



中国认可
国际互认
校准
CALIBRATION
CNAS L10466

校准证书

CALIBRATION CERTIFICATE



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证书编号

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Certificate No.

ZD202403110102

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

柔性电流钳表

型号规格

Model/Type

ETCR6920B

制造厂

Manufacturer

广东铨电测控技术有限公司

出厂编号

Serial No.

6921240054

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

巢弘

校准 :

Tested by

张辉

校准专用章
(stamp)



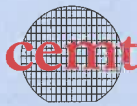
地址 : 广东省深圳市宝安区福永街道白石厦社区东区新开发区4栋203

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

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- 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.):

JJF 1075-2015 《钳形电流表校准规范》

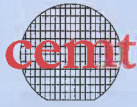
6.本次校准使用的主要测量标准 (Main Standards of Measurement Used in the Calibration.):

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
多功能校准仪	ZD-D025	233403102	2024-06-12	DCU: $U_{rel}=0.0004%$, ACU: $U_{rel}=0.007%$ DCI: $U_{rel}=0.0013%$, ACI: $U_{rel}=0.04%$ $k=2$, T: $U_{rel}=0.3%,k=2$
数字多用表	ZD-D027-1	JL2393678801	2024-11-05	DCU: $U_{rel}=0.004%$;ACU: $U_{rel}=0.010%$; DCI: $U_{rel}=0.006%$;ACI: $U_{rel}=0.032%$;R: $U_{rel}=0.005%,k=2$;

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

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1、外观以及一般性检查: 正常

In view of External and Generality check : Normal

2、直流电压测量的校准 (Calibration of DC Voltage)

量程	标准值	示值	误差	允许误差	结论						
Range	Reference	Indication	Error	MPE	Conclusion						
(mV)	(mV)	(mV)	(mV)	(mV)	(Pass/Fail)						
200	20	20.1	0.1	± 0.50	P						
	100	100.1	0.1	± 0.90	P						
	190	190.3	0.3	± 1.35	P						
(V)	(V)	(V)	(V)	(V)							
						2	0.2	0.202	0.002	± 0.0050	P
						0.6	0.603	0.003	± 0.0070	P	
						1.0	1.001	0.001	± 0.0090	P	
						1.4	1.402	0.002	± 0.0110	P	
						1.9	1.902	0.002	± 0.0135	P	
						-0.2	-0.202	-0.002	± 0.0050	P	
						-0.6	-0.603	-0.003	± 0.0070	P	
						-1.0	-1.004	-0.004	± 0.0090	P	
						-1.4	-1.404	-0.004	± 0.0110	P	
						-1.9	-1.906	-0.006	± 0.0135	P	
20	2	2.01	0.01	± 0.050	P						
	10	9.99	-0.01	± 0.090	P						
	19	18.98	-0.02	± 0.135	P						
200	20	20.1	0.1	± 0.50	P						
	100	100.2	0.2	± 0.90	P						
	190	190.2	0.2	± 1.35	P						
1000	200	201	1	± 8.0	P						
	500	505	5	± 11.0	P						
	900	905	5	± 15.0	P						



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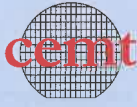
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3、60Hz交流电压测量的校准 (Calibration of AC Voltage, 60Hz)

量程	标准值	示值	误差	允许误差	结论
Range	Reference	Indication	Error	MPE	Conclusion
(V)	(V)	(V)	(V)	(V)	(Pass/Fail)
2	0.2	0.201	0.001	± 0.0116	P
	0.6	0.602	0.002	± 0.0148	P
	1.0	1.002	0.002	± 0.0180	P
	1.4	1.403	0.003	± 0.0212	P
	1.9	1.904	0.004	± 0.0252	P
20	2	2.05	0.05	± 0.116	P
	10	10.03	0.03	± 0.180	P
	19	19.06	0.06	± 0.252	P
200	20	20.1	0.1	± 1.16	P
	100	100.5	0.5	± 1.80	P
	190	190.6	0.6	± 2.52	P
750	150	203	53	± 12.00	P
	500	505	5	± 15.00	P
	700	708	8	± 17.00	P

4、60Hz 交流电流测量的校准 (Calibration of AC Current, 60Hz)

量程	标准值	示值	误差	允许误差	结论
Range	Reference	Indication	Error	MPE	Conclusion
(A)	(A)	(A)	(A)	(A)	(Pass/Fail)
2	0.2	0.201	0.001	± 0.01	P
	1.0	1.002	0.002	± 0.04	P
	1.9	1.903	0.003	± 0.07	P
20	2	2.03	0.03	± 0.13	P
	10	10.04	0.04	± 0.33	P
	19	19.03	0.03	± 0.56	P
200	20	20.5	0.5	± 1.30	P
	100	100.6	0.6	± 3.30	P
	190	192.2	2.2	± 5.55	P
1000	200	201	1	± 16.00	P
	500	504	4	± 25.00	P
	900	906	6	± 37.00	P



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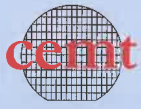
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5、电阻测量的校准 (Calibration of Resistance)

量程	标准值	示值	误差	允许误差	结论	
Range	Reference	Indication	Error	MPE	Conclusion	
(Ω)	(Ω)	(Ω)	(Ω)	(Ω)	(Pass/Fail)	
200	20	20.1	0.1	± 0.7	P	
	100	100.2	0.2	± 1.3	P	
	190	190.2	0.2	± 2.0	P	
(k Ω)	(k Ω)	(k Ω)	(k Ω)	(k Ω)		
	2	0.2	0.202	0.002	± 0.006	P
	20	1.0	1.001	0.001	± 0.012	P
1.9		1.904	0.004	± 0.019	P	
2		2.01	0.01	± 0.056	P	
200	10	10.03	0.03	± 0.120	P	
	19	19.05	0.05	± 0.192	P	
	20	20.1	0.1	± 0.56	P	
200	100	100.1	0.1	± 1.20	P	
	190	190.4	0.4	± 1.92	P	
	(M Ω)	(M Ω)	(M Ω)	(M Ω)		
2	0.2	0.202	0.002	± 0.006	P	
	1.0	1.004	0.004	± 0.012	P	
	1.9	1.911	0.011	± 0.019	P	
20	2	2.05	0.05	± 0.124	P	
	10	10.06	0.06	± 0.220	P	
	19	19.12	0.12	± 0.328	P	



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注: 测量不确定说明:

Notes : Uncertainty in the Measurement

(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)

1. 直流电压测量结果的相对扩展不确定度: $U_{rel}=0.11%$, $k=2$

Related Expanded Uncertainty of DC Voltage Measurement Results

2. 交流电压测量结果的相对扩展不确定度: $U_{rel}=0.3%$, $k=2$

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: $U_{rel}=0.7%$, $k=2$

Related Expanded Uncertainty of AC Current Measurement Results

4. 电阻测量结果的相对扩展不确定度: $U_{rel}=0.2%$, $k=2$

Related Expanded Uncertainty of Resistance Measurement Results

5. 结论判断依据: 仪器说明书技术要求

Basis for the conclusion : Technical Specification of the Instrument

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