


Schedule of Accreditation

issued by

United Kingdom Accreditation Service

2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

 0199 Accredited to ISO/IEC 17025:2005	Avon-Dynamic Calibration Issue No: 039 Issue date: 03 March 2017	
	Unit 2 The Old Mill Chapel lane Warmley Bristol BS15 4NQ	Contact: Mr J Castree Tel: +44 (0)117-9477846 Fax: +44 (0)117-9477831 E-Mail: info@avon-dynamic.co.uk Website: www.avon-dynamic.co.uk

Calibration performed by the Organisations at the locations specified below

Locations covered by the organisation and their relevant activities

Laboratory locations:

Location details	Activity	Location code
Address Unit 2 The Old Mill Chapel lane Warmley Bristol BS15 4 NQ	Local contact Mr J Castree	Dimensional A
	Mr M Hyde	Electrical A
		Pressure A

Site activities performed away from the locations listed above:

Location details	Activity	Location code
At customers premises	Mr J Castree	Dimensional B



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DETAIL OF ACCREDITATION

Measured Quantity Instrument or Gauge	Range	Calibration and Measurement Capability (CMC) Expressed as an Expanded Uncertainty ($k=2$)	Remarks	Location Code
RANGE IN MILLIMETRES AND UNCERTAINTY IN MICROMETRES UNLESS OTHERWISE STATED				
LENGTH				
Gauge blocks		Class (see Notes)	NOTES	
Inch (steel - tungsten carbide)	As BS 4311:Part 1:2007 0.010 in to 0.4 in 0.4 in to 1 in Size 2 in Size 3 in Size 4 in	C 3.0 4.0 5.0 6.0 7.0] μ in	A
Millimetre (steel - tungsten carbide)	As BS EN ISO 3650:1999 0.5 to 10 10 to 25 Sizes 30, 40, 50, 60, 70, 75 80, 90, 100	0.080 0.10 0.12 0.15 0.18		
Gauge blocks accessories	As BS 4311:Part 2: 2009 0.1 to 12.5	0.30	1 The uncertainty quoted is for the departure from either flatness, straightness, parallelism planes, which just enclose the surface under consideration.	A
Length bar accessories	As BS 1790:1961 and BS 5317:1976 10 to 25	0.30	2. Single start, symmetrical thread forms only.	A
Thread measuring cylinders	As BS 5590:1978 and specials 0.1 to 5	0.50	3. Single start symmetrical and asymmetrical thread forms only. 4. Includes use of check plugs for screw rings from 1 mm to 6mm diameter 5. Includes use of check plugs for screw rings (taper) from 5 mm to 50 mm diameter	A
Plain plug gauges (parallel), cylindrical standards and rollers	1 to 50 diameter 50 to 150 diameter	0.80 1.0		
Plain ring gauges (parallel) and setting standards	1 to 50 50 to 100	1.5 2.0		
Steel balls - steel	1 to 50	1.0	6. Functional test of size using setting plugs calibrated 7. Features and associated parts of these gauges can be measured to the uncertainties given for equivalent items listed in this schedule.	A
Plain gap gauges (parallel)	0.5 to 100 100 to 200	3.0 5.0		
	200 to 300	8.0		



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RANGE IN MILLIMETRES AND UNCERTAINTY IN MICROMETRES UNLESS OTHERWISE STATED				
LENGTH (Cont'd)				
Screw plug gauges (parallel) including check and setting plugs See Note 3	1 to 100 diameter	3.0	8. Simple height gauges - vernier, dial and digital instruments designed only for measuring distances parallel to the beam. 9. Conformance statements cannot be made against specifications whose magnitudes are smaller than the specified CMC values	A
Screw plug gauges (taper) including check plugs See Note 2	1 to 100 diameter	4.0		
Screw ring gauges (parallel) See Notes 3 and 4	1 to 100 diameter	5.0 on pitch diameter		
Screw ring gauges (taper) See Notes 2 and 5	5 to 150 diameter	7.0 on pitch diameter		
Screw pitch Screw flank angle	0.2 to 8 0° to 52°	1.5 5.0 minutes of arc		
Screw thread adjustable calliper gauges (parallel) See Note 3	3 to 50 diameter	See Note 6		A
Length gauges, flat and spherical ended	1 to 1000	1.0 + (8.0 x length in m)		A
Engineers parallels	As BS 906:1972 5 to 50 x 100 x 400	1.5 to 5.0		A
Vee blocks	As BS 3731:1987 20 to 150	2.5 to 5.0		A
Receiver, position and profile gauges, jigs and fixtures	0 to 1000 x 600 x 600	See Note 7		A
ANGLE				A
Squares				A
Blade type	As BS 939:2007 50 to 300 300 to 600	3.0 5.0		A
Cylindrical	As BS 939:2007 75 to 300 300 to 600	2.0 5.0		
Block	As BS 939:2007 50 to 300 300 to 600	3.0 5.0 All on squareness See note 1		



