Schedule of Accreditation

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Accredited to ISO/IEC 17025:2017

Calibration, Maintenance and Repair Ltd

Issue No: 044 **Issue date:** 07 May 2025

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Calibration performed by the Organisation at the locations specified

Locations covered by the organisation and their relevant activities

Laboratory locations:

Location details		Activity	Location code
Address 11 Frensham Road Norwich NR3 2BT	**Local contact:** Mr P K Clark Tel: +44 (0)1603 279557	Electrical Calibration Accelerometer calibration Mass Calibration NAWI Calibration	A
Address 5 Octavian Way, Team Valley Trading Est Gateshead NE11 0HZ	**Local contact:** Mr John Fryer Tel: +44 (0)191 4875951	Electrical Calibration Pressure Calibration	B

Calibration and Measurement Capability (CMC)

Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty (k = 2)	Remarks	Location Code
Values and uncertainties listed below are applicable for the calibration of both measuring instruments and for instruments with an output. The method used is by direct comparison against laboratory references unless otherwise stated in the remarks column.				
ELECTRICAL MEASUREMENTS			Calibrations are performed as a direct comparison against a reference standard	
DC VOLTAGE				A
Generation	0 mV to 10 mV 10 mV to 100 mV 100 mV to 1 V 1 V to 10 V 10 V to 100 V 100 V to 1100 V 1 kV to 2 kV 2 kV to 3 kV 3 kV to 4 kV 4 kV to 5 kV	0.55 µV 1.4 µV 6.6 µV 44 µV 630 µV 8.0 mV 0.45 % + 7.0 V 0.45 % + 8.0 V 0.45 % + 9.0 V 0.45 % + 11 V	For the calibration of measuring instruments	
Measurement	0 mV to 10 mV 10 mV to 100 mV 100 mV to 1 V 1 V to 10 V 10 V to 100 V 100 V to 1 kV 1 kV to 2 kV 2 kV to 3 kV 3 kV to 4 kV 4 kV to 5 kV	1.0 µV 2.0 µV 10 µV 98 µV 1.3 mV 14 mV 0.67 % + 9.0 V 0.67 % + 11 V 0.67 % + 14 V 0.67 % + 16 V	For instruments with a voltage output	
DC RESISTANCE				A
Sourcing - Spot Values	1 Ω 1.9 Ω 10 Ω 19 Ω 100 Ω 190 Ω 1 kΩ 1.9 kΩ 10 kΩ 19 kΩ 100 kΩ 190 kΩ 1 MΩ 1.9 MΩ 10 MΩ 19 MΩ 100 MΩ	110 µΩ 210 µΩ 270 µΩ 540 µΩ 1.2 mΩ 2.5 mΩ 8.7 mΩ 17 mΩ 81 mΩ 170 mΩ 1.1 Ω 2.4 Ω 16 Ω 48 Ω 460 Ω 1.1 kΩ 12 kΩ	For the calibration of measuring instruments	

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DC RESISTANCE (continued)				A
Sourcing - Range values				
	0Ω to 10 Ω	2.0 mΩ	For the calibration of measuring instruments	
	10 Ω to 100 Ω	5.0 mΩ		
	100 Ω to 1 kΩ	31 mΩ		
	1 kΩ to 10 kΩ	310 mΩ		
	10 kΩ to 100 kΩ	3.0 Ω		
	100 kΩ to 1 MΩ	37 Ω		
	1 MΩ to 10 MΩ	2.0 kΩ		
	10 MΩ to 33 MΩ	11 kΩ		
	33 MΩ to 110 MΩ	60 kΩ		
	110 MΩ to 330 MΩ	1.0 MΩ		
	330 MΩ to 1.1 GΩ	17 MΩ		
Measurement	0 Ω to 10 Ω	250 μΩ	For instruments with a resistance output	
	10 Ω to 100 Ω	2.0 mΩ		
	100 Ω to 1 kΩ	14 mΩ		
	1 kΩ to 10 kΩ	140 mΩ		
	10 kΩ to 100 kΩ	1.0 Ω		
	100 kΩ to 1 MΩ	22 Ω		
	1 MΩ to 10 GΩ	0.71 %		
	10 GΩ to 100 GΩ	1.0 %		
DC CURRENT				A
Generation	0 μA to 10 μA	7.4 nA	For the calibration of measuring instruments	
	10 μA to 100 μA	12 nA		
	100 μA to 1 mA	49 nA		
	1 mA to 10 mA	450 nA		
	10 mA to 100 mA	6.0 μA		
	100 mA to 1 A	110 μA		
	1 A to 3 A	1.0 mA		
	3 A to 5 A	4.0 mA		
	5 A to 10 A	6.0 mA		
	10 A to 20 A	12 mA		
	20 A to 30 A	570 mA		
	16 A to 160 A	25 mA	Current clamp calibration using a multi turn coil	
	160 A to 1000 A	580 mA		

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DC CURRENT (continued)				A
Measurement	0 μA to 10 μA	2.0 nA	For instruments which generate current	
	10 μA to 100 μA	4.0 nA		
	100 μA to 1 mA	34 nA		
	1 mA to 10 mA	340 nA		
	10 mA to 100 mA	5.0 μA		
	100 mA to 1 A	150 μA		
	1 A to 2 A	2.4 mA		
	2 A to 10 A	25 mA		
	10 A to 20 A	330 mA		
	20 A to 30 A	490 mA		
AC VOLTAGE				A
Generation	1 Hz to 10 Hz			
	10 μV to 10 mV	60 μV	For the calibration of measuring instruments	
	10 mV to 100 mV	270 μV		
	100 mV to 1 V	1.9 mV		
	1 V to 7 V	9.2 mV		
	10 μV to 2.2 mV			
	10 Hz to 20 Hz	5.3 μV		
	20 Hz to 40 Hz	4.9 μV		
	40Hz to 500 Hz	4.9 μV		
	500 Hz to 1 kHz	4.9 μV		
	1 kHz to 10 kHz	4.9 μV		
	10 kHz to 20 kHz	4.9 μV		
	20 kHz to 50 kHz	5.2 μV		
	50 kHz to 100 kHz	7.1 μV		
	100 kHz to 300 kHz	14 μV		
	300 kHz to 500 kHz	27 μV		
	500 kHz to 1 MHz	30 μV		
	2.2 mV to 22 mV			
	10 Hz to 20 Hz	11 μV		
	20 Hz to 40 Hz	7.1 μV		
	40Hz to 500 Hz	6.9 μV		
	500 Hz to 1 kHz	6.9 μV		
	1 kHz to 10 kHz	6.9 μV		
	10 kHz to 20 kHz	6.9 μV		
	20 kHz to 50 kHz	10 μV		
	50 kHz to 100 kHz	19 μV		
	100 kHz to 300 kHz	38 μV		
	300 kHz to 500 kHz	59 μV		
	500 kHz to 1 MHz	92 μV		

Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty (k = 2)	Remarks	Location Code
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AC VOLTAGE (continued)				A
Generation (continued)	**22 mV to 220 mV**			
	10 Hz to 20 Hz	76 µV	For measuring instruments	
	20 Hz to 40 Hz	31 µV		
	40Hz to 500 Hz	23 µV		
	500 Hz to 1 kHz	23 µV		
	1 kHz to 10 kHz	23 µV		
	10 kHz to 20 kHz	23 µV		
	20 kHz to 50 kHz	39 µV		
	50 kHz to 100 kHz	99 µV		
	100 kHz to 300 kHz	190 µV		
	300 kHz to 500 kHz	380 µV		
	500 kHz to 1 MHz	740 µV		
	220 mV to 2.2 V			
	10 Hz to 20 Hz	660 µV		
	20 Hz to 40 Hz	250 µV		
	40Hz to 500 Hz	120 µV		
	500 Hz to 1 kHz	120 µV		
	1 kHz to 10 kHz	120 µV		
	10 kHz to 20 kHz	120 µV		
	20 kHz to 50 kHz	180 µV		
	50 kHz to 100 kHz	250 µV		
	100 kHz to 300 kHz	950 µV		
	300 kHz to 500 kHz	2.8 mV		
	500 kHz to 1 MHz	4.7 mV		
	2.2 V to 22 V			
	10 Hz to 20 Hz	6.6 mV		
	20 Hz to 40 Hz	2.5 mV		
	40Hz to 500 Hz	1.1 mV		
	500 Hz to 1 kHz	1.1 mV		
	1 kHz to 10 kHz	1.1 mV		
	10 kHz to 20 kHz	1.1 mV		
	20 kHz to 50 kHz	1.8 mV		
	50 kHz to 100 kHz	2.3 mV		
	100 kHz to 300 kHz	7.2 mV		
	300 kHz to 500 kHz	28 mV		
	500 kHz to 1 MHz	42 mV		
	22 V to 220 V			
	10 Hz to 20 Hz	66 mV		
	20 Hz to 40 Hz	25 mV		
	40Hz to 500 Hz	14 mV		
	500 Hz to 1 kHz	14 mV		
	1 kHz to 10 kHz	14 mV		
	10 kHz to 20 kHz	14 mV		
	20 kHz to 50 kHz	22 mV		
	50 kHz to 100 kHz	41 mV		

Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty (k = 2)	Remarks	Location Code
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AC VOLTAGE (continued)				A
Generation (continued)	**220 V to 1100 V**		For measuring instruments	
	55 Hz to 1 kHz	110 mV		
	1 kV to 2 kV *50 Hz to 60 Hz*	0.67 % + 12 V		
	2 kV to 3 kV *50 Hz to 60 Hz*	0.67 % + 16 V		
	3 kV to 4 kV *50 Hz to 60 Hz*	0.67 % + 20 V		
	4 kV to 5 kV *50 Hz to 60 Hz*	0.67 % + 24 V		
Measurement	**30 µV to 10 mV**		For instruments with a voltage output	
	1 Hz to 40 Hz	8.0 µV		
	40 Hz to 1 kHz	5.0 µV		
	1 kHz to 20 kHz	6.0 µV		
	20 kHz to 50 kHz	13 µV		
	50 kHz to 100 kHz	60 µV		
	100 kHz to 1 MHz	160 µV		
	10 mV to 100 mV			
	1 Hz to 40 Hz	15 µV		
	40 Hz to 1 kHz	13 µV		
	1kHz to 20 kHz	20 µV		
	20 kHz to 50 kHz	38 µV		
	50 kHz to 100 kHz	100 µV		
	100 kHz to 300 kHz	360 µV		
	300 kHz to 1 MHz	2.3 mV		
	100mV to 1V			
	1 Hz to 40 Hz	140 µV		
	40 Hz to 1 kHz	120 µV		
	1kHz to 20 kHz	200 µV		
	20 kHz to 50 kHz	390 µV		
	50 kHz to 100 kHz	970 µV		
	100 kHz to 300 kHz	3.6 mV		
	300 kHz to 1 MHz	24 mV		
	1 V to 10 V			
	1 Hz to 40 Hz	2.0 mV		
	40 Hz to 1 kHz	1.0 mV		
	1kHz to 20 kHz	2.0 mV		
	20 kHz to 50 kHz	4.0 mV		
	50 kHz to 100 kHz	10 mV		
	100 kHz to 300 kHz	36 mV		
	300 kHz to 1 MHz	240 mV		
	10V to 100V			
	1 Hz to 40 Hz	38 mV		
	40 Hz to 1kHz	36 mV		
	1kHz to 20 kHz	37 mV		
	20 kHz to 50 kHz	51 mV		
	50 kHz to 100 kHz	150 mV		
	100kHz to 300 kHz	480 mV		

Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty (k = 2)	Remarks	Location Code
Values and uncertainties listed below are applicable for the calibration of both measuring instruments and for instruments with an output. The method used is by direct comparison against laboratory references unless otherwise stated in the remarks column.				
VOLTAGE (continued) Measurement (continued)	**100V to 1 kV** *1 Hz to 40 Hz* *40 Hz to 1 kHz* *1 kHz to 20 kHz* *20 kHz to 50 kHz* *50 kHz to 100 kHz* 1 kV to 2 kV *30 Hz to 200 Hz* 2 kV to 3 kV *30 Hz to 200 Hz* 3 kV to 4 kV *30 Hz to 200 Hz* 4 kV to 5 kV *30 Hz to 200 Hz*	 520 mV 490 mV 720 mV 1.4 V 3.5 V 0.45 % + 8.0 V 0.45 % + 11 V 0.45 % + 13 V 0.45 % + 16 V	For instruments with a voltage output.	A
AC CURRENT Generation	**10 µA to 220 µA** *55 Hz to 400 Hz* *400 Hz to 1 kHz* *1 kHz to 5 kHz* *5 kHz to 10 kHz* **220 µA to 2.2 mA** *55 Hz to 400 Hz* *400 Hz to 1 kHz* *1 kHz to 5 kHz* *5 kHz to 10 kHz* **2.2 mA to 22 mA** *55 Hz to 400 Hz* *400 Hz to 1 kHz* *1 kHz to 5 kHz* *5 kHz to 10 kHz* **22 mA to 220 mA** *55 Hz to 400 Hz* *400 Hz to 1 kHz* *1 kHz to 5 kHz* *5 kHz to 10 kHz* **220 mA to 2.2 A** *55 Hz to 400 Hz* *400 Hz to 1 kHz* *1 kHz to 5 kHz* *5 kHz to 10 kHz* ***10 Hz to 1 kHz*** *2 A to 3 A* *3 A to 5 A* *5 A to 10 A* **10 A to 20 A** *50 Hz to 400 Hz* *400 Hz to 1 kHz* **20 A to 30 A** *50 Hz to 400 Hz* *400 Hz to 1 kHz*	 38 nA 38 nA 88 nA 360 nA 320 nA 320 nA 660 nA 3.6 µA 29 µA 29 µA 55 µA 290 µA 3.0 µA 3.0 µA 5.7 µA 34 µA 660 µA 660 µA 1.3 mA 18 mA 7.0 mA 9.0 mA 14 mA 310 mA 290 mA 430 mA 420 mA	For the calibration of measuring instruments	A

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AC CURRENT (continued) Generation (continued)	**30 A to 40 A** *50 Hz to 400 Hz* *400 Hz to 1 kHz*	 560 mA 540 mA		A
	40 A to 50 A *50 Hz to 400 Hz* *400 Hz to 1 kHz*	 680 mA 670 mA		
	10 Hz to 100 Hz 10 A to 32 A 16 A to 160 A 160 A to 1000 A	 9.0 mA 35 mA 580 mA	Calibration of current clamps using a multi turn coil	
Measurement	**20 nA to 10 µA** *20 Hz to 45 Hz* *45 Hz to 1 kHz*	 23 nA 14 nA	For instruments which generate current	
	10 µA to 100 µA *20 Hz to 45 Hz* *45 Hz to 1 kHz*	 210 nA 110 nA		
	100 µA to 1 mA *20 Hz to 45 Hz* *45 Hz to 20 kHz* *20 kHz to 50 kHz*	 2.0 µA 1.0 µA 5.0 µA		
	1 mA to 10 mA *20 Hz to 45 Hz* *45 Hz to 20 kHz* *20 kHz to 50 kHz*	 20 µA 9.0 µA 51 µA		
	10 mA to 100 mA *20 Hz to 45 Hz* *45 Hz to 20 kHz* *20 kHz to 50 kHz*	 200 µA 95 µA 510 µA		
	100 mA to 1 A *20 Hz to 45 Hz* *45 Hz to 20 kHz* *20 kHz to 50 kHz*	 2.0 mA 1.0 mA 12 mA		
	1 A to 10 A *50 Hz to 400 Hz* *400 Hz to 1 kHz*	 180 mA 140 mA		
	10 A to 20 A *50 Hz to 400 Hz* *400 Hz to 1 kHz*	 270 mA 250 mA		
	20 A to 30 A *50 Hz to 400 Hz* *400 Hz to 1 kHz*	 370 mA 360 mA		

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AC CURRENT (continued) Measurement (continued)	**30 A to 40 A** *50 Hz to 400 Hz* *400 Hz to 1 kHz* **40 A to 50 A** *50 Hz to 400 Hz* *400 Hz to 1 kHz*	 480 mA 470 mA 590 mA 580 mA		A
FREQUENCY				A
Generation	0.5 Hz to 5.4 GHz	2.1 in 10^9	For the calibration of measuring instruments May be reported as events per unit time	
	1 kHz to 27 GHz	0.24 µHz/Hz	For instruments outputting frequency	
Measurement	0.5 Hz to 5.4 GHz 5.4 GHz to 20 GHz	2.1 in 10^9 4.0 MHz	For the calibration of instruments with frequency outputs. May be reported as events per unit time	
TIME and FREQUENCY				A
Elapsed time			Mechanical timers / stop watches	
Single event	10 s to 12 hrs	0.23 s		
Revolutions Per Minute	60 RPM to 1000 RPM 1000 RPM to 30000 RPM 30000 RPM to 96000 RPM	0.37 RPM 1.6 RPM 23 RPM		

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CAPACITANCE				A
Measurement For capacitance sources	***1 kHz*** 0.1 pF to 1 pF 1 pF to 10 pF 10 pF to 100 pF 100 pF to 1000 pF ***1 MHz*** 0.1 pF to 1 pF 1 pF to 10 pF 10 pF to 100 pF 100 pF to 1000 pF	 0.0052 pF 0.014 pF 0.11 pF 1.1 pF 0.0031 pF 0.014 pF 0.11 pF 1.3 pF	For capacitance sources	
Simulated For capacitance meters	***10 Hz to 10 kHz*** 220 pF to 400 pF 400 pF to1.1 nF ***10 Hz to 3 kHz*** 1.1 nF to 3.3 nF ***10 Hz to 1 kHz*** 3.3 nF to 11 nF 11 nF to 33 nF ***10 Hz to 1 kHz*** 33 nF to 110 nF 110 nF to 330 nF ***10 Hz to 600 Hz*** 330 nF to 1.1 µF ***10 Hz to 300 Hz*** 1.1 µF to 3.3 µF ***10 Hz to 150 Hz*** 3.3 µF to 11 µF ***10 Hz to 120 Hz*** 11 µF to 33 µF ***10 Hz to 80 Hz*** 33 µF to 110 µF	 13 pF 16 pF 27 pF 39 pF 180 pF 380 pF 1.0 nF 5.0 nF 12 nF 39 nF 140 nF 610 nF		

