



1 **EC TYPE-EXAMINATION CERTIFICATE**

2 Equipment intended for use in Potentially Explosive Atmospheres Directive 94/9/EC

3 Certificate Number: **Sira 14ATEX2110X** Issue: **1**

4 Equipment: **Model AST44xx and AST45xx Series Pressure Transducers**

5 Applicant: **American Sensor Technologies, Inc.**

6 Address: **450 Clark Dr.
Mount Olive
New Jersey 07828
USA**

7 This equipment and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

8 Sira Certification Service, notified body number 0518 in accordance with Article 9 of Directive 94/9/EC of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in the confidential reports listed in Section 14.2.

9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the schedule to this certificate, has been assured by compliance with the following documents:

EN 60079-0:2012

EN 60079-11:2012

EN 60079-26:2007

The above list of documents may detail standards that do not appear on the UKAS Scope of Accreditation, but have been added through Sira's flexible scope of accreditation, which is available on request.

10 If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

11 This EC type-examination certificate relates only to the design and construction of the specified equipment. If applicable, further requirements of this Directive apply to the manufacture and supply of this equipment.

12 The marking of the equipment shall include the following:

AST 4401



II 1G
Ex ia IIC T4 Ga
Ta = -40°C to +80°C

**AST4400, AST44LP, AST4500,
AST4510, AST4520**



II 1G
Ex ia IIB T4 Ga
Ta = -40°C to +80°C

AST4530



II 1G
Ex ia IIB T4 Ga
Ta = -0°C to +60°C

Project Number 70011599

C Ellaby
Deputy Certification Manager

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SCHEDULE

EC TYPE-EXAMINATION CERTIFICATE

Sira 14ATEX2110X
Issue 1

13 DESCRIPTION OF EQUIPMENT

Model AST44xx and AST45xx Series Pressure Transducers utilize a mechanical diaphragm to convert a mechanical pressure measurement into an electric signal. The transducers are manufactured as 1-piece stainless steel, sealed assemblies, containing a maximum of 3 PCBs. Depending on the order codes as shown in the table below, user connections can be made using several different types of connectors and can supply 4-20mA current or a range of voltage outputs. Output connections are with cables of lengths up to 1000 ft (for outputs of 4-20 mA) or 150 ft (for all other electrical outputs)

Models for Ex ia IIC and Ex ia IIB	Entity parameter	Entity parameters values per group of gas					
		Ex ia IIC			Ex ia IIB		
		No cable	Up to 1000 ft cable	Up to 150 ft cable	No cable	Up to 1000 ft cable	Up to 150 ft cable
AST4401*****4*****_** (4-20 mA)	Ui Ii Pi Ci Li	14.5 V 93 mA 625 mW 0.391 µF 0	14.5 V 93 mA 625 mW 0.434 µF 155 µH	- - - - -	- - - - -	- - - - -	- - - - -
ASTXXXX*****4*****_** Where XXXX = 4400, 44LP, 4500, 4510, 4520, 4530 (4-20 mA)	Ui Ii Pi Ci Li	- - - - -	- - - - -	- - - - -	28 V 93 mA 625 mW 0.391 µF 0	28 V 93 mA 625 mW 0.434 µF 155 µH	- - - - -
AST4401*****1/M*****_** (output rated 0.5-4.5V and 0.25-4.75V)	Ui Ii Pi Ci Li	14.5 V 93 mA 625 mW 0.643 µF 0	- - - - -	14.5 V 93 mA 625 mW 0.649 µF 23.3 µH	- - - - -	- - - - -	- - - - -
ASTXXXX*****1/M*****_** Where XXXX = 4400, 44LP, 4500, 4510, 4520, 4530 (output rated 0.5-4.5 V and 0.25-4.75 V)	Ui Ii Pi Ci Li	- - - - -	- - - - -	- - - - -	28 V 93 mA 625 mW 0.643 µF 0	- - - - -	28 V 93 mA 625 mW 0.649 µF 23.3 µH
AST4401*****A/B/F*****_** (output rated 5, 10 and 20 mV/V)	Ui Ii Pi Ci Li	14.5 V 93 mA 625 mW 0.643 µF 0	- - - - -	14.5 V 93 mA 625 mW 0.649 µF 23.3 µH	- - - - -	- - - - -	- - - - -
ASTXXXX*****A/B/F*****_** Where XXXX = 4400, 44LP, 4500, 4510, 4520, 4530 (output rated 5, 10 and 20 mV/V)	Ui Ii Pi Ci Li	- - - - -	- - - - -	- - - - -	28 V 93 mA 625 mW 0.643 µF 0	- - - - -	28 V 93 mA 625 mW 0.649 µF 23.3 µH
AST4401*****3/6/8/9/G/J/P*****_** (output rated 1-5 V, 1-6 V, 0.5-5.5 V, 0.25-5 V, 1-10 V, 0.1-5.1 V, 0.5-4.5 V)	Ui Ii Pi Ci Li	14.5 V 93 mA 625 mW 0.643 µF 0	- - - - -	14.5 V 93 mA 625 mW 0.649 µF 23.3 µH	- - - - -	- - - - -	- - - - -

