

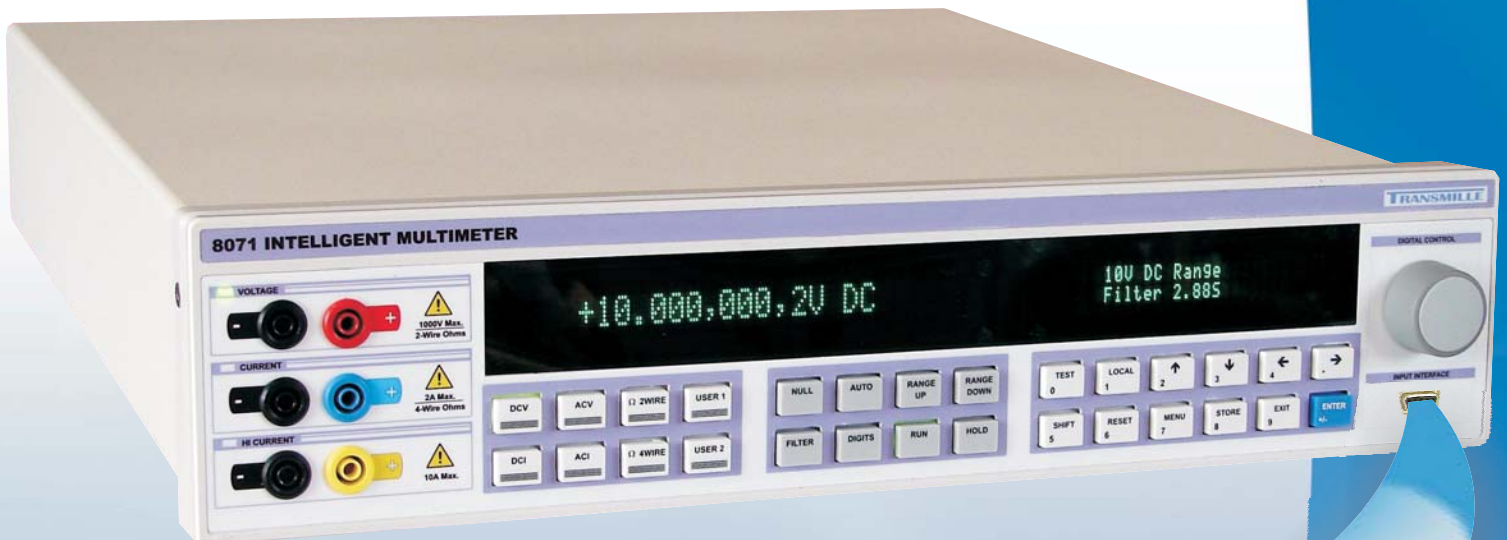
# 8000 SERIES

## PRECISION DIGITAL MULTIMETERS



➔ 8081 8 1/2 DIGIT 4ppm Accuracy

➔ 8071 7 1/2 DIGIT 9ppm Accuracy



**THE METROLOGISTS DMM**

**INTEGRATED REFERENCE SOLUTION**



THE QUEEN'S AWARDS  
FOR ENTERPRISE:  
INNOVATION  
2008

# 8000 SERIES MULTIMETERS

THE INTEGRATED REFERENCE SOLUTION



## PROGRAMMABLE TERMINAL SWITCHING

Allows remote control of front/rear input switching directly from the PC or front panel menu for switching between a reference standard and unknown (UUT).

## INTELLIGENT REFERENCE RATIO FUNCTION

A unique operating mode allows a known reference standard to be connected to the rear terminals, the unknown to the front terminals for ratio measurement. The 8000 Series can then automatically switch between the standards, displaying the value of the unknown as directly compared against the entered value of the known.

## TEMPERATURE MEASUREMENT (8081)

Precision temperature measurement using PRT probes. 8081 includes advanced modes for co-efficient storage of SPRT probes.

## PRESSURE MEASUREMENT (8081)

The Transmille range of pressure modules can be used with the 8000 Series using the built-in adapter interface for direct pressure display.

## LOW CURRENT MEASUREMENT (0.1pA to 10uA)

8081 DC Current ranges down to 10nA with a resolution of 0.1pA using a dedicated screened BNC input. This input offers a 'virtual' ground approaching zero input impedance providing electrometer performance in an integrated DMM package.

