


Schedule of Accreditation

issued by

United Kingdom Accreditation Service

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

 <p>0318</p> <p>Accredited to ISO/IEC 17025:2005</p>	<h3>CoMech Metrology Limited</h3> <p>Issue No: 033 Issue date: 29 October 2018</p>	
	<p>Metrology Division Calibration House Castings Road Derby DE23 8YL</p>	<p>Contact: Mr K Pallett Tel: +44 (0)1332 867 700 E-Mail: sales@comech.co.uk Website: www.comech.co.uk</p>
<p>Calibration performed at the above address only</p>		

DETAIL OF ACCREDITATION

Measured Quantity Instrument or Gauge	Range	Calibration and Measurement Capability (CMC) Expressed as an Expanded Uncertainty ($k=2$)	Remarks
<p>RANGE IN MILLIMETRES AND UNDERTAINTY IN MICROMETRES UNLESS OTHERWISE STATED</p>			
<p>MEASURING INSTRUMENTS AND MACHINES</p>			<p>NOTES</p>
<p>Micrometers External Internal Depth</p>	<p>BS 870:2008, 0 to 100 BS 959:2008, 0 to 600 BS 6468:2008, 0 to 300</p>	<p>Heads 2.0 Setting and extension rods 1.0 + (5.0 x length in m)</p>	<p>Calibrations may be made in metric or imperial units.</p>
<p>Vernier gauges Caliper Height Depth Dial gauge type Digital type</p>	<p>BS 887:2008 0 to 600 BS 1643:2008, 0 600 BS 6365:2008, 0 to 300 0 to 300 0 to 300</p>	<p>Overall performance: 10 + (30 x length in m)</p>	
<p>Dial gauges and dial test indicators</p>	<p>0 to 50 BS 907:2008 and BS 2795:1981</p>	<p>1.0</p>	
<p>Surface texture of Gauges (excluding surface texture standards)</p>	<p>As BS 1134:Part 1:1988</p>	<p>7.0 % (minimum 1.0 $\mu\text{m Ra}$)</p>	
<p>Length gauges, flat and spherical ended (excluding length bars)</p>	<p>25 to 1200</p>	<p>1.0 + (5.0 x length in m)</p>	
<p>Plain plug gauges parallel</p>	<p>0 to 100</p>	<p>1.6</p>	
<p>PRESSURE</p>			
<p><u>Gas pressure (gauge)</u></p>			
<p>Calibration of pressure measuring instruments and gauges.</p>	<p>- 80 kPa to 2 MPa</p>	<p>0.48 kPa</p>	
<p><u>Gas pressure (absolute)</u></p>			
<p>Calibration of pressure measuring instruments and gauges.</p>	<p>70 kPa to 2 MPa</p>	<p>0.48 kPa</p>	



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Hydraulic pressure (gauge) Calibration of pressure measuring instruments and gauges.	300 kPa to 5.5 MPa 5 MPa to 110 MPa	0.050 % 0.057 %	
TORQUE Hand torque tools	As BS EN ISO 6789 :2003 (withdrawn) 5 N·m to 1356 N·m	1.6 %	Calibrations may also be given in lbf.in and lbf.ft.
ELECTRICAL MEASUREMENTS DC Voltage High Voltage DC Current Generation only above 10 A Resistance	0 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 1 kV to 40 kV 0 µA to 100 µA 100 µA to 1 mA 1 mA to 10 mA 10 mA to 100 mA 100 mA to 1 A 1 A to 10.5 A 10.5 A to 20 A 20 A to 105 A 105 A to 525 A 525 A to 1000 A 0 Ω to 10 Ω 10 Ω to 100 Ω 100 Ω to 1 kΩ 1 kΩ to 10 kΩ 10 kΩ to 100 kΩ 100 kΩ to 1 MΩ 1 MΩ to 100 MΩ 10 MΩ to 100 MΩ 100 MΩ to 1.1 GΩ 1 GΩ to 2 GΩ	10 ppm + 860 nV 9.2 ppm + 3.5 µV 9.2 ppm + 25 µV 12 ppm + 340 µV 18 ppm + 3.4 mV 0.70 % + 15 V 23 ppm + 3.3 nA 23 ppm + 21 nA 23 ppm + 200 nA 40 ppm + 2.3 µA 130 ppm + 43 µA 740 ppm + 1.2 mA 0.45 % + 26 mA 750 ppm + 12 mA 750 ppm + 60 mA 0.50 % + 1.3 A 17 ppm + 180 µΩ 14 ppm + 1.0 mΩ 12 ppm + 58 mΩ 12 ppm + 84 mΩ 12 ppm + 1.0 Ω 17 ppm + 61 Ω 58 ppm + 320 Ω 580 ppm + 32 kΩ 0.58 % + 720 kΩ 21 MΩ	-Simulation using a multi - turn Coil



