



华南国家计量测试中心
广东省计量科学研究院

SOUTH CHINA NATIONAL CENTER OF METROLOGY
GUANGDONG INSTITUTE OF METROLOGY



中国认可
国际互认
校准
CALIBRATION
CNAS L0730

校准证书

CALIBRATION CERTIFICATE

证书编号 GDDL202500110
Certificate No.

第 1 页, 共 5 页
Page of

客户名称 优利德科技(中国)股份有限公司
Name of the Customer

联络信息 广东省东莞市松山湖园区工业北一路6号
Contact Information

计量器具名称 600A数字钳形表(钳形电流表, 数字多用表)
Description

型号/规格 UT216B
Model/Type

制造厂 UNI-T
Manufacturer

出厂编号 / 设备管理编号 UT216B-1#
Serial No. Equipment No.

接收日期 2025 年 03 月 11 日
Receipt on Y M D

结论 见校准结果
Conclusion

校准日期 2025 年 03 月 17 日
Calibration on Y M D

发布日期 2025 年 03 月 18 日
Issue on Y M D

批准 何洪波
Authorized by

核 验 何洪波
Reviewed by

校 准 张东顺
Calibrated by



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说 明

证书编号 GDDL202500110
Certificate No.

DIRECTIONS

第 2 页, 共 5 页
Page of

1. 本中心是国家市场监督管理总局在华南地区设立的国家法定计量检定机构, 本中心的质量管理体系符合 ISO/IEC 17025:2017 标准的要求。

This laboratory is the National Legal Metrological Verification Institution in southern China set up by the General Administration of Quality Supervision. The quality system is in accordance with ISO/IEC 17025:2017.

2. 本中心所出具的数据均可溯源至国家计量基准和/或国际单位制(SI)。

All data issued by this laboratory are traceable to national primary standards and/or International System of Units (SI)

3. 校准地点、环境条件:

Place and environmental conditions of the calibration:

地点 A4-406恒温实验室 温度 (20.1~20.5) °C 相对湿度 (45~46) %

Location

Temperature

RH

4. 本次校准的技术依据:

Reference documents for the calibration:

JJF 1587-2016 数字多用表校准规范 C. S. for Multimeters

JJF 1075-2015 钳形电流表校准规范 C. S. of Clamp Ammeters

5. 本次校准所使用的主要计量标准器具:

Major standards of measurement used in the calibration:

设备名称/型号规格/测量范围	编号	证书号/有效期/溯源单位	计量特性
Name of Equipment /Model/Type/Range	Serial No.	Certificate No./Due Date /Traceability to	Metrological Characteristic
多功能标准源 /3041A/DCV:1mV~1025V;ACV :1mV~1020V;DCA:10 μA~30 A;ACA:30 μA~30A;OHM:0.1 Ω~100MΩ	L1398B16	DBS202405153 /2025-12-16 /省计量院	MPE:DCV:±0.0032%, ACV:±0.04%, DCA:±0.0065%, ACA:±0.08%, OHM:±0.008%
钳形表检验线圈 /20A/50匝/AC/DC: (20~1000)A	ZB001	DBB202503317 /2026-02-13 /省计量院	MPE:±0.3%

注: 1. 本证书校准结果只与受校准仪器有关。 The results relate only to the items calibrated.
 Note: 2. 未经本机构书面批准, 不得部分复制此证书。 This certificate shall not be reproduced except in full, without the written approval of our laboratory.
 3. “客户名称”、“联络信息”由委托方提供, “制造厂”、“型号规格”、“出厂编号”以及“设备编号”为仪器上标注。 The information Name of the Customer and Contact Information are provided by client, and the Manufacturer, Model/Type, Serial No. and Equipment No. are marked on the items.

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校准结果

RESULTS OF CALIBRATION

证书编号 GDDL202500110
Certificate No.

原始记录号 202500110
Record No.

第 3 页, 共 5 页
Page of

一、钳形电流表部分

1. 工作正常性检查

Work normality check

结论: Pass

2. 交直流电流校准(交流电流): 见表1

AC/DC current calibration(AC Current): Shown in table 1

表1 Table 1

测试频率 Freq (Hz)	量程 Range (A)	标准值 Standard value (A)	显示值 Indication Value (A)	误差 Error (A)	最大允许误差 MPE (A)	结论 Conclusion P/F
50	60	6.00	5.95	-0.05	±0.20	Pass
		10.00	9.96	-0.04	±0.30	Pass
		20.00	19.97	-0.03	±0.55	Pass
	600	40.00	40.01	0.01	±1.05	Pass
		59.00	59.06	0.06	±1.53	Pass
		590.0	590.9	0.9	±15.3	Pass

二、数字多用表部分

1. 直流电压的示值误差(直流电压): 见表2

Error of DC voltage indication(DC voltage): Shown in table 2

	(mV)	(mV)	(mV)	(mV)	(mV)	P/F
+	600	590.0	589.4	-0.6	±6.7	Pass
		(V)	(V)	(V)	(V)	(V)
	6	5.900	5.898	-0.002	±0.048	Pass
		60	6.00	6.00	0.00	±0.11
	600	30.00	29.99	-0.01	±0.27	Pass
		59.00	58.99	-0.01	±0.50	Pass
		590.0	590.1	0.1	±5.0	Pass
1000	900	900	0	±12	Pass	

UNI-TREND.VN





校准结果

RESULTS OF CALIBRATION

证书编号 GDDL202500110
Certificate No.

