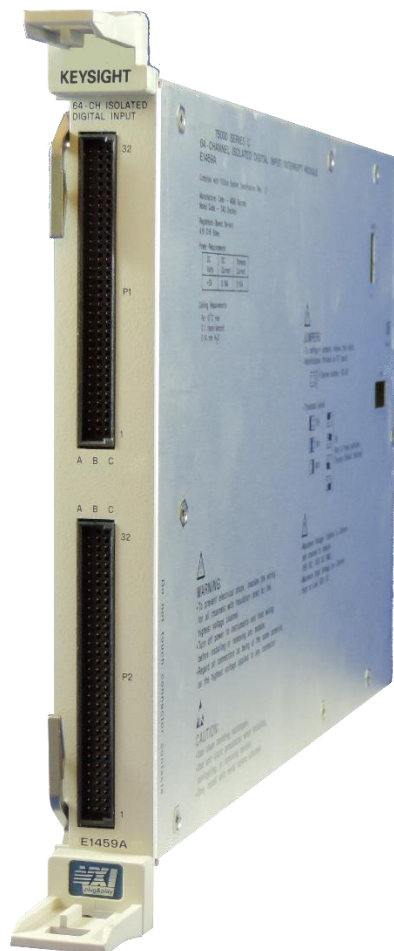


# E1459A VXI Isolated Digital Input

## 64-Channel, Interrupt, C-Size



## Description

The Keysight E1459A 64-Channel Isolated Digital Input/ Interrupt is a C-size, 1-slot, register-based VXI module. It is used to sense dc levels and edge transitions up to 48 Vdc. All inputs are optically isolated to withstand up to 125 V rms or Vdc. Plus, using the module's built-in 5 V supply with 9.4 k $\Omega$  effective pull-up resistance, you can detect whether external switches are open or closed.

The debounce feature is programmable for periods of 16  $\mu$ s to 1074 s in binary increments. Channel groups 1 to 32 and 33 to 64 can each have a unique programmed debounce period.

Each word (16-bit/channel) has strobe in, ready for data, and interrupt out. Strobe-in lines can be connected in parallel for 32- or 64-bit transfers.

## Key Features

- 1-Slot, C-size, register-based
- 64 interrupts, maskable and edge-selectable
- Jumper-selectable input levels
- Time-programmable debounce
- On-board 5 V supply for pull-up capability
- Handshake lines for each word (16 channels)

