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检测  
TESTING  
CNAS L0223

**XIHARI**

No. 235778

# 检 验 报 告

## TEST REPORT

试品型号: HXGN□-V  
TYPE  
试品名称: 环保气体全绝缘全密封金属封闭环网开关设备  
DESIGNATION ENVIRONMENT-FRIENDLY GAS FULLY INSULATED FULLY  
SEALED METAL CLOSED RING SWITCHGEAR  
委托单位: 厦门宏发电气有限公司  
APPLICANT XIAMEN HONGFA ELECTRIC CO., LTD.  
制造单位: 厦门宏发电气有限公司  
MANUFACTURER XIAMEN HONGFA ELECTRIC CO., LTD.  
检验类别: 型式试验 (温升、绝缘及内部电弧性能)  
CLASSIFICATION TYPE TEST (TEMPERATURE-RISE, DIELECTRIC AND  
INTERNAL ARC PERFORMANCE)



西安高压电器研究院常州有限责任公司

XI'AN HIGH VOLTAGE APPARATUS RESEARCH INSTITUTE CHANGZHOU CO., LTD.



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注: 对高压开关类型式试验报告包含 6 种基本形式:

note: The six basic type test reports for high-voltage switchgear and controlgear are as follows:





——完整型式试验报告 Type Test Report of Complete Type Test

——绝缘性能型式试验报告 Type Test Report of Dielectric Performance

——温升性能型式试验报告 Type Test Report of Temperature Rise Performance

——短路/开断和关合性能型式试验报告 Type Test Report of Short-Circuit / Making and Breaking Performance

——开合性能型式试验报告 Type Test Report of Switching Performance

——内部电弧性能型式试验报告 Type Test Report of Internal Arc Performance

2) 性能试验报告: 报告包含了一项或多项试验, 试验依照相关的标准实施, 仅验证试品所做试验项目的性能。Performance Test Report: a report contains records of one or more tests carried out according to a related standards, only the performance conducted to the tests are verified.

3) 研究性试验报告: 报告包含了一项或多项试验, 试验依照客户要求或参照相关标准实施。Researching Test Report: a report contains records of one or more tests carried out based on a recognized standard, or according to the client's instruction.

4) 其它试验报告(委托试验报告、定型试验报告等)。Other (e.g. entrusted test report, prototype test report).

8 检验报告封面到结论页页面右下角无查询二维码无效。The entire report shall be considered invalid if there is no QR code in the bottom-right corner from the cover page to the "Conclusions " page.

联系方式 Contact information:

地址: 江苏省常州市天宁区青洋北路 159 号

邮政编码 Zip code: 213017

Address: No.159 Qing Yang North Street Changzhou Jiangsu P.R.China

电话 Tel: (+86)-0519-85505720

传真 Fax: (+86)-0519-85509750

网址 Web: www.xihari.com

电子邮箱 E-mail: lab@xihari.com



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## 试品基本信息

### Description of the test object

型号名称: HXGN□-V 环保气体全绝缘全密封金属封闭环网开关设备  
 Type and Designation: Environment-Friendly Gas Fully Insulated Fully Sealed Metal Closed Ring Switchgear  
 委托单位: 厦门宏发电气有限公司  
 Applicant: Xiamen Hongfa Electric Co., Ltd.  
 地址: 厦门市海沧区东孚西二路 15 号 (361028)  
 Address: No.15, Dongfuxi Second Road, Haicang District, Xiamen (361028)  
 电话 Tel: 0592-5996731 传真 Fax: 0592-5996732  
 制造单位: 厦门宏发电气有限公司  
 Manufacturer: Xiamen Hongfa Electric Co., Ltd.  
 地址: 厦门市海沧区东孚西二路 15 号 (361028)  
 Address: No.15, Dongfuxi Second Road, Haicang District, Xiamen (361028)  
 电话 Tel: 0592-5996731 传真 Fax: 0592-5996732

制造单位规定的试品主要技术数据 Main technical data assigned by the manufacturer:

额定电压 Rated voltage kV	12	✓
额定电流 Rated current A	630	✓
额定频率 Rated frequency Hz	50	✓
额定短时耐受电流(主回路) Rated short-time withstand current (main circuit) kA	20	✓
额定峰值耐受电流(主回路) Rated peak withstand current(main circuit) kA	50	✓
额定短路持续时间(主回路) Rated duration of short-circuit(main circuit) s	4	✓
额定短时耐受电流(接地回路) Rated short-time withstand current (earthing circuit) kA	17.4	✓
额定峰值耐受电流(接地回路) Rated peak withstand current (earthing circuit) kA	43.5	✓
额定短路持续时间(接地回路) Rated duration of short-circuit (earthing circuit) s	2	✓
额定短时工频耐受电压 Rated short-duration power-frequency withstand voltage kV	42	✓
额定雷电冲击耐受电压 Rated lightning impulse withstand voltage kV	75	✓
额定短时工频耐受电压(断口) Rated power-frequency withstand voltage(across the open switching device) kV	48	✓
额定雷电冲击耐受电压(断口) Rated lightning impulse withstand voltage(across the open switching device) kV	85	✓



气体的额定压力(20℃表压) Rated pressure of gas(meter pressure at 20℃) Mpa	干燥空气 Dry air 0.02	✓
气体的最低功能压力(20℃表压) Min. function pressure of gas(meter pressure at 20℃) Mpa	干燥空气 Dry air 0.01	✓
内部电弧等级 IAC class	AFLR 20kA 1s	✓
防护等级 Degree of protection	IP4X/ IP2X	✓
出厂日期及编号 Manufacture date and serial number(绝缘、温升及短时耐受电流和峰值耐受电流试验 Dielectric, temperature-rise tests and short-time and peak withstand current tests / 内部电弧试验 Internal arc tests/ IP/ 其他试验 The other test)	2023-07、G2023070089 2023-07、G2023070090 2023-07、G2023070093 2023-07、G2023070094	
注 1: 以上信息和数据由委托单位/制造单位提供, 本实验室不对其准确性负责。 Note1: The above information and data are provided by Applicant/Manufacturer and the laboratory is not responsible for its accuracy.		
注 2: “✓” 表示该额定值在本检验报告中已得到验证。 Note2: “✓” This rating has been proved by the tests in this report.		





