

PCE-D122

PCE-D122-SN User Manual

Version: V1.0 2015A18

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

Part No.: 81-0211400-010

Revision History

Date	Revision	Description
2015/08/18	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.

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1. PCE-D122 Introduction

PCE-D122-SN is a 32/32-ch high-density isolated digital input/output 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.

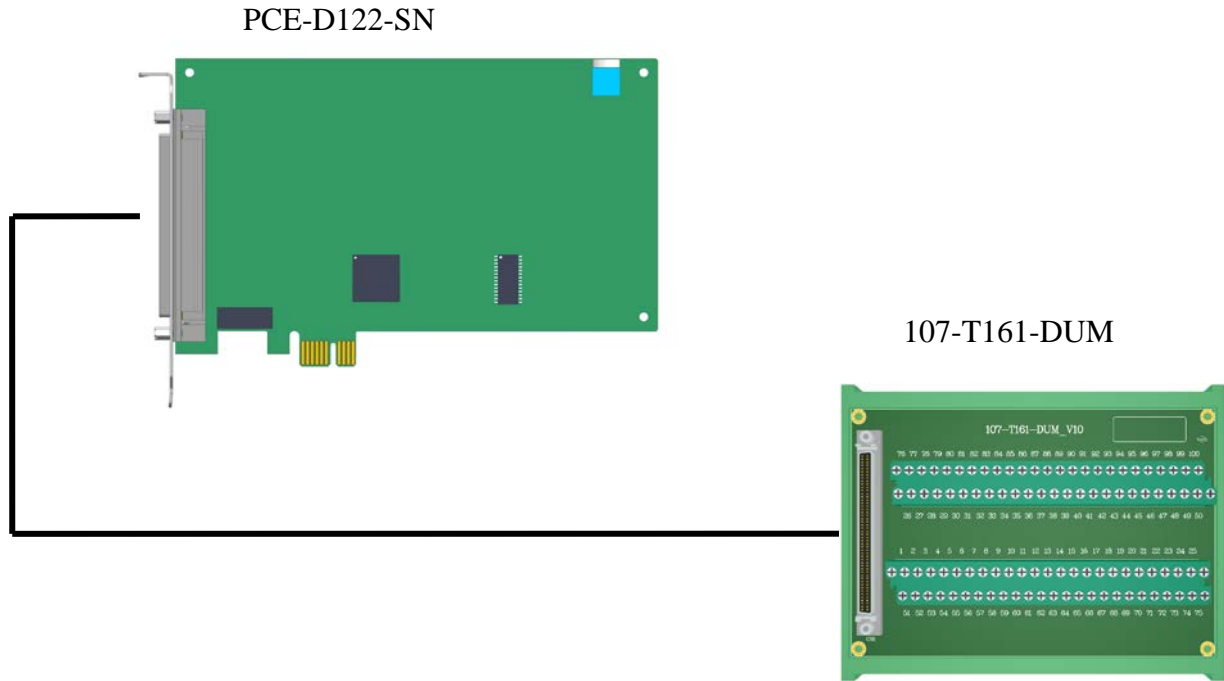


Figure 1-1: PCE-D122 and terminal board

1.1. Features

- Board ID
- Keep digital outputs status after warm reboot
- Readable digital output signals
- 2 external interrupt inputs

1.2. Specifications

- Size: (L176 x W98 mm)
- 32/32-ch high-density isolated digital input/output
- Surge Protection: 10KV
- IO Isolation Voltage: 2.5KVrms
- Output Types: NPN open collector with Darlington transistors
- 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)
- Input Impedance: 5.6K Ω /0.5W.
- 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 $^{\circ}$ C

1.3. Hardware Layout

The PCE-D122-SN PCB layout and onboard I/O interfaces are introduced as follows.

