

Certificate of Compliance

Certificate Number(s):

UL-US-L516634-364111-
03900202-3
UL-US-2314724-2

Report Reference:

E516634-20200930

Issue Date:

2025-10-07

Issued to:

ANALOG DEVICES INC
804 WOBURN ST, WILMINGTON, MA, 01887-3494, US

This certificate confirms that representative samples of:

**OERX2 - Equipment and Systems for Use in Hazardous Locations
- Component**

**OEVS2 - Intrinsically Safe Equipment and Systems for Use in
Zone Classified Hazardous Locations - Component**

See Addendum Page for Product Designation(s).

Have been evaluated by UL in accordance with the component requirements in the Standard(s) indicated on this Certificate. UL Recognized components are incomplete in certain constructional features or restricted in performance capabilities and are intended for installation in complete equipment submitted for investigation to UL LLC.

UL 913, Edition 8, Issue Date 2013-12-06, Revision Date 2022-05-10

UL 60079-0, Edition 7, Issue Date 2019-03-26, Revision Date 2024-07-19

UL 60079-11, Edition: 6, Issue Date: 2013-02-15, Revision Date: 2023-01-25

Additional Information:

See UL Product iQ® at <https://iq.ulprospector.com> for additional information.

This Certificate of Compliance indicates that representative samples of the product described in the certification report have met the requirements for UL certification. It does not provide authorization to apply the UL Recognized Component Mark. Only the Authorization Page that references the Follow-Up Services Procedure for ongoing surveillance provides authorization to apply the UL Mark.

Only those products bearing the UL Recognized Component Mark should be considered as being UL Certified and covered under UL's Follow-Up Services.



David Piecuch
UL Mark Certification Program Manager



Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL. For questions, please contact UL Solutions Customer Service at <https://www.ul.com/contact-us>.

CERTIFICATE OF COMPLIANCE

Certificate number(s): UL-US-L516634-364111-03900202-3, UL-US-2314724-2
Report reference: E516634-20200930
Issue Date: 2025-10-07

| Look for the UL Recognized Component Mark on the product.

CERTIFICATE OF COMPLIANCE

Certificate number(s): UL-US-L516634-364111-03900202-3, UL-US-2314724-2
Report reference: E516634-20200930
Issue Date: 2025-10-07

This is to certify that representative samples of the product as specified on this certificate were tested according to the current UL requirements.

Intrinsically Safe Non-Optical Isolating Device

Model(s): ADuM144 followed by 0, 1, 2, 5, 6, or 7, followed by AR, followed by Q or S, followed by Z

Safe Non-Optical Isolating Device

Model(s): AD71217ARSZ

Certificate of Compliance

Certificate Number(s):

UL-CA-L516634-364411-
03900202-3
UL-CA-2312878-2

Report Reference:

E516634-20200930

Issue Date:

2025-10-07

Issued to:

ANALOG DEVICES INC
804 WOBURN ST, WILMINGTON, MA, 01887-3494, US

This certificate confirms that representative samples of:

OERX8 - Equipment and Systems for Use in Hazardous Locations Certified for Canada - Component

OEVS8 - Intrinsically Safe Equipment and Systems for Use in Zone Classified Hazardous Locations Certified for Canada - Component

See Addendum Page for Product Designation(s).

Have been evaluated by UL in accordance with the component requirements in the Standard(s) indicated on this Certificate. UL Recognized components are incomplete in certain constructional features or restricted in performance capabilities and are intended for installation in complete equipment submitted for investigation to UL LLC.

CSA C22.2 NO. 60079-0, Edition 4, Issue Date: 2019-02-01

CSA C22.2 NO. 60079-11, Edition 2, Issue Date: 2014-02-01

CSA C22.2 No. 60079-11, Edition 2, Issued 2014-02-01

Additional Information:

See UL Product iQ® at <https://iq.ulprospector.com> for additional information.

This Certificate of Compliance indicates that representative samples of the product described in the certification report have met the requirements for UL certification. It does not provide authorization to apply the UL Recognized Component Mark. Only the Authorization Page that references the Follow-Up Services Procedure for ongoing surveillance provides authorization to apply the UL Mark.

Only those products bearing the UL Recognized Component Mark should be considered as being UL Certified and covered under UL's Follow-Up Services.

