### **Schedule of Accreditation**

issued by

## **United Kingdom Accreditation Service**

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



0125

Accredited to ISO/IEC 17025:2017

#### **Universal Instrument Services Ltd**

Issue No: 077 Issue date: 20 October 2025

Standards Laboratory Contact: Hazel Horn

 14 Rose Way
 Tel: +44 (0)116 275 0123

 Blaby
 Fax: +44 (0)116 275 0262

 Leicester
 E-Mail: sales@uiscal.co.uk

LE8 4BY Website: www.uiscal.com

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 Standards Laboratory 14 Rose Way Blaby Leicester LE8 4BY | Local contact Hazel Horn  Tel: +44 (0)116-275 0123 Fax: +44 (0)116-275 0262 Email: sales@uiscal.co.uk Website: www.uiscal.com | Dimensional Electrical Pressure Temperature Humidity Torque | Permanent<br>Laboratory |

#### Site activities performed away from the locations listed above:

| Location details   | Activity                                    | Location         |
|--|---|------------------|
| Calibrations may be performed in an air-conditioned vehicle taken to the customers' sites or in suitable areas within the customers' premises.  The customers' site or premises must be suitable for the nature of the particular calibrations undertaken and will be the subject of contract review arrangements between the laboratory and the customer. | Dimensional Electrical Pressure Temperature | Site Calibration |

Assessment Manager: GP Page 1 of 17



## **Schedule of Accreditation** issued by United Kingdom Accreditation Service 2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

#### **Universal Instrument Services Ltd**

Issue No: 077 Issue date: 20 October 2025

#### Calibration performed by the Organisation at the locations specified

Calibration and Measurement Capability (CMC)

| Measured Quantity<br>Instrument or Gauge                                     | Range   | Expanded<br>Measurement<br>Uncertainty ( <i>k</i> = 2)                              | Remarks             | Location<br>Code     |
|--|---|---|---------------------|----------------------|
| DIMENSIONAL CALIBRATION  |   |   |                     |                      |
| RANGES IN MILLII   | METRES AND UNCERTAINTIES IN   | I MICROMETRES UNLESS STAT   | ED OTHERWISE        |                      |
| LENGTH   |   |   | By comparison with  |                      |
| Plain plug gauges (parallel)<br>Cylindrical setting standards<br>and rollers | 0.2 to 10<br>10 to 50<br>50 to 100<br>100 to 150<br>150 to 200  | 1.0<br>1.0<br>1.5<br>2.0<br>2.0   | reference standards |                      |
| Plain ring gauges (parallel)   | 1.5 to 10<br>10 to 50<br>50 to 100<br>100 to 150<br>150 to 200  | 1.0<br>1.0<br>1.5<br>1.7<br>2.5   |                     |                      |
| Length gauges, flat and spherical ended                                      | 0 to 1000<br>Parallelism  | 1.0 + (8.0 x length in m)<br>0.5  |                     |                      |
| Measuring Instruments  |   |   |                     |                      |
| Micrometers<br>External  | BS 870:2008 - 0 to 600<br>Traverse of micrometer screw<br>Flatness of anvils<br>Parallelism of anvils<br>Setting rods | 2.0 between any points<br>0.20<br>0.25<br>1.0 + (8.0 x length in m)                 |                     | Permanent Laboratory |
| Internal   | BS 959:2008<br>0 to 900   | Heads: 2.0 between any points Setting and extension rods: 1.0 + (8.0 x length in m) |                     |                      |
| Depth  | BS 6468:2008<br>0 to 300  | Heads: 2.0 between any points Setting and extension rods: 1.0 + (8.0 x length in m) |                     |                      |
| Micrometer heads   | BS 1734:1951<br>0 to 50<br>Squareness   | 1.0<br>0.5  |                     |                      |
| Bore micrometers (three points)  | 3 to 50 diameter<br>50 to 100<br>100 to 150   | 3.0<br>3.5<br>5.0   | Using setting rings |                      |

Assessment Manager: GP Page 2 of 17



## **Schedule of Accreditation** issued by United Kingdom Accreditation Service 2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

#### **Universal Instrument Services Ltd**

Issue No: 077 Issue date: 20 October 2025

#### Calibration performed by the Organisation at the locations specified

| Measured Quantity<br>Instrument or Gauge                 | Range  | Expanded<br>Measurement<br>Uncertainty ( <i>k</i> = 2)                              | Remarks  | Location<br>Code     |
|--|--|---|--|----------------------|
| RANGES IN MILLII   | METRES AND UNCERTAINTIES IN  | MICROMETRES UNLESS STAT   | ED OTHERWISE   |                      |
| LENGTH (continued)                                       |  |   |  |                      |
| Vernier/digital gauges<br>Caliper,                       | BS 887:2008 - 0 to 1000<br>Linear error<br>Flatness<br>Parallelism<br>Squareness<br>Coplanar of jaws | 10 + (30 x length in m)<br>2.5<br>3.5<br>5.0<br>15.0                                |  |                      |
| Height   | As ISO 13225:2012<br>BS 1643:2008<br>0 to 1000   | 15 + (10 x length in m)   |  |                      |
| Depth  | BS 6365:2008<br>0 to 600   | 10 + (30 x length in m)   |  |                      |
| Dial gauges and dial test indicators                     | BS 907:2008<br>0 to 50   | 1.0   |  | Permar               |
|  | BS 2795:1981<br>0 to 1   | 0.40  |  | Permanent Laboratory |
| Height setting micrometer                                | 0 to 300   | Heads 1.0<br>Stepped column<br>1.0 + (5.0 x length in m)<br>Overall performance 3.0 |  | oratory              |
| Riser blocks for above                                   | 150<br>300   | 2.5<br>3.0  |  |                      |
| Protractors  | BS 1685:2008<br>0° to 360°   | 2.0 minutes of arc 6.0 minutes of arc   | 1 minute of arc resolution instruments 5 minute of arc resolution instruments  |                      |
| Feeler gauges  | BS 957:2008<br>0.02 to 1.00  | 3.0   |  |                      |
| Receiver, position and profile gauges, jigs and fixtures | 0 to 500 x 400 x 400<br>0° to 360°   | 3.0 + (10 x length in m) µm<br>2 minutes of arc<br>See Note 1                       | Notes 1. Features and associated parts of these gauges / fixtures can be measured to the uncertainties given for equivalent items listed in this schedule. |                      |
| Profile projectors                                       | 10 to 100 magnifications<br>Angular<br>Linear 0 to 50<br>Linear 50 to 300                            | 125 at the screen,<br>5.0 minutes of arc<br>2.5<br>6.0                              |  | Site<br>Calibration  |

Assessment Manager: GP Page 3 of 17



# Schedule of Accreditation issued by United Kingdom Accreditation Service 2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

.