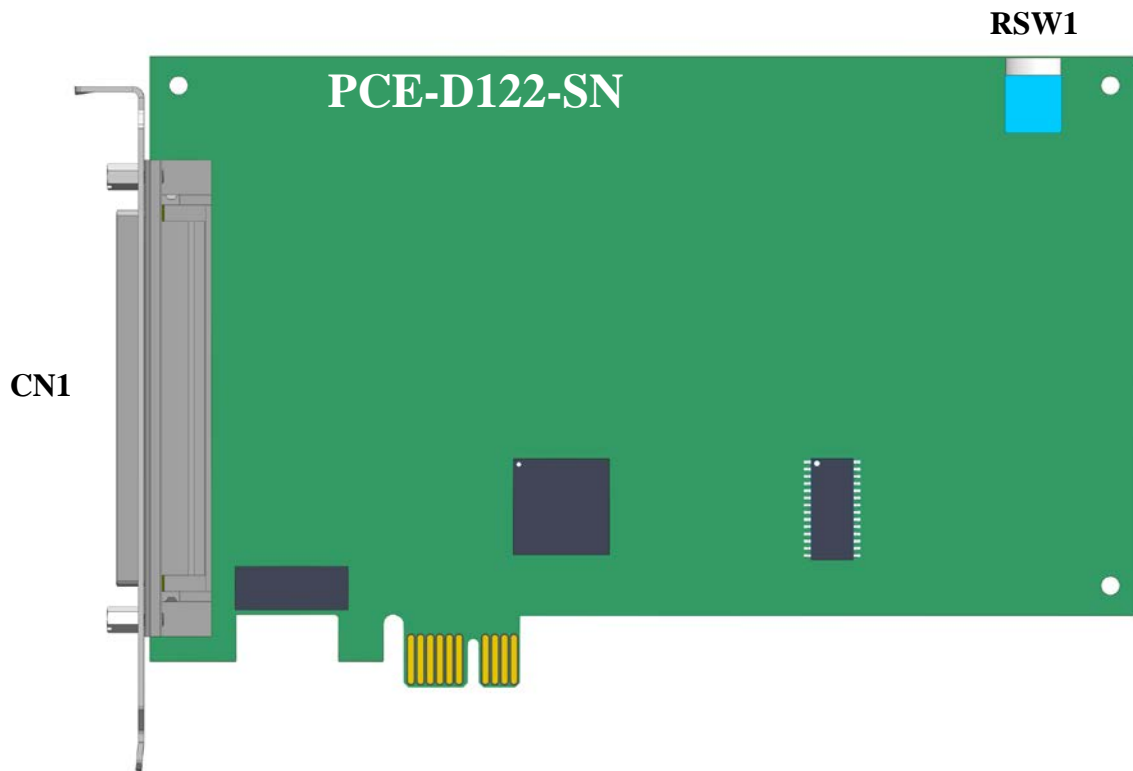


Figure 1-2: hardware PCB layout

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

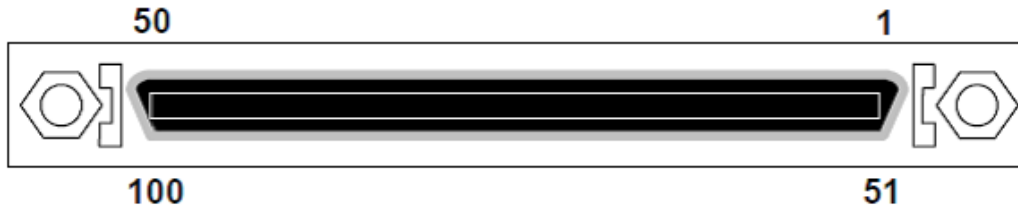


Figure 2-1: 100 pin connector for motion

Pin	Label	Port	Pin	Label	Port
1	IN 0	0	51	IN 8	1
2	IN 1	0	52	IN 9	1
3	IN 2	0	53	IN 10	1
4	IN 3	0	54	IN 11	1
5	IN 4	0	55	IN 12	1
6	IN 5	0	56	IN 13	1
7	IN 6	0	57	IN 14	1
8	IN 7	0	58	IN 15	1
9	COM0	0	59	COM1	1
10	COM0	0	60	COM1	1
11	COM0	0	61	COM1	1
12	COM0	0	62	COM1	1
13	IN 16	2	63	IN 24	3
14	IN 17	2	64	IN 25	3
15	IN 18	2	65	IN 26	3
16	IN 19	2	66	IN 27	3
17	IN 20	2	67	IN 28	3
18	IN 21	2	68	IN 29	3
19	IN 22	2	69	IN 30	3
20	IN 23	2	70	IN 31	3
21	COM2	2	71	COM3	3
22	COM2	2	72	COM3	3
23	COM2	2	73	COM3	3
24	COM2	2	74	COM3	3
25	NC		75	NC	

