Bi-Directional Digital I/O Unit with Opto-Isolation for USB

DIO-128SLX-USB

This product is an USB 2.0-compliant digital I/O unit used to provide a digital signal I/O function on a PC.

This product features 128 channels of Optocoupler isolated inputs (compatible with current sink output) and 128 channels of Optocoupler isolated open-collector outputs (current sink type).

The input point and the output point are common. Therefore each I/O pin can use as an input pin or an output pin. 24VDC external circuit power supply is required to drive a photo coupler.

You can use 16 input signals as interrupt request signals. Equipped with the digital filter function and output transistor protection circuit (overcurrent protection).

Windows/Linux device driver is supported with this product.

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

* 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 September 2024.

Features

- Bidirectional signal control is possible because digital input point and a digital output point are common.

The I/O pin can use as an input pin or an output pin without changing the wire connection.

- 128 channels of Opto-coupler isolated inputs (compatible with current sink output) and 128 channels of Opto-coupler isolated open-collector outputs (current sink type)

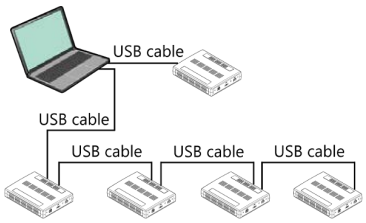
This product has the 128 channels of Opto-coupler isolated inputs (compatible with current sink output) and the 128 channels of Opto-coupler isolated open-collector outputs (current sink type) whose response speed is 200µsec. Supporting driver voltages of 24 VDC for I/O. (24VDC external circuit power supply is required separately.)

- Compatible to USB 2.0/USB 1.1

Compatible to USB 2.0/USB 1.1 and capable to achieve high speed transfer at High Speed (480 Mbps).

- USB HUB function

This product has the USB HUB function. Max. 4 DIO-128SLX-USB can be used in 1 USB port of PC. *1
When you use 4 or more DIO-128SLX-USB, you can do by connecting DIO-128SLX-USB to another USB port of PC side.
Also, you can connect the CONTEC's USB device other than DIO-128SLX-USB to the USB port of DIO-128SLX-USB. *2*3



- Common terminal provided per 16 channels

Common terminal provided per 16 channels, capable of supporting a different external power supply.

- Opto-coupler bus isolation

As the USB (PC) is isolated from the input and output interfaces by Optocouplers, this product has excellent noise performance.

- 16 input signals can be used as interrupt request signals

You can use 16 of its 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.

- Output circuits include overcurrent protection circuit

Overcurrent protection circuits are fitted to each group of 8ch outputs.The output rating is max. 24VDC, 100mA per channel.

- 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.

*1 This product cannot be stacked up for installation.
*2 Do not connect the device other than that of CONTEC's USB to the USB port included on the product. Otherwise, this may cause a failure or malfunction.
*3 When connecting multiple units with USB HUB function and set up them, do one at a time and complete setup for the previous unit before starting to do the next unit.

Packing List

Product ...1
AC adapter ...1
AC Cable (for 125VAC) ...1
USB cable (1.8m) ...1
USB Cable Attachment on the main unit's side...1
Clamps for prevention of cable on the main unit's side ...1
Ferrite Core...1
Power connector MC1,5/3-ST-3,5 ...1
Please read the following ... 1

PLUG-IN Electronic GmbH • Am Sonnenlicht 5 • 82239 Alling • Tel.: +49 (0) 8141 3697-0 • info@plug-in.de • www.plug-in.de

Specifications

Specifications

Item		Specifications
Input	Type	Opto-coupler isolated input (Compatible with current sink output) (Negative logic *1)
	Number of Channels	128 channels (16 channels available for interrupts) (1 common in 16 channels)
	Input resistance	30kΩ
	Input ON current	0.7mA or more
	Input OFF current	0.16mA or less
	Interrupt	16 interrupt input signals are arranged into a single output of interrupt request signal INTA. An interrupt is generated at the rising edge (HIGH-to-LOW transition) or falling edge (LOW-to-HIGH transition) (set by software).
	Response time	200μsec within *2
Output	Type	Opto-coupler isolated open collector output (current sink type) (Negative logic *1)
	Number of Channels	128 channels(1 common in 16 channels unit)
	Output rated voltage	24VDC (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)
	Response time	200μsec within *2
USB	Bus specification	USB Specification 2.0/1.1 standard
	USB transfer rate	12Mbps (Full-speed), 480Mbps (High-speed) *3
	Power supply	Self power
Common	Allowable distance of signal extension	Approx. 50m (depending on wiring environment)
	Number of terminals used at the same time	127 terminals (Max.) *4
	Dielectric strength	250Vrms
	External circuit power supply *5	24VDC (±10%)
	Current consumption	5VDC 900mA(Max.)
	Physical dimensions (mm)	180(W) x 140(D) x 34(H) (exclusive of protrusions)
	Weight	380g (Not including the USB cable, attachment)
	Attached cable	USB cable 1.8m

*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 PC environment used (OS and USB host controller).
*4 As a USB hub is also counted as one device, you cannot just connect 127 USB unit.
*5 External circuit power supply is required separately.

