

Schedule

Issue date: 22 February 2019
Valid until: 30 January 2021



NO: SAMM 862

(Issue 2, 22 February 2019 replacement of SAMM 862 dated 30 January 2018)

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LABORATORY LOCATION: (PERMANENT LABORATORY)



GLOBAL VENTURE METROLOGY SDN. BHD.
NO. 57-A, JALAN BAYU TINGGI
7/KS 6, BATU UNJUR
41200 KLANG, SELANGOR
MALAYSIA

FIELDS OF TESTING:

PRESSURE, TIME & FREQUENCY, MASS, HEAT & TEMPERATURE

This laboratory has demonstrated its technical competence to operate in accordance with MS ISO/IEC 17025:2005 (ISO/IEC 17025:2005).

This laboratory's fulfillment of the requirements of ISO/IEC 17025 means the laboratory meets both the technical competence requirements and management system requirements that are necessary for it to consistently deliver technically valid test results and calibrations. The management system requirements in ISO/IEC 17025 are written in language relevant to laboratory operations and operate generally in accordance with the principles of ISO 9001 (see Joint ISO-ILAC-IAF Communiqué dated April 2017).

* The expanded uncertainties are based on an estimated confidence probability of approximately 95% and have a coverage factor of $k=2$ unless stated otherwise.

SCOPE OF CALIBRATION: PRESSURE

Instrument Calibrated/ Measurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty(\pm)*	Remarks
Pressure Measuring Device			
Pneumatic	-0.9 bar to 2 bar 2 bar to 20 bar	0.0050 bar 0.03 bar	Calibrated using Pressure Calibrator & Pressure Meter
Hydraulic	20 bar to 100 bar 100 bar to 300 bar 300 bar to 700 bar	0.4 bar 0.7 bar 2.4 bar	

Signatory:

1. Lim Wei Sheng

NO: SAMM 862(Issue 2, 22 February 2019 replacement
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Instrument Calibrated/ Measurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty(\pm)*	Remarks
Pressure Measuring Device			
Pneumatic	0.9 bar to 2 bar	0.0050 bar	Calibrate by using pressure calibrator or pressure meter
	2 bar to 20 bar	0.093 bar	
	20 bar to 100 bar	0.6 bar	
Hydraulic	100 bar to 300 bar	1.5 bar	
	300 bar to 700 bar	4.0 bar	

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SCOPE OF CALIBRATION: TIME AND FREQUENCY

Instrument Calibrated/ Measurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty(\pm)*	Remarks
Tachometer (Non-Contact)	60 rpm to 10000 rpm 10000 rpm to 30000 rpm	2.0 rpm 2.3 rpm	Calibrated using stroboscope based on ASTM F2046-00

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SCOPE OF CALIBRATION: TIME AND FREQUENCY**SITE: CATEGORY I**

Instrument Calibrated/ Measurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty(\pm)*	Remarks
RPM Measuring Instrument Non-Contact	60 rpm to 14000 rpm	2.3 rpm	Calibrated using a tachometer based on ASTM F2046-00

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Instrument Calibrated/ Measurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty(\pm)*	Remarks
Standard Weight / Dead Weight	200 g	3.6 mg	Calibrated using Standard Weight sets and Mass Comparator
	500 g	13 mg	
	1000 g	0.03 g	
	2 kg	0.04 g	
	5 kg	0.09 g	
	10 kg	2.0 g	
	20 kg	2.0 g	
25 kg	2.0 g		

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SCOPE OF CALIBRATION: MASS**SITE: CATEGORY I**

Instrument Calibrated/ Measurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty(\pm)*	Remarks
Weighing Balances and Scales	Up to 200 g	0.0008 g	Calibrated using Standard Weight Sets with reference to ASTM E898-88
	200g to 1000 g	0.005 g	
	1000g to 5000 g	0.03 g	
	5kg to 50 kg	0.008 kg	
	50kg to 300 kg	0.036 kg	
	300kg to 800 kg	0.072 kg	

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NO: SAMM 862(Issue 2, 22 February 2019 replacement
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Instrument Calibrated/ Measurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty(\pm)*	Remarks
Temperature Sensor with Indicator	-30 °C to 30 °C 30 °C to 400 °C 400 °C to 640 °C	1.3 °C 1.1 °C 3.2 °C	Comparison with Pt100 in liquid bath and Dry Block
Liquid-In-Glass Thermometer (Total Immersion)	-30 °C to 50 °C	1.3 °C	Comparison with Pt100 in liquid bath
Liquid-In-Glass Thermometer (Partial Immersion)	-30 °C to 30 °C 30 °C to 200 °C	1.3 °C 1.1 °C	Comparison with Pt100 in liquid bath and Dry Block
Temperature Indicating Device (By electrical simulation)			
a) Type T	- 200 °C to 400 °C	0.52 °C	By electrical simulation using calibrator and reference table ITS 90
b) Type E	- 200 °C to 1000 °C	0.52 °C	
c) Type K	- 200 °C to 1370 °C	0.52 °C	
d) Type R	0 °C to 1760 °C	1.8 °C	
e) Type J	- 200 °C to 1200 °C	0.52 °C	
f) Type S	0 °C to 1760 °C	1.8 °C	
g) Type B	600 °C to 1800 °C	1.8 °C	
h) Type N	- 200 °C to 1300 °C	0.52 °C	
i) Pt 100	-200 °C to 850 °C	0.22 °C	

