



UNITED KINGDOM CONFORMITY ASSESSMENT

1 **UK TYPE EXAMINATION CERTIFICATE**

2 Component intended for use in a Product or Protective System for use in Potentially Explosive Atmospheres
UKSI 2016:1107 (as amended) – Schedule 3A, Part 1

3 Certificate Number: **CSAE 23UKEX1056U** Issue: **1**

4 Product: **ADUM144X Series Digital Isolators**

5 Manufacturer: **Analog Devices Inc.**

6 Address: 804 Woburn St
Wilmington
Massachusetts 01887
USA

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

8 CSA Group Testing UK Limited, Approved Body number 0518, in accordance with Regulation 42 of the Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations 2016, UKSI 2016:1107 (as amended), certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Schedule 1 of the Regulations. 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 has been assured by compliance with:

IEC EN 60079-0:2018 EN 60079-11:2012 / IEC 60079-11:2023 Ed. 7

Except in respect of those requirements listed at Section 16 of the schedule to this certificate. The above standards may not appear on the UKAS Scope of Accreditation, but have been added through flexible scope of accreditation, which is available on request.

10 The sign "U" placed after the certificate number indicates that this certificate must not be mistaken for a certificate intended for an equipment or protective system. This partial certification may be used as the basis for certification of an equipment or protective system. Any limitations are listed in Section 15.

11 This UK TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified product. Further requirements of the Regulations apply to the manufacturing process and supply of this product. These are not covered by this certificate.

12 The marking of this product shall be in accordance with Regulation 41 and include the following:



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Name: M Halliwell

Title: Senior Director of Operations



Certificate No. CSAE23UKEX1056U
CSA Group Testing UK Ltd., Unit 6 Hawarden Industrial Park, Hawarden, CH5 3US, UK

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QD 1600 Issue 3 (2023-09-11)

SCHEDULE

UK TYPE EXAMINATION CERTIFICATE

CSAE 23UKEX1056U

Issue 1

13 DESCRIPTION OF PRODUCT

The ADuM144x is a Quad channel digital isolator. This assembly is intended to be used as an isolating component between separate intrinsically safe circuits. There are 6 variants available in two package options; a 16 pin QSOP package or a 20 pin SSOP package, with different dimensions and lead frames, but the same die set and isolation transformers for each. This family of devices has channel direction variants as well as differences in the logic state maintained at the active output when half of the chip does not have power applied. The differences are programmed at assembly by bond options.

The equipment assembly should be connected to suitably certified intrinsically safe circuits considering following entity parameters:

Package Type	Entity Parameters Side 1	Entity Parameters Side 2
QSOP-16	$U_i = 42\text{ V}$ $I_i = 275\text{ mA}$ $P_i = 1.3\text{ W}$ $L_i = 0$ $C_i = 4\text{ pF}$	$U_i = 42\text{ V}$ $I_i = 275\text{ mA}$ $P_i = 1.3\text{ W}$ $L_i = 0$ $C_i = 4\text{ pF}$
SSOP-20	$U_i = 42\text{ V}$ $I_i = 275\text{ mA}$ $P_i = 1.3\text{ W}$ $L_i = 0$ $C_i = 4\text{ pF}$	$U_i = 42\text{ V}$ $I_i = 275\text{ mA}$ $P_i = 1.3\text{ W}$ $L_i = 0$ $C_i = 4\text{ pF}$
Alternate entity parameters for SSOP -20		
SSOP-20	$U_i = 42\text{ V}$ $I_i = 275\text{ mA}$ $P_i = 1.0\text{ W}$ $L_i = 0$ $C_i = 4\text{ pF}$	$U_i = 42\text{ V}$ $I_i = 275\text{ mA}$ $P_i = 1.0\text{ W}$ $L_i = 0$ $C_i = 4\text{ pF}$
Alternate entity parameters for QSOP -16		
QSOP-16	$U_i = 42\text{ V}$ $I_i = 275\text{ mA}$ $P_i = 1.0\text{ W}$ $L_i = 0$ $C_i = 4\text{ pF}$	$U_i = 42\text{ V}$ $I_i = 275\text{ mA}$ $P_i = 1.0\text{ W}$ $L_i = 0$ $C_i = 4\text{ pF}$

Variation 1 - This variation introduced the following changes:

- i. Include additional set of entity parameters for ADuM144x QSOP package.
- ii. Update to IEC 60079-11:2023

14 DESCRIPTIVE DOCUMENTS

14.1 Drawings

Refer to Certificate Annexe.