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RANGE IN MILLIMETRES AND UNCERTAINTY IN MICROMETRES UNLESS OTHERWISE STATED				
ANGLE (Cont'd)				
Right angle and box angle plates	As BS 5535:1978 50 to 600	Squareness: 3.0 + (1.0 per 100 mm) Parallelism: 1.0 + (1.0 per 100 mm) See Note 1		A
Sine bars and tables	As BS 3064:1978 0 to 250 length	Linear dimensions 1.0 + (10 x length in m) Overall performance 3.0 seconds of arc		A
Electronic indicating levels	0 minutes of arc to 20 minutes of arc	1.0 % of range Minimum 0.50 seconds of arc		A
Spirit levels	As BS 3509:1962 and BS 958:1968 5 seconds of arc to 60 minutes of arc nominal sensitivity	Mean sensitivity 10% of nominal Minimum 0.50 seconds of arc		A
Clinometers	0° to 360°	10 seconds of arc		A
Thread measuring vee pieces (prisms)	As NPL Schedule MOY/SCMI/60 0 to 4.5	0.50		A
FORM				
Surface plates Granite Cast iron	As BS 817:1988 160 x 100 to 1600 x 1000	1.5 + (0.80 x diagonal in m) See Note 1		A, B
Straightedges Cast iron Steel Granite	As BS 5204:Part 1:1975 As BS 5204:Part 2:1977 Up to 1800	1.0 + (2.0 x length in m) See Note 1		A
MEASURING INSTRUMENTS AND MACHINES				
Micrometers External	As BS 870:2008 0 to 600	Heads: 2.0		A
Internal	As BS 959:2008 0 to 900	Setting and extension rods 2.0 + (7.0 x length in m)		
Depth	As BS 6468:2008 0 to 300			



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MEASURING INSTRUMENTS AND MACHINES (Cont'd)				
Micrometer heads	As BS 1734:1951 0 to 100	1.0		A
Bore micrometers (three point)	0 to 150 diameter	5.0		A
Bench micrometers	As NPL MOY/SCMI 22 0 to 100	Overall performance 2.0		A
Height setting micrometer	0 to 300	Heads:1.2 Stepped column 2.0 Overall performance 2.5		A
Riser blocks for above	150 300	1.0 2.0		A
Vernier caliper, height and depth gauges	As BS 887:2008 0 to 1000 As BS 1643:2008 0 to 1000 As BS 6365:2008 0 to 600	Overall performance 10 + (30 x length in m)		A
Height gauges - (Simple) including vernier, dial and digital types (See note 8 and note 9)	As BS EN ISO 13225:2012 0 to 1000	Length measurement error (E): 10 + (30 x length in metres)		A
Comparators (external)	As BS 1054:1975 250 to 10 000 magnifications	1.0 % of range Minimum 0.20		A
Dial gauges and dial test indicators	As BS 907:2008 and BS 2795:1981 0 to 50	1.0		A
Bevel protractors	As BS 1685:2008 0° to 360°	6 0 minutes of arc		A
Thread diameter measuring	As NPL Schedules MOY/SCMI/1/ 9 and MOY/SCMI1 //12 0 to 200 capacity	Overall performance 1.5		A
Steel Rules	As BS 4372:1968 0 to 1000	15 + (20 X length in m)		A
Feeler Gauges	As BS 975:Part 1:1941 BS 957:Part 2:1969 0.025 to 1	3.0		A
Electronic Height Gauges with microprocessor control	0 to 1000	1.0 + (8.0 x length in m)		A, B



