pass	Pass
I <sub>b</sub>	1.0	< 184	-100 ~ 10	Pass	Pass	Pass
I <sub>max</sub>	1.0	< 184	-100 ~ 10	Pass	Pass	Pass
0.1I <sub>b</sub>	0.5L	< 184	-100 ~ 10	Pass	Pass	Pass
I <sub>b</sub>	0.5L	< 184	-100 ~ 10	Pass	Pass	Pass
I <sub>max</sub>	0.5L	< 184	-100 ~ 10	Pass	Pass	Pass
Test conclusion				<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

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## 10. Test of influence of frequency variation

1. Requirement: IEC62053-21:2003 IEC62053-23:2003 IEC62052-11:2003
2. Test method: Test the variation in percentage errors when frequency variation at  $\pm 2\%$ .
3. Test equipment: Meter calibration device ST9001D5 (7131019)
4. Test result:

Reference frequency :50Hz Current :5(100)A Reference voltage: 3×230/400V

Current	Power factor (cosΦ)	Frequency (Hz)	Limits of variation (%)	Test result (%)		
				№25073400043	№25073400044	№25073400045
0.05I <sub>b</sub>	1.0	49	0.5	0.07	0.05	0.12
I <sub>b</sub>	1.0	49	0.5	-0.02	0.10	0.03
I <sub>max</sub>	1.0	49	0.5	-0.06	-0.05	0.10
0.1I <sub>b</sub>	0.5L	49	0.7	-0.05	-0.06	-0.04
I <sub>b</sub>	0.5L	49	0.7	0.08	0.08	0.09
I <sub>max</sub>	0.5L	49	0.7	-0.02	0.10	-0.08
0.05I <sub>b</sub>	1.0	51	0.5	0.04	0.12	0.05
I <sub>b</sub>	1.0	51	0.5	0.08	-0.04	0.08
I <sub>max</sub>	1.0	51	0.5	-0.09	0.10	0.13
0.1I <sub>b</sub>	0.5L	51	0.7	0.08	-0.03	0.10
I <sub>b</sub>	0.5L	51	0.7	0.10	0.04	0.05
I <sub>max</sub>	0.5L	51	0.7	-0.03	0.02	0.06
Test conclusion				<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

Current	Power factor (sinΦ)	Frequency (Hz)	Limits of variation (%)	Test result (%)		
				№25073400043	№25073400044	№25073400045
0.05I <sub>b</sub>	1.0	49	2.5	0.04	-0.08	0.04
I <sub>b</sub>	1.0	49	2.5	0.10	-0.03	0.05
I <sub>max</sub>	1.0	49	2.5	0.08	0.02	-0.01
0.1I <sub>b</sub>	0.5L	49	2.5	-0.12	0.03	0.05
I <sub>b</sub>	0.5L	49	2.5	0.06	-0.10	0.06
I <sub>max</sub>	0.5L	49	2.5	-0.03	0.03	0.04
0.05I <sub>b</sub>	1.0	51	2.5	0.10	0.05	-0.10
I <sub>b</sub>	1.0	51	2.5	-0.05	-0.10	0.03
I <sub>max</sub>	1.0	51	2.5	-0.01	-0.01	0.03
0.1I <sub>b</sub>	0.5L	51	2.5	0.12	0.06	0.07
I <sub>b</sub>	0.5L	51	2.5	0.12	0.09	-0.10

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$I_{max}$	0.5L	51	2.5	-0.06	0.08	0.12
Test conclusion				<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

## 11. Test of magnetic induction of external origin (0.5mT)

- Requirement: IEC62053-21:2003 IEC62053-23:2003 IEC62052-11:2003
- Test method: A magnetic induction of external origin of 0.5mT produced by a current of the same frequency as that of the voltage applied to the meter and under the most unfavorable conditions of phase and direction shall not cause a variation in the percentage error of the meter exceeding limits of variation.
- Test equipment: Meter calibration device ST9001D5 (7131019) and External magnetic field test bench ZHZ26A(09021)
- Test result:

 Reference frequency :50Hz Current :5(100)A Reference voltage:  $3 \times 230/400V$ 

Current	Power factor (cosΦ)	Direction of magnetic		Limits of variation (%)	Test result (%)		
					№25073400043	№25073400044	№25073400045
$I_b$	1.0	Upright	Same phase	2.0	0.12	0.03	0.10
			60°	2.0	0.03	0.08	-0.08
		Parallel	Same phase	2.0	0.10	0.08	0.10
			60°	2.0	0.08	0.07	0.11
Test conclusion					<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

Current	Power factor (sinΦ)	Direction of magnetic		Limits of variation (%)	Test result (%)		
					№25073400043	№25073400044	№25073400045
$I_b$	1.0	Upright	Same phase	3.0	0.12	0.08	0.07
			60°	3.0	0.10	0.05	0.15
		Parallel	Same phase	3.0	0.06	0.10	0.11
			60°	3.0	0.12	0.12	0.05
Test conclusion					<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

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## 12. Test of the influence of harmonics

1. Requirement: IEC62053-21:2003 IEC62053-23:2003 IEC62052-11:2003
2. Test method: Test the variation in percentage errors at power with harmonic.
3. Test equipment: Meter calibration device ST9001D5 (7131019)
4. Test result:

Reference frequency :50Hz Current :5(100)A Reference voltage: 3×230/400V

Influence quantity	Current	Power factor (cosΦ)	Limits of variation (%)	Test result (%)		
				№25073400043	№25073400044	№25073400045
Harmonic components in the current and voltage circuits	$0.5I_{max}$	1.0	0.8	0.10	-0.05	0.06
odd-harmonics in the A.C. Current circuit	$0.5I_b$	1.0	3.0	0.07	0.06	0.09
Sub-harmonics in the A.C. Current circuit	$0.5I_b$	1.0	3.0	0.14	-0.06	-0.12
DC and even harmonics in the current circuit	$\frac{I_{max}}{\sqrt{2}}$	1.0	3.0	0.35	0.32	0.40
Test conclusion				<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

Influence quantity	Current	Power factor (sinΦ)	Limits of variation (%)	Test result (%)		
				№25073400043	№25073400044	№25073400045
DC and even harmonics in the current circuit	$\frac{I_{max}}{\sqrt{2}}$	1.0	6.0	0.40	0.38	0.35
Test conclusion				<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

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### 13. Test of influence of short time over currents

1. Requirement: IEC62053-21:2003 IEC62053-23:2003 IEC62052-11:2003
2. Test method: After the application of the short- time over current, the meter shall perform correctly when back to its initial working.
3. Test equipment: Pulse current test bench XTS-12D(03017) and Meter calibration device ST9001D5 (7131019)
4. Test result:

