

METTLER TOLEDO THORNTON
770MAX

*** Certificate of Test and Accuracy ***

Mettler-Toledo Thornton hereby certifies that the following instrument performs within specification. The instrument has passed our quality control Certification of Calibration standards and has been calibrated using test standards traceable to the National Institute of Standards and Technology (NIST).

Manufacturer: Mettler-Toledo Thornton Date Performed: 09/26/03
 Model Number: 775-LA2
 Serial Number: 703090129 Technician: J.M.
 Temperature: 23.2 deg.C Relative Humidity: 48.0%
 Calibration Procedure: TP97201

Calibration Standards: Make: Model: S/N: Cal. Due:
 Digital Multi-Meter HP 34401A US3602676 10/10/03
 Smart Calibrator Thornton 1875 B6 12/17/03

RS232 Test: PASS SelfTest: PASS Key Pad Test: PASS Display Test: PASS
 Relay#1: PASS Relay#2: PASS Relay#3: PASS Relay#4: PASS
 HiPot Test: PASS

Analog Test Results:

Output#	Setting(mA)	Measured(mA)	Deviation(mA)	Limit(mA)	Status
1	5.00	5.001075	0.001075	+/- 0.05	PASS
1	12.00	12.019045	0.019045	+/- 0.05	PASS
1	18.00	18.002470	0.002470	+/- 0.05	PASS
2	5.00	5.000971	0.000971	+/- 0.05	PASS
2	12.00	12.019008	0.019008	+/- 0.05	PASS
2	18.00	18.003991	0.003991	+/- 0.05	PASS
3	5.00	5.000656	0.000656	+/- 0.05	PASS
3	12.00	12.020965	0.020965	+/- 0.05	PASS
3	18.00	18.006895	0.006895	+/- 0.05	PASS
4	5.00	5.000036	0.000036	+/- 0.05	PASS
4	12.00	12.017923	0.017923	+/- 0.05	PASS
4	18.00	18.002308	0.002308	+/- 0.05	PASS
5	5.00	5.003033	0.003033	+/- 0.05	PASS
5	12.00	12.022923	0.022922	+/- 0.05	PASS
5	18.00	18.005724	0.005724	+/- 0.05	PASS
6	5.00	5.003641	0.003641	+/- 0.05	PASS
6	12.00	12.023296	0.023296	+/- 0.05	PASS
6	18.00	18.008466	0.008466	+/- 0.05	PASS
7	5.00	5.003687	0.003687	+/- 0.05	PASS
7	12.00	12.023495	0.023495	+/- 0.05	PASS
7	18.00	18.010760	0.010760	+/- 0.05	PASS
8	5.00	5.003104	0.003104	+/- 0.05	PASS
8	12.00	12.023483	0.023483	+/- 0.05	PASS
8	18.00	18.006372	0.006372	+/- 0.05	PASS

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Flow Channel Test Results:

Chan.#	Setting(Hz)	Measured(Hz)	Deviation(Hz)	Limit(%)	Status
5	125.00	125.006800	0.006800	+/- 0.05	PASS
5	1000.00	1000.054600	0.054600	+/- 0.05	PASS
5	4000.00	4000.218100	0.218100	+/- 0.05	PASS
6	125.00	125.007800	0.007800	+/- 0.05	PASS
6	1000.00	1000.062500	0.062500	+/- 0.05	PASS
6	4000.00	4000.247400	0.247400	+/- 0.05	PASS

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*** Certificate of Calibration ***

DATE OF CAL:	26-Sep-03 09:48:00	CAL. REFERENCE PER:	TP97201
MODEL NUMBER:	775-LA2		
SERIAL NUMBER:	703090129		
MEASUREMENT CHANNEL:	1		

*** Calibration Standards ***

MAKE:	Thornton Inc. 1875 Smart Calibrator V1.05			
	0-1Mohm	>1Mohm	VOLTAGE	FREQUENCY
SERIAL#	RES/TEMP	RES/TEMP	ACCURACY	ACCURACY
B6	+/- 0.050%	+/- 0.075%	+/- 0.5mV	+/- 0.03%