Installation Environment Requirements

Item	Specifications
Operating ambient temperature *1	0 - 40°C
Operating ambient humidity *1	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

*1 To suppress the heating, ensure that there are spaces for ventilation (about 5cm) around this product.

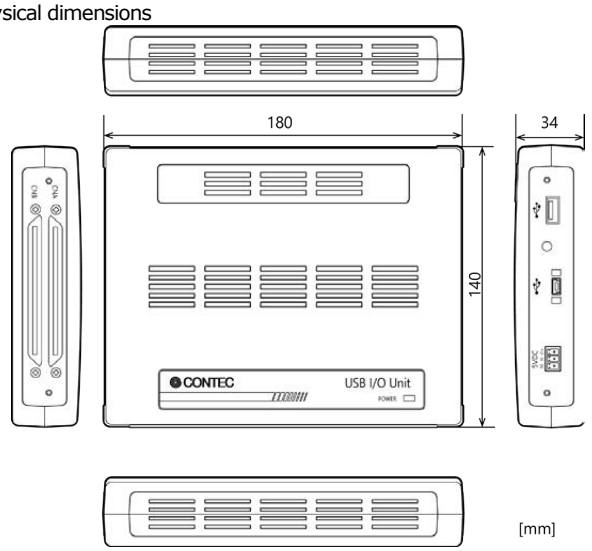
AC adapter environmental condition (environmental specification)

Item	Specifications
Input voltage range	90 - 264VAC
Rated input current	300mA
Number of frequency	50 - 60Hz
Rated output voltage	5.0VDC
Rated output current	2.0A (Max.)
Dimension (mm)	47.5(W) x 75(D) x 27.3(H) (No protrusions)
Weight	175g
Operating temperature	0 - 40°C
Operating humidity	20 - 80%RH(No condensation)
Life expectancy	4 years at the ambient temperature 40°C (When 100VAC is input and 1.3A is output)
Allowable time of short interruption	15ms (Max.) (When 100VAC is input and 1.3A is output) *1
Floating dust particles	Not to be excessive
Corrosive gases	None
Voltage corresponding to the attached AC cable	125VAC 7A

*1 When the short interruption occurs and the defective operation of the equipment is generated, please insert the power supply of the equipment after pulling out it.

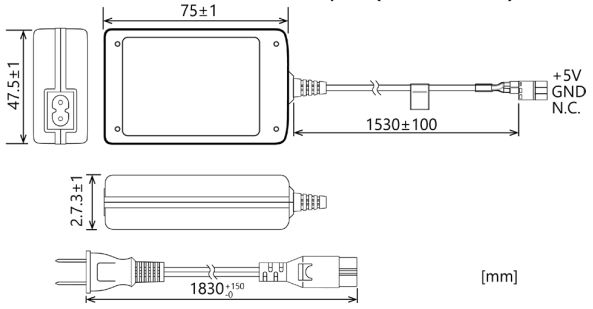
Physical Dimensions

Physical dimensions



[mm]

Physical dimensions of attached AC adapter (POA200-20-2)



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Support Software

Name	Contents	How to get
Windows Version Digital I/O Driver software API-DIO(WDM)	T 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/

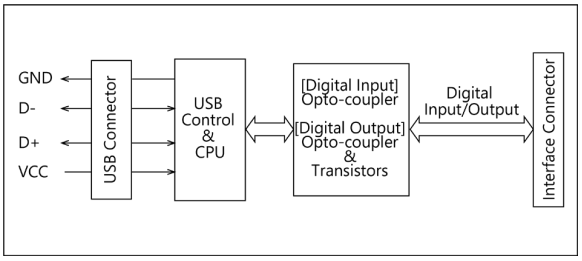
Option

Product Name	Model type	Description
Shielded Cable With Two 100pin Connector	PCB100PS-0.5	0.5m
	PCB100PS-1.5	1.5m
	PCB100PS-3	3m
	PCB100PS-5	5m
Connection Conversion Shield Cable (100P→96P)	PCB100/96PS-1.5	1.5m
	PCB100/96PS-3	3m
	PCB100/96PS-5	5m
Flat Cable with One 100-Pin Connector	PCA100P-1.5	1.5m
	PCA100P-3	3m
Connection Conversion Shield Cable (100pin→37pin D-SUB x 2)	PCB100WS-1.5	1.5m
	PCB100WS-3	3m
	PCB100WS-5	1.5m
Screw Terminal (M3 * 100)	EPD-100A	*1 *2 *5
Screw Terminal (M3 * 96)	EPD-96A	*1 *3 *5
Terminal Unit for Relay Terminal Banks	EPD-96	*3 *5
Connector Conversion Board (96pin→37pinx2)	CCB-96	*3 *5
Signal monitor Accessory for Digital I/O (64bits)	CM-64L	*3 *5
Screw Terminal (M3 * 37P)	EPD-37A	*1 *4 *6
Screw Terminal (M3.5 * 37)	EPD-37	*4 *6
General Purpose Terminal	DTP-3C	*4 *6
Screw Terminal	DTP-4C	*4 *6
USB I/O Unit Bracket for X Series	BRK-USB-X	
AC-DC Power Adaptor(5VDC, 2A)	POA200-20-2	*7
F&eIT Series DC-DC Power Supply Unit	POW-DD10GY	
F&eIT Series 5VDC AC-DC Converter	PWD-25AWD5	