#### **Universal Instrument Services Ltd**

Issue No: 077 Issue date: 20 October 2025

#### Calibration performed by the Organisation at the locations specified

| Measured Quantity<br>Instrument or Gauge                              | Range   | Expanded<br>Measurement<br>Uncertainty ( <i>k</i> = 2)   | Remarks   | Location<br>Code     |
|---|---|--|---|----------------------|
| TORQUE CALIBRATION  Wrenches and Screwdrivers  ELECTRICAL CALIBRATION | BS EN 6789-2:2017<br>0.1 N·m to 1000 N·m<br>BS EN 6789:2003 (withdrawn)<br>0.1 N·m to 1000 N·m  | 1.0 %  | The uncertainty quoted is for both the application of the calibration torque and the characteristics of the device being calibrated. Calibrations may also be given in lbf·in and lbf·ft. |                      |
| DC RESISTANCE   |   |  |   |                      |
| Measurement   | 0 $\Omega$ to 20 $\Omega$<br>20 $\Omega$ to 200 $\Omega$<br>200 $\Omega$ to 2 k $\Omega$<br>2 k $\Omega$ to 20 k $\Omega$<br>20 k $\Omega$ to 200 k $\Omega$<br>200 k $\Omega$ to 2 M $\Omega$<br>2 M $\Omega$ to 20 M $\Omega$<br>20 M $\Omega$ to 20 M $\Omega$ | $\begin{array}{c} 25 \; \mu\Omega/\Omega + 20 \; \mu\Omega \\ 16 \; \mu\Omega/\Omega + 60 \; \mu\Omega \\ 15 \; \mu\Omega/\Omega + 0.60 \; m\Omega \\ 15 \; \mu\Omega/\Omega + 6.0 \; m\Omega \\ 16 \; \mu\Omega/\Omega + 60 \; m\Omega \\ 27 \; \mu\Omega/\Omega + 1.4 \; \Omega \\ 50 \; \mu\Omega/\Omega + 80 \; \Omega \\ 0.040 \; \% + 9.0 \; k\Omega \\ \end{array}$ | Using digital multimeter.   |                      |
| Generation Specific Values  | 100 μΩ<br>1 mΩ, 10 mΩ and 100 mΩ<br>1 Ω<br>10 Ω<br>100 Ω<br>1 kΩ<br>10 kΩ<br>100 kΩ<br>1 MΩ<br>10 MΩ<br>100 MΩ  | $\begin{array}{c} 0.030~\% \\ 0.010~\% \\ 6.0~\mu\Omega/\Omega \\ 6.0~\mu\Omega/\Omega \\ 6.0~\mu\Omega/\Omega \\ 6.0~\mu\Omega/\Omega \\ 6.0~\mu\Omega/\Omega \\ 6.0~\mu\Omega/\Omega \\ 15~\mu\Omega/\Omega \\ 15~\mu\Omega/\Omega \\ 140~\mu\Omega/\Omega \end{array}$  | Known values of DC resistance for application to resistance measuring instruments, in a two terminal or four terminal configuration, as appropriate.                                      | Permanent Laboratory |
|   | 100 MΩ<br>1 GΩ<br>10 GΩ<br>100 GΩ<br>1 TΩ   | 0.050 %<br>0.50 %<br>0.50 %<br>2.0 %<br>3.0 %  | Applied voltages in the range 100 V to 500 V  |                      |
|   | 10 MΩ<br>100 MΩ<br>1 GΩ<br>10 GΩ  | 0.60 %<br>0.60 %<br>0.60 %<br>0.65 %   | Applied voltages up to 5 kV   |                      |
| DC VOLTAGE<br>Voltage Reference Values                                | 1 V<br>10 V   | 3.1 μV/V<br>2.5 μV/V   | For calibration of voltage references of suitable stability.  |                      |

Assessment Manager: GP Page 4 of 17



## **Schedule of Accreditation** issued by United Kingdom Accreditation Service 2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

