

Isolated Digital I/O Terminal
for USB2.0
DIO-0808LY2-USB



* Specifications, color and design of the products are subject to change without notice.

Features

Opto-coupler isolated input (supporting current sink output) and opto-coupler isolated open-collector output (current sink type)
This product has the 8ch of opto-coupler isolated input (supporting current sink output) and 8ch of opto-coupler isolated open-collector output (current sink type) whose response time is 300μsec. Common terminal provided per 8channels, capable of supporting a different external power supply. Supporting driver voltages of 12 - 24 VDC for I/O.

Compatible to USB 2.0/USB 1.1 and not necessary to power this product externally as the bus power is used.
Compatible to USB 2.0/USB 1.1 and capable to achieve high speed transfer at High Speed (480 Mbps). Not necessary to power this product externally as the bus power of USB is used.

Opto-coupler bus isolation
As the USB (PC) is isolated from the input and output interfaces by opto-couplers, this product has excellent noise performance.

8 input signals can be used as interrupt request signals
You can use 8 input signals as interrupt request signals and also disable or enable the interrupt in bit units and select the edge of the input signals, at which to generate an interrupt.

Equipped with digital filter to prevent wrong recognition of input signals from carrying noise or a chattering
This product has a digital filter to prevent wrong recognition of input signals from carrying noise or a chattering. All input terminals can be added a digital filter, and the setting can be performed by software.

Zener diode for surge voltage protection and the circuit for overcurrent protection
Zener diodes are connected to the output circuits to protect against surge voltages. In addition, the output circuit, it attaches the overcurrent protection circuit at the output 8-channel unit. The output rating is max. 35VDC, 100mA per channel.

Easy-to-wire terminal connector adopted
Adoption of terminal connector (with screws) enables to achieve easy wiring.

Windows/Linux support device driver
Using the device driver API-TOOL makes it possible to create applications of Windows/Linux. In addition, a diagnostic program by which the operations of hardware can be checked is provided.

Functions and connectors are compatible with Isolated Digital I/O Terminal for USB2.0 DIO-0808LY-USB.
The functions same with Isolated Digital I/O Terminal for USB2.0 DIO-0808LY-USB is provided. In addition, as there is compatibility in terms of

This product is a USB 2.0 compliant terminal that extends the digital signal I/O functions of a PC.
This product can input and output digital signals at 12 - 24VDC.
This product features 8 opto-coupler isolated inputs (for current sinking output) and 8 optocoupler isolated open-collector outputs (current sinking type).
In addition, output transistor protection circuit (surge voltage protection and overcurrent protection).
The DIO-0808LY2-USB has interrupt event function and digital filter function.
Windows/Linux device driver is supported with this product.

- * The contents in this document are subject to change without notice.
- * Visit the CONTEC website to check the latest details in the document.
- * The information in the data sheets is as of February, 2026.

connector shape and pin assignments, it is easy to migrate from the existing system.

Specifications

Function Specifications

Item		Specifications
Input	Type	Opto-isolated input (Compatible with current sink output) (Negative logic *1)
	Number of Channels	8 ch (all available for interrupts *4) (1 common)
	Input resistance	4.7 kΩ
	Input ON current	2.0mA or more
	Input OFF current	0.16mA or less
	Interrupts *4	8 input signals are arranged into a single output of interrupt signal An interrupt is generated at the falling (HIGH-to-LOW transition) or rising (LOW-to-HIGH transition) edge (set by software).
	Response time	300μsec within *2
Output	Type	Opto-isolated open collector output (current sink type) (Negative logic*1)
	Number of Channels	8 points (1 common)
	Output rated voltage	35VDC (Max)
	Output rated current	100mA (per point) (Max)
	Residual voltage with output on	0.5V or less (Output current≤50mA), 1.0V or less (Output current≤100mA)
	Surge protector	Zener diode RD47FM(Renesas) or equivalent
	Response time	300μsec within *2
USB	Bus specification	USB Specification 2.0 / 1.1 standard
	USB transfer rate	12Mbps (Full-speed), 480Mbps (High-speed) *3
	Power supply	Bus power
Common	Allowable distance of signal extension	Approx. 50m (depending on wiring environment)
	Number of terminals used at the same time	16 terminals (Max)
	Dielectric strength	1000Vrms
	External circuit power supply	12 - 24VDC (±10%)
	Current consumption	5VDC 250mA (Max)
	Physical dimensions (mm)	64(W) x 62(D) x 24(H) (exclusive of protrusions)
	Weight	70g (Not including the USB cable, attachment)
	Attached cable	USB cable 1.8m
	Compatible wires	AWG28 - 16

- *1 Data "0" and "1" correspond to the High and Low levels, respectively.
- *2 The opto-coupler's response time comes.
- *3 This depends on the host PC environment used (OS and USB host controller).
- *4 The DIO-0808LY2-USB can use I-00 through I-07 as interrupt signals.

