

PCE-D150

PCE-D150-SX User Manual

Version: V1.0 2015O20

To properly use the product, read this manual thoroughly is necessary.

Part No.: 81-0211400-010

Revision History

Date	Revision	Description
2015/10/20	1.0	Document creation.

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Electrical safety

- To prevent electrical shock hazard, disconnect the power cable from the electrical outlet before relocating the system.
- When adding or removing devices to or from the system, ensure that the power cables for the devices are unplugged before the signal cables are connected. Disconnect all power cables from the existing system before you add a device.
- Before connecting or removing signal cables from motherboard, ensure that all power cables are unplugged.
- Seek professional assistance before using an adapter or extension card. These devices could interrupt the grounding circuit.
- Make sure that your power supply is set to the voltage available in your area.
- If the power supply is broken, contact a qualified service technician or your retailer.

Operational safety

- Please carefully read all the manuals that came with the package, before installing the new device.
- Before use ensure all cables are correctly connected and the power cables are not damaged. If you detect and damage, contact the dealer immediately.
- To avoid short circuits, keep paper clips, screws, and staples away from connectors, slots, sockets and circuitry.
- Avoid dust, humidity, and temperature extremes. Do not place the product in any area where it may become wet.
- If you encounter technical problems with the product, contact a qualified service technician or the dealer.

Contents

CONTENTS	5
1. PCE-D150 INTRODUCTION	6
1.1. FEATURES.....	7
1.2. SPECIFICATIONS	7
1.3. HARDWARE LAYOUT	8
2. I/O INTERFACE DESCRIPTION	9
2.1. I/O INTERFACE CONNECTOR CN1	9
2.2. CARD NUMBER SWITCH RSW1.....	10
3. INTRODUCTION OF THE TERMINAL BOARD FOR PCE-D150-SN	11
3.1. 107-T161-DUM	11
3.2. 107-T160-DUM	12
4. SIGNAL CONNECTION.....	13
4.1. ISOLATED DIGITAL INPUT CHANNELS INTERFACE.....	13

1. PCE-D150 Introduction

PCE-D150-SX is a 80-ch high-density isolated digital input card. It is an advanced-performance data acquisition card based on PCI Express bus architecture. It is suitable for most industrial applications such as in test equipment, instrumentation, industrial automation, lab automation, and process control. The card features a PCI Express x1 lane which can be used in any available x1, x4, x8, or x16 PCI Express expansion slot.