Reference frequency :50Hz Current :5(100)A Reference voltage: 3×230/400V

Current	Power factor (cosΦ)	Limits of variation (%)	Test result (%)		
			№25073400043	№25073400044	№25073400045
$I_b$	1.0	1.5	0.12	0.11	0.15
Test conclusion			<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

Current	Power factor (sinΦ)	Limits of variation (%)	Test result (%)		
			№25073400043	№25073400044	№25073400045
$I_b$	1.0	1.5	0.14	0.21	0.15
Test conclusion			<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

### 14. Spring hammer test

1. Requirement: IEC62053-21:2003 IEC62053-23:2003 IEC62052-11:2003
2. Test method: The meter shall be mounted in its normal working position and the spring hammer shall act on the outer surfaces of the meter cover (including windows) and on the terminal cover with a kinetic energy of  $0.2J \pm 0.02J$ .
3. Test equipment: Impact test bench TY2(027)
4. Test result:

Test part	Test requirement	Test result		
		№25073400043	№25073400044	№25073400045
Outside surface	No damage	Pass	Pass	Pass
Terminal cover	No damage	Pass	Pass	Pass
Test conclusion		<b>Pass</b>	<b>Pass</b>	<b>Pass</b>



## 15. Test of resistance to heat and fire

1. Requirement: IEC62053-21:2003 IEC62053-23:2003 IEC62052-11:2003
2. Test method: The contact with the glow wire may occur at any random location.If the terminal block is integral with the meter base,It is sufficient to carry out the test only on the terminal block.
3. Test equipment: Hot wire test device ZHZ13 (35093)
4. Test result:

Location	Temperature (°C)	Requirement	Test result		
			№25073400043	№25073400044	№25073400045
Terminal block	960	No burn	Pass	Pass	Pass
Terminal Cover	650	No burn	Pass	Pass	Pass
Case	650	No burn	Pass	Pass	Pass
Test conclusion			<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

## 16. Test of power consumption

1. Requirement: IEC62053-21:2003 IEC62053-23:2003 IEC62052-11:2003
2. Test method: The power consumption in the voltage and current circuit at reference values of the influence quantities.
3. Test equipment: Low power factor wattmeter D5-W (20149) and DMM 7150(303645)
4. Test result:

Power factor: cosΦ=1.0 Reference frequency :50Hz Current :5(100)A Reference voltage: 3×230/400V

Test item	Specified range of power consumption (active)		Test result (%)		
			№25073400043	№25073400044	№25073400045
Voltage circuit	A	2 W	0.71W	0.70W	0.70W
		10VA	2.39VA	2.39VA	2.37VA
	B	2 W	0.72W	0.71W	0.71W
		10VA	2.41VA	2.40VA	2.42VA
	C	2 W	0.71W	0.72W	0.72W
		10VA	2.39VA	2.39VA	2.38VA
Current circuit	A	4VA	0.01VA	0.01VA	0.01VA
	B	4VA	0.01VA	0.01VA	0.01VA
	C	4VA	0.01VA	0.01VA	0.01VA
Test conclusion			<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

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## 17. Test of influence of heating

1. Requirement: IEC62053-21:2003 IEC62053-23:2003 IEC62052-11:2003
2. Test method: With each current circuit of the meter carrying maximum current and with each voltage circuit carrying 1.15 times the reference voltage, the temperature rise of the external surface shall not exceed 25K, with an ambient temperature of 40°C.
3. Test equipment: Digital thermometer WMY-01(212)
4. Test result:

Power factor:cosΦ =1.0 Voltage:3×264.5V Reference frequency:50Hz Current:100A  
 Temperature :40°C

Test temperature arise part	Limits of temperature rise (K)	Test result (K)		
		№25073400043	№25073400044	№25073400045
Outside surface of cover	25	6	6	5
Test conclusion		<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

## 18. Damp heat cyclic test

1. Requirement: IEC62053-21:2003 IEC62053-23:2003 IEC62052-11: 2003
2. Test method: After damp heat cyclic test, the meter shall show no damage or change of the information and shall operate correctly.
3. Test equipment: Damp heat cyclic test chambers SETH-101U/P(634003) and Meter calibration device ST9001D5 (7131019)
4. Test result:

Reference frequency :50Hz Current :5(100)A Reference voltage: 3×230/400V

Current	Power factor (cosΦ)	Percentage error limits (%)	Test result (%)		
			№25073400043	№25073400044	№25073400045
0.05I <sub>b</sub>	1.0	±1.5	0.1	0.1	0.1
I <sub>b</sub>	1.0	±1.0	0.1	0.0	0.2
I <sub>max</sub>	1.0	±1.0	0.2	0.1	0.1
0.1I <sub>b</sub>	0.5L	±1.5	0.1	0.2	0.0
I <sub>b</sub>	0.5L	±1.0	0.0	0.1	0.0
I <sub>max</sub>	0.5L	±1.0	0.1	0.1	0.0
0.1I <sub>b</sub>	0.8C	±1.5	0.1	0.1	0.2
I <sub>b</sub>	0.8C	±1.0	0.0	0.2	0.0
I <sub>max</sub>	0.8C	±1.0	0.0	0.1	0.2
Test conclusion			<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

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Current	Power factor (sinΦ)	Percentage error limits (%)	Test result (%)		
			№25073400043	№25073400044	№25073400045
0.05 $I_b$	1.0	±2.5	0.0	0.1	0.1
$I_b$	1.0	±2.0	0.1	0.2	0.2
$I_{max}$	1.0	±2.0	0.1	0.1	0.2
0.1 $I_b$	0.5L	±2.5	0.2	0.1	0.1
$I_b$	0.5L	±2.0	0.1	0.2	0.0
$I_{max}$	0.5L	±2.0	0.1	-0.1	0.2
0.2 $I_b$	0.25L	±2.5	0.2	-0.1	0.0
$I_b$	0.25L	±2.5	0.3	0.1	0.0
$I_{max}$	0.25L	±2.5	0.2	0.2	0.1
Test conclusion			<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

**B. Error limits of poly meters carrying a single-phase load**

Reference frequency :50Hz Current :5(100)A Reference voltage: 3×230/400V

Phase number	Current	Power factor (cosΦ)	Percentage error limits (%)	Test result (%)		
				№2507340004 3	№2507340004 4	№2507340004 5
A	0.1 $I_b$	1.0	±2.0	0.1	0.1	0.0
	$I_b$	1.0	±2.0	0.2	0.1	0.0
	$I_{max}$	1.0	±2.0	0.1	0.2	0.2
	0.2 $I_b$	0.5L	±2.0	-0.2	0.2	0.0
	$I_b$	0.5L	±2.0	-0.1	0.1	0.2
	$I_{max}$	0.5L	±2.0	-0.1	0.0	0.1
B	0.1 $I_b$	1.0	±2.0	-0.2	0.1	0.0
	$I_b$	1.0	±2.0	0.0	-0.1	0.0
	$I_{max}$	1.0	±2.0	0.1	-0.1	0.0
	0.2 $I_b$	0.5L	±2.0	0.2	0.0	-0.1
	$I_b$	0.5L	±2.0	0.0	-0.1	-0.1
	$I_{max}$	0.5L	±2.0	0.0	0.1	-0.1
C	0.1 $I_b$	1.0	±2.0	-0.1	0.2	0.0
	$I_b$	1.0	±2.0	0.0	0.1	-0.1
	$I_{max}$	1.0	±2.0	0.2	0.0	0.0
	0.2 $I_b$	0.5L	±2.0	0.1	0.1	0.0
	$I_b$	0.5L	±2.0	0.2	0.2	-0.1
	$I_{max}$	0.5L	±2.0	0.1	-0.1	-0.1
Test conclusion				<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

