



IECEX Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: **IECEX CSAE 22.0008X** Page 1 of 3 [Certificate history:](#)

Status: **Current** Issue No: 0

Date of Issue: 2022-06-01

Applicant: **Kulite Semiconductor Products, Inc.**
1 Willow Tree Road
Leonia
New Jersey 07605
United States of America

Equipment: **A Range of Amplified and Passive Sensors, Type I, II, III, IV and V**

Optional accessory:

Type of Protection: **Intrinsic Safety "ia" & Increased Safety "ec"**

Marking: Ex ia IIC T4 Ga (Ta = -60 °C to +80 °C)
Ex ia IIC T3 Ga (Ta = -60 °C to +125 °C)
Ex ia IIC T2 Ga (Ta = -60 °C to +230 °C)
Ex ec IIC T4 Gc (Ta = -60 °C to +80 °C)
Ex ec IIC T3 Gc (Ta = -60 °C to +125 °C)
Ex ec IIC T2 Gc (Ta = -60 °C to +230 °C)

Approved for issue on behalf of the IECEx
Certification Body:

Michelle Halliwell

Position:

Director Operations, UK & Industrial Europe

Signature:
(for printed version)

Date:
(for printed version)

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Certificate issued by:

CSA Group Testing UK Ltd
Unit 6, Hawarden Industrial Park
Hawarden, Deeside CH5 3US
United Kingdom





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Manufacturer: **Kulite Semiconductor Products, Inc.**
1 Willow Tree Road
Leonia
New Jersey 07605
United States of America

Manufacturing locations: **Kulite Semiconductor Products, Inc.**
1 Willow Tree Road
Leonia
New Jersey 07605
United States of America

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended

STANDARDS :

The equipment and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards

[IEC 60079-0:2017](#) Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0

[IEC 60079-11:2011](#) Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "I"
Edition:6.0

[IEC 60079-7:2017](#) Explosive atmospheres - Part 7: Equipment protection by increased safety "e"
Edition:5.1

This Certificate **does not** indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Report:

[GB/CSAE/ExTR22.0107/00](#)

Quality Assessment Report:

[GB/CSAE/QAR22.0006/00](#)



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EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

The Kulite range of amplified and passive pressure sensors are essentially modular in construction. The sensing element is a silicon diaphragm that is housed within an oil filled capsule. The amplified transducers contain a hybrid circuit and may also contain a capacitor array and filters for EMC protection. The passive transducers contain just the sensing element and compensation resistors. All sensors can be configured to read either absolute, gauge or differential pressure. The pressure port type and electrical connection to the transducer can be specified by the user.

All sensors are to be used in conjunction with suitably certified associated apparatus.

Refer to certificate Annexe for additional information.

Conditions of manufacture

The Manufacturer shall comply with the following:

1. A test voltage of 500 Vrms in accordance with clause 10.3 of IEC 60079-11 shall be applied between the intrinsically safe circuit of the transducer and its enclosure. The test voltage shall be increased steadily to the specified value in a period of not less than 10 s and then maintained for at least 60 s. During this period, no breakdown or current in excess of 5 mA shall be observed.

SPECIFIC CONDITIONS OF USE: YES as shown below:

1. For type ec, provision shall be made, either in the equipment or external to the equipment, to provide for the transient protection device to be set at a level not exceeding 119 V at the power supply terminals of the equipment. The transient protection shall limit transients up to a maximum input voltage of the equipment in normal operation.
2. For type ec, the connector used to make an electrical connection to the transducer shall have a minimum rating of IP54 (when used indoors) or IP66 rating (when used outdoors) and shall be manufactured from stainless steel and the pins insulated from the shell by glass to metal seals.
3. For type ec, the connectors shall not be connected or disconnected whilst the equipment is energised. Before connection, they shall be inspected to be free from contaminants (e.g. moisture and dust) that might impair the segregation between the pins.
4. For type ec, the equipment shall be adequately earthed.

Annex:

[IECEX CSAE 22.0008X Annexe Issue 0.pdf](#)

Annexe to: IECEx CSAE 22.0008X Issue 0

Applicant: Kulite Semiconductor Products, Inc.

**Apparatus: A Range of Amplified and Passive Sensors,
Type I, II, III, IV and V**



EQUIPMENT (continued)

Type I Transducers		
Description:	Silicon Diaphragm Oil-Filled Design, Amplified, EMC Filters and Capacitor Array	
Mode:	Absolute, Gauge and Differential	
Protection concept:	Type Ex ia	Type Ex ec
Parameters:	Ui = 33.0 V Ii = 250 mA Pi = 1.0 W Ci = 51.5 nF Li = 150 µH	33 Vdc
Example model numbers:	IS-APTE-XXX-1000 Series IS-IPTE-1100 Series IS-BME-1100 Series IS-BMDE-1100 Series IS-ISTE-1000 Series IS-KF-1040 Series IS-KF-1041 Series IS-EPS-XXX-1000 Series IS-TC-1500 Series IS-APTE-DC-XXX Series IS-ETM-XXX-375 & 500 Series PT213A Series IS-EFT-1000 Series IS-KE-XXX-375 Series IS-ETQ-XXX Series IS-ETQ-XXX Series PT2000A Series IS-ETL-XXX-190 & 312 & 375 Series IS-ETLR Series	APTE-XXX-1000 Series IPTE-1100 Series IBME-110 Series BMDE-1100 Series ISTE-1000 Series KF-1040 Series KF-1041 Series EPS-XXX-1000 Series TC-1500 Series APTE-DC-XXX Series ETM-XXX-375 & 500 Series PT213A Series EFT-1000 Series NE-XXX-375 Series KE-XXX-375 Series ETQ-XXX-Series PT2000A Series ETL-XXX-190 & 312 & 375 Series ETLR Series
	Other Kulite Models complying with Type I design specification may be included. Type II or Type III Kulite Pressure Transducer with KA-XXX Series (in-line amplifier)	

