



Multi-Function Power Meter Calibration Report

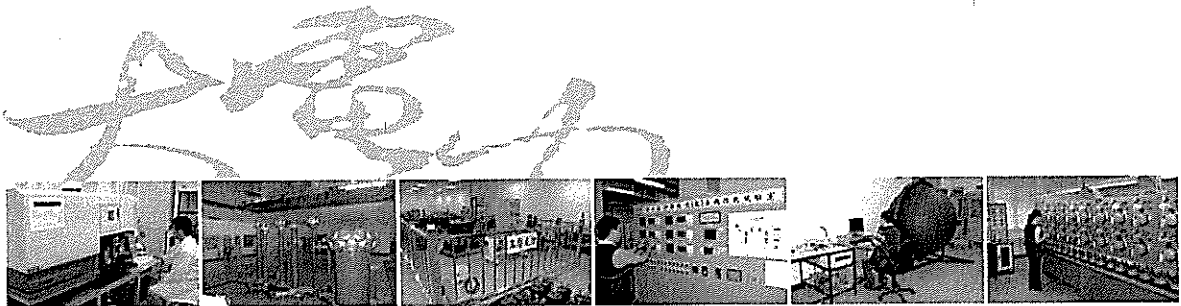
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Laboratory Accreditation Number : 0061



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台灣大電力研究試驗中心
Taiwan Electric Research & Testing CenterElectrical and Temperature Calibration Laboratory
Report No. : EC20150199

Calibration Report

Applicant : ICP DAS Co.,Ltd
Address : No. 111, Guangfu N. Rd., Hukou Township, Hsinchu County 30351, Taiwan, R.O.C.
Equipment : Multi-Channel Power Meter
Manufacturer : ICP DAS Co.,Ltd
Model No. : PM-4324-100P
Serial No. : PM4324A000YEHHA00001
Remark : 1. Calibration items RS485 communication interface and manufacturer of computer software(ICP DAS PM-4324-100P V1.8) reader to indication value.
2. Calibration items with the same manufacturing number of the external CT (1~24).

Issued Date : 2015/08/24
Calibration Date : 2015/08/13
Temperature : 23±2°C
Humidity : 50±10%
Procedure Used : 60I-07-1812, 60I-07-1818, 60I-07-1819

Calibration Standard			
Equipment	Manufacturer/Model No.	I.D. Number	Cal. Source / Cal. Date/ Report No/Cycle
Three Phase Standard	RADIAN/RD-30-211	300130	TERTEC / 2015.03.18 / EC1040026 / 1 year
Multi Calibration Standard	FLUKE/5500A	1855004	Pink Technology/2014.12.04 / P411065-C/1 year.

1. AC Power (60Hz)

Power Source Set Value					Standard Value(kW)	Indication Value(kW)	Error Value(%)	Uncertainty (%)
Mode	Phase/Wire	Voltage(V)	Current(A)	P.F.				
CH1	3P4W	220	5	1.0	3.3000	3.2947	-0.16	0.08
CH2	3P4W	220	5	1.0	3.3000	3.2993	-0.02	0.08
CH3	3P4W	220	5	1.0	3.3000	3.2952	-0.14	0.08
CH4	3P4W	220	5	1.0	3.3000	3.2993	-0.02	0.08
CH5	3P4W	220	5	1.0	3.3000	3.2906	-0.29	0.08
CH6	3P4W	220	5	1.0	3.3000	3.2991	-0.03	0.08
CH7	3P4W	220	5	1.0	3.3000	3.2991	-0.03	0.08
CH8	3P4W	220	5	1.0	3.3000	3.3007	+0.02	0.08

2. AC Current (60Hz)

Mode	Standard Value (A)	Indication Value (A)	Error Value(%)	Uncertainty
CH1A	1.0000	0.9983	-0.17	0.20
CH1B	1.0000	0.9978	-0.22	0.20
CH1C	1.0000	0.9995	-0.05	0.20
CH2A	1.0000	0.9997	-0.03	0.20
CH2B	1.0000	1.0011	+0.11	0.20
CH2C	1.0000	1.0003	+0.03	0.20

