



CERTIFICATE NUMBER	21-2079629-PDA
EFFECTIVE DATE	03-Mar-2021
EXPIRY DATE	02-Mar-2026
ABS TECHNICAL OFFICE	Hamburg Engineering Department

CERTIFICATE OF Product Design Assessment

This is to certify that a representative of this Bureau did, at the request of

DRAEGER SAFETY AG & CO. KG AA

located at

REVALSTRASSE 1, D-23560 LUEBECK, Germany

assess design plans and data for the below listed product. This assessment is a representation by the Bureau as to the degree of compliance the design exhibits with applicable sections of the Rules. This assessment does not waive unit certification or classification procedures required by ABS Rules for products to be installed in ABS classed vessels or facilities. This certificate, by itself, does not reflect that the product is Type Approved. The scope and limitations of this assessment are detailed on the pages attached to this certificate.

Product: Gas Detector
Model: Polytron 8100 EC, 8200 CAT, 8700 IR, 8720 IR
Sensor Types: ITR 0xxx (infrared sensing principle) , XTR 0xxx (catalytic sensing principle), ETR 0xxx (electrochemical sensing princip...
Endorsements:
Tier: 2 - PDA Issued

This Product Design Assessment (PDA) Certificate remains valid until 02/Mar/2026 or until the Rules and/or Standards used in the assessment are revised or until there is a design modification warranting design reassessment (whichever occurs first).

Acceptance of product is limited to the "Intended Service" details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or previous to the effective date of the ABS Rules and standards applied at the time of PDA issuance. Use of the Product for non-ABS units is subject to agreement between the manufacturer and intended client.

American Bureau Of Shipping

Efstratios Maliatsos, Engineer/Consultant

NOTE: This certificate evidences compliance with one or more of the Rules, Guides, standards or other criteria of ABS or a statutory, industrial or manufacturer's standards. It is issued solely for the use of ABS, its committees, its clients or other authorized entities. Any significant changes to the aforementioned product without approval from ABS will result in this certificate becoming null and void. This certificate is governed by ABS Rules 1-1-A3/5.9 Terms and Conditions of the Request for Product Type Approval and Agreement (2010)

DRAEGER SAFETY AG & CO. KG AA

REVALSTRASSE 1

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Germany

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Product: Gas Detector

Model: Polytron 8100 EC, 8200 CAT, 8700 IR, 8720 IR

Sensor Types: ITR 0xxx (infrared sensing principle) , XTR 0xxx (catalytic sensing principle),
ETR 0xxx (electrochemical sensing principle)

Endorsements:

Intended Service:

Stationary gas detector for Marine and Offshore Applications.

Description:

Explosion-proof gas transmitters for monitoring concentrations of combustible/ toxic gases, vapors and oxygen.

- Polytron 8100 EC: detection of toxic gases or oxygen, plug and play electrochemical Dräger Sensor;
- Polytron 8200 CAT:detection of flammable gases in the lower explosion limit (LEL), catalytic bead DrägerSensor Ex;
- Polytron 8700 IR: detection of combustible gases in the lower explosion limit (LEL), high performance infrared Dräger PIR 7000 sensor, which will detect most common hydrocarbon gases;
- Polytron 8720 IR: detection of carbon dioxide in percent volume or ppm, infrared Dräger PIR 7200 sensor.

Rating:

Power supply: 10 to 30 V DC (3-wire shielded cable)

Signal Output: 4 to 20 mA, optional 3 relay outputs (alarm, fault, maintenance)

Display: 128 x 64 resolution, back-lit

3 LEDs (alarm, fault, maintenance)

Degree of Protection: IP65/66/67

Ambient Operating Temperature: -40 to 65°C

Certified Safe Type:

- Ex db IIC T6/T4 Gb resp. Ex db eb IIC T6/T4 Gb resp. Ex tb IIIC T80°C/T130°C Db resp. Ex db ia IIC T6/T4 Gb resp. Ex db eb ia IIC T6/T4 Gb resp. Ex db [ia] IIC T6/T4 Gb resp. Ex db ia [ia] IIC T6/T4 Gb resp. Ex db eb [ia] T6/T4 Gb resp. Ex db eb ia [ia] IIC T6/T4 Gb (IECEx PTB 11.0005X Issue No. 8)
- Class I, Div. 1, Groups A, B, C and D;Ex db IIC T6/T4 Gb (CSA 2518052, 2020-04-28)

Service Restriction:

Unit Certification is not required for this product.

If the manufacturer or purchaser request an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined.