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CAPACITANCE (continued)				A
For capacitance meters	***0 Hz to 50 Hz*** 110 µF to 330 µF	2.0 µF		
	0 Hz to 20 Hz 330 µF to 1.1 mF	6.0 µF		
	0 Hz to 6 Hz 1.1 mF to 3.3 mF	2.0 µF		
	0 Hz to 2 Hz 3.3 mF to 11 mF	60 µF		
	0 Hz to 0.6 Hz 11 mF to 33 mF	280 µF		
	0 Hz to 0.2 Hz 33 mF to 110 mF	1.0 mF		
CALIBRATION OF INSULATION TESTERS				A
Insulation Resistance	10 kΩ to 20 kΩ 20 kΩ to 40 kΩ 40 kΩ to 100 kΩ 100 kΩ to 200 kΩ 200 kΩ to 1 MΩ 1 MΩ to 2 MΩ 2 MΩ to 10 MΩ 10 MΩ to 20 MΩ 20 MΩ to 200 MΩ 200 MΩ to 1 GΩ 1 GΩ to 2 GΩ 2 GΩ to 10 GΩ	46 Ω 93 Ω 230 Ω 460 Ω 2.3 kΩ 7.0 kΩ 35 kΩ 120 kΩ 1.2 MΩ 5.8 MΩ 23 MΩ 120 MΩ	Up to 1100 V	
Insulation test voltage Nominal	50 to 400 V 400 to 1 kV	6.1 V 18 V	The test voltage will normally be measured with a 1 mA load.	
Continuity Resistance	0.2 Ω to 30 Ω 30 Ω to 100 Ω 100 Ω to 200 Ω 200 Ω to 500 Ω 500 Ω to 1 kΩ 1 kΩ to 2 kΩ 2 kΩ to 5 kΩ 5 kΩ to 10 kΩ	80 mΩ 310 mΩ 0.67 Ω 1.70 Ω 2.60 Ω 4.80 Ω 17 Ω 26 Ω		

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Temperature indicators, calibration by electrical simulation				A
Type K thermocouple	-200 °C to +1372 °C	0.73 °C	Including reference junction compensation	
Type T thermocouple	-250 °C to +400 °C	0.65 °C	Including reference junction compensation	
Type N thermocouple	-200 °C to +1300 °C	0.46 °C	Including reference junction compensation	
Type S thermocouple	0 °C to 1767 °C	0.77 °C	Including reference junction compensation	
Type J thermocouple	-210 °C to +1200 °C	0.23 °C	Including reference junction compensation	
Type E thermocouple	-250 °C to +1000 °C	0.26 °C	Including reference junction compensation	
Resistance thermometer (Pt 100)	-200°C to +800°C	0.05°C		
Calibration of Oscilloscopes				A
Voltage deflection	1 mV to 25 mV 25 mV to 110 mV 110 mv to 2.2 V 2.2 V to 6.6 V	120 µV 370 µV 6.5 mV 19 mV	Into 50 Ω	
	1 mV to 25 mV 25 mV to 110 mV 110 mv to 2.2 V 2.2 V to 11 V 11 V to 130 V	63 µV 120 µV 1.3 mV 6.5 mV 76 mV	Into 1 MΩ	
Edge verification – Amplitude	4.5 mV to 10 mV 10 mV to 100 mV 100 mV to 1 V 1 V to 2.5 V	2.5 mV 4.4 mV 28 mV 82 mV	Into 50 Ω 1 kHz to 10 kHz	
Time markers	20 ns to 50 ns 50 ns to 500 ns 500 ns to 5 µs 5 µs to 50 µs 50 µs to 500 µs 500 µs to 20 ms 20 ms to 500 ms 500 ms to 5 s	1.5 ps 15 ps 150 ps 1.50 ns 15.0 ns 580 ns 15 µs 380 µs		
Rise time	1 kHz to 2 MHz 2 MHz to 10 MHz	300 ps 350 ps		

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OSCILLOSCOPES (Continued)				A
Bandwidth Level flatness 50 kHz ref Nominal 3 V	 To 100 MHz To 300 MHz To 600 MHz To 1.1 GHz	 130 mV 160 mV 250 mV 300 mV	CMC is with respect to relative amplitude of level flatness this will be quoted in frequency terms when stating bandwidth uncertainty as it will vary from device to device.	
ACCELEROMETRY			Uncertainties for accelerometry sensitivity calibrations at ambient temperature applies for masses up to 40 grams.	
Accelerometer calibration Charge	Sensitivity range: 0.3 pC/g to 1000 pC/g (0.03 pC/ms^2 to 100 pC/ms^2)			
	1 Hz to 2 Hz	3.0 %		
	2 Hz to 5 Hz	1.2 %	Nominal acceleration ms^{-2}:	
	5 Hz to 5 kHz	0.85 %	1 Hz: 0.10	
	5 kHz to 10 kHz	0.90 %	3 Hz: 0.20 4 Hz to 10 kHz: 0.3 to 100.0	
	Sensitivity range: 0.04 pC/g to 0.3 pC/g (0.004 pC/ms^2 to 0.03 pC/ms^2)			
	20 Hz to 10 kHz	3.0 %	Nominal acceleration 0.3 ms^{-2} to 100.0 ms^{-2}:	
Devices with integral electronics				
Voltage (mV/ms^2)	0.03 mV/ms^2 to 1000 mV/ms^2		Nominal acceleration ms^{-2}:	
	1 Hz to 2 Hz	2.0 %	1 Hz: 0.10	
	2 Hz to 5 Hz	0.83 %	3 Hz: 0.20	
	5 Hz to 5 kHz	0.85 %	4 Hz to 10 kHz: 0.3 to 100.0	
	5 kHz to 10 kHz	0.90 %		
	0.004 mV/ms^2 to 0.03 mV/ms^2			
	20 Hz to 10 kHz	3.0 %		
Resistive/Capacitive	0.01 mV/ms^2 to 100 mV/ms^2		Nominal acceleration ms^{-2}:	
	1 Hz to 2 Hz	2.0 %	1 Hz: 0.10	
	2 Hz to 5 Hz	0.83 %	3 Hz: 0.20	
	5 Hz to 5 kHz	0.85 %	4 Hz to 10 kHz: 0.3 to 100.0	
	5 kHz to 10 kHz	0.90 %		
Vibration	*10 Hz to 5 kHz*		Reference to transfer standard Accelerometer	
Acceleration	0.1g to 10 g	0.40 %		
Velocity	3 mm/s to 2000 mm/s	0.40 %		
Displacement	0.2µm to 100 mm	0.40 %		
Velocity transducers	*5 Hz to 10 kHz*			
	1.5 mm/s to 3000 mm/s	0.90 %		

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ACCELEROMETRY (continued)				A
Climatic chamber range	-60 ^{0}C to 100 ^{0}C 100 ^{0}C to 180 ^{0}C	1.7 ^{0}C 3.2 ^{0}C	For accelerometer calibration.	
Transducer at any temperature between: -60 ^{0}C to +100 ^{0}C:	0.03 mV/ms^2 to 1000 mV/ms^2 *20 Hz to 630 Hz*	3.3 %	At a nominal 1 g_n This uncertainty applies for masses up to 60 grams, larger masses can be calibrated but at greater uncertainties.	
100 ^{0}C to +180 ^{0}C:	0.03 mV/ms^2 to 1000 mV/ms^2 *20 Hz to 630 Hz*	4.5 %		
Portable calibrators	*Frequency 160 Hz* 10 ms^2 nominal	1.5 %		
Bench Calibrators			Note indicated outputs on Bench Calibrators for acceleration are normally indicated in “g”.	
Acceleration	*10mV to 10V, 5 Hz to 10KHz Up to 25g*	2.4 %		
Velocity	*10mV to 10V, 10 Hz to 1KHz Up to 1000 m/sec pk*	2.4 %		
Displacement	*10 mV to 10V, 10 Hz to 250 Hz Up to 10 mm pk to pk*	2.4 %		
DISTORTION THD	*20 Hz to 20 kHz* *10 mV to 750 V* 0 % to 1 % 1 % to 100 %	 0.20 % distortion 0.47 % distortion	Bandpass filter between 20 Hz and 50 kHz	

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ACCELERATION TRANSDUCERS - SHOCK CALIBRATION				A
<u>Piezoelectric and Piezoresistive and voltage types</u>			Calibration of charge sensitivity by comparison with a reference (precision grade) transducer	
Transducer at nominal 23 ^{0}C	Sensitivity 0.001 pC/ms^2 to 100 pC/ms^2 0.001 mV/ms^2 to 10 mV/ms^2 Within the range of: 2 ms^2 to 1000 ms^2	3.0 %	The transducer to be calibrated must have a mass of no more than 40 grams.	
Vibration meters and analysers	*Frequency 10 Hz to 1 kHz* Range 0.1 ms^2 to 1 ms^2	2.0 %		
Shock and Impulse hammers	Half Sine Wave *Frequency 500 Hz to 20 kHz* Force 0.2 N to 450 N			
Sensitivity	pC/N	3.3 %	Sensitivity measured in pC/N or mV/N dependant on hammer type	
	mV/N	3.3 %		
Spring hammers				
Impact Energy Imparted from Spring Operated Impact Test Apparatus - as specified in BS EN 60068-2-75:1997 and IEC 60068-2-75 1997	0.1 Joule to 1.0 Joule	0.015 Joule	Calibrations can be given in Joule or Newton Meter units.	
HELICOPTER BLADE BALANCING TEST SETS				
Strobe frequency				
	1 Hz to 50 Hz 50 Hz to 100 Hz 100 Hz to 150 Hz 150 Hz to 200 Hz	1.2 Hz 1.4 Hz 1.6 Hz 1.7 Hz		
MASS	500 g 200 g 100 g	9 mg 7 mg 7 mg	Calibrated using Borda substitution method.	A
NON-AUTOMATIC WEIGHING MACHINES	100 g 200 g 500 g	19 mg 19 mg 20 mg	Weights are available in OIML Class: M1 from 1 g to 500 g Calibration method in line with the requirements of Euramet gauge cg-18	

Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty (k = 2)	Remarks	Location Code
Values and uncertainties listed below are applicable for the calibration of both measuring instruments and for instruments with an output. The method used is by direct comparison against laboratory references unless otherwise stated in the remarks column.				
Gateshead Laboratory				
ELECTRICAL				
DC VOLTAGE				B
Generation	0 mV to 50 mV	1.1 µV		
	50 mV to 100 mV	1.4 µV		
	100 mV to 220 mV	2.5 µV		
	0.22 V to 0.5 V	4.9 µV		
	0.5 to 1 V	9.4 µV		
	1 V to 2.2 V	20 µV		
	2.2 V to 5 V	47 µV		
	5 V to 11 V	0.10 mV		
	11 V to 22 V	0.20 mV		
	22 V to 50 V	0.54 mV		
	50 V to 100 V	1.0 mV		
	100 V to 220 V	2.3 mV		
	220 V to 500 V	6.5 mV		
	500 V to 1100 V	14 mV		
Measurement	0 mV	0.65 µV		
	0 mV to 50 mV	0.86 µV		
	50 mV to 100 mV	1.1 µV		
	100 mV to 200 mV	2.0 µV		
	200 mV to 500 mV	2.1 µV		
	500 mV to 1 V	3.6 µV		
	1 V to 2 V	7.0 µV		
	2 V to 5 V	18 µV		
	5 V to 10 V	34 µV		
	10 V to 20 V	69 µV		
	20 V to 50 V	0.30 mV		
	50 V to 100 V	0.53 mV		
	100 V to 200 V	1.1 mV		
	200 V to 500 V	2.8 mV		
	500 V to 1050 V	5.5 mV		

Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty (k = 2)	Remarks	Location Code
Values and uncertainties listed below are applicable for the calibration of both measuring instruments and for instruments with an output. The method used is by direct comparison against laboratory references unless otherwise stated in the remarks column.				
DC RESISTANCE Sourcing - Spot Values	0 Ω 1 Ω 1.9 Ω 10 Ω 19 Ω 100 Ω 190 Ω 1 kΩ 1.9 kΩ 10 kΩ 19 kΩ 100 kΩ 190 kΩ 1 MΩ 1.9 MΩ 10 MΩ 19 MΩ 100 MΩ	58 µΩ 0.13 mΩ 0.24 mΩ 0.38 mΩ 0.68 mΩ 2.3 mΩ 4.4 mΩ 17 mΩ 33 mΩ 0.16 Ω 0.31 Ω 1.8 Ω 3.5 Ω 27 Ω 53 Ω 0.53 kΩ 1.2 kΩ 15 kΩ		B
DC RESISTANCE Sourcing - Range values	0 Ω to 11 Ω 11 Ω to 33 Ω 33 Ω to 110 Ω 110 Ω to 330 Ω 330 Ω to 1.1 kΩ 1.1 kΩ to 3.3 kΩ 3.3 kΩ to 11 kΩ 11 k Ω to 33 kΩ 33 kΩ to 110 kΩ 110 kΩ to 330 kΩ 330 kΩ to 1.1 MΩ 1.1 MΩ to 3.3 MΩ 3.3 MΩ to 11 MΩ 11 MΩ to 33 MΩ 33 MΩ to 110 MΩ 110 MΩ to 330 MΩ 330 MΩ to 1.1 GΩ	0.51 mΩ 1.1 mΩ 3.6 mΩ 11 mΩ 36 mΩ 110 mΩ 0.36 mΩ 1.1 Ω 3.6 Ω 12 Ω 41 Ω 230 Ω 1.7 kΩ 9.6 kΩ 64 kΩ 1.1 MΩ 19 MΩ		B

Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty (k = 2)	Remarks	Location Code
Values and uncertainties listed below are applicable for the calibration of both measuring instruments and for instruments with an output. The method used is by direct comparison against laboratory references unless otherwise stated in the remarks column.				
DC RESISTANCE Measurement	0 Ω 0 Ω to 0.5 Ω 0.5 Ω to 1 Ω 1 Ω to 2 Ω 2 Ω to 5 Ω 5 Ω to 10 Ω 10 Ω to 20 Ω 20 Ω to 50Ω 50 Ω to 100 Ω 100 Ω to 200 Ω 0.2 kΩ to 0.5 kΩ 0.5 kΩ to 1 kΩ 1 kΩ to 2 kΩ 2 kΩ to 5 kΩ 5 kΩ to 10 kΩ 10 kΩ to 20 kΩ 20 kΩ to 50 kΩ 50 kΩ to 100 kΩ 100 kΩ to 200 kΩ 0.2 MΩ to 0.5 MΩ 0.5 MΩ to 1 MΩ 1 MΩ to 2 MΩ 2 MΩ to 5 MΩ 5 MΩ to 10 MΩ 10 MΩ to 20 MΩ 20 MΩ to 50 MΩ 50 MΩ to 100 MΩ 100 MΩ to 1 GΩ	7.5 μΩ 13 μΩ 21 μΩ 43 μΩ 92 μΩ 0.14 mΩ 0.25 mΩ 0.58 mΩ 1.1 mΩ 2.2 mΩ 5.5 mΩ 11 mΩ 21 mΩ 57 mΩ 0.11 Ω 0.22 Ω 0.62 Ω 1.1 Ω 2.2 Ω 7.8 Ω 13 Ω 26 Ω 0.18 kΩ 0.26 kΩ 0.52 kΩ 14 kΩ 19 kΩ 0.34 MΩ		B
DC CURRENT Generation	0 μA to 50 μA 50 μA to 100 μA 100 μA to 220 μA 0.22 mA to 0.5 mA 0.5 mA to 1 mA 1 mA to 2.2 mA 2.2 mA to 5 mA 5 mA to 10 mA 10 mA to 22 mA 22 mA to 50 mA 50 mA to 100 mA 100 mA to 220 mA 0.22 A to 0.5 A 0.5 A to 1 A 1 A to 2.2 A 2.2 A to 3 A 3 A to 11 A 11 A to 20.5 A	12 nA 13 nA 19 nA 37 nA 71 nA 0.15μA 0.37 μA 0.71 μA 1.5 μA 4.2 μA 8.2 μA 18 μA 65 μA 0.12 mA 0.24 mA 1.3 mA 6.4 mA 24 mA		B

Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty (k = 2)	Remarks	Location Code
Values and uncertainties listed below are applicable for the calibration of both measuring instruments and for instruments with an output. The method used is by direct comparison against laboratory references unless otherwise stated in the remarks column.				
DC CURRENT (continued) Generation	20 A to 30 A 30 A to 110 A 110 A to 200 A 200 A to 550 A 550 A to 1025 A	150 mA 500 mA 930 mA 2.5 A 4.7 A	Current clamp calibration using a multi turn coil	B
Measurement	0 µA to 5 µA 5 µA to 10 µA 10 µA to 20 µA 20 µA to 50 µA 50 µA to 100 µA 100 µA to 200 µA 0.2 mA to 0.5 mA 0.5 mA to 1 mA 1 mA to 2 mA 2 mA to 5 mA 5 mA to 10 mA 10 mA to 20 mA 20 mA to 50 mA 50 mA to 100 mA 100 mA to 200 mA 0.2 A to 0.5 A 0.5 A to 1 A 1 A to 2 A 2 A to 5 A 5 A to 10 A 10 A to 20 A 20 A to 30 A	0.57 nA 0.63 nA 1.2 nA 1.1 nA 1.4 nA 2.9 nA 9.1 nA 13 nA 26 nA 0.11 µA 0.18 µA 0.35 µA 3.7 µA 6.8 µA 14 µA 0.14 mA 0.19 mA 0.39 mA 1.5 mA 2.8 mA 14 mA 20 mA		
AC VOLTAGE Generation	**0.22 mV to 0.5 mV** *10 Hz to 20 Hz* *20 Hz to 40 Hz* *40 Hz to 100 Hz* *100 Hz to 1 kHz* *1 kHz to 10 kHz* *10 kHz to 20 kHz* *20 kHz to 50 kHz* *50 kHz to 100 kHz* *100 kHz to 200 kHz* *200 kHz to 500 kHz* *500 kHz to 1 MHz*	 5.8 µV 5.8 µV 5.8 µV 5.8 µV 5.8 µV 5.8 µV 5.8 µV 9.3 µV 17 µV 35 µV 46 µV		B

Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty (k = 2)	Remarks	Location Code
Values and uncertainties listed below are applicable for the calibration of both measuring instruments and for instruments with an output. The method used is by direct comparison against laboratory references unless otherwise stated in the remarks column.				
AC VOLTAGE Generation (continued)	**0.5 mV to 1 mV** *10 Hz to 20 Hz* *20 Hz to 40 Hz* *40 Hz to 100 Hz* *100 Hz to 1 kHz* *1 kHz to 10 kHz* *10 kHz to 20 kHz* *20 kHz to 50 kHz* *50 kHz to 100 kHz* *100 kHz to 200 kHz* *200 kHz to 500 kHz* *500 kHz to 1 MHz* **1 mV to 2.2 mV** *10 Hz to 20 Hz* *20 Hz to 40 Hz* *40 Hz to 100 Hz* *100 Hz to 1 kHz* *1 kHz to 10 kHz* *10 kHz to 20 kHz* *20 kHz to 50 kHz* *50 kHz to 100 kHz* *100 kHz to 200 kHz* *200 kHz to 500 kHz* *500 kHz to 1 MHz* **2.2 mV to 5 mV** *10 Hz to 20 Hz* *20 Hz to 40 Hz* *40 Hz to 100 Hz* *100 Hz to 1 kHz* *1 kHz to 10 kHz* *10 kHz to 20 kHz* *20 kHz to 50 kHz* *50 kHz to 100 kHz* *100 kHz to 200 kHz* *200 kHz to 500 kHz* *500 kHz to 1 MHz* ***5 mV to 10 mV*** *10 Hz to 20 Hz* *20 Hz to 40 Hz* *40 Hz to 100 Hz* *100 Hz to 1 kHz* *1 kHz to 10 kHz* *10 kHz to 20 kHz* *20 kHz to 50 kHz* *50 kHz to 100 kHz* *100 kHz to 200 kHz* *200 kHz to 500 kHz* *500 kHz to 1 MHz*	 5.9 µV 5.8 µV 5.8 µV 5.8 µV 5.8 µV 5.8 µV 5.8 µV 5.8 µV 9.3 µV 17 µV 35 µV 47 µV 6.0 µV 5.8 µV 5.8 µV 5.8 µV 5.8 µV 5.8 µV 5.9 µV 10 µV 18 µV 35 µV 48 µV 7.8 µV 7.1 µV 7.0 µV 7.0 µV 7.0 µV 7.0 µV 7.4 µV 11 µV 19 µV 36 µV 54 µV 10 µV 7.5 µV 7.1 µV 7.1 µV 7.1 µV 7.1 µV 8.4 µV 14 µV 23 µV 40 µV 72 µV		B

Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty (k = 2)	Remarks	Location Code
Values and uncertainties listed below are applicable for the calibration of both measuring instruments and for instruments with an output. The method used is by direct comparison against laboratory references unless otherwise stated in the remarks column.				
AC VOLTAGE Generation (continued)	**10 mV to 22 mV**			B
	10 Hz to 20 Hz	17 µV		
	20 Hz to 40 Hz	9.3 µV		
	40 Hz to 100 Hz	7.6 µV		
	100 Hz to 1 kHz	7.6 µV		
	1 kHz to 10 kHz	7.6 µV		
	10 kHz to 20 kHz	7.6 µV		
	20 kHz to 50 kHz	13 µV		
	50 kHz to 100 kHz	26 µV		
	100 kHz to 200 kHz	37 µV		
	200 kHz to 500 kHz	57 µV		
	500 kHz to 1 MHz	0.13 mV		
	22 mV to 50 mV			
	10 Hz to 20 Hz	39 µV		
	20 Hz to 40 Hz	18 µV		
	40 Hz to 100 Hz	13 µV		
	100 Hz to 1 kHz	13 µV		
	1 kHz to 10 kHz	13 µV		
	10 kHz to 20 kHz	13 µV		
	20 kHz to 50 kHz	24 µV		
	50 kHz to 100 kHz	62 µV		
	100 kHz to 200 kHz	72 µV		
	200 kHz to 500 kHz	0.11 mV		
	500 kHz to 1 MHz	0.24 mV		
	50 mV to 100 mV			
	10 Hz to 20 Hz	72 µV		
	20 Hz to 40 Hz	30 µV		
	40 Hz to 100 Hz	17 µV		
	100 Hz to 1 kHz	17 µV		
	1 kHz to 10 kHz	17 µV		
	10 kHz to 20 kHz	17 µV		
	20 kHz to 50 kHz	43 µV		
	50 kHz to 100 kHz	0.11 mV		
	100 kHz to 200 kHz	0.13 mV		
	200 kHz to 500 kHz	0.21 mV		
	500 kHz to 1 MHz	0.43 mV		
	100 mV to 220 mV			
	10 Hz to 20 Hz	0.15 mV		
	20 Hz to 40 Hz	62 µV		
	40 Hz to 100 Hz	30 µV		
	100 Hz to 1 kHz	30 µV		
	1 kHz to 10 kHz	30 µV		
	10 kHz to 20 kHz	30 µV		
	20 kHz to 50 kHz	92 µV		
	50 kHz to 100 kHz	0.23 mV		
	100 kHz to 200 kHz	0.28 mV		
	200 kHz to 500 kHz	0.46 mV		
	500 kHz to 1 MHz	0.92 mV		

Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty (k = 2)	Remarks	Location Code
Values and uncertainties listed below are applicable for the calibration of both measuring instruments and for instruments with an output. The method used is by direct comparison against laboratory references unless otherwise stated in the remarks column.				
AC VOLTAGE Generation (continued)	**220 mV to 0.5 V** *10 Hz to 20 Hz* *20 Hz to 40 Hz* *40 Hz to 100 Hz* *100 Hz to 1 kHz* *1 kHz to 10 kHz* *10 kHz to 20 kHz* *20 kHz to 50 kHz* *50 kHz to 100 kHz* *100 kHz to 200 kHz* *200 kHz to 500 kHz* *500 kHz to 1 MHz* **0.5 V to 1 V** *10 Hz to 20 Hz* *20 Hz to 40 Hz* *40 Hz to 100 Hz* *100 Hz to 1 kHz* *1 kHz to 10 kHz* *10 kHz to 20 kHz* *20 kHz to 50 kHz* *50 kHz to 100 kHz* *100 kHz to 200 kHz* *200 kHz to 500 kHz* *500 kHz to 1 MHz* **1 V to 2 .2 V** *10 Hz to 20 Hz* *20 Hz to 40 Hz* *40 Hz to 100 Hz* *100 Hz to 1 kHz* *1 kHz to 10 kHz* *10 kHz to 20 kHz* *20 kHz to 50 kHz* *50 kHz to 100 kHz* *100 kHz to 200 kHz* *200 kHz to 500 kHz* *500 kHz to 1 MHz* **2.2 V to 5 V** *10 Hz to 20 Hz* *20 Hz to 40 Hz* *40 Hz to 100 Hz* *100 Hz to 1 kHz* *1 kHz to 10 kHz* *10 kHz to 20 kHz* *20 kHz to 50 kHz* *50 kHz to 100 kHz* *100 kHz to 200 kHz* *200 kHz to 500 kHz* *500 kHz to 1 MHz*	 0.37 mV 0.11 mV 52 µV 52 µV 52 µV 52 µV 85 µV 0.19 mV 0.33 mV 0.83 mV 1.8 mV 0.70 mV 0.21 mV 0.10 mV 0.10 mV 0.10 mV 0.10 mV 0.16 mV 0.34 mV 0.58 mV 1.5 mV 3.0 mV 1.5 mV 0.46 mV 0.22 mV 0.22 mV 0.22 mV 0.22 mV 0.36 mV 0.72 mV 1.2 mV 3.1 mV 6.2 mV 3.7 mV 1.1 mV 0.52 mV 0.52 mV 0.52 mV 0.52 mV 0.85 mV 1.7 mV 4.0 mV 10 mV 20 mV		B

Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty (k = 2)	Remarks	Location Code
Values and uncertainties listed below are applicable for the calibration of both measuring instruments and for instruments with an output. The method used is by direct comparison against laboratory references unless otherwise stated in the remarks column.				
AC VOLTAGE Generation (continued)	**5 V to 10 V** *10 Hz to 20 Hz* *20 Hz to 40 Hz* *40 Hz to 100 Hz* *100 Hz to 1 kHz* *1 kHz to 10 kHz* *10 kHz to 20 kHz* *20 kHz to 50 kHz* *50 kHz to 100 kHz* *100 kHz to 200 kHz* *200 kHz to 500 kHz* *500 kHz to 1 MHz* **10 V to 22 V** *10 Hz to 20 Hz* *20 Hz to 40 Hz* *40 Hz to 100 Hz* *100 Hz to 1 kHz* *1 kHz to 10 kHz* *10 kHz to 20 kHz* *20 kHz to 50 kHz* *50 kHz to 100 kHz* *100 kHz to 200 kHz* *200 kHz to 500 kHz* *500 kHz to 1 MHz* **22 V to 50 V** *10 Hz to 20 Hz* *20 Hz to 40 Hz* *40 Hz to 100 Hz* *100 Hz to 1 kHz* *1 kHz to 10 kHz* *10 kHz to 20 kHz* *20 kHz to 50 kHz* *50 kHz to 100 kHz* **50 V to 100 V** *10 Hz to 20 Hz* *20 Hz to 40 Hz* *40 Hz to 100 Hz* *100 Hz to 1 kHz* *1 kHz to 10 kHz* *10 kHz to 20 kHz* *20 kHz to 50 kHz* *50 kHz to 100 kHz*	 7.0 mV 2.1 mV 1.0 mV 1.0 mV 1.0 mV 1.0 mV 1.6 mV 3.3 mV 7.2 mV 17 mV 36 mV 15 mV 4.6 mV 2.2 mV 2.2 mV 2.2 mV 2.2 mV 3.6 mV 7.1 mV 15 mV 36 mV 77 mV 37 mV 11 mV 5.8 mV 5.8 mV 5.8 mV 5.8 mV 15 mV 37 mV 70 mV 21 mV 11 mV 11 mV 11 mV 11 mV 29 mV 70 mV		B

Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty (k = 2)	Remarks	Location Code
Values and uncertainties listed below are applicable for the calibration of both measuring instruments and for instruments with an output. The method used is by direct comparison against laboratory references unless otherwise stated in the remarks column.				
AC VOLTAGE Generation (continued)	**100 V to 220 V**			B
	10 Hz to 20 Hz	0.15 V		
	20 Hz to 40 Hz	46 mV		
	40 Hz to 100 Hz	23 mV		
	100 Hz to 1 kHz	23 mV		
	1 kHz to 10 kHz	23 mV		
	10 kHz to 20 kHz	23 mV		
	20 kHz to 50 kHz	64 mV		
	50 kHz to 100 kHz	0.15 V		
	220 V to 500 V			
	50 Hz	57 mV		
	50 Hz to 500 Hz	57 mV		
	500 Hz to 1 kHz	57 mV		
	500 V to 1100 V			
	50 Hz	0.12 V		
	50 Hz to 500 Hz	0.12 V		
	500 Hz to 1 kHz	0.12 V		
AC VOLTAGE Measurement	1 **mV to 5 mV**			B
	10 Hz to 2 kHz	3.0 µV		
	2 kHz to 10 kHz.	3.3 µV		
	10 kHz to 30 kHz	3.3 µV		
	30 kHz to 100 kHz	18 µV		
	100 kHz to 300 kHz	58 µV		
	300 kHz to 1 MHz	0.12 mV		
	5 **mV to 10 mV**			
	10 Hz	3.0 µV		
	10 Hz to 2 kHz	4.2 µV		
	2 kHz to 10 kHz.	4.9 µV		
	10 kHz to 30 kHz	5.0 µV		
	30 kHz to 60 kHz	36 µV		
	60 kHz to 100 kHz	35 µV		
	100 kHz to 300 kHz	0.12 mV		
	300 kHz to 1 MHz	0.23 mV		

Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty (k = 2)	Remarks	Location Code
Values and uncertainties listed below are applicable for the calibration of both measuring instruments and for instruments with an output. The method used is by direct comparison against laboratory references unless otherwise stated in the remarks column.				
AC VOLTAGE Measurement (continued)	**10 mV to 50 mV** *10Hz* *10 Hz to 2 kHz* *2 kHz to 10 kHz.* *10 kHz to 30 kHz* *30 kHz to 100 kHz* *100 kHz to 300 kHz* *300 kHz to 1 MHz* *1 MHz to 2 MHz* *2 MHz to 4 MHz* *4 MHz to 6 MHz* *6 MHz to 8 MHz* *8 MHz to 10 MHz* ***50* mV to 100 mV** *10 Hz* *10 Hz to 2 kHz* *2 kHz to 10 kHz.* *10 kHz to 30 kHz* *30 kHz to 100 kHz* *100 kHz to 300 kHz* *300 kHz to 1 MHz* *1 MHz to 2 MHz* *2 MHz to 4 MHz* *4 MHz to 8 MHz* *8 MHz to 10 MHz* **0.1 V to 0.5 V** *10Hz* *10 Hz to 2 kHz* *2 kHz to 10 kHz* *10 kHz to 30 kHz* *30 kHz to 100 kHz* *100 kHz to 300 kHz* *300 kHz to 1 MHz* *1 MHz to 2 MHz* *2 MHz to 4 MHz* *4 MHz to 8MHz* *8 MHz to 10 MHz* ***0.5* V to 1 V** *10Hz* *10 Hz to 2 kHz* *2 kHz to 10 kHz.* *10 kHz to 30 kHz* *30 kHz to 60 kHz* *60 kHz to 100 kHz* *100 kHz to 300 kHz* *300 kHz to 1 MHz* *1 MHz to 2 MHz* *2 MHz to 4 MHz* *4 MHz to 8 MHz* *8 MHz to 10 MHz*	 6.1 µV 5.7 µV 7.9 µV 14 µV 34 µV 0.14 mV 0.69 mV 1.1 mV 2.7 mV 5.1 mV 5.2 mV 9.5 mV 11 10 µV 15 µV 27 µV 68 µV 0.25 mV 1.3 mV 1.9 mV 4.9 mV 10 mV 19 mV 50 µV 47 µV 73 µV 0.13 mV 0.34 mV 1.4 mV 6.3 mV 11 mV 26 mV 51 mV 92 mV 91 µV 90 µV 0.14 mV 0.27 mV 0.62 mV 0.68 mV 2.5 mV 12 mV 18 mV 48 mV 0.10 V 0.18 V		B

Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty (k = 2)	Remarks	Location Code
Values and uncertainties listed below are applicable for the calibration of both measuring instruments and for instruments with an output. The method used is by direct comparison against laboratory references unless otherwise stated in the remarks column.				
AC VOLTAGE Measurement (continued)	**1 V to 5 V** *10Hz* *10 Hz to 2 kHz* *2 kHz to 10 kHz.* *10 kHz to 30 kHz* *30 kHz to 100 kHz* *100 kHz to 300 kHz* *300 kHz to 1 MHz* *1 MHz to 2 MHz* *2 MHz to 4 MHz* *4 MHz to 8 MHz* *8 MHz to 10 MHz* ***5* V to 10 V** *10Hz* *10 Hz to 2 kHz* *2 kHz to 10 kHz.* *10 kHz to 30 kHz* *30 kHz to 100 kHz* *100 kHz to 300 kHz* *300 kHz to 1 MHz* *1 MHz to 2 MHz* *2 MHz to 4 MHz* *4 MHz to 8 MHz* *8 MHz to 10 MHz* **10 V to 50 V** *10Hz* *10 Hz to 2 kHz* *2 kHz to 10 kHz.* *10 kHz to 30 kHz* *30 kHz to 100 kHz* *100 kHz to 300 kHz* *300 kHz to 1 MHz* ***50* V to 100 V** *10 Hz to 2 kHz* *2 kHz to 10 kHz.* *10 kHz to 30 kHz* *30 kHz to 100 kHz* *100 kHz to 300 kHz* *300 kHz to 1 MHz* **100 V to 500 V** *40 Hz to 10 kHz* *10 kHz to 30 kHz* *30 kHz to 100 kHz* ***500* V to 1000 V** *40 Hz to 10 kHz* *10 kHz to 30 kHz* *30 kHz to 100 kHz*	0.49 mV 0.48 mV 0.73 mV 1.3 mV 3.3 mV 14 mV 60 mV 0.10 V 0.26 V 0.49 V 0.90 V 0.91 mV 0.90 mV 1.4 mV 2.7 mV 6.3 mV 25 mV 0.12 V 0.18 V 0.48 V 1.0 V 1.8 V 6.0 mV 5.6 mV 6.7 mV 16 mV 39 mV 0.22 V 0.88 V 11 mV 13 mV 28 mV 71 mV 0.43 V 1.4 V 73 mV 0.16 V 0.38 V 0.13 V 0.28 V 0.70 V		B

Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty (k = 2)	Remarks	Location Code
Values and uncertainties listed below are applicable for the calibration of both measuring instruments and for instruments with an output. The method used is by direct comparison against laboratory references unless otherwise stated in the remarks column.				
AC CURRENT Generation	**10 µA to 50 µA** *20 Hz to 40 Hz* *40 Hz to 1 kHz* *1 kHz to 5 kHz* *5 kHz to 10 kHz* **50 µA to 100 µA** *20 Hz to 40 Hz* *40 Hz to 1 kHz* *1 kHz to 5 kHz* *5 kHz to 10 kHz* **100 µA to 220 µA** *20 Hz to 40 Hz* *40 Hz to 1 kHz* *1 kHz to 5 kHz* *5 kHz to 10 kHz* **0.22 mA to 0.5 mA** *20 Hz to 40 Hz* *40 Hz to 1 kHz* *1 kHz to 5 kHz* *5 kHz to 10 kHz* **0.5 mA to 1 mA** *20 Hz to 40 Hz* *40 Hz to 1 kHz* *1 kHz to 5 kHz* *5 kHz to 10 kHz* **1 mA to 2.2 mA** *20 Hz to 40 Hz* *40 Hz to 1 kHz* *1 kHz to 5 kHz* *5 kHz to 10 kHz* **2.2 mA to 5 mA** *20 Hz to 40 Hz* *40 Hz to 1 kHz* *1 kHz to 5 kHz* *5 kHz to 10 kHz* **5 mA to 10 mA** *20 Hz to 40 Hz* *40 Hz to 1 kHz* *1 kHz to 5 kHz* *5 kHz to 10 kHz* **10 mA to 22 mA** *20 Hz to 40 Hz* *40 Hz to 1 kHz* *1 kHz to 5 kHz* *5 kHz to 10 kHz*	 38 nA 26 nA 71 nA 0.16 µA 57 nA 30 nA 0.10 µA 0.24 µA 0.11 µA 48 nA 0.19 µA 0.47 µA 48 nA 47 nA 0.58 µA 1.2 µA 0.49 µA 0.19 µA 1.0 µA 2.4 µA 1.1 µA 0.41 µA 1.9 µA 4.7 µA 2.5 µA 1.0 µA 7.0 µA 16 µA 4.9 µA 1.9 µA 10 µA 24 µA 11 µA 4.1 µA 19 µA 47 µA		B

Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty (k = 2)	Remarks	Location Code
Values and uncertainties listed below are applicable for the calibration of both measuring instruments and for instruments with an output. The method used is by direct comparison against laboratory references unless otherwise stated in the remarks column.				
AC CURRENT Generation (continued)				B
	22 mA to 50 mA			
	20 Hz to 40 Hz	25 µA		
	40 Hz to 1 kHz	11 µA		
	1 kHz to 5 kHz	70 µA		
	5 kHz to 10 kHz	0.16 mA		
	50 mA to 100 mA			
	20 Hz to 40 Hz	49 µA		
	40 Hz to 1 kHz	21 µA		
	1 kHz to 5 kHz	99 µA		
	5 kHz to 10 kHz	0.24 mA		
	100 mA to 220 mA			
	20 Hz to 40 Hz	0.11 mA		
	40 Hz to 1 kHz	46 µA		
	1 kHz to 5 kHz	0.19 mA		
	5 kHz to 10 kHz	0.47 mA		
	0.22 A to 0.5 A			
	20 *Hz to 1 kHz*	0.44 mA		
	1 kHz to 5 kHz	0.50 mA		
	5 kHz to 10 kHz	0.62 mA		
	0.5 A to 1 A			
	20 *Hz to 1 kHz*	0.87 mA		
	1 kHz to 5 kHz	0.99 mA		
	5 kHz to 10 kHz	1.2 mA		
	1 A to 2.2 A			
	20 *Hz to 1 kHz*	1.9 mA		
	1 kHz to 5 kHz	2.2 mA		
	5 kHz to 10 kHz	2.6 mA		
	2.2 A to 3 A			
	10 Hz to 45 Hz	6.2 mA		
	45 Hz to 1 kHz	2.1 mA		
	1 kHz to 5 kHz	21 mA		
	5 kHz to 10 kHz	87 mA		
	3 A to 11 A			
	45 Hz to 100 Hz	8.0 mA		
	100 Hz to 1 kHz	13 mA		
	1 kHz to 5 kHz	0.38 mA		
	11 A to 20.5 A			
	45 Hz to 100 Hz	29 mA		
	100 Hz to 1 kHz	36 mA		
	1 kHz to 5 kHz	710 mA		
	45 Hz to 400 Hz		Calibration of current clamps using a multi turn coil	
	20 A to 30 A	150 mA		

Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty (k = 2)	Remarks	Location Code
Values and uncertainties listed below are applicable for the calibration of both measuring instruments and for instruments with an output. The method used is by direct comparison against laboratory references unless otherwise stated in the remarks column.				
AC CURRENT Generation (continued)				B
	30 A to 110 A *45 Hz to 100 Hz*	520 mA	Calibration of current clamps using a multi turn coil	
	110 A to 200 A *100 Hz to 400 Hz*	960 mA		
	200 A to 550 A *45 Hz to 100 Hz*	2.5 A		
	550 A to 1025 A *45 Hz to 100 Hz*	4.8 A		
Measurement				
	0 µA to 5 µA *10 Hz to 55 Hz* *55 Hz to 10 kHz*	13 nA 25 nA		
	5 µA to 10 µA *10 Hz to 55 Hz* *55 Hz to 10 kHz*	24 nA 34 nA		
	10 µA to 20 µA *10 Hz to 55 Hz* *55 Hz to 10 kHz*	47 nA 52 nA		
	20 µA to 50µA *10 Hz to 2 kHz.* *2 kHz to 10 kHz* *10 kHz to 20 kHz* *20 kHz to 30 kHz*	23 nA 35 nA 48 nA 53 nA		
	50 µA to 100 µA *10 Hz to 2 kHz.* *2 kHz to 10 kHz* *10 kHz to 20 kHz* *20 kHz to 30 kHz*	36 nA 63 nA 88 nA 91 nA		
	100 µA to 200 µA *10 Hz to 2 kHz.* *2 kHz to 10 kHz* *10 kHz to 30 kHz*	67 nA 0.12 µA 0.17 µA		
	0.2 mA to 0.5 mA *10Hz to 2 kHz.* *2 kHz to 10 kHz* *10 kHz to 30 kHz*	0.19 µA 0.32 µA 0.44 µA		
	0.5 mA to 1 mA *10 Hz to 2 kHz.* *2 kHz to10 kHz* *10 kHz to 30 kHz*	0.34 µA 0.62 µA 0.86 µA		

Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty (k = 2)	Remarks	Location Code
Values and uncertainties listed below are applicable for the calibration of both measuring instruments and for instruments with an output. The method used is by direct comparison against laboratory references unless otherwise stated in the remarks column.				
AC CURRENT Measurement (continued)	**1 mA to 2 mA** *10 Hz to 2 kHz.* *2 kHz to 10 kHz* *10 kHz to 30 kHz* **2 mA to 5 mA** *10 Hz to 2 kHz.* *2 kHz to 10 kHz* *10 kHz to 30 kHz* **5 mA to 10 mA** *10 Hz to 2 kHz.* *2 kHz to 10 kHz* *10 kHz to 30 kHz* **10 mA to 20 mA** *10 Hz to 2 kHz.* *2 kHz to 10 kHz* *10 kHz to 30 kHz* **20 mA to 50 mA** *10 Hz to 2 kHz.* *2 kHz to 10 kHz* *10 kHz to 30 kHz* **50 mA to 100 mA** *10 Hz to 2 kHz.* *2 kHz to 10 kHz* *10 kHz to 30 kHz* **100 mA to 200 mA** *10 Hz to 2 kHz.* *2 kHz to 10 kHz* *10 kHz to 30 kHz* **0.2 A to 0.5 A** *10 Hz to 2 kHz.* *2 kHz to 10 kHz* *10 kHz to 30 kHz* ***0.5* A to 1 A** *10 Hz to 2 kHz.* *2 kHz to 10 kHz* *10 kHz to 30 kHz* **1 A to 2 A** *10 Hz to 2 kHz.* *2 kHz to 10 kHz* *10 kHz to 30 kHz* **2 A to 5 A** *10 Hz to 10 kHz*	 0.66 µA 1.2 µA 1.7 µA 1.9 µA 3.2 µA 4.4 µA 3.4 µA 6.2 µA 8.6 µA 6.6 µA 12 µA 17 µA 19 µA 31 µA 45 µA 34 µA 61 µA 86 µA 66 µA 0.12 mA 0.17 mA 0.23 mA 0.36 mA 0.47mA 0.38 mA 0.66 mA 0.92 mA 0.74 mA 1.3 mA 1.8 mA 5.0 mA		B

Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty (k = 2)	Remarks	Location Code
Values and uncertainties listed below are applicable for the calibration of both measuring instruments and for instruments with an output. The method used is by direct comparison against laboratory references unless otherwise stated in the remarks column.				
AC CURRENT Measurement (continued)	***5* A to 10 A** *10 Hz to 10 kHz*	10 mA		B
	10 A to 20 A *10 Hz to 10 kHz*	19 mA		
	20 A to 30 A *10 Hz to 2 kHz* 2 k*Hz to 10 kHz*	24 mA 32 mA		
FREQUENCY				B
Generation	10 MHz	3.2 in 10^9	Reference	
Measurement	10 Hz to 100 kHz 100 kHz to 1 MHz 1 MHz to 10 MHz 10 MHz to 50 MHz 50 MHz to 600 MHz 600 MHz to 6 GHz	16 mHz 170 mHz 1.7 Hz 17 Hz 4.8 Hz 35 Hz		
Generation	1 Hz to 10 Hz 10 Hz to 100 Hz 100 Hz to 20 MHz	2.3 µHz/Hz 1.2 µHz/Hz 0.012 µHz/Hz	May be reported as events per unit time	
Elapsed time			Mechanical timers / stop watches	
Single event	1 s to 12 hrs	0.05 s		
Revolutions Per Minute Simulation	6 RPM to 600 RPM 600 RPM to 6000 RPM 6000 RPM to 120000 RPM	0.064 RPM 0.065 RPM 0.066 RPM	Optical	
CAPACITANCE				B
Simulated generation	***1 kHz*** 220 pF to 400 pF 400 pF to 1.1 nF 1.1 nF to 3.3 nF 3.3 nF to 11 nF 11 nF to 33 nF 33 nF to 110 nF 110 nF to 330 nF	 12 pF 13 pF 22 pF 34 pF 100 pF 320 pF 970 pF		

Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty (k = 2)	Remarks	Location Code
Values and uncertainties listed below are applicable for the calibration of both measuring instruments and for instruments with an output. The method used is by direct comparison against laboratory references unless otherwise stated in the remarks column.				
CAPACITANCE (continued) Simulated generation (continued)	***100 Hz*** 0.33 µF to 1.1 µF 1.1 µF to 3.3 µF 3.3 µF to 11 µF 11 µF to 33 µF 33 µF to 110 µF 110 µF to 330 µF 330 µF to 1.1 mF 1.1 mF to 3.3 mF 3.3 mF to11 mF 11 mF to 33 mF 33 mF to 110 mF	 3.4 nF 10 nF 34 nF 160 nF 600 nF 1.8 µF 5.8 µF 18 µF 58 µF 290 µF 1.4 mF		B
Measurement	0 to 0.5 nF 0.5 nF to 1 nF 1 nF to 2 nF 2 nF to 5 nF 5 nF to 10 nF 10 nF to 20 nF 20 nF to 50 nF 50 nF to 100 nF 100 nF to 200 nF 0.2 µF to 0.5 µF 0.5 µF to 1 µF 1 µF to 2 µF 2 µF to 5 µF 5 µF to 10 µF 10 µF to 20 µF 20 µF to 50 µF 50 µF to 100 µF 100 µF to 200 µF 0.2 mF to 0.5 mF 0.5 mF to 1 mF 1 mF to 2 mF 2 mF to 5 mF 5 mF to 10 mF 10 mF to 20 mF 20 mF to 50 mF 50 mF to 100 mF 100 mF to 200 mF	2.0 pF 2.7 pF 5.1 pF 6.1 pF 10 pF 20 pF 35 pF 60 pF 0.12 nF 0.28 nF 0.50 nF 1.1 nF 3.5 nF 5.5 nF 10 nF 45 nF 76 nF 0.15 µF 0.45 µF 0.76 µF 1.5 µF 5.0 µF 8.7 µF 17 µF 45 µF 87 µF 0.17 mF		

Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty (k = 2)	Remarks	Location Code
Values and uncertainties listed below are applicable for the calibration of both measuring instruments and for instruments with an output. The method used is by direct comparison against laboratory references unless otherwise stated in the remarks column.				
CALIBRATION OF INSULATION TESTERS				B
Insulation Resistance	10 kΩ to 190 kΩ 200 kΩ 400 kΩ 800 kΩ 1.9 MΩ 2 MΩ 4 MΩ 8 MΩ 19 MΩ 20 MΩ 40 MΩ 80 MΩ 190 MΩ 200 MΩ 400 MΩ 800 MΩ 1.9 GΩ	5.8 kΩ 6.1 kΩ 6.2 kΩ 6.4 kΩ 7.0 kΩ 9.4 kΩ 15 kΩ 28 kΩ 58 kΩ 0.13 MΩ 0.24 MΩ 0.47 MΩ 0. 58 MΩ 1.8 MΩ 3.4 MΩ 6.7 MΩ 13 MΩ	Up to 1350 V	B
Insulation test voltage Nominal	0 to 10 V 10 V to 100 V 100 V to 1100 V	0.10 V 0.26 V 2.6 V	The test voltage will normally be measured with a 1 mA load.	B
Continuity Resistance	100 mΩ to 2 Ω 4 Ω 8 Ω 19 Ω 20 Ω 40 Ω 80 Ω 190 Ω 200 Ω 400 Ω 800 Ω 1.9 k Ω 2 kΩ 4 kΩ 8 kΩ 10 kΩ	30 mΩ 33 mΩ 35 mΩ 38 mΩ 55 mΩ 0.12 Ω 0.20 Ω 0.24 Ω 0.74 Ω 1.1 Ω 2.0 Ω 2.4 Ω 8.1 Ω 11 Ω 20 Ω 24 Ω		B

Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty (k = 2)		Remarks	Location Code
Values and uncertainties listed below are applicable for the calibration of both measuring instruments and for instruments with an output. The method used is by direct comparison against laboratory references unless otherwise stated in the remarks column.					
Temperature indicators, calibration by electrical simulation		Excluding CJC	Including CJC	By injection of equivalent DC voltages	B
Type K thermocouple	-270 °C to -200 °C	1.6 °C	2.8 °C		
	-200 °C to -50 °C	0.10 °C	0.17 °C		
	-50 °C to 1370 °C	0.10 °C	0.13 °C		
Type J thermocouple	-210 °C to -200 °C	0.10 °C	0.23 °C		
	-200 °C to 0 °C	0.10 °C	0.21 °C		
	0 °C to 1200 °C	0.10 °C	0.14 °C		
Type E thermocouple	-270 °C to -200 °C	0.69 °C	0.95 °C		
	-200 °C to 0 °C	0.10 °C	0.13 °C		
	0 °C to 1000 °C	0.10 °C	0.12 °C		
Type T thermocouple	-270 °C to -200 °C	1.1 °C	7.2 °C		
	-200 °C to 0 °C	0.10 °C	0.48 °C		
	0 °C to 400 °C	0.10 °C	0.22 °C		
Type N thermocouple	-270 °C to -200 °C	3.7 °C	4.3 °C		
	-200 °C to -100 °C	0.13 °C	0.18 °C		
	-100 °C to 800 °C	0.10 °C	0.13 °C		
	800 °C to 1300 °C	0.10 °C	0.12 °C		
Type R thermocouple	-50 °C to 0 °C	0.30 °C	0.34 °C		
	0 °C to 150 °C	0.22 °C	0.25 °C		
	150 °C to 400 °C	0.15 °C	0.19 °C		
	400 °C to 1768 °C	0.12 °C	0.17 °C		
Type S thermocouple	-50 °C to 0 °C	0.28 °C	0.31 °C		
	0 °C to 100 °C	0.21 °C	0.24 °C		
	100 °C to 300 °C	0.16 °C	0.20 °C		
	300 °C to 1768 °C	0.13 °C	0.17 °C		
Resistance thermometer (Pt 100)	-200 °C to -80 °C	0.058 °C		By injection of equivalent DC resistance	
	-80 °C to 0 °C	0.058 °C			
	0 °C to 100 °C	0.081°C			
	100 °C to 300 °C	0.10 °C			
	300 °C to 400 °C	0.12 °C			
	400 °C to 630 °C	0.14 °C			
	630 °C to 800 °C	0.27 °C			

Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty (k = 2)		Remarks	Location Code
Values and uncertainties listed below are applicable for the calibration of both measuring instruments and for instruments with an output. The method used is by direct comparison against laboratory references unless otherwise stated in the remarks column.					
Temperature simulators, calibration by electrical measurement				By measurement of equivalent DC voltages	B
		Excluding CJC	Including CJC		
Type K thermocouple	-270 °C to -200 °C	1.2 °C	2.6 °C		
	-200 °C to -50 °C	0.10 °C	0.17 °C		
	-50 °C to 1370 °C	0.10 °C	0.13 °C		
Type J thermocouple	-210 °C to -200 °C	0.10 °C	0.23 °C		
	-200 °C to 0 °C	0.10 °C	0.21 °C		
	0 °C to 1200 °C	0.10 °C	0.14 °C		
Type E thermocouple	-270 °C to -200 °C	0.54 °C	0.85 °C		
	-200 °C to 0 °C	0.10 °C	0.13 °C		
	0 °C to 1000 °C	0.10 °C	0.12 °C		
Type T thermocouple	-270 °C to -200 °C	0.86 °C	7.2 °C		
	-200 °C to 0 °C	0.10 °C	0.47 °C		
	0 °C to 400 °C	0.10 °C	0.22 °C		
Type N thermocouple	-270 °C to -200 °C	2.9 °C	3.6 °C		
	-200 °C to -100 °C	0.11 °C	0.16 °C		
	-100 °C to 800 °C	0.10 °C	0.13 °C		
	800 °C to 1300 °C	0.10 °C	0.12 °C		
Type R thermocouple	-50 °C to 0 °C	0.24 °C	0.29 °C		
	0 °C to 150 °C	0.17 °C	0.22 °C		
	150 °C to 400 °C	0.12 °C	0.17 °C		
	400 °C to 1768 °C	0.10 °C	0.15 °C		
Type S thermocouple	-50 °C to 0 °C	0.22 °C	0.26 °C		
	0 °C to 100 °C	0.17 °C	0.21 °C		
	100 °C to 300 °C	0.13 °C	0.17 °C		
	300 °C to 1768 °C	0.11 °C	0.16 °C		
Resistance thermometer (Pt 100)	-200 °C to 0 °C	0.0086 °C		By measurement of equivalent DC resistance	
	0 °C to 850 °C	0.020 °C			

Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty (k = 2)	Remarks	Location Code
Values and uncertainties listed below are applicable for the calibration of both measuring instruments and for instruments with an output. The method used is by direct comparison against laboratory references unless otherwise stated in the remarks column.				
Calibration of Oscilloscopes				B
Voltage deflection	1 mV to 25 mV 25 mV to 110 mV 110 mV to 2.2 V 2.2 V to 6 V	Q [0.29 %, 47 µV] Q [0.29 %, 48 µV] Q [0.29 %, 92 µV] Q [0.29 %, 0.21 mV]	Into 50 Ω	
	1 mV to 25 mV 25 mV to 110 mV 110 mV to 2.2 V 2.2 V to 11 V 11 V to 130 V	Q [0.12 %, 46 V] Q [0.12 %, 46 µV] Q [0.12 %, 51 µV] Q [0.12 %, 0.22 mV] Q [0.12 %, 0.47 mV]	Into 1 MΩ	
Time markers	2 ns to 500 ns 500 ns to 500 µs 500 µs to 50 ms 50 ms to 5 s	Q [0.082 %, 0.12 ps] Q [0.082 %, 0.12 ns] Q [0.058 %, 12 ns] Q [0.59 %, 1.2 µs]		
PRESSURE Pneumatic Pressure (gauge)			Methods consistent with EURAMET CG17. Absolute pressures can be generated within these gauge pressure ranges. This will attract an additional uncertainty of 10 Pa.	B
Calibration of pressure indicating instruments and gauges	- 95 kPa to -10 kPa -10 kPa to -3.5 kPa -3.5 kPa to -1.5 kPa 1.5 kPa to 3.5 kPa 3.5 kPa to 10 kPa 10 kPa to 20 kPa 20 kPa to 2.5 MPa 2.5 MPa to 14 MPa	0.0087 % 0.0097 % Q [0.014 %, 0.50 Pa] Q [0.013 %, 0.50 Pa] 0.0078 % 0.0066 % 0.0063 % 0.0079 %	Sensors with an electrical output can be calibrated	
Hydraulic Pressure (gauge)				
Calibration of pressure indicating instruments and gauges	0.6 MPa to 6 MPa 6 MPa to 120 MPa	0.011 % 0.010 %		
END				

Appendix - Calibration and Measurement Capabilities

Introduction

The definitive statement of the accreditation status of a calibration laboratory is the Accreditation Certificate and the associated Schedule of Accreditation. This Schedule of Accreditation is a critical document, as it defines the measurement capabilities, ranges and boundaries of the calibration activities for which the organisation holds accreditation.

Calibration and Measurement Capabilities (CMCs)

The capabilities provided by accredited calibration laboratories are described by the Calibration and Measurement Capability (CMC), which expresses the lowest measurement uncertainty that can be achieved during a calibration. If a particular device under calibration itself contributes significantly to the uncertainty (for example, if it has limited resolution or exhibits significant non-repeatability) then the uncertainty quoted on a calibration certificate will be increased to account for such factors.

The CMC is normally used to describe the uncertainty that appears in an accredited calibration laboratory's schedule of accreditation and is the uncertainty for which the laboratory has been accredited using the procedure that was the subject of assessment. The measurement uncertainty is calculated according to the procedures given in the GUM and is normally stated as an expanded uncertainty at a coverage probability of 95 %, which usually requires the use of a coverage factor of $k = 2$. An accredited laboratory is not permitted to quote an uncertainty that is smaller than the published measurement uncertainty in certificates issued under its accreditation.

Expression of CMCs - symbols and units

It should be noted that the percentage symbol (%) represents the number 0.01. In cases where the measurement uncertainty is stated as a percentage, this is to be interpreted as meaning percentage of the measurand.
Thus, for example, a measurement uncertainty of 1.5 % means $1.5 \times 0.01 \times q$, where q is the quantity value.

The notation Q[a, b] stands for the root-sum-square of the terms between brackets: $Q[a, b] = [a^2 + b^2]^{1/2}$