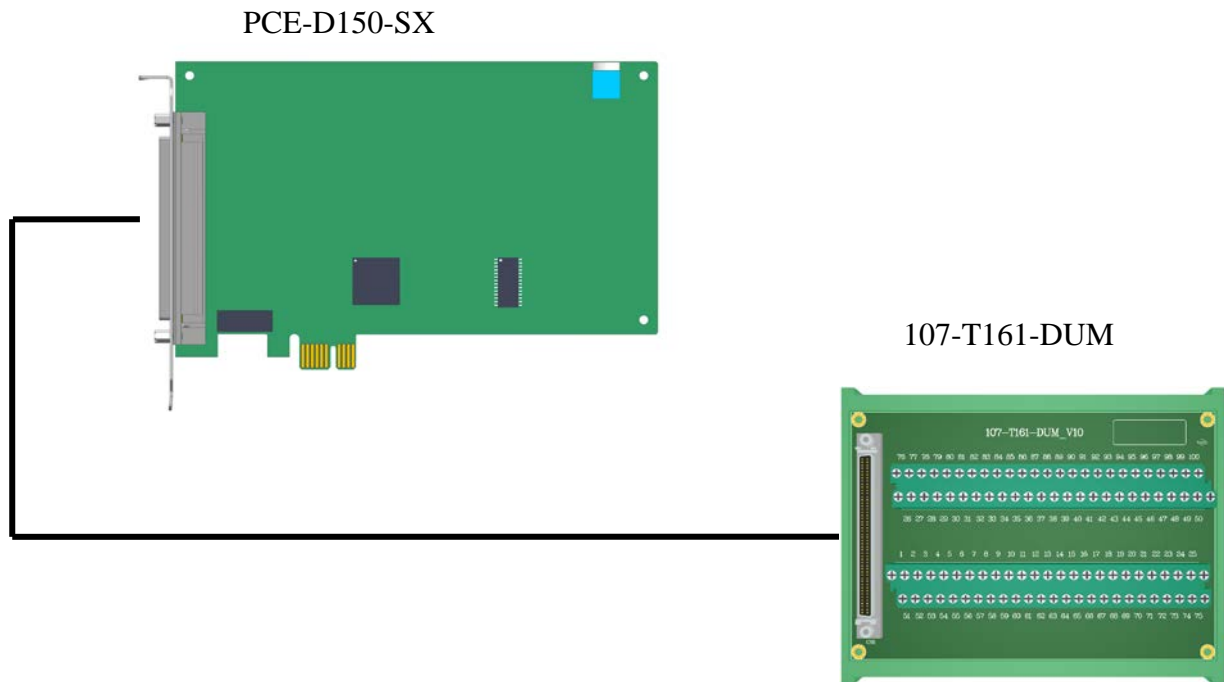


Figure 1-1: PCE-D150 and terminal board

1.1. Features

- Board ID
- 2 external interrupt inputs

1.2. Specifications

- Size: (L176 x W98 mm)
- 80-ch high-density isolated digital input
- Surge Protection: 10KV
- IO Isolation Voltage: 2.5KVrms
- High sink current on isolated output channels (350mA max./ch)
- Response Time: On to Off about 50 μ s, Off to On about 8 μ s
- Input Current: \pm 10mA (Max)
- Either NPN or PNP input for DI by group
- Input Voltage: +18V DC ~ +30V DC

General

- 1-lane 2.5 GB/s PCI Express
- Power consumption: +3.3 V DC at 430 mA, +12V DC at 55 mA typical
- Working temperature: 0 to 60°C

1.3. Hardware Layout

The PCE-D150-SX PCB layout and onboard I/O interfaces are introduced as follows.