Look for the UL Recognized Component Mark on the product.



David Piecuch
UL Mark Certification Program Manager



Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL. For questions, please contact UL Solutions Customer Service at <https://www.ul.com/contact-us>.

CERTIFICATE OF COMPLIANCE

Certificate number(s): UL-CA-L516634-364411-03900202-3, UL-CA-2312878-2
Report reference: E516634-20200930
Issue Date: 2025-10-07

This is to certify that representative samples of the product as specified on this certificate were tested according to the current UL requirements.

Intrinsically Safe Non-Optical Isolating Device

Model(s): ADuM144 followed by 0, 1, 2, 5, 6, or 7, followed by AR, followed by Q or S, followed by Z

Safe Non-Optical Isolating Device

Model(s): AD71217ARSZ

File E516634
Project 4789491519

September 30, 2020

REPORT

on

COMPONENT - Equipment and Systems for Use in Hazardous Locations - Component

(OERX2, OERX8)

* * * * *

Complementary Product Category
COMPONENT - Intrinsically Safe Equipment and Systems for Use in Zone
Classified Hazardous Locations - Component

(OEVX2, OEVX8)

Recognized Company:

ANALOG DEVICES INC
WILMINGTON, MA

Copyright © 2020 UL LLC

UL LLC authorizes the above named company to reproduce this Report only for purposes as described in the Conclusion. The Report should be reproduced in its entirety; however to protect confidential product information, the Construction Details Descriptive pages may be excluded.

DESCRIPTION

PRODUCT COVERED:

USR, CNR - Digital Isolator, Intrinsically Safe Component for use in Class I, Division 1, Groups A, B, C, and D

USR - Digital Isolator, Intrinsically Safe Component for use in Class I, Zone 0, AEx ia IIC **Ga**, Hazardous Locations

CNR - Digital Isolator, Intrinsically Safe Component for use in Class I, Zone 0, Ex ia IIC **Ga**, Hazardous Locations

Models: ADuM1440ARQZ
ADuM1441ARQZ
ADuM1442ARQZ
ADuM1445ARQZ
ADuM1446ARQZ
ADuM1447ARQZ
ADuM1440ARSZ
ADuM1441ARSZ
ADuM1442ARSZ
ADuM1445ARSZ
ADuM1446ARSZ
ADuM1447ARSZ
AD71217ARSZ

GENERAL:

These devices are non-optical isolators consisting of an encoder and decoder. The encoder and decoder are separated by a transformer. Internal "chips" are connected to lead frames that are molded into the enclosure.

These products shall comply with all elements of ordinary locations File E214100, issued date 2014-08-09, Non-optical Isolating Device, covering for this Applicant and with the following description. Should the above mentioned Procedure File be withdrawn, labeling under this Procedure must be discontinued until authorization to resume is received.

TECHNICAL CONSIDERATIONS (NOT FOR FIELD REPRESENTATIVE'S USE):

USR - Products designated USR have been investigated using US requirements as noted in the Test Record.

CNR - Products designated CNR have been investigated using Canadian requirements as noted in the Test Record.

The models ADuM144XARQZ are intended for use in an ambient temperature of -40°C to 85°C for a Pi of 1.3W on each side **ambient temperature range of -40°C to 125°C for a Pi of 1.0W on each side.**

* The models ADuM144XARSZ are intended for use in an ambient temperature of **-40°C** to 85°C for a Pi of 1.3W on each side and an ambient temperature range of **-40°C** to 125°C for a Pi of 1.0W on each side.

The model AD71217ARSZ is intended for use in an ambient temperature of -55°C to 85°C for a Pi of 1.3W on each side and an ambient temperature range of -55°C to 125°C for a Pi of 1.0W on each side.

CONDITIONS OF ACCEPTABILITY -

- *1. The components being certified comply with UL **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 operating temperature range of these components are as follows:

The models ADuM144XARQZ are intended for use in an ambient temperature of -40°C to 85°C for a Pi of 1.3W on each side **ambient temperature range of -40°C to 125°C for a Pi of 1.0W on each side.**

*The models ADuM144XARSZ are intended for use in an ambient temperature of **-40°C** to 85°C for a Pi of 1.3W on each side and an ambient temperature range of **-40°C** to 125°C for a Pi of 1.0W on each side.