SCHEDULE

UK TYPE EXAMINATION CERTIFICATE

CSAE 23UKEX1056U

Issue 1

14.2 Associated Reports and Certificate History

Issue	Date	Report number	Comment
0	22 March 2023	R80146538A	The release of the prime certificate.
1	30 January 2025	R80226931A	The introduction of Variation 1

15 SCHEDULE OF LIMITATIONS

15.1 The components being certified comply with EN 60079-11:2012 and IEC 60079-11:2023. When one of these components will be used in an equipment, the component is to be fitted on a PCB inside a suitable enclosure and re-certified as equipment. The creepage and clearance distances across the isolating component have been evaluated but the distances to other circuitry remain the responsibility of the user of the certified equipment.

15.2 This assembly is an isolating component between separate intrinsically safe circuits. The assembly shall be connected to suitably certified intrinsically safe circuits considering following entity parameters:

Package Type	Entity Parameters Side 1	Entity Parameters Side 2	Max. operating range
QSOP-16	$U_i = 42\text{ V}$ $I_i = 275\text{ mA}$ $P_i = 1.3\text{ W}$ $L_i = 0$ $C_i = 4\text{ pF}$	$U_i = 42\text{ V}$ $I_i = 275\text{ mA}$ $P_i = 1.3\text{ W}$ $L_i = 0$ $C_i = 4\text{ pF}$	-55°C to 85°C
SSOP-20	$U_i = 42\text{ V}$ $I_i = 275\text{ mA}$ $P_i = 1.3\text{ W}$ $L_i = 0$ $C_i = 4\text{ pF}$	$U_i = 42\text{ V}$ $I_i = 275\text{ mA}$ $P_i = 1.3\text{ W}$ $L_i = 0$ $C_i = 4\text{ pF}$	-55°C to 85°C
Alternate entity parameters for SSOP -20			
SSOP-20	$U_i = 42\text{ V}$ $I_i = 275\text{ mA}$ $P_i = 1.0\text{ W}$ $L_i = 0$ $C_i = 4\text{ pF}$	$U_i = 42\text{ V}$ $I_i = 275\text{ mA}$ $P_i = 1.0\text{ W}$ $L_i = 0$ $C_i = 4\text{ pF}$	-55°C to 125°C
Alternate entity parameters for QSOP -16			
QSOP-16	$U_i = 42\text{ V}$ $I_i = 275\text{ mA}$ $P_i = 1.0\text{ W}$ $L_i = 0$ $C_i = 4\text{ pF}$	$U_i = 42\text{ V}$ $I_i = 275\text{ mA}$ $P_i = 1.0\text{ W}$ $L_i = 0$ $C_i = 4\text{ pF}$	-55°C to 125°C

15.3 The components (i.e. Digital Isolators) being certified will have the following safety ratings. The temperature class will be determined based on the following table:

SCHEDULE

UK TYPE EXAMINATION CERTIFICATE

CSAE 23UKEX1056U

Issue 1

Package type	Maximum power Side 1 (W)	Maximum power Side 2 (W)	Maximum component temperature (°C)	Ambient Temperature (°C)
QSOP-16	1.3	1.3	189.8	85
SSOP-20	1.3	1.3	218	85
SSOP-20 (for alternate parameter)	1.0	1.0	200	125
QSOP-16 (for alternate parameters)	1.0	1.0	214.3	125

16 ESSENTIAL HEALTH AND SAFETY REQUIREMENTS (REGULATIONS SCHEDULE 1)

In addition to the Essential Health and Safety Requirements covered by the standards listed in Section 9, all other requirements are demonstrated in the relevant reports.

17 PRODUCTION CONTROL

- 17.1 Holders of this certificate are required to comply with production control requirements defined in Schedule 3A, as applicable, and CSA Group Testing UK Regulations for Certificate Holders
- 17.2 Each ADUM144X series Digital Isolator shall be supplied with a marking drawing.