

Schedule of Accreditation

issued by

United Kingdom Accreditation Service

21 - 47 High Street, Feltham, Middlesex, TW13 4UN, UK

 <p style="margin: 0;">0324</p> <p style="margin: 0;">Accredited to ISO/IEC 17025:2005</p>	<h3 style="margin: 0;">Transmille Ltd</h3> <p style="margin: 0;">Issue No: 029 Issue date: 01 March 2011</p>	
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Calibration performed at the above address only		

DETAIL OF ACCREDITATION

Measured Quantity Instrument or Gauge	Range	Calibration and Measurement Capability (CMC) Expressed as an Expanded Uncertainty ($k = 2$)	Remarks
ELECTRICAL			
DC Resistance			
Specific Values	1 m Ω 10 m Ω 100 m Ω 1 Ω 10 Ω 100 Ω 1 k Ω 10 k Ω 100 k Ω 1 M Ω 10 M Ω 100 M Ω 1 G Ω 10 G Ω 100 G Ω	280 n Ω 1.0 $\mu\Omega$ 1.7 $\mu\Omega$ 3.0 $\mu\Omega$ 28 $\mu\Omega$ 200 $\mu\Omega$ 1.5 m Ω 16 m Ω 350 m Ω 6.1 Ω 50 Ω 3.4 k Ω 220 k Ω 45 M Ω 510 M Ω	100 V 100 V
Other Values	0 Ω to 10 Ω 10 Ω to 100 Ω 100 Ω to 1 k Ω 1.0 k Ω to 10 k Ω 10. k Ω to 100 k Ω 100 k Ω to 1 M Ω 1.0 M Ω to 10 M Ω 10 M Ω to 100 M Ω 100 M Ω to 1 G Ω	22 ppm + 84 $\mu\Omega$ 19 ppm + 680 $\mu\Omega$ 12 ppm + 1.4 m Ω 12 ppm + 13 m Ω 14 ppm + 120 m Ω 19 ppm + 3.5 Ω 69 ppm + 165 Ω 580 ppm + 4.2 k Ω 0.58 % + 100 k Ω	
AC Resistance	40 Hz to 1.592 kHz		
Specific Values	1 Ω 10 Ω 100 Ω 1 k Ω 10 k Ω	41 $\mu\Omega$ 410 $\mu\Omega$ 4.1 m Ω 41 m Ω 410 m Ω	



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DC Voltage			
Standard cell values		1.4 μ V	This uncertainty can be realised with cells only if they have their own temperature-controlled enclosure maintained at a nominal 30 °C with the appropriate thermal stability
Other Values	0 mV to 10 mV 10 mV to 100 mV 100 mV to 1 V 1.0 V to 1 kV	440 nV 490 nV 2.0 ppm + 440 nV 3.0 ppm	
High Voltage	1 kV to 20 kV 20 kV to 40 kV	57 V 110 V	
DC Current	0 μ A to 100 μ A 100 μ A to 1 mA 1.0 mA to 10 mA 10 mA to 100 mA 100 mA to 1 A 1.0 A to 10 A 10. A to 30 A	6 ppm + 130 pA 5.9 ppm + 1.8 nA 5.9 ppm + 26 nA 5.9 ppm + 185 nA 8.8 ppm + 1.6 μ A 36 ppm + 27 μ A 130 ppm + 500 μ A	
	10 A to 1000 A	0.23 % + 1.3 A	For the calibration of clamp-on ammeters
AC Voltage	40 Hz to 20 kHz 1 mV to 999 mV	230 ppm + 4.0 μ V	Generation only
Specific Values	1 V 10 Hz 40 Hz 1 kHz 10 kHz 100 kHz 1 MHz	40 μ V 40 μ V 40 μ V 40 μ V 230 μ V 660 μ V	
	10 V 10 Hz 40 Hz 1 kHz 10 kHz 100 kHz 200 kHz 1 MHz	390 μ V 390 μ V 100 μ V 410 μ V 2.3 mV 4.2 mV 4.1 mV	
	20 V 40 Hz 1 kHz 10 kHz 100 kHz	780 μ V 780 μ V 800 μ V 4.6 mV	



