



## Confirmation of Product Type Approval

**Company Name:** KONGSBERG MARITIME AS, TRONDHEIM

**Address:** SKONNERTVEGEN 1, 7053 RANHEIM, TRONDHEIM, Norway, 7005

**Product:** Zener Barrier Unit

**Model(s):** DZ-110U/ DZ-120

**Endorsements:**

<b>Certificate Type</b>	<b>Certificate Number</b>	<b>Issue Date</b>	<b>Expiry Date</b>
Product Design Assessment (PDA)	21-2102556-PDA	20-APR-2021	19-APR-2026
Manufacturing Assessment (MA)	20-4414541	27-AUG-2020	26-AUG-2025
Product Quality Assurance (PQA)	NA	NA	NA

### **Tier**

3 - Type Approved, unit certification not required

### **Intended Service**

For use on ABS Classed Vessels and Offshore Facilities in accordance with the listed ABS Rules and International Standards.

### **Description**

Intrinsically Safe Transmitter Barrier is a single channel shunt diode safety barrier intended for energising a 2-wire, 2 to 20 mA/4-20 mA/HART signal transmitter in hazardous areas.

### **Ratings**

DZ-110U

Power supply: 24 VDC (18 to 32 VDC);

Input and output current range: 0 to 22 mA;

Ambient temperature range: -20 to +70 degrees C;

Enclosure protection degree: IP 20

Safety data

Max. safe voltage:  $U_m = 250$  VAC

Max. output voltage:  $U_o = 25.2$  VDC

Max. output current :  $I_o = 116$  mA

Max. output power:  $P_o = 0.73$  W

Max. external capacitance:  $C_o = 107 \text{ nF}$

Max. external inductance:  $L_o = 2.6 \text{ mH}$

Max. ratio:  $L_o / R_o = 48.8 \text{ uH/\#}$

Type of Protection: Intrinsic safety

Marking: [Ex ia Ga] IIC -20°C#Ta#+70°C; IECEx PRE 14.0005 Issued 3.0

: Ex II (1) G [Ex ia Ga] IIC; Presafe 14 ATEX 4368, Issued 4.0

DZ-120

Power supply: 24 VDC (+/- 0.5V)

Input and output current range: 4 to 20 mA;

Ambient temperature range: -20 to +70 degrees C;

Enclosure protection degree: IP 20.

Safety Data:

Maximum output voltage.  $U_o$ : 26.5 VDC

Maximum output current.  $I_o$ : 112 mA

Maximum output power.  $P_o$ : 0.74 W

Maximum external capacitance.  $C_o$ : 95 nF

Maximum external inductance.  $L_o$ : 2.8 mH

Maximum external inductance to resistance ratio.  $L_o/R_o$ : 48 uH/#

Marking: [Ex ia Ga] IIC -20°C#Ta#+70°C, IECEx PRE 16.0020 Issued 2.0

: Ex II (1) G [Ex ia Ga] IIC; Presafe 16 ATEX 7965, Issued 2.0

### Service Restrictions

1. Unit Certification is not required for this product.

2. ATEX certified equipment is not to be installed in hazardous areas on U.S. Flagged Vessels, unless it can be proven to have been tested to the IEC 60079 series standards by an independent laboratory accepted by the U.S. Coast Guard. USCG MI Notice 01-12 (February 7, 2012) refers.

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

4. All electrical equipment intended for installation in hazardous areas are to be certified safe type based on the class of the hazardous area at its location of installation. Certificates in this regard are to be presented to ABS Surveyor for verification on a case by case basis.

### Comments

1. The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.

2. Earth strap shall be connected to separate earth rail.

3. To be installed in accordance with Special conditions for safe use from Presafe 16 ATEX 7965, IECEx PRE 16.0020, Presafe 14 ATEX 4368, IECEx PRE 14.0005.

