



Certificate of Compliance

Certificate: 2018368

Master Contract: 212120

Project: 80162235

Date Issued: 2023-04-12

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 - C2258 04 - PROCESS CONTROL EQUIPMENT - Intrinsically Safe Entity - For Hazardous Locations

CLASS - C2258 84 - PROCESS CONTROL EQUIPMENT - Intrinsically Safe Entity - For Hazardous Locations - CERTIFIED TO U.S. STANDARDS

Class I, Div. 1, Groups A, B, C and D T4

Ex ia IIC T4 Ga

Class I Zone 0, AEx ia IIC T4 Ga

Model AST4401 Pressure Transducer

A) with output rated 4-20mA (suffix "4" in 15th position of model code), input rated 10-32 Vdc max;



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with integral connector (suffix "E", "F", "I", "K", "R", "S", "Y", "Z" and "4" in the 16th position of the model code), intrinsically safe with entity parameters of:

$V_{max}/U_i = 14.5V$, $I_{max}/I_i = 93mA$, $P_{max}/P_i = 625mW$, $C_i = 0.391\mu F$, $L_i = 0 \mu H$

with up to 1000ft of integral cable (suffix "A", "B", "C", "D", "J", "L", "M", "N" and "P" in the 16th position of the model code), intrinsically safe with entity parameters of:

$V_{max}/U_i = 14.5V$, $I_{max}/I_i = 93mA$, $P_{max}/P_i = 625mW$, $C_i = 0.434\mu F$, $L_i = 155\mu H$

when installed per installation Dwg A08949;

B) Other outputs:

B.1) with Ratiometric output rated 0.5-4.5V and 0.25-4.75V (suffix "1" and "M" in the 15th position of the model code); input rated 5.5 Vdc max;

B.2) with mV output rated 5, 10 and 20 mV/V (suffix "A", "B" and "F" in the 15th position of the model code); input rated 15 Vdc max;

B.3) with voltage output rated 1-5V, 1-6V, 0.5-5.5V, 0.25-5V, 1-10V, 0.1-5.1V, 0.5-4.5V, 0.5 – 2.5V (suffix "3", "6", "8", "9", "J", "P" and "T" in the 15th position of the model code); input rated 8-32 Vdc max; with integral connector (suffix "E", "F", "I", "K", "R", "S", "Y" and "Z" in the 16th position of the model code), intrinsically safe with entity parameters of:

$V_{max}/U_i = 14.5V$, $I_{max}/I_i = 93mA$, $P_{max}/P_i = 625mW$, $C_i = 0.643\mu F$, $L_i = 0 \mu H$

with up to 150ft of integral cable (suffix "A", "B", "C", "D", "J", "L", "M", "N" and "P" in the 16th position of the model code) intrinsically safe with entity parameters of:

$V_{max}/U_i = 14.5V$, $I_{max}/I_i = 93mA$, $P_{max}/P_i = 625mW$, $C_i = 0.649\mu F$, $L_i = 23.3\mu H$

when installed per installation Dwg A08949;

Maximum Working pressure for the lowest pressure sensors: 0.34MPa (50 psi) and Maximum Working Pressure for highest pressure sensors: 137.9 MPa (20000 psi); Single Seal; $-40 \text{ }^\circ\text{C} \leq T_{amb.} \leq +80 \text{ }^\circ\text{C}$; $-40 \text{ }^\circ\text{C} \leq \text{Process Temp.} \leq +125 \text{ }^\circ\text{C}$.

