

校准证书
Calibration Certificate中国认可
国际互认
校准
CALIBRATION
CNAS L5138证书编号
Certificate No. Z2025N5-F386728

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客户名称
Client Name 华润东北电力工程有限公司苍南项目部地 址
Address 浙江省温州市龙港市巴曹华润电厂仪器名称
Description 开关特性测试仪型号/规格
Model/Type UHV-408 制造厂商
Manufacturer 武汉特高压电力科技有限公司出厂编号
Serial Number 2506142 管理编号
Management No. /接收日期
Date of Receipt 2025 年 06 月 23 日
Year Month Day校准日期
Calibration Date 2025 年 06 月 23 日
Year Month Day建议下次校准日期
Due Date 2026 年 06 月 22 日
Year Month Day发布日期
Issue Date 2025 年 06 月 24 日
Year Month Day

发证单位(专用章)

Issued by (stamp)



批准:

Approved by

王世

核验:

Inspected by

张艳艳

校准:

Calibrated by

陈永利

地址: 广东省深圳市龙岗区锦龙大道2号

Add: No.2, Jinlong Road, Longgang District, Shenzhen,
Guangdong, China

电话(Tel): 0755-84815081

邮编(Post Code): 518116

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说明

DIRECTIONS

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- 本实验室质量管理体系依据ISO/IEC17025:2017建立。
The laboratory quality management systems document is established according to ISO/IEC17025:2017.
- 本证书中的数据均可溯源至国际单位制（SI）单位和/或社会公用计量标准。
The data in this certificate can be traced to International System of Units (SI) and/or social public measurement standards.
- 本证书未经签章、数据涂改、或分离使用均无效。未经我司书面批准，不得部分复制此证书。校准结果仅对受测仪器当时之情况负责。
The Certificate is invalid when no stamp sealed on, data alteration or separate use. Without our written approval, the certification should not be partially duplicated. The calibration results are only responsible for calibration conditions of the instrument at the time.
- 本证书具有唯一性，带有相同证书编号、按页码顺序的组成页为校准证书，我司对本证书的内容拥有最终解释权。
The certificate is unique, and made up of pages with same certificate number and serial order, and reserves final explanation right of the certificate contents.
- 证书中最大允许误差、判定结果仅供参考，其中“P”代表“符合”，“F”代表“不符合”。
MPE & judgement result in the datasheet is only for reference, "P" is "Pass" "F" is "Fail".
- 若被校仪器属于强检范畴，按照法规要求，不能替代检定证书。
If the instrument belongs to compulsory test field, the corresponding calibration can not replace the verification according to the compulsory regulations.
- 带※的参数项目表示不在CNAS认可范围内。
Parameter with asterisk '※' is not within the accreditation by CNAS.
- 本次校准所依据的技术文件(Reference documents for the calibration):
JJG1120-2015 高压开关动作特性测试仪检定规程
- 校准的地点及环境条件(Place and environmental condition in the calibration):
校准地点: 委托方现场【武汉市江夏区高新五路84号实验室】
Cal. Place: 温度: 25.2 °C 相对湿度: 65 %
Temperature: Relative Humidity:
- 校准所用的主要计量标准器具(Main Standards of Measurement Used in the Calibration):

名称 Description	设备编号 Equipment No.	证书编号 Certificate No.	有效期至 Due date	溯源机构 Actuator
变压器有载分接开关校准装置	TS-SB-19853	校准字第202409101290号	2025-09-05	中国测试技术研究院

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1. 外观及工作性能检查:
(Appearance & Working Performance Check) 符合(Pass)