### Notes, Drawings and Documentation

Drawing No. Declaration of Conformity, Revision:- , Pages: 01

Drawing No. E15308.01, Test Report, Nemko AS, Norway, Date 25.07.2016, Revision:02, Pages: 44

Drawing No. IECEx PRE 14.0005, IECEx Certificate of Conformity, Revision:03, Pages: 04

Drawing No. IECEx PRE 16.0020, IECEx Certificate of Conformity, Revision:02, Pages: 04

Drawing No. Presafe 14 ATEX 4368, EC-Type Examination Certificate, Revision: 04, Pages:03

Drawing No. Presafe 16 ATEX 7965, EC-Type Examination Certificate, Revision: 02, Pages:03

Drawing No. DZ110U, Data sheet P-DZ110U\_CE, Revision: 0C, Pages:03

Drawing No. DZ120, Data sheet P-DZ129\_CE, Revision: 0B, Pages:03

Drawing No. 285039, Statement of compliance from Nemko, Pages:01

Drawing No. Material declaration, Revision: 00, Pages:03

### Term of Validity

This Product Design Assessment (PDA) Certificate remains valid until 19/Apr/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.

### ABS Rules

- Marine Vessels Rules (2021): 1-1-4/7.7, 1-1-A3, 1-1-A4, 4-8-3/1.3, 4-8-3/1.7, 4-9-9/3, 4-9-9 Table 1
- Facilities on Offshore Installations (2021): 1-1-4/9.7, 1-1-A2, 1-1-A3, 3-7/3.3;
- Mobile Offshore Units (2021): 1-1-4/9.7, 1-1-A3, 1-1-A4, 6-1-1/9, 6-1-1/13;
- Steel Vessels for Service on Rivers and Intracoastal Waterways (2021): 1-1-4/7.7, 1-1-A3, 1-1-A4;
- High Speed Crafts (2021): 1-1-4/11.9, 1-1-A2, 1-1-A3; 4-6-1/11, 4-7-9/3, 4-7-9 Table 9
- Steel Barge Rules (2021): 1-1-4/7.9, 1-1-A3, 1-1-A4;

### International Standards

EN 60945: 2002, EN 60079-0:2018, EN 60079-11:2012

IEC 60079-0 Ed 7.0 :2017, IEC 60079-11 Ed 6.0:2011

IACS E10 Rev 7.0: 2018

### EU-MED Standards

NA

### National Standards

NA

**Government Standards**

NA

**Other Standards**

NA



A handwritten signature in blue ink, appearing to read "James J. Walsh".

Corporate ABS Programs  
American Bureau of Shipping  
Print Date and Time: 20-Apr-2021 3:17

ABS has used due diligence in the preparation of this certificate, and it represents the information on the product in the ABS Records as of the date and time the certificate is printed.

If the Rules and/or standards used in the PDA evaluation are revised or if there is a design modification (whichever occurs first), a PDA revalidation may be necessary.

The continued validity of the MA is dependent on completion of satisfactory audits as required by the ABS Rules. The validity of both PDA and MA entitles the product to receive a **Confirmation of Product Type Approval**.

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 prior to the effective date of the ABS Rules and standards applied at the time of PDA issuance. ABS makes no representations regarding Type Approval of the Product for use on vessels, MODUs or facilities built after the date of the ABS Rules used for this evaluation.

Type Approval requires Drawing Assessment, Prototype Testing and assessment of the manufacturer's quality assurance and quality control arrangements. The manufacturer is responsible to maintain compliance with all specifications applicable to the product design assessment. Unless specifically indicated in the description of the product, certification under type approval does not waive requirements for witnessed inspection or additional survey for product use on a vessel, MODU or facility intended to be ABS classed or that is presently in class with ABS.

Due to wide variety of specifications used in the products ABS has evaluated for Type Approval, it is part of our contract that; whether the standard is an ABS Rule or a non-ABS Rule, the Client has full responsibility for continued compliance with the standard.

Questions regarding the validity of ABS Rules or the need for supplemental testing or inspection of such products should, in all cases, be addressed to ABS.