Class I, Div. 1, Groups C and D T4
Ex ia IIB T4 Ga
Class I Zone 0, AEx ia IIB T4 Ga

Models AST4400, AST44LP, AST4500, AST4510, AST4520, AST4530 Pressure Transducers

A) 4-20mA output (suffix "4" in 15th position of model code); input rated 10-32 Vdc max;



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with integral connector (suffix "6", "E", "F", "I", "K", "R", "S", "Y", "Z" and "4" in the 16th position of the model code), intrinsically safe with entity parameters of:

$V_{max}/U_i = 28V$, $I_{max}/I_i = 93mA$, $P_{max}/P_i = 625mW$, $C_i = 0.391\mu F$, $L_i = 0\ \mu H$

with up to 1000ft of integral cable (suffix "A", "B", "C", "D", "J", "L", "M", "N" and "P" in the 16th position of the model code) intrinsically safe with entity parameters of:

$V_{max}/U_i = 28V$, $I_{max}/I_i = 93mA$, $P_{max}/P_i = 625mW$, $C_i = 0.434\mu F$, $L_i = 155\ \mu H$;

when installed per installation Dwg A08949;

B) Other outputs:

B.1) with Ratiometric output rated 0.5-4.5V and 0.25-4.75V (suffix "1" and "M" in the 15th position of the model code); input rated 5.5 Vdc max;

B.2) with mV output rated 5, 10 and 20 mV/V (suffix "A", "B" and "F" in the 15th position of the model code); input rated 15 Vdc max;

B.3) with voltage output rated 1-5V, 1-6V, 0.5-5.5V, 0.25-5V, 1-10V, 0.1-5.1V, 0.5-4.5V, 0.5 – 2.5V (suffix "3", "6", "8", "9", "G", "J", "P" and "T" in the 15th position of the model code); input rated 8-32 Vdc max;

with integral connector (suffix "6", "E", "F", "I", "K", "R", "S", "Y" and "Z" in the 16th position of the model code),

intrinsically safe with entity parameters of:

$V_{max}/U_i = 28V$, $I_{max}/I_i = 93mA$, $P_{max}/P_i = 625mW$, $C_i = 0.643\mu F$, $L_i = 0\ \mu H$

with up to 150ft of integral cable (suffix "A", "B", "C", "D", "J", "L", "M", "N" and "P" in the 16th position of the model code), intrinsically safe with entity parameters of:

$V_{max}/U_i = 28V$, $I_{max}/I_i = 93mA$, $P_{max}/P_i = 625mW$, $C_i = 0.649\mu F$, $L_i = 23.3\ \mu H$;

when installed per installation Dwg A08949;

Maximum Working pressure for the lowest pressure sensors: 0.34MPa (50 psi) and Maximum Working Pressure for highest pressure sensors: 137.9 MPa (20000 psi); Single Seal; $-40\ ^\circ C \leq T_{amb.} \leq +80\ ^\circ C$; $-40\ ^\circ C \leq Process\ Temp. \leq +125\ ^\circ C$. (For AST4530 Pressure Transducers only: $0\ ^\circ C \leq T_{amb.} \leq +60\ ^\circ C$, $0\ ^\circ C \leq Process\ Temp. \leq +60\ ^\circ C$)

Conditions of Acceptability:

1. For Canadian Installations, sensor case must be bonded to ground according to Section 18 of the CEC, Part 1.
2. For US Installations, sensor case must be bonded to ground according to Articles 501 and 505 of the NEC.



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3. The model numbers include suffix letters and numbers, which denote variations in pressure connection, pressure range, pressure units, electrical output, electrical interface, cable material/length wetted material and other minor options of the transducers.

APPLICABLE REQUIREMENTS

C22.2 No. 142-M1987 <i>(Reaffirmed 2009)</i>	Process Control Equipment
ANSI/UL 508-2013 <i>Seventeenth Edition</i>	Industrial Control Equipment
UL 913 (6 th Ed.)	Intrinsically Safe Apparatus and Associated Apparatus for Use in Class I, II and III, Division 1, Hazardous Locations
ANSI/ISA 12.27.01-2003	Requirements for Process Sealing Between Electrical Systems and Flammable or Combustible Process Fluids
CAN/CSA-C22.2 No. 60079-0:11 <i>(December 2011)</i>	Explosive atmospheres – Part 0: Equipment – General requirements
CAN/CSA C22.2 No. 60079-11:14 <i>(R2018)</i>	Explosive atmospheres – Part 11: Equipment protection by intrinsic safety “i”
ANSI/ISA-60079-0 (12.00.01)-2009 <i>(R2013)</i>	Electrical Apparatus for Explosive Gas Atmospheres – Part 0: General Requirements
ANSI/ISA-60079-11 (12.02.01)- 2014	Explosive Atmospheres – Part 11: Equipment protection by intrinsic safety “i” (Edition 6.2)



