



CERTIFICATE OF ACCREDITATION

ANSI-ASQ National Accreditation Board

500 Montgomery Street, Suite 625, Alexandria, VA 22314, 877-344-3044

This is to certify that

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

has been assessed by ANAB
and meets the requirements of international standard

ISO/IEC 17025:2017

while demonstrating technical competence in the field of

CALIBRATION

Refer to the accompanying Scope of Accreditation for information regarding the types of calibrations to which this accreditation applies.

AC-2616
Certificate Number


ANAB Approval

Certificate Valid: 09/18/2018-09/18/2020
Version No. 001 Issued: 09/18/2018



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, 2020**

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	0.20 mS/cm 0.49 mS/cm 0.82 mS/cm	Standard Conductivity Solutions
Oxygen Meters ¹	1% O ₂ 8 % O ₂ 21%O ₂	1 % of reading 1.1 % of reading 0.32 % of reading	Standard Gas Mixture

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 ¹ Source	Type J (-210 °C to 1 200) °C Type K (-210 °C to 1 372) °C	0.68 °C 1 °C	Process Calibrator



Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Thermocouple Measurement ¹ Measure	Type J (-210 °C to 1 200) °C	0.95 °C	Process Calibrator
	Type K (-210 °C to 1 372) °C	1.1 °C	

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	(0 to 30) psi	0.03 psi	Pressure Modules 700P05
	(-15 to 30) psi	0.03 psi	700PD5
	(0 to 100) psi	0.08 psi	700P06
	(-15 to 100) psi	0.08 psi	700PD6
	(0 to 300) psi	0.42 psi	700P27
	(0 to 500) psi	0.45 psi	700P07
	(0 to 1 000) psi	1.1 psi	700P08
	(0 to 3 000) psi	3.9 psi	700P29
	(0 to 5 000) psi	6.5 psi	700P30
	(0 to 10 000) psi	6 psi	750P31
Differential Pressure ¹	(-1 to 1) inH ₂ O	0.008 inH ₂ O	Pressure Modules 700P00
	(-10 to 10) inH ₂ O	0.054 inH ₂ O	700P01
	(-1 to 1) psi	0.004 psi	700P22/750P22
	(-15 to 15) psi	0.015 psi	700P24
Scales ¹	Up to 15 lbs.	0.004 8 lbs.	ASTM Class F7 weights
Liquid Mass Flow ¹	(1.24 to 31) lbs/min	0.35 % of reading	8 mm Reference Meter Portable Flow Rig
	(13.3 to 333) lbs/min	0.28 % of reading	25 mm Reference Meter Portable Flow Rig
	(34 to 850) lbs/min	0.32 % of reading	50 mm Reference Meter Portable Flow Rig
	(110 to 2 570) lbs/min	0.32 % of reading	50 mm Reference Meter Inline

Mass and Mass Related

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
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) lbs.	0.004 8 lbs.	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 + 0.6R	Oil Baths, Dry Block, RTD Thermometer, 753/754 Process Calibrator
Mechanical Thermometers ^{1,2}	(-5 to 200) °C Ambient to 400 °C	0.27 °C + 0.6R 1.3 °C + 0.6R	
RTD/TC Thermometers & Transmitters ¹	(-5 to 200) °C Ambient to 400 °C	0.8 °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. This scope is formatted as part of a single document including Certificate of Accreditation No. AC-2616.



Vice President

