

Attachment 8
Form
Data form for critical components and material information



Product Service

Applicant name and address..... :	Inheco Industrial Heating & Cooling GmbH Fraunhoferstrasse 11, 82152 Martinsried, Germany
Manufacturer name and address . :	Inheco Industrial Heating & Cooling GmbH Fraunhoferstrasse 11, 82152 Martinsried, Germany
Name and address of factory / factories..... :	Inheco Industrial Heating & Cooling GmbH Fraunhoferstrasse 11, 82152 Martinsried, Germany
Project-No./Report-No. :	2051491 / 713280669
Test item description..... :	Laboratory Equipment (Thermal Cyler)
Model/Type reference :	ODTC System (On Deck Thermal Cyler) ODTC System consists of: ODTC® Power & Control Unit and ODTC Device For more details regarding the assessed equipment see General product information and Description of model differences in this report
Device type :	<input type="checkbox"/> component / <input type="checkbox"/> sub-assembly / <input checked="" type="checkbox"/> equipment / <input type="checkbox"/> system

Ratings :	- ODTC® Power & Control Unit (P&CU): 100-240 Vac; 50/60 Hz; 1250 W; Class I - ODTC Device: 24 Vdc; 1200 W; Class III
Connection to electrical supply..... :	<input type="checkbox"/> N/A <input type="checkbox"/> Permanent / <input checked="" type="checkbox"/> Detachable cord set / <input type="checkbox"/> Non detachable cord set / <input type="checkbox"/> Direct plug-in / <input type="checkbox"/> Battery operated / <input type="checkbox"/> Others:
Overvoltage category..... :	II for ODTC Power & Control Unit; I for ODTC Device
Pollution degree..... :	<input type="checkbox"/> 1 / <input checked="" type="checkbox"/> 2 / <input type="checkbox"/> 3 / <input type="checkbox"/> 4 / <input type="checkbox"/> N/A
Class of protection..... :	Class I for ODTC Power & Control Unit (P&CU); Class III for ODTC Device
Product with functional earthing :	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> N/A
Environmental conditions / Maximum ambient temperature (°C)..... :	Extended (+15 to +32 °C; 30 to 80 % rel. humidity; 3000 m max. altitude; indoor use)

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Equipment mobility / Classification of installation and use..... :	<input type="checkbox"/> transportable / <input checked="" type="checkbox"/> portable / <input type="checkbox"/> stationary / <input type="checkbox"/> mobile / <input type="checkbox"/> fixed / <input type="checkbox"/> permanently installed / <input type="checkbox"/> hand-held / <input type="checkbox"/> body-worn / <input type="checkbox"/> building-in / <input type="checkbox"/> Others:				
Operating conditions :	<input checked="" type="checkbox"/> Continuous / <input type="checkbox"/> Short-time / <input type="checkbox"/> Intermittent				
Overall size of equipment (mm) :	ODTC Power & Control Unit: Approx. 256.5 mm x 414.5 mm x 58 mm; ODTC Device: Approx. 157 x 248 x 125; ODTC Device XL model versions: Approx. 157 x 285 x 130				
Mass of equipment (kg)..... :	ODTC Power & Control Unit: Approx. 5.5 kg ODTC Device: Approx. 7.5 kg				
Degree of ingress protection (IEC 60529, UL 50 / UL 50 E) :	N/A				
Noise emission [dB(A)]..... :	N/A				
Vibration [m/s ²]	N/A				
Connection to hydraulic power :	N/A				
Connection to pneumatic power ... :	N/A				
Connection to water installation ... :	N/A				
Description of special features :	N/A				
Additional information for Laser equipment, classification according to IEC/EN 60825-1:					
<input checked="" type="checkbox"/> N/A					
Type:		Wavelength:		Output power:	
Class:		Pulse duration:			
Data communication ports:					
<input type="checkbox"/> N/A					
Wired ports :	<input type="checkbox"/> N/A <input type="checkbox"/> USB <input checked="" type="checkbox"/> LAN <input type="checkbox"/> DALI <input checked="" type="checkbox"/> other: ODTC connector (SELV)				
Wireless ports :	<input checked="" type="checkbox"/> N/A <input type="checkbox"/> Wifi <input type="checkbox"/> Bluetooth <input type="checkbox"/> NFC <input type="checkbox"/> 4G/LTE <input type="checkbox"/> 5G <input type="checkbox"/> Other:				
Data Storage / Processing :	<input checked="" type="checkbox"/> N/A <input type="checkbox"/> Local <input type="checkbox"/> Cloud				

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Additional IEC 60601-1 / EN 60601-1 / ANSI/AAMI ES60601-1 / CAN/CSA-C22.2 No. 60601-1: <input checked="" type="checkbox"/> N/A	
Applied part type	<input type="checkbox"/> B <input type="checkbox"/> BF <input type="checkbox"/> CF <input type="checkbox"/> Defibrillation-Proof <input type="checkbox"/> No AP
Software Version.....	

