1000 SERIES
ULTRA PORTABLE CALIBRATOR

MULTI FUNCTION
PORTABLE / COMPACT
BENCH CALIBRATOR
The new 1000 Series is set to transform the world of calibration - the completely new design utilises the latest in cutting edge digital and analogue electronics, combined with the latest manufacturing techniques to create the world's first ultra portable full function calibrator. Transmille have applied their expertise in designing bench and transportable calibrators to create this new generation of multi function calibrators to offer true portability and rapid return on investment.

For the first time the 1000 Series will allow you to easily take your calibration laboratory with you. The significant improvement in portability changes how and where calibration can be performed. On-site calibration is not a new idea, but older designs meant carrying large, heavy instruments. The 1000 Series is easy to carry, quick to set up anywhere and a fast warm up time allows work to be started quickly.

Although ultra portable and lightweight, the 1000 Series provides all the capabilities you would expect from a traditional full size calibrator. Full functionality and accuracy come as standard, with the 1000 Series offering the following comprehensive features:

- AC/DC Voltage to 1000V
- AC/DC Current to 10A (500A with coil)
- Resistance to 100 MΩ
- Capacitance
- Frequency
- Thermocouple Simulation
- PRT Simulation
- Pressure Measurement (via Transducers)
- Process Control Measurement (mV / mA)
- Insulation Tester Calibration

All these functions together with the high drive capabilities for calibrating older analogue instruments make the 1000 Series the perfect choice for on-site calibration. This full function ultra portable configuration makes it ideal for all types of sites including oil rigs, ships, aviation, power & process plants and railways.
1000 SERIES
THE WORLD'S FIRST ULTRA PORTABLE CALIBRATOR
ONE CALIBRATOR :: TWO CONFIGURATIONS

1000B BENCH CALIBRATOR
COMPACT BENCH ENCLOSURE - A REDUCED FOOTPRINT ALLOWS THE CALIBRATOR TO BE POSITIONED AT THE REAR OF A WORKBENCH OR WITHIN A RACK SYSTEM.

1. ADVANCED ADAPTER INTERFACE TO EXPAND FUNCTIONALITY INCLUDING mV, mA, PRESSURE MEASUREMENT AND MORE.
2. CLEAR LED INDICATION OF ACTIVE TERMINALS
3. DEDICATED THERMOCOUPLE OUTPUT SOCKET
4. GRAPHIC LCD DISPLAY INCORPORATING LED BACKLIGHT FOR CLEAR, BRIGHT PRESENTATION OF FUNCTIONS & SETTINGS
5. TACTILE SOFT-KEYS LINKED TO ON-SCREEN MENUS

1000A PORTABLE CALIBRATOR
RUGGED IP67 RATED ENCLOSURE WITH BUILT-IN HANDLE INCORPORATING COMFORT INSERT AND HIGH PERFORMANCE LATCHING CATCHES.

6. EASY MANUAL ENTRY OF TEST VALUES USING NUMERIC KEYPAD
7. DIGITAL CONTROL FOR QUICK SELECTION OF RANGES & OUTPUTS
8. USB INTERFACE BUILT-IN AS STANDARD

KEY FEATURES
- 80PPM ACCURACY
- AC/DC VOLTAGE TO 1000V
- AC/DC CURRENT UP TO 10A
- 2 WIRE RESISTANCE TO 100MΩ
- CAPACITANCE
- FREQUENCY
- THERMOCOUPLE SIMULATION
- PT & INSULATION TEST FUNCTIONS

ANALOGUE / MOVING IRON METER SUPPORT
The high current drive capability allows the 1000A Series to drive moving iron meters - ideal for many industrial applications where these analogue meters are commonly used in monitoring stations / control panels.