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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, Div. 2, Groups A, B, C and D T4;

Models AST4300 and AST43LP Pressure Transducers with DIN43650A and Turck Mini-Fast connectors (suffix "I" and "4" in 16th position of model code) with different output configurations:

- a) rated 4-20mA (suffix "4" in 15th position of model code); input rated 32 Vdc max;
- b) ratiometric 0.5-4.5V and 0.25-4.75V (suffix "1" and "M" in the 15th position of the model code); input rated 5.5 Vdc max;
- c) 5, 10 and 20 mV/V (suffix "A", "B" and "F" in the 15th position of the model code); input rated 15 Vdc max;
- d) 0-5V, 1-5V, 0-10V, 1-6V, 0.5-5.5V, 0.25-5V, 1-10V, 0.1-5.1V, 0.5-4.5V, 0.5 – 2.5V (suffix "2", "3", "5", "6", "8", "9", "G", "J", "P" and "T" in the 15th position of the model code); input rated 32 Vdc max;

Maximum Working pressure for the lowest pressure sensors: 0.34MPa (50 psi) and Maximum Working Pressure for highest pressure sensors: 137.9 MPa (20000 psi); Single Seal; $-40\text{ }^{\circ}\text{C} \leq \text{Tamb.} \leq +80\text{ }^{\circ}\text{C}$; $-40\text{ }^{\circ}\text{C} \leq \text{Process Temp.} \leq +125\text{ }^{\circ}\text{C}$.

Class I, Div. 2, Groups A, B, C and D T4;
Ex ec IIC T4 Gc
Class I Zone 2, AEx ec IIC T4 Gc

Models AST4300 and AST43LP Pressure Transducers with metal conduit connector (suffix "L", "M", "N" and "P" in 16th position of model code) with different output configurations:

- a) 4-20mA (suffix "4" in 15th position of model code); input rated 32 Vdc max;
- b) ratiometric 0.5-4.5V and 0.25-4.75V (suffix "1" and "M" in the 15th position of the model code); input rated 5.5 Vdc max;
- c) 5, 10 and 20 mV/V (suffix "A", "B" and "F" in the 15th position of the model code); input rated 15 Vdc max;
- d) 0-5V, 1-5V, 0-10V, 1-6V, 0.5-5.5V, 0.25-5V, 1-10V, 0.1-5.1V, 0.5-4.5V, 0.5 – 2.5V, (suffix "2", "3", "5", "6", "8", "9", "G", "J", "P" and "T" in the 15th position of the model code); input rated 32 Vdc max;

Maximum Working pressure for the lowest pressure sensors: 0.34MPa (50 psi) and Maximum Working Pressure for highest pressure sensors: 137.9 MPa (20000 psi); Single Seal; $-40\text{ }^{\circ}\text{C} \leq \text{Tamb.} \leq +80\text{ }^{\circ}\text{C}$; $-40\text{ }^{\circ}\text{C} \leq \text{Process Temp.} \leq +125\text{ }^{\circ}\text{C}$; Enclosure IP54 rated.

Conditions of Acceptability:

1. For Canadian Installations, sensor case must be bonded to ground according to Section 18 of the CEC, Part 1.
2. For US Installations, sensor case must be bonded to ground according to Articles 501 and 505 of the NEC.
3. The model numbers include suffix letters and numbers, which denote variations in pressure connection, pressure range, pressure units, electrical output, electrical interface, cable material/length wetted material and other minor options of the transducers.