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Phase number	Current	Power factor (cosΦ)	Percentage error limits (%)	Test result (%)		
				№2507340004 3	№2507340004 4	№2507340004 5
A	0.1I <sub>b</sub>	1.0	±3.0	-0.2	-0.1	0.0
	I <sub>b</sub>	1.0	±3.0	-0.1	-0.1	-0.2
	I <sub>maxx</sub>	1.0	±3.0	-0.1	-0.1	-0.1
	0.2I <sub>b</sub>	0.5L	±3.0	0.0	0.0	0.0
	I <sub>b</sub>	0.5L	±3.0	-0.1	0.2	0.1
	I <sub>max</sub>	0.5L	±3.0	-0.1	0.0	0.2
B	0.1I <sub>b</sub>	1.0	±3.0	0.0	0.1	-0.1
	I <sub>b</sub>	1.0	±3.0	-0.1	0.0	0.1
	I <sub>maxx</sub>	1.0	±3.0	0.0	0.1	-0.1
	0.2I <sub>b</sub>	0.5L	±3.0	-0.1	0.2	0.1
	I <sub>b</sub>	0.5L	±3.0	-0.2	0.0	0.0
	I <sub>max</sub>	0.5L	±3.0	-0.1	-0.1	0.1
C	0.1I <sub>b</sub>	1.0	±3.0	0.0	-0.1	-0.2
	I <sub>b</sub>	1.0	±3.0	-0.1	0.0	-0.1
	I <sub>maxx</sub>	1.0	±3.0	-0.1	-0.1	-0.2
	0.2I <sub>b</sub>	0.5L	±3.0	-0.2	-0.2	0.0
	I <sub>b</sub>	0.5L	±3.0	0.1	-0.1	0.0
	I <sub>max</sub>	0.5L	±3.0	0.2	-0.1	-0.2
Test conclusion				<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

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## 19. Vibration test

1. Requirement: IEC62053-21:2003 IEC62053-23:2003 IEC62052-11:2003
2. Test method: The meter shall show no damage or change of the information and shall operate correctly in accordance with the requirements of this standard after the test.
3. Test equipment: Vibration test bench D-1000-5(920407)and Meter calibration device ST9001D5 (7131019)
4. Test result:

Reference frequency :50Hz Current :5(100)A Reference voltage: 3×230/400V

Current	Power factor (cosΦ)	Percentage error limits (%)	Test result (%)		
			No25073400043	No25073400044	No25073400045
0.05I <sub>b</sub>	1.0	±1.5	0.1	0.0	0.0
I <sub>b</sub>	1.0	±1.0	0.2	-0.1	0.1
I <sub>max</sub>	1.0	±1.0	0.1	0.0	0.1
0.1I <sub>b</sub>	0.5L	±1.5	0.1	0.2	0.2
I <sub>b</sub>	0.5L	±1.0	0.2	0.1	0.1
I <sub>max</sub>	0.5L	±1.0	0.1	0.1	0.0
0.1I <sub>b</sub>	0.8C	±1.5	-0.1	0.1	0.1
I <sub>b</sub>	0.8C	±1.0	0.1	0.0	-0.1
I <sub>max</sub>	0.8C	±1.0	0.1	0.1	0.2
Test conclusion			<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

Current	Power factor (sinΦ)	Percentage error limits (%)	Test result (%)		
			No25073400043	No25073400044	No25073400045
0.05 I <sub>b</sub>	1.0	±2.5	0.2	0.2	0.1
I <sub>b</sub>	1.0	±2.0	0.1	0.1	-0.1
I <sub>max</sub>	1.0	±2.0	0.2	-0.1	0.1
0.1 I <sub>b</sub>	0.5L	±2.5	0.1	0.1	0.2
I <sub>b</sub>	0.5L	±2.0	0.2	0.1	0.0
I <sub>max</sub>	0.5L	±2.0	0.2	0.1	0.0
0.2 I <sub>b</sub>	0.25L	±2.5	0.2	-0.1	0.1
I <sub>b</sub>	0.25L	±2.5	0.0	0.1	0.2
I <sub>max</sub>	0.25L	±2.5	0.1	0.0	0.1
Test conclusion			<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

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报告编号: HYI202510230A1151

**B. Error limits of poly meters carrying a single-phase load**

Reference frequency :50Hz Current :5(100)A Reference voltage: 3×230/400V

Phase number	Current	Power factor (cosΦ)	Percentage error limits (%)	Test result (%)		
				No2507340004 3	No2507340004 4	No2507340004 5
A	0.1I <sub>b</sub>	1.0	±2.0	0.1	0.1	0.2
	I <sub>b</sub>	1.0	±2.0	0.2	0.1	0.0
	I <sub>maxx</sub>	1.0	±2.0	0.1	0.2	0.2
	0.2I <sub>b</sub>	0.5L	±2.0	-0.1	0.1	0.1
	I <sub>b</sub>	0.5L	±2.0	-0.1	0.0	0.1
	I <sub>max</sub>	0.5L	±2.0	-0.1	0.1	0.1
B	0.1I <sub>b</sub>	1.0	±2.0	-0.2	-0.1	0.0
	I <sub>b</sub>	1.0	±2.0	0.1	0.0	0.1
	I <sub>maxx</sub>	1.0	±2.0	0.1	0.1	0.2
	0.2I <sub>b</sub>	0.5L	±2.0	0.0	0.0	0.0
	I <sub>b</sub>	0.5L	±2.0	0.1	-0.2	0.0
	I <sub>max</sub>	0.5L	±2.0	0.0	0.0	-0.1
C	0.1I <sub>b</sub>	1.0	±2.0	-0.1	0.0	0.0
	I <sub>b</sub>	1.0	±2.0	0.2	0.1	-0.1
	I <sub>maxx</sub>	1.0	±2.0	0.0	0.2	0.0
	0.2I <sub>b</sub>	0.5L	±2.0	0.0	0.2	0.0
	I <sub>b</sub>	0.5L	±2.0	0.0	0.1	-0.1
	I <sub>max</sub>	0.5L	±2.0	-0.1	-0.1	-0.1
Test conclusion				<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