Dimensions: H=432 W=432 D=150mm
Weight: 9.5kg

Dimensions: H=447 W=297mm
Weight: 9.2kg

For ultra precision & advanced functionality
Small and lightweight - the latest ICs allow for small form factor - ideal for on-site in industrial environments

Specifications:
- Coverage of all major standards
- Easy to use - manual control
- High accuracy
- User-friendly interface

For the ultimate in portability
- Compact design
- Easy to transport
- Rugged construction
ER001A THERMOCOUPLE SIMULATION & MEASUREMENT ADAPTER

The 1000 Series provides thermocouple simulation via a front panel socket for basic temperature meters. For higher accuracy meters and thermocouples Transmille has designed an external source / measure adapter which keeps the electronics used for thermocouple simulation / measurement as close as possible to the connection of the UUT.

- Superior thermocouple simulation / measurement
- 11 Built-in Types
- Thermocouple measurement
- Uses neutral (copper) thermocouple plug - simulation / measurement of any thermocouple without the need for compensation cables, avoiding introduction of errors.

COLD JUNCTION COMPENSATION

Special care has been taken over the cold junction compensation - a common source of errors in thermocouple calibration. The cold junction compensation sensor is mounted in the thermocouple plug / socket itself. By measuring the cold junction at the instruments input allows any type of thermocouple to be simulated / measured without using compensation cables.

SSC sensor built into thermocouple plug - The ultimate in accurate CJC compensation - measures the temperature at the closest point to the cold junction.

ER022 PROCESS CONTROL CALIBRATION ADAPTER

To provide support for calibration of process control instruments and transducers, the 1000 Series has a dedicated adapter designed to allow measurement of mV and mA signal sources allowing the 1000 Series to perform these measurement tasks without the need for a separate meter. A dedicated pressure module input on the rear of the adapter also allow pressure monitoring for transducer calibration.

- mV Measurement to 30V
- mA Measurement to 30mA
- 24V Loop Supply for Transducers
- Pressure Module input for pressure monitoring

INSULATION TESTER CALIBRATION FUNCTIONS

The Insulation test functions allow both Insulation and Installation tester functions to be calibrated. Adding yet another useful set of functions to the 1000 Series, the insulation tester calibration functions provide simulated insulation resistance and test voltage measurement capabilities to the 1000 Series.

- Insulation Resistance from 1MΩ to 1GΩ
- Select any resistance value within output range
- Test Voltage Measurement
- Accuracy 0.8%

ER002 2 / 10 / 50 TURN CLAMP COIL ADAPTER

Designed for the calibration of both wound AC & Magnetic field hall effect AC/DC clamp meters the Transmille current coil offers several unique features built in a robust construction, complete with alignment table for ease of use.

- Calibrates Clamp Meters up to 500A
- 2 / 10 / 50 Turn Coils
- High Accuracy AC/DC Balanced Design
- Wide range of clamp sizes covered
- Includes alignment table for repeatable readings

PR0 TEMPERATURE SIMULATION

The PRT temperature simulation function makes the calibration of resistance thermometers easy. Simply connect in place of the probe and select a resistance value using the keypad or digital control. Compare the calibrator simulated value with the displayed value on the thermometer.

- Additional modes available using the PRT simulation function and can be selected using the on-screen PRT menu.
- 2-Wire simulation of probe
- Range -200° to 800°C
- Accuracy 0.3°C

SPECIFICATIONS

<table>
<thead>
<tr>
<th>Function</th>
<th>Type</th>
<th>Range</th>
<th>Accuracy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage</td>
<td>J</td>
<td>-210°C to 1200°C</td>
<td>0.02% ± 1 DIGIT</td>
</tr>
<tr>
<td></td>
<td>K</td>
<td>-200°C to 1370°C</td>
<td>0.02% ± 1 DIGIT</td>
</tr>
<tr>
<td></td>
<td>T</td>
<td>-250°C to 400°C</td>
<td>0.02% ± 1 DIGIT</td>
</tr>
<tr>
<td></td>
<td>R</td>
<td>0°C to 1760°C</td>
<td>0.02% ± 1 DIGIT</td>
</tr>
<tr>
<td></td>
<td>S</td>
<td>0°C to 1760°C</td>
<td>0.02% ± 1 DIGIT</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>600° to 1820°C</td>
<td>0.02% ± 1 DIGIT</td>
</tr>
<tr>
<td></td>
<td>E</td>
<td>-250°C to 1300°C</td>
<td>0.02% ± 1 DIGIT</td>
</tr>
<tr>
<td></td>
<td>L</td>
<td>-200°C to 900°C</td>
<td>0.02% ± 1 DIGIT</td>
</tr>
<tr>
<td></td>
<td>U</td>
<td>-200°C to 600°C</td>
<td>0.02% ± 1 DIGIT</td>
</tr>
</tbody>
</table>