*1 "Spring-up" type terminal is used to prevent terminal screws from falling off.
*2 PCB100PS optional cable is required separately.
*3 PCB100/96PS optional cable is required separately.
*4 PCB100WS optional cable is required separately.
*5 If using both the CNA and CNB connectors, two each of the terminal block and cable sets are required.
*6 If using both the CNA and CNB connectors, two cable sets are required.
You will also require sufficient terminal blocks for the number of I/O points you are using.
*7 It is the same as the one included to the product. Please buy it necessary for maintenance.

* Check the CONTEC's Web site for more information on these options.

Block Diagram



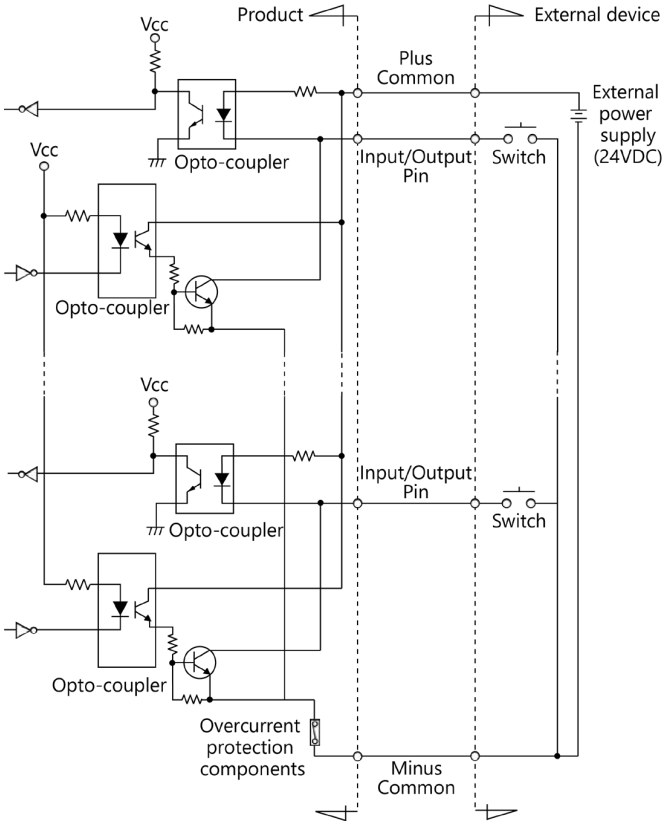
Connecting Input/Output Signals

Input and Output Circuit

When the input/output pin is used as input pin. 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. This product inputs the ON/OFF state of the current-driven device as a digital value.

When the input/output pin is used as output pin. 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.

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



* I/O-xx represents the Input/Output pin.

The signal inputs are isolated by Optocouplers (compatible with current sink output). The signal output section is an Optocoupler isolated, open-collector output (current sink type). The input point becomes "ON" when output is turned on, because the input point and the output point are common.

This product therefore requires an external power supply to drive the inputs/ outputs. The power requirement for each input pin is about 0.8mA and output pin is about 4mA at 24VDC

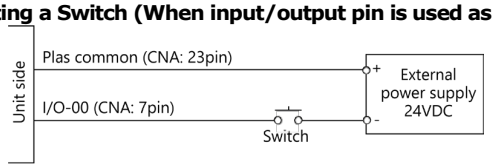
The rated output current per channel is 100mA at maximum. The residual voltage (low-level voltage) between the collector and emitter with the output on is 0.5V or less at an output current within 50mA or at most 1.0V at an output current within 100mA.

The overcurrent protector is provided for every 8 output transistors.

⚠ CAUTION

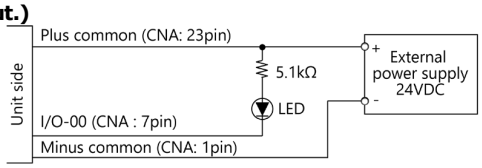
This product can't be connected with a TTL level input/output equipment.
When the PC is turned on, all output are reset to OFF.

Connecting a Switch (When input/output pin is used as input.)