	INPUT VALUE	MEASURED VALUE	DEVIATION	LIMIT	P/F
RANGE: (Ohms) 1	4001177.0	4001177.0	0.00%	+/- 0.30%	PASS
RANGE: (Ohms) 2	157909.2	157909.2	0.00%	+/- 0.30%	PASS
RANGE: (Ohms) 3	6994.7	6994.7	0.00%	+/- 0.30%	PASS
RANGE: (Ohms) 4	10.050	10.050	0.00%	+/- 0.30%	PASS
TEMP: (Ohms)	999.1	999.1	0.00%	+/- 0.08%	PASS
VOLTAGE: (Volts)	1.3327	1.3327	0.0mV	+/- 3.00mV	PASS
FREQUENCY: (Hz)	99.992	99.992	0.00%	+/- 0.05%	PASS
	VALUE	VALUE	DEVIATION	LIMIT	P/F
RANGE: (Ohms) 1	157909.2	157909.2	0.00%	+/- 0.30%	PASS
RANGE: (Ohms) 2	6994.7	6994.7	0.00%	+/- 0.30%	PASS
RANGE: (Ohms) 3	500.2	500.2	0.00%	+/- 0.30%	PASS
RANGE: (Ohms) 4	500.2	500.2	0.00%	+/- 0.30%	PASS
TEMP: (Ohms)	1397.8	1397.8	0.00%	+/- 0.08%	PASS
VOLTAGE: (Volts)	-1.3319	-1.3319	0.0mV	+/- 3.00mV	PASS
FREQUENCY: (Hz)	1001.7	1001.7	0.00%	+/- 0.05%	PASS
	VALUE	VALUE	DEVIATION	LIMIT	P/F
RANGE: (Ohms) 1	1805637.0	1805638.0	0.00%	+/- 0.30%	PASS
RANGE: (Ohms) 2	24845.4	24845.9	0.00%	+/- 0.30%	PASS
RANGE: (Ohms) 3	1397.8	1397.8	0.00%	+/- 0.30%	PASS
RANGE: (Ohms) 4	200.5	200.5	0.00%	+/- 0.30%	PASS
TEMP: (Ohms)	1096.5	1096.4	-0.01%	+/- 0.08%	PASS
VOLTAGE: (Volts)	0.6664	0.6665	0.1mV	+/- 3.00mV	PASS
FREQUENCY: (Hz)	500.3	500.3	0.00%	+/- 0.05%	PASS

NOTE: Measurement certification consists of one page per channel and a cover sheet

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*** Certificate of Calibration ***

DATE OF CAL: 26-Sep-03 09:49:52
 MODEL NUMBER: 775-LA2 CAL. REFERENCE PER: TP97201
 SERIAL NUMBER: 703090129
 MEASUREMENT CHANNEL: 2

*** Calibration Standards ***

MAKE: Thornton Inc. 1875 Smart Calibrator V1.05

SERIAL#	0-1Mohm RES/TEMP ACCURACY	>1Mohm RES/TEMP ACCURACY	VOLTAGE ACCURACY	FREQUENCY ACCURACY
B6	+/- 0.050%	+/- 0.075%	+/- 0.5mV	+/- 0.03%

