



中国认可  
国际互认  
校准  
CALIBRATION  
CNAS L10466

## 校准证书

CALIBRATION CERTIFICATE



证书编号

Certificate No.

ZD202403110096

第 1 页, 共 5 页

Page of

委托方

Client

广东铨电测控技术有限公司

委托方地址

Address

佛山市南海区桂城街道石龙北路105号联东智造园5座10楼

仪器名称

Description

无线PT二次压降测试仪

型号规格

Model/Type

ETCR4500

制造厂

Manufacturer

广东铨电测控技术有限公司

出厂编号

Serial No.

4500240026

管理编号

Asset No.

/

样品接收日期

Date of Receipt

2024-03-11

校准日期

Date of Calibration

2024-03-11

批准人 :

Approved Signatory

苏瑶云

审核 :

Inspected by

巢红

校准 :

Tested by

张辉

校准专用章  
(stamp)



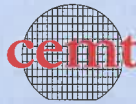
地址 : 广东省深圳市宝安区福永街道白石厦社区东区新开发区4栋203

Add : Room 203, Building 4, New Development Area, East Zone, Baishixia Community, Fuyong Sub-District, Bao'an District, Shenzhen, Guangdong, China

电话 ( Tel ) : 0755-29888158

邮政编码 ( Post Code ) : 518103

传真 ( Fax ) : 0755-29796107



## 校准说明

### DIRECTIONS OF CALIBRATION

证书编号: ZD202403110096

第 2 页, 共 5 页

Certificate No.

Page of

- 1.本实验室出具的数据均可溯源至国家计量基准。  
( All data issued by ZD Test are traced to National Primary Standards.)
- 2.本结果仅对当次被测样品有效,如有疑问请在15个工作日反馈。  
( The results is ONLY valid for the tested sample,please feedback to us within 15 working days if you have any question.)
- 3.本证书编号具有唯一性,若替换证书,自发出后原证书即可作废。  
( Each certificate has a unique number.If replaced the certificate,the original certificate will be invalid once the new certificate number is issued.)
- 4.证书中如有最大允许误差、判定结果,仅供参考,其中“P”代表“Pass”,“F”代表“Fail”。  
( In the datasheet,MPE & determination is only for reference,"P"represents"Pass"and"F"represents"Fail".)
- 5.本次校准的技术依据及获认可的能力范围,超出范围的内容未被认可。  
( Reference documents and Accredited Scopes for Calibration,Beyond the Scope has not been accredited.):

参照JJG 124-2005《电流表、电压表、功率表及电阻表检定规程》《Verification Regulation of Amperemeters,Voltmeters,Wattmeters and Ohmmeters》

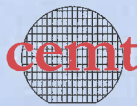
#### 6.本次校准使用的主要测量标准 ( Main Standards of Measurement Used in the Calibration.):

名称/型号 Description/Model	编号 Serial No.	证书号 Certificate No.	有效期至 Due Date	技术特征 Technique Character
多功能校准器	ZD-D026	230810201	2024-08-16	DCV : $U_{rel}=0.002\%$ 、ACV : $U_{rel}=0.01\%$ 、DCI : $U_{rel}=0.005\%$ 、 ACI : $U_{rel}=0.02\%$ 、电阻 : $U_{rel}=0.003\%$ 、 $k=2$

#### 7.校准地点、环境条件 ( Place and environmental conditions of the calibration)

地点 Place	委托方现场	温度 Temperature	22 °C	相对湿度 Relative Humidity	57 %
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- 8.建议复校时间间隔: 12 个月, 送检单位可根据实际情况自主决定。  
Suggested calibration interval is 12 month or it can be altered depending on the actual usage of the user.



## 校准结果

### Result of Calibration

证书编号: ZD202403110096

Certificate No.

第 3 页, 共 5 页

Page 3 of 5 Pages

#### 1、外观以及一般性检查: 正常

In view of External and Generality check : Normal

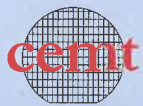
#### 2、电压指示值 ( Voltage Accuracy)

	频率 Frequency (Hz)	标准值 Reference (V)	示值 Indication (V)	误差 Error (V)	允许误差 MPE (V)	结论 Conclusion (Pass/Fail)
A相	50	50	50.0	0.0	± 0.4	P
		100	99.9	-0.1	± 0.7	P
		200	199.8	-0.2	± 1.2	P
		300	299.4	-0.6	± 1.6	P
B相	50	50	50.0	0.0	± 0.4	P
		100	99.8	-0.2	± 0.7	P
		200	199.4	-0.6	± 1.2	P
		300	299.2	-0.8	± 1.6	P
C相	50	50	50.0	0.0	± 0.4	P
		100	99.9	-0.1	± 0.7	P
		200	199.9	-0.1	± 1.2	P
		300	299.9	-0.1	± 1.6	P

