

Schedule of Accreditation

issued by

United Kingdom Accreditation Service

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

 <p>0625</p> <p>Accredited to ISO/IEC 17025:2005</p>	Labcal Ltd	
	Issue No: 032	Issue date: 05 December 2011
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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
FLOW			
Gas - Flow-rate and Quantity passed	0.024 ml/min to 0.5 ml/min 0.5 ml /min to 8 l/min 8 l/min to 1200 l/min 1200 l/min to 12983 l/min	1.6 % + 0.0016 ml/min 0.15 % 0.20 % 0.44 %	Calibrations of pressure and flow devices with an electrical output may be undertaken. Calibration medium Air Other gases may be used up to 300 l/min
Water Mass, Volume, Flow rate and Quantity passed	0.5 ml/min to 500 ml/min 500 ml/min to 2 l/min 2 l/min to 500 l/min	0.25 % 0.32 % 0.25 %	
AIR VELOCITY			
Calibration of Anemometers and Pitot Tubes by comparison	0.11 m/s to 5 m/s 5 m/s to 20 m/s 20 m/s to 30 m/s	0.38 % + 0.14 m/s 1.2 % + 0.13 m/s 1.2 % + 0.14 m/s	Anemometer up to 125 mm diameter can be calibrated.
PRESSURE			
<u>Hydraulic pressure (gauge)</u>			
Calibration of pressure indicating instruments and gauges	500 kPa to 7 MPa 7 MPa to 140 MPa	0.010 % 0.0080 %	
<u>Hydraulic pressure (absolute)</u>			
Calibration of pressure indicating instruments and gauges	600 kPa to 7 MPa 7 MPa to 140 MPa	0.010 % + 10 Pa 0.0080 %	



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PRESSURE			
<u>Gas pressure (gauge)</u>			
Calibration of pressure indicating instruments and gauges	- 100 kPa to 0 Pa 0 Pa to 3 kPa 3 kPa to 4.7 kPa 4.7 kPa to 400 kPa 400 kPa to 690 kPa 690 kPa 17.4 MPa	0.010 % + 2.9 Pa 0.028% + 0.070 Pa 0.028 % + 0.68 Pa 0.010 % + 2.9 Pa 0.010 % + 450 Pa 0.0060 %	
"Pressure equivalent" Calibration of dead weight testers (Pressure balance supplied with associated mass set)	- 100 kPa to 500 kPa 500 kPa to 4 MPa 4 MPa to 8.2 MPa	0.010 % + 2.9 Pa 0.010 % + 450 Pa 0.0090 % + 330 Pa	
<u>Gas pressure (absolute)</u>			
Calibration of pressure indicating instruments and gauges	80 kPa to 115 kPa	0.010 % + 1.0 Pa	Absolute pressure calibrations can be undertaken using associated barometric pressure measurement correction. The uncertainties quoted will be increased by 10 Pa
ELECTRICAL			
DC Voltage			
	0 V to 120 mV 120 mV to 1.2 V 1.2 V to 12 V 12. V to 120 V	21 ppm + 5.0 μ V 21 ppm + 31 μ V 21 ppm + 65 μ V 21 ppm + 300 μ V	
DC Current			
	0 A to 12 mA 12 mA to 120 mA	110 ppm + 3.0 μ A 110 ppm + 6.0 μ A	
DC Resistance			
	10 Ω to 1.2 k Ω 1.2 k Ω to 12 k Ω	12 ppm + 13 m Ω 13 ppm + 130 m Ω	
FREQUENCY			
	1 Hz to 50 kHz	0.0020 % + 10 μ Hz	
TIME INTERVAL			
Elapsed time, single event Stop watches and timers	5 s to 24 Hours	20 ms	



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ELECTRICAL CALIBRATION OF TEMPERATURE INDICATORS AND SIMULATORS			
Base Metal	- 200 °C to 1000 °C 1000 °C to 1372 °C	0.50 °C 0.60 °C	Including Reference Junction Compensation
Noble Metal	0 °C to 100 °C 100 °C to 1768 °C	0.90 °C 0.70 °C	
Reference Junction Temperature	Nominal Zero Ambient 16 °C to 25 °C	0.10 °C 0.30 °C	
PRT simulation (Pt 50 to 1000)	- 200 °C to 200 °C 200 °C to 600 °C 600 °C to 850 °C	0.16 °C 0.26 °C 0.36 °C	
TEMPERATURE			
Resistance thermometers	-30 °C to +140 °C	0.13 °C	
Thermocouples	-30 °C to +140 °C	0.25 °C	
Temperature indicators with probes			
Resistance thermometers	-30 °C to 0 °C 0 °C to 70 °C 70 °C to +140 °C	0.15 °C 0.10 °C 0.15 °C	
Thermocouples	-30 °C to +140 °C	0.25 °C	
Temperature probes in air	10 °C to 40 °C	0.15 °C	
HUMIDITY			
Relative humidity measuring instruments	10 %rh to 90 %rh 10 °C to 40 °C	0.3 %rh + 1.9 % of reading	Dependant on probe length
Temperature probes built into humidity meters	10 °C to 40 °C	0.15 °C	Dependant on probe length
END			