

File E214100

Project 05CA57964

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REPORT

on

COMPONENT - NON-OPTICAL ISOLATORS

Analog Devices Inc.
Wilmington, MA

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DESCRIPTION

PRODUCT COVERED:

USR - Non-Optical Isolators, Models AD7400YRWZ, AD7401YRWZ, AD7400AYRWZ, AD7401AYRWZ and AD7400AYNSZ.

GENERAL CHARACTERISTIC AND USE (Not for UL Representative Use):

These are magnetically coupled devices consisting of two physically separated die in the same package. They are intended to provide electrical isolation between input and output terminals.

ELECTRICAL RATINGS (at nominal operating temperature):

Model	Max. Continuous Current	Max. Continuous Voltage	Max. Continuous Power	Isolation Voltage (AC)	Max. Operating Temp. (°C)	Max. Junction, Storage, Case Temp. (°C)
*ALL	Encoder 18 mA	Encoder 5.25 V	Encoder 94.5 mW	5000 V _{RMS}	125	150
	Decoder 18 mA	Decoder 5.25 V	Decoder 94.5 mW			

Nomenclature Breakdown:

AD7400	A	Y	NS	Z
I	II	III	IV	V

I - Model Series

II - Encoder Chip Model

None = Part no. N70

A = Part no. N79

III - Temperature Range

Y = -40°C to 125°C

IV - Package Type

NS = 8 lead, Gullwing

RW = 16 lead, WB-SOIC

Z - Lead free (manufacturer's declaration)

ENGINEERING CONSIDERATIONS (Not for UL Representative Use:)

Use - For use only in products where the acceptability of the combination is determined by Underwriters Laboratories Inc.

Conditions of Acceptability -

1. The capability of the device to control a load has not been investigated.
2. These devices should be installed in a suitable end product enclosure.
- *3. The maximum temperature on the case should not exceed the maximum **case** temperature rating specified in the ratings table.
- *4. For double protection devices, the insulation to the case has been evaluated to the isolation voltage specified in the ratings table.

CONSTRUCTION DETAILS:

The product shall be constructed in accordance with the following description.

Tolerances - Unless specified otherwise, all indicated dimensions are nominal.

Corrosion Protection - All parts of corrosive material shall be protected against corrosion by enameling, galvanizing, plating, or other equivalent means.

Marking - The company name or trademark, and model number shall appear on the device or the smallest shipping carton.

* Model Differences - **Models AD7400YRWZ and AD7401YRWZ are similar; AD7400AYRWZ and AD7401AYRWZ are similar; AD7400AYRWZ and AD7401AYRWZ are similar;** except for items that do not affect the insulation or overloading characteristics of the devices. The package and die for models **Models AD7400YRWZ and AD7401YRWZ are identical; AD7400AYRWZ and AD7401AYRWZ are identical; AD7400AYRWZ and AD7401AYRWZ are identical;** the only differences are that model AD7400 has clock input while model AD7401 has a clock output, and model AD7400 has one additional internal bonding **wire**.

Specification Sheet - A specification sheet shall be available at the manufacturing facility and shall contain the following information in tabular or graphic format:

1. Maximum continuous power, a current and a voltage rating for both the encoder and the decoder.
2. A dielectric insulation-voltage rating between input and output terminals shall be specified in volts rms or dc, as applicable.
3. The maximum operating temperature of the device.
4. Derating specifications related to ambient temperatures.

For Engineering Use Only - See ILL. 1 for a functional diagram and lead pin configuration.

Model AD7400YRWZ

FIG. 1

General - The general design, shape, and arrangement shall be as illustrated except where variations are specifically described. Model AD7400YRWZ is considered representative of Models AD7401YRWZ, AD7400AYRWZ and AD7401AYRWZ.

1. Insulation Encapsulant - R/C QMFZ2, "Sumikon" Type EME-6600H, manufactured by Sumitomo Bakelite Co., Ltd. See ILLs. 1 and 2 for construction details.
2. Insulation Compound Coupling - Medium, Type I-8124C Polyimide manufactured by Asahi Kasei Corporation, minimum 0.017 mm thick.

Alternate - Type I-8124ER, manufactured by Asahi Kasei Corporation, minimum 0.017 mm thick.

3. Lead Pins - 16 provided. Copper alloy, see ILL. 2 for details.
4. Encoder - FET.

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5. Decoder - FET.

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Model AD7400AYNSZ

FIG. 2

* General - The general design, shape, and arrangement shall be as illustrated except where variations are specifically described.

1. Insulation Encapsulant - R/C QMFZ2, "Sumikon" Type EME-6600H, manufactured by Sumitomo Bakelite Co., Ltd. See ILLs. 5 and 6 for construction details.

2. Insulation Compound Coupling - Medium, Type I-8124C Polyimide manufactured by Asahi Kasei Corporation, minimum 0.017 mm thick.

Alternate - Type I-8124ER, manufactured by Asahi Kasei Corporation, minimum 0.017 mm thick.

3. Lead Pins - 8 provided. Copper alloy, see ILL. 6 for details.
4. Encoder - FET.
5. Decoder - FET.