Installation Environment Requirements

Item	Specifications
Operating ambient temperature	0 - 50°C
Operating ambient humidity	10 - 90%RH (No condensation)
Floating dust particles	Not to be excessive
Corrosive gases	None
Standard	VCCI Class A, CE Marking (EMC Directive Class A, RoHS Directive), UKCA, KCC

Support Software

Name	Contents	How to get
Windows Version Digital I/O Driver software API-DIO(WDM)	The Windows device driver is provided as a form of Windows API functions. Various sample programs such as C# and Visual Basic .NET, Visual C++, Python etc. and diagnostic program useful for checking operation is provided.	Download from the CONTEC website *1
Linux Version Digital I/O Driver software API-DIO(LNX)	The Linux device driver is provided as a shared library. The software includes various sample programs such as gcc (C, C++) and Python programs, as well as a configuration tool to configure the device settings.	Download from the CONTEC website *1
Software Development Tool Kits (SDK) and Support Software	In addition to the device drivers, we offer many software programs for using CONTEC devices in an easier manner.	Download from the CONTEC website *2

*1 Download the files from the following URL
<https://www.contec.com/download/>

*2 For supported software, search the CONTEC website for this product and view the product page.
<https://www.contec.com/>

Optional Products

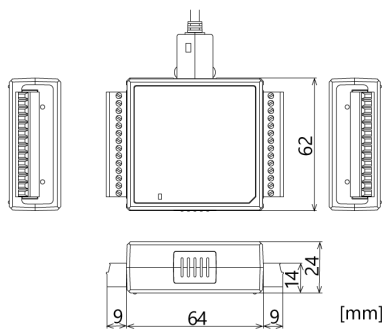
Product Name	Model type	Description
14pin Screw Terminal Connector Set	CNG-Y14	6 pieces
Bracket for USB I/O Terminal products	BRK-USB-Y	

* Information about the option products, see the Contec's website.

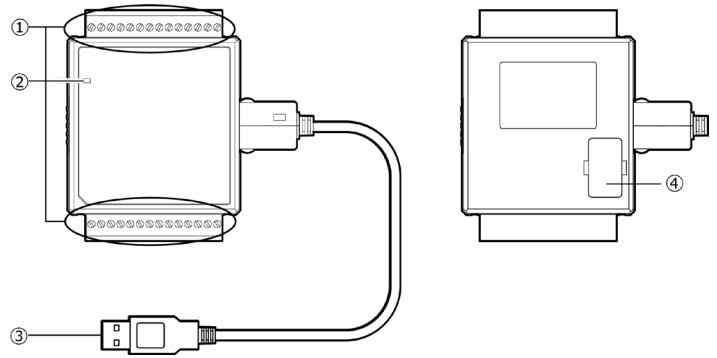
Included Items

- Product [DIO-0808LY2-USB] ...1
- Please read the following ... 1
- Interface connector plugs ...2
- USB Cable (1.8m) ... 1
- USB Cable Attachment ... 1

Physical Dimensions



Component Name

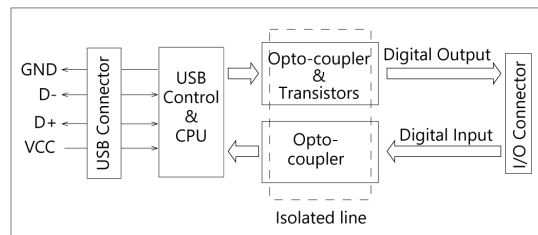


No.	Name	No.	Name
1	Interface Connector	3	USB Type-A connector
2	LINK Status	4	ID Setting Switch

List Status

Name	Function	Indicator color	LED indicator
LINK Status	USB communication status	GREEN	ON : Communication established
	PC connection status		OFF : Communication unestablished
			ON : PC communication established
			OFF : PC communication unestablished

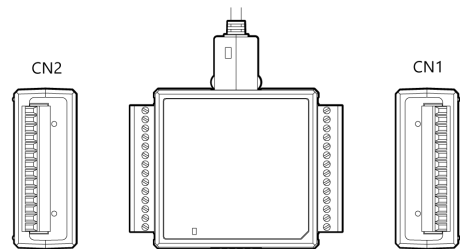
Using the On-terminal Connectors



Using the On-terminal Connectors

Connecting a terminal to a Connector

To connect an external device to this terminal, plug the cable from the device into the interface connector (CN1, CN2) shown below.