## HIGH VALUE RESISTANCE MEASUREMENT (8081)

8081 resistance measurement up to 1 TOhm can be achieved using the dedicated low current screened BNC input (essential for low noise / high value resistance measurement). A high voltage (200V) source combined with a sub pA input provides a high performance resistance measurement system offering electrometer performance in an integrated DMM package.

## DC Voltage

- Model 8081**
- 5 Ranges
  - 10nV to 1050V
  - 8½ to 4½ Digit resolution
  - Maximum sensitivity : 10nV
  - Reading rate 0.1s to 6s
  - 0.9 ppm 24 hour stability
  - 4 ppm / year accuracy

- Model 8071**
- 5 Ranges
  - 100nV to 1050V
  - 7½ to 4½ Digit resolution
  - Maximum sensitivity 100nV
  - Reading rate 0.1s to 3s
  - 2 ppm 24 hour stability
  - 9 ppm / year voltage

## DC Resistance

- Model 8081**
- 9 Ranges
  - 0.1 uOhm to 1 TOhm
  - 8½ to 4½ Digit resolution
  - 2-Wire and 4-Wire Ohms
  - Offset compensation
  - Reading rate 0.1s to 6s
  - 1 ppm 24 hour stability
  - 8 ppm / year accuracy

- Model 8071**
- 7 Ranges
  - 10 uOhms to 10 MOhm
  - 7½ to 4½ Digit resolution
  - 2-Wire and 4-Wire ohms
  - Offset compensation
  - Reading rate 0.1s to 3s
  - 2.3 ppm 24 hour stability
  - 20 ppm / year accuracy

## AC Voltage

- Model 8081**
- 5 Ranges
  - 0.1uV to 1000V
  - 6½ to 4½ Digit resolution
  - 10Hz to 1MHz Bandwidth
  - Analogue RMS converter
  - Reading rate 0.1s to 3s
  - 200 ppm best accuracy

- Model 8071**
- 5 Ranges
  - 1uV to 1000V
  - 5½ to 4½ Digit resolution
  - 10Hz to 1MHz Bandwidth
  - Reading rate 0.1s to 3s
  - Analogue RMS converter
  - 500 ppm best accuracy

## DC Current

- Model 8081**
- 11 Ranges
  - 0.1pA to 30A
  - 7½ to 4½ Digit resolution
  - Max. sensitivity 0.1pA
  - Reading rate 0.1s to 3s
  - 5 ppm 24 hour stability
  - 10 ppm / year accuracy

- Model 8071**
- 6 Ranges
  - 100pA to 10A
  - 6½ to 4½ Digit resolution
  - Max. sensitivity 100pA
  - Reading rate 0.1s to 3s
  - 14 ppm 24 hour stability
  - 25 ppm / year accuracy

## AC Current

- Model 8081**
- 7 Ranges
  - 1uA to 30A
  - 6½ to 4½ Digit resolution
  - 10Hz to 10kHz bandwidth
  - Reading rate 0.1s to 3s
  - 200 ppm 24 hour stability
  - 300 ppm / year accuracy

- Model 8071**
- 7 Ranges
  - 10uA to 10A
  - 5½ to 4½ Digit resolution
  - Reading rate 0.1s to 3s
  - 10Hz to 10kHz bandwidth
  - 300 ppm 24 hour stability
  - 800 ppm / year accuracy

## Frequency (8081)

- Frequency : 1Hz to 10MHz
- 7½ to 4½ Digit resolution
- 5 ppm accuracy
- AC or DC coupled

## Temperature (8081)

- PRT -200°C to 660°C
- 8½ to 4½ Digit resolution
- 2-Wire and 4-Wire modes
- Programmable current
- ITS90 temperature scale

## Pressure (8081)

- 25 pressure modules
- 25mBar to 100Bar
- 0.04% best accuracy

**VOLTAGE**  
**CURRENT**  
**HI CURRENT**

Unique terminal indication - intuitive operation, with LED indication of correct input terminals in use.

Clear, bright and familiar presentation of measurements & settings using dual fluorescent displays - ideal for reading from a distance.

+10.000,129,4V DC      10V DC Range Filter 2.885

Digital control - adds further flexibility to user control of functions, ranges and additional settings presented in the dedicated 'settings' display.



30A input as standard for 8081 - the highest input of any DMM currently available. Avoids the requirement of external shunts for high current measurements (10A for 8071).

30A INPUT

Ergonomic keyboard - full control over functions and ranges is accessible via the keyboard, and can be used in conjunction with the digital control for greater flexibility.