2. 合闸时间:
Closing Time

相别 Phase	标准值 Standard Value	示 值 Indication	示值误差 Indication Error	允 差 MPE	结论 Pass/Fail
A1	1ms	1.00ms	0.00ms	±0.2ms	P
	5ms	5.00ms	0.00ms	±0.2ms	P
	10ms	10.00ms	0.00ms	±0.2ms	P
	20ms	20.00ms	0.00ms	±0.2ms	P
	50ms	50.00ms	0.00ms	±0.2ms	P
	100ms	100.01ms	+0.01ms	±0.2ms	P
	500ms	500.01ms	+0.01ms	±0.2ms	P
	800ms	800.02ms	+0.02ms	±0.2ms	P
B1	1ms	1.00ms	0.00ms	±0.2ms	P
	5ms	5.00ms	0.00ms	±0.2ms	P
	10ms	10.00ms	0.00ms	±0.2ms	P
	20ms	20.00ms	0.00ms	±0.2ms	P
	50ms	50.00ms	0.00ms	±0.2ms	P
	100ms	100.00ms	0.00ms	±0.2ms	P
	500ms	500.01ms	+0.01ms	±0.2ms	P
	800ms	800.01ms	+0.01ms	±0.2ms	P
C1	1ms	1.00ms	0.00ms	±0.2ms	P
	5ms	5.00ms	0.00ms	±0.2ms	P
	10ms	10.00ms	0.00ms	±0.2ms	P
	20ms	20.00ms	0.00ms	±0.2ms	P
	50ms	50.00ms	0.00ms	±0.2ms	P
	100ms	100.01ms	+0.01ms	±0.2ms	P
	500ms	500.01ms	+0.01ms	±0.2ms	P
	800ms	800.02ms	+0.02ms	±0.2ms	P
A2	1ms	1.00ms	0.00ms	±0.2ms	P
	5ms	5.00ms	0.00ms	±0.2ms	P
	10ms	10.00ms	0.00ms	±0.2ms	P

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相别 Phase	标准值 Standard Value	示 值 Indication	示值误差 Indication Error	允 差 MPE	结论 Pass/Fail
B2	20ms	20.00ms	0.00ms	±0.2ms	P
	50ms	50.00ms	0.00ms	±0.2ms	P
	100ms	100.01ms	+0.01ms	±0.2ms	P
	500ms	500.01ms	+0.01ms	±0.2ms	P
	800ms	800.02ms	+0.02ms	±0.2ms	P
	1ms	1.00ms	0.00ms	±0.2ms	P
	5ms	5.00ms	0.00ms	±0.2ms	P
	10ms	10.00ms	0.00ms	±0.2ms	P
	20ms	20.00ms	0.00ms	±0.2ms	P
	50ms	50.00ms	0.00ms	±0.2ms	P
C2	100ms	99.99ms	-0.01ms	±0.2ms	P
	500ms	499.99ms	-0.01ms	±0.2ms	P
	800ms	799.99ms	-0.01ms	±0.2ms	P
	1ms	1.00ms	0.00ms	±0.2ms	P
	5ms	5.00ms	0.00ms	±0.2ms	P
	10ms	10.00ms	0.00ms	±0.2ms	P
	20ms	20.00ms	0.00ms	±0.2ms	P
	50ms	50.00ms	0.00ms	±0.2ms	P
	100ms	100.01ms	+0.01ms	±0.2ms	P
	500ms	500.02ms	+0.02ms	±0.2ms	P
A3	800ms	800.02ms	+0.02ms	±0.2ms	P
	1ms	1.00ms	0.00ms	±0.2ms	P
	5ms	5.00ms	0.00ms	±0.2ms	P
	10ms	10.00ms	0.00ms	±0.2ms	P
	20ms	20.00ms	0.00ms	±0.2ms	P
	50ms	50.00ms	0.00ms	±0.2ms	P
	100ms	100.01ms	+0.01ms	±0.2ms	P
	500ms	500.01ms	+0.01ms	±0.2ms	P
	800ms	800.02ms	+0.02ms	±0.2ms	P
B3	1ms	1.00ms	0.00ms	±0.2ms	P
	5ms	5.00ms	0.00ms	±0.2ms	P
	10ms	10.00ms	0.00ms	±0.2ms	P
	20ms	20.00ms	0.00ms	±0.2ms	P
	50ms	50.00ms	0.00ms	±0.2ms	P
	100ms	100.01ms	+0.01ms	±0.2ms	P