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Phase number	Current	Power factor (cosΦ)	Percentage error limits (%)	Test result (%)		
				№2507340004 3	№2507340004 4	№2507340004 5
A	$0.1I_b$	1.0	±3.0	-0.2	-0.1	0.0
	$I_b$	1.0	±3.0	-0.2	-0.2	-0.1
	$I_{maxx}$	1.0	±3.0	-0.1	-0.1	-0.2
	$0.2I_b$	0.5L	±3.0	0.1	-0.1	0.0
	$I_b$	0.5L	±3.0	0.0	0.0	0.1
	$I_{max}$	0.5L	±3.0	0.1	0.0	0.1
B	$0.1I_b$	1.0	±3.0	0.0	0.2	-0.2
	$I_b$	1.0	±3.0	-0.2	-0.1	0.0
	$I_{maxx}$	1.0	±3.0	-0.1	0.0	-0.1
	$0.2I_b$	0.5L	±3.0	-0.1	0.0	-0.1
	$I_b$	0.5L	±3.0	-0.2	0.1	0.0
	$I_{max}$	0.5L	±3.0	-0.1	-0.1	0.1
C	$0.1I_b$	1.0	±3.0	-0.1	0.0	-0.2
	$I_b$	1.0	±3.0	-0.2	0.0	-0.1
	$I_{maxx}$	1.0	±3.0	-0.1	-0.1	-0.2
	$0.2I_b$	0.5L	±3.0	-0.1	0.2	0.0
	$I_b$	0.5L	±3.0	0.2	-0.1	0.2
	$I_{max}$	0.5L	±3.0	0.0	-0.1	-0.1
Test conclusion				<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

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## 20. Shock test

1. Requirement: IEC62053-21:2003 IEC62053-23:2003 IEC62052-11:2003
2. Test method: The meter shall show no damage or change of the information and shall operate correctly in accordance with the requirements of this standard after the test.
3. Test equipment: Shock test bench CP-100(120807)and Meter calibration device ST9001D5 (7131019)
4. Test result:

Reference frequency :50Hz Current :5(100)A Reference voltage: 3×230/400V

Current	Power factor (cosΦ)	Percentage error limits (%)	Test result (%)		
			No25073400043	No25073400044	No25073400045
0.05I <sub>b</sub>	1.0	±1.5	0.2	0.2	0.0
I <sub>b</sub>	1.0	±1.0	0.1	-0.1	-0.1
I <sub>max</sub>	1.0	±1.0	0.1	0.0	0.2
0.1I <sub>b</sub>	0.5L	±1.5	0.0	0.0	0.0
I <sub>b</sub>	0.5L	±1.0	-0.1	0.1	0.1
I <sub>max</sub>	0.5L	±1.0	0.1	0.2	0.0
0.1I <sub>b</sub>	0.8C	±1.5	-0.2	0.0	0.2
I <sub>b</sub>	0.8C	±1.0	0.1	0.0	-0.1
I <sub>max</sub>	0.8C	±1.0	0.1	0.1	-0.1
Test conclusion			<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

Current	Power factor (sinΦ)	Percentage error limits (%)	Test result (%)		
			No25073400043	No25073400044	No25073400045
0.05 I <sub>b</sub>	1.0	±2.5	0.1	0.2	0.1
I <sub>b</sub>	1.0	±2.0	0.2	-0.1	-0.1
I <sub>max</sub>	1.0	±2.0	0.1	-0.1	0.2
0.1 I <sub>b</sub>	0.5L	±2.5	0.1	0.1	0.1
I <sub>b</sub>	0.5L	±2.0	0.0	0.0	0.1
I <sub>max</sub>	0.5L	±2.0	0.1	0.1	0.0
0.2 I <sub>b</sub>	0.25L	±2.5	0.2	-0.1	0.0
I <sub>b</sub>	0.25L	±2.5	0.1	0.1	0.2
I <sub>max</sub>	0.25L	±2.5	0.2	0.0	0.1
Test conclusion			<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

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**B. Error limits of poly meters carrying a single-phase load**

Reference frequency :50Hz Current :5(100)A Reference voltage: 3×230/400V

Phase number	Current	Power factor (cosΦ)	Percentage error limits (%)	Test result (%)		
				№25073400043	№25073400044	№25073400045
A	0.1I <sub>b</sub>	1.0	±2.0	0.0	0.1	0.0
	I <sub>b</sub>	1.0	±2.0	-0.2	0.1	0.1
	I <sub>maxx</sub>	1.0	±2.0	-0.1	0.2	0.0
	0.2I <sub>b</sub>	0.5L	±2.0	-0.2	0.0	0.1
	I <sub>b</sub>	0.5L	±2.0	-0.1	0.0	0.2
	I <sub>max</sub>	0.5L	±2.0	-0.1	0.2	0.1
B	0.1I <sub>b</sub>	1.0	±2.0	0.0	-0.1	0.0
	I <sub>b</sub>	1.0	±2.0	0.1	-0.1	0.0
	I <sub>maxx</sub>	1.0	±2.0	0.1	-0.1	0.1
	0.2I <sub>b</sub>	0.5L	±2.0	0.0	0.0	0.1
	I <sub>b</sub>	0.5L	±2.0	-0.1	-0.2	0.0
	I <sub>max</sub>	0.5L	±2.0	0.0	0.0	-0.1
C	0.1I <sub>b</sub>	1.0	±2.0	-0.1	0.1	0.0
	I <sub>b</sub>	1.0	±2.0	0.2	0.0	-0.1
	I <sub>maxx</sub>	1.0	±2.0	0.0	0.1	0.0
	0.2I <sub>b</sub>	0.5L	±2.0	0.2	0.0	0.2
	I <sub>b</sub>	0.5L	±2.0	0.0	0.2	-0.1
	I <sub>max</sub>	0.5L	±2.0	-0.2	0.0	-0.1
Test conclusion				<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

