

# **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

IECEX CSAE 22.0008X Certificate No.: 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:

Position: Director Operations, UK & Industrial Europe

Michelle Halliwell

Signature:

(for printed version)

(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





# IECEx Certificate of Conformity

Certificate No.: IECEX CSAE 22.0008X Page 2 of 3

Date of issue: 2022-06-01 Issue No: 0

Manufacturer: Kulite Semiconductor Products, Inc.

1 Willow Tree Road

Leonia

New Jersey 07605 United States of America

Manufacturing Kulite Semiconductor Products, Inc.

locations: 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

Explosive atmospheres - Part 7: Equipment protection by increased safety "e"

IEC 60079-7:2017

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



# IECEx Certificate of Conformity

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Date of issue: 2022-06-01 Issue No: 0

#### **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:

 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:

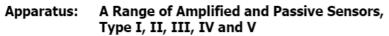
- 1. For type ec, provision shall be made, either in the equipment or external to the equipment, to provide for the transient protection device to be set at a level not exceeding 119 V at the power supply terminals of the equipment. The transient protection shall limit transients up to a maximum input voltage of the equipment in normal operation.
- 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.





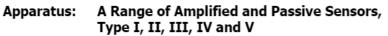
## **EQUIPMENT (continued)**

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	33 Vdc
	Ii = 250 mA	
	Pi = 1.0 W	
	Ci = 51.5 nF	
	Li = 150 μH	
Example model numbers:	IS-APTE-XXX-1000 Series	APTE-XXX-1000 Series
	IS-IPTE-1100 Series	IPTE-1100 Series
	IS-BME-1100 Series	IBME-110 Series
	IS-BMDE-1100 Series	BMDE-1100 Series
	IS-ISTE-1000 Series	ISTE-1000 Series
	IS-KF-1040 Series	KF-1040 Series
	IS-KF-1041 Series	KF-1041 Series
	IS-EPS-XXX-1000 Series	EPS-XXX-1000 Series
	IS-TC-1500 Series	TC-1500 Series
	IS-APTE-DC-XXX Series	APTE-DC-XXX Series
	IS-ETM-XXX-375 & 500 Series	ETM-XXX-375 & 500 Series
	PT213A Series	PT213A Series
	IS-EFT-1000 Series	EFT-1000 Series
	IS-KE-XXX-375 Series	NE-XXX-375 Series
	IS-ETQ-XXX Series	KE-XXX-375 Series
	IS-ETQ-XXX Series	ETQ-XXX-Series
	PT2000A Series	PT2000A Series
	IS-ETL-XXX-190 & 312 & 375 Series	ETL-XXX-190 & 312 & 375 Series
	IS-ETLR 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	55 Vdc
	Ii = 250 mA	
	Pi = 1.0 W	
	Ci = 16.5 nF	
	Li = 150 μH	
Example model numbers:	IS-APT-XXX-1000 Series	APT-XXX-1000 Series
	IS-IPT-1100 Series	IPT-1100 Series
	IS-IPT-750 Series	IPT-750 Series
	IS-BM-1100 Series	BM-1100 Series
	IS-BM-750 Series	BM-750 Series
	IS-BMD-1100 Series	BMD-1100 Series

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Kulite Semiconductor Products, Inc. Applicant:





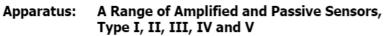
Type II Transducers		
	IS-IST-1000 Series PT213A Series (unamplified) IS-HKM-375 Series IS-HEM-375 Series IS-HKM-3X Series IS-HKM-XXX-375 IS-HEM-XXX-375 Series & 500 Series IS-IPT-4-750 Series PT2000A Series (unamplified)	IST-1000 Series PT213A Series (unamplified) ETLR Series HKM-375 Series HEM-375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

Type III Transducers		
Description:	Silicon Diaphragm & Metal Diaphragm Designs, Unamplified	
Mode:	Absolute, Gauge and Differential	
Protection concept:	Type Ex ia	Type Ex ec
Parameters:	Ui = 55.0 V	55 Vdc
	Ii = 250 mA	
	Pi = 1.0 W	
	Ci = 16.5 nF	
	Li = 150 μH	
Example model numbers:	IS-XTM-190 Series	XTM-190 Series
	IS-XTL-190 Series	XTL-190 Series
	IS-XTHL-XXX Series	XTHL-XXX Series
	IS-XCHL-XXX Series	XCHL-XXX Series
	IS-ECS-13L 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:	Ui = 33.0 V	33 Vdc
	Ii = 250 mA	
	Pi = 1.0 W	
	Ci = 51.5 nF	
	Li = 150 μH	
Example model numbers:	IS-EPTS-312 Series	EPTS-312 Series
	IS-ETL/T-312 Series	ETL/T-312 Series
	IS-ETL/T-375 Series	ETL/T-375 Series
	IS-ETLR/T-635 Series	ETLR/T-635 Series

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Kulite Semiconductor Products, Inc. Applicant:





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, I	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:	Ui = 55.0 V	55 Vdc
	Ii = 250 mA	
	Pi = 1.0 W	
	Ci = 16.5 nF	
	Li = 150 μH	
Example model numbers:	IS-HKL/T-1-235 Series	HKL/T-1-235 Series
	IS-HKL/T-312 Series	HKL/T-312 Series
	IS-HKL-T-375 Series	HKL-T-375 Series
	Other Kulite Models complying with included.	Type V design specification may be