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相别 Phase	标准值 Standard Value	示 值 Indication	示值误差 Indication Error	允 差 MPE	结论 Pass/Fail
C3	500ms	500.01ms	+0.01ms	±0.2ms	P
	800ms	800.02ms	+0.02ms	±0.2ms	P
	1ms	1.00ms	0.00ms	±0.2ms	P
	5ms	5.00ms	0.00ms	±0.2ms	P
	10ms	10.00ms	0.00ms	±0.2ms	P
	20ms	20.00ms	0.00ms	±0.2ms	P
	50ms	50.00ms	0.00ms	±0.2ms	P
	100ms	100.01ms	+0.01ms	±0.2ms	P
	500ms	500.02ms	+0.02ms	±0.2ms	P
	800ms	800.02ms	+0.02ms	±0.2ms	P
A4	1ms	1.00ms	0.00ms	±0.2ms	P
	5ms	5.00ms	0.00ms	±0.2ms	P
	10ms	10.00ms	0.00ms	±0.2ms	P
	20ms	20.00ms	0.00ms	±0.2ms	P
	50ms	50.01ms	+0.01ms	±0.2ms	P
	100ms	100.02ms	+0.02ms	±0.2ms	P
	500ms	500.02ms	+0.02ms	±0.2ms	P
	800ms	800.03ms	+0.03ms	±0.2ms	P
	1ms	1.00ms	0.00ms	±0.2ms	P
	5ms	5.00ms	0.00ms	±0.2ms	P
B4	10ms	10.00ms	0.00ms	±0.2ms	P
	20ms	20.00ms	0.00ms	±0.2ms	P
	50ms	50.00ms	0.00ms	±0.2ms	P
	100ms	100.02ms	+0.02ms	±0.2ms	P
	500ms	500.02ms	+0.02ms	±0.2ms	P
	800ms	800.02ms	+0.02ms	±0.2ms	P
	1ms	1.00ms	0.00ms	±0.2ms	P
	5ms	5.00ms	0.00ms	±0.2ms	P
	10ms	10.00ms	0.00ms	±0.2ms	P
	20ms	20.00ms	0.00ms	±0.2ms	P
C4	50ms	50.00ms	0.00ms	±0.2ms	P
	100ms	100.02ms	+0.02ms	±0.2ms	P
	500ms	500.03ms	+0.03ms	±0.2ms	P
	800ms	800.03ms	+0.03ms	±0.2ms	P
	1ms	1.00ms	0.00ms	±0.2ms	P
	5ms	5.00ms	0.00ms	±0.2ms	P
	10ms	10.00ms	0.00ms	±0.2ms	P
	20ms	20.00ms	0.00ms	±0.2ms	P
	50ms	50.00ms	0.00ms	±0.2ms	P
	100ms	100.02ms	+0.02ms	±0.2ms	P

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3. 分闸时间: Opening Time

相别 Phase	标准值 Standard Value	示 值 Indication	示值误差 Indication Error	允 差 MPE	结论 Pass/Fail
A1	1ms	1.00ms	0.00ms	±0.2ms	P
	5ms	5.00ms	0.00ms	±0.2ms	P
	10ms	10.00ms	0.00ms	±0.2ms	P
	20ms	20.00ms	0.00ms	±0.2ms	P
	50ms	50.00ms	0.00ms	±0.2ms	P
	100ms	100.02ms	+0.02ms	±0.2ms	P
	500ms	500.02ms	+0.02ms	±0.2ms	P
B1	800ms	800.02ms	+0.02ms	±0.2ms	P
	1ms	1.00ms	0.00ms	±0.2ms	P
	5ms	5.00ms	0.00ms	±0.2ms	P
	10ms	10.00ms	0.00ms	±0.2ms	P
	20ms	20.00ms	0.00ms	±0.2ms	P
	50ms	50.01ms	+0.01ms	±0.2ms	P
	100ms	100.02ms	+0.02ms	±0.2ms	P
C1	500ms	500.02ms	+0.02ms	±0.2ms	P
	800ms	800.02ms	+0.02ms	±0.2ms	P
	1ms	1.00ms	0.00ms	±0.2ms	P
	5ms	5.00ms	0.00ms	±0.2ms	P
	10ms	10.00ms	0.00ms	±0.2ms	P
	20ms	20.00ms	0.00ms	±0.2ms	P
	50ms	50.00ms	0.00ms	±0.2ms	P
A2	100ms	100.01ms	+0.01ms	±0.2ms	P
	500ms	500.02ms	+0.02ms	±0.2ms	P
	800ms	800.04ms	+0.04ms	±0.2ms	P
	1ms	1.00ms	0.00ms	±0.2ms	P
	5ms	5.00ms	0.00ms	±0.2ms	P
	10ms	10.00ms	0.00ms	±0.2ms	P
	20ms	20.00ms	0.00ms	±0.2ms	P
	50ms	50.00ms	0.00ms	±0.2ms	P
	100ms	100.02ms	+0.02ms	±0.2ms	P