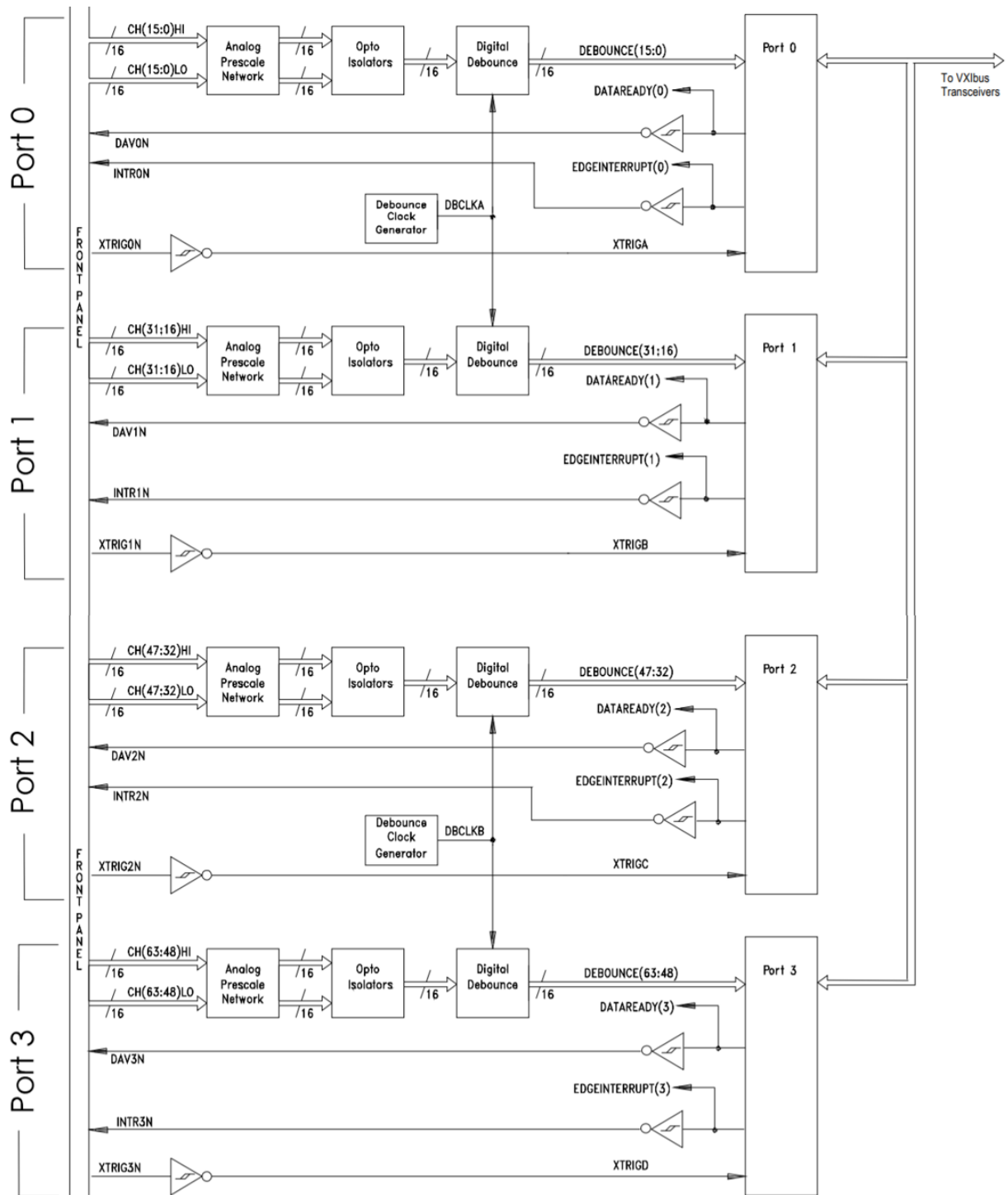


Figure 1. E1459A Block Diagram

## Technical Specifications and Characteristics

General Characteristics	
Number of channels	64
Channel type	Input
Output or input type	Variable
Logic levels	TTL compatible, 5 V maximum
Memory	None
Typical 16-bit read time	1 ms, using register access
Terminal module	Removable, screw-type terminals
Maximum wire size	16 AWG

Input Characteristics	
Voltages	5, 12, 24, and 48 Vdc
Threshold	1, 2.5, 7, or 14 Vdc minimum 4, 9.5, 17, or 31 Vdc maximum
Current	0.5, 1.3, 2.8, or 5.8 mA (at nominal voltages)
Maximum input voltage	60 Vdc (Between High and Low terminal of each channel), 125 V rms or Vdc (Between channels or between any terminal and chassis)
Minimum input pulse width	100 ms + debounce time
Debounce	Programmable from 16 $\mu$ s to 1074 s

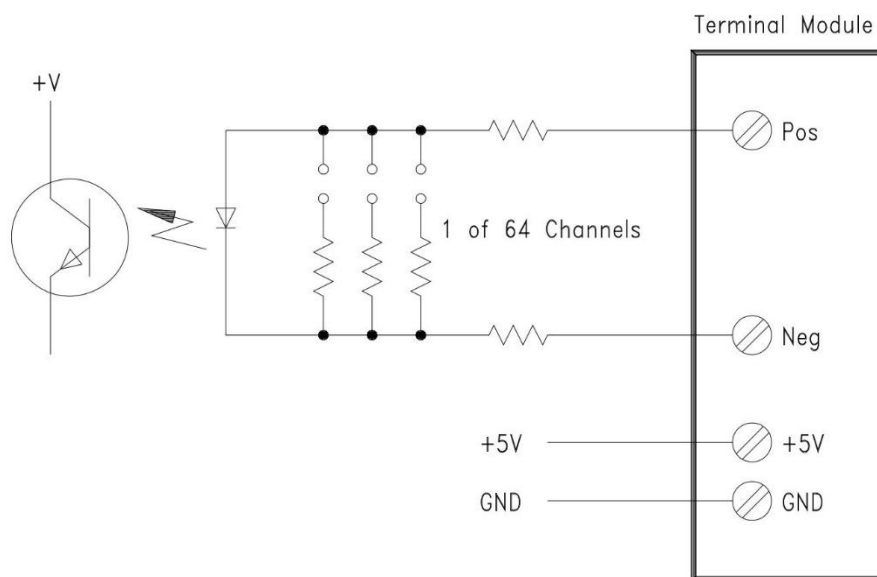


Figure 2. E1459A Input Circuit

Output Characteristics		
5 volt supply	4.5 to 5.5 Vdc (at 32 mA total maximum)	

VXI Characteristics		
VXI device type	Register-based, A16, slave only	
Size	C	
Slots	1	
Connectors	P1/P2	
Shared memory	None	
VXI busses	None	
Module current	$I_{PM}$	$I_{DM}$
+5 V	0.19	0.10
+12 V	0	0
-12 V	0	0
+24 V	0	0
- 24 V	0	0
- 5.2 V	0	0
-2 V	0	0
Cooling/slot		
Watts/slot	1	
$\Delta P$ mm H <sub>2</sub> O	0.05	
Air flow liters/s	0.42	

## Definitions and Conditions

### Specification (spec)

The warranted performance of a calibrated instrument that has been stored for a minimum of 1 hour within the operating temperature range of 0 to 50 °C and after a 30-minute warm up period. All specifications account for the effects of measurement and calibration-source uncertainties and were created in compliance with ISO-17025 methods. In addition, a driver session must be opened to initialize the power supplies. This can be done programmatically or by opening SFP and connecting to the instrument. Data published in this document are specifications (spec) only where specifically indicated.

### Typical (typ)

The characteristic performance, which 80% or more of manufactured instruments will meet. This data is not warranted, does not include measurement uncertainty or calibration-source, and is valid only at room temperature (approximately 25°C).

### Nominal (nom)

The mean or average characteristic performance, or the value of an attribute that is determined by design such as a connector type, physical dimension, or operating speed. This data is not warranted and is measured at room temperature (approximately 25°C).

### Measured (meas)

An attribute measured during the design phase for purposes of communicating expected performance, such as amplitude drift vs. time. This data is not warranted and is measured at room temperature (approximately 25°C).

### Additional Information

All data are measured from multiple units at room temperature and are representative of product performance within the operating temperature range unless otherwise noted. The data contained in this document is subject to change.

## Ordering Information

Model	Description
E1459A	64-Channel Isolated Dig Input/Interrupt
E1459A-FRMK	Factory refurbished product
Related Products	
E8401A	13-slot, C-size, VXI Mainframe with 550W Power Supply and basic monitoring
E8403A	13-slot, C-size, VXI Mainframe with 1000W Power Supply and basic monitoring
E8404A	13-slot C-size VXI Mainframe, 1000W PS, Enhanced monitor, color graphic display
E1406A	VXI GPIB Command Module; C-size

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