General product information and other remarks:																																																	
Main label / Warning Markings:	<table border="1"> <tr> <td>Part Nr. 8900035-HAM</td> <td>Revision 10</td> <td>Serial Nr. 12345</td> </tr> <tr> <td colspan="3">ODTC® Power & Control Unit</td> </tr> <tr> <td colspan="3">static IP: 192.168.1.50</td> </tr> <tr> <td colspan="3">Input: 100-240VAC 50/60Hz 1250W</td> </tr> <tr> <td colspan="3">Fuse: T12A Output: 24VDC 1200W</td> </tr> <tr> <td colspan="2"> </td> <td> </td> </tr> <tr> <td colspan="2"> ICES/NMB-001 ISM 1-B </td> <td> Prod. Date: 2023-02 inheco GmbH Germany inheco </td> </tr> <tr> <td colspan="3"> </td> </tr> <tr> <td colspan="3" style="text-align: center;">Type Label P&CU</td> </tr> <tr> <td>Part Nr. 8100000</td> <td>Revision 09</td> <td>Serial Nr. 6192</td> </tr> <tr> <td colspan="3">ODTC 96 Left</td> </tr> <tr> <td colspan="3">Input: 24VDC 1200W</td> </tr> <tr> <td colspan="2"> </td> <td> </td> </tr> <tr> <td colspan="2"> ICES/NMB-001 ISM 1-B </td> <td> Prod. Date: 2022-11 inheco GmbH Germany inheco </td> </tr> <tr> <td colspan="3" style="text-align: center;"> A representative label for the ODTC Device </td> </tr> <tr> <td colspan="3"> 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. </td> </tr> </table>	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						ICES/NMB-001 ISM 1-B		Prod. Date: 2023-02 inheco GmbH Germany inheco				Type Label P&CU			Part Nr. 8100000	Revision 09	Serial Nr. 6192	ODTC 96 Left			Input: 24VDC 1200W						ICES/NMB-001 ISM 1-B		Prod. Date: 2022-11 inheco GmbH Germany inheco	A representative label for the ODTC Device			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.		
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Description of model differences:	ODTC Devices:	Number of wells:	Orientation of ventilation duct:
		ODTC®96 Left	96
	ODTC®96 Back	96	Ventilation outlet on the back side of device
	ODTC®96 Right	96	Ventilation outlet on the right side of device
	ODTC®96 Down	96	Ventilation outlet on the down side of device
	ODTC®384 Left	384	Ventilation outlet on the left side of device
	ODTC®384 Back	384	Ventilation outlet on the back side of device
	ODTC®384 Right	384	Ventilation outlet on the right side of device
	ODTC®384 Down	384	Ventilation outlet on the down side of device
	ODTC®96 XL Left	96	Ventilation outlet on the left side of device
	ODTC®96 XL Back	96	Ventilation outlet on the back side of device
	ODTC®96 XL Right	96	Ventilation outlet on the right side of device
	ODTC®96 XL Down	96	Ventilation outlet on the down side of device
	ODTC®384 XL Left	384	Ventilation outlet on the left side of device
	ODTC®384 XL Back	384	Ventilation outlet on the back side of device
	ODTC®384 XL Right	384	Ventilation outlet on the right side of device
	ODTC®384 XL Down	384	Ventilation outlet on the down side of device
* Power & Control Unit (PCU) is identical for all ODTC® versions and included in the scope of supply			

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<p>General information / Intended use:</p>	<p>The ODC System consists of ODC Power & Control Unit and ODC 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 ODC Power & Control Unit is used as power supply and control instrument for the ODC Device. The ODC Device is only powered via ODC Power & Control Unit and may not be used separately. The particular challenge here is to ensure thermal cyclability.</p>
<p>Protective earth connection:</p>	<p>PE connection is part by R/C detachable cord set and R/C appliance plug. Connection is realized with a PE-star point and cable-lugs and secured by serrated lock washer.</p>
<p>Drawing(s) / Picture(s):</p>	

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Product Service

Critical components and material information:

TABLE 1: - List of components and circuits relied on for safety						P
Unique component reference or location	Application/function	Manufacturer / trademark (NOTE 1)	Type / model	Technical data (NOTE 2)	Standard	Mark(s) of conformity evidence of acceptance (NOTE 3 and 4)
ODTC power and control unit:						
--	Outer enclosure	Inheco	ODTC	Made of metal; Overall dimensions: 415 mm x 248 mm x 53 mm; With $\Phi 2$ mm holes as ventilation openings at front side and $\Phi 2$ mm holes as ventilation openings as air circulation at rear side (fans).	IEC 61010-1	Tested with equipment
--	Appliance Inlet with mains switch	Schurter	EC11	16A/250V (EU) 20A/250V (US/CAN) Op. temp. 70°C	UL 498; CSA-C22.2 No. 42; UL 60320-1; CAN/CSA-C22.2 No. 60320-1	cURus: AXUT2.E96454 AXUT8.E96454
--	- ALTERNATE	Interchangeable	Interchangeable	Same as above	Same as above	UR CCN: AXUT2/8
--	Fuse holder (2x)	Schurter	FPG1	16A/400VAC Op. temp. 85°C	UL 4248-1; CSA-C22.2 No. 4248.1	cURus: IZLT2.E39328 IZLT8.E39328
--	PRI-Fuse (2x) or alternative	Littelfuse	215P Series Catalog no.: 215 012.P	Cartridge Fuses; Time-Lag Fuse; 5x20mm; 12A/250V; Op. temp max. 125°C	UL 248-1; CSA-C22.2 No. 248-1-00	cURus: JDYX2.E10480 JDYX8.E10480

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Unique component reference or location	Application/function	Manufacturer / trademark (NOTE 1)	Type / model	Technical data (NOTE 2)	Standard	Mark(s) of conformity evidence of acceptance (NOTE 3 and 4)
		Interchangeable	Interchangeable	Same or better ratings	Same as above	UR CCN: JDYX2/8
--	Protection foil	DuPont	HN FI 16010	Kapton sheet, Electric strength 154kV/mm, Min. temp. 230°C, V-0.	UL 94	UR QMFZ2
--	PRI wiring and PE wiring or alternative	U.I. Lapp GmbH	Style 1015	600 V, 105°C; 16 AWG; 1.5mm ²	UL 758 or UL 1063	AVLV2.E100338 or ZKHZ.E198296
		Interchangeable	Same as above	Same or better ratings	Same as above	UR CCN: AVLV2 or ZKHZ
--	PSU	TDK-Lambda	RFE1600-24/mmm (m = A-Z, 0-9)	In: 100-240Vac, 50/60Hz, 14.2A Op. temp. 70°C Out: 24Vdc, 67A max. / 12Vdc, 0.5A	UL 62368-1; CAN/CSA-C22.2 No. 62368-1	QQJQ2.E155698 QQJQ8.E155698
--	SEC wiring or alternative	U.I. Lapp GmbH	Style 1015	600 V, 105°C; VW-1; 12 AWG	UL 1063	ZKHZ.E198296
		Interchangeable	Same as above	Same or better ratings	Same as above	UR CCN: ZKHZ
--	SEC fuses (4x)	Texas Instruments	TPS2660x	0.4A, 1.45A, 1.6A, 2A; T.op: -30°C to +70°C	UL 2367	UR: QVGS2.E169910
--	PCB	Interchangeable	Interchangeable (Different versions (V1.2, V1.3, V1.4, V1.5, V1.6, V1.7, etc.))	Minimum V-1, min. 130°C	UL 796	UR CCN: ZPMV2
--	Coin Battery	Panasonic	CR2032	3 V; Max Abnormal Charging Current 10 mA	UL 1642	BBCV2.MH12210

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--	- ALTERNATE	Interchangeable	Same as above	Same as above	Same as above	UR CCN: BBCV2
MB	Battery holder	RENATA SA	Renata smtu-2032-1	Surface Mounting Technology (SMT); UL94V-0; T.op. max.100°C	UL 1977; CSA-C22.2 No. 182.3	cURus: ECBT2.E218732 ECBT8.E218732
MB	- ALTERNATE	Interchangeable	Same as above	Same as above	Same as above	UR CCN: ECBT2/8
--	Fans (2x)	SANYO DENKI	San ACE 40 (109P0424H3013)	40x40x28mm, plastics flammability UL94V-0, 24Vdc, 0.095 A; 70°C	UL IEC 61010-1	Tested with equipment
--	- ALTERNATE	ADDA	AD04024LB285302-A00	40x40x28 Material: UL94V-0 Glass Filled polyester, 24 Vdc, 0.2A, 4.8 W+10%; T.op.: 70°C; Rated Speed: 12000 RPM+10%	UL IEC 61010-1	Tested with equipment
--	D-SUB connector	FCT	FCT112 (FM21WA4S5-2591)	For AWG 20, insulators PBT max. 130°C	UL 1977; CSA-C22.2 No. 182.3	cURus ECBT2.E168813 ECBT8.E168813
ODTC Device:						