See extended specifications for full details
TPM INTELLIGENT PRESSURE MODULES

The 1000 Series supports pressure calibration using a range of pressure modules, which can connect directly to the 1000 Series or be used as part of a transducer verification system with the EA022 adapter. These pressure modules cover the range from 25mBar to 10000 PSI with a 5 PSI differential and ±1Bar vacuum modules available.
- Pressure ranges from 25mBar to 10.000PSI • 5 PSI differential • ±1Bar vacuum
- Optional Hand pump available (-0.95Bar to 60Bar)
- Connects directly to Adapter Interface or EA022 Adapter
- Use direct from front panel or ProCal Software
- Supports multiple pressure units
- 1000 series automatically switches to pressure function on connection

ER003 OPTICAL TACHOMETER CALIBRATION ADAPTER

Using a high intensity LED light source, optical tachometers can be calibrated quickly and easily. Simply enter the RPM value using the calibrator keypad or use with ProCal software for automated calibration.
- High intensity LED light source
- Direct keyboard input in RPM
- Range: 60 to 60,000 RPM

PROCAL: EASY TO USE SOFTWARE FOR CALIBRATION

Transmille ProCal software provides easy control of the 1000 Series with pre-set test points for each model of tester. The software takes care of setting the 1000 Series to the correct function and output - the user simply follows on-screen prompts and confirms measurements or enters readings from the tester.

- UNIVERSAL CALIBRATION SOFTWARE
- AUTOMATIC CONTROL OF 1000 SERIES CALIBRATORS
- FAST PROCEDURE CREATION - PROCEDURE WIZARDS
- PRINT CERTIFICATES ON PLAIN PAPER
- M3003 / GUM UNCERTAINTIES
- SUPPORTS CRYSTAL REPORTS
- CALIBRATION PRICING

CONDENSED SPECIFICATIONS

<table>
<thead>
<tr>
<th>FUNCTION</th>
<th>RANGE</th>
<th>RESOLUTION</th>
<th>ACCURACY</th>
</tr>
</thead>
<tbody>
<tr>
<td>DC Voltage</td>
<td>0 to 1020V</td>
<td>1uV</td>
<td>80ppm</td>
</tr>
<tr>
<td>DC Current</td>
<td>0 to 10A</td>
<td>1mA</td>
<td>300ppm</td>
</tr>
<tr>
<td>AC Voltage</td>
<td>0 to 1020V</td>
<td>1uV</td>
<td>0.08%</td>
</tr>
<tr>
<td>Frequency Range</td>
<td>0 to 1020V</td>
<td>1uV</td>
<td>0.6%</td>
</tr>
<tr>
<td>AC Current</td>
<td>0 to 10A</td>
<td>1mA</td>
<td>0.1%</td>
</tr>
<tr>
<td>Frequency Range</td>
<td>0 to 10A</td>
<td>1mA</td>
<td>0.1%</td>
</tr>
<tr>
<td>Resistance (Simulated)</td>
<td>0Ω to 10MΩ</td>
<td>1mΩ</td>
<td>0.02%</td>
</tr>
<tr>
<td>Resistance (Passive Decades)</td>
<td>0Ω to 10MΩ</td>
<td>100Ω</td>
<td>0.02%</td>
</tr>
<tr>
<td>Capacitance (Passive)</td>
<td>10nF to 1uF</td>
<td>1pF</td>
<td>0.8%</td>
</tr>
<tr>
<td>Insulation Resistance</td>
<td>1MΩ to 1GΩ</td>
<td>0.1MΩ</td>
<td>0.8%</td>
</tr>
<tr>
<td>PRT Resistance</td>
<td>-20°C to +80°C</td>
<td>±0.01°C</td>
<td>0.3°C</td>
</tr>
<tr>
<td>Frequency</td>
<td>10Hz to 10kHz</td>
<td>1Hz</td>
<td>26ppm</td>
</tr>
<tr>
<td>Thermocouple Simulation</td>
<td>J, K, T, R, S, B, N, E, L, U, C</td>
<td>0.01°C</td>
<td>0.22°C</td>
</tr>
</tbody>
</table>