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相别 Phase	标准值 Standard Value	示 值 Indication	示值误差 Indication Error	允 差 MPE	结论 Pass/Fail
B2	500ms	500.02ms	+0.02ms	±0.2ms	P
	800ms	800.03ms	+0.03ms	±0.2ms	P
	1ms	1.00ms	0.00ms	±0.2ms	P
	5ms	5.00ms	0.00ms	±0.2ms	P
	10ms	10.00ms	0.00ms	±0.2ms	P
	20ms	20.00ms	0.00ms	±0.2ms	P
	50ms	50.00ms	0.00ms	±0.2ms	P
	100ms	100.03ms	+0.03ms	±0.2ms	P
	500ms	500.03ms	+0.03ms	±0.2ms	P
C2	800ms	800.02ms	+0.02ms	±0.2ms	P
	1ms	1.00ms	0.00ms	±0.2ms	P
	5ms	5.00ms	0.00ms	±0.2ms	P
	10ms	10.00ms	0.00ms	±0.2ms	P
	20ms	20.00ms	0.00ms	±0.2ms	P
	50ms	50.01ms	+0.01ms	±0.2ms	P
	100ms	100.02ms	+0.02ms	±0.2ms	P
	500ms	500.02ms	+0.02ms	±0.2ms	P
	800ms	800.02ms	+0.02ms	±0.2ms	P
A3	1ms	1.00ms	0.00ms	±0.2ms	P
	5ms	5.00ms	0.00ms	±0.2ms	P
	10ms	10.00ms	0.00ms	±0.2ms	P
	20ms	20.00ms	0.00ms	±0.2ms	P
	50ms	50.00ms	0.00ms	±0.2ms	P
	100ms	100.01ms	+0.01ms	±0.2ms	P
	500ms	500.02ms	+0.02ms	±0.2ms	P
	800ms	800.02ms	+0.02ms	±0.2ms	P
B3	1ms	1.00ms	0.00ms	±0.2ms	P
	5ms	5.00ms	0.00ms	±0.2ms	P
	10ms	10.00ms	0.00ms	±0.2ms	P
	20ms	20.00ms	0.00ms	±0.2ms	P
	50ms	50.00ms	0.00ms	±0.2ms	P
	100ms	100.01ms	+0.01ms	±0.2ms	P
	500ms	500.02ms	+0.02ms	±0.2ms	P
	800ms	800.02ms	+0.02ms	±0.2ms	P
C3	1ms	1.00ms	0.00ms	±0.2ms	P

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相别 Phase	标准值 Standard Value	示 值 Indication	示值误差 Indication Error	允 差 MPE	结论 Pass/Fail
A4	5ms	5.00ms	0.00ms	±0.2ms	P
	10ms	10.00ms	0.00ms	±0.2ms	P
	20ms	20.00ms	0.00ms	±0.2ms	P
	50ms	50.00ms	0.00ms	±0.2ms	P
	100ms	100.01ms	+0.01ms	±0.2ms	P
	500ms	500.02ms	+0.02ms	±0.2ms	P
	800ms	800.02ms	+0.02ms	±0.2ms	P
	1ms	1.00ms	0.00ms	±0.2ms	P
	5ms	5.00ms	0.00ms	±0.2ms	P
	10ms	10.00ms	0.00ms	±0.2ms	P
	20ms	20.00ms	0.00ms	±0.2ms	P
	50ms	50.00ms	0.00ms	±0.2ms	P
	100ms	100.00ms	0.00ms	±0.2ms	P
	500ms	500.00ms	0.00ms	±0.2ms	P
	800ms	800.00ms	0.00ms	±0.2ms	P
B4	1ms	1.00ms	0.00ms	±0.2ms	P
	5ms	5.00ms	0.00ms	±0.2ms	P
	10ms	10.00ms	0.00ms	±0.2ms	P
	20ms	20.00ms	0.00ms	±0.2ms	P
	50ms	50.00ms	0.00ms	±0.2ms	P
	100ms	100.00ms	0.00ms	±0.2ms	P
	500ms	500.01ms	+0.01ms	±0.2ms	P
	800ms	800.01ms	+0.01ms	±0.2ms	P
C4	1ms	1.00ms	0.00ms	±0.2ms	P
	5ms	5.00ms	0.00ms	±0.2ms	P
	10ms	10.00ms	0.00ms	±0.2ms	P
	20ms	20.00ms	0.00ms	±0.2ms	P
	50ms	50.00ms	0.00ms	±0.2ms	P
	100ms	100.01ms	+0.01ms	±0.2ms	P
	500ms	500.02ms	+0.02ms	±0.2ms	P
	800ms	800.02ms	+0.02ms	±0.2ms	P