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

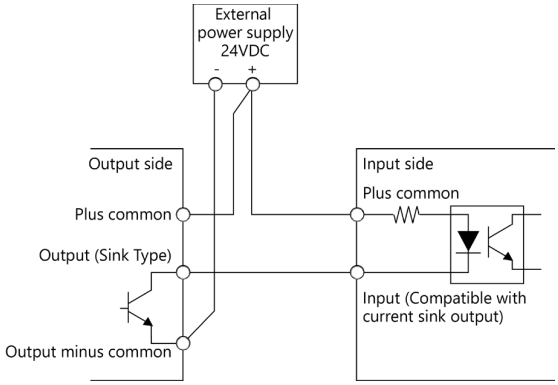
Connection to the LED(When input/output pin is used as output.)



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.

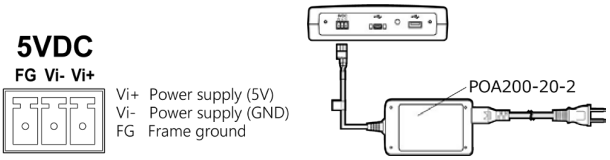
Connecting the Sink Type Output and Sink Output Support Input

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 this product to each other.



+5VDC input terminal

This product must be connected with 5VDC power supply (in a self-powered state).
Connect with 5VDC power supply by using +5VDC input pin.



When using the attached AC adapter [POA200-20-2], please connect directly to the input terminals.

When the accompanying power connector (MC1,5/3-ST-3,5, suitable cable: AWG28 - 16) is used to supply power to this unit, strip the end of the suitable cable and insert it to the power connector before firmly securing it using a screw.

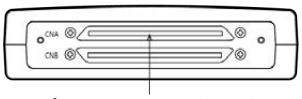
Beside the AC adaptor, a power supply for installation on a DIN rail is also available (as an option).

Use the appropriate power supply depending on the operating environment and application. When a power supply for installation on a DIN rail is used, connect the unit using the accompanying power connector MC1,5/-ST-3,5.

⚠ CAUTION

- Connect 5VDC power supply to the main unit. Next, connect the USB cable to the PC.
  Do not turn it on or off when using. If you remove, USB cable is first and then 5VDC power supply.
- When the USB module is not used, leave the AC adapter unplugged.
- Continuously using the AC adapter heated affects its life.
- Use the AC adapter not in a closed place but in a well-ventilated place not to be heated.
- Do not remove the power connector [MC1,5/3-ST-3,5] attached to the AC adapter.

Connecting an Interface Connector



Interface connector (CNA, CNB)

- Connector used
  HDRA-E100W1LFDT1EC-SL+ or equivalent
  [mfd by HONDA TSUSHIN KOGYO CO., LTD.]

- Applicable connector
  HDRA-E100MA1 or equivalent
  [mfd by HONDA TSUSHIN KOGYO CO., LTD.]

Layout on the Interface Connector(CNA, CNB)

CNB

Common plus pin for +E/+F ports	P-E/F	100	50	P-A/B	Common plus pin for +A/+B ports	
	P-E/F	99	49	P-A/B		
+F port (Input/Output)	I/O-F7	98	48	I/O-B7	+B port (Input/Output)	
	I/O-F6	97	47	I/O-B6		
	I/O-F5	96	46	I/O-B5		
	I/O-F4	95	45	I/O-B4		
	I/O-F3	94	44	I/O-B3		
	I/O-F2	93	43	I/O-B2		
	I/O-F1	92	42	I/O-B1		
	I/O-F0	91	41	I/O-B0		
+E port (Input/Output)	I/O-E7	90	40	I/O-A7	+A port (Input/Output)	
	I/O-E6	89	39	I/O-A6		
	I/O-E5	88	38	I/O-A5		
	I/O-E4	87	37	I/O-A4		
	I/O-E3	86	36	I/O-A3		
	I/O-E2	85	35	I/O-A2		
	I/O-E1	84	34	I/O-A1		
	I/O-E0	83	33	I/O-A0		
Common minus pin for +E/+F ports	N-E/F	82	32	N-A/B	Common minus pin for +A/+B port	
	N-E/F	81	31	N-A/B		
	N-E/F	80	30	N-A/B		
	N-E/F	79	29	N-A/B		
	N-E/F	78	28	N-A/B		
	N-E/F	77	27	N-A/B		
	N.C.	76	26	N.C.		
	N.C.	75	25	N.C.		
Common plus pin for +C/+D output ports	P-C/D	74	24	P-8/9	Common plus pin for +8/+9 ports	
	P-C/D	73	23	P-8/9		
+D port (Input/Output)	I/O-D7	72	22	I/O-97	+9 port (Input/Output)	
	I/O-D6	71	21	I/O-96		
	I/O-D5	70	20	I/O-95		
	I/O-D4	69	19	I/O-94		
	I/O-D3	68	18	I/O-93		
	I/O-D2	67	17	I/O-92		
	I/O-D1	66	16	I/O-91		
	I/O-D0	65	15	I/O-90		
+C port (Input/Output)	I/O-C7	64	14	I/O-87	+8 port (Input/Output)	
	I/O-C6	63	13	I/O-86		
	I/O-C5	62	12	I/O-85		
	I/O-C4	61	11	I/O-84		
	I/O-C3	60	10	I/O-83		
	I/O-C2	59	9	I/O-82		
	I/O-C1	58	8	I/O-81		
	I/O-C0	57	7	I/O-80		
Common minus pin for +C/+D ports	N-C/D	56	6	N-8/9	Common minus pin for +8/+9 ports	
	N-C/D	55	5	N-8/9		
	N-C/D	54	4	N-8/9		
	N-C/D	53	3	N-8/9		
	N-C/D	52	2	N-8/9		
	N-C/D	51	1	N-8/9		

