



Certificate of Compliance

Certificate: 1393892

Master Contract: 212120

Project: 80162236

Date Issued: 2023-04-19

Issued To: TE Sensores S de RL de CV a TE Connectivity Company
Av. Obrero Mundial # 9
Parque Industrial Dynatech
Hermosillo, Sonora, 83174
Mexico

Attention: Juan Grez

The products listed below are eligible to bear the CSA Mark shown with adjacent indicators 'C' and 'US' for Canada and US or with adjacent indicator 'US' for US only or without either indicator for Canada only.

Issued by: *Junlong Pan*
Junlong Pan



PRODUCTS

CLASS 2258 02 – PROCESS CONTROL EQUIPMENT – For Hazardous Locations

CLASS 2258 82 – PROCESS CONTROL EQUIPMENT – For Hazardous Locations – CERTIFIED TO U.S. STANDARDS

Class I, Division 1, Groups A, B, C and D T5;

Enclosure Type 4

Ex db IIC T5 Gb

Class I, Zone 1, AEx db IIC T5 Gb

Explosionproof pressure transducers - AST4600, AST46HA, AST46PT and 46SW Series. Ratings: Input: 5V dc or 10 –28Vdc; Output: See details below; $-40\text{ }^{\circ}\text{C} \leq T_{amb.} \leq +85\text{ }^{\circ}\text{C}$; $-40\text{ }^{\circ}\text{C} \leq \text{Process Temp.} \leq +125\text{ }^{\circ}\text{C}$; Maximum Working Pressure for highest pressure sensors: 137.9 MPa (20000 psi); Single Seal; Temperature Code: T5.



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Model nomenclature:

AST4600 abcdefghij (-Z = Canadian Registry Number Approval, CRN)

Where: a (fitting information) = A, B, C, D, E, F, G, H, I, J, K, L, M, N, P, R, S, T, U, V, W, Z

b (pressure reference) = G, V

c (pressure) = 0000 to 9999

d (pressure unit) = B, H, K, M, P

e (electrical outputs) = 1, 2, 3, 4, 5, 6, 8, 9, A, G, P, B, F, J, M, T

f (electrical connection) = T, U, W, X

g (header material) = 0,1,2, 3, 4, 6

h,i,j (special calibration) = eg: tolerances

AST46HA abcdefghijk (-Z = CRN)

Where: a (port information) = A, B, C, D, E, F, G, H, I, J, K, L, M, N, P, R, S, T, U, V, W, Z

b (pressure reference) = G, V

c (pressure) = 0000 to 9999

d (pressure unit) = B, H, K, M, P

e (electrical outputs) = 1, 2, 3, 4, 5, 6, 8, 9, G, P, J, K, L, M, T

f (electrical connection) = T, U, W, X

g (header material) = 0,1,2, 3, 4, 6

h (fail safe mechanism) = N, H, L

i,j,k (special calibration) = eg: tolerances

AST46PT abcdefghijkl (-Z = CRN)

Where: a (temperature range) = 1, 2, 3, 4, 5

b (fitting) = A, B, C, D, E, F, G, H, I, J, K, L, M, N, P, R, S, T, U, V, W, Z

c (pressure reference) = G, V

d (pressure) = 0000 to 9999

e (pressure unit) = B, K, P, H, M

f (electrical outputs) = 1, 2, 3, 4, 5, 6, 8, 9, G, J, M, P, T

g (electrical connection) = T, U, W, X

h (header material) = 0,1,2, 3, 4, 6

i (fail safe mechanism) = N, H, L

j, k, l (special calibration) = eg: tolerances

Electrical outputs:

1: 0.5-4.5 V Ratiometric

2: 0-5 Vdc 3wire

3: 1-5 Vdc

4: 4-20 mA

5: 0-10 Vdc 3wire

6: 1-6 Vdc

8: 0.5-5.5 Vdc

9: 0.25-5 Vdc

A: 10 mV/V

B: 20 mV/V



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F: 5 mV/V
G: 1-10 Vdc
J: 0.1-5.1 Vdc
K: 0-5 Vdc 4wire
L: 0-10 Vdc 4wire
M: 0.25-4.75 Vdc Ratiometric
P: 0.5-4.5 Vdc
T: 0.5-2.5 Vdc

46SW abcdefghijklm (-Z = CRN)

Where: a (port information) = A, B, C, D, E, F, G, H, I, J, K, L, M, N, P, R, S, T, U, V, W, Z
b (pressure range PSI) = 01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11
c (pressure unit) = B, K, P, H, M
d (switch)= E
e (electrical connection) = T, U, W, X
f (header material) = 0, 1, 2, 3, 4, 6
g (pressure reference) = G, V
h (switching pressure) = 5 digits: 0 to 20000
i (switching direction) = F, R
j (hysteresis) = 2 digits: 05 to 95S
k, l, m (special options) = eg: tolerances

