



Confirmation of Product Type Approval

Company Name: TE SENSORES S DE RL DE CV

Address: AVENIDA OBRERO MUNDIAL#9PARQUE INDUSTRIAL DYNATECHCOL. E SAHUARO CP 83174 Mexico

Product: Pressure Sensor

Model(s): AST43XX, AST44XX, AST45XX, AST46XX, AST53XX, AST54ED and AST54EN

Endorsements:

Certificate Type	Certificate Number	Issue Date	Expiry Date
Product Design Assessment (PDA)	21-2098824-PDA-DUP	23-MAR-2021	22-MAR-2026
Manufacturing Assessment (MA)	21-5000392	28-OCT-2021	27-OCT-2026
Product Quality Assurance (PQA)	NA	NA	NA

Tier

3 - Type Approved, unit certification not required

Intended Service

Marine & Offshore Application - Pressure Sensors for use in Hazardous Areas.

Description

AST4300, AST4310 and AST43LP are Media Isolated Stainless Steel Pressure Sensors

AST4400, AST4410 and AST44LP are Media Isolated Stainless Steel Pressure Sensors with an approved Barrier.

AST4500, AST4510 and AST4520 are Submersible Stainless Steel Level Sensor with an approved Barrier.

AST4600 & AST46HA , AST46PT, AST46SW are Explosion Proof Pressure Transmitters for use in variety of applications.

AST46DS series is Explosion Proof Pressure Transducer

AST 53ED, AST53SWa, AST53EN are Explosion Proof Differential Pressure Transducer

AST 54ED and Model 54EN Explosion Proof Pressure Transducer

For additional product information and data sheets, please refer to the manufacturer's website www.astensors.com

Ratings

Models AST4300, AST4310 and AST43LP Pressure Transducers -

Hazardous Area: Class I, Div. 2, Groups A, B, C, D; Single Seal; Temperature Code: T4;

Class I, Zone 2, AEx nA IIC, T4

Maximum Working pressure for the lowest pressure sensors: 0.34MPa (50 psi) and Maximum Working Pressure for highest pressure sensors: 137.9 MPa (20,000 psi)

Ambient Temperature: -40 Deg C to 80 deg C (-40 deg F to 176 degF)

Models AST4400, AST4410 and AST44LP Pressure Transducers -

Hazardous Area: Class I, Div. 1, Groups C and D; Temperature Code: T4;

Class I, Zone 0, AEx ia IIB, T4

Model AST4401 Pressure transducer

Hazardous Area: Class I, Div. 1, Groups C and D; Temperature Code: T4;

Class I, Zone 0, AEx ia IIC, T4

Maximum Working pressure for the lowest pressure sensors: 0.34MPa (50 psi) and Maximum Working Pressure for highest pressure sensors: 137.9 MPa (20,000 psi)

Ambient Temperature: -40 Deg C to 80 deg C (-40 deg F to 176 degF)

Models AST4500, AST4510, AST4520, AST4530 Pressure Transducers -

Hazardous Area: Class I, Div. 1, Groups C and D; Temperature Code: T4;

Class I, Zone 0, AEx ia IIB, T4

Maximum Working pressure for the lowest pressure sensors: 0.34MPa (50 psi) and Maximum Working Pressure for highest pressure sensors: 137.9 MPa (20,000 psi)

Ambient Temperature: -40 Deg C to 80 deg C (-40 deg F to 176 degF)

Model AST4600 and AST46HA , AST46PT, and 46SW Series Explosion proof pressure transducers -

Hazardous Area: Class I, Division 1, Groups A, B, C and D ; Class II, Division 1, Groups E, F and G, Temperature Code T5

Class I, Zone 1, AEx d IIC T5 Gb

Zone 21, AEx tb IIIC T100 Db

Ambient Temperature: -40 Deg C to 85 deg C (-40 deg F to 185 degF)

Model AST46DS Series Explosion proof pressure transducers -

Hazardous Area: Class I, Division 1, Groups A, B, C and D ; Class II, Division 1, Groups E, F and G, Temperature Code T5

Maximum Working pressure for the lowest pressure sensors: 0.34MPa (50 psi) and Maximum Working Pressure for highest pressure sensors: 137.9 MPa (20,000 psi)

Ambient Temperature: -40 Deg C to 85 deg C (-40 deg F to 185 degF)

Model AST53ED, AST53SWa, AST53EN Explosion Proof Differential Pressure Transducer

Hazardous Area: Class I, Division 1, Groups A, B, C and D ; Class II, Division 1, Groups E, F and G;
Class III, Div. 1: Temperature Code T5

Maximum Working pressure : 137.9 MPa (1500 psi)

Ambient Temperature: -40 Deg C to 85 deg C (-40 deg F to 185 degF)

Temperature Code T5

Model AST54ED Series Explosion Proof Pressure Transducer

Hazardous Area: Class I, Division 1, Groups A, B, C and D ; Class II, Division 1, Groups E, F and G;
Class III, Div. 1: Temperature Code T5

Maximum Working pressure : 137.9 MPa (20000 psi)

Ambient Temperature: -40 Deg C to 85 deg C (-40 deg F to 185 degF)

Temperature Code T5

Model AST54EN Series Nonincendive Pressure Transducer

Hazardous Area: Class I, Division 1, Groups A, B, C and D ; Temperature Code T5

Maximum Working pressure : 137.9 MPa (20000 psi)

Ambient Temperature: -40 Deg C to 85 deg C (-40 deg F to 185 degF)

Temperature Code T5

For All Models:

Input: 4-20MA or 10Vmax

Service Restrictions

1. Unit Certification is not required for this product.
2. 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.
3. These pressure transducers are suitable for hazardous areas.