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--	Outer enclosure	Inheco	Metal	Made of metal; overall dimensions: 157 x 248 x 125 mm (140 with LID open), or 157 x 285 x 130 for XL versions; Opening (2mm spacing at the front part (Heat sink side)	IEC 61010-1	Tested with equipment
--	Power cable	Lapp Kabel	Style 2464	300V, 80°C; VW-1; (11x24 + 5x22 + 2x12)AWG	UL 758 CSA-C22.2 No. 127	cURus: AVLV2.E63634 AVLV2.E63634
--	Connector (male)	FCT	FMK4G	Metal hood	IEC 61010-1	Tested with equipment
--	PCB	Interchangeable	Interchangeable (Different versions (V1.2, V1.3, V1.4, V1.5, V1.6, V1.7, etc.))	Minimum V-1, min. 130°C	UL94	UR CCN: ZPMV2
--	Fan	ebmpapst	24 HH	60x60x25mm, plastics flammability UL94V-0, 24Vdc, 0.15A, 70°C	UL IEC 61010-1	Tested with equipment
--	- ALTERNATE	ADDA	AG06024XB257103-A02	60x60x25 Material: UL94V-0 Glass Filled polyester, 24 Vdc, 0.23A, 5.52 W; T.op.: 70°C; Rated Speed: 7000 RPM	UL 507; CSA C22.2 No. 113-15	cURus GPWV2.E132139 GPWV8.E132139
--	Temp. adhesive transfer tape	3M	Hitherm005	150°C, fulfils UL 94 V-0	IEC 61010-1	Tested with equipment

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Unique component reference or location	Application/function	Manufacturer / trademark (NOTE 1)	Type / model	Technical data (NOTE 2)	Standard	Mark(s) of conformity evidence of acceptance (NOTE 3 and 4)
--	Motor and Encoder	Maxon	Motor: RE25 (339152); Encoder+Gear+Motor design.: Maxon 501920	24V/1.5A; Ambient temperature: 100°C;	IEC 61010-1	Tested with equipment
--	Heat device	Marlow industries	XLT2460	130°C, 100W	IEC 61010-1	Tested with equipment
--	Sensors	Honeywell	HOA 1887-012	85°C, continuous forward current 50mA	IEC 61010-1	Tested with equipment
		IST	3U P1K0.161.2I.B.750.S	-200°C to 300°C	IEC 61010-1	Tested with equipment
		Jumo	PCS 1.1302.10	-50 to +150°C	IEC 61010-1	Tested with equipment
--	Heating foil	Calesco	PI106160-01	25.5V, 102 W	IEC 61010-1	Tested with equipment
--	- ALTERNATE	Calesco	PNxxxxxx-xx Different versions (x = 0-9)	25.5V, 102 W, PN = PEN	IEC 61010-1	Tested with equipment
--	- ALTERNATE	Minco	HSFKxxxxxx Different versions (x = 0-9)	25.5V, 102 W, H = Heater S = sensor included F = flex cable (not heated) K = Kapton	UL 499; CSA-C22.2 No. 72	cURus: KSOT2.E89693 KSOT8.E89693
<p>NOTE → 1 List all different manufacturers of the above components → 4 asterisk indicates mark assuring agreed level of surveillance → 2 May include electrical, mechanical values → 3 List licence no or method of acceptance</p>						

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NRTL - Unrecognized Safety relevant (critical) components subject to verification testing:

Object / part No.	Verification tests to be conducted	Laboratory of testing / sampling
--	--	--
--	--	--
--	--	--

Routine Test (Safety, Security, ...):

N/A, No requirement in standard, Non certification mark project

Model/Typ: ODTC Power & Control Unit (P&CU)

Test Details:	Test Points:	Test Values / Limit(s):
<input checked="" type="checkbox"/> Dielectric Strength	BI: L/N – Chassis	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)
<input checked="" type="checkbox"/> Ground Continuity	AC inlet plug PE pin to Chassis parts	Continuity test only. Test-current and test-time not specified.

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Test Report 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.

Signature of the Project handler:

Name, seal and signature of Project handler:	
Date:	2023-07-28

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