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SCOPE OF CALIBRATION: HEAT AND TEMPERATURE

Instrument Calibrated/ Measurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty(\pm)*	Remarks
Temperature Calibrator i. Generate			
a) Type T	- 270 °C to -100 °C -100 °C to 400 °C	1.0 °C 0.2 °C	
b) Type E	- 250 °C to -100 °C -100 °C to 1000 °C	1.0 °C 0.2 °C	
c) Type K	- 270 °C to -100 °C -100 °C to 1370 °C	2.0 °C 0.2 °C	By electrical measurement using multimeter and reference table ITS 90 By electrical measurement using multimeter and reference table ITS 90
d) Type R	- 50 °C to 500 °C 500 °C to 1760 °C	0.6 °C 0.3 °C	
e) Type J	- 210 °C to 1200 °C	0.2 °C	
f) Type S	- 50 °C to 500 °C 500 °C to 1760 °C	0.6 °C 0.3 °C	
g) Type B	200 °C to 500 °C 500 °C to 1800 °C	1.0 °C 0.5 °C	
h) Type N	- 200 °C to 1300 °C	0.3 °C	
l) Pt 100	- 200 °C to 850 °C	0.2 °C	

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Instrument Calibrated/ Measurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty(\pm)*	Remarks
Temperature Calibrator ii. Measurement			
a) Type T	- 200 °C to 400 °C	0.52 °C	By electrical simulation using calibrator and reference table ITS 90
b) Type E	- 200 °C to 1000 °C	0.52 °C	
c) Type K	- 200 °C to 1370 °C	0.52 °C	
d) Type R	0 °C to 1760 °C	1.8 °C	
e) Type J	- 200 °C to 1200 °C	0.52 °C	
f) Type S	0 °C to 1760 °C	1.8 °C	
g) Type B	600 °C to 1800 °C	1.8 °C	
h) Type N	- 200 °C to 1300 °C	0.52 °C	
i) Pt 100	-200 °C to 850 °C	0.22 °C	
Temperature and Relative Humidity Measuring Device	-20 °C to 60 °C 20 % rh to 90% rh	0.9 °C 3.4 % rh	

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SCOPE OF CALIBRATION: HEAT AND TEMPERATURE**SITE: CATEGORY I**

Instrument Calibrated/ Measurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty(\pm)*	Remarks
Temperature Controlled Enclosures	-30 °C to 250 °C 250 °C to 1200 °C	1.5 °C 3.5 °C	Calibrate by using temperature recorder with sensor base on AS2853-1986
Temperature Sensor with Indicator	0 °C	0.64 °C	Comparison with Pt100 in Ice Point
	30 °C to 200 °C 200 °C to 400 °C	1.0 °C 2.7 °C	Comparison with Pt100 in Dry Block
Liquid-In-Glass Thermometer (Partial Immersion)	0 °C	0.7 °C	Comparison with Pt100 in Ice Point
	30 °C to 200 °C 200 °C to 400 °C	1.0 °C 2.7 °C	Comparison with Pt100 in Dry Block

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SCOPE OF CALIBRATION: HEAT AND TEMPERATURE**SITE: CATEGORY I**

Instrument Calibrated/ Measurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty(\pm)*	Remarks
Temperature Indicating Device (By electrical simulation)			
a) Type T	- 200 °C to 400 °C	0.52 °C	By electrical simulation using calibrator and reference table ITS 90
b) Type E	- 200 °C to 1000 °C	0.52 °C	
c) Type K	- 200 °C to 1370 °C	0.52 °C	
d) Type R	0 °C to 1760 °C	1.8 °C	
e) Type J	- 200 °C to -1200 °C	0.52 °C	
f) Type S	0 °C to 1760 °C	1.8 °C	
g) Type B	600 °C to 1800 °C	1.8 °C	
h) Type N	- 200 °C to 1300 °C	0.52 °C	
l) Pt 100	-200 °C to 850 °C	0.22 °C	
Humidity Controlled Enclosure	25 % rh to 90 % rh	3.6 % rh	Calibration by humidity data logger with reference to AS2853:1986

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