4. 弹跳时间:

Bounce Time

相别 Phase	标准值 Standard Value	示 值 Indication	示值误差 Indication Error	允 差 MPE	结论 Pass/Fail
A1	5ms	5.00ms	0.00ms	±0.2ms	P

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相别 Phase	标准值 Standard Value	示 值 Indication	示值误差 Indication Error	允 差 MPE	结论 Pass/Fail
B1	10ms	10.00ms	0.00ms	$\pm 0.2\text{ms}$	P
	5ms	5.00ms	0.00ms	$\pm 0.2\text{ms}$	P
	10ms	10.00ms	0.00ms	$\pm 0.2\text{ms}$	P
C1	5ms	5.00ms	0.00ms	$\pm 0.2\text{ms}$	P
	10ms	10.01ms	+0.01ms	$\pm 0.2\text{ms}$	P
	5ms	5.00ms	0.00ms	$\pm 0.2\text{ms}$	P
A2	10ms	10.01ms	+0.01ms	$\pm 0.2\text{ms}$	P
	5ms	5.00ms	0.00ms	$\pm 0.2\text{ms}$	P
	10ms	10.01ms	+0.01ms	$\pm 0.2\text{ms}$	P
B2	5ms	5.00ms	0.00ms	$\pm 0.2\text{ms}$	P
	10ms	10.00ms	0.00ms	$\pm 0.2\text{ms}$	P
	5ms	5.00ms	0.00ms	$\pm 0.2\text{ms}$	P
C2	10ms	10.01ms	+0.01ms	$\pm 0.2\text{ms}$	P
	5ms	5.00ms	0.00ms	$\pm 0.2\text{ms}$	P
	10ms	10.01ms	+0.01ms	$\pm 0.2\text{ms}$	P
A3	5ms	5.00ms	0.00ms	$\pm 0.2\text{ms}$	P
	10ms	10.01ms	+0.01ms	$\pm 0.2\text{ms}$	P
	5ms	5.00ms	0.00ms	$\pm 0.2\text{ms}$	P
B3	10ms	10.00ms	0.00ms	$\pm 0.2\text{ms}$	P
	5ms	5.00ms	0.00ms	$\pm 0.2\text{ms}$	P
	10ms	10.00ms	0.00ms	$\pm 0.2\text{ms}$	P
C3	5ms	5.00ms	0.00ms	$\pm 0.2\text{ms}$	P
	10ms	10.00ms	0.00ms	$\pm 0.2\text{ms}$	P
	5ms	5.00ms	0.00ms	$\pm 0.2\text{ms}$	P
A4	10ms	10.02ms	+0.02ms	$\pm 0.2\text{ms}$	P
	5ms	5.00ms	0.00ms	$\pm 0.2\text{ms}$	P
	10ms	10.00ms	0.00ms	$\pm 0.2\text{ms}$	P
B4	5ms	5.01ms	+0.01ms	$\pm 0.2\text{ms}$	P
	10ms	10.02ms	+0.02ms	$\pm 0.2\text{ms}$	P
	5ms	5.00ms	0.00ms	$\pm 0.2\text{ms}$	P
C4	10ms	10.00ms	0.00ms	$\pm 0.2\text{ms}$	P
	5ms	5.01ms	+0.01ms	$\pm 0.2\text{ms}$	P
	10ms	10.02ms	+0.02ms	$\pm 0.2\text{ms}$	P

说明:本次测量结果的扩展不确定度为:

(The Expanded Uncertainty of the Measurement Result Is)

合闸时间: $U=0.05\text{ms}$; 分闸时间: $U=0.05\text{ms}$; 弹跳时间: $U=0.05\text{ms}$ $k=2$

(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)

-----以下空白(Blank below)-----