

**Technical Report No.: 713280669**

**Date: 2023-07-24**

**Client:** Inheco Industrial Heating & Cooling GmbH  
Fraunhoferstr. 11, 82152 Martinsried, Germany

**Manufacturer:** Inheco Industrial Heating & Cooling GmbH  
Fraunhoferstr. 11, 82152 Martinsried, Germany

**Factory:** Inheco Industrial Heating & Cooling GmbH  
Fraunhoferstr. 11, 82152 Martinsried, Germany

**Test object:** Product: Laboratory Equipment (Thermal Cycler)

**Model:** **ODTC System** (On Deck Thermal Cycler)

ODTC System consists of:

ODTC® Power & Control Unit and ODTC Devices:

- ODTC®96 Left
- ODTC®96 Right
- ODTC®96 Back
- ODTC®96 Down
- ODTC®384 Left
- ODTC®384 Right
- ODTC®384 Back
- ODTC®384 Down
- ODTC®96 Left XL
- ODTC®96 Right XL
- ODTC®96 Back XL
- ODTC®96 Down XL
- ODTC®384 Left XL
- ODTC®384 Right XL
- ODTC®384 Back XL
- ODTC®384 Down XL

**Test specification:** IEC 61010-1:2010  
IEC 61010-1:2010/AMD1:2016

Report No.: 713280669  
Rev.: 00  
Date: 2023-07-28

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Frankfurt Branch  
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60314 Frankfurt/M., Germany*



IEC 61010-2-010:2019  
IEC 61010-2-081:2019

UL 61010-1:2012/R:2019-07  
UL 61010-2-010:2019  
UL 61010-2-081:2019

CSA C22.2 No. 61010-1:2012/A1:2018-11  
CSA C22.2 No. 61010-2-010:2019  
CSA C22.2 No. 61010-2-081:2019

Purpose of examination: Testing and evaluation (visual / partial) according to the test specification

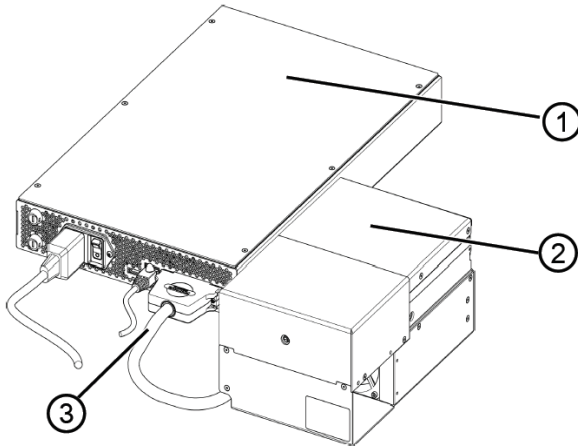
Test result: The test results show that the presented product is in compliance with the above listed test specifications.

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## 1. Description of the test object

### 1.1 Picture(s)

The ODTc set primarily consist of the Power & Control Unit (PCU) (1) and Thermal Cycler (2) (ODTC), Power & Control Unit (1) and ODTC (2) is connected by a maximum 3-m cable (3), which is hard-wired to the ODTC.



### 1.2 Function

Manufacturer's specification for intended use:

The ODTc System consists of ODTc Power & Control Unit and ODTc Device and is designed for use as an integrated thermal cycler in automated liquid handling workstations, to heat and cool labware with biological or chemical samples.

The ODTc Power & Control Unit is used as power supply and control instrument for the ODTc Device.

The ODTc Device is only powered via ODTc Power & Control Unit and may not be used separately. The particular challenge here is to ensure thermal cyclability.


## 1.3 Consideration of the foreseeable use

- Not applicable
- Covered through the applied standard
- Covered by the following comment\*
- Covered by attached risk analysis






## 1.4 Technical Data

	ODTC® Power & Control Unit (P&CU)	ODTC Device
Rated voltage:	100 - 240 Vac	24 Vdc
Rated frequency:	50/60 Hz	--
Rated power:	1250 W	1200 W
Protection class:	Class I	Class III


Part Nr. **8900035-HAM** Revision **10** Serial Nr. **12345**  
**ODTC® Power & Control Unit**  
 static IP: 192.168.1.50  
 Input: 100-240VAC 50/60Hz 1250W  
 Fuse: T12A Output: 24VDC 1200W




Prod. Date: 2023-02  
 inheco GmbH  
 Germany  
 inheco






ICES/NMB-001  
 ISM 1-B




Part Nr. **8100000** Revision **09** Serial Nr. **6192**  
**ODTC 96 Left**  
 Input: 24VDC 1200W



Prod. Date: 2022-11  
 inheco GmbH  
 Germany  
 inheco

ICES/NMB-001  
 ISM 1-B



Remark: Copy of marking plate of ODTC® Power & Control Unit (P&CU) and ODTC devices representative for all model versions. For more information see “Description of model differences” in this report.