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ELECTRICAL MEASUREMENTS (cont'd)			
AC Voltage	1 mV to 100 mV 50 Hz to 1 kHz 1 kHz to 10 kHz 10 kHz to 50 kHz	700 ppm + 17 μ V 240 ppm + 16 μ V 0.16 % + 67 μ V	
	100 mV to 1 V 40 Hz to 1 kHz 1 kHz to 10 kHz 10 kHz to 50 kHz	710 ppm + 130 μ V 250 ppm + 130 μ V 0.18 % + 1.5 mV	
	1 V to 10 V 40 Hz to 1 kHz 1 kHz to 10 kHz 10 kHz to 50 kHz	700 ppm + 1.3 mV 250 ppm + 1.3 mV 0.18 % + 4.9 mV	
	10 V to 100 V 40 Hz to 1 kHz 1 kHz to 10 kHz 10 kHz to 50 kHz	700 ppm + 13 mV 360 ppm + 12 mV 0.18 % + 50 mV	
	100 V to 750 V 40 Hz to 1 kHz 1 kHz to 10 kHz	940 ppm + 240 mV 0.18 % + 460 mV	
	750 V to 1050 V 10 Hz to 3 kHz 3 kHz to 10 kHz 10 kHz to 20 kHz	940 ppm + 160 mV 9304ppm + 250 mV 0.14 % + 370 mV	
High Voltage	1 kV to 40 kV 50 Hz to 60 Hz	1.5 % + 45 V	
AC Current	1 μ A to 100 μ A 40 Hz to 1 kHz	0.18 % + 38 nA	
	100 μ A to 1 mA 40 Hz to 1 kHz	0.46 % + 270 nA	
	1 mA to 10 mA 40 Hz to 1 kHz 1 kHz to 5 kHz	0.47 % + 2.8 μ A 0.035 % + 5.3 μ A	
	10 mA to 100 mA 40 Hz to 1 kHz	0.46 % + 15 μ A	
	100 mA to 1 A 40 Hz to 1 kHz	0.46 % + 340 μ A	
	1 A to 3.2 A 10 Hz to 3 kHz 3 kHz to 10 kHz	0.12 % + 560 μ A 0.13 % + 3.0 mA	



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ELECTRICAL MEASUREMENTS (cont'd)			
AC Current	3.2 A to 10.5 A 10 Hz to 3 kHz 3 kHz to 10 kHz	0.23 % + 4.4 mA 0.58 % + 12 mA	
Generation only above 10 A	10.5 A to 105 A 10 Hz to 400 Hz 105 A to 525 A 10 Hz to 400 Hz	0.28 % + 44 mA 0.28 % + 220 mA	-Simulation using a multi -turn coil
Capacitance 1 kHz	0.5 nF to 4 nF 4 nF to 40 nF 40 nF to 400 nF 400 nF to 4 µF 4 µF to 40 µF 40 µF to 400 µF 400 µF to 4 mF 4 mF to 40 mF	0.50 % + 18 pF 0.40 % + 36 pF 0.40 % + 190 pF 0.50 % + 580 pF 0.60 % + 20 nF 0.60 % + 190 nF 0.60 % + 59 µF 0.20 % + 70 µF	
17th Edition capability			
Insulation Resistance	10 kΩ to 40 kΩ 40 kΩ to 200 kΩ 200 kΩ to 10 MΩ 10 MΩ to 1 GΩ 1 GΩ to 2 GΩ	200 ppm + 15 Ω 250 ppm + 15 Ω 500 ppm + 590 Ω 0.22 % + 120 kΩ 0.52 % + 120 kΩ	
Insulation Resistance: test current	0 mA to 9.9 mA	76 µA	
Continuity resistance	100 mΩ to 400 mΩ 400 mΩ to 5 Ω 5 Ω to 30 Ω 30 Ω to 200 Ω 200 Ω to 2 kΩ 2 kΩ to 10 kΩ	1.0 % + 1.5 mΩ 0.80 % + 8.3 mΩ 0.12 % 0.11 % 0.11 % 0.17 %	
Continuity resistance current	50 mA to 400 mA	21 %	
Voltage Output	3 V to 600 V 3 V 50 Hz to 600 V 50 Hz	0.15 % 0.18 %	
Voltage measurement	180 mV to 1 kV 130 mV 50 Hz to 1 kV 50 Hz	0.060 % + 180 mV 0.10 % + 130 mV	
High Voltage 50 Hz	1 kV to 7 kV 10 kV to 25 kV	0.25 % + 24 V 0.25 % + 120 V	
High Voltage DC	1 kV to 10 kV 10 kV to 25 kV	0.060 % + 40 V 0.060 % + 120 V	



