

CONPROSYS nano Series
Digital Input Module 8ch/Counter/DC Synchronous
CPSN-DI-08FCL



- * Specifications, color and design of the products are subject to change without notice.
- * The photo is CPSN-DI-08FCL.

Features

Opto-coupler isolated input

The product has the opto-coupler isolated input 8 channels (supporting current sink output) whose high-speed response speed is 1μsec or less.

All of the input signals are usable as interrupt events *1

You can use all of the input signals as interrupt events and also disable or enable the interrupt in bit units and select the interrupt edge.

All of the input signals are usable as up counter *1

All input signals can be used as 16-bit up counts and can be used in bits.

Synchronization function supported *1

The synchronization control function provided by the installed CPU unit is supported.

You can control the timing of input and output according to the synchronization signal from the CPU unit, allowing for control and measurement that are aligned with the timing of the entire system.

With pulse catch function *1

This product is equipped with a function that detects input pulses as short as 0.1 μsec turning ON and OFF. (*Positive logic: ON=H, OFF=L, Negative logic: ON=L, OFF=H)

With pulse measurement function *1

This product is equipped with a function that measures the length of time that an input pulse is ON or OFF. (*Positive logic: ON=H, OFF=L, Negative logic: ON=L, OFF=H)

Equipped with an input pulse filter function to prevent false recognition of input signals due to noise and chattering

This product is equipped with an input pulse filter that can prevent input signal noise and chattering. The input pulse filter can be applied to all input terminals, and configuration can be performed using the software.

Easy installation and removal

This product can be installed in and removed from the CPU unit or USB I/O Unit - Module Type without any tools.

Adaptable to a wide range of temperature between -20 and +60°C

The product is capable of operating in the temperature between -20 and +60°C. It can be installed in the various environments.

Equipped with the LED for an operation check

The product has the LED for an operation check, which helps you visually confirm the communication status of each interface.

No electrolytic capacitor

Without an electrolytic capacitor, which has a limited life, we are creating the product with a longer life.

* For details of the functions, refer to the Reference Manual (Software Edition) of each CPU unit.

This product is an expansion I/O module that adds an opto-coupler isolated input interface with a high-speed response speed of 1μsec or less to the CPU unit or USB I/O Unit - Module Type of the CONPROSYS nano series.

This product is equipped with 8 inputs and 1 common that support current sink output. This product can also be used with an external circuit power supply of 12 to 24 V.

- * 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 April, 2026.

Specifications

Function specification

| Item | Description |
|--|--|
| Input | |
| Input type | Opto-coupler isolated input (supports current sink [negative logic] output *1) |
| Isolation | Opto-coupler Isolation |
| Voltage Resistance | AC1500Vrms |
| Input Resistance | 4.7kΩ |
| Input ON current | 1.77mA or more |
| Input OFF current | 0.47mA or less |
| Interrupt | 8 interrupt input signals are arranged into a single output of interrupt signal. An interrupt is generated at the rising edge (Logic: HIGH-to-LOW transition) or falling edge (Logic: LOW-to-HIGH transition). (setting can be done by software) |
| Digital filter | 0.1us - 52.4288ms |
| Count system | Up counting |
| Max count | FFFFH (binary) |
| Response time | Within 1μsec |
| Number of input signal channels | 8 (1 common) |
| LED | DI0 - DI7 (Green) |
| Common | |
| Connector | 2 pieces 3.81mm pitch 10-pin terminal |
| Applicable | AWG28 - 16 |
| External circuit power supply | 12 - 24VDC (±10%) |
| Current Consumption | 3.3V 0.08A (Max) |
| Allowable distance of signal extension | 50m (depending on wiring environment) |
| Physical dimensions (mm) | 15.6(W) x 52.6(D) x 84(H) (not include projection) |
| Weight | 50g |

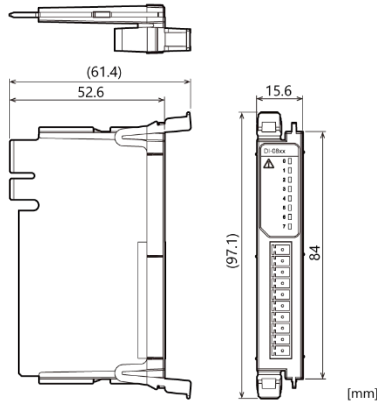
*1 Data "0" and "1" correspond to the High and Low levels, respectively.

Installation Environment Requirements

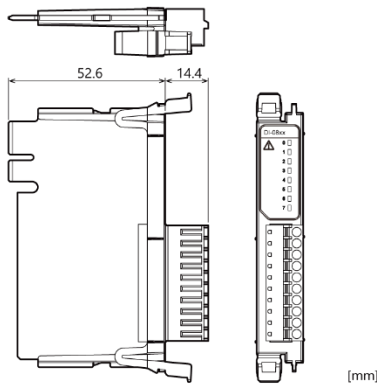
| Item | Description | |
|-----------------------------------|---|---|
| Operating ambient temperature | -20 - +60°C (Vertical installation) -20°C to +55°C (with a vertical installation at an angle of 90° to the left/right or with a horizontal installation) | |
| Operating ambient humidity | 10 - 90%RH (No condensation) | |
| Non-operating ambient temperature | -20 - +60°C | |
| Non-operating ambient humidity | 10 - 90%RH (No condensation) | |
| Floating dust particles | Not to be excessive | |
| Corrosive gases | None | |
| Line-noise resistance | Line noise | Signal Line /±1kV (IEC61000-4-4 Level 3, EN61000-4-4 Level 3) |
| | Static electricity resistance | Touch /±4kV (IEC61000-4-2 Level 2, EN61000-4-2 Level 2) Air /±8kV (IEC61000-4-2 Level 3, EN61000-4-2 Level 3) |
| | Sweep resistance | 10 - 57Hz *1/ semi-amplitude vibration 0.15mm, 57 - 150Hz/2.0G 40 minutes each in X, Y, and Z directions (JIS C60068-2-6-compliant, IEC60068-2-6-compliant) |
| Vibration resistance | | |
| Impact resistance | 15G half-sine shock for 11ms in X, Y, and Z directions (JIS C60068-2-27-compliant, IEC60068-2-27-compliant) | |
| Standard | VCCI Class A, FCC Class A CE Marking (EMC Directive Class A, RoHS Directive) UKCA, ISED | |