The model AD71217ARSZ is intended for use in an ambient temperature of -55°C to 85°C for a Pi of 1.3W on each side and an ambient temperature range of -55°C to 125°C for a Pi of 1.0W on each side.

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

Terminal Encoder:

Parameter	Ui	Ii	Pi	Li	Ci	Operating (Ambient) Temperature Range
All 16-pin versions	42V	275mA	1.3W	0uH	4pF	-40°C to 85°C
Alternate QSOP – 16 pin versions	42V	275mA	1.0W	0uH	4pF	-40°C to 125°C
*All ADuM144x family 20-pin versions	42V	275mA	1.3W	0uH	4pF	-40°C to 85°C
AD71217ARSZ 20-pin versions	42V	275mA	1.3W	0uH	4pF	-55°C to 85°C
*Alternate ADuM144x family 20-pin versions	42V	275mA	1.0W	0uH	4pF	-40°C to 125°C
*Alternate AD71217ARSZ 20-pin versions	42V	275mA	1.0W	0uH	4pF	-40°C to 125°C

Terminal Decoder:

Parameter	Ui	Ii	Pi	Li	Ci	Operating (Ambient) Temperature Range
All 16-pin versions	42V	275mA	1.3W	0uH	4pF	-40°C to 85°C
Alternate QSOP – 16 Pin version	42V	275mA	1.0W	0uH	4pF	-40°C to 125°C
*All ADuM144x family 20-pin versions	42V	275mA	1.3W	0uH	4pF	-40°C to 85°C
AD71217ARSZ 20-pin versions	42V	275mA	1.3W	0uH	4pF	-55°C to 85°C
*Alternate ADuM144x family 20-pin versions	42V	275mA	1.0W	0uH	4pF	-40°C to 125°C
*Alternate AD71217ARSZ 20-pin versions	42V	275mA	1.0W	0uH	4pF	-40°C to 125°C

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:

* Package Type	Temperature Coefficient	Maximum Component Temperature
QSOP-16	40.4°C/W	189.8°C
SSOP-20	51.2°C/W	218.0°C
Alternate QSOP-16	40.4°C/W	214.3°C
Alternate SSOP-20	51.2°C/W @	218.0°C

@ Note: The temperature coefficient of 51.2°C/W is a worst case approximation for the Alternate SSOP-20 ratings. Within the approved Pi and ambient temperature ranges, the maximum permissible temperature is predicted not to exceed 218°C.

4. The capability of the device to control a load has not been investigated.
5. These devices should be installed in a suitable end product enclosure.

6. If the maximum operating (ambient) temperature exceeds the rating noted in the ratings table, additional means should be used to determine if the maximum junction temperature of the device is exceeded.
7. For single protection devices, the insulation to the case has not been evaluated. For double protection devices, the insulation to the case has been evaluated to the isolation voltage specified in the ratings table.

CONSTRUCTION DRAWING:

The construction drawing is shown in ILL. 1.

MARKING:

The marking drawing is shown in ILL. 2.

MODEL NOMENCLATURE:

The Model number designates the following:

ADuM144XARYZ:

X - Number 0, 1, 2, 5, 6, 7 - Determines numbers of inputs on encoder or decoder side.

0-	Encoder 4 inputs, Decoder 0 inputs
1-	Encoder 3 inputs, Decoder 1 inputs
2-	Encoder 2 inputs, Decoder 2 inputs
5-	Encoder 4 inputs, Decoder 0 inputs
6-	Encoder 3 inputs, Decoder 1 inputs
7-	Encoder 2 inputs, Decoder 2 inputs

Y - Q or S - Determines package size.

Q-	RQ-16, QSOP-16 package
S-	RS-20, SSOP-20 package

AD71217ARSZ:

3 encoder inputs, 1 decoder input, RS-20, SSOP-20 package size, and a low ambient of -55°C.

CONSTRUCTION DETAILS:

General - The devices are constructed in accordance with the following figures, illustrations and descriptive pages. Dimensions are approximate unless specifically indicated otherwise.

*[X] Spacings - Where affecting intrinsic safety, spacings have been evaluated and found to be in accordance with Table 5 of UL 60079-11, Sixth Edition **Issued 2023-01-25** and CSA C22.2 No. 60079-11 **Second Edition Issued 2014-02**.