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MEASURING INSTRUMENTS AND MACHINES (Cont'd)				
Coordinate measuring machines	As ISO 10360-2:2009 and ISO 10360-5:2010 (section 6.2) 0 to 1200 (longest diagonal using end standards)	2.0 + (2.0 x length in m)		B
Profile projectors	10 to 100 magnification Linear 0 to 300 Angular 0° to 360°	125 at the screen 5.0 3.0 minutes of arc		B
ELECTRICAL				
DC VOLTAGE Measurement	0 µV 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 1.1 kV	0.44 µV 5.9 ppm + 0.35 µV 5.5 ppm + 0.35 µV 5.5 ppm + 0.65 µV 8.2 ppm + 35 µV 8.2 ppm + 200 µV		A
AC VOLTAGE Measurement	1 mV to 10 mV 10 Hz to 40 Hz 40 Hz to 1 kHz 1 kHz to 20 kHz 20 kHz to 50 kHz 50 kHz to 100 kHz 100 kHz to 300 kHz	870 ppm + 5 µV 580 ppm + 5 µV 650 ppm + 5 µV 0.14 % + 5 µV 0.59 % + 6 µV 5.8 %		A
	10 mV to 100 mV 10 Hz to 40 Hz 40 Hz to 1 kHz 1 kHz to 20 kHz 20 kHz to 50 kHz 50 kHz to 100 kHz 100 kHz to 300 kHz 300 kHz to 1 MHz	350 ppm + 14 µV 160 ppm + 8.5 µV 220 ppm + 8.5 µV 440 ppm + 8.5 µV 0.11 % + 8.5 µV 0.38 % + 8.5 µV 1.8 %		
	100 mV to 1 V 10 Hz to 40 Hz 40 Hz to 1 kHz 1 kHz to 20 kHz 20 kHz to 50 kHz 50 kHz to 100 kHz 100 kHz to 300 kHz 300 kHz to 1 MHz	320 ppm + 150 µV 120 ppm + 140 µV 190 ppm + 140 µV 380 ppm + 140 µV 960 ppm + 140 µV 0.36 % + 170 µV 1.6 %		



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AC VOLTAGE Measurement Continued	1 V to 10 V 10 Hz to 40 Hz 40 Hz to 1 kHz 1 kHz to 20 kHz 20 kHz to 50 kHz 50 kHz to 100 kHz 100 kHz to 300 kHz 300 kHz to 1 MHz	320 ppm + 1.5 mV 120 ppm + 1.4 mV 190 ppm + 1.4 mV 380 ppm + 1.4 mV 960 ppm + 1.4 mV 0.36 % + 1.6 mV 1.6 %		A
	10 V to 100 V 10 Hz to 40 Hz 40 Hz to 1 kHz 1 kHz to 20 kHz 20 kHz to 50 kHz 50 kHz to 100 kHz	400 ppm + 14.8 mV 260 ppm + 14 mV 260 ppm + 14 mV 440 ppm + 14 mV 0.14 % + 14 mV		
DC CURRENT Measurement	100 to 1000 V 20 Hz to 10 kHz	310 ppm + 23 mV		A
	0 A to 10 μ A 10 μ A to 100 μ A 100 μ A to 1 mA 1 mA to 10 mA 10 mA to 100 mA 100 mA to 1 A 1 A to 10 A 10 A to 50 A	1.3 nA 28 ppm + 1.2 nA 28 ppm + 7.4 nA 28 ppm + 74 nA 51 ppm + 0.74 μ A 170 ppm + 16 μ A 0.020 % 0.35 %		
AC CURRENT Measurement	10 μ A to 100 μ A 10 Hz to 20 Hz 20 Hz to 45 Hz 45 Hz to 100 Hz 100 Hz to 1 kHz	0.46 % + 120 nA 0.17 % + 120 nA 720 ppm + 120 nA 720 ppm + 120 nA		A
	100 μ A to 1 mA 10 Hz to 20 Hz 20 Hz to 45 Hz 45 Hz to 100 Hz 100 Hz to 5 kHz	0.46 % + 260 nA 0.17 % + 260 nA 720 ppm + 260 nA 450 ppm + 260 nA		
	1 mA to 10 mA 10 Hz to 20 Hz 20 Hz to 45 Hz 45 Hz to 100 Hz 100 Hz to 5 kHz	0.46 % + 2.4 μ A 0.17 % + 2.4 μ A 710 ppm + 2.4 μ A 420 ppm + 2.4 μ A		
	10 mA to 100 mA 10 Hz to 20 Hz 20 Hz to 45 Hz 45 Hz to 100 Hz 100 Hz to 5 kHz	0.46 % + 24 μ A 0.17 % + 24 μ A 710 ppm + 24 μ A 420 ppm + 24 μ A		