EXTERNAL ADAPTERS: CONDENSED SPECIFICATIONS

<table>
<thead>
<tr>
<th>FUNCTION</th>
<th>RANGE</th>
<th>RESOLUTION</th>
<th>ACCURACY</th>
</tr>
</thead>
<tbody>
<tr>
<td>EA001A Thermocouple Simulation</td>
<td>J, K, T, R, S, B, N, E, L, U, C</td>
<td>0.01°C</td>
<td>0.09°C</td>
</tr>
<tr>
<td>EA002 2/10/50 TURN CLAMP COIL ADAPTER</td>
<td>J, K, T, R, S, B, N, E, L, U, C</td>
<td>0.01°C</td>
<td>0.09°C</td>
</tr>
<tr>
<td>EA003 Optical Tachometer Calibration Adapter</td>
<td>J, K, T, R, S, B, N, E, L, U, C</td>
<td>0.01°C</td>
<td>0.09°C</td>
</tr>
<tr>
<td>EA022 Process Control Calibration Adapter</td>
<td>J, K, T, R, S, B, N, E, L, U, C</td>
<td>0.01°C</td>
<td>0.09°C</td>
</tr>
</tbody>
</table>

GENERAL SPECIFICATIONS

- WARM UP TIME: Double the time since last powered up to 20 minutes maximum.
- INTERFACE: Built-In USB
- LINE POWER: 110V / 230V
- DIMENSIONS: 1000A: H 180 • W 447 • D 297mm
- 1000B: H 257 • W 432 • D 185mm
- WEIGHT: 1000A: 9.2kg
- 1000B: 9.5kg
- WARRANTY: 1 Year
- SAFETY: Designed to EN61010-1:2001: CE Marked

*Best 1 Year absolute uncertainties including calibration uncertainties. Due to continuous development specifications are subject to change.
1000A  80PPM PORTABLE MULTI FUNCTION CALIBRATOR (PORTABLE TRANSIT CASE)
1000B  80PPM COMPACT MULTI FUNCTION CALIBRATOR (BENCH TOP ENCLOSURE)
1000M  80PPM COMPACT MULTI FUNCTION CALIBRATOR (RACK MOUNT ENCLOSURE)
CAL-1000  UKAS CALIBRATION CERTIFICATE
OPTION EA001A  EA001A THERMOCOUPLE SIMULATION AND MEASUREMENT ADAPTER
OPTION EA002  EA002 2/10/50 TURN CLAMP COIL ADAPTER
OPTION EA003  EA003 OPTICAL TACHOMETER CALIBRATION ADAPTER
OPTION EA022  EA022 PROCESS CONTROL CALIBRATION ADAPTER
OPTION TPMxx  TPM PRESSURE MODULES (SEE SEPARATE PRICE LIST FOR RANGES AND OPTIONS)
OPTION 1000LEAD  1000 SERIES LEAD SET
OPTION PC-PACK  PROCAL CALIBRATION SOFTWARE

PRODUCT RANGE

MULTI PRODUCT
8/25/50 ppm ACCURACY

TRANSPORTABLE
25/50 ppm ACCURACY

MULTIMETERS
4/9 ppm ACCURACY

ELECTRICAL TEST
INSULATION • RCD • PAT • LOOP

TRANSMILLE :: THE CALIBRATION SPECIALISTS
Transmille has over a decades 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.

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AGENT

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