

Micro Signal Type Tester

II. TH2690 Series fA meter/pA meter/Electrometer/High Resistance Meter



Features

- 5.0-inch capacitive touch screen
- 6½-bit measurement resolution
- Four measurement modes: high resistance meter, voltmeter, ammeter, electrostatic meter
- Independent current and voltage measurement
- Built-in voltage source: ±1000V, resolution: 1mV
- Current range: 2pA-20mA, current resolution up to 0.01fA (10^{-17} A)
- Internal resistance voltage drop in the lowest current range $20\ \mu\text{V}$
- Measurement resistance up to $1000\text{P}\ \Omega$ ($10^{15}\ \Omega$)
- Charge measurement down to 2nC range
- Input impedance >200T Ω
- Supports voltage measurements up to 20V
- Temperature and humidity measurements
- Time-domain view to capture transient signal effects and select specific measurements
- Support data recording
- Configure special shielding test box



RS232	LAN	HANDLER	USB DEVICE	USB HOST	INTERLOCK
standard	standard	standard	standard	standard	standard

TH2690 Series

Rack mount (mm) : 215(W)×88(H)×412(D)
Dimension (mm) : 235(W)×111(H)×440(D)

Weight : 3.5kg

Application

- Material science
Biomaterials, ceramics, rubber, films, dielectric materials, electrochemical materials, ferroelectric materials, graphene, metals, organic materials, nanomaterials, polymers, semiconductors, etc.
- Electronic Component
Types of transistors such as capacitors, resistors, diodes, sensors, TFT and CNT, photoelectric devices, solar cells, etc.
- Electronic/non-electronic system
Ion beam, electron beam, sensor system, particle measurement, embedded precision instrument, etc.

Specifications

Model	TH2690	TH2690A	TH2690H	TH2691	TH2691A	TH2691H
Display	5.0-inch capacitive touch color LCD display					
Measurement Resolution	6½ digit					
Current Measurement						
Range	Accuracy	Resolution	Accuracy	Resolution	Accuracy	Resolution
2pA	±(1%+5fA)	0.01fA	-----	-----	±(1%+5fA)	0.01fA
20pA	±(1%+5fA)	0.1fA	-----	-----	±(1%+5fA)	0.1fA
200pA	±(0.5%+5fA)	0.1fA	-----	-----	±(0.5%+5fA)	0.1fA
2nA	±(0.2%+50fA)	1fA	±(0.2%+50fA)	1fA	±(0.2%+50fA)	1fA
20nA	±(0.2%+3pA)	10fA	±(0.2%+3pA)	10fA	±(0.2%+3pA)	10fA
200nA	±(0.2%+5pA)	100fA	±(0.2%+5pA)	100fA	±(0.2%+5pA)	100fA
2μA	±(0.1%+50pA)	1pA	±(0.1%+50pA)	1pA	±(0.1%+50pA)	1pA
20μA	±(0.05%+500pA)	10pA	±(0.05%+500pA)	10pA	±(0.05%+500pA)	10pA
200μA	±(0.05%+5nA)	100pA	±(0.05%+5nA)	100pA	±(0.05%+5nA)	100pA
2mA	±(0.05%+50nA)	1nA	±(0.05%+50nA)	1nA	±(0.05%+50nA)	1nA
20mA	±(0.05%+500nA)	10nA	±(0.05%+500nA)	10nA	±(0.05%+500nA)	10nA
Resistance Measurement						
Range	Accuracy	Resolution	Accuracy	Resolution	Accuracy	Resolution
1MΩ	±(0.135%+1Ω)	1Ω	±(0.135%+1Ω)	1Ω	±(0.135%+1Ω)	1Ω
10MΩ	±(0.135%+10Ω)	10Ω	±(0.135%+10Ω)	10Ω	±(0.135%+10Ω)	10Ω
100MΩ	±(0.185%+100Ω)	100Ω	±(0.185%+100Ω)	100Ω	±(0.185%+100Ω)	100Ω
1GΩ	±(0.285%+1kΩ)	1kΩ	±(0.285%+1kΩ)	1kΩ	±(0.285%+1kΩ)	1kΩ
10GΩ	±(0.41%+10kΩ)	10kΩ	±(0.41%+10kΩ)	10kΩ	±(0.41%+10kΩ)	10kΩ
100GΩ	±(0.41%+100kΩ)	100kΩ	±(0.41%+100kΩ)	100kΩ	±(0.41%+100kΩ)	100kΩ
1TΩ	±(0.45%+1MΩ)	1MΩ	±(0.45%+1MΩ)	1MΩ	±(0.45%+1MΩ)	1MΩ
10TΩ	±(0.75%+10MΩ)	10MΩ	-----	-----	±(0.75%+10MΩ)	10MΩ
100TΩ	±(2.6%+100MΩ)	100MΩ	-----	-----	±(2.6%+100MΩ)	100MΩ
Range	Current range	Voltage Source	Current Range	Voltage Source	Current Range	Voltage Source
1MΩ	200μA	20V	200μA	20V	200μA	20V
10MΩ	20μA	20V	20μA	20V	20μA	20V
100MΩ	2μA	20V	2μA	20V	2μA	20V
1GΩ	200nA	20V	200nA	20V	200nA	20V
10GΩ	20nA	20V	20nA	20V	20nA	20V