原始记录号 202500110
Record No.

第 4 页, 共 5 页
Page of

续表2 Table 2

极性	量程	标准值	显示值	误差	最大允许误差	结论
Polar	Range	Standard value	Indication Value	Error	MPE	Conclusion
	(mV)	(mV)	(mV)	(mV)	(mV)	P/F
-	600	590.0	590.4	0.4	±6.7	Pass
	(V)	(V)	(V)	(V)	(V)	P/F
	6	5.900	5.898	-0.002	±0.048	Pass
	60	59.00	58.99	-0.01	±0.50	Pass
	600	590.0	589.7	-0.3	±5.0	Pass
	1000	900	900	0	±12	Pass

2.交流电压的示值误差(交流电压): 见表3

Error of AC voltage indication(AC voltage): Shown in table 3

表3 Table 3

测试频率	量程	标准值	显示值	误差	最大允许误差	结论
Freq	Range	Standard value	Indication Value	Error	MPE	Conclusion
(Hz)	(V)	(V)	(V)	(V)	(V)	P/F
50	6	5.900	5.894	-0.006	±0.076	Pass
	60	59.00	59.00	0.00	±0.76	Pass
	600	590.0	589.8	-0.2	±7.6	Pass
	750	700	700	0	±16	Pass

3.直流电阻的示值误差(电阻): 见表4

Error of Resistance indication(Resistance): Shown in table 4

表4 Table 4

量程	标准值	显示值	误差	最大允许误差	结论
Range	Standard value	Indication Value	Error	MPE	Conclusion
(Ω)	(Ω)	(Ω)	(Ω)	(Ω)	P/F
600	100.0	100.1	0.1	±1.4	Pass
(kΩ)	(kΩ)	(kΩ)	(kΩ)	(kΩ)	P/F
6	1.000	0.999	-0.001	±0.012	Pass
60	10.00	9.99	-0.01	±0.12	Pass

UNI-TREND.VN





校准结果

RESULTS OF CALIBRATION

证书编号 GDDL202500110
Certificate No.

原始记录号 202500110
Record No.

第 5 页, 共 5 页
Page of

续表4 Table 4

量程	标准值	显示值	误差	最大允许误差	结论
Range	Standard value	Indication Value	Error	MPE	Conclusion
(kΩ)	(kΩ)	(kΩ)	(kΩ)	(kΩ)	P/F
600	100.0	99.9	-0.1	±1.2	Pass
(MΩ)	(MΩ)	(MΩ)	(MΩ)	(MΩ)	P/F
6	1.000	1.000	0.000	±0.014	Pass
60	10.00	10.01	0.01	±0.20	Pass

说明:

Note:

1. 本次测量结果的扩展不确定度:

The Expanded Uncertainty of Measurement:

(1) 钳形电流表: 交流电流: $U_{rel}=0.5\%$;

(2) 数字多用表: 直流电压: $U_{rel}=0.12\%$; 交流电压: $U_{rel}=0.12\%$; 电阻: $U_{rel}=0.12\%$;

包含因子 $k=2$, 本证书中给出的扩展不确定度依据 JJF1059.1-2012 《测量不确定度评定与表示》评定, 由合成标准不确定度乘以包含概率约为 95% 时对应的包含因子 k 得到。

Coverage factor $k=2$, the expanded uncertainty given in this certificate is evaluated according to JJF 1059.1-2012 "Evaluation and Expression of Uncertainty in Measurement", which is obtained by multiplying the combined standard uncertainty by the coverage factor k corresponding to the coverage probability of about 95%.

2. 校准结果符合性判定依据 JJF1094-2002 《测量仪器特性评定》第 5.3.1 条款和该仪器说明书技术要求。

Decision rules of conformity is in JJF1094-2002 "Evaluation of the Characteristic of Measuring Instruments" (5.3.1) and the technical requirements in the manual.

3. 该仪器的溯源日期为本证书的“校准日期”, 按照所依据技术文件的规定, 建议复校时间间隔不超过 1 年。更换重要部件、维修或对仪器性能有怀疑时, 应及时校准。

The traceability date of this instrument is the "Calibration Date" on this certificate. According to the demand of reference document, next calibration is proposed within 1 year. In case of replacement of important parts, maintenance or doubt on the performance of the instrument, it shall be calibrated in time.

4. 校准活动中对测量结果有影响的条件:

Conditions under which the calibrations were made that have an influence on the measurement results:

温度(Temperature): (20.1~20.5)°C, 湿度(Humidity): (45~46)%RH.

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