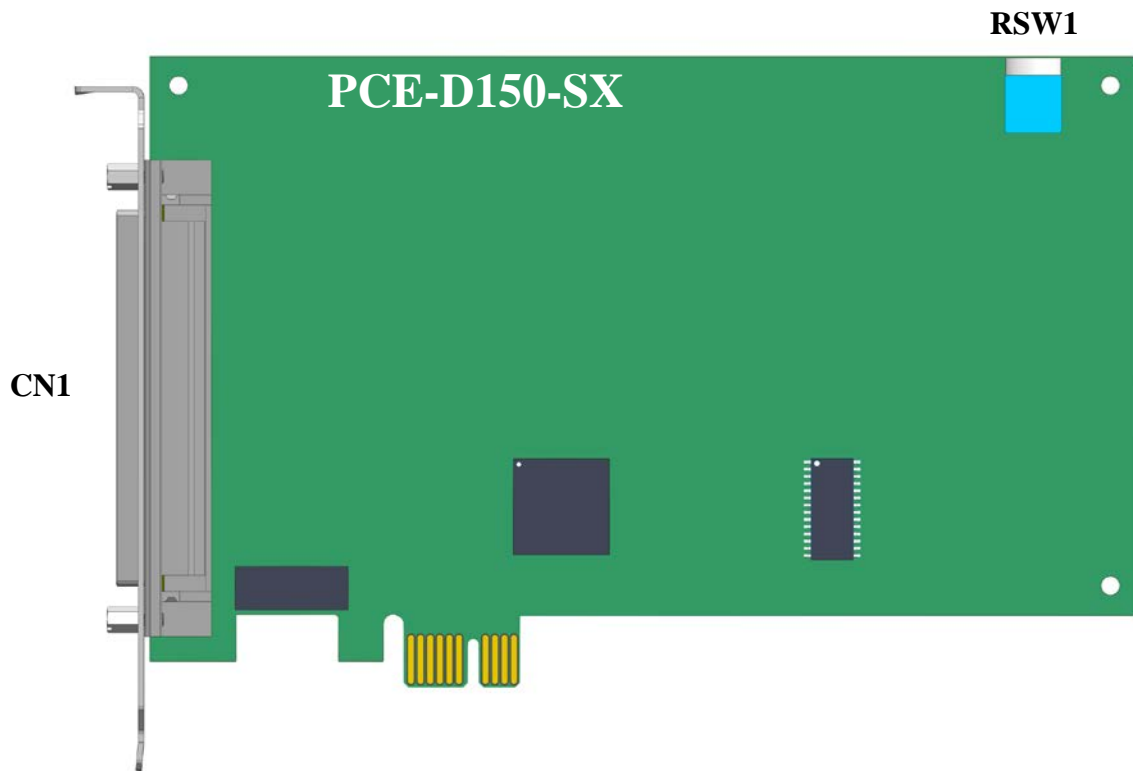


Figure 1-2: hardware PCB layout

Name	Description
CN1	I/O interface and SCSI 100 pins connector
RSW1	Rotary switch for card number setting.

Table 1-1: I/O interfaces on PCE-D122-SN

2. I/O Interface Description

2.1. I/O interface Connector CN1

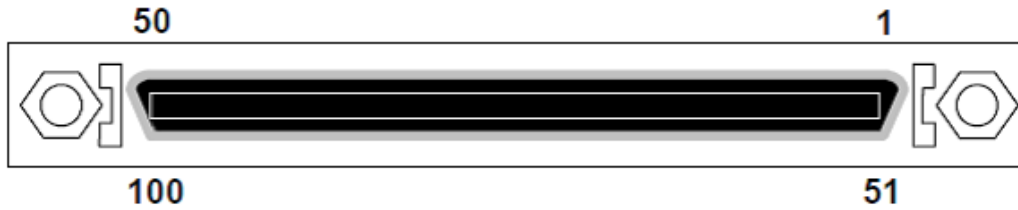


Figure 2-1: 100 pin connector for motion

Pin	Label	Port	Pin	Label	Port
1	COM1	0	51	COM6	5
2	IN 0	0	52	IN 40	5
3	IN 1	0	53	IN 41	5
4	IN 2	0	54	IN 42	5
5	IN 3	0	55	IN 43	5
6	IN 4	0	56	IN 44	5
7	IN 5	0	57	IN 45	5
8	IN 6	0	58	IN 46	5
9	IN 7	0	59	IN 47	5
10	COM1	0	60	COM6	5
11	COM2	1	61	COM7	6
12	IN 8	1	62	IN 48	6
13	IN 9	1	63	IN 49	6
14	IN 10	1	64	IN 50	6
15	IN 11	1	65	IN 51	6
16	IN 12	1	66	IN 52	6
17	IN 13	1	67	IN 53	6
18	IN 14	1	68	IN 54	6
19	IN 15	1	69	IN 55	6
20	COM2	1	70	COM7	6
21	COM3	2	71	COM8	7
22	IN 16	2	72	IN 56	7
23	IN 17	2	73	IN 57	7
24	IN 18	2	74	IN 58	7
25	IN 19	2	75	IN 59	7

Pin	Label	Port	Pin	Label	Port
26	IN 20	2	76	IN 60	7
27	IN 21	2	77	IN 61	7
28	IN 22	2	78	IN 62	7
29	IN 23	2	79	IN 63	7
30	COM3	2	80	COM8	7
31	COM4	3	81	COM9	8
32	IN 24	3	82	IN 64	8
33	IN 25	3	83	IN 65	8
34	IN 26	3	84	IN 66	8
35	IN 27	3	85	IN 67	8
36	IN 28	3	86	IN 68	8
37	IN 29	3	87	IN 69	8
38	IN 30	3	88	IN 70	8
39	IN 31	3	89	IN 71	8
40	COM4	3	90	COM9	8
41	COM5	4	91	COM10	9
42	IN 32	4	92	IN 72	9
43	IN 33	4	93	IN 73	9
44	IN 34	4	94	IN 74	9
45	IN 35	4	95	IN 75	9
46	IN 36	4	96	IN 76	9
47	IN 37	4	97	IN 77	9
48	IN 38	4	98	IN 78	9
49	IN 39	4	99	IN 79	9
50	COM5	4	100	COM10	9