	INPUT VALUE	MEASURED VALUE	DEVIATION	LIMIT	P/F
RANGE: (Ohms) 1	4001177.0	4001177.0	0.00%	+/- 0.30%	PASS
RANGE: (Ohms) 2	157909.2	157909.2	0.00%	+/- 0.30%	PASS
RANGE: (Ohms) 3	6994.7	6994.7	0.00%	+/- 0.30%	PASS
RANGE: (Ohms) 4	10.050	10.050	0.00%	+/- 0.30%	PASS
TEMP: (Ohms)	999.1	999.1	0.00%	+/- 0.08%	PASS
VOLTAGE: (Volts)	1.3327	1.3327	0.0mV	+/- 3.00mV	PASS
FREQUENCY: (Hz)	99.992	99.992	0.00%	+/- 0.05%	PASS
	VALUE	VALUE	DEVIATION	LIMIT	P/F
RANGE: (Ohms) 1	157909.2	157909.2	0.00%	+/- 0.30%	PASS
RANGE: (Ohms) 2	6994.7	6994.7	0.00%	+/- 0.30%	PASS
RANGE: (Ohms) 3	500.2	500.2	0.00%	+/- 0.30%	PASS
RANGE: (Ohms) 4	500.2	500.2	0.00%	+/- 0.30%	PASS
TEMP: (Ohms)	1397.8	1397.8	0.00%	+/- 0.08%	PASS
VOLTAGE: (Volts)	-1.3319	-1.3319	0.0mV	+/- 3.00mV	PASS
FREQUENCY: (Hz)	1001.7	1001.7	0.00%	+/- 0.05%	PASS
	VALUE	VALUE	DEVIATION	LIMIT	P/F
RANGE: (Ohms) 1	1805637.0	1805637.0	0.00%	+/- 0.30%	PASS
RANGE: (Ohms) 2	24845.4	24866.3	0.08%	+/- 0.30%	PASS
RANGE: (Ohms) 3	1397.8	1397.5	0.02%	+/- 0.30%	PASS
RANGE: (Ohms) 4	200.5	200.5	0.00%	+/- 0.30%	PASS
TEMP: (Ohms)	1096.5	1096.5	-0.01%	+/- 0.08%	PASS
VOLTAGE: (Volts)	0.6664	0.6665	0.1mV	+/- 3.00mV	PASS
FREQUENCY: (Hz)	500.3	500.3	0.00%	+/- 0.05%	PASS

NOTE: Measurement certification consists of one page per channel and a cover sheet

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*** Certificate of Calibration ***

DATE OF CAL: 26-Sep-03 09:51:44
 MODEL NUMBER: 775-LA2 CAL. REFERENCE PER: TP97201
 SERIAL NUMBER: 703090129
 MEASUREMENT CHANNEL: 3

*** Calibration Standards ***

MAKE: Thornton Inc. 1875 Smart Calibrator V1.05

SERIAL#	0-1Mohm RES/TEMP ACCURACY	>1Mohm RES/TEMP ACCURACY	VOLTAGE ACCURACY	FREQUENCY ACCURACY
B6	+/- 0.050%	+/- 0.075%	+/- 0.5mV	+/- 0.03%

	INPUT VALUE	MEASURED VALUE	DEVIATION	LIMIT	P/F
RANGE: (Ohms) 1	4001177.0	4001177.0	0.00%	+/- 0.30%	PASS
RANGE: (Ohms) 2	157909.2	157909.2	0.00%	+/- 0.30%	PASS
RANGE: (Ohms) 3	6994.7	6994.7	0.00%	+/- 0.30%	PASS
RANGE: (Ohms) 4	10.050	10.050	0.00%	+/- 0.30%	PASS
TEMP: (Ohms)	999.1	999.1	0.00%	+/- 0.08%	PASS
VOLTAGE: (Volts)	1.3327	1.3327	0.0mV	+/- 3.00mV	PASS
FREQUENCY: (Hz)	99.992	99.992	0.00%	+/- 0.05%	PASS
	VALUE	VALUE	DEVIATION	LIMIT	P/F
RANGE: (Ohms) 1	157909.2	157909.2	0.00%	+/- 0.30%	PASS
RANGE: (Ohms) 2	6994.7	6994.7	0.00%	+/- 0.30%	PASS
RANGE: (Ohms) 3	500.2	500.2	0.00%	+/- 0.30%	PASS
RANGE: (Ohms) 4	500.2	500.2	0.00%	+/- 0.30%	PASS
TEMP: (Ohms)	1397.8	1397.8	0.00%	+/- 0.08%	PASS
VOLTAGE: (Volts)	-1.3319	-1.3319	0.0mV	+/- 3.00mV	PASS
FREQUENCY: (Hz)	1001.7	1001.7	0.00%	+/- 0.05%	PASS
	VALUE	VALUE	DEVIATION	LIMIT	P/F
RANGE: (Ohms) 1	1805637.0	1805639.0	0.00%	+/- 0.30%	PASS
RANGE: (Ohms) 2	24845.4	24845.1	-0.00%	+/- 0.30%	PASS
RANGE: (Ohms) 3	1397.8	1397.8	0.00%	+/- 0.30%	PASS
RANGE: (Ohms) 4	200.5	200.5	-0.00%	+/- 0.30%	PASS
TEMP: (Ohms)	1096.5	1096.5	-0.01%	+/- 0.08%	PASS
VOLTAGE: (Volts)	0.6664	0.6665	0.1mV	+/- 3.00mV	PASS
FREQUENCY: (Hz)	500.3	500.3	0.00%	+/- 0.05%	PASS