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Sira Certification Service

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Models for Ex ia IIC and Ex ia IIB	Entity parameter	Entity parameters values per group of gas					
		Ex ia IIC			Ex ia IIB		
		No cable	Up to 1000 ft cable	Up to 150 ft cable	No cable	Up to 1000 ft cable	Up to 150 ft cable
ASTXXXX*****3/6/8/9/G/J/P*****_** Where XXXX = 4400, 44LP, 4500, 4510, 4520, 4530 (output rated 1-5V, 1-6V, 0.5-5.5V, 0.25-5V, 1-10V, 0.1-5.1V, 0.5-4.5V)	Ui	-	-	-	28 V	-	28 V
li	-	-	-	93 mA	-	93 mA	
Pi	-	-	-	625 mW	-	625 mW	
Ci	-	-	-	0.643 µF	-	0.649 µF	
Li	-	-	-	0	-	23.3 µH	

14 DESCRIPTIVE DOCUMENTS

14.1 Drawings

Refer to Certificate Annexe.

14.2 Associated Sira Reports and Certificate History

Issue	Date	Report number	Comment
0	12 June 2014	R70006508A	The release of the prime certificate.
1	10 September 2014	R70011599A	Issued to correct a Typographical error.

15 SPECIAL CONDITIONS FOR SAFE USE (denoted by X after the certificate number)

15.1 Since Pressure Transducers models AST4401, AST4400, AST44LP, AST4500, AST4510, AST4520 and AST4530 are not earthed and a charge-generating mechanism may be present when in contact with non-metallic charge generating materials, the device shall be grounded before use.

15.2 Under certain extreme circumstances, exposed plastic and unearthed metal parts of the enclosure may store an ignition-capable level of electrostatic charge. Therefore, the user/installer shall implement precautions to prevent the build up of electrostatic charge, e.g. locate the equipment where a charge-generating mechanism (such as wind-blown dust) is unlikely to be present and they shall be cleaned with a damp cloth.

15.3 The enclosure is manufactured from light metal. In rare cases, ignition sources due to impact and friction sparks could occur. This shall be considered during installation, particularly if the equipment is installed in a zone 0 location.

16 ESSENTIAL HEALTH AND SAFETY REQUIREMENTS OF ANNEX II (EHSRs)

The relevant EHSRs that are not addressed by the standards listed in this certificate have been identified and individually assessed in the reports listed in Section 14.2.

17 CONDITIONS OF CERTIFICATION

17.1 The use of this certificate is subject to the Regulations Applicable to Holders of Sira Certificates.

17.2 Holders of EC type-examination certificates are required to comply with the production control requirements defined in Article 8 of directive 94/9/EC.

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Certificate Annexe



Certificate Number: Sira 14ATEX2110X
 Equipment: Model AST44xx and AST45xx
 Series Pressure Transducers
 Applicant: American Sensor Technologies, Inc.