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100GΩ	2nA	20V	2nA	20V	2nA	20V	-----
1TΩ	2nA	200V	2nA	200V	2nA	200V	-----
10TΩ	200pA	200V	-----	-----	200pA	200V	-----
100TΩ	20pA	200V	-----	-----	20pA	200V	-----
Maximum Measurement Resistance	100PΩ		1000TΩ		1000PΩ		-----
Voltage Measurement (independent input unit)							
Range	Accuracy			Resolution		-----	
2V	±(0.05%+40μV)			1μV		-----	
20V	±(0.05%+400μV)			10μV		-----	
Input Impedance	>200TΩ					-----	
Charge Measurement (indicator valid for 1s)							
Range	Accuracy	Resolution	-----	Accuracy	Resolution	-----	
2nC	±(0.5%+50fC)	1fC	-----	±(0.5%+50fC)	1fC	-----	
20nC	±(0.5%+500fC)	10fC	-----	±(0.5%+500fC)	10fC	-----	
200nC	±(0.5%+5pC)	100fC	-----	±(0.5%+5pC)	100fC	-----	
2μC	±(0.5%+50pC)	1pC	-----	±(0.5%+50pC)	1pC	-----	
Voltage Source							
Range	Accuracy			Resolution		-----	
20V	±(0.05%+2mV)			1mV		-----	
1000V	±(0.05%+100mV)			35mV		-----	
Range	Maximum Output Current					-----	
20V	±20mA					-----	
1000V	±1mA					-----	
Voltage Source Function	DC, Sweep (Single Sweep, Dual Sweep, List Sweep), ARB (Square Wave)					-----	
Temperature Measurement Range & Accuracy							
-40°C-10°C	1°C					-----	
10°C-55°C	0.5°C					-----	
55°C-80°C	1°C					-----	
Humidity Measurement Range & Accuracy							
0-20%RH	4%					-----	
20-80%RH	3%					-----	
80-100%RH	4%					-----	
View mode	Gauge View, Graphic View, Histogram, Scroll View					-----	
Test Terminal							
Voltage Input	Three-axis BNC					-----	
Current Input	Three-axis BNC					-----	
Voltage Output	√					-----	
COMMON	√					-----	
GROUND	Banana Seat					-----	
Interface							
D/A Output	±2VFS					-----	
HANDLER	√					-----	
Communication Interface	RS232, USB DEVICE, USB HOST, LAN, GPIB					-----	
Sensor Input	temperature and humidity					-----	
Interlock Input	√					-----	
Ambient Temperature & Humidity							
Operating temperature and humidity range	0°C-45°C, 30%-80%, non-condensing					-----	
Storage temperature and humidity range	-20°C-60°C, 10%-90%, non-condensing					-----	
Precision guaranteed temperature and humidity	23°C±5°C, 30%-80%RH					-----	
warm-up time	1 hour					-----	
Ambient temperature change	Less than ±3°C after self-calibration					-----	
Calibration Cycle	1 year					-----	
General Indicator							
Power Supply	AC: 90V-264V,50/60Hz; or DC: 127V-370V					-----	
Power	60W					-----	
Rack Mount	215(W)×88(H)×412(D)					-----	
Dimension	235(W)×111(H)×440(D)					-----	
Weight	3.5kg					-----	