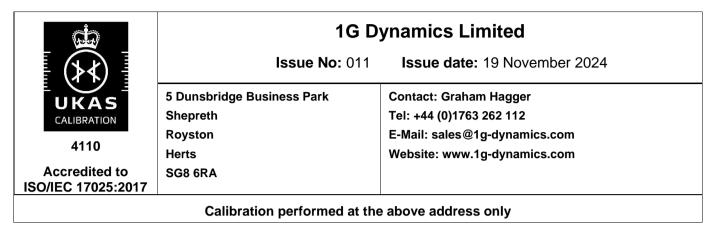
# **Schedule of Accreditation**

issued by

**United Kingdom Accreditation Service** 

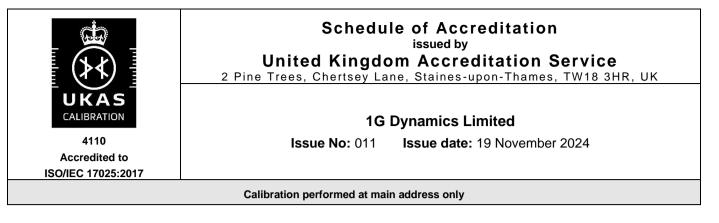
2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK



Calibration and Measurement Capability (CMC)

Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty $(k = 2)$	Remarks
ACCELERATION TRANSDUCERS			
Reference (precision) Grade			
Piezoelectric type Transducer at 23°C	High frequency Test Nominal peak acceleration $1g_n$ up to 10 $g_n$ (9.81 up to 98 m/s <sup>-2</sup> ) Charge Sensitivity >0.1 pCg_n (0.01 pC/ms <sup>-2</sup> ) <1000 pCg_n (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
Working or non-precision grades Piezoelectric type	High frequency Test Nominal peak acceleration		Calibration of charge sensitivity by comparison with a reference
	$\begin{array}{l} 1g_{n} \text{ up to 10 } g_{n} \\ (9.81 \text{ up to 98 } \text{m/s}^{-2}) \\ \text{Charge Sensitivity} \\ > 0.1 \text{ pCg}_{n} (0.01 \text{ pC/ms}^{-2}) \\ < 1000 \text{ pCg}_{n} (0.01 \text{ pC/ms}^{-2}) \end{array}$		(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 $g_n$ (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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UKAS CALIBRATION 4110 Accredited to	1G Dynamics Limited Issue No: 011 Issue date: 19 November 2024			
ISO/IEC 17025:2017 Calibration performed at main address only				
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	
Piezoresistive type				
	$\begin{array}{l} \mbox{High frequency Test} \\ \mbox{Nominal peak acceleration} \\ \mbox{1 up to 10 } g_n \\ \mbox{(9.81 up to 98 m/s^2)} \\ \mbox{System Sensitivity} \\ \mbox{> 1mv/g_n (0.1 mv/ms^{-2})} \\ \mbox{< 1000 mv/g_n (100 mv/ms^{-2})} \\ \mbox{20 Hz to 5 kHz} \\ \mbox{5 kHz to 6.3 kHz} \\ \mbox{5 kHz to 6.3 kHz} \\ \mbox{6.3 kHz to 10 kHz} \\ \mbox{Low frequency Test} \\ \mbox{Nominal peak acceleration} \\ \mbox{0.2 up to 2 } g_n \\ \mbox{(1.96 up to 19.6 m/s^{-2})} \\ \mbox{System Sensitivity} \\ \mbox{> 0.05 mv/g_n ( 0.005 mv/ms^{-2})} \\ \mbox{< 1000 mv/g_n ( 100 mv/ms^{-2})} \\ \end{array}$	1.5 % 1.3 % 1.8 %	Transducer at ambient	
Integral electronics type	2 Hz to 20 Hz	1.5 %	Calibration of sensitivity by comparison with a reference (precision grade) transducer	
	High frequency Test Nominal peak acceleration 1 up to 10 g <sub>n</sub> (9.81 up to 98 m/s <sup>-2</sup> ) System Sensitivity > 1 mv/g <sub>n</sub> (0.1 mv/ms <sup>-2</sup> ) < 1000 mv/g <sub>n</sub> (100 mv/ms <sup>-2</sup> ) 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 <sup>-2</sup> ) System Sensitivity >1mv/g <sub>n</sub> (0.1 mv/ms <sup>-2</sup> ) <1000 mv/g <sub>n</sub> (100 mv/ms <sup>-2</sup> )		Transducer at ambient	
	2 Hz to 20 Hz	1.5 %		
END				



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