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AC CURRENT Measurement Continued	100 mA to 1 A 10 Hz to 20 Hz 20 Hz to 45 Hz 45 Hz to 100 Hz 100 Hz to 5 kHz	0.46 % + 240 μ A 0.18 % + 240 μ A 760 ppm + 240 μ A 630 ppm + 250 μ A		A
Measurement and Generation	1 A to 10 A 50 Hz to 400 Hz	0.050 %		
RESISTANCE Measurement	0 Ω to 10 Ω 10 Ω to 100 Ω 100 Ω to 1 k Ω 1 k Ω to 10 k Ω 10 k Ω to 100 k Ω 100 k Ω to 1 M Ω 1 M Ω to 10 M Ω 10 M Ω to 100 M Ω 100 M Ω to 1 G Ω	20 ppm + 70 $\mu\Omega$ 15 ppm + 700 $\mu\Omega$ 13 ppm + 700 $\mu\Omega$ 13 ppm + 6.3 m Ω 13 ppm + 70 m Ω 22 ppm + 2.6 Ω 82 ppm + 130 Ω 0.08 % 1.00 %		A
Current Shunts Measurement and Generation	250 $\mu\Omega$ at 10 A 1 m Ω at 10 A 3 m Ω at 10 A 5 m Ω at 10 A 10 m Ω at 1 A 100 m Ω at 1 A	600 ppm 250 ppm 250 ppm 250 ppm 150 ppm 50 ppm		A
DC VOLTAGE Generation	0 V to 220 mV 220 mV to 2.2 V 2.2 V to 11 V 11 V to 22 V 22 V to 220 V 220 V to 1.1 kV	9.0 ppm + 500 nV 6.0 ppm + 810 nV 4.5 ppm + 3.2 μ V 4.5 ppm + 4.8 μ V 5.9 ppm + 48 μ V 7.6 ppm + 480 μ V		A
AC VOLTAGE Generation	10 μ V to 2.2 mV 10 Hz to 20 Hz 20 Hz to 40 Hz 40 Hz to 20 kHz 20 kHz to 50 kHz 50 kHz to 100 kHz 100 kHz to 300 kHz 300 kHz to 500 kHz 500 kHz to 1 MHz	520 ppm + 5.0 μ V 460 ppm + 5.0 μ V 450 ppm + 5.0 μ V 500 ppm + 5.0 μ V 730 ppm + 6.0 μ V 0.13 % + 12 μ V 0.17 % + 24 μ V 0.32 + 24 μ V		A



