


# Schedule of Accreditation

issued by

## United Kingdom Accreditation Service

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

 <b>4110</b> Accredited to <b>ISO/IEC 17025:2017</b>	<b>1G Dynamics Limited</b>	
	<b>Issue No:</b> 011	<b>Issue date:</b> 19 November 2024
	<b>5 Dunsbridge Business Park</b> <b>Shepreth</b> <b>Royston</b> <b>Herts</b> <b>SG8 6RA</b>	<b>Contact:</b> Graham Hagger <b>Tel:</b> +44 (0)1763 262 112 <b>E-Mail:</b> sales@1g-dynamics.com <b>Website:</b> www.1g-dynamics.com
<b>Calibration performed at the above address only</b>		

### Calibration and Measurement Capability (CMC)

Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty ( $k = 2$ )	Remarks
ACCELERATION TRANSDUCERS  Reference (precision) Grade  <b>Piezoelectric type</b> Transducer at 23°C	High frequency Test Nominal peak acceleration $1g_n$ up to $10g_n$ (9.81 up to 98 m/s <sup>-2</sup> ) Charge Sensitivity >0.1 pCg <sub>n</sub> (0.01 pC/ms <sup>-2</sup> ) <1000 pCg <sub>n</sub> (0.01 pC/ms <sup>-2</sup> )		Calibration of charge sensitivity by comparison with a reference (precision grade) transducer
	20 Hz to 5 kHz 5 kHz to 6.3 kHz 6.3 kHz to 10 kHz	1.5 % 1.3 % 1.8 %	Transducer at ambient
<b>Working or non-precision grades Piezoelectric type</b>	High frequency Test Nominal peak acceleration $1g_n$ up to $10g_n$ (9.81 up to 98 m/s <sup>-2</sup> ) Charge Sensitivity >0.1 pCg <sub>n</sub> (0.01 pC/ms <sup>-2</sup> ) <1000 pCg <sub>n</sub> (0.01 pC/ms <sup>-2</sup> )		Calibration of charge sensitivity by comparison with a reference (precision grade) transducer
	20 Hz to 5 kHz 5 kHz to 6.3 kHz 6.3 kHz to 10 kHz	1.5 % 1.3 % 2.5 %	Transducer at ambient
	Low frequency Test Nominal peak acceleration 0.2 up to 2 g <sub>n</sub> (1.96 up to 19.6 m/s <sup>-2</sup> ) Charge Sensitivity >2 pCg <sub>n</sub> (0.01 pC/ms <sup>-2</sup> ) <1000 pCg <sub>n</sub> (0.01 pC/ms <sup>-2</sup> )		
	2 Hz to 20 Hz	1.5 %	



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Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty ( $k = 2$ )	Remarks
ACCELERATION TRANSDUCERS (continued)			Calibration of sensitivity by comparison with a reference (precision grade) transducer
<b>Piezoresistive type</b>			
	High frequency Test Nominal peak acceleration 1 up to 10 $g_n$ (9.81 up to 98 $m/s^2$ ) System Sensitivity > 1 $mv/g_n$ (0.1 $mv/ms^{-2}$ ) < 1000 $mv/g_n$ (100 $mv/ms^{-2}$ )		Transducer at ambient
	20 Hz to 5 kHz 5 kHz to 6.3 kHz 6.3 kHz to 10 kHz	1.5 % 1.3 % 1.8 %	
	Low frequency Test Nominal peak acceleration 0.2 up to 2 $g_n$ (1.96 up to 19.6 $m/s^2$ ) System Sensitivity > 0.05 $mv/g_n$ ( 0.005 $mv/ms^{-2}$ ) < 1000 $mv/g_n$ ( 100 $mv/ms^{-2}$ )		Transducer at ambient
	2 Hz to 20 Hz	1.5 %	
<b>Integral electronics type</b>			
	High frequency Test Nominal peak acceleration 1 up to 10 $g_n$ (9.81 up to 98 $m/s^2$ ) System Sensitivity > 1 $mv/g_n$ (0.1 $mv/ms^{-2}$ ) < 1000 $mv/g_n$ (100 $mv/ms^{-2}$ )		Calibration of sensitivity by comparison with a reference (precision grade) transducer
	20 Hz to 5 kHz 5 kHz to 6.3 kHz 6.3 kHz to 10 kHz	1.5 % 1.3 % 1.8 %	Transducer at ambient
	Low frequency Test Nominal peak acceleration 0.2 up to 2 $g_n$ (1.96 up to 19.6 $m/s^2$ ) System Sensitivity > 1 $mv/g_n$ (0.1 $mv/ms^{-2}$ ) < 1000 $mv/g_n$ (100 $mv/ms^{-2}$ )		Transducer at ambient
	2 Hz to 20 Hz	1.5 %	
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:  $Q[a, b] = [a^2 + b^2]^{1/2}$