#### **Universal Instrument Services Ltd**

Issue No: 077 Issue date: 20 October 2025

#### Calibration performed by the Organisation at the locations specified

| Measured Quantity<br>Instrument or Gauge | Range   | Expanded<br>Measurement<br>Uncertainty ( <i>k</i> = 2)  | Remarks   | Location<br>Code     |
|--|---|---|---|----------------------|
| DC VOLTAGE (continued)                   |   |   |   |                      |
| Measurement                              | 0 mV to 200 mV<br>200 mV to 2 V<br>2 V to 20 V<br>20 V to 200 V<br>200 V to 1000 V<br>1 kV to 15 kV<br>15 kV to 40 kV | 12 μV/V + 1.0 μV<br>9.0 μV/V + 1.0 μV<br>8.0 μV/V + 8.0 μV<br>13 μV/V + 80 μV<br>13 μV/V + 0.80 mV<br>0.30 % + 1.0 V<br>0.30 % + 10 V | Using digital multimeter.  Using high voltage divider. Generation of DC voltages for this range can also be undertaken. |                      |
| Generation                               | 0 mV to 220 mV<br>220 mV to 2.2 V<br>2.2 V to 22 V<br>22 V to 220 V<br>220 V to 1100 V                                | 12 μV/V + 1.0 μV<br>10 μV/V + 1.5 μV<br>10 μV/V + 10 μV<br>10 μV/V + 120 μV<br>12 μV/V + 0.80 mV                                      | Known values of DC voltage for application to voltage measuring instruments.  |                      |
| DC CURRENT                               |   |   |   |                      |
| Measurement                              | 0 mA to 1 mA<br>1 mA to 10 mA<br>10 mA to 100 mA<br>100 mA to 3 A<br>3 A to 10 A<br>10 A to 100 A                     | 19 μA/A + 0.16 nA<br>20 μA/A + 13 nA<br>20 μA/A + 0.16 μA<br>60 μA/A + 13 μA<br>100 μA/A + 16 μA<br>80 μA/A + 160 μA                  | Using digital multimeter and current shunts   | Permanent Laboratory |
| Generation                               | 10 μA to 220 μA<br>220 μA to 2.2 mA<br>2.2 mA to 22 mA<br>22 mA to 220 mA<br>220 mA to 2.2 A<br>2.2 A to 100 A        | 70 μA/A + 11 nA<br>70 μA/A + 12 nA<br>70 μA/A + 120 nA<br>100 μA/A + 1.2 μA<br>180 μA/A + 32 μA<br>300 μA/A + 21 mA                   | Known values of DC current for application to current measuring instruments.  | boratory             |
|  | 100 A to 2 kA   | 0.030 % + 100 mA  | Using multi-turn coil technique; for the calibration of clamp-on ammeters.  |                      |
| AC RESISTANCE                            |   |   |   |                      |
| Specific Values                          | 50 Hz 0.2 $\Omega$ , 0.5 $\Omega$ , 1 $\Omega$ , 5 $\Omega$ , 47 $\Omega$ , 100 $\Omega$ and 1 k $\Omega$             | 0.10 % + 0.010 Ω  | For the calibration of loop testers   |                      |
|  | 1 Ω<br>100 Hz to 1 kHz<br>10 kHz  | 0.40 %<br>0.60 %  | Resistance values available for the calibration of resistance measuring devices using four terminal                     |                      |
|  | 10 Ω<br>100 Hz to 1 kHz<br>10 kHz   | 0.25 %<br>0.40 %  | pair connections.   |                      |

Assessment Manager: GP Page 5 of 17



## **Schedule of Accreditation** issued by United Kingdom Accreditation Service 2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

#### **Universal Instrument Services Ltd**

Issue No: 077 Issue date: 20 October 2025

#### Calibration performed by the Organisation at the locations specified

| Measured Quantity<br>Instrument or Gauge | Range   | Expanded<br>Measurement<br>Uncertainty ( <i>k</i> = 2)        | Remarks                   | Location<br>Code     |
|--|---|---|---------------------------|----------------------|
| AC RESISTANCE (continued)                |   |   |                           |                      |
| Specific values (continued)              | 100 Ω<br>100 Hz to 1 kHz<br>10 kHz  | 0.15 %<br>0.40 %  |                           |                      |
|  | 1 kΩ<br>100 Hz to 1 kHz<br>10 kHz   | 0.15 %<br>0.20 %  |                           |                      |
|  | 10 kΩ<br>100 Hz to 1 kHz<br>10 kHz  | 0.15 %<br>0.20 %  |                           |                      |
|  | 100 kΩ<br>100 Hz to 10 kHz  | 0.20 %  |                           |                      |
|  | 1 MΩ<br>100 Hz to 10 kHz  | 0.30 %  |                           |                      |
|  | 10 MΩ<br>100 Hz to 1 kHz  | 1.3 %   |                           | Perr                 |
| Other Values                             | 10 mΩ to 1.1 Ω<br>50 Hz   | 0.10 % + 0.50 mΩ  |                           | Permanent Laboratory |
| AC VOLTAGE                               |   |   |                           | _abor                |
| Measurement                              | 20 mV to 200 mV<br>50 Hz to 10 kHz<br>10 kHz to 30 kHz<br>30 kHz to 100 kHz | 290 μV/V + 4.0 μV<br>530 μV/V + 8.0 μV<br>930 μV/V + 20 μV    | Using digital multimeter. | atory                |
|  | 200 mV to 2 V<br>50 Hz to 10 kHz<br>10 kHz to 30 kHz<br>30 kHz to 100 kHz   | 200 μV/V + 20 μV<br>300 μV/V + 40 μV<br>620 μV/V + 0.20 mV    |                           |                      |
|  | 2 V to 20 V<br>50 Hz to 10 kHz<br>10 kHz to 30 kHz<br>30 kHz to 100 kHz     | 190 μV/V + 0.20 mV<br>300 μV/V + 0.40 mV<br>620 μV/V + 2.0 mV |                           |                      |
|  | 20 V to 200 V<br>50 Hz to 10 kHz<br>10 kHz to 30 kHz<br>30 kHz to 100 kHz   | 200 μV/V + 2.0 mV<br>310 μV/V + 4.0 mV<br>650 μV/V + 20 mV    |                           |                      |
|  | 200 V to 300 V<br>50 Hz to 10 kHz   | 200 μV/V + 20 mV  |                           |                      |

Assessment Manager: GP Page 6 of 17



## **Schedule of Accreditation** issued by United Kingdom Accreditation Service 2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