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AC Voltage (cont'd)			
Specific values	100 V 40 Hz 1 kHz 10 kHz 50 kHz	6.5 mV 6.4 mV 6.4 mV 78 mV	
	200 V 40 Hz 1 kHz 10 kHz 50 kHz	13 mV 13 mV 13 mV 160 mV	
	1000 V 40 Hz 1 kHz 10 kHz 50 kHz	95 mV 95 mV 95 mV 200 mV	
Other values	10 mV to 100 mV 10 Hz to 40 Hz 40 Hz to 1 kHz 1 kHz to 20 kHz	200 ppm + 7.0 μ V 290 ppm + 5.0 μ V 250 ppm + 5.0 μ V	
	100 mV to 1 V 10 Hz to 40 Hz 40 Hz to 1 kHz 1 kHz to 10 kHz 10 kHz to 100 kHz 100 kHz to 1 MHz	80 ppm + 48 μ V 85 ppm + 25 μ V 160 ppm + 25 μ V 950 ppm + 20 μ V 1.2 % + 100 μ V	
	1 V to 10 V 10 Hz to 40 Hz 40 Hz to 1 kHz 1 kHz to 10 kHz 10 kHz to 100 kHz 100 kHz to 1 MHz	85 ppm + 450 μ V 88 ppm + 220 μ V 170 ppm + 220 μ V 940 ppm + 300 μ V 1.2 % + 1.0 mV	
	10 V to 100 V 40 Hz to 1 kHz 1 kHz to 10 kHz 10 kHz to 50 kHz	230 ppm + 2.3 mV 230 ppm + 2.3 mV 870 ppm + 2.0 mV	
	100 V to 1 kV 40 Hz to 1 kHz 1 kHz to 10 kHz 10 kHz to 50 kHz	470 ppm + 20 mV 700 ppm + 25 mV 0.14 % + 20 mV	
	1 kV to 28 kV 50 Hz	0.42 % + 4.0 V	



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AC Current	40 Hz to 1 kHz 25 μ A to 100 μ A 100 μ A to 1 mA 1.0 mA to 10 mA 10 mA to 100 mA 100 mA to 1 A 1.0 A to 10 A 10 A to 30 A 50 Hz 10 A to 1000 A	150 ppm + 4 nA 160 ppm + 30 nA 160 ppm + 300 nA 160 ppm + 3.0 μ A 170 ppm + 20 μ A 350 ppm + 1.0 mA 360 ppm + 1.0 mA 0.25 % + 1.3 A	For the calibration of clamp-on ammeters
Loop impedance	At 50 Hz: 0.6 Ω to 1.6 Ω 5.5 Ω to 100 Ω 1 k Ω	24 m Ω 42 m Ω 5.8 m Ω	Nominal values for the calibration of earth loop testers
Inductance Specific Values	1 kHz 10 μ H 100 μ H 1 mH 10 mH 100 mH 1 H	8.9 nH 39 nH 350 nH 3.7 μ H 31 μ H 280 μ H	Specific values are those that fall within ± 1 % of the stated values.
Capacitance Specific Values	3 Terminal 1 kHz 10 pF 100 pF 1 nF 2 terminal and 3 terminal 1 kHz 10 nF 100 nF 1 μ F	26 fF 170 fF 280 fF 2.8 pF 28 pF 280 of	Specific values are those that fall within 1 % of the stated values
Other Values	1 kHz 10 pF to 10 μ F	0.050 % + 0.20 pF	
Frequency Measurement Generation	10 mHz to 1 GHz 1 Hz to 10 MHz	0.24 ppm 2.1 Hz	The CMC is for an average frequency measured or generated over a 10-minute period. The uncertainties may be increased for shorter periods.



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Time Interval	20 ms to 900 ms	390 μs	For the calibration of RCD testers
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Phase Measurement	50 Hz 0 to 359.0°	170 m°	
Temperature simulation			In support of thermocouple measurements
Reference junction measurements	Reference to 0 °C Ambient 18 °C to 28 °C	0.12 °C 0.12 °C	
Thermocouple type:-			Including Reference Junction Compensation
B	100 °C to 1820 °C	2.4 °C	
E	0°C to 800 °C	0.35 °C	
J	- 180 °C to + 150 °C 150 °C to 750 °C	0.35 °C 0.50 °C	
K	- 140 °C to + 200 °C 200 °C to 1340 °C	0.40 °C 0.60 °C	
N	- 270 °C to + 260 °C 260 °C to 1300 °C	0.35 °C 0.60 °C	
R	100 °C to 1700 °C	1.2 °C	
S	50 °C to 1700 °C	1.7 °C	
T	- 250 °C to + 400 °C	0.40 °C	
Resistance Thermometer			
PT 100	-100 °C to + 800 °C	0.020 °C	

END