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AC VOLTAGE Generation	<p>2.2 mV to 22 mV 10 Hz to 20 Hz 20 Hz to 40 Hz 40 Hz to 20 kHz 20 kHz to 50 kHz 50 kHz to 100 kHz 100 kHz to 300 kHz 300 kHz to 500 kHz 500 kHz to 1 MHz</p> <p>22 mV to 220 mV 10 Hz to 20 Hz 20 Hz to 40 Hz 40 Hz to 20 kHz 20 kHz to 50 kHz 50 kHz to 100 kHz 100 kHz to 300 kHz 300 kHz to 500 kHz 500 kHz to 1 MHz</p> <p>220 mV to 2.2 V 10 Hz to 20 Hz 20 Hz to 40 Hz 40 Hz to 20 kHz 20 kHz to 50 kHz 50 kHz to 100 kHz 100 kHz to 300 kHz 300 kHz to 500 kHz 500 kHz to 1 MHz</p> <p>2.2 V to 22 V 10 Hz to 20 Hz 20 Hz to 40 Hz 40 Hz to 20 kHz 20 kHz to 50 kHz 50 kHz to 100 kHz 100 kHz to 300 kHz 300 kHz to 500 kHz 500 kHz to 1 MHz</p> <p>22 V to 220 V 10 Hz to 20 Hz 20 Hz to 40 Hz 40 Hz to 20 kHz 20 kHz to 50 kHz 50 kHz to 100 kHz</p> <p>220 V to 1.1 kV 50 Hz to 1 kHz</p>	<p>300 ppm + 5.0 μV 140 ppm + 5.0 μV 130 ppm + 5.0 μV 250 ppm + 5.0 μV 590 ppm + 6.0 μV 0.13 % + 12 μV 0.17 % + 24 μV 0.32 % + 24 μV</p> <p>320 ppm + 14 μV 120 ppm + 8.5 μV 110 ppm + 8.5 μV 240 ppm + 8.5 μV 540 ppm + 20 μV 0.13 % + 12 μV 0.17 % + 29 μV 0.32 % + 52 μV</p> <p>290 ppm + 47 μV 120 ppm + 18 μV 110 ppm + 9.5 μV 240 ppm + 12 μV 540 ppm + 35 μV 500 ppm + 93 μV 0.12 % + 240 μV 0.20 % + 350 μV</p> <p>290 ppm + 470 μV 110 ppm + 180 μV 55 ppm + 58 μV 90 ppm + 120 μV 120 ppm + 240 μV 330 ppm + 700 μV 0.12 % + 2.3 mV 0.18 % + 3.5 mV</p> <p>290 ppm + 5.0 mV 110 ppm + 1.8 mV 64 ppm + 700 μV 97 ppm + 1.2 mV 180 ppm + 3.0 mV</p> <p>97 ppm + 4.3 mV</p>		A



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DC CURRENT Generation	0 A to 220 μ A 220 μ A to 2.2 mA 2.2 mA to 22 mA 22 mA to 220 mA 220 mA to 2.2 A 2.2A to 10 A 10 A to 50 A	47 ppm + 7.0 nA 41 ppm + 8.2 nA 41 ppm + 48 nA 53 ppm + 0.82 μ A 93 ppm + 14 μ A 0.020 % 0.35 %		A
Simulated current	10 A to 100 A 100 A to 1000 A	0.10 % 0.20 %	For the calibration of clamp meters only	
AC CURRENT Generation	10 nA to 220 μ A 40 Hz to 1kHz 1 kHz to 5 kHz 5 kHz to 10 kHz	210 ppm + 9.4 nA 390 ppm + 14 nA 0.14 % + 75 nA		A
	220 μ A to 2.2 mA 40 Hz to 1kHz 1 kHz to 5 kHz 5 kHz to 10 kHz	180 ppm + 43 nA 280 ppm + 130 nA 0.14 % + 750 nA		
	2.2 mA to 22 mA 40 Hz to 1kHz 1 kHz to 5 kHz 5 kHz to 10 kHz	140 ppm + 420 nA 230 ppm + 650 nA 0.13 % + 5.8 μ A		
	22 mA to 220 mA 40 Hz to 1kHz 1 kHz to 5 kHz 5 kHz to 10 kHz	140 ppm + 3.2 μ A 230 ppm + 4.3 μ A 0.13 % + 12 μ A		
	220 mA to 2.2 A 40 Hz to 1kHz 1 kHz to 5 kHz 5 kHz to 10 kHz	300 ppm + 43 μ A 520 ppm + 94 μ A 0.81 % + 190 μ A		
Simulated AC Current	10 A to 100 A 40 Hz to 100 Hz 100 Hz to 440 Hz	0.10 % 0.50 %		A
	100 A to 1000 A 40 Hz to 100 Hz	0.20 %	For the calibration of clamp meters only	