Table 2-1: SCSI 100-pin definition

2.2. Card Number Switch RSW1



Figure 2-2: card number switch

3. Introduction of the Terminal Board for PCE-D150-SX

3.1. 107-T161-DUM

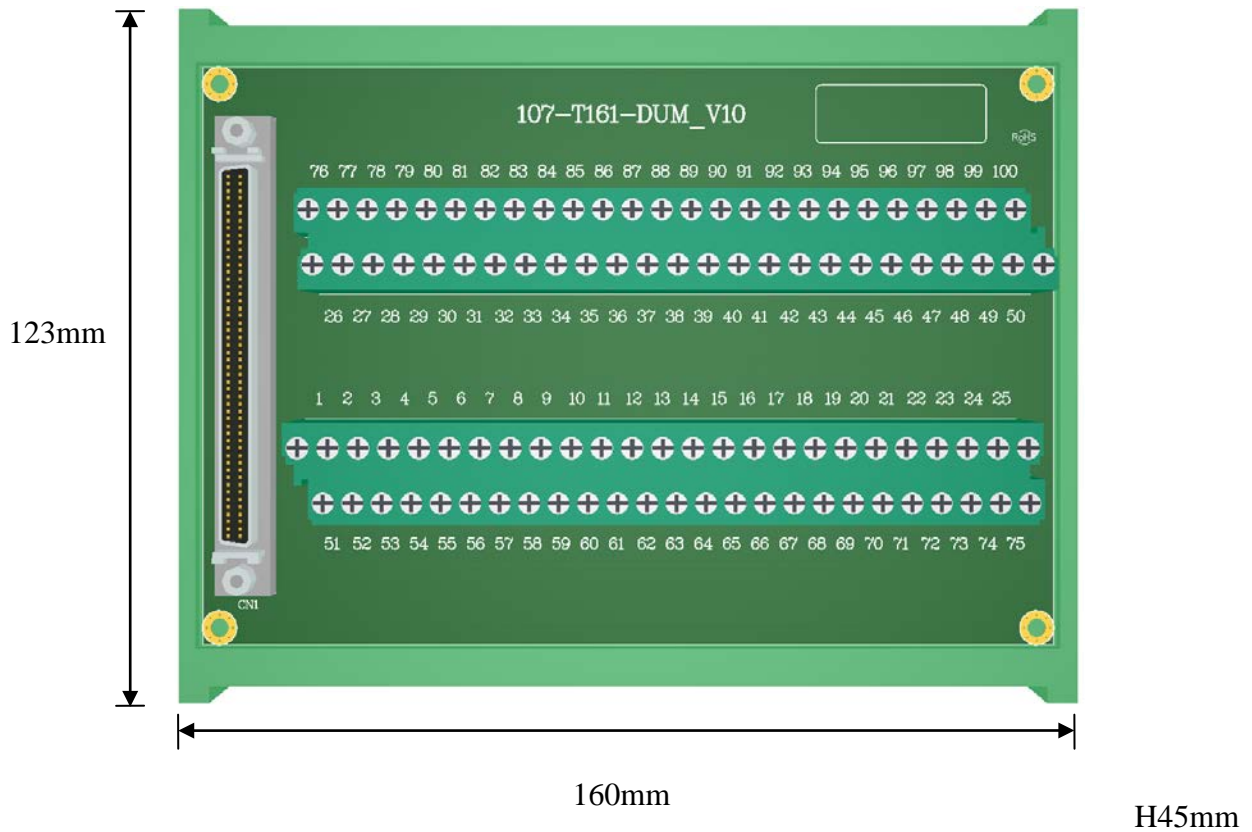


Figure 3-1: drawing of 107-T161-DUM

Label	Function
CN1	SCSI 100 pin Connector

