

CALIBRATION CERTIFICATE

Certificate No.



J202607276787A-0003

Page 1 of 6

Client

Servico Nacional de Aprendizagem Industrial

Contact Inf.

Av. Assis Brasil, 8787 Bairro Sarandi, ZIP CODE 91140-001, Porto Alegre - RS, Brasil

Description

AUTOMOTIVE POWER FAIL SIMULATOR

Manufacturer

LISUN GROUP

Model/Type

PFS-80V100A

Receipt Date

2026-08-01

Y M D

Serial No.

LS1WB2606A02

Cal. Date

2026-08-01

Y M D

Asset No.

Issued Date

2026-08-06

Y M D

Approved by

罗望初

luo wang chu

Inspected by

李士

li shi

Calibrated by

文斌

wen bin

(Stamp)

Headquarters Add.:

No.8, Chuangyun Road, Shiqi Town, Panyu District, Guangzhou, Guangdong, China

Add.of the Lab:

No.8, Chuangyun Road, Shiqi Town, Panyu District, Guangzhou, Guangdong, China

Tel.:400-602-0999

Postcode:511450

Website:http:// www.grgtest.com

E-mail:grgtest@grgtest.com



Scan

CheckCode: 262428

DIRECTIONS OF CALIBRATION

Certificate No.: J202607276787A-0003

Page 2 of 6

1.The quality system is in accordance with ISO/IEC 17025:2017,the calibration results are traceable to the International System of Units (SI).

2.The result is only valid for the calibrated sample.The certificate shall not be reproduced except in full,without the written approval of our laboratory .please feedback to us within 15 days if you have any question.

3.Each certificate has a unique number. The suffix of "-Gx" will be added to the number as a replacement of the old version. The original certificate will be officially invalid once the new certificate number is issued.The modified certificate shall be based on the client content.

4.MPE & judgement result in the datasheet is only for reference , "P" is "Pass" , "F" is "Fail" and "N/A" is "Not Applicable".Whereas users should evaluate the effects of MU of calibration results on conformance assessment by actual measurement.

5.The traceability date of this instrument is the calibration date on this certificate.

6.Place and environmental conditions of the calibration:

Place: Room 703, Building A4, Huanchuang Enterprise Plaza, Yuelu District, Changsha

Temperature: 21.8℃

Relative Humidity: 56%

7.Suggested calibration interval is 1 year or it can be altered depending on the actual usage of the user.

8.Reference document and accredited scope by CNAS for calibration, beyond which isn't accredited. Please see the attachment of certificate on CNAS website for details.

JJF(电子) 0019-2018 汽车电瞬态传导骚扰模拟器校准规范(C.S. for Road vehicles- Electrical Transient Conduction Disturbance Simulators) 试验电压: $\pm 50V$ 脉冲幅度: $\pm 600V$ 上升/下降时间: 1ns~10ms 脉冲宽度/重复时间: 100ns~10s

DIRECTIONS OF CALIBRATION

Certificate No.: J202607276787A-0003

Page 3 of 6

9. Main Standards of Measurement Used in the Calibration.:

Description	Serial No.	Certificate No./ Due Date	Traceability Institute	Technique Character
digital oscilloscope	C010584	J202603193714- 0008 2027-03-31	广电计量检测集 团股份有限公司	V:±1% , t: ±0.01%

10.Measurement traceability declaration.:

数字示波器/digital oscilloscope (C010584)→多功能校准器/multifunction calibrator(6025904)→数字多用表/
Digital multimeter(456175079)→精密交直流同轴分流器/AC/DC coaxial shunt(05155847)→直流电阻副基准装
置（中国计量科学研究院/NIM）；

校准结果 RESULTS OF CALIBRATION

证书编号: J202607276787A-0003

第 4 页 共 6 页

Certificate No.

Page of

1、外观以及一般性检查: 正常

In view of External and Generality check : Pass

2. 通断时间: (Turn-off time):

2.1 电源线模式开通时间 (Power Line Mode Turn-on Time) (1 Ω /1V)

设定值 Setting	实测值 Measured	误差 Error	不确定度 $U_{rel}(k=2)$	允许误差 MPE	结 论 Conclusion
(μ s)	(μ s)	(μ s)	(%)	(μ s)	(Pass/Fail)
10	10.0	0.0	5.5	± 2.0	P
200	200	0	5.5	± 40	P
(ms)	(ms)	(ms)	(%)	(ms)	(Pass/Fail)
1	1.00	0.00	5.5	± 0.20	P
10	10.0	0.0	5.5	± 2.0	P
1000	1000	0	5.5	± 200	P

2.2 电源线模式关断时间 (Power Line Mode Turn-off Time) (1 Ω /1V)

设定值 Setting	实测值 Measured	误差 Error	不确定度 $U_{rel}(k=2)$	允许误差 MPE	结 论 Conclusion
(μ s)	(μ s)	(μ s)	(%)	(μ s)	(Pass/Fail)
10	10.0	0.0	5.5	± 2.0	P
200	200	0	5.5	± 40	P
(ms)	(ms)	(ms)	(%)	(ms)	(Pass/Fail)
1	1.00	0.00	5.5	± 0.20	P
10	10.0	0.0	5.5	± 2.0	P
1000	1000	0	5.5	± 200	P

2.3 电源线模式开通时间 (Power Line Mode Turn-on Time) (100 Ω /10V)