Low current input for electrometer functions  
This input offers a 'virtual' ground approaching zero input impedance and a high voltage (200V) source offering electrometer performance in an integrated DMM package.



PROCAL REFERENCE SUPPORT  
AUTOMATE CALIBRATION USING PROCAL





Transmille has over a decade's experience in calibration and instrumentation design & manufacture. Our products are in use throughout the world in both commercial and military laboratories, service centers and production facilities. Our reputation for innovation, reliability & value is second to none with complete solutions including instrumentation, software, support & training.

UKAS calibration is available for all Transmille products as a optional service.



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## OVERVIEW

### PRODUCT OVERVIEW

The 8000 series Digital Multimeter provides outstanding accuracy and linearity measurement performance together with ease of use.

The heart of any precision instrument is in its analogue design; the experience and knowledge gained by Transmille over 10 years in the development of its 3000 series precision multi-product calibrators, its innovation and commitment to quality have all been directed towards the design of the 8000 series multimeter.

The choice of components is critical in the design, the 8000 series using precision foil resistors, with temperature coefficients less than 1ppm°C and the latest in analogue chopper stabilised op-amps and low leakage switches. A temperature stabilised zener reference chip provides 1ppm stability/year. PCB design at this level is critical, and every effect from thermal EMF,s to leakage must be eliminated if 8.5 digit performance is to be achieved. To give stable readings in noisy environments the 8000 Series measurement cycle is phase-locked to the mains (line) power.

To complement the analogue design the 8000 series multimeter digital design is also state of the art. The 8000 series is a multi-processor design, making full use of today's low cost digital processing power. Low-level processors handle the measurement ranging and A to D control etc, while a single chip 64 bit high performance processor handles data management. Circuitry, which would have just a few years ago taken up complete circuit boards, is now available on a single chip, improving reliability, reducing power and also cost, whilst at the same time improving performance.

By bringing together the latest technology in both analogue and digital design Transmille have significantly reduced the parts count and the complexity of an 8.5 digit multimeter, achieving unrivaled performance at a breakthrough price.

The 8000 Series DMM complements the 3000 Series range of multi product calibrators, 3200 electrical test equipment calibrator and the 30000 Precision range of reference standards. This comprehensive range of Queen's award winning instrumentation combined with the ProCal calibration software provides a complete solution for the modern calibration laboratory.

Please visit [www.transmille.co.uk](http://www.transmille.co.uk) for full information on the complete range of Transmille products.

## GENERAL

### GENERAL SPECIFICATIONS

<b>DIMENSIONS</b>	<b>Width 44cm : Length 46cm : Height 9.5cm</b>
<b>WEIGHT</b>	<b>7kg</b>
<b>POWER</b>	<b>110 / 230V : 50 / 60Hz : 50W</b>
<b>INTERFACES</b>	<b>RS232 : GPIB : USB</b>
<b>OPERATING TEMPERATURE</b>	<b>0°C to 50°C</b>
<b>STORAGE TEMPERATURE</b>	<b>-5°C to 60°C</b>
<b>SAFETY &amp; EMC</b>	<b>Tested to EN61010-1-2001, CE Marked.</b>
<b>WARRANTY</b>	<b>1 Year : 3 Year Extended Care Plan Available</b>

## ORDERING

### ORDERING INFORMATION

<b>MODEL 8081</b>	<b>8½ Digit Precision Multimeter (4ppm)</b>
<b>CAL8081</b>	<b>UKAS Calibration Certificate</b>
<b>MODEL 8071</b>	<b>7½ Digit Precision Multimeter (9ppm)</b>
<b>CAL8071</b>	<b>UKAS Calibration Certificate</b>
<b>8000LEAD</b>	<b>Analogue Lead Set</b>

## SOFTWARE

### SOFTWARE

**Automate calibration with ProCal Software - See software brochure for full details**

<b>PC-SU</b>	<b>ProCal Professional Calibration Software</b>
<b>PROSITE</b>	<b>On-Site Database Management Software For ProCal</b>
<b>PROWEB</b>	<b>Web Service Data Exporter For ProCal</b>
<b>MCD</b>	<b>Multimeter Calibration Procedure CD</b>
<b>ECD</b>	<b>Electrical Test Equipment Calibration Procedure CD</b>
<b>SCD</b>	<b>Oscilloscope Calibration Procedure CD</b>
<b>PCT-SU</b>	<b>ProCal-Track Laboratory Management Software</b>
<b>PROSALES-SU</b>	<b>ProSales Sales Management Software</b>



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