Schedule of Accreditation

issued by

United Kingdom Accreditation Service

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4168

Accredited to ISO/IEC 17025:2017

Johnson and Allen Ltd

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Calibration performed by the Organisation at the locations specified below

Locations covered by the organisation and their relevant activities

Laboratory locations:

Location details	Activity
Address Neocol Works Smithfield Sheffield S3 7AR **Local contact** Paul Jones	Calibration of magnetic particle inspection equipment

Site activities performed away from the locations listed above:

Location details	Activity
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.	Calibration of magnetic particle inspection equipment

Calibration and Measurement Capability (CMC)

Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty (k = 2)	Remarks	Location Code
MAGNETIC PARTICLE INSPECTION EQUIPMENT			All specific value CMCs apply within 5 % of that point. Intermediate values will attract an uncertainty of the higher of the two adjacent values.	**Permanent laboratory and customers' sites**
DC CURRENT				
Output set points	0.3 A	1.3 %	Using digital multimeter.	
	1 A	1.2 %		
	2 A	1.9 %		
	3 A	2.0 %		
	4 A	2.0 %		
	5 A	2.0 %		
	6 A	5.1 %		
	7 A	5.1 %		
	8 A	5.2 %		
	9 A	5.2 %		
	10 A	5.3 %		
	40 A	2.7 %	Using current shunt and multimeter.	
	100 A	1.3 %		
	200 A	1.4 %		
	400 A	1.0 %		
	600 A	1.3 %		
	800 A	1.1 %		
	1000 A	0.93 %		
	1500 A	0.95 %		
	2000 A	0.97 %		
	2500 A	1.0 %		
	3000 A	1.2 %		
AC CURRENT 50 Hz RMS				
Output set points	40 A	5.0 %	Using current transformer and multimeter.	
	100 A	3.8 %		
	200 A	3.1 %		
	400 A	2.9 %		
	600 A	3.1 %		
	800 A	5.5 %		
	1000 A	5.7 %		
	1200 A	3.5 %		
	1400 A	3.0 %		
	1600 A	2.8 %		

Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty (k = 2)	Remarks	Location Code
Output set points (continued)				**Permanent laboratory and customers' sites**
	1800 A	3.0 %	Using current transformer and multimeter.	
	2000 A	3.2 %		
	2500 A	3.3 %		
	3000 A	3.2 %		
	4000 A	3.3 %		
	5000 A	3.4 %		
	6000 A	5.5 %		
AC CURRENT 50 Hz Peak Output set points			Using current shunts and oscilloscope.	
	141 A	12 %		
	283 A	5.3 %		
Peak values, AC 50 Hz and DC half-wave rectified, including waveforms controlled by thyristors or similar devices.	566 A	5.1 %		
	849 A	3.7 %		
	1131 A	8.8 %		
	1414 A	6.4 %		
	1700 A	4.6%		
	1980 A	3.7 %		
	2260 A	3.3 %		
	2550 A	3.6 %		
	2830 A	3.4 %		
	4240 A	3.0 %		
	5660 A	3.6 %		
	7070 A	4.2 %		
	7777 A	4.2 %		
	8131 A	3.2 %		
Open circuit voltage	2 V to 25 V, 50 Hz	0.50 V	Using digital multimeter.	

NOTES

[1] The uncertainties shown are for MPI equipment equipped with digital readouts. For equipment fitted with analogue metering, the uncertainties may be increased.

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