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Phase number	Current	Power factor (cosΦ)	Percentage error limits (%)	Test result (%)		
				№25073400043	№25073400044	№25073400045
A	0.1I <sub>b</sub>	1.0	±3.0	-0.1	-0.1	0.0
	I <sub>b</sub>	1.0	±3.0	-0.2	-0.1	-0.1
	I <sub>maxx</sub>	1.0	±3.0	-0.1	0.1	-0.2
	0.2I <sub>b</sub>	0.5L	±3.0	0.2	0.1	0.0
	I <sub>b</sub>	0.5L	±3.0	-0.2	0.1	0.1
	I <sub>max</sub>	0.5L	±3.0	-0.1	0.0	0.2
B	0.1I <sub>b</sub>	1.0	±3.0	0.0	0.0	-0.2
	I <sub>b</sub>	1.0	±3.0	-0.2	-0.1	0.0
	I <sub>maxx</sub>	1.0	±3.0	-0.1	0.2	-0.1
	0.2I <sub>b</sub>	0.5L	±3.0	-0.1	0.0	0.1
	I <sub>b</sub>	0.5L	±3.0	-0.1	0.0	0.0
	I <sub>max</sub>	0.5L	±3.0	0.0	-0.1	0.1
C	0.1I <sub>b</sub>	1.0	±3.0	-0.1	-0.1	-0.2
	I <sub>b</sub>	1.0	±3.0	0.0	0.0	-0.1
	I <sub>maxx</sub>	1.0	±3.0	0.1	-0.2	-0.2
	0.2I <sub>b</sub>	0.5L	±3.0	-0.1	-0.2	0.0
	I <sub>b</sub>	0.5L	±3.0	0.2	-0.1	0.1
	I <sub>max</sub>	0.5L	±3.0	0.0	0.1	-0.1
Test conclusion				<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

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## 21. Dry heat test

1. Requirement: IEC62053-21:2003 IEC62053-23:2003 IEC62052-11:2003
2. Test method: After dry heat test, the meter shall show no damage or change of the information and shall operate correctly .
3. Test equipment: High and low temperature test chambers PL-2G(920218)and Meter calibration device ST9001D5 (7131019)
4. Test result:

Reference frequency :50Hz Current :5(100)A Reference voltage: 230V

Current	Power factor (cosΦ)	Percentage error limits (%)	Test result (%)		
			№25073400043	№25073400044	№25073400045
0.05I <sub>b</sub>	1.0	±1.5	0.2	0.1	0.2
I <sub>b</sub>	1.0	±1.0	0.1	0.2	-0.1
I <sub>max</sub>	1.0	±1.0	0.1	0.1	0.2
0.1I <sub>b</sub>	0.5L	±1.5	0.1	0.2	0.1
I <sub>b</sub>	0.5L	±1.0	-0.1	0.2	0.2
I <sub>max</sub>	0.5L	±1.0	0.1	0.1	0.0
0.1I <sub>b</sub>	0.8C	±1.5	0.0	0.2	0.2
I <sub>b</sub>	0.8C	±1.0	0.2	0.1	0.1
I <sub>max</sub>	0.8C	±1.0	0.0	0.2	-0.1
Test conclusion			<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

Current	Power factor (sinΦ)	Percentage error limits (%)	Test result (%)		
			№25073400043	№25073400044	№25073400045
0.05 I <sub>b</sub>	1.0	±2.5	0.0	0.1	0.0
I <sub>b</sub>	1.0	±2.0	0.0	0.0	0.2
I <sub>max</sub>	1.0	±2.0	0.1	-0.1	0.1
0.1 I <sub>b</sub>	0.5L	±2.5	0.1	0.0	0.1
I <sub>b</sub>	0.5L	±2.0	0.2	0.0	0.1
I <sub>max</sub>	0.5L	±2.0	0.0	0.2	0.2
0.2 I <sub>b</sub>	0.25L	±2.5	0.2	0.3	0.2
I <sub>b</sub>	0.25L	±2.5	0.1	0.2	0.0
I <sub>max</sub>	0.25L	±2.5	0.2	0.1	0.1
Test conclusion			<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

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报告编号: HYI202510230A1151

**B. Error limits of poly meters carrying a single-phase load**

Reference frequency :50Hz Current :5(100)A Reference voltage: 3×230/400V

Phase number	Current	Power factor (cosΦ)	Percentage error limits (%)	Test result (%)		
				№25073400043	№25073400044	№25073400045
A	0.1I <sub>b</sub>	1.0	±2.0	0.1	0.1	0.0
	I <sub>b</sub>	1.0	±2.0	-0.1	0.1	0.2
	I <sub>maxx</sub>	1.0	±2.0	0.2	0.2	0.3
	0.2I <sub>b</sub>	0.5L	±2.0	0.0	0.0	0.1
	I <sub>b</sub>	0.5L	±2.0	-0.1	0.0	0.0
	I <sub>max</sub>	0.5L	±2.0	-0.1	0.1	0.2
B	0.1I <sub>b</sub>	1.0	±2.0	-0.1	0.2	0.0
	I <sub>b</sub>	1.0	±2.0	0.2	-0.1	0.0
	I <sub>maxx</sub>	1.0	±2.0	0.1	-0.1	0.0
	0.2I <sub>b</sub>	0.5L	±2.0	0.2	0.0	0.2
	I <sub>b</sub>	0.5L	±2.0	-0.1	-0.1	0.1
	I <sub>max</sub>	0.5L	±2.0	0.0	0.2	-0.1
C	0.1I <sub>b</sub>	1.0	±2.0	-0.1	0.2	0.0
	I <sub>b</sub>	1.0	±2.0	0.2	0.2	-0.1
	I <sub>maxx</sub>	1.0	±2.0	0.3	0.0	0.0
	0.2I <sub>b</sub>	0.5L	±2.0	0.0	0.0	0.0
	I <sub>b</sub>	0.5L	±2.0	0.3	0.1	-0.1
	I <sub>max</sub>	0.5L	±2.0	-0.1	0.2	-0.1
Test conclusion				<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

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Phase number	Current	Power factor (cosΦ)	Percentage error limits (%)	Test result (%)		
				№25073400043	№25073400044	№25073400045
A	0.1I <sub>b</sub>	1.0	±3.0	-0.2	-0.1	0.0
	I <sub>b</sub>	1.0	±3.0	0.0	-0.1	-0.1
	I <sub>maxx</sub>	1.0	±3.0	-0.1	-0.1	-0.2
	0.2I <sub>b</sub>	0.5L	±3.0	0.0	0.1	0.2
	I <sub>b</sub>	0.5L	±3.0	-0.1	0.2	0.1
	I <sub>max</sub>	0.5L	±3.0	-0.1	0.0	0.1
B	0.1I <sub>b</sub>	1.0	±3.0	0.0	0.0	-0.2
	I <sub>b</sub>	1.0	±3.0	-0.2	-0.1	0.0
	I <sub>maxx</sub>	1.0	±3.0	-0.2	0.0	-0.1
	0.2I <sub>b</sub>	0.5L	±3.0	0.0	0.0	0.1
	I <sub>b</sub>	0.5L	±3.0	0.1	0.0	0.0
	I <sub>max</sub>	0.5L	±3.0	-0.1	-0.1	0.1
C	0.1I <sub>b</sub>	1.0	±3.0	0.0	-0.1	-0.2
	I <sub>b</sub>	1.0	±3.0	-0.1	0.0	-0.1
	I <sub>maxx</sub>	1.0	±3.0	0.1	-0.2	-0.1
	0.2I <sub>b</sub>	0.5L	±3.0	0.2	-0.2	-0.1
	I <sub>b</sub>	0.5L	±3.0	0.0	-0.1	0.0
	I <sub>max</sub>	0.5L	±3.0	0.0	-0.2	-0.2
Test conclusion				<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

