



Annex (1)

Updated on: 01-10-2019

To the Accreditation Certificate No. **JAS Cal. – 005** Dated **2018-05-08**

For the Laboratory of **SAMA** for Calibration and Qualification

Scope of Accreditation

Calibration of Temperature and Pressure (Onsite / Permanent)

Measurand	Measuring Range	Calibration and Measurement Capability (CMC) <sup>a</sup>	Calibration Methods/ Standards/ Remarks
<b>Temperature</b>			
Thermocouples	-40 °C to +140 °C	0.25 °C	Kaye low temperature reference (LTR)/Comparison with reference RTD Calibration is done according to EURAMET cg-08 SP14-1, Issue 2, revision 5, Issue date 10/08/2017, effective date: 30/07/2019
	-23 °C to +150 °C	0.5 °C	Jofra advanced temperature calibrator(ATC 156)Comparison with reference RTD Calibration is done according to EURAMET cg-08 SP14-1, Issue 2, revision 5, Issue date 10/08/2017, effective date: 30/07/2019
	-30 °C to +150 °C	0.95 °C	Jofra reference/professional temperature calibrator (RTC 156)/Comparison with reference RTD Calibration is done according to EURAMET cg-08 SP14-1, Issue 2, revision 5, Issue date 10/08/2017, effective date: 30/07/2019
	50 to < 150 °C	0.62 °C	Kaye high temperature reference (HTR)Comparison with reference RTD Calibration is done according to EURAMET cg-08 SP14-1, Issue 2, revision 5, Issue date 10/08/2017, effective date: 30/07/2019
	150 to < 300 °C	0.62 °C	
	300 to 400 °C	0.62 °C	



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Measurand	Measuring Range	Calibration and measurement Capability (CMC) <sup>a</sup>	Calibration Methods/ Standards/ Remarks
<b>Temperature</b>			
Thermocouples	50 to < 150 °C	1.1 °C	Jofra advanced temperature calibrator(ATC 650) Comparison with reference RTD Calibration is done according to EURAMET cg-08 SP14-1, Issue 2, revision 5, Issue date 10/08/2017, effective date: 30/07/2019
	150 to < 250 °C	1.1 °C	
	250 to < 350 °C	1.1 °C	
	350 to 650 °C	5.1 °C	
Total immersion Glass Thermometers	-20 °C to +110 °C	0.15 °C	Fluke Micro Bath Calibration is done according to SP14-3, Issue 2, revision 6, Issue date 10/08/2017, effective date: 28/09/2019
Data Loggers	5 °C to < 25 °C	0.65 °C	Reference generator for calibration of Humidity and temperature instruments (Hygrogen 1A) Calibration is done according to EURAMET cg-08 SP14-4, Issue 2, revision 3, Issue date 10/08/2017, effective date: 12/06/2019
	25 °C to < 40 °C	0.65 °C	
	40 °C to +50 °C	0.65 °C	
	0 °C to < 25 °C	0.84 °C	Reference generator for calibration of Humidity and temperature instruments (Hygrogen 2A) Calibration is done according to EURAMET cg-08 SP14-4, Issue 2, revision 3, Issue date 10/08/2017, effective date: 12/06/2019
	25 °C to < 45 °C	0.84 °C	
	45 °C to +60 °C	0.84 °C	
<b>Pressure</b>			
Pressure	1 to < 100 Pa	1.2 Pa	Reference Differential Pressure Calibrator Druck DPI 610 Calibration is done according to EURAMET cg-17 SP14-5, Issue 2, revision 6, Issue date 10/08/2017, effective date: 30/07/2019
	100 to 15000 Pa	2.1 Pa	



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<b>Pressure</b>			
Pressure	0.1 to 50 Bar	0.046 Bar	Pressure Calibrator Druck DPI 620 Pneumatic/Comparison with reference Pressure Sensor PM620 (100 Bar ) Calibration is done according to EURAMET cg-17 SP14-5, Issue 2, revision 6, Issue date 10/08/2017, effective date: 30/07/2019
Pressure	0.1 to 50 Bar	0.28 Bar	Hydraulic Pump with Fluke Digital Pressure Gauge Calibration is done according to EURAMET cg-17 SP14-5, Issue 2, revision 6, Issue date 10/08/2017, effective date: 30/07/2019
	0.1 to 50 Bar	0.28 Bar	Hydraulic Pump with Martel Digital Pressure Gauge Calibration is done according to EURAMET cg-17 SP14-5, Issue 2, revision 6, Issue date 10/08/2017, effective date: 30/07/2019
Vacuum Pressure	-15000 Pa to > -100 Pa	2.1 Pa	Reference Differential Pressure Calibrator Druck DPI 610 Calibration is done according to ISO/TS 3567
	-100 to to1 Pa	2.8 Pa	SP14-6, , Issue 2, revision 6, Issue date 10/08/2017, effective date: 30/07/2019
	-0.8 to 0.1 Bar	0.28 Bar	Hydraulic Pump with Fluke Digital Pressure Gauge Calibration is done according to ISO/TS 3567 SP14-6, , Issue 2, revision 6, Issue date 10/08/2017, effective date: 30/07/2019
	-0.8 to 0.1 Bar	0.016 Bar	Hydraulic Pump with Martel Digital Pressure Gauge Calibration is done according to ISO/TS 3567 SP14-6, , Issue 2, revision 6, Issue date 10/08/2017, effective date: 30/07/2019

**a) The reported CMCs are expressed at approximately the 95 % level of confidence, using a coverage factor of k = 2. The actual measurement uncertainty of a specific calibration performed by the laboratory may be greater than the CMC due to the behavior of the customer's device and to influences from the circumstances of the specific calibration.**



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List of employees in the laboratory who are technically responsible for issuing the calibration certificates in the scope of accreditation:

1. Malek Shamlawe / Technical Manager
2. Afnan Dawoud / Quality Manager
3. Essa Jamal/ Head of Lab
4. Anas Dahshan / Calibration and Qualification Supervisor
5. Ismael Al-Khateeb / Calibration and Qualification Supervisor
6. Mohammad Adnan / Calibration and Qualification Engineer

Voluntary Withdrawal - Full scope-Date: 01-01-2021