Connector Pin Assignment

CN2		Pin
N.C.	1	
N.C.	2	2
N.C.	3	3
I-07	4	4
I-06	5	5
I-05	6	6
I-04	7	7
I-03	8	8
I-02	9	9
I-01	10	10
I-00	11	11
N.C.	12	12
I-PC	13	13
I-PC	14	14

CN1		Pin	Signal
	14		
	13	13	O-PC
	12	12	N.C.
	11	11	O-00
	10	10	O-01
	9	9	O-02
	8	8	O-03
	7	7	O-04
	6	6	O-05
	5	5	O-06
	4	4	O-07
	3	3	N.C.
	2	2	O-NC
	1	1	O-NC

Signal name	Description
I-00 - I-07	8 input signal pins. Connect output signals from the external device to these pins.
O-00 - O-07	8 output signal pins. Connect these pins to the input signal pins of the external device.
I-PC	Connect the positive side of the external power supply. These pins are common to 8 input signal pins.
O-PC	Connect the positive side of the external power supply. These pins are common to 8 output signal pins.
O-NC	Connect the negative side of the external power supply. These pins are common to 8 output signal pins.
N.C.	These pins are left unconnected.

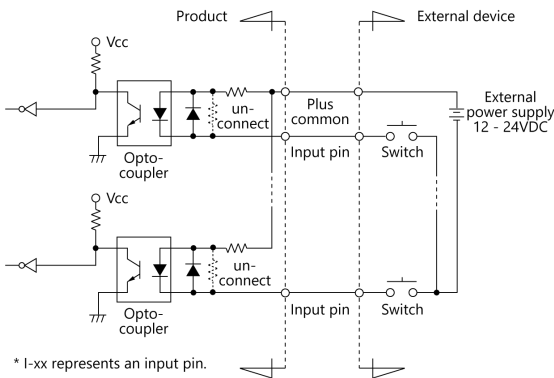
Connecting Input and Output Signals

Input Circuit

Connect the input signals to a device which can be current-driven, such as a switch or transistor output device.

The connection requires an external power supply to feed currents.

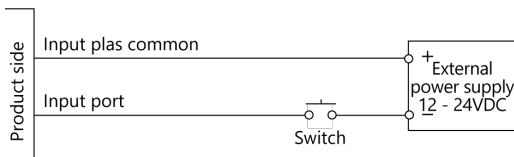
The product inputs the ON/OFF state of the current-driven device as a digital value.



The signal inputs are isolated by opto-couplers (ready to accept current sinking output signals).

The product therefore requires an external power supply to drive the inputs. The power requirement for each input pin is about 5.1 mA at 24 VDC (about 2.6 mA at 12 VDC).

Connecting a Switch



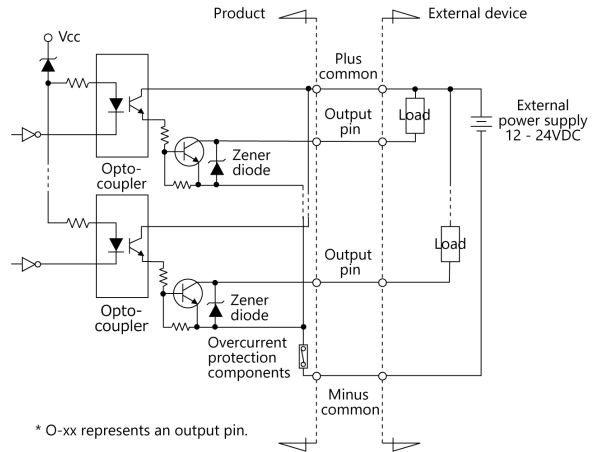
When the switch is ON, the corresponding bit contains 1.
When the switch is OFF, by contrast, the bit contains 0.

Output Circuit

Connect the output signals to a current-driven controlled device such as a relay or LED.

The connection requires an external power supply to feed currents.

The product controls turning on/off the current-driven controlled device using a digital value.



The signal output section is an opto-coupler isolated, open-collector output (current sink type). This product therefore requires the external power supply to drive the output section of this product.