#### **Universal Instrument Services Ltd**

Issue No: 077 Issue date: 20 October 2025

#### Calibration performed by the Organisation at the locations specified

| Measured Quantity<br>Instrument or Gauge | Range   | Expanded<br>Measurement<br>Uncertainty ( <i>k</i> = 2) | Remarks  | Location<br>Code     |
|--|---|--|--|----------------------|
| AC VOLTAGE (continued)                   |   |  |  |                      |
| Measurement (continued)                  | 50 Hz to 10 kHz<br>300 V to 1000 V<br>500 V<br>1000 V   | 0.15% + 20 mV<br>250 μV/V<br>500 μV/V                  |  |                      |
|  | At 50 Hz:<br>1 kV to 5 kV<br>5 kV to 28 kV              | 1.3 % + 10 V<br>1.3 % + 40 V                           | Using high voltage divider.<br>Generation of AC voltages<br>over these ranges can also<br>be undertaken. |                      |
| Generation                               | 100 mV to 2.2 V<br>40 Hz to 20 kHz<br>20 kHz to 500 kHz | 110 μV/V + 9.0 μV<br>0.14 % + 410 μV                   | Known values of AC voltage for application to voltage measuring instruments.                             |                      |
|  | 2.2 V to 22 V<br>40 Hz to 20 kHz<br>20 kHz to 500 kHz   | 110 μV/V + 82 μV<br>0.20 % + 6.0 mV                    |  | _                    |
|  | 22 V to 220 V<br>40 Hz to 20 kHz<br>20 kHz to 50 kHz    | 120 μV/V + 2.0 mV<br>0.030 % + 5.0 mV                  |  | Permanent Laboratory |
|  | 220 V to 1000 V<br>50 Hz to 1 kHz                       | 120 μV/V + 5.0 mV                                      |  | Laborat              |
| AC CURRENT                               |   |  |  | ory                  |
| Measurement                              | 20 μA to 1 mA<br>50 Hz to 1 kHz                         | 0.040 % + 33 nA  | Using digital multimeter and current shunts.   |                      |
|  | 1 mA to 10 mA<br>50 Hz to 1 kHz                         | 0.040 % + 0.33 μA                                      |  |                      |
|  | 10 mA to 100 mA<br>50 Hz to 1 kHz                       | 0.030 % + 3.3 μΑ                                       |  |                      |
|  | 100 mA to 3 A<br>50 Hz to 1 kHz                         | 0.030 % + 330 μΑ                                       |  |                      |
|  | 3 A to 10 A<br>50 Hz to 1 kHz                           | 0.030 % + 330 μA                                       |  |                      |
|  | 10 A to 100 A<br>50 Hz to 400 Hz                        | 0.030 % + 3.3 mA                                       |  |                      |

Assessment Manager: GP Page 7 of 17



## Schedule of Accreditation issued by United Kingdom Accreditation Service 2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

#### **Universal Instrument Services Ltd**

Issue No: 077 Issue date: 20 October 2025

#### Calibration performed by the Organisation at the locations specified

| Measured Quantity<br>Instrument or Gauge | Range  | Expanded<br>Measurement<br>Uncertainty ( <i>k</i> = 2) | Remarks  | Location<br>Code     |
|--|--|--|--|----------------------|
| AC CURRENT (continued)                   |  |  |  |                      |
| Generation                               | 100 μA to 220 μA<br>50 Hz to 1 kHz                                     | 250 μA/A + 20 nA                                       | Known values of AC current for application to current measuring instruments.   |                      |
|  | 220 µA to 2.2 mA<br>50 Hz to 1 kHz                                     | 270 μA/A + 40 nA                                       |  |                      |
|  | 2.2 mA to 22 mA<br>50 Hz to 1 kHz                                      | 200 μA/A + 410 nA                                      |  |                      |
|  | 22 mA to 220 mA<br>50 Hz to 1 kHz                                      | 400 μΑ/Α + 4.0 μΑ                                      |  |                      |
|  | 220 mA to 2.2 A<br>50 Hz to 1 kHz<br>1 kHz to 5 kHz<br>5 kHz to 10 kHz | 0.080 % + 40 μA<br>0.090 % + 100 μA<br>1.1 % + 200 μA  |  |                      |
|  | 2.2 A to 100 A<br>50 Hz to 400 Hz                                      | 0.050 %  |  | Per                  |
|  | 100 A to 1 kA<br>50 Hz   | 0.20 % + 120 mA  | Using multi turn coil technique; for the calibration of clamp-on ammeters and Rogowski coils.  | Permanent Laboratory |
| AC POWER                                 | 1 W to 100 kW<br>50 Hz to 400 Hz                                       | 0.15 %   | Using phantom load<br>technique.<br>The capabilities are for   | ratory               |
|  | 100 kW to 1 MW<br>50 Hz  | 0.25 %   | unity power factor only. Voltages will be in the range 10 V to 1000 V and currents will be in the range 100 mA to 1000 A. The applied frequency is limited to 50 Hz at currents above 100 A. |                      |
| CAPACITANCE                              |  |  |  |                      |
| Generation                               | At 1 kHz<br>100 pF<br>1 nF<br>10 nF<br>100 nF<br>1 μF                  | 0.15 %<br>0.030 %<br>0.030 %<br>0.030 %<br>0.030 %     | Known values of capacitance for application to capacitance measuring instruments.  |                      |
| Measurement                              | At 1 kHz, 1 V<br>10 pF to 1 μF   | 0.68 % + 3 digits                                      | Using capacitance meter with a 3½ digit display  |                      |

Assessment Manager: GP Page 8 of 17



## Schedule of Accreditation issued by United Kingdom Accreditation Service 2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