The report issued by: *Bang-yeun Lai*

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60T-07-1801D

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2. AC Current (60Hz)

Mode	Standard Value (A)	Indication Value (A)	Error Value(%)	Uncertainty (%)
CH3A	1.0000	1.0004	+0.04	0.20
CH3B	1.0000	0.9988	-0.12	0.20
CH3C	1.0000	0.9989	-0.11	0.20
CH4A	1.0000	1.0002	+0.02	0.20
CH4B	1.0000	1.0020	+0.20	0.20
CH4C	1.0000	0.9992	-0.08	0.20
CH5A	1.0000	0.9964	-0.36	0.20
CH5B	1.0000	0.9977	-0.23	0.20
CH5C	1.0000	0.9967	-0.33	0.20
CH6A	1.0000	1.0018	+0.18	0.20
CH6B	1.0000	0.9991	-0.09	0.20
CH6C	1.0000	1.0005	+0.05	0.20
CH7A	1.0000	1.0014	+0.14	0.20
CH7B	1.0000	0.9990	-0.10	0.20
CH7C	1.0000	1.0010	+0.10	0.20
CH8A	1.0000	0.9976	-0.24	0.20
CH8B	1.0000	0.9986	-0.14	0.20
CH8C	1.0000	0.9995	-0.05	0.20

3. AC Voltage (60Hz)

Mode	Standard Value (V)	Indication Value (V)	Error Value(%)	Uncertainty (%)
CH1A	100.0000	100.0041	0	0.08
CH1B	100.0000	100.0080	+0.01	0.08
CH1C	100.0000	100.0046	0	0.08
CH2A	100.0000	99.9950	0	0.09
CH2B	100.0000	99.9951	0	0.08
CH2C	100.0000	100.0033	0	0.08
CH3A	100.0000	99.9969	0	0.08
CH3B	100.0000	100.0018	0	0.08
CH3C	100.0000	99.9966	0	0.08
CH4A	100.0000	99.9951	0	0.08
CH4B	100.0000	99.9976	0	0.08
CH4C	100.0000	99.9929	-0.01	0.08
CH5A	100.0000	99.9936	-0.01	0.09
CH5B	100.0000	99.9939	-0.01	0.08
CH5C	100.0000	99.9925	-0.01	0.08
CH6A	100.0000	99.9913	-0.01	0.08
CH6B	100.0000	99.9856	-0.01	0.09
CH6C	100.0000	99.9927	-0.01	0.08



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3. AC Voltage (60Hz)

Mode	Standard Value (V)	Indication Value (V)	Error Value(%)	Uncertainty (%)
CH7A	100.0000	99.9884	-0.01	0.09
CH7B	100.0000	99.9852	-0.01	0.08
CH7C	100.0000	99.9903	-0.01	0.08
CH8A	100.0000	99.9954	0	0.08
CH8B	100.0000	100.0078	+0.01	0.08
CH8C	100.0000	99.9972	0	0.08

二、Instruction :

1. Calibration method : reference to the laboratory watt meter, watt-hour meter calibration instructions, use adjustable power factor of the power source is added to this Laboratory Watt / Watt-Varhour when the standard device and the calculation error (%)
2. Calibration method(AC current、AC Voltage) : reference to AC Current and AC Voltage calibration procedure, used of Multifunction Calibrator correction devices when the standard device and the calculation error (%)
3. $Error(\%) = ((E_{UUT} - E_{STD}) / E_{STD}) \times 100\%$, E_{UUT} : 3Phase compact smart Meter Energy Standard, E_{STD} : Energy Standard
4. Expanded uncertainty the level of confidence is 95% and the coverage factor $k=2$.
5. The use of standard calibration devices traceable to national standards of weights and measurement laboratory(report No.E140566A, traceable data 2014.10.07, calibration cycle is one year) and Pink Technology Co.Ltd (report No.P411065-C, traceable data 2014.12.04, calibration cycle is one year)..