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| **《安装式交流电能表检定规程》** |
| **安装式交流电能表检定原始记录** |
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| 《安装式交流电能表检定规程》编制小组  2022年5月18日 |

安装式交流电能表检定原始记录

检定证书/检定结果通知书编号：2022F15-20-83041001检定日期： 2022-05-18

委托单位: 上海金陵智能电表有限公司 单位地址： 上海市奉贤区辉煌路兰宝科技园

仪器名称:三相四线智能电能表 (☑静止式□机电式)型号DTZY501出厂编号：202201

制造单位:上海金陵智能电表有限公司准确度等级:有功B级无功2级 接入方式:直接式

标称电压:3×220/380V 最小电流/转折电流/最大电流（有功）： 0.2-0.5(60)A

基本电流或额定电流/最大电流(无功): 5(60)A 相线和线数： 三相四线

常数： 有功1000imp/kWh 无功1000imp/kvarh 技术依据： JJG596-20XX

温度： 22 ℃相对湿度： 59 %标称频率： 50 Hz

多功能：☑多费率 □预付费 ☑最大需量 其他： 多功能电能表无预付费功能

检定使用的计量标准器具：

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 标准器名称 | 型号 | 设备编号 | 不确定度/准确度等级/最大允许误差 | 检定/校准证书号 | 有效期 |
| 三相电能表检定装置 | DZ603-16 | L3G001 | 3×（60~380）V  3×（0.005~100）A  /0.05级 | 2021F15-20-43241201 | 2022-10-19 |
| 耐电压测试仪 | ZHZ8 | 04625 | (0~5000)V/5级 | 2021F15-10-33243301 | 2022-08-30 |
| 时钟精度测量仪 | ITP02 | 5010001 | 0.5s/d～-0.5s/d  ±0.05s/d | 2021F00-10-2281675001 | 2022-07-28 |

1. 外观功能检查

标志符合6.1条要求，其中国家计量行政部门要求的标志和编号为CPA2021001,

有双方框符号“回”。

结论：☑合格 / □不合格

1. 交流电压试验

结论：☑合格 / □不合格

1. 潜动试验

结论：☑合格 / □不合格

1. 起动试验

|  |  |
| --- | --- |
| 技术要求 | 检定结果 |
| 在标称频率、标称电压*U*nom和cos=1的条件下，电流线路通以表6规定的起动电流*I*st（三相电能表各相同时加电压和起动电流），在规定的时限1.5τ内电能表应能起动并连续累计电能。 | 符合要求 |
| 在起动电流时其固有误差不超过表1规定的最大允许误差 | +0.09% |