Table 3-1: I/O interfaces on 107-T161-DUM

3.2. 107-T160-DUM

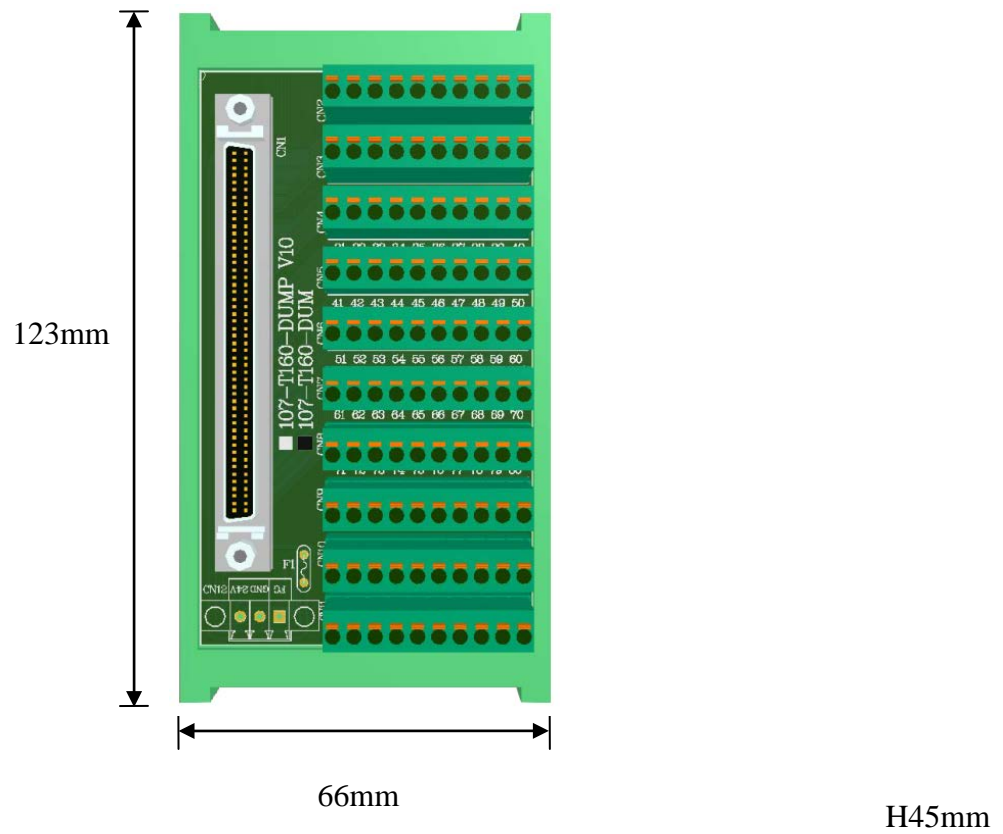


Figure 3-2: drawing of 107-T160-DUM

Label	Function
CN1	SCSI 100 pin Connector

Table 3-2: I/O interfaces on 107-T160-DUM

4. Signal Connection

4.1. Isolated Digital Input Channels Interface

