

# Schedule of Accreditation

issued by

## United Kingdom Accreditation Service

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

 <p><b>UKAS</b> CALIBRATION</p> <p>0690</p> <p>Accredited to ISO/IEC 17025:2017</p>	<h3>Airflow Measurements Ltd</h3> <p>Issue No: 033    Issue date: 10 October 2025</p>	
	<p><b>Unit 27</b> Oakhill Trading Estate Devonshire Road Worsley M28 3PT</p>	<p><b>Contact: Mr C Slater</b> Tel: +44 (0) 1204 571499 E-Mail: enquiries@airflowmeasurements.com Website: www.airflowmeasurements.com</p>
<p><b>Calibration performed at the above address only</b></p>		

### Calibration and Measurement Capability (CMC)

Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty ( $k = 2$ )	Remarks
<p><b>AIR VELOCITY</b></p> <p>Calibration of Anemometers and Pitot Tubes by comparison</p>	<p>0.1 m/s to 1 m/s 1 m/s to 2 m/s 2 m/s to 5 m/s 5 m/s to 10 m/s 10 m/s to 20 m/s 20 m/s to 30 m/s 30 m/s to 40 m/s 40 m/s to 50 m/s</p>	<p>0.10 % + 0.035 m/s 0.10 % + 0.030 m/s 0.10 % + 0.040 m/s 0.25 % + 0.12 m/s 0.25 % + 0.13 m/s 0.25 % + 0.12 m/s 0.25 % + 0.11 m/s 0.25 % + 0.22 m/s</p>	<p>Usable wind tunnel diameter 100 mm. Calibrations by comparison with a master instrument within a characterised airstream. CMC above 30 m/s may increase for UUT &gt; 3" diameter</p>
<p><b>PRESSURE</b></p> <p><u>Gas pressure (absolute)</u></p> <p>Calibration of pressure indicating instruments and gauges</p>	<p>3.5 kPa to 131 kPa</p>	<p>0.0050 % + 10 Pa</p>	<p>Methods consistent with EURAMET CG17.</p> <p>NOTE: Absolute pressure calibration can be carried out using associated barometric pressure measurement. The uncertainty values given below will be increased by 11 Pa.</p>
<p><u>Gas pressure (gauge)</u></p> <p>Calibration of pressure indicating instruments and gauges</p>	<p>-95 kPa to 0 Pa 0 Pa to 540 Pa 540 Pa to 2.5 kPa 2.5 kPa to 8 kPa 8 kPa to 24 kPa 24 kPa to 500 kPa 500 kPa to 4 MPa</p>	<p>0.0050 % + 100 Pa 0.030 % + 0.60 Pa 0.030 % + 0.10 Pa 0.20 % + 0.95 Pa 0.20 % + 2.7 Pa 0.0050 % + 100 Pa 0.0050 % + 1.0 kPa</p>	<p>Calibration of devices with an electrical output may be undertaken</p>
<p><u>Hydraulic pressure (gauge)</u></p> <p>Calibration of pressure indicating instruments and gauges</p>	<p>0.7 MPa to 2.8 MPa 2.8 MPa to 28 MPa</p>	<p>0.030 % + 1.7 kPa 0.020 % + 1.7 kPa</p>	