结论：☑合格 / □不合格

1. 固有误差

5.1有功电能固有误差 ☑正向/□反向有功

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 有功电能固有误差（%）□单相电能表/☑三相电能表平衡负载 | | | | | | | | | | | | | | | | | | | | | | |
| 电流*I* | cos | | | | | | | | cos | | | | | | | | cos | | | | | |
| 误差1 | 误差2 | | | 平均值 | | 修约结果 | | 误差1 | 误差2 | | | 平均值 | | 修约结果 | | 误差1 | 误差2 | | 平均值 | | 修约结果 |
| *I*max | -0.092 | -0.103 | | | -0.098 | | -0.1 | | -0.232 | -0.214 | | | -0.223 | | -0.2 | | -0.033 | -0.028 | | -0.031 | | 0.0 |
| 0.5*I*max | -0.093 | -0.086 | | | -0.090 | | -0.1 | | -0.182 | -0.164 | | | -0.173 | | -0.2 | | -0.062 | -0.056 | | -0.059 | | -0.1 |
| 10 *I*tr | -0.074 | -0.071 | | | -0.073 | | -0.1 | | -0.113 | -0.132 | | | -0.123 | | -0.1 | | -0.063 | -0.054 | | -0.059 | | -0.1 |
| *I*tr | -0.073 | -0.065 | | | -0.069 | | -0.1 | | -0.072 | -0.062 | | | -0.067 | | -0.1 | | -0.071 | -0.068 | | -0.070 | | -0.1 |
| *I*min | -0.074 | -0.062 | | | -0.068 | | -0.1 | | -0.063 | -0.059 | | | -0.061 | | -0.1 | | -0.075 | -0.059 | | -0.067 | | -0.1 |
| 电流*I* | cos | | | | | | | | cos | | | | | | | | cos | | | | | |
| *I*max | -0.092 | -0.104 | | | -0.098 | | -0.1 | | -0.293 | -0.277 | | | -0.285 | | -0.3 | | / | / | | / | | / |
| 10 *I*tr | -0.074 | -0.083 | | | -0.079 | | -0.1 | | -0.164 | -0.154 | | | -0.159 | | -0.2 | | / | / | | / | | / |
| *I*tr | -0.054 | -0.047 | | | -0.051 | | -0.1 | | -0.102 | -0.123 | | | -0.113 | | -0.1 | | / | / | | / | | / |
| 有功电能固有误差（%） 不平衡负载 | | | | | | | | | | | | | | | | | | | | | | |
| 相别 | cos | | | | | | | | | | | | | cos | | | | | | | | |
| 电流*I* | | 误差1 | | | 误差2 | | 平均值 | | | 修约结果 | | | 误差1 | | 误差2 | | | 平均值 | | 修约结果 | |
| A相 | *I*max | | -0.096 | | | -0.089 | | -0.093 | | | -0.1 | | | -0.239 | | -0.254 | | | -0.247 | | -0.2 | |
| 10 *I*tr | | -0.073 | | | -0.067 | | -0.070 | | | -0.1 | | | -0.136 | | -0.125 | | | -0.131 | | -0.1 | |
| *I*tr | | -0.051 | | | -0.065 | | -0.058 | | | -0.1 | | | -0.124 | | -0.115 | | | -0.120 | | -0.1 | |
| B相 | *I*max | | -0.072 | | | -0.067 | | -0.070 | | | -0.1 | | | -0.012 | | -0.031 | | | -0.022 | | 0.0 | |
| 10 *I*tr | | -0.053 | | | -0.035 | | -0.044 | | | 0.0 | | | -0.213 | | -0.221 | | | -0.217 | | -0.2 | |
| *I*tr | | -0.055 | | | -0.045 | | -0.050 | | | -0.1 | | | -0.084 | | -0.068 | | | -0.076 | | -0.1 | |
| C相 | *I*max | | -0.112 | | | -0.123 | | -0.118 | | | -0.1 | | | -0.039 | | -0.054 | | | -0.047 | | 0.0 | |
| 10 *I*tr | | -0.094 | | | -0.082 | | -0.088 | | | -0.1 | | | -0.181 | | -0.194 | | | -0.188 | | -0.2 | |
| *I*tr | | -0.095 | | | -0.077 | | -0.086 | | | -0.1 | | | -0.073 | | -0.061 | | | -0.067 | | -0.1 | |
| 平衡负载和不平衡负载时的有功电能误差偏移极限（%） | | | | | | | | | | | | | | | | | | | | | | |
| 电流*I* | cos | | | | | | | | | | | cos | | | | | | | | | | |
| A相 | | | B相 | | | | C相 | | | | A相 | | | | B相 | | | | C相 | | |
| *I*max | 0.0 | | | 0.0 | | | | 0.0 | | | | 0.0 | | | | -0.2 | | | | -0.2 | | |
| 10 *I*tr | 0.0 | | | -0.1 | | | | 0.0 | | | | 0.0 | | | | 0.1 | | | | 0.1 | | |

5.2无功电能固有误差 ☑正向/□反向无功；☑直接接入/□经电流互感器接入(宽负载)