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High Voltage Current 50 Hz	300 μ A	0.36 % + 3.4 μ A	
	3 mA	0.24 % + 8.5 μ A	
	30 mA	0.58 % + 27 μ A	
	300 mA	0.23 % + 180 μ A	
High Voltage Current DC	300 μ A	0.36 % + 3.4 μ A	
	3 mA	0.24 % + 8.5 μ A	
	30 mA	0.58 % + 25 μ A	
	300 mA	0.23 % + 180 μ A	
Loop impedance 50 Hz	10 m Ω to 90 m Ω	3.7 % + 18 m Ω	
	90 m Ω to 320 m Ω	1.8 % + 18 m Ω	
	320 m Ω to 490 m Ω	0.90 % + 23 m Ω	
	490 m Ω to 1 Ω	0.60 % + 24 m Ω	
	1 Ω to 5 Ω	0.30 % + 43 m Ω	
	5 Ω to 500 Ω	0.10 % + 200 m Ω	
RCD Trip Current 50 Hz	500 Ω to 1.8 k Ω	0.10 % + 24 Ω	
	1 mA to 30 mA	0.20 % + 38 μ A	
	30 mA to 300 mA	0.20 % + 1.4 mA	
RCD Trip time	300 mA to 3 A	0.20 % + 11 mA	
	0 ms to 5 s	0.10 % + 4.7 ms	
PAT Insulation resistance	10 k Ω to 40 k Ω	200 ppm + 15 Ω	
	40 k Ω to 200 k Ω	250 ppm + 15 Ω	
	200 k Ω to 10 M Ω	500 ppm + 590 Ω	
	10 M Ω to 1 G Ω	0.22 % + 120 k Ω	
	1 G Ω to 2 G Ω	0.52 % + 120 k Ω	
Earth Bond resistance	0 Ω to 10 Ω	0.30 % + 40 m Ω	
	10 Ω to 1 k Ω	0.11 % + 200 m Ω	
Earth bond current	100 μ A to 100 mA	4.0 mA	
	100 mA to 20 A	0.53 % + 32 mA	
Leakage current	1 μ A to 30 mA	0.52 % + 20 μ A	



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ELECTRICAL MEASUREMENTS (cont'd)			
Temperature simulation Thermocouple type			
K	-180 °C to 0 °C	0.16 °C	Excluding internal reference junction compensation
	0 °C to 1300 °C	0.14 °C	
J	-200 °C to 0 °C	0.15 °C	Including internal reference junction compensation
	0 °C to 1190 °C	0.13 °C	
K	-180 °C to 0 °C	0.64 °C	Including internal reference junction compensation
	0 °C to 1300 °C	0.63 °C	
J	-200 °C to 0 °C	0.63 °C	Including internal reference junction compensation
	0 °C to 1190 °C	0.63 °C	
Resistance thermometer simulation			
PT 100	-200 °C to 0 °C	0.21 °C	
	0 °C to 850 °C	0.21 °C	
END			