*1 With the optional DIN rail fitting power supply: 10 - 55Hz (for details, see the specification of the optional power supply)

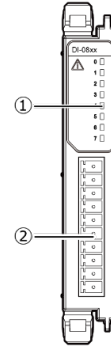
Physical Dimensions



With the connector attached



Component Name



| No. | Name | Function |
|-----|---------------------|--|
| 1 | LED Indicator | Indicate the status of digital input. |
| 2 | Interface Connector | Connector for digital input. Use the 10-pin connector, included in the package. |

Interface Connector

This product has 8 channels of digital input/output. Use the 10-pin connector included in the package.

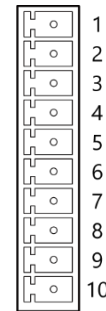
- Mounted Connector

10-pin European style terminal block (3.81mm pitch, 10 x 1 row)
MC 1.5/10-G-3,81 P26 THR [Phoenix Contact] or equivalent

- Compatible Connector

10-pin European style terminal block (3.81mm pitch, 10 x 1 row)
FK-MCP 1.5/10-ST-3,81 [Phoenix Contact] or equivalent

Digital Input Connector



| Pin No. | Signal Name | Description |
|---------|-------------|---|
| 1 | COM | When connecting to sink output, connect this pin to the positive side of the external circuit power supply. There is one common for D10 to D17. |
| 2 | N.C. | This pin is left unconnected. |
| 3 - 10 | D10 - D17 | This indicates the input signals. It connects the output signals from the other devices. |

Included Items

- Product [CPSN-DI-08FC] ...1
- 10 pin connector (attached to the product) ... 1
- Product Guide ... 1

Optional Products

| Product Name | Model type | Description |
|-------------------------------|--------------------|--|
| CPU unit *2 | CPSN-MCB271-S1-041 | Remote I/O CPU unit *1 |
| | CPSN-MCB271-1-041 | Remote I/O CPU unit LAN 2-channel *1 |
| | CPSN-MCB271-1-081 | Remote I/O CPU unit LAN HUB, 8slot *1 |
| | CPSN-PCB271-S1-041 | CODESYS Modbus Master CPU unit |
| | CPSN-EOB471EC-41 | Remote I/O CPU unit (EtherCAT, 4slot) |
| | CPSN-EOB471EC-81 | Remote I/O CPU unit (EtherCAT, 8slot) |
| USB I/O Unit - Module Type | CC-USB271-CPSN4 | USB I/O Unit - Module Type (4 slot) *1 |
| DIN rail fitting power supply | CPS-PWD-30AW24-01 | Fitting power supply 30W (Input: 100 - 240VAC, Output: 24VDC 1.3 A) |
| | CPS-PWD-90AW24-01 | Fitting power supply 90W (Input: 100 - 240VAC, Output: 24VDC 3.8 A) |

*1 Available with our device driver API-TOOL

*2 For the latest supported CPU units, see the Contec website.

* Visit the CONTEC website for the latest optional products.

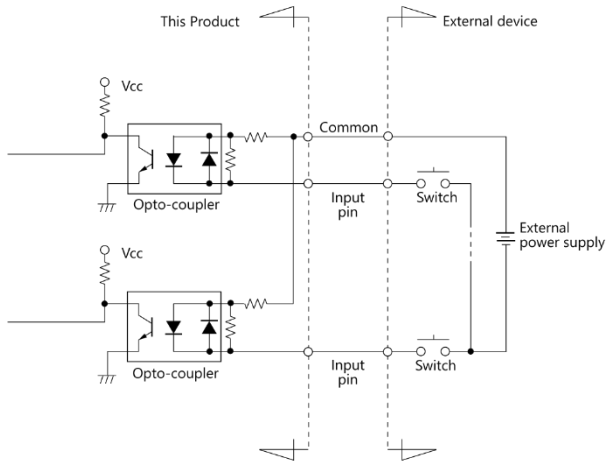
Digital input circuit

For the product, opto-coupler-isolated input (supporting current sink output) is used for the digital input.

The digital input is connected to a device that can perform current driving such as a switch or transistor output device. The ON/OFF state of the device is input as a digital value.

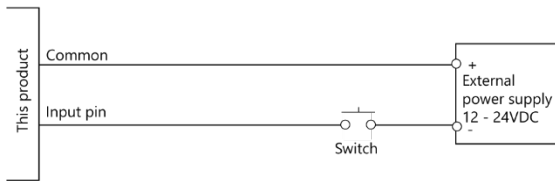
The input equivalent circuit of the digital input and the connection with the external device vary depending on the I/O module and the current output direction, so see the following figure.

Digital input circuit (Corresponded to current sink output)



Example of connecting the product to a switch

Example connection to the switch (Corresponded to current sink output)



When the switch is "ON", the corresponding bit contains "1".

When the switch is "OFF", by contrast, the bit contains "0".

Example of connecting the product to a switch

Connection to the transistor (Corresponded to current sink output)