Comments

1. The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.
2. Any specific installation arrangement is to be approved in conjunction with the relevant application and system.

Notes, Drawings and Documentation

Document No. Procedure, (A&B) Procedure, Revision: 07, Date: July 2014;

Document No. AST43, AST44, AST45 CSA Report 2018368, (A) AST43, AST44, AST45 CSA Project 80049312, Edition: 8, Date: December 2020, Pages: 24;

Document No. AST46 CSA Report 1393892, (A) AST46 CSA Project 80016520, Edition: 10, Date: 14 July 2020, Pages: 32;

Document No. AST46DS CSA Report 2561438, (A) AST46DS CSA Project 70179038, Edition: 4, Date: 13 July 2018, Pages: 27;

Document No. AST53xx CSA Report 2456841, (A) AST53XX CSA Project 70179037, Edition: 3, Date: 26 July 2018, Pages: 23;

Document No. AST54xx CSA Report 2734453, AST 54ED and AST 54EN CSA Project 70204979, Edition: 3, Date: 14 January 2019, Pages: 11;

Term of Validity

This Product Design Assessment (PDA) Certificate remains valid until 22/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.

ABS Rules

Rules for Conditions of Classification, 2021 Marine Vessel Rules 1-1-4/7.7, 1-1-A3, 1-1-A4, which covers the following:

2021 Rules for Building and Classing Marine Vessels: 4-8-3/13.3, 4-8-4/27.5.1, 4-8-4/27.7

Rules for Conditions of Classification, 2021 Offshore Units and Structures 1-1-4/9.7, 1-1-A2, 1-1-A3, which covers the following:

2021 Rules for Building and Classing Mobile Offshore Units: 4-3-3/9.1.1, 4-3-3/9.3.2

International Standards

AST44XX and AST45XX: CAN/CSA-C22.2 No. 0-M91, CAN/CSA-C22.2 No. 94-M91, C22.2 No. 142-M1987, CAN/CSA-C22.2 No. 157-92

AST43XX: CAN/CSA-C22.2 No. 0-M91, C22.2 No. 142-M1987, C22.2 No. 213-M1987, CAN/CSA-C22.2 No. 60079-0:11

AST46XX: C22.2 No. 0-10, C22.2 No. 25-1966(R2009), C22.2 No. 30-M1986(R2012), C22.2 No. 142-M1987(R2009), CAN/CSA-C22.2 No. 60079-0:11, CAN/CSA-C22 No. 60079-1:11, CAN/CSA-C22.2 No. 60079-31:12

AST 53XX: C22.2 No. 0-10, C22.2 No. 25-1966(R2009), CSA Std C22.2 No. 30-M1986, C22.2 No. 142-M1987, C22.2 No. 213-M1987, CAN/CSA-C22.2 No. 60079-0:11, CAN/CSA-C22.2 No. 60079-1:11, CAN/CSA-C22.2 No. 60079-15:12

AST54XX: C22.2 No. 0-10, C22.2 No. 25-1966(R2009), C22.2 No. 30-M1986(R2012), C22.2 No. 142-M1987 (R2009), C22.2, 60079-0:11, C22.2 No. 60079-1:11, C22.2 No. 60079-15:12

EU-MED Standards

NA

National Standards

AST44XX and AST45XX: UL 50(11th Ed), UL 508(17th Ed); UL913(6th Ed), ANSI/ISA 60079-0-0:09, ANSI/ISA 60079-11:13

AST43XX: UL 508(17th Ed), UL 1604 (3rd Ed), ANSI/ISA 12.12.01-2007, ANSI/ISA 12.27.01-2003, ANSI/ISA 60079-0:09, ANSI/ISA60079-15:12

AST46XX: UL 508(17th Ed), UL 1203 (4th Ed), ANSI/ISA 60079-0:09, ANSI/ISA 60079-1:09, ANSI/ISA 60079-21:20136

AST53XX: ISA S82.02.01 (2nd Ed) (IEC 61010-1 Mod) (2nd Ed), ANSI/ISA 60079-0:09, ANSI/ISA 60079-1:09, ANSI/ISA 60079-15:09, ANSI/ISA 12.27.01-2003.

AST54XX: UL 916, UL 508(17th Ed), UL1203 (4th Ed), FM 3600 1998, FM 3615 2006

Government Standards

NA

Other Standards

None



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

Corporate ABS Programs
American Bureau of Shipping
Print Date and Time: 24-Nov-2021 3:44

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.