NOTE: Measurement certification consists of one page per channel and a cover sheet

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*** Certificate of Calibration ***

DATE OF CAL: 26-Sep-03 09:53:52
 MODEL NUMBER: 775-LA2 CAL. REFERENCE PER: TP97201
 SERIAL NUMBER: 703090129
 MEASUREMENT CHANNEL: 4

*** Calibration Standards ***

MAKE: Thornton Inc. 1875 Smart Calibrator V1.05

SERIAL#	0-1Mohm RES/TEMP ACCURACY	>1Mohm RES/TEMP ACCURACY	VOLTAGE ACCURACY	FREQUENCY ACCURACY
B6	+/- 0.050%	+/- 0.075%	+/- 0.5mV	+/- 0.03%

	INPUT VALUE	MEASURED VALUE	DEVIATION	LIMIT	P/F
RANGE: (Ohms) 1	4001177.0	4001177.0	0.00%	+/- 0.30%	PASS
RANGE: (Ohms) 2	157909.2	157909.2	0.00%	+/- 0.30%	PASS
RANGE: (Ohms) 3	6994.7	6994.7	0.00%	+/- 0.30%	PASS
RANGE: (Ohms) 4	10.050	10.050	0.00%	+/- 0.30%	PASS
TEMP: (Ohms)	999.1	999.1	0.00%	+/- 0.08%	PASS
VOLTAGE: (Volts)	1.3327	1.3327	0.0mV	+/- 3.00mV	PASS
FREQUENCY: (Hz)	99.992	99.992	0.00%	+/- 0.05%	PASS
	VALUE	VALUE	DEVIATION	LIMIT	P/F
RANGE: (Ohms) 1	157909.2	157909.2	0.00%	+/- 0.30%	PASS
RANGE: (Ohms) 2	6994.7	6994.7	0.00%	+/- 0.30%	PASS
RANGE: (Ohms) 3	500.2	500.2	0.00%	+/- 0.30%	PASS
RANGE: (Ohms) 4	500.2	500.2	0.00%	+/- 0.30%	PASS
TEMP: (Ohms)	1397.8	1397.8	0.00%	+/- 0.08%	PASS
VOLTAGE: (Volts)	-1.3319	-1.3319	0.0mV	+/- 3.00mV	PASS
FREQUENCY: (Hz)	1001.7	1001.7	0.00%	+/- 0.05%	PASS
	VALUE	VALUE	DEVIATION	LIMIT	P/F
RANGE: (Ohms) 1	1805637.0	1805625.0	0.00%	+/- 0.30%	PASS
RANGE: (Ohms) 2	24845.4	24845.1	-0.00%	+/- 0.30%	PASS
RANGE: (Ohms) 3	1397.8	1397.8	0.00%	+/- 0.30%	PASS
RANGE: (Ohms) 4	200.5	200.5	0.00%	+/- 0.30%	PASS
TEMP: (Ohms)	1096.5	1096.5	-0.01%	+/- 0.08%	PASS
VOLTAGE: (Volts)	0.6664	0.6665	0.1mV	+/- 3.00mV	PASS
FREQUENCY: (Hz)	500.3	500.3	0.00%	+/- 0.05%	PASS

NOTE: Measurement certification consists of one page per channel and a cover sheet

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