Kalibrierschein / Calibration Certificate

gem. DIN EN ISO/IEC 17025:2018 / *acc. DIN EN ISO/IEC 17025:2018*

erstellt durch das Kalibrierlaboratorium
issued by the calibration laboratory

WIKA Alexander Wiegand SE & Co. KG

Alexander-Wiegand Straße 30
63911 Klingenberg

Deutsche Akkreditierungsstelle
D-K-15105-01-00

M 2025-01
D-K-15105-01-00
2025-07

Mitglied im Deutschen Kalibrierdienst
Member of the Deutscher Kalibrierdienst

Kalibrierzeichen
Calibration mark

Gegenstand *Object*	Dry well calibrator
Hersteller *Manufacturer*	Alexander Wiegand SE & Co.KG Alexander-Wiegand-Strasse 30 D-63911 Klingenberg
Typ *Type*	CTD9100-650
Fabrikat/Serien-Nr. *Serial Number*	2409023
Auftraggeber *Customer*	Mustermann Musterstraße Musterstadt
Auftragsnummer *Order No.*	S110049837
Anzahl der Seiten des Kalibrierscheines *Number of pages of the certificate*	4
Zeitraum der Kalibrierung *Period of calibration*	15.07.2025 - 16.07.2025

Dieser Kalibrierschein dokumentiert die metrologische Rückführbarkeit auf nationale Normale zur Darstellung der Einheiten in Übereinstimmung mit dem Internationalen Einheitensystem (SI). Die DAkkS ist Unterzeichner der multilateralen Übereinkommen der European co-operation for Accreditation (EA) und der International Laboratory Accreditation Cooperation (ILAC) zur gegenseitigen Anerkennung der Kalibrierscheine.
Für die Einhaltung einer angemessenen Frist zur Wiederholung der Kalibrierung ist der Benutzer verantwortlich.
This calibration certificate documents the metrological traceability to national standards, which realize the units of measurement according to the International System of Units (SI). The DAkkS is signatory to the multilateral agreements of the European co-operation for Accreditation (EA) and of the International Laboratory Accreditation Cooperation (ILAC) for the mutual recognition of calibration certificates. The user is obliged to have the object recalibrated at appropriate intervals.

MUSTER

Dieser Kalibrierschein darf nur vollständig und unverändert weiterverbreitet werden. Auszüge oder Änderungen bedürfen der Genehmigung des ausstellenden Kalibrierlaboratoriums. Kalibrierscheine ohne Unterschrift haben keine Gültigkeit.
This calibration certificate may not be reproduced other than in full except with the permission of the issuing laboratory. Calibration certificates without signature are not valid.

Datum *Date*	Stellv. Leiter des Kalibrierlaboratoriums *Assistant head of the calibration laboratory*	Bearbeiter *Person in charge*
19.07.2025		
	M. Mustermann	M. Mustermann

WIKA Alexander Wiegand SE & Co. KG
Alexander-Wiegand Straße 30
63911 Klingenberg
Germany

Tel. +49 9372 132-5049
www.wika.de
CTserviceteam@wika.com

Description of the device under test

The item to be calibrated is a portable dry well calibrator. The heating is realised by electrical heating elements.

Applied calibration procedure

The calibration had been carried out according to the guideline for the "Calibration of dry well calibrators", DKD-R 5-4:2018.

Measurement conditions

digital multimeter Keithley 2001, S/N: 4316756,GN A52 73184 D-K 2025
PRT 935-14-95, S/N: 1109RAGQ, GN A64 A14517 D-K 2024

The reference thermometer was immersed into the insert until it reaches the bottom. In order to measure the dry-well temperature the average temperature is calculated out of > 10 readings. The results are mathematical averages of rising and decreasing temperature steps and are taking into account contributions for hysteresis effects.

Environmental conditions

The ambient conditions of the calibration laboratory are controlled within the following limits:
Ambient temperature:
(23 ± 2) °C
Relative humidity: (40 ± 25) %

MUSTER

Calibration results

Operating mode: Dry Well calibrator / internal control, S/N: 2409023

Temperature t_{90} in °C	Display DUT t_{90} in °C	Deviation Δt in K	Uncertainty U in K
99,9	100,0	0,1	0,40
199,9	200,0	0,1	0,40
299,9	300,0	0,1	0,50
399,9	400,0	0,1	0,50
499,8	500,0	0,2	0,60
599,9	600,0	0,1	0,60

Uncertainty

All reported expanded uncertainties at the various calibration points are stated as the standard uncertainties multiplied by a coverage factor of k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%. They were calculated according to EA-4/02 M:2022 taking into account the reference standards, Calibration equipment, environmental conditions, contribution of the calibrated instruments, repeatability, etc. Possible long term drifts are not included.

MUSTER

Zusatzprüfungen gemäß DKD-R 5-4
Additional Tests according DKD-R 5-4

Kalibriergegenstand (KG) ***Device under test (DUT)***	Blockkalibrator *Dry well calibrator*
Typ ***Model***	CTD9100-650
Funktion ***Function***	Blockkalibrator / interne Reglung *Dry well calibrator / internal control*
Arbeitsbereich ***Working range***	40 ... 650 °C

Beschreibung des Betriebsmittels / *Description of the operating resource*

Messing-Einlegeteil, DA = 28 mm, LA = 150 mm, DI = 6,3 mm
Brass insert, DA = 28 mm, LA = 150 mm, DI = 6,3 mm

Ergebnis / *Result*

Prüfung ***Test***	**Kapitel** ***Chapter***	***t* min** **in K**	***t* 50% Bereich / Rt** ***t 50% range / t ambient*** **in K**	***t* max** **in K**
Axiale Temperaturverteilung *Axial temperature homogeneity*	3.1*	0,23	./.	0,26
Radiale Temperaturverteilung *Radial temperature homogeneity*	3.2	./.	./.	./.
Beladungseinfluss *Loading effect*	3.3	./.	./.	./.
Zeitliche Stabilität über 30 Min. *Stability within time 30 min.*	3.4	0,04	0,08	0,15
Wärmeableitungseinfluss *Heat conduction*	3.5	./.	./.	./.

MUSTER

Die Ergebnisse wurden im Rahmen einer Typenprüfung ermittelt.
The results were verified within type testing.

* Durchführung gemäß DKD-R 5-4 Anhang A Abschnitt 3 mit Thermometern mit langer sensitiver Länge.
** Implementation according to DKD-R 5-4 Annex A Section 3 with thermometers with long sensitive length.*

Die in diesem Kalibrierschein angegebenen Ergebnisse beziehen sich nur auf den kalibrierten Gegenstand.
The results in this calibration certificate refer only to the calibrated object.

Ende des Kalibrierscheins.
End of calibration certificate.

WIKA Alexander Wiegand SE & Co. KG
Alexander-Wiegand Straße 30
63911 Klingenberg/Germany
Tel. +49 9372 132-5049
www.wika.de
CTserviceteam@wika.com