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 无功电能固有误差（%）□单相电能表/□三相电能表平衡负载 | | | | | | | | | | | | | | | | | | | | | | | |
| 电流*I* | sin | | | | | | | sin | | | | | | | | sin | | | | | | | |
| 误差1 | | 误差2 | | | 平均值 | 修约结果 | 误差1 | | | 误差2 | | 平均值 | 修约结果 | | 误差1 | | | 误差2 | | 平均值 | | 修约结果 |
| *I*max | -0.092 | | -0.079 | | | -0.086 | 0.0 | -0.074 | | | -0.056 | | -0.065 | 0.0 | | 0.053 | | | 0.063 | | 0.058 | | 0.0 |
| 0.5*I*max | -0.094 | | -0.071 | | | -0.083 | 0.0 | -0.065 | | | -0.086 | | -0.076 | 0.0 | | 0.024 | | | 0.045 | | 0.035 | | 0.0 |
| *I*b | -0.074 | | -0.053 | | | -0.064 | 0.0 | -0.042 | | | -0.064 | | -0.053 | 0.0 | | -0.047 | | | -0.027 | | -0.037 | | 0.0 |
| 0.2*I*b | —— | | —— | | | —— | — | +0.244 | | | +0.212 | | +0.228 | +0.2 | | -0.042 | | | -0.074 | | -0.058 | | 0.0 |
| 0.1*I*b | +0.224 | | +0.242 | | | +0.233 | +0.2 | +0.234 | | | +0.252 | | +0.243 | +0.2 | | -0.056 | | | -0.045 | | -0.051 | | 0.0 |
| 0.05*I*b | +0.224 | | +0.252 | | | +0.238 | +0.2 | —— | | | —— | | —— | — | | —— | | | —— | | —— | | — |
| 电流*I* | sin | | | | | | | | | | | sin | | | | | | | | | | | |
| 误差1 | | | 误差2 | | | 平均值 | | 修约结果 | | | 误差1 | | | 误差2 | | 平均值 | | | | | 修约结果 | |
| *I*max | -0.091 | | | -0.079 | | | -0.085 | | 0.0 | | | +0.113 | | | +0.109 | | +0.111 | | | | | +0.2 | |
| 0.5*I*max | -0.082 | | | -0.098 | | | -0.090 | | 0.0 | | | +0.012 | | | 0.032 | | +0.022 | | | | | 0.0 | |
| *I*b | -0.072 | | | -0.058 | | | -0.065 | | 0.0 | | | +0.021 | | | -0.014 | | +0.004 | | | | | 0.0 | |
| 0.2*I*b | -0.043 | | | -0.073 | | | -0.058 | | 0.0 | | | +0.053 | | | +0.035 | | +0.044 | | | | | 0.0 | |
| 无功电能固有误差（%） 不平衡负载 | | | | | | | | | | | | | | | | | | | | | | | |
| 电流*I* | A相 | | | | | | | | | | | | | | | | | | | | | | |
| sin | | | | | | | sin | | | | | | | | sinC | | | | | | | |
| 误差1 | 误差2 | | | 平均值 | | 修约结果 | 误差1 | | 误差2 | | 平均值 | | 修约结果 | | 误差1 | | 误差2 | | 平均值 | | | 修约结果 |
| *I*max | -0.088 | -0.068 | | | -0.078 | | 0.0 | -0.048 | | -0.062 | | -0.055 | | 0.0 | | -0.021 | | 0.022 | | 0.000 | | | 0.0 |
| *I*b | -0.035 | -0.055 | | | -0.045 | | 0.0 | 0.069 | | 0.056 | | 0.063 | | 0.0 | | -0.049 | | -0.032 | | -0.041 | | | 0.0 |
| 0.2*I*b | —— | —— | | | —— | | — | -0.029 | | 0.012 | | -0.009 | | 0.0 | | -0.051 | | -0.035 | | -0.043 | | | 0.0 |
| 0.1*I*b | -0.063 | -0.051 | | | -0.057 | | 0.0 | —— | | —— | | —— | | — | | —— | | —— | | —— | | | — |
| 电流*I* | B相 | | | | | | | | | | | | | | | | | | | | | | |
| sin | | | | | | | sin | | | | | | | | sinC | | | | | | | |
| 误差1 | 误差2 | | | 平均值 | | 修约结果 | 误差1 | | 误差2 | | 平均值 | | 修约结果 | | 误差1 | | 误差2 | | 平均值 | | | 修约结果 |
| *I*max | -0.121 | -0.134 | | | -0.128 | | -0.2 | -0.067 | | -0.082 | | -0.075 | | 0.0 | | -0.123 | | -0.094 | | -0.109 | | | 0.0 |
| *I*b | -0.079 | -0.099 | | | -0.089 | | 0.0 | -0.025 | | -0.052 | | -0.039 | | 0.0 | | -0.121 | | -0.145 | | -0.133 | | | -0.2 |
| 0.2*I*b | —— | —— | | | —— | | — | -0.113 | | -0.084 | | -0.099 | | 0.0 | | -0.142 | | -0.133 | | -0.138 | | | -0.2 |
| 0.1*I*b | -0.059 | -0.064 | | | -0.062 | | 0.0 | —— | | —— | | —— | | — | | —— | | —— | | —— | | | — |
| 电流*I* | C相 | | | | | | | | | | | | | | | | | | | | | | |
| sin | | | | | | | sin | | | | | | | | sinC | | | | | | | |
| 误差1 | 误差2 | | | 平均值 | | 修约结果 | 误差1 | | 误差2 | | 平均值 | | 修约结果 | | 误差1 | | 误差2 | | 平均值 | | | 修约结果 |
| *I*max | -0.046 | -0.039 | | | -0.043 | | 0.0 | -0.044 | | -0.102 | | -0.073 | | 0.0 | | -0.141 | | -0.165 | | -0.153 | | | -0.2 |
| *I*b | -0.028 | -0.054 | | | -0.041 | | 0.0 | -0.123 | | -0.104 | | -0.114 | | -0.2 | | -0.142 | | -0.153 | | -0.148 | | | -0.2 |
| 0.2*I*b | —— | —— | | | —— | | — | -0.113 | | -0.194 | | -0.154 | | -0.2 | | -0.153 | | -0.124 | | -0.139 | | | -0.2 |
| 0.1*I*b | -0.047 | -0.068 | | | -0.058 | | 0.0 | —— | | —— | | —— | | — | | —— | | —— | | —— | | | — |

