



IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.:	IECEx CSA 22.0005X	Page 1 of 6	<u>Certificate history:</u>
Status:	Current	Issue No: 1	Issue 0 (2022-02-25)
Date of Issue:	2025-06-11		
Applicant:	BARTEC BENKE GmbH Borsigstraße 10, 21465 Reinbek Germany		
Equipment:	5674-100 Channel Card (Ex i)		
Optional accessory:			
Type of Protection:	Intrinsic Safety 'ia', Optical Radiation 'op is'		
Marking:	[Ex ia op is IIC Ga] -20°C ≤ Tamb ≤ +70°C		

Approved for issue on behalf of the IECEx
Certification Body:

Dave Magee

Position:

Senior Director of Operations

Signature:
(for printed version)

Date:
(for printed version)

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting www.iecex.com or use of this QR Code.



Certificate issued by:

CSA Group
178 Rexdale Boulevard
Toronto, Ontario M9W 1R3
Canada





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Date of issue: 2025-06-11

Issue No: 1

Manufacturer: **BARTEC BENKE GmbH**
Borsigstraße 10, 21465 Reinbek
Germany

Manufacturing
locations: **BARTEC BENKE GmbH**
Borsigstraße 10, 21465 Reinbek
Germany

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended

STANDARDS :

The equipment and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards

[IEC 60079-0:2017](#) Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0

[IEC 60079-11:2011](#) Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
Edition:6.0

[IEC 60079-28:2015](#) Explosive atmospheres - Part 28: Protection of equipment and transmission systems using optical radiation
Edition:2

This Certificate **does not** indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Reports:

[CA/CSA/ExTR22.0006/00](#)

[CA/CSA/ExTR22.0006/01](#)

Quality Assessment Report:

[DE/TUN/QAR12.0009/11](#)



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EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

The 5674-100 Channel Card (Ex i) will be used in the HYGROPHIL F 5674 Moisture Analyzer as an Analog to Digital converter. The Moisture Analyzer is intended for measuring the humidity of gases in pipes, vessels or tanks with the associated humidity sensor. A maximum of three sensors can be connected to the Moisture Analyzer, three Channel Card are required for this.

The Channel Card transforms the Ex i-signals of the temperature and pressure (PT100 and 0... 20mA) from a Moisture Sensor to a digital signal. This signal is transmitted to the HYGROPHIL F 5674 Moisture Analyzer via an I²C interface.

The humidity is measured optically with the sensor. A fiber optic cable supplies the sensor with intrinsically safe light. The LED for the light supply of the sensor is also installed on the card.

The channel card has the following connections:

- Digital data bus with 24V DC supply
- intrinsically safe connector for PT100
- intrinsically safe connector for 0-20 mA (active or passive input)
- intrinsically safe fiber optic cable connector

Safety-related maximum voltage: 28V

SPECIFIC CONDITIONS OF USE: YES as shown below:

1. Equipment is intended to be permanently installed in a non-hazardous area only within a Hy-F 5674 enclosure.



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Equipment (continued):

$U_m = 28V$

Electrical data

Auxiliary power	DC 24 V \pm 10 %, max. 150 mA, fuse 500 mA
Data connection voltage (COM)	DC 3.3 V, fuse 63 mA

Safety data – Port “RTD” (PT100 input) [Ex ia IIC Ga]

Terminals	4 (I+), 3 (IN+), 2 (IN-), 1 (GND)		
Max. voltage U _o	6.7V		
Max. current I _o	30mA		
Max. power P _o	50mW		
Max. resistance R	230Ω		
Internal capacitance C _i	2.5μF		
Internal inductance L _i	0.3mH		
Max. connectable capacitance C _o	15.4μF		
Max. connectable inductance L _o	38 mH		
if capacitance and inductance are present at the same time:			
C _o	0.3μF	0.2μF	0.1μF
L _o	0.01mH	0.1mH	0.15mH



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Safety data – Port “0-20mA” (Analog Input) [Ex ia IIC Ga]

Case: Passive 0..20mA sensor connected

Terminals	4 (+24V), 2 (IN+), 1 (IN-)
Max. voltage U_o	28V
Max. current I_o	93mA
Max. power P_o	0.65W
Max. resistance R	300 Ω
Internal capacitance C_i	negligible small (between I.S. wires)
Internal inductance L_i	negligible small
Max. connectable capacitance C_o	83 nF
Max. connectable inductance L_o	3 mH

if capacitance and inductance are present at the same time:

Max. connectable capacitance C_o	83nF
Max. connectable inductance L_o	0.2mH

Case: Active 0..20mA sensor connected (external I.S. circuit)

Terminals	2 (IN+), 1 (IN-)
Max voltage U_o	28 V
Max current I_o	0 mA
External I.S. voltage U_i	30 V
External I.S. current I_i	120mA
External I.S. capacitance C_i	0nF
External I.S. inductance L_i	0 μ H

Conditions of Manufacture

1. The use of this certificate is subject to the Regulations Applicable to Holders of CSA Certificates.
2. Intrinsic safe relevant transformers shall withstand for one min without breakdown, the application of an ac potential of 1500Vrms between primary and secondary circuits in accordance with IEC 60079-11:2011, 6th Edition, clause 11.2, Table 10. Alternatively, a voltage of 1800 Vrms can be applied for 1 sec. as described in clause 11.2.



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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

This issue, Issue 1, introduced the following changes:

1. Addition of the capacitors C64, C65, C70, C71, C72 and C73.
2. Reducing the maximum voltage U_m .
3. Minor change to the nameplate drawing.
4. Changed the voltage/time from 2.5kV@60s to 1.5kV@60s or 1.8kV@1s for the routine test of the transformers TR1 and TR2.
5. Changes on critical components:
 - Added package limits to the diodes D10 to D15, D29 and D30.
 - Changing the diodes D18, D19 and D20 from type BAS86 to LL4150 (both manufacturer Vishay) and recalculation of the limiting parameters.
 - Decrease of the nominal current of the fuses F4, F5 and F13 to 40 mA and recalculation of the limiting parameters of the diodes D10 to D15, D29 and D30.
6. Changing non-critical components and corrections to previously noted errors and inaccuracies