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## 22. Cold test

1. Requirement: IEC62053-21:2003 IEC62053-23:2003 IEC62052-11:2003
2. Test method: After cold test, the meter shall show no damage or change of the information and shall operate correctly.
3. Test equipment: High and low temperature test chambers PL-2G(920218)and Meter calibration device ST9001D5 (7131019)
4. Test result:

Reference frequency :50Hz Current :5(100)A Reference voltage: 3×230/400V

Current	Power factor (cosΦ)	Percentage error limits (%)	Test result (%)		
			No25073400043	No25073400044	No25073400045
0.05I <sub>b</sub>	1.0	±1.5	0.0	0.1	0.2
I <sub>b</sub>	1.0	±1.0	0.2	0.1	0.0
I <sub>max</sub>	1.0	±1.0	0.1	0.0	0.2
0.1I <sub>b</sub>	0.5L	±1.5	0.0	0.2	0.0
I <sub>b</sub>	0.5L	±1.0	0.2	0.1	0.0
I <sub>max</sub>	0.5L	±1.0	0.1	0.1	0.1
0.1I <sub>b</sub>	0.8C	±1.5	0.0	0.0	0.2
I <sub>b</sub>	0.8C	±1.0	0.1	0.1	-0.1
I <sub>max</sub>	0.8C	±1.0	0.1	0.1	0.2
Test conclusion			<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

Current	Power factor (sinΦ)	Percentage error limits (%)	Test result (%)		
			No25073400043	No25073400044	No25073400045
0.05 I <sub>b</sub>	1.0	±2.5	0.0	0.1	0.1
I <sub>b</sub>	1.0	±2.0	0.2	-0.1	0.2
I <sub>max</sub>	1.0	±2.0	0.1	-0.1	0.2
0.1 I <sub>b</sub>	0.5L	±2.5	0.1	0.0	0.1
I <sub>b</sub>	0.5L	±2.0	0.0	0.2	0.2
I <sub>max</sub>	0.5L	±2.0	0.2	-0.2	0.3
0.2 I <sub>b</sub>	0.25L	±2.5	0.2	-0.1	0.0
I <sub>b</sub>	0.25L	±2.5	0.1	0.1	0.0
I <sub>max</sub>	0.25L	±2.5	0.0	0.2	0.1
Test conclusion			<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

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**B. Error limits of poly meters carrying a single-phase load**

Reference frequency :50Hz Current :5(100)A Reference voltage: 3×230/400V

Phase number	Current	Power factor (cosΦ)	Percentage error limits (%)	Test result (%)		
				№25073400043	№25073400044	№25073400045
A	0.1I <sub>b</sub>	1.0	±2.0	-0.1	0.1	0.0
	I <sub>b</sub>	1.0	±2.0	-0.1	0.1	0.0
	I <sub>maxx</sub>	1.0	±2.0	-0.2	0.2	0.1
	0.2I <sub>b</sub>	0.5L	±2.0	-0.1	0.0	0.0
	I <sub>b</sub>	0.5L	±2.0	0.2	0.3	0.3
	I <sub>max</sub>	0.5L	±2.0	-0.1	0.0	0.1
B	0.1I <sub>b</sub>	1.0	±2.0	0.0	-0.1	0.2
	I <sub>b</sub>	1.0	±2.0	0.0	-0.1	0.0
	I <sub>maxx</sub>	1.0	±2.0	0.1	0.0	0.2
	0.2I <sub>b</sub>	0.5L	±2.0	0.0	0.3	0.0
	I <sub>b</sub>	0.5L	±2.0	0.0	-0.1	0.0
	I <sub>max</sub>	0.5L	±2.0	0.1	0.0	-0.1
C	0.1I <sub>b</sub>	1.0	±2.0	-0.2	0.2	0.0
	I <sub>b</sub>	1.0	±2.0	0.1	0.0	-0.1
	I <sub>maxx</sub>	1.0	±2.0	0.0	0.2	0.0
	0.2I <sub>b</sub>	0.5L	±2.0	0.2	0.0	0.1
	I <sub>b</sub>	0.5L	±2.0	0.0	0.1	-0.1
	I <sub>max</sub>	0.5L	±2.0	-0.2	-0.1	-0.1
Test conclusion				<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

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Phase number	Current	Power factor (cosΦ)	Percentage error limits (%)	Test result (%)		
				№25073400043	№25073400044	№25073400045
A	0.1I <sub>b</sub>	1.0	±3.0	-0.1	-0.1	0.0
	I <sub>b</sub>	1.0	±3.0	-0.2	-0.1	-0.1
	I <sub>maxx</sub>	1.0	±3.0	0.0	-0.1	-0.2
	0.2I <sub>b</sub>	0.5L	±3.0	0.1	-0.2	0.0
	I <sub>b</sub>	0.5L	±3.0	-0.1	0.0	-0.1
	I <sub>max</sub>	0.5L	±3.0	-0.1	0.0	0.2
B	0.1I <sub>b</sub>	1.0	±3.0	0.2	0.1	-0.2
	I <sub>b</sub>	1.0	±3.0	0.0	-0.1	0.0
	I <sub>maxx</sub>	1.0	±3.0	0.1	0.1	0.2
	0.2I <sub>b</sub>	0.5L	±3.0	-0.1	0.0	0.2
	I <sub>b</sub>	0.5L	±3.0	-0.1	-0.1	0.0
	I <sub>max</sub>	0.5L	±3.0	0.0	0.1	0.1
C	0.1I <sub>b</sub>	1.0	±3.0	0.2	-0.1	-0.2
	I <sub>b</sub>	1.0	±3.0	-0.2	0.0	-0.1
	I <sub>maxx</sub>	1.0	±3.0	-0.1	0.2	-0.2
	0.2I <sub>b</sub>	0.5L	±3.0	-0.1	-0.2	0.0
	I <sub>b</sub>	0.5L	±3.0	0.0	0.0	-0.1
	I <sub>max</sub>	0.5L	±3.0	-0.2	-0.1	0.0
Test conclusion				<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

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### 23. Test of immunity to electromagnetic HF fields

1. Requirement: IEC62053-21:2003 IEC62053-23:2003 IEC62052-11:2003
2. Test method: 1) Without any current in the current circuits, test the change in the register.  
With basic current  $I_b$  and power factor equal to 1.  
2) At sensitive frequencies or frequencies of dominant interest, test the variation of error.
3. Test equipment: Signal generator PMM3030-02(000WJ81009)and Power amplifier AS0104-200/200 (1034148) and Power amplifier A P32MT255 (S/N:0906-943)