#### **Universal Instrument Services Ltd**

Issue No: 077 Issue date: 20 October 2025

#### Calibration performed by the Organisation at the locations specified

| Measured Quantity<br>Instrument or Gauge                     | Range  | Expanded<br>Measurement<br>Uncertainty ( <i>k</i> = 2)   | Remarks   | Location<br>Code     |
|--|--|--|---|----------------------|
| INDUCTANCE   | At 1 kHz<br>10 μH<br>100 μH<br>1 mH<br>10 mH<br>100 mH | 0.60 %<br>0.10 %<br>0.10 %<br>0.10 %<br>0.10 %<br>0.10 % | For the calibration of inductance measuring devices   |                      |
| FREQUENCY  |  |  |   |                      |
| Measurement  | 0.1 Hz to 2 GHz  | 2.0 in 10 <sup>6</sup>                                   | Using counter timer. The periodic time of repetitive waveforms may be expressed in terms of 1/f or as events per unit time such as RPM. | 70                   |
| Generation   | 0.01 Hz to 2.4 GHz                                     | 2.0 in 10 <sup>9</sup>                                   | Using frequency synthesiser.  | Permanent Laboratory |
| TIME INTERVAL  |  |  |   | nt Lak               |
| Single events  | 5 ms to 50 ms<br>50 ms to 2.2 s                        | 0.20 ms<br>2.5 ms  | For the calibration of RCD testers  | oratory              |
| Stopwatches (Mechanical)                                     | 5 s to 3 hours<br>3 hours to 30 hours                  | 0.25 s<br>0.50 s   | By comparison with calibrated counter timer.  |                      |
| Temperature indicators, calibration by electrical simulation |  |  |   |                      |
| Base metal thermocouples                                     | -200 °C to +1600 °C                                    | 0.20 °C  | including cold junction compensation  |                      |
| Noble metal thermocouples                                    | -50 °C to +1760 °C                                     | 0.25 °C  | including cold junction compensation  |                      |
| Resistance thermometers (Pt 100)                             | -200 °C to +800 °C                                     | 0.030 °C   |   |                      |

Assessment Manager: GP Page 9 of 17



## Schedule of Accreditation issued by United Kingdom Accreditation Service 2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

#### **Universal Instrument Services Ltd**

Issue No: 077 Issue date: 20 October 2025

#### Calibration performed by the Organisation at the locations specified

| Measured Quantity<br>Instrument or Gauge | Range  | Expanded<br>Measurement<br>Uncertainty ( <i>k</i> = 2)   | Remarks  | Location<br>Code |
|--|--|--|--|------------------|
| DC RESISTANCE                            |  |  |  |                  |
| Measurement                              | 0 $\Omega$ to 100 $\Omega$<br>100 $\Omega$ to 1 k $\Omega$<br>1 k $\Omega$ to 10 k $\Omega$<br>10 k $\Omega$ to 100 k $\Omega$<br>100 k $\Omega$ to 1 M $\Omega$<br>1 M $\Omega$ to 10 M $\Omega$<br>10 M $\Omega$ to 100 M $\Omega$<br>100 M $\Omega$ to 300 M $\Omega$   | $\begin{array}{l} 120~\mu\Omega/\Omega + 4.6~m\Omega \\ 120~\mu\Omega/\Omega + 15~m\Omega \\ 120~\mu\Omega/\Omega + 150~m\Omega \\ 120~\mu\Omega/\Omega + 1.5~\Omega \\ 120~\mu\Omega/\Omega + 1.5~\Omega \\ 450~\mu\Omega/\Omega + 500~\Omega \\ 950~\mu\Omega/\Omega + 60~k\Omega \\ 2.1~\% + 0.10~M\Omega \end{array}$  | Using digital multimeter.  |                  |
| Generation                               |  |  |  |                  |
| Specific values                          | 10 MΩ<br>100 MΩ<br>1 GΩ<br>10 GΩ   | 0.60 %<br>0.60 %<br>0.60 %<br>1.0 %  | Applied voltages up to 5 kV  | Site C           |
| Other values                             | 0 $\Omega$ to 11 $\Omega$<br>11 $\Omega$ to 33 $\Omega$<br>33 $\Omega$ to 330 $\Omega$<br>330 $\Omega$ to 3.3 k $\Omega$<br>3.3 k $\Omega$ to 33 k $\Omega$<br>33 k $\Omega$ to 330 k $\Omega$<br>330 k $\Omega$ to 3.3 M $\Omega$<br>3.3 M $\Omega$ to 11 M $\Omega$<br>11 M $\Omega$ to 33 M $\Omega$<br>33 M $\Omega$ to 110 M $\Omega$ | $\begin{array}{l} 150~\mu\Omega/\Omega + 6.2~m\Omega \\ 160~\mu\Omega/\Omega + 12~m\Omega \\ 120~\mu\Omega/\Omega + 12~m\Omega \\ 120~\mu\Omega/\Omega + 72~m\Omega \\ 120~\mu\Omega/\Omega + 7.2~\Omega \\ 150~\mu\Omega/\Omega + 7.2~\Omega \\ 150~\mu\Omega/\Omega + 67~\Omega \\ 650~\mu\Omega/\Omega + 670~\Omega \\ 0.13\% + 10~k\Omega \\ 0.55\% + 11~k\Omega \\ \end{array}$ | Known values of DC resistance for application to resistance measuring instruments. | Site Calibration |
| DC VOLTAGE                               |  |  |  |                  |
| Measurement                              | 0 mV to 100 mV<br>100 mV to 1 V<br>1 V to 10 V<br>10 V to 100 V<br>100 V to 1000 V   | 60 μV/V + 5.0 μV<br>50 μV/V + 10 μV<br>50 μV/V + 70 μV<br>60 μV/V + 0.80 mV<br>60 μV/V + 13 mV   | Using digital multimeter.  |                  |

Assessment Manager: GP Page 10 of 17



## Schedule of Accreditation issued by United Kingdom Accreditation Service 2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