## 检验结论

## Conclusions

型号名称: HXGN□-V 环保气体全绝缘全密封金属封闭环网开关设备  
 Type and Designation: Environment-Friendly Gas Fully Insulated Fully Sealed Metal Closed Ring Switchgear  
 委托单位: 厦门宏发电气有限公司  
 Applicant: Xiamen Hongfa Electric Co., Ltd.  
 地址: 厦门市海沧区东孚西二路 15 号 (361028)  
 Address: No.15, Dongfuxi Second Road, Haicang District, Xiamen (361028)  
 电话 Tel: 0592-5996731 传真 Fax: 0592-5996732  
 制造单位: 厦门宏发电气有限公司  
 Manufacturer: Xiamen Hongfa Electric Co., Ltd.  
 地址: 厦门市海沧区东孚西二路 15 号 (361028)  
 Address: No.15, Dongfuxi Second Road, Haicang District, Xiamen (361028)  
 电话 Tel: 0592-5996731 传真 Fax: 0592-5996732

依据标准 Standards for Test Performance: GB/T 3906-2020

实施的项目 Test have been performed:

序号 Serial	项目 Items	参数 Parameters	判定标准 Standards for Verdict	结果 Result
1	工频耐受电压试验 Power frequency withstand voltage tests	相间及对地 Between phases, to earth: 42kV 1min 真空断口 Across vacuum contact: 48kV 1min 隔离断口 Across the isolating distance: 48kV 1min	GB/T 3906-2020 7.2	符合 Satisfied
2	雷电冲击耐受电压试验 Lightning impulse withstand voltage tests	相间及对地 Between phases, to earth: 75kV 真空断口 Across vacuum contact: 85kV 隔离断口 Across the isolating distance: 85kV	GB/T 3906-2020 7.2	符合 Satisfied
3	控制和辅助回路的绝缘试验 Dielectric tests on auxiliary and control circuits	2000V 1min	GB/T 3906-2020 7.2.11	符合 Satisfied
4	局部放电测量 Partial discharge measurement	13.2kV ≤ 20pC	GB/T 3906-2020 7.2.10	符合 Satisfied
5	IP 代码的检验 Verification of IP code	外壳 Enclosure: IP4X 隔室间 Between compartments: IP2X	GB/T 3906-2020 7.7.1	符合 Satisfied
6	短时耐受电流和峰值耐受电流试验 Short-time and peak withstand current tests	主回路 Main circuit: 20kA、4s、峰值(peak) 50kA 接地连接回路 Earthing circuit: 17.4kA、2s 峰值(peak) 43.5kA	GB/T 3906-2020 7.6	符合 Satisfied



序号 Serial	项目 Items	参数 Parameters	判定标准 Standards for Verdict	结果 Result
7	内部电弧试验 Internal arc tests	IAC 级(class): AFLR 12kV、20kA、1s 峰值(peak) 50kA (开关室和电缆室 CB compartment and cable compartment)	GB/T 3906-2020 7.106	符合 Satisfied
8	回路电阻测量 Measurement of the resistance of circuits	/	GB/T 3906-2020 7.4	符合 Satisfied
9	温升试验 Temperature-rise tests	1.1×630A (按委托方要求, 试验电流为 额定电流的 1.1 倍 Required by clients, the test current was 1.1 times the rated current)	GB/T 3906-2020 7.5	符合 Satisfied
10	辅助和控制设备的温升试验 Temperature-rise Tests of A.C.E	/	GB/T 3906-2020 7.5.6	符合 Satisfied
11	机械试验 Mechanical tests	联锁检查 Interlock verification	GB/T 3906-2020 7.102	符合 Satisfied
12	密封试验 Tightness Tests	≤ 0.01%/Y	GB/T 3906-2020 7.8	符合 Satisfied
13	充气隔室的压力耐受试验 Pressure withstand test for gas-filled compartments	设计压力 Design pressure: 0.07MPa (20℃时表压 meter pressure)	GB/T 3906-2020 7.103	符合 Satisfied

注 Note:

1. 试验参照 CHPTL[2018]09 号 《12kV 环网柜(箱) 标准化设计样机试验细则》中要求进行。

Tests were performed with the reference to No. CHPTL[2018]09 <Test plan for 12kV ring main unit standardized sample>.

2. 本产品已按照国家电网公司制定的《12kV 环网柜(箱) 标准化设计定制方案》中规定在试品制造单位完成现场样机检查。现场样机检查实施日期为 2023-08-11。The test sample already finished the spot inspection in according to <Custom solution for 12kV ring main unit standardized sample design> at the manufacturer plant. The date of spot inspection is 2023-08-11.

编写  
Edited:

王恒

校核

Checked:

熊琪

批准

Approved:

刘震

日期  
Date:

2023-12-25

日期  
Date:

2023-12-25

日期  
Date:

2023-12-25