- Input signal circuit in SINK mode (NPN) is illustrated as follows

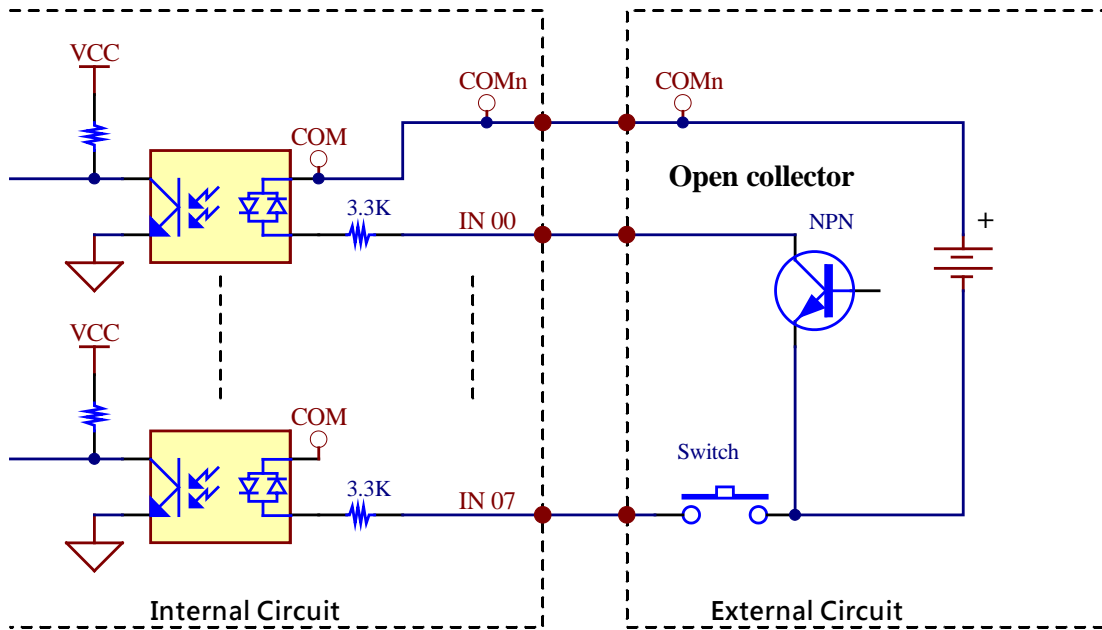


Figure 4-1: Signal circuit of input NPN

- Input signal circuit in SOURCE mode (PNP) is illustrated as follows

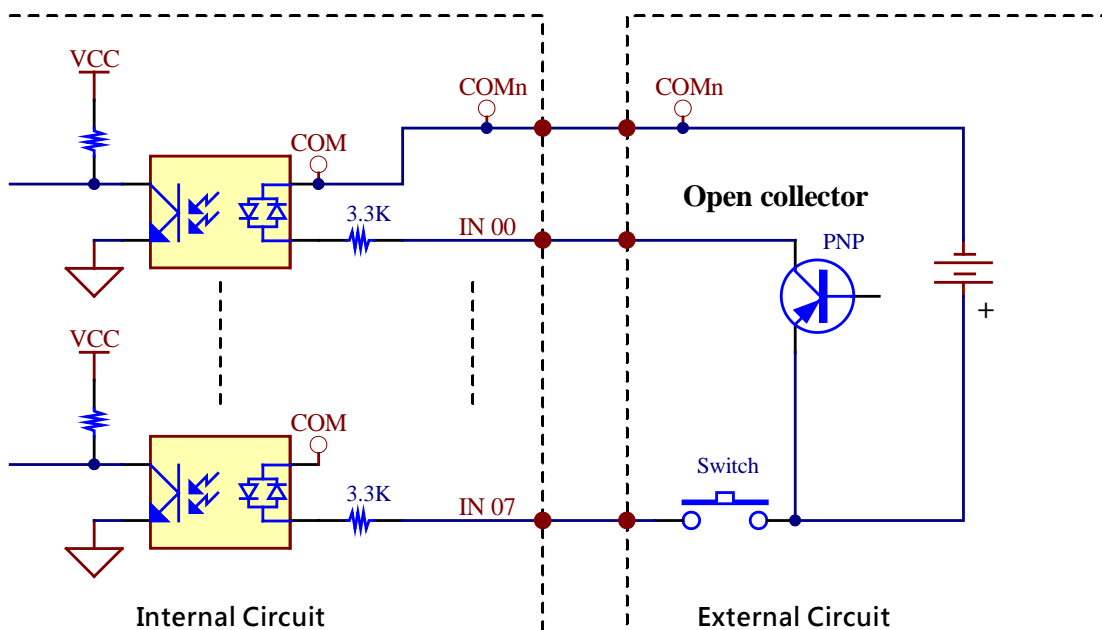


Figure 4-2: Signal circuit of input PNP