


# Schedule of Accreditation

issued by

## United Kingdom Accreditation Service

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

 <p><b>UKAS</b> CALIBRATION</p> <p><b>0426</b></p> <p>Accredited to <b>ISO/IEC 17025:2005</b></p>	<h3>Avon-Dynamic Calibration</h3> <p><b>Issue No: 021    Issue date: 04 August 2008</b></p>	
	<p><b>Unit 24</b>  <b>Station Road Workshops</b>  <b>Station Road</b>  <b>Kingswood</b>  <b>Bristol</b>  <b>BS15 4PJ</b></p>	<p><b>Contact: Mr P W Beamson</b>  <b>Tel: +44 (0)117 970 1501</b>  <b>Fax: +44 (0)117 970 1500</b>  <b>E-Mail: info@avon-dynamic.co.uk</b>  <b>Website: www.avon-dynamic.co.uk</b></p>
<p><b>Calibration performed at the above address only</b></p>		

#### DETAIL OF ACCREDITATION

Measured Quantity Instrument or Gauge	Range	Best Measurement Capability Expressed as an Expanded Uncertainty ( <i>k=2</i> )	Remarks
DC VOLTAGE			
Generation	100 mV	8 ppm	
Specific Values	1 V	4 ppm	
	10 V	3 ppm	
	100 V	4 ppm	
	1000 V	6 ppm	
Generation and Measurement	Up to 10 mV	100 ppm + 1.0 $\mu$ V	
	10 mV to 200 mV	10 ppm + 0.5 $\mu$ V	
	200 mV to 2 V	5 ppm + 2 $\mu$ V	
	2 V to 20 V	5.0 ppm	
	20 V to 200 V	8.0 ppm	
	200 V to 1 kV	15 ppm	
AC VOLTAGE			
Generation and Measurement	1 kHz		
	100 $\mu$ V to 1 mV	0.5%	
	1 mV to 100 mV	0.05%	
	100 kHz		
	100 $\mu$ V to 1 mV	1%	
	1 mV to 10 mV	0.5%	
	10 mV to 100 mV	0.1%	
	100 V	0.03%	
	30 kHz		
	1000 V	0.05%	
	30 Hz to 10 kHz		
	100 $\mu$ V to 2 mV	0.5%	
	2 mV to 20 mV	0.1%	
	20 mV to 200 mV	0.1%	
	200 mV to 2 V	0.03%	
2 V to 20 V	0.03%		
20 V to 200 V	0.03%		
50 Hz to 10 kHz			
200 V to 1000 V	0.04%		



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Measured Quantity Instrument or Gauge	Range	Best Measurement Capability Expressed as an Expanded Uncertainty ( <i>k</i> =2)	Remarks
AC VOLTAGE (cont'd)			
Generation and Measurement (cont'd)	10 kHz to 100 kHz		
	100 μV to 2 mV	1.0%	
	2 mV to 20 mV	0.15%	
	20 mV to 200 mV	0.1%	
	200 mV to 2 V	0.05%	
	2 V to 20 V	0.05%	
	20 V to 200 V	0.05%	
	100 kHz to 330 kHz		
	2 V to 20 V	0.15%	
	30 Hz, 100 Hz, 300 Hz, 1 kHz, 3 kHz, 10 kHz, 30 kHz		
	100 mV to 1 V	0.05%	
	1 V to 10 V	0.02%	
	10 V to 100 V	0.02%	
	45 Hz, 100 Hz, 300 Hz, 1 kHz, 3 kHz, 10 kHz		
	100 V to 1000 V	0.02%	
	100 kHz, 300 kHz, 1 MHz		
	1 V	0.5%	
	10 V	0.5%	
DC RESISTANCE			
Specific Values	10 Ω	15 ppm	
	100 Ω	10 ppm	
	1 kΩ	12 ppm	
	10 kΩ	6 ppm	
	100 kΩ	10 ppm	
	1 MΩ	20 ppm	
	10 MΩ	30 ppm	
	100 MΩ	0.03%	
	1 GΩ	0.3%	
Other Values	Up to 10 Ω	60 ppm + 7 μΩ	
	10 Ω to 20 Ω	60 ppm	
	20 Ω to 200 Ω	20 ppm	
	200 Ω to 2 kΩ	16 ppm	
	2 kΩ to 20 kΩ	10 ppm	
	20 kΩ to 200 kΩ	15 ppm	
	200 kΩ to 2 MΩ	30 ppm	
	2 MΩ to 20 MΩ	40 ppm	
	20 MΩ to 200 MΩ	600 ppm	
	200 MΩ to 1 GΩ	0.6%	



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DC RESISTANCE (cont'd)			
Current Carrying Resistors	250 $\mu\Omega$ at 10 A 1 m $\Omega$ at 10 A 3 m $\Omega$ at 10 A 5 m $\Omega$ at 10 A 10 m $\Omega$ at 1 A 100 m $\Omega$ at 1 A	600 ppm 250 ppm 250 ppm 250 ppm 150 ppm 50 ppm	Higher currents are available but will result in increased uncertainties
DC CURRENT	10 $\mu$ A to 100 $\mu$ A 100 $\mu$ A to 100 mA 100 mA to 1 A 1 A to 10 A	80 ppm 50 ppm 90 ppm 0.02%	
AC CURRENT	10 A to 100 A 100 A to 500 A	0.1% 0.2%	] For the calibration of clamp meters only
	100 mA to 1 mA 10 Hz to 5 kHz	0.03%	
	1 mA to 10 mA 10 Hz to 5 kHz	0.03%	
	10 mA to 100 mA 10 Hz to 5 kHz	0.03%	
	100 mA to 1 A 10 Hz to 5 kHz	0.035%	
	1 A to 10 A 50 Hz to 400 Hz	0.05%	
Generation Only	10 A to 100 A Up to 100 Hz 100 Hz to 440 Hz	0.1% 0.5%	] For the calibration of clamp meters only
	100 A to 500 A Up to 100 Hz	0.2%	
CAPACITANCE	1 pF to 1 nF 1 kHz	50 ppm	
FREQUENCY			
Specific Values	1 MHz, 5 MHz and 10 MHz	3 in 10 <sup>9</sup>	
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 1 MHz to 10 MHz 10 MHz to 1 GHz	3 in 10 <sup>5</sup> 3 in 10 <sup>6</sup> 3 in 10 <sup>7</sup> 3 in 10 <sup>8</sup> 4 in 10 <sup>9</sup> 2 in 10 <sup>9</sup> 3 in 10 <sup>9</sup> 5 in 10 <sup>9</sup>	Period Mode ] Frequency Mode
TIME INTERVAL	1 s to 1000 s	2 ms	



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ELECTRICAL SIMULATION OF TEMPERATURE READING INSTRUMENTS	Ice Point	0.06 °C	Support measurement suitable for measurement of cold junction compensation devices
Cold junction	laboratory ambient temperature	0.5 °C	
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
Resistance sensors	-200 °C to 800 °C	0.05 °C	(PT 100)
Electrical calibration of temperature indicators, controllers and recorders for the following sensors:			
Noble metal thermocouples	-200 °C to 1800 °C	0.25 °C	Excluding cold junction compensation
Base metal thermocouples	-200 °C to 1380 °C	0.15 °C	Excluding cold junction compensation
Cold junction	laboratory ambient temperature	0.50 °C	
Resistance sensors	-200 °C to 800 °C	0.08 °C	

END