结论：☑合格 / □不合格

1. 仪表常数试验

结论：☑合格 / □不合格

1. 时钟示值误差/时间（时刻）示值误差

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 日计时误差 | | | | | |
| 日计时误差1(s/d) | 日计时误差2(s/d) | | 日计时误差3(s/d) | 平均值(s/d) | 修约值(s/d) |
| +0.015 | +0.021 | | +0.023 | +0.020 | +0.02 |
| 时间的示值误差 | | | | | |
| 电能表显示时间 | | 标准时钟显示时间 | | 时间的示值误差（s） | |
| 2022年5月18日14:45:21 | | 2022年5月18日14:45:22 | | -1 | |

结论：☑合格 / □不合格

1. 电能示值组合误差

*n*: *4* ;*α*: 2 ；电流： 5A 。

|  |  |  |  |
| --- | --- | --- | --- |
| 费率示值 | 初始示值/ kW·h | 运行后示值/ kW·h | 电能增量/ kW·h |
| *W*1 | 0.13 | 19.95 | 19.82 |
| *W*2 | 0.24 | 20.05 | 19.81 |
| *W*3 | 0.25 | 20.06 | 19.81 |
| *W*4 | 0.37 | 20.15 | 19.78 |
| *W* | 1.00 | 80.21 | 79.21 |
| 组合误差/ kW·h | 0.01 | | |

结论：☑合格 / □不合格

1. 需量示值误差

|  |  |  |  |
| --- | --- | --- | --- |
| 电流 | 标准表最大需量 | 被检表最大需量*P* | 需量示值误差 |
| *I*max | 39659.9 W | 39.601kW | +0.2 |
| 10*I*tr | 3299.67 W | 3.301kW | 0.0 |
| *I*tr | 329.91 W | 0.330W | 0.0 |

结论：☑合格 / □不合格

1. 剩余电能量（金额）递减准确度

|  |  |  |
| --- | --- | --- |
| 剩余电能量减少E0（金额） | 电能增加量ΔE（金额） | ｜E0-ΔE｜ |
| / | / | / |

结论：□合格 / □不合格

1. 检定结论及说明

检定合格，检定周期10年 ，检定有效期为2032年5月17日

结论：☑合格 / □不合格

检定员：韩志强 核验员：周碧红