The rated output current per channel is 100mA at maximum. The output section can also be connected to a TTL level input as it uses a low-saturated transistor for output.

The residual voltage (low-level voltage) between the collector and emitter with the output on is 0.5V or less at an output current within 50mA or at most 1.0V at an output current within 100mA.

A zener diode is connected to the output transistor for protection from surge voltages.

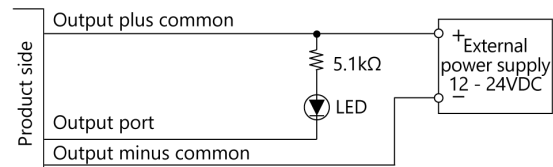
An overcurrent protection component is provided for every 8 output transistors.

When the over-current protector works, the output section of the product is temporarily disabled. If this is the case, turn off the power to the PC and the external power supply and wait for a few minutes, then turn them on back.

CAUTION

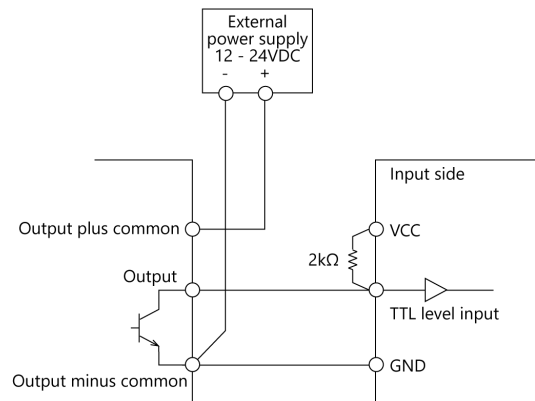
When the PC is turned on, all output are reset to OFF.

Connection to the LED



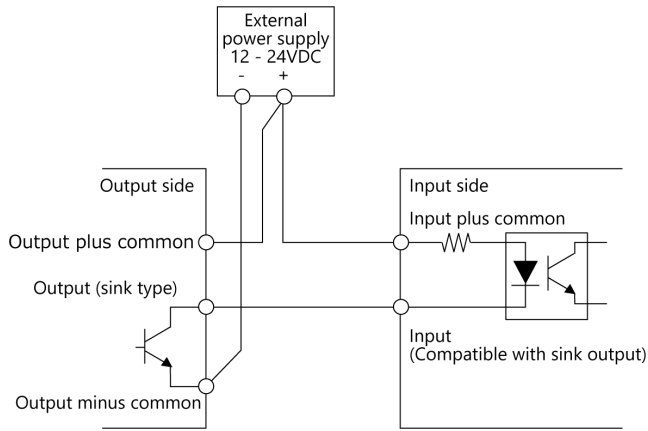
When "1" is output to a relevant bit, the corresponding LED comes on.
When "0" is output to the bit, in contrast, the LED goes out.

Example of Connection to TTL Level Input



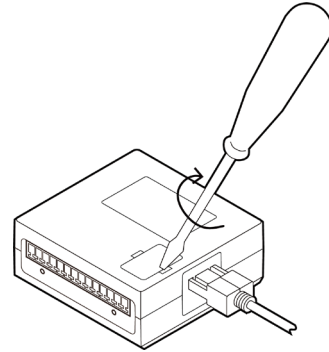
Connecting the Sink Type Output and Sink Output Support Input

The following example shows a connection between a sink type output (output side) and a sink output support input (input side). Refer to this connection example when you connect such products to each other.



How to open the cover

Use a flathead screwdriver or similar to open the cover on the underside of the product. This exposes the setting switches to set the device ID. As shown in Figure below, an easy way to open the cover is to insert the tip of the screwdriver into the slot and then rotate the screwdriver.

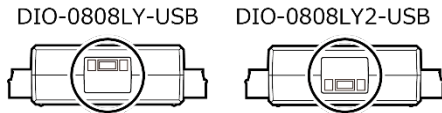


Differences between this product and our earlier models

Item	Conventional product	This Product
Location and orientation of the USB connector	Back on top of the housing	Front on bottom of the housing
Individual recognition method	Built-in ID	Set with the rotary switch
Interrupt event function	No	Yes
Digital filter function	No	Yes

Location and orientation of the USB connector

Please note that the USB connector on this product is reversed from the conventional product.



Individual recognition method

When two or more devices of the same product are connected to the same PC, the method of individual recognition differs from the conventional product. For this product, use the rotary switch on the bottom of the unit to select the device ID.