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<p><b>ELECTRICAL CALIBRATION:</b> Electrical 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 standards unless otherwise stated in the remarks column.</p>			
DC VOLTAGE	0 V to 100 mV 100 mV to 1 V 1 V to 10 V 10 V to 100 V 100 V to 1 kV  0 V to 100 mV 100 mV to 1 V 1 V to 20 V 20 V to 200 V 200 V to 1 kV	6.5 $\mu$ V 41 $\mu$ V/V + 2.0 $\mu$ V 36 $\mu$ V/V + 53 $\mu$ V 47 $\mu$ V/V + 740 $\mu$ V 47 $\mu$ V/V + 10 mV  0.0020 % + 5.0 $\mu$ V 0.0010 % + 15 $\mu$ V 0.0010 % + 120 $\mu$ V 0.0010 % + 7.0 mV 0.0010 % + 24 mV	Direct measurement capability suitable for calibrating the outputs of devices submitted for calibration.  These are source values available for the calibration of measuring equipment.
DC RESISTANCE	0 $\Omega$ to 10 $\Omega$ 10 $\Omega$ to 100 $\Omega$ 100 $\Omega$ to 1 k $\Omega$ 1 k $\Omega$ to 10 k $\Omega$ 10 k $\Omega$ to 100 k $\Omega$ 100 k $\Omega$ to 1 M $\Omega$ 1 M $\Omega$ to 10 M $\Omega$  100 $\mu\Omega$ 1 m $\Omega$ 5 m $\Omega$ 10 m $\Omega$ 100 m $\Omega$ 1 $\Omega$  1 $\Omega$ 10 $\Omega$ 100 $\Omega$ 1 k $\Omega$ 10 k $\Omega$ 100 k $\Omega$ 1 M $\Omega$ 10 M $\Omega$ 100 M $\Omega$	130 $\mu\Omega/\Omega$ + 4.7 m $\Omega$ 130 $\mu\Omega/\Omega$ + 12 m $\Omega$ 200 $\mu\Omega/\Omega$ + 120 m $\Omega$ 130 $\mu\Omega/\Omega$ + 1.3 m $\Omega$ 110 $\mu\Omega/\Omega$ + 13 $\Omega$ 950 $\mu\Omega/\Omega$ + 37 $\Omega$ 0.90 % + 1.1 k $\Omega$  0.10 $\mu\Omega$ 0.31 $\mu\Omega$ 1.3 $\mu\Omega$ 1.0 $\mu\Omega$ 20 $\mu\Omega$ 430 $\mu\Omega$  0.016 % 0.0051 % 0.0027 % 0.0020 % 0.0020 % 0.016 % 0.0031 % 0.022 % 0.062 %	Direct measurement capability suitable for calibrating the outputs of devices submitted for calibration.  These are source values available for the calibration of measuring equipment using standard resistors  These are source values available for the calibration of measuring equipment using multi-function calibrator
DC CURRENT	0 A to 10 mA 10 mA to 100 mA 100 mA to 1 A 1 A to 2 A	510 $\mu$ A/A + 240 nA 510 $\mu$ A/A + 6.5 $\mu$ A 1000 $\mu$ A/A + 160 $\mu$ A 1200 $\mu$ A/A + 680 $\mu$ A	Direct measurement capability suitable for calibrating the outputs of devices submitted for calibration.