100 50 51 1

CNA

Common minus pin for +0/+1 ports	N-0/1	1	51	N-4/5	Common minus pin for +4/+5 ports	
	N-0/1	2	52	N-4/5		
	N-0/1	3	53	N-4/5		
	N-0/1	4	54	N-4/5		
	N-0/1	5	55	N-4/5		
	N-0/1	6	56	N-4/5		
+0 port (Input/Output)	I/O-00	7	57	I/O-40	+4 port (Input/Output)	
	I/O-01	8	58	I/O-41		
	I/O-02	9	59	I/O-42		
	I/O-03	10	60	I/O-43		
	I/O-04	11	61	I/O-44		
	I/O-05	12	62	I/O-45		
	I/O-06	13	63	I/O-46		
	I/O-07	14	64	I/O-47		
+1 port (Input/Output)	I/O-10	15	65	I/O-50	+5 port (Input/Output)	
	I/O-11	16	66	I/O-51		
	I/O-12	17	67	I/O-52		
	I/O-13	18	68	I/O-53		
	I/O-14	19	69	I/O-54		
	I/O-15	20	70	I/O-55		
	I/O-16	21	71	I/O-56		
	I/O-17	22	72	I/O-57		
Common plus pin for +0/+1 ports	P-0/1	23	73	P-4/5	Common plus pin for +4/+5 ports	
	P-0/1	24	74	P-4/5		
	N.C.	25	75	N.C.		
	N.C.	26	76	N.C.		
Common minus pin for +2/+3 ports	N-2/3	27	77	N-6/7	Common minus pin for +6/+7 port	
	N-2/3	28	78	N-6/7		
	N-2/3	29	79	N-6/7		
	N-2/3	30	80	N-6/7		
	N-2/3	31	81	N-6/7		
	N-2/3	32	82	N-6/7		
+2 Port (Input/Output)	I/O-20	33	83	I/O-60	+6 port (Input/Output)	
	I/O-21	34	84	I/O-61		
	I/O-22	35	85	I/O-62		
	I/O-23	36	86	I/O-63		
	I/O-24	37	87	I/O-64		
	I/O-25	38	88	I/O-65		
	I/O-26	39	89	I/O-66		
	I/O-27	40	90	I/O-67		
+3 Port (Input/Output)	I/O-30	41	91	I/O-70	+7 Port (Input/Output)	
	I/O-31	42	92	I/O-71		
	I/O-32	43	93	I/O-72		
	I/O-33	44	94	I/O-73		
	I/O-34	45	95	I/O-74		
	I/O-35	46	96	I/O-75		
	I/O-36	47	97	I/O-76		
	I/O-37	48	98	I/O-77		
Common plus pin for +2/+3 ports	P-2/3	49	99	P-6/7	Common plus pin for +6/+7 ports	
	P-2/3	50	100	P-6/7		

1 51 50 100

* I/O-00 – I/O-17 can be used as all of interrupt signal.