APPLICABLE REQUIREMENTS

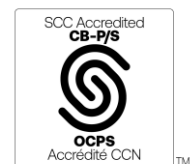
C22.2 No. 142-M1987 <i>(Reaffirmed 2009)</i>	Process Control Equipment
CSA C22.2 No. 213-M1987 <i>(Reaffirmed 2013)</i>	Non-incendive Electrical Equipment for Use in Class I, Division 2 Hazardous Locations
ANSI/UL 508-2013 <i>Seventeenth Edition</i>	Industrial Control Equipment
ANSI/ISA-12.12.01-2007	Non-incendive Electrical Equipment for Use in Class I and II, Division 2 and Class III, Division 1 and 2 Hazardous (Classified) Locations.
ANSI/ISA 12.27.01-2003	Requirements for Process Sealing Between Electrical Systems and Flammable or Combustible Process Fluids
ANSI/ISA-60079-0 (12.00.01)-2009 <i>(R2013)</i>	Electrical Apparatus for Explosive Gas Atmospheres – Part 0: General Requirements
ANSI/UL 60079-7-2017 (R2021) Fifth Edition	Explosive Atmospheres – Part 7: Equipment protection by increased safety “e”
CAN/CSA-C22.2 No. 60079-0:11 <i>(December 2011)</i>	Explosive atmospheres – Part 0: Equipment – General requirements
CAN/CSA C22.2 No. 60079-7:16	Explosive atmospheres – Part 7: Equipment protection by increased safety “e”

MARKINGS

Please refer to CSA Report # 2018368 - MARKINGS section for details.

Notes:

Products certified under Class C225802, C225804, C225882, C225884 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
80162235	2023-04-12	Update cCSAus report # 2018368 for Class I, Division 1 and Zone 0 intrinsically safe “ia” protected Model AST44XX and AST45XX Pressure Transducer and Class I, Division 2 non-incendive and Zone 2 type “ec” protected Models AST43XX Pressure transducers to change applicant name from “Measurement Specialties” to “TE Sensors” and corresponding address from USA to Mexico on the label drawings.
80132247	2022-11-17	Update cCSAus report # 2018368 for Class I, Division 1 and Zone 0 intrinsically safe “ia” protected Model AST44XX and AST45XX Pressure Transducer and Class I, Division 2 non-incendive and Zone 2 type “nA” protected Models AST43XX Pressure transducers to correct label drawings, replace standard ANSI/ISA-60079-15 (12.12.02)-2012 and CAN/CSA-C22.2 No. 60079-15:12 to ANSI/UL 60079-7-2017 (R2021) and CAN/CSA C22.2 No. 60079-7:16, and update the process temperature to -40 °C < Process Temp. < +125 °C.
80073003	2021-06-24	Update to cCSAus report # 2018368 for intrinsically safe Model AST44** and 45** Series Pressure Transducer for addition of PCB quality inspection notes and update related drawings.
80049312	2020-12-22	Update CSA report 2018368 to include the addition of electrical connector with M12 thread to model AST4510 submersible sensor.
70192968	2018-09-18	Variation to CofC 2018368. Drawing changes are all related to clarifying information for manufacturing purposes.
70179036	2018-07-19	Update to certificate 2018368 Ed. 4 70041283 to change company name from □ American Sensor Technologies Inc. to TE Connectivity Sensor Solutions
70042626	2015-10-20	Update to Report 2018368 to include component designation for Model AST43xx.
70041283	2015-10-09	Update existing report 2018368 to add code to part number nomenclature and to add drawing revisions to report.



2676482	2013-12-18	Update to report 2018368 to add a new Turck connector.
2531803	2013-10-22	Update to report 2018368 to add 2 new amplifiers PGA 308 and PGA 309 for all models, increase the upper pressure limit to 20,000PSI and include Zones.
2018368	2008-08-20	Model AST44xx and AST45xx Series Pressure Transducers - Intrinsically Safe; Model AST43xx Series Pressure Transducers - Suitable for Class I, Div. 2.