#### 4. Test result:

Power factor: cosΦ=1.0 Reference frequency :50Hz Current :5(100)A Reference voltage: 3×230/400V

Test field strength	Frequency (MHz)	Limits of variation (%)	Test result		
			No25073400043	No25073400044	No25073400045
10V/m	80	2.0	0.1	0.1	0.1
	100		0.2	0.1	0.2
	120		0.2	0.0	0.2
	200		0.3	0.2	0.1
	300		0.2	0.2	0.2
	400		0.2	0.1	0.2
	500		0.2	0.2	0.2
	600		0.2	0.2	0.0
	700		0.1	0.2	0.2
	800		0.0	0.2	0.1
	900		0.0	0.0	0.1
	1000		0.1	0.1	0.0
	1100		0.1	0.2	0.2
	1200		0.1	0.2	0.0
	1300		0.0	0.1	0.1
	1400		0.0	0.1	0.0
	1500		0.0	0.0	0.2
	1000		0.1	0.1	0.0
	1700		0.0	0.0	0.1
	1800		0.1	0.0	0.1
1900	0.0	0.0	0.0		
2000	0.1	0.1	0.1		
Test conclusion			Pass	Pass	Pass

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 Reference frequency :50Hz Reference voltage: 3×230/400V

Frequency band and field strength	Limits of charge in the register	Test result		
		№25073400043	№25073400044	№25073400045
80~2000MHz 30V/m	≤0.069kWh	Pass	Pass	Pass
	No output	Pass	Pass	Pass
Test conclusion		<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

## 24. Fast transient burst test

1. Requirement: IEC62053-21:2003 IEC62053-23:2003 IEC62052-11:2003
2. Test method: IEC62053-21:2003 IEC62053-23:2003 IEC62052-11:2003
3. Test equipment: Burst generator EFT-406N (EFT0460905)
4. Test result:

 Reference frequency: 50Hz Reference voltage: 3×230/400V

Test voltage	Test content	Test result		
		№25073400043	№25073400044	№25073400045
4kV	Pulse Output	Pass	Pass	Pass
Register function	≤0.069kWh	Pass	Pass	Pass
Test conclusion		<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

## 25. Test of immunity to electrostatic discharges

1. Requirement: IEC62053-21:2003 IEC62053-23:2003 IEC62052-11:2003
2. Test method: IEC62053-21:2003 IEC62053-23:2003 IEC62052-11:2003
3. Test equipment: Electrostatic discharge generator ESD-203A(ESD-203A0130102)
4. Test result:

 Reference frequency :50Hz Reference voltage: 3×230/400V

Test voltage	Limit value allowable %	Test result		
		№25073400043	№25073400044	№25073400045
contact discharge 8kV, air discharge 15kV	≤0.069kWh	Pass	Pass	Pass
	No output	Pass	Pass	Pass
Test conclusion		<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

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## 26. Tests of the effect of voltage dips and short interruptions

1. Requirement: IEC62053-21:2003 IEC62053-23:2003 IEC62052-11:2003
2. Test method: IEC62053-21:2003 IEC62053-23:2003 IEC62052-11:2003
3. Test equipment: Cycle drop device VDS-1132A(VDS-1132A0130101)and Meter calibration device ST9001D5 (7131019)
4. Test result:

Reference frequency :50Hz Reference voltage: 3×230/400V

Interrupt voltage and time	Test content	Limits of charge in the register	Test result		
			№25073400043	№25073400044	№25073400045
$\Delta U=100\%$ 1s/50ms	Register Function	$\leq 0.069\text{kWh}$	Pass	Pass	Pass
	Output pulse	No output	Pass	Pass	Pass
$\Delta U=100\%$ 20ms	Register Function	$\leq 0.069\text{kWh}$	Pass	Pass	Pass
	Output pulse	No output	Pass	Pass	Pass
$\Delta U=50\%$ 1min	Register Function	$\leq 0.069\text{kWh}$	Pass	Pass	Pass
	Output pulse	No output	Pass	Pass	Pass
$I_b$	Error (%)		0.1	0.2	0.1
Test conclusion			<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

## 27. Test of continuous magnetic induction of external origin

1. Requirement: IEC62053-21:2003 IEC62053-23:2003 IEC62052-11:2003
2. Test method: Put 1000At magnetic field to touchable part of the meter surface.
3. Test equipment: DC steady current source YJ-10A(6102) and Meter calibration device ST9001D5 (7131019).
4. Test result:

Reference frequency :50Hz Current :5(100)A Reference voltage: 230V

Current	Location	Power factor (cosΦ)	Limits of variation (%)	Test result (%)		
				№25073400043	№25073400044	№25073400045
$I_b$	Front	1.0	2.0	0.10	0.08	0.10
$I_b$	Up	1.0	2.0	0.08	0.15	0.07
$I_b$	Left	1.0	2.0	0.17	0.06	0.12
$I_b$	Right	1.0	2.0	0.14	0.13	0.20
Test conclusion				<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

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Current	Location	Power factor (sinΦ)	Limits of variation (%)	Test result (%)		
				№25073400043	№25073400044	№25073400045
$I_b$	Front	1.0	3.0	0.07	0.11	0.08
$I_b$	Up	1.0	3.0	0.11	0.06	0.07
$I_b$	Left	1.0	3.0	0.11	0.13	0.15
$I_b$	Right	1.0	3.0	0.12	0.08	0.07
Test conclusion				<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

## 28. Marking and elements test

1. Requirement: IEC62053-21:2003 IEC62053-23:2003 IEC62052-11:2003
2. Test method: Checked by inspection
3. Test equipment: Checked by inspection
4. Test result:

Test item	Test result		
	№25073400043	№25073400044	№25073400045
Case	Pass	Pass	Pass
Name-plates and marking	Pass	Pass	Pass
Terminal and Line connecting diagram	Pass	Pass	Pass
Clearance and creep age distances	Pass	Pass	Pass
Seal	Pass	Pass	Pass
Test conclusion	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

## 29. Test of reversed phase sequence

1. Requirement: IEC62053-21:2003 IEC62053-23:2003 IEC62052-11: 2003
2. Test method: Testing relative error separately at normal and reversed phase sequence.
3. Test equipment: Meter calibration device ST9001D5 (7131019)
4. Test result:

 Reference frequency :50Hz Current :5(100)A Reference voltage: 3×230/400V

Current	Power factor (cosΦ)	Limits of variation	Test result		
			№2507340004	№2507340004	№2507340004
$0.1 I_b$	1.0	1.5	3 0.10	4 0.12	5 0.07
Test conclusion			<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

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### 30. Test of voltage unbalance

