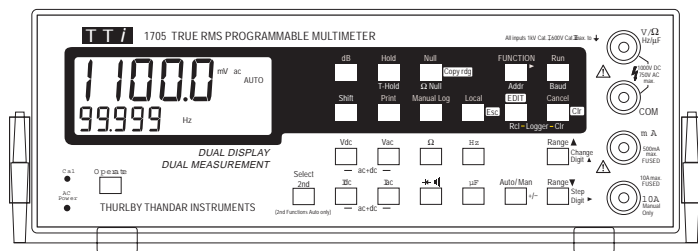


1705 Dual Measurement Bench Multimeter



- High performance 12,000 count autoranging DMM
- High accuracy and resolution: 0.04%, 10 μ V, 10m Ω
- Dual display and dual measurement technology
- Large and clear LCD (17mm digits) with annunciators
- True RMS ac functions; Frequency and Capacitance
- Wide range of computing functions, e.g. Ax + b
- 100 step data-logger, timed or triggered logging
- RS232 interface standard, GPIB interface optional
- Mains and battery operation as standard

High resolution & accuracy

The 1705 is a 4 $\frac{1}{4}$ digit meter with a scale length of 12,000 counts and a resolution of 10 μ V, 10m Ω and 0.1 μ A.

Combined with a high basic dcV accuracy of 0.04%, it provides measurements that are an order of magnitude better than most hand-held DMMs.

Dual display system

The 1705 has both a main display and a secondary display. The two displays can be used for a variety of purposes:

To show the selected range in addition to the measurement units (e.g. 100mA dc).

To display a measurement in two different units (e.g. ac volts and dBm).

To display the result of a calculated function (e.g. Ω s value and % deviation).

To measure and display two parameters of one signal (e.g. ac and dc volts).

To measure and display two different signals (e.g. ac volts and dc current).

Wide bandwidth ac with true RMS

The 1705 provides True RMS ac response which gives accurate measurements regardless of the waveform shape.

The wide bandwidth attenuator provides high accuracy within the audio band and gives extended response to avoid errors when measuring switching waveforms.

Measurements are normally ac coupled but, when required, the true RMS value of the ac plus dc components can be shown.

Frequency & capacitance

The 1705 offers high accuracy frequency measurement (better than 0.01%) from 10Hz to 120kHz. It uses a reciprocal counting technique to give up to 0.01Hz resolution at 10 readings per second.

The 1705 also incorporates capacitance measurement in four ranges up to 120 μ F.

Wide range of Smart functions

The 1705 offers computing and datalogging functions as standard: dBs, Ax+b, Limits, % deviation, Min-Max, Power, and a 100 reading Data-logger

Full bus control via RS-232 or GPIB

The 1705 has an RS-232 interface as standard which can be used for remote control and read-back of measurements. A GPIB interface is available as an option.

Note: This is a faxable data sheet, a colour brochure is also available.

ACCURACY (Main Measurement Functions)

Accuracies apply for 1 year, 19°C to 25°C. Temperature coefficient outside these limits is <0.1 x quoted range accuracy per °C

DC Volts

| Range | Accuracy | Resolution | Notes |
|-------|--------------------|-------------|---|
| 100mV | 0.06% \pm 3 dig. | 10 μ V | Input impedance 10M Ω Max. input 1kV DC or AC pk NMR: >60dB @ 50/60Hz CMR: >90dB @ DC/50Hz/60Hz |
| 1V | 0.04% \pm 2 dig. | 100 μ V | |
| 10V | 0.06% \pm 2 dig. | 1mV | |
| 100V | 0.06% \pm 2 dig. | 10mV | |
| 1000V | 0.06% \pm 2 dig. | 100mV | |

AC Volts (True RMS)

| Range | Accuracy | | | Resolution |
|-------|--------------------|--------------------|------------------|-------------|
| | 45Hz - 10kHz | 10kHz - 20kHz | 20kHz - 50kHz | |
| 100mV | 0.2% \pm 20 dig. | 1% \pm 20 dig. | N/A | 10 μ V |
| 1V | | 0.2% \pm 20 dig. | 1% \pm 50 dig. | 100 μ V |
| 10V | | | 1% \pm 80 dig. | 1mV |
| 100V | | | 1% \pm 80 dig. | 10mV |
| 750V | | | N/A | 100mV |

1V, 10V, 100V ranges are <1dB down at 100kHz. AC accuracies apply above 1,000 counts. Additional error at crest factor = 3 is typically 0.2%. Input impedance = 1M Ω nominal. Max. input = 750V rms, 1kV pk. 1k Ω unbalanced CMR = >60dB at DC/50Hz/60Hz.

Resistance

| Range | Accuracy | Resolution | Notes |
|----------------|--------------------|---------------|---|
| 100 Ω | 0.1% \pm 3 dig. | 10m Ω | Max. input 300V DC or AC rms any range. |
| 1000 Ω | 0.08% \pm 2 dig. | 100m Ω | |
| 10k Ω | 0.09% \pm 2 dig. | 1 Ω | |
| 100k Ω | 0.09% \pm 2 dig. | 10 Ω | Max. open circuit voltage 4V |
| 1000k Ω | 0.12% \pm 2 dig. | 100 Ω | |
| 10M Ω | 0.5% \pm 2 dig. | 1k Ω | |
| 20M Ω | 0.5% \pm 2 dig. | 10k Ω | |

DC Current

| Range | Accuracy | Resolution | Notes |
|-----------------|-------------------|-------------|---|
| 1mA | 0.1% \pm 3 dig. | 0.1 μ A | Max. input 500mA Voltage burden <250mV |
| 100mA | 0.1% \pm 3 dig. | 10 μ A | |
| 10A (up to 1A) | 0.3% \pm 3 dig. | 1mA | Max. input 10A Voltage burden <500mV |
| 10A (up to 5A) | 1.0% \pm 4 dig. | 1mA | |
| 10A (up to 10A) | 3% \pm 10 dig. | 1mA | |

AC Current (True RMS)

| Range | Accuracy | Resolution | Notes |
|-----------------|---------------------|-------------|---|
| 1mA | 0.35% \pm 20 dig. | 0.1 μ A | Max. input 500mA Voltage burden <250mV |
| 100mA | 0.35% \pm 20 dig. | 10 μ A | |
| 10A (up to 1A) | 0.5% \pm 20 dig. | 1mA | Max. input 10A Voltage burden <500mV |
| 10A (up to 5A) | 1.2% \pm 20 dig. | 1mA | |
| 10A (up to 10A) | 3% \pm 20 dig. | 1mA | |

Accuracies apply over 45Hz to 10kHz for readings above 1000 counts. Additional error at crest factor = 3 is typically 0.2%.

Note: Further information on this product is available on a 'Supplemental' data sheet.

Thurlby Thandar Instruments Ltd. operates a policy of continuous development and reserves the right to alter specifications without prior notice.

Designed and built in the EEC by:



Thurlby Thandar Instruments Ltd.

Glebe Road, Huntingdon. Cambs. PE18 7DX England

Tel: +44 (0)1480 412451 Fax: +44 (0)1480 450409

e-mail: sales@ttinst.co.uk Web: <http://www.ttinst.co.uk>