Electrical outputs:

28V sourcing solid state relay

Class I, Division 1, Groups A, B, C and D T5;
Class II, Division 1, Groups E, F and G T100°C;
Enclosure Type 4
Ex db IIC T5 Gb
Ex tb IIIC T100 °C Db
Class I, Zone 1, AEx db IIC T5 Gb
Zone 21, AEx tb IIIC T100°C Db

Explosionproof pressure transducers - AST4600, AST46HA, AST46PT and 46SW Series. Ratings: Input: 5V dc or 10 -28Vdc; Output: See details below; $-40\text{ °C} \leq T_{amb.} \leq +85\text{ °C}$; $-40\text{ °C} \leq \text{Process Temp.} \leq +125\text{ °C}$;
Maximum Working Pressure for highest pressure sensors: 137.9 MPa (20000 psi); Single Seal; Temperature Code: T5.

Model nomenclature:

AST4600 abcdefghij (-Z = Canadian Registry Number Approval, CRN)

Where: a (fitting information) = A, B, C, D, E, F, G, H, I, J, K, L, M, N, P, R, S, T, U, V, W, Z
b (pressure reference) = 0, 1, 2, A, C
c (pressure) = 0000 to 9999
d (pressure unit) = B, H, K, M, P
e (electrical outputs) = 1, 2, 3, 4, 5, 6, 8, 9, A, B, F, G, J, P, M, T



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f (electrical connection) = T, U, W, X
g (header material) = 0,1,2, 3, 4, 6
h,i,j (special calibration) = eg: tolerances

AST46HA abcdefghijk (-Z = CRN)

Where: a (port information) = A, B, C, D, E, F, G, H, I, J, K, L, M, N, P, R, S, T, U, V, W, Z
b (pressure reference) = 0, 1, 2, A, C
c (pressure) = 0000 to 9999
d (pressure unit) = B, H, K, M, P
e (electrical outputs) = 1, 2, 3, 4, 5, 6, 8, 9, G, J, K, L, M, P, T
f (electrical connection) = T, U, W, X
g (header material) = 0,1,2, 3, 4, 6
h (fail safe mechanism) = N, H, L
i,j,k (special calibration) = eg: tolerances

AST46PT abcdefghijkl (-Z = CRN)

Where: a (temperature range) = 1, 2, 3, 4, 5
b (fitting) = A, B, C, D, E, F, G, H, I, J, K, L, M, N, P, R, S, T, U, V, W, Z
c (pressure reference) = 0, 1, 2, A, C
d (pressure) = 0000 to 9999
e (pressure unit) = B, K, P, H, M
f (electrical outputs) = 1, 2, 3, 4, 5, 6, 8, 9, G, J, M, P, T
g (electrical connection) = T, U, W, X
h (header material) = 0,1,2, 3, 4, 6
i (fail safe mechanism) = N, H, L
j, k, l (special calibration) = eg: tolerances

Electrical outputs:

- 1: 0.5-4.5 V Ratiometric
- 2: 0-5 Vdc 3wire
- 3: 1-5 Vdc
- 4: 4-20 mA
- 5: 0-10 Vdc 3wire
- 6: 1-6 Vdc
- 8: 0.5-5.5 Vdc
- 9: 0.25-5 Vdc
- A: 10 mV/V
- B: 20 mV/V
- F: 5 mV/V
- G: 1-10 Vdc
- J: 0.1-5.1 Vdc
- K: 0-5 Vdc 4wire
- L: 0-10 Vdc 4wire
- M: 0.25-4.75 Vdc Ratiometric
- P: 0.5-4.5 Vdc



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T: 0.5-2.5 Vdc

46SW abcdefghijklm (-Z = CRN)

Where: a (port information) = A, B, C, D, E, F, G, H, I, J, K, L, M, N, P, R, S, T, U, V, W, Z

b (pressure range PSI) = 01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11

c (pressure unit) = B, K, P, H, M

d (switch)= E

e (electrical connection) = T, U, W, X

f (header material) = 0, 1, 2, 3, 4, 6

g (pressure reference) = 0, 1, 2, A, C

h (switching pressure) = 5 digits: 0 to 20000

i (switching direction) = F, R

j (hysteresis) = 2 digits: 05 to 95

k, l, m (special options) = eg: tolerances

Electrical output:

28V sourcing solid state relay

APPLICABLE REQUIREMENTS

CSA C22.2 No. 25-17	Enclosures for use in Class II, Division 1, Groups E, F, and G hazardous locations
CSA C22.2 No. 30:20 (R07/20)	Explosion-proof equipment
CSA C22.2 No. 94.2-15 <i>Second Edition</i>	Enclosures for Electrical Equipment, Environmental Considerations
C22.2 No. 142-M1987 <i>(Reaffirmed 2009)</i>	Process Control Equipment
ANSI/UL 508-2013 <i>Seventeenth Edition</i>	Industrial Control Equipment
ANSI/UL 1203-2022 <i>Fifth Edition</i>	Explosion-Proof and Dust-Ignition-Proof Electrical Equipment for Use in Hazardous (Classified) Locations
ANSI/UL 50E-15 <i>Second Edition</i>	Enclosures for Electrical Equipment, Environmental Considerations
CAN/CSA-C22.2 No. 60079-0:15 <i>Update No. 1 — April 2018</i>	Explosive atmospheres – Part 0: Equipment – General requirements
CAN/CSA-C22.2 No. 60079-1:16	Explosive atmospheres – Part 1: Equipment protection by flameproof enclosures “d”
CAN/CSA-C22.2 No. 60079-31:15	Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure "t"
ANSI/UL 60079-0-2013 <i>Sixth Edition (R2017)</i>	Explosive atmospheres – Part 0: Equipment – General requirements
ANSI/UL 60079-1-2015 <i>Seventh Edition</i>	Explosive Atmospheres – Part 1: Equipment Protection by Flameproof Enclosures “d”
ANSI/UL 60079-31-2015	Explosive Atmospheres –



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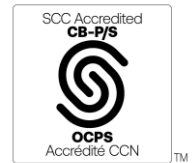
<i>Second Edition</i>	Part 31: Equipment Dust Ignition Protection by Enclosure “t”
ANSI/ISA 12.27.01-2003	Requirements for Process Sealing Between Electrical Systems and Flammable or Combustible Process Fluids
FM 3600 <i>(January 2018)</i>	Electrical Equipment for Use in Hazardous (Classified) Locations, General Requirements
FM 3615 <i>(January 2018)</i>	Explosionproof Electrical Equipment - General Requirements

MARKINGS

Please refer to CSA Report # 1393892 - MARKINGS section for details.

Notes:

Products certified under Class C225802, C225882 have been certified under CSA’s ISO/IEC 17065 accreditation with the Standards Council of Canada (SCC). www.scc.ca





Supplement to Certificate of Compliance

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The products listed, including the latest revision described below, are eligible to be marked in accordance with the referenced Certificate.

Product Certification History

Project	Date	Description
80162236	2023-04-19	Update cCSAus report # 1393892 for Class I, Division 1 explosion proof and Zone 1 flameproof “db” or Class II, Division 1 dust ignition proof and Zone 21 dust protection by enclosure “tb” protected Model AST46XX Series Explosionproof pressure transducers to change applicant name from “Measurement Specialties” to “TE Sensors” and corresponding address from USA to Mexico on the label drawings.
80132248	2022-08-30	Update cCSAus report # 1393892 for Class I, Division 1 explosion proof and Zone 1 flameproof “db” or Class II, Division 1 dust ignition proof and Zone 21 dust protection by enclosure “tb” protected Model AST46XX Series Explosionproof pressure transducers to correct label drawings.
80073005	2021-11-05	Update to cCSAus report 1393892 for explosionproof and dust ignition proof (flameproof and dust ignition protection by enclosure) Model AST46** Series pressure transducers for addition of PCB quality notes and update of 42 drawings.
80016520	2020-07-14	Update Report 1393892 to review and address non-compliance found during March 12, 2019 inspection and to add alternate components. Update of header materials to include 316, Inconel & Hastelloy.
70192966	2018-11-14	Update to Report 1393892 to perform the following: i) update the Hazardous Locations standards to the latest editions, ii) update drawing revisions and iii) add Type 4 rating.
70179035	2018-07-19	Update to certificate 1393892 Ed. 7 70041282 to change company name from American Sensor Technologies Inc. to Measurement Specialties, Inc as per transfer project 70179034.
70041282	2015-10-20	Update the report 1393892 to add code to part number nomenclature and update corresponding drawing revisions.
70019963	2015-03-25	Add Zone ratings to all models and update some drawing revisions



2647004	2013-09-11	Update to include corrections, minor drawing updates, adding helium vacuum leak testing and add electrical outputs, which are already supported by the existing design, replacement of the first layer of epoxy with certified tough gel.
2333122	2011-02-28	Update to add 20,000 psi version; absolute pressure version; gauge pressure version; increase rating to Group A, B, C, D for AST46HA; addition of Class II coverage.
2079843	2008-11-11	Update to include Model AST46HA.
1914374	2007-10-10	Update to cover evaluation to ANSI/ISA 12.27.01 for Single Seal rating.
1393892	2003-08-21	Series 4600 Pressure transducer for Class I, Groups A, B, C and D.