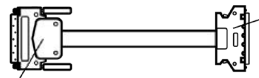
Signal name	Description
I/O -00 - I/O -F7	16 input signal pins. Connect output signals from the external device to these pins.
P-0/1	Connect the positive side of the external power supply. These pins are common to 16 input/ output signal pins.
P-2/3	Connect the positive side of the external power supply. These pins are common to 16 input/ output signal pins.
P-4/5	Connect the positive side of the external power supply. These pins are common to 16 input/ output signal pins.
P-6/7	Connect the positive side of the external power supply. These pins are common to 16 input/ output signal pins.
P-8/9	Connect the positive side of the external power supply. These pins are common to 16 input/ output signal pins.
P-A/B	Connect the positive side of the external power supply. These pins are common to 16 input/ output signal pins.
P-C/D	Connect the positive side of the external power supply. These pins are common to 16 input/ output signal pins.
P-E/F	Connect the positive side of the external power supply. These pins are common to 16 input/ output signal pins.
N-0/1	Connect the negative side of the external power supply. These pins are common to 16 input/ output signal pins. One pin permissible current of the connector is 0.3A. Please connect necessary number of pins for the corresponding total current of the input/ output 16 channels. When 16 channels are used by the output full ratings (100mA per 1 channel), it is necessary to connect six all.
N-2/3	Connect the negative side of the external power supply. These pins are common to 16 input/ output signal pins. One pin permissible current of the connector is 0.3A. Please connect necessary number of pins for the corresponding total current of the input/ output 16 channels. When 16 channels are used by the output full ratings (100mA per 1 channel), it is necessary to connect six all.
N-4/5	Connect the negative side of the external power supply. These pins are common to 16 input/ output signal pins. One pin permissible current of the connector is 0.3A. Please connect necessary number of pins for the corresponding total current of the input/ output 16 channels. When 16 channels are used by the output full ratings (100mA per 1 channel), it is necessary to connect six all.
N-6/7	Connect the negative side of the external power supply. These pins are common to 16 input/ output signal pins. One pin permissible current of the connector is 0.3A. Please connect necessary number of pins for the corresponding total current of the input/ output 16 channels. When 16 channels are used by the output full ratings (100mA per 1 channel), it is necessary to connect six all.
N-8/9	Connect the negative side of the external power supply. These pins are common to 16 input/ output signal pins. One pin permissible current of the connector is 0.3A. Please connect necessary number of pins for the corresponding total current of the input/ output 16 channels. When 16 channels are used by the output full ratings (100mA per 1 channel), it is necessary to connect six all.
N-A/B	Connect the negative side of the external power supply. These pins are common to 16 input/ output signal pins. One pin permissible current of the connector is 0.3A. Please connect necessary number of pins for the corresponding total current of the input/ output 16 channels. When 16 channels are used by the output full ratings (100mA per 1 channel), it is necessary to connect six all.
N-C/D	Connect the negative side of the external power supply. These pins are common to 16 input/ output signal pins. One pin permissible current of the connector is 0.3A. Please connect necessary number of pins for the corresponding total current of the input/ output 16 channels. When 16 channels are used by the output full ratings (100mA per 1 channel), it is necessary to connect six all.
N-E/F	Connect the negative side of the external power supply. These pins are common to 16 input/ output signal pins. One pin permissible current of the connector is 0.3A. Please connect necessary number of pins for the corresponding total current of the input/ output 16 channels. When 16 channels are used by the output full ratings (100mA per 1 channel), it is necessary to connect six all.
N.C.	These pins are left unconnected.

⚠ CAUTION

To perform input/output using this product with the CONTEC device driver, specify logical ports and logical bits when calling each function. For details, refer to the "Relationships between API-TOOL Logical Ports/Bits and Connector Signal Pins".

Pin Assignments of Optional Connector PCB100/96PS

- Option Cable PCB100/96PS

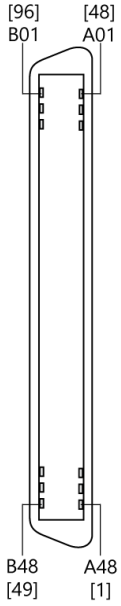


Connector
PCR-E96FB
[mfd by HONDA TSUSHIN KOGYO CO., LTD.]
or equivalent

Connector HDRA-E100MA1
[mfd by HONDA TSUSHIN KOGYO CO., LTD.] or equivalent

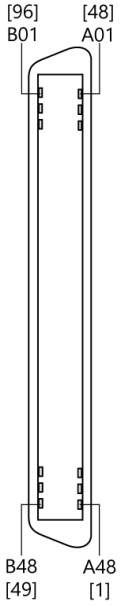
When connected to CNB of the product

Common minus pin for +C/+D ports	N-C/D	B01	A01	N-8/9	Common minus pin for +8/+9 ports
	N-C/D	B02	A02	N-8/9	
+C port (Input/Output)	I/O-C0	B03	A03	I/O-80	+8 port (Input/Output)
	I/O-C1	B04	A04	I/O-81	
	I/O-C2	B05	A05	I/O-82	
	I/O-C3	B06	A06	I/O-83	
	I/O-C4	B07	A07	I/O-84	
	I/O-C5	B08	A08	I/O-85	
	I/O-C6	B09	A09	I/O-86	
	I/O-C7	B10	A10	I/O-87	
+D port (Input/Output)	I/O-D0	B11	A11	I/O-90	+9 port (Input/Output)
	I/O-D1	B12	A12	I/O-91	
	I/O-D2	B13	A13	I/O-92	
	I/O-D3	B14	A14	I/O-93	
	I/O-D4	B15	A15	I/O-94	
	I/O-D5	B16	A16	I/O-95	
	I/O-D6	B17	A17	I/O-96	
	I/O-D7	B18	A18	I/O-97	
Common plus pin for +C/+D ports	P-C/D	B19	A19	P-8/9	Common plus pin for +8/+9 ports
	P-C/D	B20	A20	P-8/9	
Unconnected	N.C.	B21	A21	N.C.	Unconnected
	N.C.	B22	A22	N.C.	
	N.C.	B23	A23	N.C.	
	N.C.	B24	A24	N.C.	
	N.C.	B25	A25	N.C.	
	N.C.	B26	A26	N.C.	
	N.C.	B27	A27	N.C.	
	N.C.	B28	A28	N.C.	
Common minus pin for +E/+F ports	N-E/F	B29	A29	N-A/B	Common minus pin for +A/+B ports
	N-E/F	B30	A30	N-A/B	
+E port (Input/Output)	I/O-E0	B31	A31	I/O-A0	+A port (Input/Output)
	I/O-E1	B32	A32	I/O-A1	
	I/O-E2	B33	A33	I/O-A2	
	I/O-E3	B34	A34	I/O-A3	
	I/O-E4	B35	A35	I/O-A4	
	I/O-E5	B36	A36	I/O-A5	
	I/O-E6	B37	A37	I/O-A6	
	I/O-E7	B38	A38	I/O-A7	
+F port (Input/Output)	I/O-F0	B39	A39	I/O-B0	+B port (Input/Output)
	I/O-F1	B40	A40	I/O-B1	
	I/O-F2	B41	A41	I/O-B2	
	I/O-F3	B42	A42	I/O-B3	
	I/O-F4	B43	A43	I/O-B4	
	I/O-F5	B44	A44	I/O-B5	
	I/O-F6	B45	A45	I/O-B6	
	I/O-F7	B46	A46	I/O-B7	
Common plus pin for +E/+F ports	P-E/F	B47	A47	P-A/B	Common plus pin for +A/+B ports
	P-E/F	B48	A48	P-A/B	