Comments:

1. The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.
2. Installation is to be in accordance with any specific conditions for safe use as detailed in the Ex approval certificate. The device variants incorporating a FISCO fieldbus interface as well as the Gas detection transmitter Type ETR 0*** must operate in circuits that are limited to overvoltage category I/II/III in accordance with IEC 60664-1 for FISCO field device operation.
3. Where the detector is installed as a component of a detection system the complete system is to be specifically approved.

Notes/Drawing/Documentation:

Drawing No. 08, Product Key P8xxx, Revision: -

Drawing No. 15, Construction Polytron 8000 8100, Revision: -

Drawing No. 16, Dimension Drawing, Polytron 8200, Revision: -

Drawing No. 17, Dimension Drawing, Polytron 8310 8700 8720, Revision: -

Drawing No. 19, Assembly XTR SE20934_0, Revision: -

Drawing No. 21, Layout ETR XTR ITR SE20935_0, Revision: -

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Drawing No. 22, Block Diagram, ETR XTR ITR SE20937_0, Revision: -
Drawing No. 23, Test Report, Salt Mist, 26/04/2013, Revision: -
Drawing No. 24, IP Test x6 x7, 27/08/2012, Revision: -
Drawing No. 25, IP Verification 6x, Revision: -
Drawing No. 26, Manufacturer Declaration due to IP degree, Revision: -
Drawing No. 28, Clime Test report Polytron 5200/Polytron 8310, CEcert GmbH, 21-09-2012, Revision: -
Drawing No. 29, Test Report, Vibration, AKUVIB, 14/03/2013, Revision: -

-----Revalidation 2021-----

Drawing No. 4161722 Rev 0, Test Report EMC P8200 CAT, CEcert GmbH, 12-09-2016, Revision: -
Drawing No. 4161732 Rev 0, Test Report EMC P8700 IR, 29-09-2016, Revision: -
Drawing No. 4162872 Rev 0, Test Report EMC P8100 EC, CEcert GmbH, 23-11-2016, Revision: -
Drawing No. 4183471 Rev 0, Test Report EMC P8700 IR (6 GHz), CEcert GmbH, 10-12-2018, Revision: -
Drawing No. 4183472 Rev 0, Test Report EMC P8200 CAT (6 GHz), CEcert GmbH, 10-12-2018, Revision: -
Drawing No. 4183473 Rev 0, Test Report EMC P8100 EC (6 GHz), CEcert GmbH, 10-12-2018, Revision: -
Drawing No. TREO 270-20, ENV Test Report (Polytron 7000-EC sensor), TREO, 02-11-2020, Revision: -
Drawing No. PIR 7000, ENV Test Report, PIR 7000, TREO, 27-04-2020, Revision: -
Drawing No. 9041533, Product Information P8100 EC, Revision: -
Drawing No. 9041534, Product Information P8200 CAT, Revision: -
Drawing No. 9041536, Product Information P8700 IR, Revision: -
Drawing No. 9041537, Product Information P8720 IR, Revision: -
Drawing No. PTB 11 ATEX 1005 X, Issue 2, Ex-approval, dust, Revision: -
Drawing No. SE20933-03, PCB Main Assy ITR 04/5, Revision: -
Drawing No. SE20961-04, Transmitters ETR 04/5 I..Z, Revision: -
Drawing No. SE20963-03, Transmitters ITR 04/5 I..Z, Revision: -
Drawing No. SE20965-04, Transmitters XTR 04/5 I..Z, Revision: -
Drawing No. SE20969-03, PCB Interf 4-20/Rel Assy ETR 04/5, Revision: -
Drawing No. Z10 053474 0023 Rev 01, SIL certificate, Revision: -
Drawing No. IECEx PTB 11, IECEx Certificate, Revision: 08
Drawing No. CSA 2518052 Sup , CSA Certificate, Revision: 08

Terms of Validity:

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STANDARDS

ABS Rules:

2021 Marine Vessel Rules: 1-1-4/7.7, 1-1-A3, 1-1-A4, 4-8-3/1.7, 4-8-3/1.11, 4-8-3/1.17, 4-8-3/13, 4-9-9/13.1, 4-9-9/13.2
2021 Mobile Offshore Units Rules: 1-1-4/9.7, 1-1-A2, 1-1-A3, 4-3-1/11, 4-3-1/15, 4-3-1/17.1, 4-3-3/9.3.1, 4-3-3/9.3.2

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Tier: 2 - PDA Issued

National:

NA

International:

IACS UR E10 Rev. 7

Government:

NA

EUMED:

NA

OTHERS:

NA