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RESISTANCE Generation Spot Values	0 1 Ω 1.9 Ω 10 Ω 19 Ω 100 Ω 190 Ω 1 k Ω 1.9 k Ω 10 k Ω 19 k Ω 100 k Ω 190 k Ω 1 M Ω 1.9 M Ω 10 M Ω 19 M Ω 100 M Ω	50 $\mu\Omega$ 110 ppm 112 ppm 28 ppm 29 ppm 13 ppm 14 ppm 11 ppm 11 ppm 11 ppm 11 ppm 14 ppm 15 ppm 24 ppm 29 ppm 47 ppm 60 ppm 124 ppm		A
OSCILLOSCOPE BANDWIDTH AND FREQUENCY RESPONSE Set points at 1 kHz	20 μV to 1.1 mV 1.1 mV to 3 mV 3 mV to 11 mV 11 mV to 33 mV 33 mV to 110 mV 110 mV to 330 mV 330 mV to 1.1 V 1.1 V to 3.5 V	1.0 % + 2.4 μV 0.90 % + 3.5 μV 0.90 % + 9.3 μV 0.80 % + 19 μV 0.80 % + 46 μV 0.70 % + 120 μV 0.70 % + 460 μV 0.62 % + 580 μV		A
Frequency Response Including set point	20 μV to 1.1 mV 10 Hz to 30 Hz 30 Hz to 120 Hz 120 Hz to 1.2 kHz 1.2 kHz to 12 kHz 12 kHz to 120 kHz 120 kHz to 1.2 MHz 1.2 MHz to 2 MHz 2 MHz to 10 MHz 10 MHz to 20 MHz 20 MHz to 30 MHz	1.1 % + 2.4 μV 1.1 % + 2.4 μV 1.1 % + 2.4 μV 1.1 % + 2.4 μV 1.1 % + 2.4 μV 1.1 % + 4.2 μV 1.1 % + 4.2 μV 1.3 % + 4.2 μV 1.3 % + 4.2 μV 2.0% + 18 μV		A



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Frequency Response Including set point Continued	<p><i>1.1 mV to 3 mV</i> 10 Hz to 30 Hz 30 Hz to 120 Hz 120 Hz to 1.2 kHz 1.2 kHz to 12 kHz 12 kHz to 120 kHz 120 kHz to 1.2 MHz 1.2 MHz to 2 MHz 2 MHz to 10 MHz 10 MHz to 20 MHz 20 MHz to 30 MHz</p> <p><i>3 mV to 11 mV</i> 10 Hz to 30 Hz 30 Hz to 120 Hz 120 Hz to 1.2 kHz 1.2 kHz to 12 kHz 12 kHz to 120 kHz 120 kHz to 1.2 MHz 1.2 MHz to 2 MHz 2 MHz to 10 MHz 10 MHz to 20 MHz 20 MHz to 30 MHz</p> <p><i>11 mV to 33 mV</i> 10 Hz to 30 Hz 30 Hz to 120 Hz 120 Hz to 1.2 kHz 1.2 kHz to 12 kHz 12 kHz to 120 kHz 120 kHz to 1.2 MHz 1.2 MHz to 2 MHz 2 MHz to 10 MHz 10 MHz to 20 MHz 20 MHz to 30 MHz</p> <p><i>33 mV to 110 mV</i> 10 Hz to 30 Hz 30 Hz to 120 Hz 120 Hz to 1.2 kHz 1.2 kHz to 12 kHz 12 kHz to 120 kHz 120 kHz to 1.2 MHz 1.2 MHz to 2 MHz 2 MHz to 10 MHz 10 MHz to 20 MHz 20 MHz to 30 MHz</p>	<p>1.0 % + 3.5 μV 0.95 % + 3.5 μV 0.95 % + 3.5 μV 0.95 % + 3.5 μV 0.95 % + 3.5 μV 0.95 % + 5.0 μV 0.95 % + 5.0 μV 1.0 % + 5.0 μV 1.1 % + 5.0 μV 2.0 % + 5.0 μV</p> <p>1.0 % + 9.3 μV 0.95 % + 9.3 μV 0.95 % + 9.3 μV 0.95 % + 9.3 μV 0.95 % + 9.3 μV 0.95 % + 9.9 μV 0.95 % + 9.9 μV 0.95 % + 9.9 μV 1.1 % + 9.9 μV 1.5 % + 9.9 μV</p> <p>0.90 % + 19 μV 0.85 % + 19 μV 0.85 % + 19 μV 0.85 % + 19 μV 0.85 % + 19 μV 0.85 % + 19 μV 0.85 % + 19 μV 0.85 % + 19 μV 0.95 % + 19 μV 1.4 % + 19 μV</p> <p>0.90 % + 47 μV 0.85 % + 47 μV 0.85 % + 47 μV 0.85 % + 47 μV 0.85 % + 47 μV 0.85 % + 47 μV 0.85 % + 47 μV 0.85 % + 47 μV 0.95 % + 47 μV 1.4 % + 47 μV</p>		A