5. Requirement: IEC62053-21:2003 IEC62053-23:2003 IEC62052-11: 2003
6. Test method: IEC62053-21:2003 IEC62053-23:2003 IEC62052-11: 2003
7. Test equipment: Meter calibration device ST9001D5 (7131019)
8. Test result:

Reference frequency :50Hz Current :5(100)A Reference voltage: 3×230/400V

Current	Power factor (cosΦ)	Limits of variation	Test result		
			№2507340004 3	№2507340004 4	№2507340004 5
$I_b$	1.0	2.0	0.17	0.08	0.14
Test conclusion			<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

### 31. Test of supply voltage operating range

9. Requirement: IEC62053-21:2003 IEC62053-23:2003 IEC62052-11: 2003
10. Test method: IEC62053-21:2003 IEC62053-23:2003 IEC62052-11: 2003
11. Test equipment: Meter calibration device ST9001D5 (7131019)
12. Test result:

Reference frequency :50Hz Current :5(100)A Reference voltage: 3×230/400V

Supply voltage operating range	Test result		
	№25073400043	№25073400044	№25073400045
Operating range(0.9~1.1) $U_n$	Pass	Pass	Pass
Limit operating range(0~1.15) $U_n$	Pass	Pass	Pass
Test conclusion	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

### 32. Test of initial start-up

1. Requirement: IEC62053-21:2003 IEC62053-23:2003 IEC62052-11: 2003
2. Test method: IEC62053-21:2003 IEC62053-23:2003 IEC62052-11: 2003
3. Test equipment: Meter calibration device ST9001D5 (7131019)
4. Test result:

Reference frequency :50Hz Current :5(100)A Reference voltage: 3×230/400V

Test item	Test result		
	№25073400043	№25073400044	№25073400045
Initial start-up	Pass	Pass	Pass
Test conclusion	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>



### 33. Surge immunity test

1. Requirement: IEC62053-21:2003 IEC62053-23:2003 IEC62052-11: 2003
2. Test method: After application of the surge immunity, test the change in the register.
3. Test equipment: Surge generator LSG-510A (LSG05100905)
4. Test result:

Reference frequency :50Hz Reference voltage: 3×230/400V

Test content	Limits of charge in the register	Test result		
		№25073400043	№25073400044	№25073400045
4kV	Pulse Output	Pass	Pass	Pass
Register function	≤0.069kWh	Pass	Pass	Pass
Test conclusion		<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

### 34. Radio interference measurement

1. Requirement: IEC62053-21:2003 IEC62053-23:2003 IEC62052-11:2003
2. Test method: IEC62053-21:2003 IEC62053-23:2003 IEC62052-11:2003
3. Test equipment: Electromagnetic disturbance test receiver PMM9010 (696WX21006) and Three-phase power supply network of artificial L3-32 (0120X90108).
4. Test result:

#### a. Limit value of conducted disturbances:

Reference voltage: 3×230/400V Power factor: 1.0 Reference frequency :50Hz Current :0.5A

Frequency (MHz)	Limits dB(μV)		Test result №25073400043
	Peak value	Average value	
0.15 ~ 0.50	66 ~ 56	56 ~ 46	≤31
0.50 ~ 5	56	46	≤33
5 ~ 30	60	50	≤4
Test conclusion			<b>Pass</b>

#### b . Limit value of radiation disturbances:

Reference voltage: 3×230/400V Power factor: 1.0 Reference frequency :50Hz Current :1A

Frequency (MHz)	Peak value dB(μV/m)	Test result
		№25073400043
30 ~ 230	40	≤32
230 ~ 1000	47	≤26
Test conclusion		<b>Pass</b>

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### 35. Test of immunity to conducted disturbances, induced radio-frequency fields

1. Requirement: IEC62053-21:2003 IEC62053-23:2003 IEC62052-11:2003
2. Test method: IEC62053-21:2003 IEC62053-23:2003 IEC62052-11:2003
3. Test equipment: NSG4070-75 Conducted disturbances test system (35761)
4. Test result:

Reference frequency :50Hz Power factor: 1.0 Current: 5(100)A Reference voltage:  
3×230/400V

Test voltage	Frequency (MHz)	Limits of variation (%)	Test result		
			№25073400043	№25073400044	№25073400045
10V	0.15	2.0	0.1	0.2	0.1
	0.5		0.2	0.2	0.0
	1.0		0.1	0.1	0.1
	2.0		0.2	0.2	0.2
	5.0		0.1	0.2	0.2
	10.0		0.2	0.1	0.2
	20.0		0.1	0.0	0.0
	30.0		0.1	0.2	0.1
	50.0		0.2	0.2	0.0
	80.0		0.1	0.1	0.1
Test conclusion			<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

Reference voltage: 3×230/400V Reference frequency: 50Hz

Test content	Limits of charge in the register	Test result		
		№25073400043	№25073400044	№25073400045
Frequency range: 150kHz ~ 80MHz	≤0.069kWh	Pass	Pass	Pass
	No output	Pass	Pass	Pass
Test conclusion		<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

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### 36. Test of solar radiation

1. Requirement: IEC62053-21:2003 IEC62053-23:2003 IEC62052-11:2003
2. Test method: IEC62053-21:2003 IEC62053-23:2003 IEC62052-11:2003
3. Test equipment: Xenon climate test chamber TET080D (030117)
4. Test result:

Test condition	Requirement	Test result		
		№25073400043	№25073400044	№25073400045
8h irradiation and 16h darkness 3cycles Temperature:55°C	The appearance and, in particular, the legibility of markings shall not be altered. The function of meter shall not be impaired.	Pass	Pass	Pass
Test conclusion		<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

### 37. Test of protection against penetration of water

1. Requirement: IEC62053-21:2003 IEC62053-23:2003 IEC62052-11:2003
2. Test method: IEC62053-21:2003 IEC62053-23:2003 IEC62052-11:2003
3. Test equipment: Swing pipe rain test device BGL-06/08 (040196)
4. Test result:

Test condition	Requirement	Test result		
		№25073400043	№25073400044	№25073400045
IPX4	Any ingress of water shall be only in a quality not impairing the operation the meter, and its dielectric strength (insulating strength)	Pass	Pass	Pass
Test conclusion		<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

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### 38. Test of protection against penetration of dust

1. Requirement: IEC62053-21:2003 IEC62053-23:2003 IEC62052-11:2003
2. Test method: IEC62053-21:2003 IEC62053-23:2003 IEC62052-11:2003
3. Test equipment: Dust test chamber FCH-20 (990122)
4. Test result:

Test condition	Requirement	Test result		
		№25073400043	№25073400044	№25073400045
IP5X	Any ingress of dust shall be only in a quantity not impairing the operation of the meter and its dielectric strength (insulating strength)	Pass	Pass	Pass
Test conclusion		Pass	Pass	Pass

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报告编号: HYI202510230A1151

Meter Photos:



**--END OF REPORT--**

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