When connected to CNA of the product

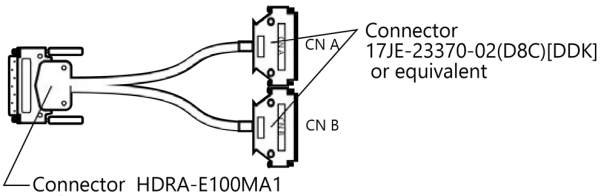
Common minus pin for +4/+5 ports	N-4/5.	B01	A01	N-0/1	Common minus pin for +0/+1 ports
	N-4/5	B02	A02	N-0/1	
+4 port (Input/Output)	I/O-40	B03	A03	I/O-00	+0 port (Input/Output)
	I/O-41	B04	A04	I/O-01	
	I/O-42	B05	A05	I/O-02	
	I/O-43	B06	A06	I/O-03	
	I/O-44	B07	A07	I/O-04	
	I/O-45	B08	A08	I/O-05	
	I/O-46	B09	A09	I/O-06	
	I/O-47	B10	A10	I/O-07	
+5 port (Input/Output)	I/O-50	B11	A11	I/O-10	+1 port (Input/Output)
	I/O-51	B12	A12	I/O-11	
	I/O-52	B13	A13	I/O-12	
	I/O-53	B14	A14	I/O-13	
	I/O-54	B15	A15	I/O-14	
	I/O-55	B16	A16	I/O-15	
	I/O-56	B17	A17	I/O-16	
	I/O-57	B18	A18	I/O-17	
Common plus pin for +4/+5 ports	P-4/5	B19	A19	P-0/1	Common plus pin for +0/+1 ports
	P-4/5	B20	A20	P-0/1	
Unconnected	N.C.	B21	A21	N.C.	Unconnected
	N.C.	B22	A22	N.C.	
	N.C.	B23	A23	N.C.	
	N.C.	B24	A24	N.C.	
	N.C.	B25	A25	N.C.	
	N.C.	B26	A26	N.C.	
	N.C.	B27	A27	N.C.	
	N.C.	B28	A28	N.C.	
Common plus pin for +4/+5 ports	P-4/5	B29	A29	N-2/3	Common minus pin for +2/+3 ports
	P-4/5	B30	A30	N-2/3	
+6 port (Input/Output)	I/O-60	B31	A31	I/O-20	+2 port (Input/Output)
	I/O-61	B32	A32	I/O-21	
	I/O-62	B33	A33	I/O-22	
	I/O-63	B34	A34	I/O-23	
	I/O-64	B35	A35	I/O-24	
	I/O-65	B36	A36	I/O-25	
	I/O-66	B37	A37	I/O-26	
	I/O-67	B38	A38	I/O-27	
+7 port (Input/Output)	I/O-70	B39	A39	I/O-30	+3 port (Input/Output)
	I/O-71	B40	A40	I/O-31	
	I/O-72	B41	A41	I/O-32	
	I/O-73	B42	A42	I/O-33	
	I/O-74	B43	A43	I/O-34	
	I/O-75	B44	A44	I/O-35	
	I/O-76	B45	A45	I/O-36	
	I/O-77	B46	A46	I/O-37	
Common plus pin for +6/+7 ports	P-6/7	B47	A47	P-2/3	Common plus pin for +2/+3 ports
	P-6/7	B48	A48	P-2/3	



The numbers in square brackets [ ] are pin numbers designated by HONDA TSUSHIN KOGYO CO., LTD.

