

EU - Type Examination Certificate

(1)

(2) Equipment and protective systems intended for use in potentially explosive atmospheres – Directive 2014/34/EU

(3) EU - Type Examination Certificate Number

EPS 20 ATEX 1 001 X

Revision 0

(4) Equipment: **Explosion protected Cooling/Heating and climatic Test Cabinets**
T-Line – Types T320, T500, T820, T1000, T1640 and
X-Line – Types X320, X500, X820, X1000, X1640

(5) Manufacturer: **Rubarth Apparate GmbH**

(6) Address: Mergenthalerstr. 8
D-30880 Laatzen
Germany

(7) This equipment and any acceptable variation thereto are specified in the annex to this certificate and the documentation therein referred to.

(8) Bureau Veritas Consumer Products Services Germany GmbH, notified body No. 2004 in accordance with Article 21 given in the Directive 2014/34/EU of the European Parliament and of the Council of 26 February 2014, certifies that this equipment has been found to comply with the essential health and safety requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, given in Annex II of the Directive. The examination and test results are recorded in the confidential documentation under the reference number 20TH0144.

(9) Compliance with the essential health and safety requirements has been assured by compliance with:

EN IEC 60079-0:2018 EN 60079-1:2014 EN 60079-7:2015 EN 60079-18:2015
EN 60079-11:2012 EN ISO 80079-36:2016 EN ISO 80079-37:2016

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the annex to this certificate.

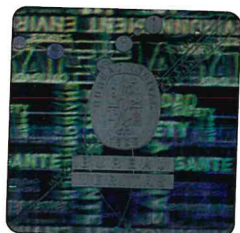
(11) This EU - Type Examination Certificate relates only to the design and examination of the specified equipment in accordance with Directive 2014/34/EU. Further requirements of this Directive apply to the manufacture of this equipment and its placing on the market. Those requirements are not covered by this certificate.

(12) The marking of the equipment shall include the following:



II 2/- G Ex db eb h [ib] ib mb IIB+H2 T3 Gb for the T-Line

II 2G Ex db eb h [ib] ib mb IIB T3 Gb for the X-Line



Certification department of explosion protection

Hamburg, 2020-03-17

H. Schaffer



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(13)

Annex

(14) EU - Type Examination Certificate EPS 20 ATEX 1 001 X

Revision 0

(15) Description of equipment:

The products are Cooling/Heating and Climatic Test Cabinets used as test and simulation devices suitable for safe storage of explosive materials, such as aerosols, or for tests with adhesives or paint even if the storage tests might occasionally or temporary cause an explosive atmosphere (T-Line) or can also be used in explosive areas of Zone 1 or Zone 2 (X-Line). The storage of substances takes place in the test room of the testing and simulation device.

The maximum permissible ambient temperature of the test and simulation device is +30°C for functional reasons but limited to +40°C for safety reasons. The minimum permissible ambient temperature is limited to 0°C (frost-free room) for functional reasons but limited to -20°C for safety reasons.

Description of devices T-Line – Types T320, T500, T820, T1000, T1640:

The test room of devices of the T-line is suitable for zone 1 and zone 2.

At the installation site there must be no danger of explosion at any time.

The test room contains the heating and temperature sensors. The supply of the temperature sensors is intrinsically safe. The heating is standard with hot gas of the refrigeration system. Fan impeller and drive motor are located in the test room. Both are already Ex-certified. With the +80°C option, the drive motor for the test room ventilation is located outside the cabinet but also explosion protected. Heating is provided via an additional Ex-certified heating system in the test room.

The test room is sealed around the boundary to largely prevent carry-over of the explosive atmosphere. When the door is opened, a safety shutdown occurs through a contactless door limit switch, which is designed in the "encapsulation" type of protection. As a result, the circuits of ventilation, heating and cooling are interrupted. A permanent shutdown takes place when the set device limit temperature is exceeded by a maximum of 40°C or 90°C with the temperature range extension to +80°C.