#### **Universal Instrument Services Ltd**

Issue No: 077 Issue date: 20 October 2025

#### Calibration performed by the Organisation at the locations specified

| Measured Quantity<br>Instrument or Gauge | Range   | Expanded<br>Measurement<br>Uncertainty ( <i>k</i> = 2)  | Remarks  | Location<br>Code |
|--|---|---|--|------------------|
| DC VOLTAGE (continued)                   |   |   |  |                  |
| Generation                               | 0 mV to 330 mV<br>330 mV to 3.3 V<br>3.3 V to 33 V<br>33 V to 330 V<br>330 V to 1020 V                    | 70 μV/V + 4.0 μV<br>60 μV/V + 6.0 μV<br>60 μV/V + 60 μV<br>65 μV/V + 0.60 mV<br>65 μV/V + 2.0 mV                            | Known values of DC voltage for application to voltage measuring instruments. |                  |
| DC CURRENT                               |   |   |  |                  |
| Measurement                              | 0 mA to 1 mA<br>1 mA to 10 mA<br>10 mA to 100 mA<br>100 mA to 3 A<br>3 A to 10 A<br>10 A to 100 A         | 0.015 % + 12 nA<br>0.010 % + 20 nA<br>0.010 % + 1.6 μA<br>0.010 % + 110 μA<br>0.012 % + 160 μA<br>0.012 % + 1.6 mA          | Using digital multimeter.  |                  |
| Generation                               | 0 mA to 3.3 mA<br>3.3 mA to 33 mA<br>33 mA to 330 mA<br>330 mA to 2.2 A<br>2.2 A to 11 A<br>11 A to 100 A | 160 μA/A + 0.060 μA<br>130 μA/A + 0.31 μA<br>130 μA/A + 4.0 μA<br>400 μA/A + 45 μA<br>710 μA/A + 340 μA<br>300 μA/A + 21 mA | Known values of DC current for application to current measuring instruments. | Sit              |
|  | 100 A to 1 kA   | 0.030 % + 21 mA   | Using multi-turn coil technique; for the calibration of clamp-on ammeters.   | Site Calibration |
| AC RESISTANCE                            | 0.2 $\Omega$ to 1 k $\Omega$<br>50 Hz   | 0.10 % + 0.50 mΩ  | For the calibration of loop testers  | on               |
| AC VOLTAGE                               |   |   |  |                  |
| Measurement                              | 10 mV to 100 mV<br>45 Hz to 20 kHz<br>20 kHz to 50 kHz  | 0.080 % + 50 μV<br>0.30 % + 450 μV  | Using digital multimeter.  |                  |
|  | 100 mV to 1 V<br>45 Hz to 20 kHz<br>20 kHz to 50 kHz  | 0.080 % + 60 μV<br>0.25 % + 100 μV  |  |                  |
|  | 1 V to 10 V<br>45 Hz to 20 kHz<br>20 kHz to 50 kHz  | 0.080 % + 4.0 mV<br>0.14 % + 6.0 mV   |  |                  |
|  | 10 V to 100 V<br>45 Hz to 20 kHz<br>20 kHz to 50 kHz  | 0.080 % + 35 mV<br>0.25 % + 210 mV  |  |                  |
|  | 200 V to 750 V<br>45 Hz to 1 kHz  | 0.080 % + 250 mV  |  |                  |

Assessment Manager: GP Page 11 of 17



## Schedule of Accreditation issued by United Kingdom Accreditation Service 2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

#### **Universal Instrument Services Ltd**

Issue No: 077 Issue date: 20 October 2025

#### Calibration performed by the Organisation at the locations specified

| Measured Quantity<br>Instrument or Gauge | Range  | Expanded<br>Measurement<br>Uncertainty ( <i>k</i> = 2)                    | Remarks  | Location<br>Code |
|--|--|---|--|------------------|
| AC VOLTAGE (continued)                   |  |   |  |                  |
| Generation                               | 3 mV to 33 mV<br>50 Hz to 10 kHz<br>33 mV to 330 mV<br>50 Hz to 10 kHz             | 0.18 % + 24 μV<br>0.065 % + 24 μV   | Known values of AC voltage for application to voltage measuring instruments. |                  |
|  | 330 mV to 3.3 V<br>50 Hz to 10 kHz<br>10 kHz to 50 kHz                             | 0.045 % + 80 μV<br>0.18 % + 0.40 mV                                       |  |                  |
|  | 3.3 V to 33 V<br>50 Hz to 10 kHz<br>10 kHz to 50 kHz                               | 0.055 % + 0.80 mV<br>0.23 % + 7.0 mV                                      |  |                  |
|  | 33 V to 330 V<br>50 Hz to 1 kHz<br>1 kHz to 10 kHz                                 | 0.065 % + 9.0 mV<br>0.10 % + 18 mV  |  |                  |
|  | 330 V to 1020 V<br>50 Hz to 1 kHz  | 0.065 % + 90 mV   |  |                  |
| AC CURRENT                               |  |   |  | Site             |
| Measurement                              | 50 Hz to 100 Hz<br>3 mA to 30 mA<br>30 mA to 100 mA<br>100 mA to 1 A<br>1 A to 3 A | 0.60 % + 12 μA<br>0.60 % + 120 μA<br>0.19 % + 0.46 mA<br>0.24 % + 0.66 mA | Using digital multimeter.  | Site Calibration |
|  | 100 mA to 2 A<br>50 Hz to 100 Hz<br>100 Hz to 1 kHz                                | 0.60 % + 1.0 mA<br>0.50 % + 1.0 mA  |  |                  |
|  | 2 A to 10 A<br>50 Hz to 60 Hz  | 1.1 % + 12 mA   |  |                  |
|  | 10 A to 100 A<br>50 Hz to 60 Hz  | 0.13 % + 40 mA  |  |                  |
| Generation                               | 0.3 mA to 3.3 mA<br>50 Hz to 1 kHz   | 0.14 % + 0.32 μΑ  | Known values of AC current for application to current measuring instruments. |                  |
|  | 3.3 mA to 33 mA<br>50 Hz to 1 kHz  | 0.13 % + 3.2 μΑ   | Ĭ  |                  |
|  | 33 mA to 330 mA<br>50 Hz to 1 kHz  | 0.13 % + 32 μΑ  |  |                  |
|  | 330 mA to 2.2 A<br>50 Hz to 1 kHz  | 0.14 % + 320 μΑ   |  |                  |

Assessment Manager: GP Page 12 of 17



## Schedule of Accreditation issued by United Kingdom Accreditation Service 2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