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Frequency Response Including set point Continued	<p><i>110 mV to 330 mV</i> 10 Hz to 30 Hz 30 Hz to 120 Hz 120 Hz to 1.2 kHz 1.2 kHz to 12 kHz 12 kHz to 120 kHz 120 kHz to 1.2 MHz 1.2 MHz to 2 MHz 2 MHz to 10 MHz 10 MHz to 20 MHz 20 MHz to 30 MHz</p> <p><i>330 mV to 1.1 V</i> 10 Hz to 30 Hz 30 Hz to 120 Hz 120 Hz to 1.2 kHz 1.2 kHz to 12 kHz 12 kHz to 120 kHz 120 kHz to 1.2 MHz 1.2 MHz to 2 MHz 2 MHz to 10 MHz 10 MHz to 20 MHz 20 MHz to 30 MHz</p> <p><i>1.1 V to 3.5 V</i> 10 Hz to 30 Hz 30 Hz to 120 Hz 120 Hz to 1.2 kHz 1.2 kHz to 12 kHz 12 kHz to 120 kHz 120 kHz to 1.2 MHz 1.2 MHz to 2 MHz 2 MHz to 10 MHz 10 MHz to 20 MHz 20 MHz to 30 MHz</p>	<p>0.80 % + 120 μV 0.75 % + 120 μV 0.75 % + 120 μV 0.75 % + 120 μV 0.75 % + 120 μV 0.75 % + 120 μV 0.75 % + 120 μV 0.75 % + 120 μV 0.75 % + 120 μV 0.85 % + 120 μV 1.4 % + 120 μV</p> <p>0.70 % + 460 μV 0.80 % + 460 μV 0.75 % + 460 μV 0.75 % + 460 μV 0.75 % + 460 μV 0.75 % + 460 μV 0.75 % + 460 μV 0.75 % + 460 μV 0.75 % + 460 μV 0.85 % + 460 μV 1.4 % + 460 μV</p> <p>0.75 % + 580 μV 0.65 % + 580 μV 0.65 % + 580 μV 0.65 % + 580 μV 0.65 % + 580 μV 0.65 % + 580 μV 0.65 % + 580 μV 0.65 % + 580 μV 0.70 % + 580 μV 0.80 % + 580 μV 1.3 % + 580 μV</p>		A
Bandwidth continued with respect to set point	40 Hz to 600 MHz			
RISE TIME	<i>100 mV to 3.5 V peak to peak</i>	2.0 %	Into 50 Ω	
	Nominal 1 ns	150 ps		
CAPACITANCE	<i>1 pF to 1 μF</i> 1 kHz	50 ppm		A



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2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