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Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty ( $k = 2$ )	Remarks
DC CURRENT (continued)	0 A to 200 $\mu$ A 200 $\mu$ A to 2 mA 2 mA to 20 mA 20 mA to 200 mA 200 mA to 2 A 2 A to 20 A	0.0020 % + 25 nA 0.0020 % + 100 nA 0.0010 % + 5.0 $\mu$ A 0.0010 % + 10 $\mu$ A 0.0050 % + 40 $\mu$ A 0.010 % + 600 $\mu$ A	These are source values available for the calibration of measuring equipment.
	10 A to 100 A 100 A to 1000 A	0.080 % + 1.0 mA 0.080 % + 1.0 mA	For calibration of current clamps using a multi turn coil.
AC VOLTAGE	5 mV to 100 mV 100 mV to 1 V 45 Hz to 1 kHz 100 mV to 1 V 1kHz to 30 kHz 1 V to 10 V 45 Hz to 1 kHz 1 V to 10 V 1 kHz to 30 kHz 10 V to 100 V 45 Hz to 1 kHz 10 V to 100 V 1 kHz to 30 kHz 100 V to 750 V 45 Hz to 10 kHz	660 $\mu$ V/V + 42 $\mu$ V 620 $\mu$ V/V + 310 $\mu$ V 620 $\mu$ V/V + 320 $\mu$ V/V 400 $\mu$ V/V + 37 mV 1200 $\mu$ V/V + 5.1 mV 480 $\mu$ V/V + 260 mV 620 $\mu$ V/V + 58 mV 660 ppm + 240 mV	Direct measurement capability suitable for calibrating the outputs of devices submitted for calibration.
	45 Hz to 5 kHz: 1 mV to 200 mV 200 mV to 2 V 10 V to 20 V 20 V to 200 V 200 V to 1000 V	0.0050 % + 70 $\mu$ V 0.010 % + 820 $\mu$ V 0.010 % + 12 mV 0.010 % + 120 mV 0.010 % + 450 mV	These are source values available for the calibration of measuring equipment.
AC RESISTANCE	At 50 Hz: 0 $\Omega$ to 0.3 $\Omega$ 0.3 $\Omega$ to 10 $\Omega$ 10 $\Omega$ to 100 $\Omega$ 100 $\Omega$ to 1 k $\Omega$	0.10 % + 20 m $\Omega$ 0.10 % + 25 m $\Omega$ 0.20 % + 200 m $\Omega$ 0.30 % + 250 m $\Omega$	Calibration of loop impedance meters.
AC CURRENT	45 Hz to 1 kHz: 1 $\mu$ A to 1 A 1 A to 2 A	0.26 % + 400 $\mu$ A 0.47 % + 12 mA	Direct measurement capability suitable for calibrating the outputs of devices submitted for calibration.
	45 Hz to 1 kHz: 25 $\mu$ A to 200 $\mu$ A 200 $\mu$ A to 2 mA 2 mA to 20 mA 20 mA to 200 mA 200 mA to 2 A 2 A to 20 A	0.020 % + 500 nA 0.015 % + 4.0 $\mu$ A 0.010 % + 40 $\mu$ A 0.015 % + 500 $\mu$ A 0.015 % + 5.0 mA 0.020 % + 15 mA	These are source values available for the calibration of measuring equipment.
	45 Hz to 400 Hz 10 A to 100 A 100 A to 1000 A	0.10 % + 15 mA 0.10 % + 120 mA	For calibration of current clamps.



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Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty (k = 2)		Remarks	
		Without Cold Junction Compensation	Including Cold Junction Compensation		
RCD TRIP CURRENT	0 mA to 300 mA	0.30 % + 5.0 mA		Repetitive signals suitable for calibrating oscilloscope time bases.	
RCD TRIP TIME	0 s to 400 ms 400 ms to 1 s	0.30 % + 5.0 ms 0.30 % + 10 ms			
FREQUENCY	1 Hz to 100 kHz 100 kHz, 1 MHz, 5 MHz and 10 MHz	100 µHz  1.0 part in 10 <sup>7</sup>			
TIME INTERVAL	1 µs 5 µs 20 µs 500 µs 1 ms 5 ms 10 ms 50 ms 100 ms	0.020 µs 0.10 µs 0.10 µs 11 µs 0.020 ms 0.10 ms 0.20 ms 1.1 ms 2.1 ms			
Elapsed time, single event					
Manually triggered devices	0 s to 24 Hours	3.5 µs/s + 2.0 ms			
Electronically triggered devices	1 s to 24 hours	3.5 µs/s			
ELECTRICAL CALIBRATION OF TEMPERATURE INDICATORS AND CALIBRATORS	Type                      Range °C				Methods consistent with Euramet CG-11
Thermocouple indicators	T                      -240 to -100 -100 to 0 0 to 400	0.70 °C 0.70 °C 0.60 °C	0.80 °C 0.80 °C 0.80 °C		
	K                      -200 to -100 -100 to 0 0 to 1370	0.80 °C 0.70 °C 0.60 °C	0.90 °C 0.80 °C 0.80 °C		
	S                      0 to 1700	0.80 °C	0.90 °C		
	R                      -50 to 0 0 to 1700	1.2 °C 0.70 °C	1.3 °C 0.90 °C		
	N                      -250 to 0 0 to 1300	0.62 °C 0.60 °C	0.80 °C 0.80 °C		
	J                      -180 to 0 0 to 700	0.60 °C 0.60 °C	0.80 °C 0.80 °C		
	E                      0 to 800 B                      0 to 1800	0.60 °C 0.80 °C	0.80 °C 0.90 °C		
RTD indicators	Pt 100                      -200 to +800	0.050 °C			
Reference junction compensation	15 °C to 25 °C	0.50 °C			

END



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**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:  $Q[a, b] = [a^2 + b^2]^{1/2}$