#### 3、电流指示值 ( Current Accuracy)

	频率 Frequency (Hz)	标准值 Reference (A)	示值 Indication (A)	误差 Error (A)	允许误差 MPE (A)	结论 Conclusion (Pass/Fail)
A相	50	0.5	0.504	0.004	± 0.004	P
		1	1.009	0.009	± 0.007	P
		2	2.012	0.012	± 0.011	P
		5	5.017	0.017	± 0.029	P
B相	50	0.5	0.505	0.005	± 0.004	P
		1	1.007	0.007	± 0.007	P
		2	2.012	0.012	± 0.011	P
		5	5.022	0.022	± 0.029	P
C相	50	0.5	0.501	0.001	± 0.004	P
		1	1.008	0.008	± 0.007	P
		2	2.009	0.009	± 0.011	P
		5	5.014	0.014	± 0.029	P





# 校准结果

## Result of Calibration

证书编号: ZD202403110096

Certificate No.

第 4 页, 共 5 页

Page 4 of 5 Pages

### 4、功率指示值 (Power Accuracy) f=50Hz

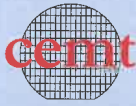
	标准值 Reference (W)	示值 Indication (W)	误差 Error (W)	允许误差 MPE (W)	结论 Conclusion (Pass/Fail)
A相	50	49.90	-0.10	± 0.3	P
	100	99.8	-0.2	± 0.5	P
	200	199.7	-0.3	± 1.0	P
	500	499.7	-0.3	± 2.5	P
	1000	999	-1	± 5	P
B相	50	50.00	0.00	± 0.3	P
	100	99.9	-0.1	± 0.5	P
	200	199.8	-0.2	± 1.0	P
	500	499.5	-0.5	± 2.5	P
	1000	999	-1	± 5	P
C相	50	49.90	-0.10	± 0.3	P
	100	99.8	-0.2	± 0.5	P
	200	199.7	-0.3	± 1.0	P
	500	499.7	-0.3	± 2.5	P
	1000	999	-1	± 5	P

### # 5、频率 (Frequency)

	标准值 Reference (Hz)	示值 Indication (Hz)	误差 Error (Hz)	允许误差 MPE (Hz)	结论 Conclusion (Pass/Fail)
	50	50.01	0.01	± 0.05	P
	60	60.01	0.01	± 0.05	P

### # 6、功率因数 (Power Factor)

		标准值 Reference (%)	示值 Indication (%)	误差 Error (%)	允许误差 MPE (%)	结论 Conclusion (Pass/Fail)
A相	超前	50	49.97	-0.03	± 0.10	P
		80	79.93	-0.07	± 0.16	P
		90	89.93	-0.07	± 0.18	P
		100	99.89	-0.11	± 0.20	P
	滞后	50	49.99	-0.01	± 0.10	P
		80	79.98	-0.02	± 0.16	P
		90	89.96	-0.04	± 0.18	P
		100	99.95	-0.05	± 0.20	P



## 校准结果

### Result of Calibration

证书编号: ZD202403110096

第 5 页, 共 5 页

Certificate No.

Page 5 of 5 Pages

B相	超前	50	49.98	-0.02	± 0.10	P
		80	79.93	-0.07	± 0.16	P
		90	89.91	-0.09	± 0.18	P
		100	99.89	-0.11	± 0.20	P
	滞后	50	50.00	0.00	± 0.10	P
		80	79.97	-0.03	± 0.16	P
		90	89.95	-0.05	± 0.18	P
		100	99.90	-0.10	± 0.20	P
C相	超前	50	49.97	-0.03	± 0.10	P
		80	79.93	-0.07	± 0.16	P
		90	89.91	-0.09	± 0.18	P
		100	99.86	-0.14	± 0.20	P
	滞后	50	49.98	-0.02	± 0.10	P
		80	79.97	-0.03	± 0.16	P
		90	89.96	-0.04	± 0.18	P
		100	99.92	-0.08	± 0.20	P

说明: 本次测量结果不确定度说明

Notes: Uncertainty in the Measurement

1. 依据JJF1059.1—2012测量不确定度评定与表示

According to JJF1059.1-2012 Evaluation and Expression of Uncertainty in Measurement

2. 交流电压测量结果的相对扩展不确定度:  $U_{rel}=1.5\%$ ,  $k=2$

Related Expanded Uncertainty of AC Voltage Measurement Results

3. 交流电流测量结果的相对扩展不确定度:  $U_{rel}=0.2\%$ ,  $k=2$

Related Expanded Uncertainty of AC Current Measurement Results

4. 交流功率测量结果的相对扩展不确定度:  $U_{rel}=0.5\%$ ,  $k=2$

Related Expanded Uncertainty of AC Power Measurement Results

5. 标记“#”校准参量(或测量范围)不在CNAS认可范围内

Parameters(or testing range)which marked as “#” are not certified in CNAS

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