Avon-Dynamic Calibration
Issue No: 039 Issue date: 03 March 2017

Calibration performed by the Organisation at the locations specified

Measured Quantity Instrument or Gauge	Range	Calibration and Measurement Capability (CMC) Expressed as an Expanded Uncertainty ($k=2$)	Remarks	Location Code
FREQUENCY				A,
Specific Values	1 MHz, 5 MHz and 10 MHz	3.0 in 10^9		
Other Values	1 Hz to 10 Hz 10 Hz to 100 Hz 100 Hz to 1 kHz 1 kHz to 10 kHz 10 kHz to 100 kHz 100 kHz to 1 MHz	3.0 in 10^5 3.0 in 10^6 3.0 in 10^7 3.0 in 10^8 4.0 in 10^9 2.0 in 10^9	Period Mode	
	1 MHz to 10 MHz 10 MHz to 1 GHz	3.0 in 10^9 5.0 in 10^9	Frequency Mode	
TIME INTERVAL	1 s to 24 hours	2.0 ms 200 ms	Electronically triggered. Manual triggered	A
ELECTRICAL SIMULATION OF TEMPERATURE READING INSTRUMENTS	Nominal 0 °C	0.060 °C	Support measurement suitable for measurement of reference junction compensation devices	A
Reference junction	18 °C to 25 °C	0.41 °C	Supporting temperature measurement only	
Electrical calibration of temperature simulators for the following sensors:				
Noble metal thermocouples	- 200 °C to 1800 °C	0.20 °C	Excluding cold junction compensation	
Base metal thermocouples	- 200 °C to 1380 °C	0.10 °C	Excluding cold junction compensation	
Noble metal thermocouples	- 200 °C to 1800 °C	0.70 °C	Including cold junction compensation	
Base metal thermocouples	- 200 °C to 1380 °C	0.60 °C	Including cold junction compensation	
Resistance sensors	- 200 °C to 800 °C	0.050 °C	(PT 100)	
Electrical calibration of temperature indicators, controllers and recorders for the following sensors:				
Noble metal thermocouples	- 200 °C to 1800 °C	0.75 °C	Including cold junction compensation	
Base metal thermocouples	- 200 °C to 1380 °C	0.65 °C	Including cold junction compensation	
Resistance sensors	- 200 °C to 800 °C	0.080 °C		



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Measured Quantity Instrument or Gauge	Range	Calibration and Measurement Capability (CMC) Expressed as an Expanded Uncertainty ($k=2$)	Remarks	Location Code
ADDITIONAL MEASUREMENTS IN SUPPORT OF IEE 17 TH EDITION TEST EQUIPMENT				
RCD				
Trip current	3 mA to 10 mA 10 mA to 100 mA 100 mA to 1 A 1 A to 3 A	7.0 % + 20 μ A 7.0 % + 160 μ A 7.0 % + 840 μ A 7.0 % + 5.3 mA		
Trip time	20 ms to 390 ms 390 ms to 5 s	1.0 ms 8.9 ms		
AC RESISTANCE FOR LOOP 50 Hz				
Nominal Ranges	0.05 Ω to 0.1 Ω 0.1 Ω to 0.22 Ω 0.22 Ω to 0.33 Ω	0.80 % + 1.7 m Ω 0.80 % + 3.0 m Ω 0.80 % + 1.7 m Ω	Laboratory loop nominally 0.55 Ω	
	0.33 Ω to 0.5 Ω 0.5 Ω to 1 Ω 1 Ω to 5 Ω	0.80 % + 2.0 m Ω 0.80 % + 2.0 m Ω 0.80 % + 5.0 m Ω		
	5 Ω to 10 Ω 10 Ω to 100 Ω 100 Ω to 1 k Ω	0.80 % + 6.2 m Ω 0.80 % + 26 m Ω 0.80 % + 1.1 Ω		
EARTH BOND RESISTANCE				
	25 m Ω to 1 k Ω	0.10 % + 1 m Ω		
EARTH BOND CURRENT 50 Hz				
	1 A to 10 A 10 A to 30 A	2.0 % + 26 mA 2.0 % + 30 mA		
PRESSURE				
Gas Pressure Gauge				
Calibration of pressure indicating instruments and gauges	-90 kPa to 0 Pa 0 Pa to 2 MPa	0.010 % + 200 Pa 0.010 % + 200 Pa	Calibrations of pressure devices with an electrical output may be undertaken.	A
Hydraulic Pressure Gauge				
Calibration of pressure indicating instruments and gauges	500 kPa to 60 MPa	0.014 % + 1 kPa		
END				