The controller (Master), the control panel (Slave) and the chiller are located in a separate volume in the upper part of the test and simulation unit. During shutdown by opening the door, the controller (Master) located on the rear of the unit continues to run. The control panel (Slave) above the inspection room door is switched off because of possible formation of steam. After closing the door, the control panel (Slave) will start up again.

An optional humidity control is provided by an ultrasonic humidifier mounted on the outer housing. If there is insufficient air flow into the test chamber, the pneumatically actuated zone divider valve closes the connection between the installation room (no zone) and the test room (zone 1) and switches off the humidifier. Explosion protection is achieved by the Ex version of the humidity sensor and the zone divider valve in front of the humidifier.

Minimum and maximum test chamber temperatures are 0°C / + 35°C (standard version) or +80°C (upper temperature extension) and -30°C (lower temperature extension).

Description of devices X-Line – Types X320, X500, X820, X1000, X1640:

Devices of the X-line are used for installation in Zone 1 and Zone 2.

The test room contains the temperature sensors whose supply is "intrinsically safe". For optimal spatial temperature distribution fan impeller and drive motor are located in the test room, both are Ex certified.

The heating is standard with hot gas of the refrigeration system. With the +80°C option, the drive motor for the test room ventilation is located outside the cabinet but also explosion protected. With the +80°C option, heating is provided via an additional Ex-certified heating system in the test room with the type of protection "increased safety". The test room is sealed off all around in order to prevent carry-over of the potentially explosive atmosphere. When the door is opened, a safety shutdown occurs through a contactless door limit switch, which is designed in the "encapsulation" type of protection. As a result, the circuits of ventilation, heating and cooling are interrupted. A permanent shutdown takes place when the set device limit temperature is exceeded by a maximum of 40°C or 90°C with the temperature range extension to +80 ° C.

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Revision 0

The control unit and the chiller are located in a separate volume in the upper part, on the back side or/and at the side wall of the test and simulation unit and are designed to be flameproof. During shutdown by opening the door, control continues. Explosion protection is achieved here by Ex version of the temperature and humidity controller.

The maximum permissible ambient temperature of the test and simulation device is +30°C for functional reasons but limited to +40°C for safety reasons. Minimum and maximum test chamber temperatures are 0°C / + 35°C (standard version) or +80°C (upper temperature extension) and -30°C (lower temperature extension).

Electrical data:

T-Line – Types T320, T500, T820, T1000, T1640 - 50 Hz or 60 Hz versions respectively
Rated voltage 230 V / 50Hz or 60Hz (35°C – version) or
400 V / 230 V / 50 Hz or 60 Hz (with temperature extension to 80°C)

X-Line – Types X320, X500, X820, X1000, X1640 - 50 Hz or 60 Hz versions respectively
Rated voltage 400 V / 230 V / 50 Hz or 60 Hz

(16) Reference number: 20TH0144

(17) Special conditions for safe use:

1. It must be ensured that, due to the stored media, only a potentially explosive Zone 1 is to be expected within the usual atmospheric conditions in the test room (air pressure between 88 and 110 kPa, oxygen content approx 21%).
2. The manufacturer's settings on the motor protection switch for the fan motor and on the temperature limiter must not be changed.
3. When installing the device, it must be ensured that adequate space and, if necessary, ventilation in case of the escape of explosive gases from the test chamber, reliably prevent the formation of a potentially explosive atmosphere.
4. It must be ensured that after opening the door, an ignition of the potentially leaking explosive atmosphere can not take place.
5. The devices may only be operated with a perfect door seal. The device may no longer be operated if there is a fault in the safety shutdown (door limit switch).
6. For the devices of the X-Line it has to be ensured for the accordingly identified parts (handgrip, hinge-joint) by correlate cleaning methods that hazardous electrostatic discharges must not be reckoned with.
7. Make sure that the floor drain is not always open to the test room. However, ventilation to the outside or a source of source-free exhaust air system is permitted.

(18) Essential health and safety requirements:

Met by compliance with standards

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