Issue 0

Drawing no.	Sheets	Rev.	Date (Sira stamp)	Title
A08951	1 to 1	F	05 Jun 14	Label, Standard, Housing CSA, Class I, IS
A08953	1 to 1	E	05 Jun 14	Label, Standard, Housing, CSA, Class I, Div IS
A08949	1 to 1	B	05 Jun 14	Control Drawing, IS Connections (Groups C,D), Div1/Zone 0
A14878	1 to 1	B	05 Jun 14	Layout Label CSA Intrinsically Safe
A04010	1 to 1	B	05 Jun 14	Outline, AST-44XX ¼ MNPT w/ Cable, 1" housing
A04012	1 to 1	B	05 Jun 14	Outline, AST-44XX ¼ MNPT w/Mini-DIN, 1" housing
A15364	1 to 1	A	05 Jun 14	Final Assembly. ¼ MNPT, 316L, 0.5-4.5V w/ 6 ft. Cable(AST4400&4401)
A10850	1 to 1	F	05 Jun 14	Final Assembly. ¼ MNPT, 316L, 4-20mA w/ 4 ft. Cable, conduit(AST44LP)
A13982	1 to 1	G	05 Jun 14	Final Assembly. ¼ FNPT, 4-20mA w/ Cable(AST4530)
A14275	1 to 1	B	05 Jun 14	Final Assembly. 4-20mA, 316L w/ 25ft Cable(AST4520)
A14396	1 to 1	A	05 Jun 14	Final Assembly. 4-20mA, submersible, 50ft cable(AST4500)
A14671	1 to 1	A	05 Jun 14	Final Assembly. ¼ MNPT, 316L, 4-20mA, w/ 10ft Cable(AST4510)
A01522	1 to 1	D	05 Jun 14	Sub-Assembly, EMI Plate
A05781	1 to 1	E	05 Jun 14	Sub-Assembly, EMI Plate, 1 in housing
A00200	1 to 1	J	05 Jun 14	Sub-Assembly, 4-20 mA PCB (circular version)
A00207	1 to 1	Q	05 Jun 14	Sub-Assembly, PCB, Voltage Output
A11472	1 to 1	B	05 Jun 14	PCB, 1-x Voltage, PGA 309
A11473	1 to 1	C	05 Jun 14	Sub-assembly PCB, 1-x Voltage, PGA 309
S11473	1 to 1	C	05 Jun 14	Schematic PCB, 1-x Voltage, PGA 309
A11468	1 to 1	D	05 Jun 14	PCB, 4-20mA, PGA 309
A11469	1 to 1	D	05 Jun 14	Sub-assembly PCB, 4-20mA, PGA 309
S11469	1 to 1	D	05 Jun 14	Schematic PCB, 4-20mA, PGA 309
A11470	1 to 1	B	05 Jun 14	PCB, Ratiometric, PGA 309
A11471	1 to 1	A	05 Jun 14	Sub-assembly PCB, Ratiometric, PGA 309
S11471	1 to 1	A	05 Jun 14	Schematic PCB, Ratiometric, PGA 309
A11466	1 to 1	C	05 Jun 14	PCB, Main Board, PGA 309
A11467	1 to 1	H	05 Jun 14	Sub-assembly PCB, Main Board, PGA 309
S11467	1 to 1	G	05 Jun 14	Schematic PCB, Main Board, PGA 309
A11519	1 to 1	C	05 Jun 14	PCB, Ratiometric, PGA 309, Complete
A11520	1 to 1	C	05 Jun 14	Sub-assembly PCB, Ratiometric, PGA 309, Complete
S11520	1 to 1	C	05 Jun 14	Schematic PCB, Ratiometric, PGA 309, Complete
A11219	1 to 1	C	05 Jun 14	PCB, 4-20mA, PGA 308
A11220	1 to 1	D	05 Jun 14	Sub-assembly PCB, 4-20mA, PGA 308
S11220	1 to 1	D	05 Jun 14	Schematic PCB, 4-20mA, PGA 308
A11222	1 to 1	F	05 Jun 14	Sub-assembly PCB, Ratiometric, PGA 308
S11222	1 to 1	E	05 Jun 14	Schematic PCB, Ratiometric, PGA 308
A11370	1 to 1	B	05 Jun 14	Sub-assembly PCB, 1-x Voltage, PGA 308
S11370	1 to 1	B	05 Jun 14	Schematic PCB, 1-xV Voltage, PGA 308
A10407	1 to 1	B	05 Jun 14	PCB, 4-20mA
S00200	1 to 1	I	05 Jun 14	Schematic PCB, 4-20mA
A00206	1 to 1	J	05 Jun 14	PCB, Voltage
S00207	1 to 1	M	05 Jun 14	Schematic PCB, Voltage output

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Certificate Annexe

Certificate Number: Sira 14ATEX2110X
Equipment: Model AST44xx and AST45xx
Series Pressure Transducers
Applicant: American Sensor Technologies, Inc.



Drawing no.	Sheets	Rev.	Date (Sira stamp)	Title
A01210	1 to 1	S	05 Jun 14	Sub-assembly PCB, Ratiometric
S01210	1 to 1	Q	05 Jun 14	Schematic PCB, Ratiometric
A13835	1 to 1	A	05 Jun 14	Combinations, Sensor, Comp.&Amplifier
A13311	1 to 1	B	05 Jun 14	Layout Label, CSA, AST4520
M00002	1 to 1	B	05 Jun 14	Model Number Matrix, AST4400, AST4401, AST44LP, AST4500, AST4510, AST4520 - ATEX
M00003	1 to 1	B	05 Jun 14	Model Number Matrix, AST4530 - ATEX
302204S1.H YT	1 to 1		05 Jun 14	4/C #22 AWG VENTED CABLE 100°C, 600V - SENSOR CABLE
302204S1.K YN	1 to 1		05 Jun 14	4/C #22 AWG VENTED CABLE 100°C, 600V - SENSOR CABLE
302204S2.1,	1 to 1		05 Jun 14	4/C #24 AWG VENTED CABLE 125°C, 300V - SENSOR CABLE
302204S2	1 to 1		05 Jun 14	4/C #24 7/32 SHIELDED ETFE/TPR 125°C, 300V - SENSOR CABLE
A01404	1 to 1	E	05 Jun 14	Housing, Tube, Universal

Issue 1 No new drawings were introduced.

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