#### **Universal Instrument Services Ltd**

Issue No: 077 Issue date: 20 October 2025

#### Calibration performed by the Organisation at the locations specified

| Measured Quantity<br>Instrument or Gauge                     | Range                                 | Expanded<br>Measurement<br>Uncertainty ( <i>k</i> = 2) | Remarks   | Location<br>Code |
|--|---------------------------------------|--|---|------------------|
| AC CURRENT (continued)                                       |                                       |  |   |                  |
| Generation (continued)                                       | 2.2 A to 11 A<br>50 Hz to 400 Hz      | 0.14 % + 2.1 mA  |   |                  |
|  | 11 A to 100 A<br>50 Hz to 400 Hz      | 0.30 %   |   |                  |
|  | 100 A to 1 kA<br>50 Hz                | 0.20 % + 120 mA  | Using multi turn coil technique; for the calibration of clamp-on ammeters and Rogowski coils.   |                  |
| FREQUENCY  |                                       |  |   |                  |
| Measurement and generation                                   | 0.1 Hz to 160 MHz                     | 2 in 10 <sup>6</sup>                                   | Using counter timer. The periodic time of repetitive waveforms may be expressed in terms of 1/f or as events per unit time such as RPM. | Site Calibration |
| Generation   | 0.02 Hz to 2.1 GHz                    | 2 in 10 <sup>9</sup>                                   | Using Signal Generator  | alibra           |
| TIME INTERVAL  |                                       |  |   | tion             |
| Single events  | 5 ms to 50 ms<br>50 ms to 2.2 s       | 0.20 ms<br>2.5 ms                                      | For the calibration of RCD testers  |                  |
| Stopwatches (Mechanical)                                     | 0 s to 3 hours<br>3 hours to 30 hours | 0.25 s<br>0.50 s                                       | By comparison with calibrated counter timer.  |                  |
| Temperature indicators, calibration by electrical simulation |                                       |  |   |                  |
| Base metal thermocouples                                     | -200 °C to +1600 °C                   | 0.57 °C  | Including cold junction compensation  |                  |
| Noble metal thermocouples                                    | -50 °C to +1760 °C                    | 1.4 °C   | Including cold junction compensation  |                  |
| Resistance thermometers (Pt 100)                             | -200 °C to 800 °C                     | 0.15 °C  |   |                  |

Assessment Manager: GP Page 13 of 17



## Schedule of Accreditation issued by United Kingdom Accreditation Service 2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

#### **Universal Instrument Services Ltd**

Issue No: 077 Issue date: 20 October 2025

#### Calibration performed by the Organisation at the locations specified

| Measured Quantity<br>Instrument or Gauge  | Range  | Expanded<br>Measurement<br>Uncertainty ( <i>k</i> = 2)   | Remarks   | Location<br>Code     |
|---|--|--|---|----------------------|
| PRESSURE CALIBRATION  Gas pressure (gauge)  Calibration of pressure indicating instruments and gauges.  Gas pressure (absolute) | -100 kPa to -7 kPa<br>-7 kPa to -2.5 kPa<br>-2.5 kPa to 2.5 kPa<br>2.5 kPa to 7 kPa<br>7 kPa to 70 kPa<br>70 kPa to 700 kPa<br>700 kPa to 4.3 MPa<br>4.3 MPa to 6 MPa<br>6 MPa to 10 MPa | 58 Pa/MPa + 17 Pa<br>68 Pa/MPa + 5.1 Pa<br>0.010 % + 2.0 Pa<br>68 Pa/MPa + 5.1 Pa<br>58 Pa/MPa + 13 Pa<br>66 Pa/MPa<br>0.010 % + 33 Pa<br>0.18 % + 4.2 kPa<br>0.12 % + 4.0 kPa | Methods consistent with<br>EURAMET CG17.<br>Calibrations of devices with<br>an electrical output may be<br>undertaken | Perman               |
| Calibration of pressure indication instruments and gauges.  | 30 Pa to 75 kPa<br>75 kPa to 120 kPa<br>120 kPa to 170 kPa<br>170 kPa to 800 kPa<br>800 kPa to 4.3 MPa   | 58 Pa/MPa + 17 Pa<br>10 Pa<br>58 Pa/MPa + 17 Pa<br>66 Pa/MPa + 10 Pa<br>0.010 % + 35 Pa  |   | Permanent Laboratory |
| Hydraulic pressure (gauge)  Calibration of pressure indicating instruments and gauges.  | 0 kPa to 54 kPa<br>54 kPa to 60 kPa<br>60 kPa to 600 kPa<br>600 kPa to 6 MPa<br>6 MPa to 120 MPa   | 0.030 % + 110 Pa<br>0.032 % + 220 Pa<br>0.0066 % + 29 Pa<br>0.010 %<br>0.010 %   |   |                      |
| Hydraulic Pressure (absolute)   |  |  |   |                      |
| Calibration of pressure indicating instruments and gauges.  | 170 kPa to 800 kPa<br>800 kPa to 6.1 MPa<br>6.1 MPa to 120 MPa   | 0.0066 % + 32 Pa<br>0.010 % + 12 Pa<br>0.010 % + 12 Pa   |   |                      |
| Gas pressure (gauge)  |  |  |   |                      |
| Calibration of pressure indicating instruments and gauges.  | -100 kPa to -2.5 kPa<br>-2.5 kPa to 2.5 kPa<br>2.5 kPa to 200 kPa<br>200 kPa to 2 MPa  | 0.005 8 % + 0.22 kPa<br>0.010 % + 2.0 Pa<br>96 Pa<br>0.010% + 0.80 kPa   | Absolute pressures within these ranges can also be generated, subject to an additional uncertainty of 90 Pa.          | Site Calibration     |
| Hydraulic pressure (gauge)  | 2 MPa to 7 MPa   | 0.010% + 7.0 kPa   |   | ılibratio            |
| Calibration of pressure indicating instruments and gauges.  | 0 MPa to 20 MPa<br>20 MPa to 70 MPa  | 0.010% + 5.8 kPa<br>0.050 % + 22 kPa   |   | วท                   |

Assessment Manager: GP Page 14 of 17



## Schedule of Accreditation issued by United Kingdom Accreditation Service 2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