## 2. Order

### 2.1 Date of Purchase Order, Customer's Reference

Order 2022-12-20, based on TÜV SÜD quote 5744885, 2022-11-21.

### 2.2 Test Sample(s)

- Reception date(s): 2023-03-22
- Location(s) of reception: TÜV SÜD Product Service GmbH  
Daimlersraße 40 60314 Frankfurt, Germany
- Condition of test sample(s): Without technical restrictions

### 2.3 Testing

- Testing date(s): 2022-12-20 to 2023-07-28
- Location(s) of testing: TÜV SÜD Product Service GmbH  
Daimlersraße 40 60314 Frankfurt, Germany

### 2.4 Points of Non-Compliance or Exceptions of the Test Procedure

- None

### 3. Test Results

- Decision rule according to IEC Guide 115:2023, clause 4.3 was applied.”

#### 3.1 Positive Test Results

Test specification(s)	Report no. / Rev. No.	Date	Remark
Electrical safety:	713280669 Rev.00	2023-07-28	

#### 3.2 Points of Non-Compliance according to the test specification

- None

Test specification(s)	Sub-clause	Remark
N/A	---	---

## 4. Test History

Report Ref. No.	Item
028-713040503-000, dated 2014-07-21	Initial testing of EUT and NRTL certification.
028-713040503-100, dated 2015-07-14	Upgrade testing of EUT due to changing the model names and new marking plates; New NRTL certification
028-713040503-200, dated 2017-11-21	Upgrade testing of EUT according to the current standard versions of IEC/UL/CSA 61010-1, IEC/UL/CSA 61010-2-010 and IEC/UL/CSA 61010-2-081; New NRTL certification
028-713040503-300, dated 2018-07-20	Upgrade testing of EUT due to adding the extended (XL) model versions to the product family of ODTC devices; New NRTL certification.
028-713176187-000, dated 2020-02-11	Upgrade testing of EUT due to adding of two alternative heating foils to the ODTC devices; New NRTL certification. All relevant test result as described in reports 028-713040503-000 /-100 /-200 /-300 have been taken over without modification in this report.
028-713176187-100, dated 2020-03-26	CB certification for the already tested and NRTL certified ODTC System; All relevant test result as described in reports 028-713040503-000 /-100 /-200 /-300 and 028-713176187-000 have been taken over in this report without modification.
713280669 / Rev.00, dated 2023-07-28	This report updates the product to the current standard (AMD1). The main board in the P&CU has also been updated. New fans have also been installed in the P&CU and in the ODTC device. All relevant tests have been re-tested and re-evaluated.

**5. Remarks**

**5.1 General**

The user manual has been examined according to the minimum requirements described in the product standard. The manufacturer is responsible for the accuracy of further particulars as well as of the composition and layout.

In many countries, instructions and equipment marking related to safety are required to be in a language that is acceptable in the country in which the equipment is to be installed.

The user manual has been examined according to the minimum requirements described in the product standard. The manufacturer is responsible for the accuracy of further particulars as well as of the composition and layout.

**5.2 Factory surveillance cycle**

Your production facility is currently on the following surveillance cycle.

- Annual (12 month)
- Bi-Annual (6 month)
- Quarterly (3 month)

**5.3 Additional information for routine tests to be performed by the factory(ies)**

**Routine tests for electrical appliances / equipment:**

Routine test requirements for production are described in IEC 61010-1:2010, AMD1:2016 / UL 61010-1:2012/R:2019-07 Annex F.

Required

Not Required

Reason for non-requirement:

- Class III product
- Other:

**Test Details:**

Dielectric Strength

Ground Continuity

**Test Points:**

BI: L/N – Chassis

RI: L/N – Secondary

AC inlet plug PE pin to Chassis parts

**Test Values / Limit(s):**

1400 Vac for 2 seconds + 5 s raising, or 2000 Vdc for 2 seconds + 5 s raising, or (2000 V, 3 impulses for min. 1 second of each polarity)

— Vac / — Vdc

Continuity test only.

Test-current and test-time not specified.



## 6. Documentation

File	File name	Date
TRF – complete (with attachments)	713280669_Rev.00_TRF_CB_NRTL_E - IEC61010_1P-complete.pdf	2023-07-28
TR	713280669_Rev.00_TR_rev13_CB_NRTL_E.pdf	2023-07-28
Data form (CDF):	713280669_Rev.00_A8_CDF_CB-NRTL_E.pdf	2023-07-28

## 7. Summary

The test results show that the presented product is in compliance with the specified requirements.

With this letter, we have completed our ordered services and are closing the stated project. Ordered positions will be charged to date.

If there are any open questions to this report or we can assist you for further projects, please to not hesitate to conduct us directly.

Thank you for cooperation, we are looking forward to work with you. Positive

## TÜV SÜD Product Service GmbH

Tested by:



Aydin ÜNAL (Project Handler)

*printed name, function & signature*

Approved by:



SIGN-ID 817113

Jens HERRMANN (Reviewer)

*printed name, function & signature*