Pin	Label	Port	Pin	Label	Port
26	OUT 0	4	76	OUT 8	5
27	OUT 1	4	77	OUT 9	5
28	OUT 2	4	78	OUT 10	5
29	OUT 3	4	79	OUT 11	5
30	OUT 4	4	80	OUT 12	5
31	OUT 5	4	81	OUT 13	5
32	OUT 6	4	82	OUT 14	5
33	OUT 7	4	83	OUT 15	5
34	+COM0	4	84	+COM1	5
35	-COM0	4	85	-COM1	5
36	-COM0	4	86	-COM1	5
37	-COM0	4	87	-COM1	5
38	OUT 16	6	88	OUT 24	7
39	OUT 17	6	89	OUT 25	7
40	OUT 18	6	90	OUT 26	7
41	OUT 19	6	91	OUT 27	7
42	OUT 20	6	92	OUT 28	7
43	OUT 21	6	93	OUT 29	7
44	OUT 22	6	94	OUT 30	7
45	OUT 23	6	95	OUT 31	7
46	+COM2	6	96	+COM3	7
47	-COM2	6	97	-COM3	7
48	-COM2	6	98	-COM3	7
49	-COM2	6	99	-COM3	7
50	5V OUT		100	5V OUT	

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-D122-SN

3.1. 107-T161-DUM

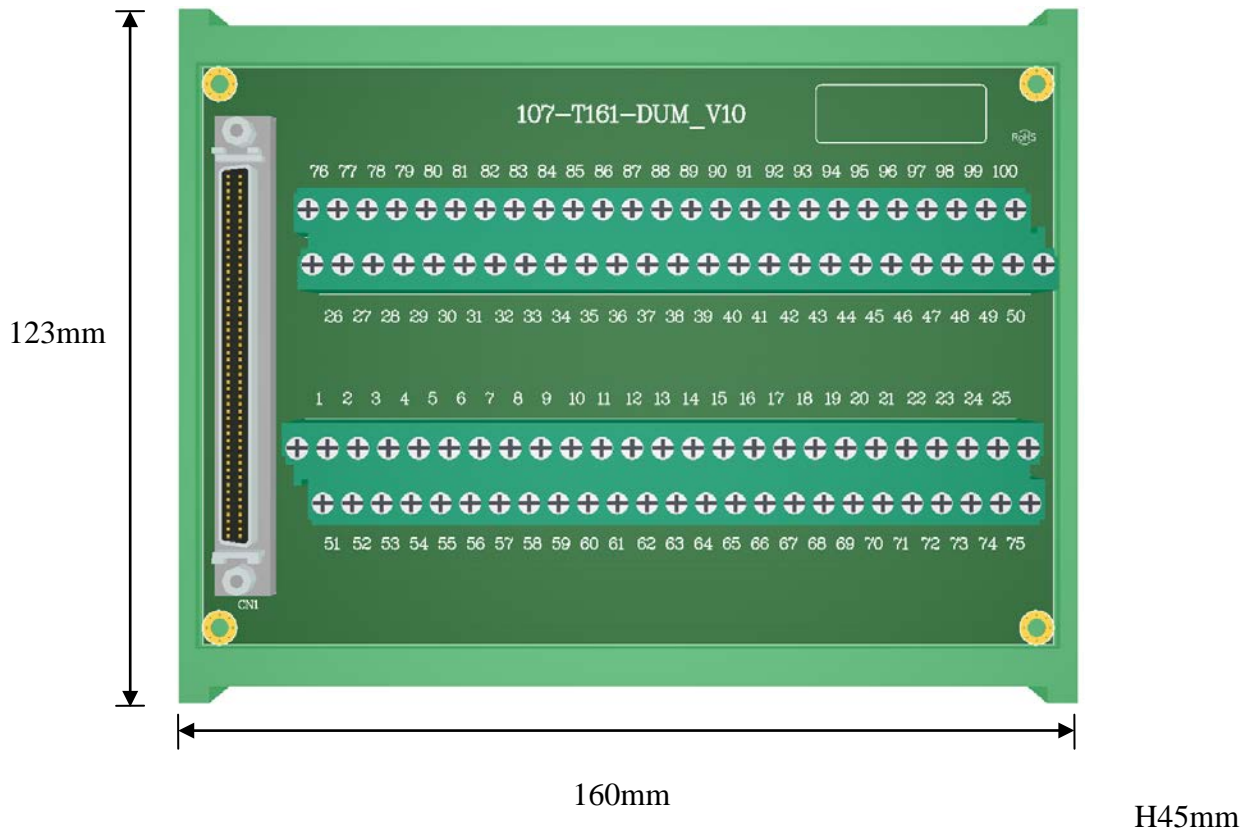


