CERTIFICATE OF ACCREDITATION

The ANSI National Accreditation Board

Hereby attests that

Turnkey Instrument Solutions, Inc.
1132 Southeastern Ave.
Indianapolis, IN 46202

Fulfills the requirements of

ISO/IEC 17025:2017

In the field of

CALIBRATION

This certificate is valid only when accompanied by a current scope of accreditation document.
The current scope of accreditation can be verified at www.anab.org.

R. Douglas Leonard Jr., VP, PILR SBU

Expiry Date: 18 September 2024
Certificate Number: AC-2616

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017.
This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated April 2017).

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

Turnkey Instrument Solutions, Inc.
1132 Southeastern Ave.
Indianapolis, IN 46202
Pat Roche 317-946-6354

CALIBRATION

Valid to: **September 18, 2024** Certificate Number: **AC-2616**

Chemical Quantities

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
pH Meters [1]	4 pH 7 pH 10 pH	0.03 pH	Standard pH Solutions
Conductivity Meters [1]	10 mS/cm 100 mS/cm 200 mS/cm	0.2 mS/cm 0.49 mS/cm 0.82 mS/cm	Standard Conductivity Solutions

Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
DC Current – Measure [1]	(0 to 30) mA	0.07 % of reading + 0.002 mA	Process Calibrator
DC Current –Source [1]	(0 to 24) mA	0.018 mA	Process Calibrator
RTD Simulation [1]	PT100 Ω 385 (-200 °C to 400) °C (400 °C to 800) °C	 0.56 °C 0.84 °C	Process Calibrator
Thermocouple Simulation Source [1]	Type J (-210 °C to 1 200) °C Type K (-210 °C to 1 372) °C	 0.68 °C 1 °C	Process Calibrator
Thermocouple Measurement Measure [1]	Type J (-210 °C to 1 200) °C Type K (-210 °C to 1 372) °C	 0.95 °C 1.1 °C	Process Calibrator

Mass and Mass Related

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Absolute Pressure [1]	(0.5 to 100) psia	0.1 psi	700PA6 Pressure Module
Gauge Pressure [1] Pneumatic	(0 to 30) psi (-15 to 30) psi (0 to 100) psi (-15 to 100) psi (0 to 300) psi (0 to 500) psi	0.03 psi 0.03 psi 0.08 psi 0.08 psi 0.42 psi 0.45 psi	Fluke 7xx Series Pressure Modules
Gauge Pressure [1] Hydraulic	(0 to 1 000) psi (0 to 3 000) psi (0 to 5 000) psi (0 to 10 000) psi	1.1 psi 3.9 psi 6.5 psi 6 psi	Fluke 7xx Series Pressure Modules
Differential Pressure [1]	(-1 to 1) inH_20 (-10 to 10) inH_20 (-1 to 1) psi (-15 to 15) psi	0.008 inH_20 0.054 inH_20 0.004 psi 0.015 psi	Fluke 7xx Series Pressure Modules
Scales [1]	Up to 15 lbs.	0.002 7 lbs.	ASTM Class F7 weights
Liquid Mass Flow [1]	(1.24 to 31) lb/min	0.35 % of reading	8 mm Reference Meter Portable Flow Rig
	(13.3 to 333) lb/min	0.28 % of reading	25 mm Reference Meter Portable Flow Rig
	(34 to 850) lb/min	0.32 % of reading	50 mm Reference Meter Portable Flow Rig
	(110 to 2 570) lb/min	0.32 % of reading	50 mm Reference Meter Inline
Liquid Volume Flow [1]	(0.16 to 4) GPM	0.35 % of reading	8 mm Reference Meter Portable Flow Rig
	(1.6 to 40) GPM	0.28 % of reading	25 mm Reference Meter Portable Flow Rig
	(4.1 to 102) GPM	0.32 % of reading	50 mm Reference Meter Portable Flow Rig
	(12.4 to 310) GPM	0.32 % of reading	50 mm Reference Meter Inline
Totalize Mass Flow [1]	(0.6 to 15) lb	0.004 1 lb	Scale

Thermodynamic

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Liquid in Glass Thermometers (Partial immersion) [1,2]	(-5 to 200) °C	0.27 °C + 0.6*R*	Oil Baths, Dry Block, RTD Thermometer, 753/754 Process Calibrator
Digital & Mechanical Thermometers [1,2,3]	(-5 to 200) °C Ambient to 400 °C	0.27 °C + 0.6*R* 1.3 °C + 0.6*R*	
RTD/TC Thermometers & Transmitters [1,3]	(-5 to 200) °C Ambient to 400 °C	0.5 °C 1.4 °C	

Calibration and Measurement Capability (CMC) is expressed in terms of the measurement parameter, measurement range, expanded uncertainty of measurement and reference standard, method, and/or equipment. The expanded uncertainty of measurement is expressed as the standard uncertainty of the measurement multiplied by a coverage factor of 2 (k=2), corresponding to a confidence level of approximately 95%.

Notes:

1. On-site calibration service is available for this parameter, since on-site conditions are typically more variable than those in the laboratory, larger measurement uncertainties are expected on-site than what is reported on the accredited scope.
2. *R* = resolution of unit under test.
3. Ambient temperature is procedurally defined to be within a range of 32 to 104 degrees F.
4. This scope is formatted as part of a single document including Certificate of Accreditation No. AC-2616.

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