设定值 Setting	实测值 Measured	误差 Error	不确定度 $U_{rel}(k=2)$	允许误差 MPE	结 论 Conclusion
(μ s)	(μ s)	(μ s)	(%)	(μ s)	(Pass/Fail)
10	10.0	0.0	5.5	± 2.0	P
200	200	0	5.5	± 40	P
(ms)	(ms)	(ms)	(%)	(ms)	(Pass/Fail)
1	1.00	0.00	5.5	± 0.20	P
10	10.0	0.0	5.5	± 2.0	P
1000	1000	0	5.5	± 200	P

2.4 电源线模式关断时间 (Power Line Mode Turn-off Time) (100 Ω /10V)

设定值 Setting	实测值 Measured	误差 Error	不确定度 $U_{rel}(k=2)$	允许误差 MPE	结 论 Conclusion
(μ s)	(μ s)	(μ s)	(%)	(μ s)	(Pass/Fail)
10	10.0	0.0	5.5	± 2.0	P
200	200	0	5.5	± 40	P
(ms)	(ms)	(ms)	(%)	(ms)	(Pass/Fail)
1	1.00	0.00	5.5	± 0.20	P
10	10.0	0.0	5.5	± 2.0	P
1000	1000	0	5.5	± 200	P

校准结果
RESULTS OF CALIBRATION

证书编号: J202607276787A-0003

第 5 页 共 6 页

Certificate No.

Page of

2.5信号线模式开通时间 (Signal Line Mode Turn-on Time) (1Ω/1V)

设定值 Setting	实测值 Measured	误差 Error	不确定度 $U_{rel}(k=2)$	允许误差 MPE	结论 Conclusion
(μs)	(μs)	(μs)	(%)	(μs)	(Pass/Fail)
10	10.0	0.0	5.5	± 2.0	P
200	200	0	5.5	± 40	P
(ms)	(ms)	(ms)	(%)	(ms)	(Pass/Fail)
1	1.00	0.00	5.5	± 0.20	P
10	10.0	0.0	5.5	± 2.0	P
1000	1000	0	5.5	± 200	P

2.6信号线模式关断时间 (Signal Line Mode Turn-off Time) (1Ω/1V)

设定值 Setting	实测值 Measured	误差 Error	不确定度 $U_{rel}(k=2)$	允许误差 MPE	结论 Conclusion
(μs)	(μs)	(μs)	(%)	(μs)	(Pass/Fail)
10	10.0	0.0	5.5	± 2.0	P
200	200	0	5.5	± 40	P
(ms)	(ms)	(ms)	(%)	(ms)	(Pass/Fail)
1	1.00	0.00	5.5	± 0.20	P
10	10.0	0.0	5.5	± 2.0	P
1000	1000	0	5.5	± 200	P

2.7信号线模式开通时间 (Signal Line Mode Turn-on Time) (1000Ω/10V)

设定值 Setting	实测值 Measured	误差 Error	不确定度 $U_{rel}(k=2)$	允许误差 MPE	结论 Conclusion
(μs)	(μs)	(μs)	(%)	(μs)	(Pass/Fail)
10	10.0	0.0	5.5	± 2.0	P
200	200	0	5.5	± 40	P
(ms)	(ms)	(ms)	(%)	(ms)	(Pass/Fail)
1	1.00	0.00	5.5	± 0.20	P
10	10.0	0.0	5.5	± 2.0	P
1000	1000	0	5.5	± 200	P

2.8信号线模式关断时间 (Signal Line Mode Turn-off Time) (1000Ω/10V)

设定值 Setting	实测值 Measured	误差 Error	不确定度 $U_{rel}(k=2)$	允许误差 MPE	结论 Conclusion
(μs)	(μs)	(μs)	(%)	(μs)	(Pass/Fail)
10	10.0	0.0	5.5	± 2.0	P
200	200	0	5.5	± 40	P
(ms)	(ms)	(ms)	(%)	(ms)	(Pass/Fail)
1	1.00	0.00	5.5	± 0.20	P
10	10.0	0.0	5.5	± 2.0	P
1000	1000	0	5.5	± 200	P

校准结果
RESULTS OF CALIBRATION

证书编号: J202607276787A-0003

第 6 页 共 6 页

Certificate No.

Page of

3.上升/下降时间 (Rise/Fall Time)

3.1电源线模式上升/下降时间 (Power Line Mode Rise/Fall Time) (1Ω/13.5V)

	实测值 Measured (ns)	不确定度 $U_{rel}(k=2)$ (%)	允许值 Limit (ns)	结 论 Conclusion (Pass/Fail)
上升时间	170	5.5	≤ 200	P
下降时间	140	5.5	≤ 200	P

3.2电源线模式上升/下降时间 (Power Line Mode Rise/Fall Time) (100Ω/13.5V)

	实测值 Measured (ns)	不确定度 $U_{rel}(k=2)$ (%)	允许值 Limit (ns)	结 论 Conclusion (Pass/Fail)
上升时间	100	5.5	≤ 200	P
下降时间	140	5.5	≤ 200	P

备注:

Notes:

结论(Conclusion): 所校项目符合技术要求 (The calibrated items meet the technical specifications)

1.本报告给出的扩展不确定度是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 得到的。

The extended uncertainty given in the report is obtained by multiplying the combined standard uncertainty by the coverage factor k corresponding to the inclusion probability of about 95%.

2.依据(Reference document)

JJF 1059.1-2012 测量不确定度评定与表示

(JJF 1059.1-2012 Evaluation and Expression of Uncertainty in Measurement)

3.时间参数配套客户专用负载电阻测试。

(Testing of customer-specific load resistors with time-parameter matching)

(以下空白)

(The below is blank)