Figure 3-1: drawing of 107-T161-DUM

Label	Function
CN1	SCSI 100 pin Connector

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

3.2. 107-T160-DUM

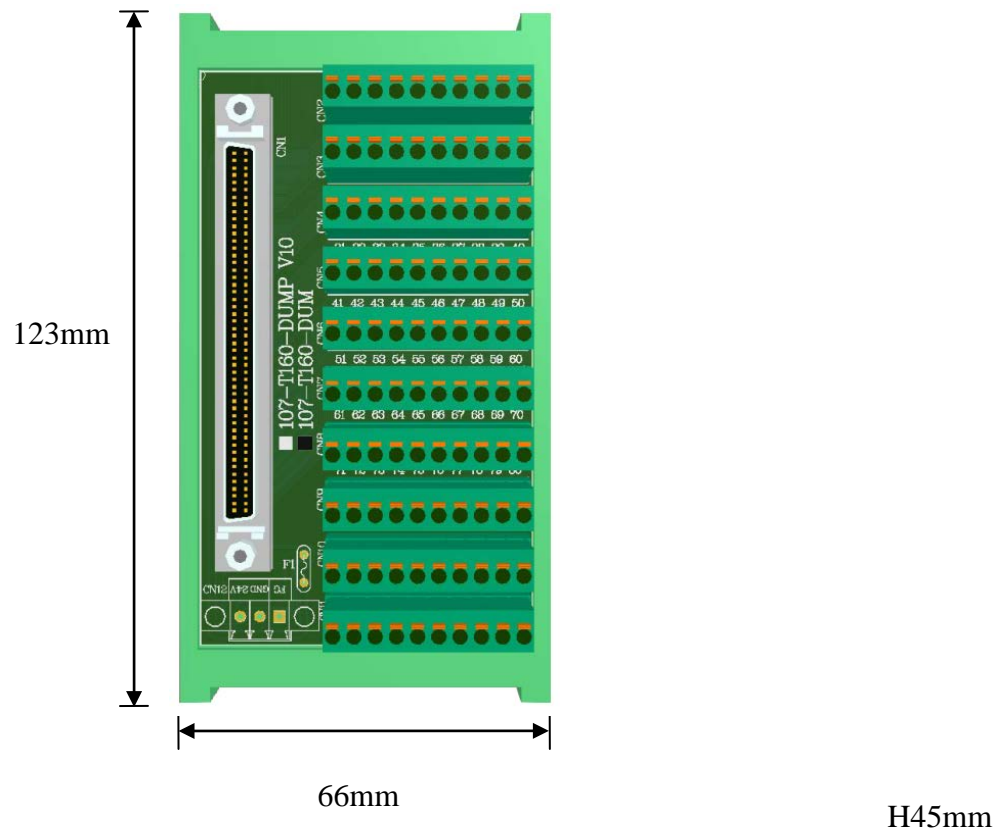


Figure 3-2: drawing of 107-T160-DUM

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

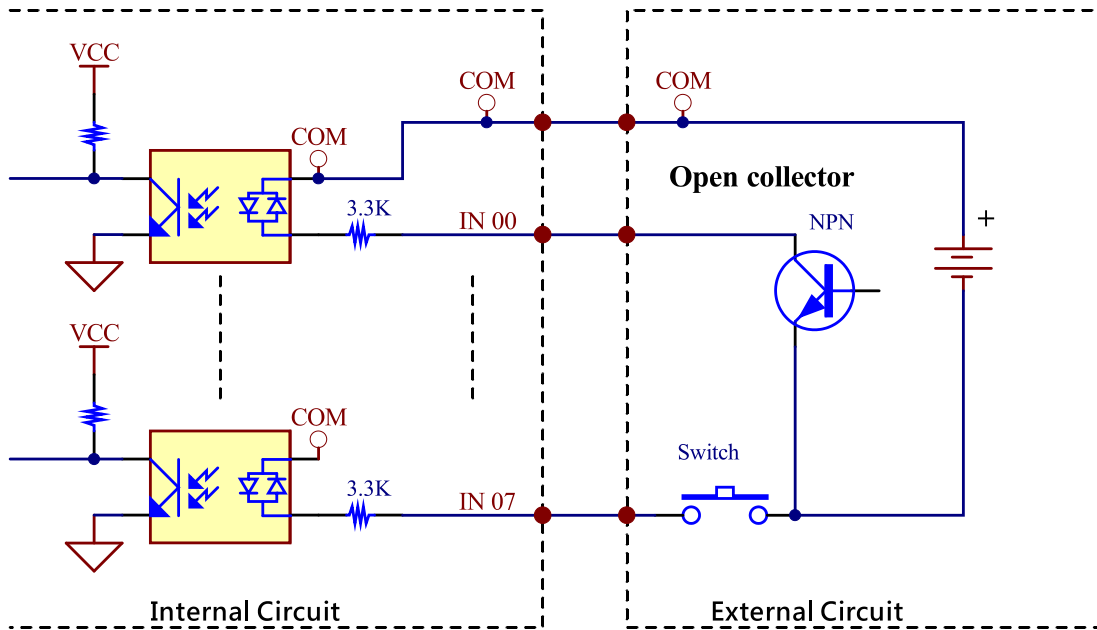


Figure 4-1: Signal circuit of input NPN