#### **Universal Instrument Services Ltd**

Issue No: 077 Issue date: 20 October 2025

#### Calibration performed by the Organisation at the locations specified

| Measured Quantity<br>Instrument or Gauge   | Range   | Expanded<br>Measurement<br>Uncertainty ( <i>k</i> = 2)                           | Remarks  | Location<br>Code     |
|--|---|--|--|----------------------|
| TEMPERATURE CALIBRATION  | l   |  |  |                      |
| Liquid-in-glass thermometers   | lce-point (0 °C)<br>-80 °C to +5 °C<br>5 °C to 50 °C<br>50 °C to 250 °C   | 0.013 °C<br>0.020 °C<br>0.016 °C<br>0.025 °C                                     | By comparison with reference standards Calibration performed within liquid baths   |                      |
| Resistance thermometers  | Nitrogen boiling point (-196 °C) Ice point (0 °C) Triple point of water (0.01 °C) -80 °C to 5 °C 5 °C to 50 °C 50 °C to 250 °C 250 °C to 660 °C | 0.013 °C<br>0.012 °C<br>0.005 °C<br>0.010 °C<br>0.015 °C<br>0.014 °C<br>0.095 °C | -196 °C & 0 °C FP<br>by comparison with<br>reference standards<br>Calibration within liquid<br>baths up to 650 °C and<br>above 650 °C in a furnace |                      |
| Platinum thermocouples   | -50 °C to 0 °C<br>0 °C to 80 °C<br>80 °C to 250 °C<br>250 °C to 650 °C<br>650 °C to 1100 °C   | 1.3 °C<br>0.67 °C<br>0.52 °C<br>0.54 °C<br>1.6 °C                                | By comparison with reference standards Calibration within liquid baths up to 650 °C and above 650 °C in a furnace                                  |                      |
| Base metal thermocouples   | Nitrogen boiling point (-196 °C) -80 °C to 0 °C 0 °C to 250 °C 250 °C to 650 °C 650 °C to 1100 °C   | 0.23 °C<br>0.18 °C<br>0.17 °C<br>0.19 °C<br>1.6 °C                               | -196 °C & 0 °C FP<br>by comparison with<br>reference standards<br>Calibration within liquid<br>baths up to 650 °C and<br>above 650 °C in a furnace | Permanent Laboratory |
| Electronic Thermometers with probes  | Nitrogen boiling point (-196 °C) -80 °C to +250°C Ice point (0 °C) Triple point of water (0.01 °C) 250 °C to 650 °C 650 °C to 1100 °C           | 0.014 °C<br>0.013 °C<br>0.014 °C<br>0.007 0 °C<br>0.12 °C<br>1.7 °C              | -196 °C & 0 °C FP<br>by comparison with<br>reference standards<br>Calibration within liquid<br>baths up to 650 °C and<br>above 650 °C in a furnace | aboratory            |
| Calibration of Temperature<br>Data loggers, Electronic<br>Temperature Indicators and<br>Recorders in Air | -40 °C to +80 °C  | 0.47 °C  | Calibration within air chamber   |                      |
| Block calibrators  | -50 °C to +660 °C   | 0.12 °C  | By comparison with reference standards   |                      |
| Cold Junction Compensation   | Ice-point (0 °C)<br>15 °C to 25 °C  | 0.13 °C<br>0.17 °C   | In stirred liquid bath   |                      |
|  |   |  |  |                      |

Assessment Manager: GP Page 15 of 17



## Schedule of Accreditation issued by United Kingdom Accreditation Service 2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

#### **Universal Instrument Services Ltd**

Issue No: 077 Issue date: 20 October 2025

#### Calibration performed by the Organisation at the locations specified

| Measured Quantity<br>Instrument or Gauge                                   | Range  | Expanded Measurement Uncertainty (k = 2) | Remarks  | Location<br>Code     |
|--|--|--|--|----------------------|
| HUMIDITY CALIBRATION   | In the temperature range 0 °C to 20 °C 5 %rh to 50 %rh 50 %rh 50 %rh In the temperature range 20 °C to 40 °C 5 %rh to 95 %rh In the temperature range 40 °C to 60 °C 5 %rh to 90 %rh | 2.0 %rh<br>2.5 %rh<br>2.5 %rh<br>2.5 %rh | By comparison with reference in controlled chamber Calibrations of devices with an electrical output may be undertaken   | Permanent Laboratory |
| Temperature in air   | 0 °C to 60 °C  | 0.20 °C                                  |  |                      |
| TEMPERATURE<br>CALIBRATION   |  |  |  |                      |
| Temperature sensors with indicators  | -20 °C to 120 °C   | 0.089 °C                                 | By comparison with reference standards In stirred liquid baths   |                      |
|  | -25 °C to +140 °C<br>140 °C to 350 °C  | 0.061 °C<br>0.15 °C                      | By comparison with reference standards within metal block baths  | Site                 |
|  | Ice-point (0 °C)   | 0.041 °C                                 | Calibration performed within liquid baths  | Site Calibration     |
| Liquid baths   |  |  | Inquia battle  | ration               |
| Temperature measurement  | -40 °C to 250 °C   | 0.044 °C                                 | By comparison with reference standards   |                      |
| Gradient measurement   | -40 °C to 250 °C   | 0.020 °C                                 | Total and Startage   |                      |
| Temperature controlled chambers, ovens, fridges/refrigerators and freezers | -80 °C to +300 °C<br>300 °C to 1100 °C   | 0.84 °C<br>3.7 °C                        | Single and multipoint time dependent temperature profiling, also referred to as spatial temperature surveying or mapping |                      |
| END  |  |  |  |                      |

Assessment Manager: GP Page 16 of 17



## Schedule of Accreditation issued by United Kingdom Accreditation Service

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

#### **Universal Instrument Services Ltd**

Issue No: 077 Issue date: 20 October 2025

Calibration performed by the Organisation at the locations specified

#### 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] =  $[a^2 + b^2]^{1/2}$ 

Assessment Manager: GP Page 17 of 17