Schedule of Accreditation

issued by

United Kingdom Accreditation Service

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

0580

Accredited to ISO/IEC 17025:2017

Furness Controls Limited

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Beeching Road **Bexhill** **East Sussex** **TN39 3LG**	**Contact: Mr Ian Clarke** **Tel: +44 (0)1424-819980** **E-Mail: calibration@furness-controls.com** **Website: www.furness-controls.com**

Calibration performed by the Organisation at the locations specified below

Locations covered by the organisation and their relevant activities

Laboratory locations:

Location details		Activity	Location code
Address Beeching Road Bexhill East Sussex TN39 3LJ	**Local contact** Ian Clarke	Flow calibration Pressure calibration Electrical Calibration	Perm
Techniparc 3 rue Boole 91240 St. Michel sur Orge France	Thierry Jéhanno Tel.+33 1 69460020	Flow calibration Pressure calibration Electrical Calibration	France and site
Furness Controls GmbH Halskestraße 23 D - 47877 Willich Germany	Karsten Bartsch Tel. +49 21 54 49 96 80	Flow calibration Pressure calibration Electrical Calibration	Germany and site

Site activities performed away from the locations listed above:

Location details		Activity	Location code
The customer's 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	**Site contact:** Sarah Hedge 4 The Pavilions Amber Close Tamworth Staffordshire B77 4RP Tel: +44 (0)1827 59950	Flow calibration Pressure calibration	Site

Calibration and Measurement Capability (CMC)

Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty (k = 2)	Remarks	Location Code
PRESSURE				
Gas pressure (gauge)				
Calibration of pressure indicating instruments and gauges Pressure equivalent calibration of Furness controls FRS 4's and other dead weight testers	-100 kPa to -10 kPa -10 kPa to 0 Pa 0 Pa to 3 kPa 3 kPa to 12 kPa 12 kPa to 30 kPa 30 kPa to 40 kPa 40 kPa to 4 MPa	0.010 % Q [0.010 %, 0.30 Pa] Q [0.010 %, 0.030 Pa] Q [0.010 %, 0.30 Pa] Q [0.010 %, 1.0 Pa] Q [0.010 %, 2.0 Pa] 0.010 %		Perm
Gas pressure (absolute)				
Calibration of pressure indicating instruments and gauges	80 Pa to 131 kPa 131 kPa to 4 MPa	Q [0.010 %, 10 Pa] Q [0.010 %, 14 Pa]		Perm
Gas pressure (gauge)				
Calibration of pressure indicating instruments and gauges	-100 kPa to -24 kPa -24 kPa to -10 kPa -10 kPa to -2.4 kPa -2.4 kPa to -1 kPa -1 kPa to 1 kPa 1 kPa to 2.4 kPa 2.4 kPa to 10 kPa 10 kPa to 24 kPa 24 kPa to 100 kPa 100 kPa to 400 kPa 400 kPa to 1.6 MPa 1.6 MPa to 4 MPa	Q [0.20 %, 100 Pa] Q [0.30 %, 4.0 Pa] Q [0.30 %, 0.70 Pa] Q [0.30 %, 0.40 Pa] Q [0.30 %, 0.070 Pa] Q [0.30 %, 0.40 Pa] Q [0.30 %, 0.70 Pa] Q [0.30 %, 4.0 Pa] Q [0.20 %, 50 Pa] Q [0.20 %, 200 Pa] Q [0.20 %, 800 Pa] Q [0.20 %, 2.0 kPa]		Site
Gas pressure (absolute)				
Calibration of pressure indicating instruments and gauges	0 Pa to 160 kPa	Q [0.20 %, 150 Pa]		Site
FLOW				
Flow Rate - Gas Volume	0.02 ml/min to 500 l/min 500 l/min to 2000 l/min	0.66 % 0.80 %	Calibration medium Air. Calibrations up to 10 l/min can be undertaken on Nitrogen.	Perm
Gas - Volume Passed (at flow rates of 2 l/min to 500 l/min)	10 l to 200 l 200 l to 10000 l	0.36 % 0.65 %		Perm
Gas volume flow rate	0.04 ml/min to 0.4 ml/min 0.4 ml/min to 500 l/min 500 l/min to 2000 l/min	Q [1.3 %, 0.0014 ml/min] 1.3 % 1.4 %	Calibration medium Air.	Site

Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty (k = 2)	Remarks	Location Code
French Capability				France
FLOW				
Flow Rate - Gas Volume	0.04 ml/min to 0.4 ml/min 0.4 ml/min to 300 l/min	Q [1.0 %, 0.0011 ml/min] 1.1 %	Calibration medium Air	
PRESSURE				
Gas pressure (gauge)				
Calibration of pressure indicating instruments and gauges Furness Controls FRS 4s, pressure equivalent	-100 kPa to -24 kPa -24 kPa to -10 kPa -10 kPa to 0 Pa 0 Pa to 3 kPa 3 kPa to 12 kPa 12 kPa to 30 kPa 30 kPa to 40 kPa 40 kPa to 100 kPa 100 kPa to 400 kPa 400 kPa to 1.6 MPa 1.6 MPa to 4 MPa	Q [0.10 %, 100 Pa] Q [0.20 %, 2.8 Pa] Q [0.014 %, 0.50 Pa] Q [0.014 %, 0.040 Pa] Q [0.014 %, 0.50 Pa] Q [0.014 %, 1.0 Pa] Q [0.014 %, 2.0 Pa] Q [0.10 %, 50 Pa] Q [0.10 %, 200 Pa] Q [0.10 %, 800 Pa] Q [0.10 %, 2 kPa]		
Gas pressure (absolute)				
Calibration of pressure indicating instruments and gauges	1 kPa to 160 kPa 160 kPa to 200 kPa	Q [0.10 %, 100 Pa] Q [0.10 %, 200 Pa]		
German Capability				Germany
FLOW				
Flow Rate - Gas Volume	0.04 ml/min to 0.4 ml/min 0.4 ml/min to 500 l/min	Q [1.0 %, 0.0011 ml/min] 1.1 %	Calibration medium Air	
PRESSURE				
Gas pressure (gauge)				
Calibration of pressure indicating instruments and gauges	-100 kPa to -24 kPa -24 kPa to -10 kPa -10 kPa to 0 Pa 0 Pa to 3 kPa 3 kPa to 12 kPa 12 kPa to 30 kPa 30 kPa to 40 kPa 40 kPa to 400 kPa 400 kPa to 1.6 MPa	Q [0.15 %, 100 Pa] Q [0.20 %, 2.8 Pa] Q [0.014 %, 0.50 Pa] Q [0.014 %, 0.040 Pa] Q [0.014 %, 0.50 Pa] Q [0.014 %, 1.0 Pa] Q [0.014 %, 2.0 Pa] Q [0.15 %, 200 Pa] Q [0.15 %, 800 Pa]		
Gas pressure (absolute)				
Calibration of pressure indicating instruments and gauges	1 kPa to 160 kPa	Q [0.10 %, 100 Pa]		

Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty (k = 2)	Remarks	Location Code
ELECTRICAL				
DC Voltage				
Measurement	0 V to 11 V 11 V to 55 V	Q [0.0035 %, 30 µV] Q [0.0035 %, 300 µV]		Perm France Germany
DC Current				
Measurement	0 A to 110 mA	Q [0.010 %, 1.0 µA]		Perm France Germany
RESISTANCE				
Measurement	0 Ω to 11 kΩ	Q [0.015 %, 5.0 mΩ]		Perm France Germany

Calibration methods:

Pressure and flow calibrations of devices with an electrical output may be undertaken at all sites.

Pressure calibration are undertaken by comparison with either a pressure generator or indicator.

Flow calibrations are performed under steady conditions for items connected in series with a reference standard.

Electrical calibrations are performed by direct comparison with reference device.

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