Type II Transducers		
Description:	Silicon Diaphragm Oil-Filled Design, Unamplified	
Mode:	Absolute, Gauge and Differential	
Protection concept:	Type Ex ia	Type Ex ec
Parameters:	Ui = 55.0 V Ii = 250 mA Pi = 1.0 W Ci = 16.5 nF Li = 150 µH	55 Vdc
Example model numbers:	IS-APT-XXX-1000 Series IS-IPT-1100 Series IS-IPT-750 Series IS-BM-1100 Series IS-BM-750 Series IS-BMD-1100 Series	APT-XXX-1000 Series IPT-1100 Series IPT-750 Series BM-1100 Series BM-750 Series BMD-1100 Series

Date: 01 June 2022

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Applicant: Kulite Semiconductor Products, Inc.



Apparatus: A Range of Amplified and Passive Sensors, Type I, II, III, IV and V

Type II Transducers		
	IS-IST-1000 Series PT213A Series (unamplified) IS-HKM-375 Series IS-HEM-375 Series IS-HKM-3X Series IS-HKM-XXX-375 IS-HEM-XXX-375 Series & 500 Series IS-IPT-4-750 Series PT2000A Series (unamplified)	IST-1000 Series PT213A Series (unamplified) ETLR Series HKM-375 Series HEM-375 Series HKM-3X Series HKM-XXX-375 HEM-XXX-375 Series IPT-4-750 Series PT2000A Series (unamplified)
Other Kulite Models complying with Type II design specification may be included.		

Type III Transducers		
Description:	Silicon Diaphragm & Metal Diaphragm Designs, Unamplified	
Mode:	Absolute, Gauge and Differential	
Protection concept:	Type Ex ia	Type Ex ec
Parameters:	$U_i = 55.0 \text{ V}$ $I_i = 250 \text{ mA}$ $P_i = 1.0 \text{ W}$ $C_i = 16.5 \text{ nF}$ $L_i = 150 \text{ }\mu\text{H}$	55 Vdc
Example model numbers:	IS-XTM-190 Series IS-XTL-190 Series IS-XTHL-XXX Series IS-XCHL-XXX Series IS-ECS-13L Series	XTM-190 Series XTL-190 Series XTHL-XXX Series XCHL-XXX Series ECS-13L Series
Other Kulite Models complying with Type III design specification may be included.		

Type IV Transducers		
Description:	Silicon Diaphragm Oil-Filled or Leadless Design, Amplified (internal or in-line) fitted with a platinum RTD (Resistance Temperature Detector)	
Mode:	Absolute, Gauge and Differential	
Protection concept:	Type Ex ia	Type Ex ec
Parameters:	$U_i = 33.0 \text{ V}$ $I_i = 250 \text{ mA}$ $P_i = 1.0 \text{ W}$ $C_i = 51.5 \text{ nF}$ $L_i = 150 \text{ }\mu\text{H}$	33 Vdc
Example model numbers:	IS-EPTS-312 Series IS-ETL/T-312 Series IS-ETL/T-375 Series IS-ETLR/T-635 Series	EPTS-312 Series ETL/T-312 Series ETL/T-375 Series ETLR/T-635 Series

Annexe to: IECEx CSAE 22.0008X Issue 0

Applicant: Kulite Semiconductor Products, Inc.

**Apparatus: A Range of Amplified and Passive Sensors,
Type I, II, III, IV and V**



Type IV Transducers	
	Other Kulite Models complying with Type IV design specification may be included. Type V Kulite Pressure Transducer with KA-XXX Series (in line amplifier)

Type V Transducers		
Description:	Silicon Diaphragm Oil-Filled Design, Leadless & Metal Diaphragm Designs, Unamplified fitted with a platinum RTD (Resistance Temperature Detector)	
Mode:	Absolute, Gauge and Differential	
Protection concept:	Type Ex ia	Type Ex ec
Parameters:	U _i = 55.0 V I _i = 250 mA P _i = 1.0 W C _i = 16.5 nF L _i = 150 µH	55 Vdc
Example model numbers:	IS-HKL/T-1-235 Series IS-HKL/T-312 Series IS-HKL-T-375 Series	HKL/T-1-235 Series HKL/T-312 Series HKL-T-375 Series
	Other Kulite Models complying with Type V design specification may be included.	