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

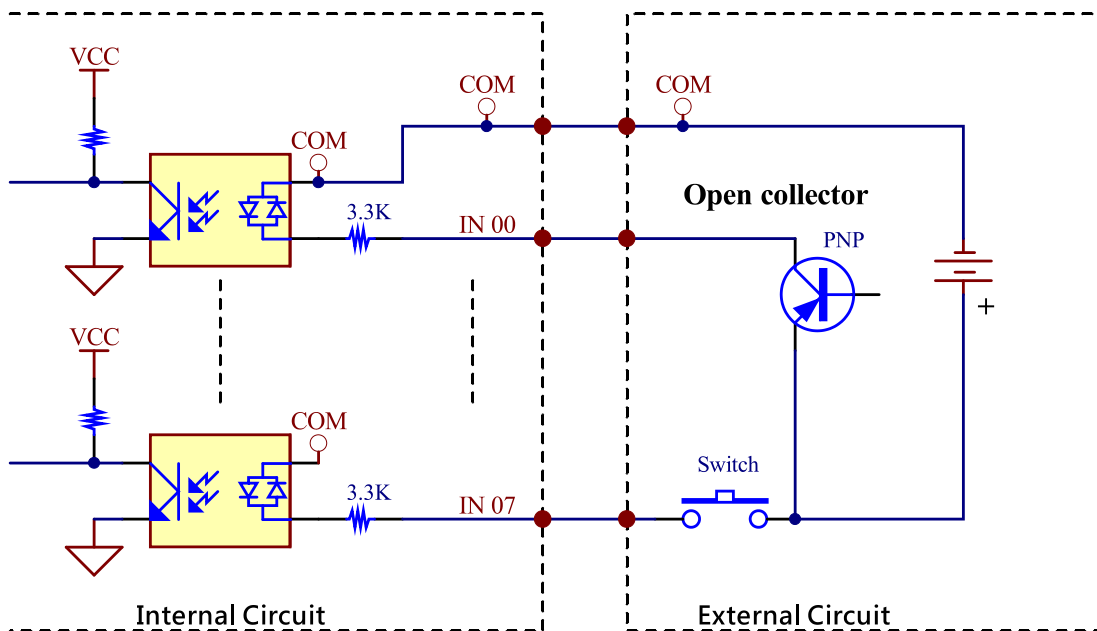


Figure 4-2: Signal circuit of input PNP

4.2. Isolated Digital Output Channels Interface

■ Output signal circuit in SINK mode (NPN) is illustrated as follows

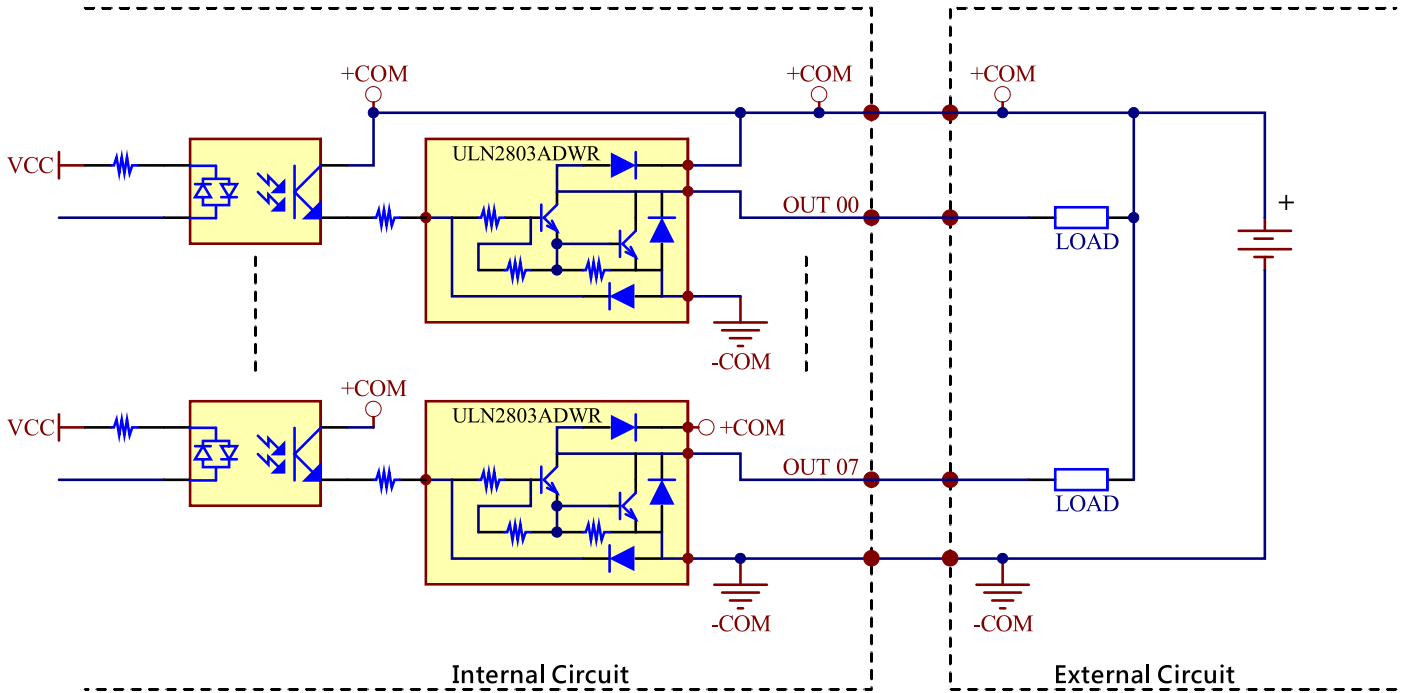


Figure 4-3: Signal circuit of Output NPN