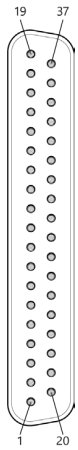
Pin Assignments of Optional Connector PCB100WS

- Option Cable PCB100WS



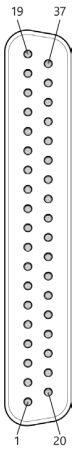
CNA of PCB100WS connected to CNB of product

	N.C.	19				
Common plus pin for +8/+9 ports	P-8/9	18		37	P-A/B	Common plus pin for +A/+B ports
+9 port (Input/ Output)	I/O-97	17		36	I/O-B7	+B port (Input/ Output)
	I/O-96	16		35	I/O-B6	
	I/O-95	15		34	I/O-B5	
	I/O-94	14		33	I/O-B4	
	I/O-93	13		32	I/O-B3	
	I/O-92	12		31	I/O-B2	
	I/O-91	11		30	I/O-B1	
	I/O-90	10		29	I/O-B0	
+8 port (Input/ Output)	I/O-87	9		28	I/O-A7	+A port (Input/ Output)
	I/O-86	8		27	I/O-A6	
	I/O-85	7		26	I/O-A5	
	I/O-84	6		25	I/O-A4	
	I/O-83	5		24	I/O-A3	
	I/O-82	4		23	I/O-A2	
	I/O-81	3		22	I/O-A1	
	I/O-80	2		21	I/O-A0	
Common minus pin for +8/+9 ports	N-8/9	1		20	N-A/B	Common minus pin for +A/+B ports



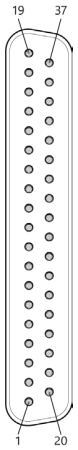
CNA of PCB100WS connected to CNA of product

	N.C.	19				
Common plus pin for +0/+1 ports	P-0/1	18		37	P-2/3	Common plus pin for +2/+3 ports
+1 port (Input/ Output)	I/O-17	17		36	I/O-37	+3 port (Input/ Output)
	I/O-16	16		35	I/O-36	
	I/O-15	15		34	I/O-35	
	I/O-14	14		33	I/O-34	
	I/O-13	13		32	I/O-33	
	I/O-12	12		31	I/O-32	
	I/O-11	11		30	I/O-31	
	I/O-10	10		29	I/O-30	
+0 port (Input/ Output)	I/O-07	9		28	I/O-27	+2 port (Input/ Output)
	I/O-06	8		27	I/O-26	
	I/O-05	7		26	I/O-25	
	I/O-04	6		25	I/O-24	
	I/O-03	5		24	I/O-23	
	I/O-02	4		23	I/O-22	
	I/O-01	3		22	I/O-21	
	I/O-00	2		21	I/O-20	
Common minus pin for +0/+1 ports	N-0/1	1		20	N-2/3	Common minus pin for +2/+3 ports



CNB of PCB100WS connected to CNB of product

	N.C.	19				
Common plus pin for +C/+D ports	P-C/D	18		37	P-E/F	Common plus pin for +E/+F ports
+D port (Input/ Output)	I/O-D7	17		36	I/O-F7	+F port (Input/ Output)
	I/O-D6	16		35	I/O-F6	
	I/O-D5	15		34	I/O-F5	
	I/O-D4	14		33	I/O-F4	
	I/O-D3	13		32	I/O-F3	
	I/O-D2	12		31	I/O-F2	
	I/O-D1	11		30	I/O-F1	
	I/O-D0	10		29	I/O-F0	
+C port (Input/ Output)	I/O-C7	9		28	I/O-E7	+E port (Input/ Output)
	I/O-C6	8		27	I/O-E6	
	I/O-C5	7		26	I/O-E5	
	I/O-C4	6		25	I/O-E4	
	I/O-C3	5		24	I/O-E3	
	I/O-C2	4		23	I/O-E2	
	I/O-C1	3		22	I/O-E1	
	I/O-C0	2		21	I/O-E0	
Common minus pin for +C/+D ports	N-C/D	1		20	N-E/F	Common minus pin for +E/+F ports



CNB of PCB100WS connected to CNA of product

	N.C.	19				
Common plus pin for +4/+5 ports	P-4/5	18		37	P-6/7	Common plus pin for +6/+7 ports
+5 port (Input/ Output)	I/O-57	17		36	I/O-77	+7 port (Input/ Output)
	I/O-56	16		35	I/O-76	
	I/O-55	15		34	I/O-75	
	I/O-54	14		33	I/O-74	
	I/O-53	13		32	I/O-73	
	I/O-52	12		31	I/O-72	
	I/O-51	11		30	I/O-71	
	I/O-50	10		29	I/O-70	
+4 port (Input/ Output)	I/O-47	9		28	I/O-67	+6 port (Input/ Output)
	I/O-46	8		27	I/O-66	
	I/O-45	7		26	I/O-65	
	I/O-44	6		25	I/O-64	
	I/O-43	5		24	I/O-63	
	I/O-42	4		23	I/O-62	
	I/O-41	3		22	I/O-61	
	I/O-40	2		21	I/O-60	
Common minus pin for +4+5 ports	N-4/5	1		20	N-6/7	Common minus pin for +6+7 ports