

CONPROSYS nano Series
Digital Output Module Source Type
CPSN-DO-08RL
Digital Output Module Source Type,
Built-in power supply
CPSN-DO-08BRL



**The photograph is a CPSN-DO-08RL.

Features

Opto-coupler isolated Output

This product contains 8 channels of opto-coupler isolated output (current source type) whose response speed is 200µsec or less.

Internal circuit power supply (CPSN-DO-08BRL only)

The CPSN-DO-08BRL 's internal circuit has a built-in power supply, so no external circuit power supply is necessary.

Output circuits include zener diodes for surge voltage protection. Zener diodes are connected to the output circuits to protect against surge voltages.

The rated output of the CPSN-DO-08RL is 26.4VDC to the maximum, 500mA per channel.

The rated output of the CPSN-DO-08BRL is 12VDC, 56mA to the maximum (the total value of all output channels)

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.

Optional Products

Product Name	Model type	Description
CPU unit	CPSN-MCB271-S1-041	Remote I/O CPU unit *1
	CPSN-MCB271-1-041	Remote I/O CPU unit LAN 2-channel model *1
	CPSN-PCB271-S1-041	CODESYS Modbus Master CPU unit
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

* Visit the Contec website regarding information on the optional products.

This product is an expansion I/O module that adds a digital output interface to the CPU unit or USB I/O Unit - Module Type of the CONPROSYS nano series.

The CPSN-DO-08RL contains 8 channels of opto-coupler isolated output (current source type) whose response speed is 200µsec or less. This product can also be used with an external circuit power supply of 12 to 24 V.

The CPSN-DO-08BRL contains 8 channels of opto-coupler isolated output (current source type) whose response speed is 200µsec or less.

This product's internal circuit also has a built-in power supply, so no external circuit power supply is necessary.

* 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 November 2023.

Specifications

Function specifications

Item	CPSN-DO-08RL	CPSN-DO-08BRL
Output		
Output type	Opto-coupler Isolation Output (Current source type) (positive logic) *1	
Isolation	Opto-coupler Isolation	
Voltage Resistance	AC1000Vrms	AC500Vrms
Output rating	Output Voltage	12 - 24VDC(±10%)
	Output Current	500mA (Max.)
		12VDC
		56mA (Max.) (The total value of all output channels)
Maximum voltage drop at ON	0.5V or less	
Response time	Within 200µsec	
Number of output signal channels	8 (shared common)	
LED	DO00 - DO07 (Green)	
Connector	2 pieces 3.81mm pitch 10-pin terminal	
Applicable wire	AWG28 - 16	
External circuit power supply *2	12-24VDC(±10%)	-
Internal circuit power supply	-	12VDC
Electricity consumption	3.3V	0.08A (Max.)
	5V	0.15A (Max.) *3
	3.3V	0.08A (Max.)
Physical dimensions (mm)	15.6(W)×52.6(D)×84(H) (No projection included)	
Weight	50g	

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

*2 The digital output circuit is equipped with a fuse for preventing overcurrent. Use a power supply that has overcurrent protection or a 300 W or more power supply.

*3 Output current 56mA is included.

Installation Environment Requirements

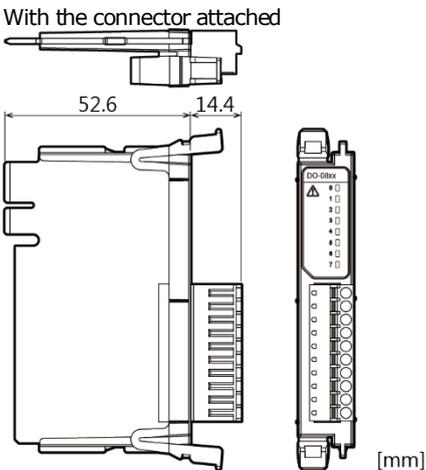
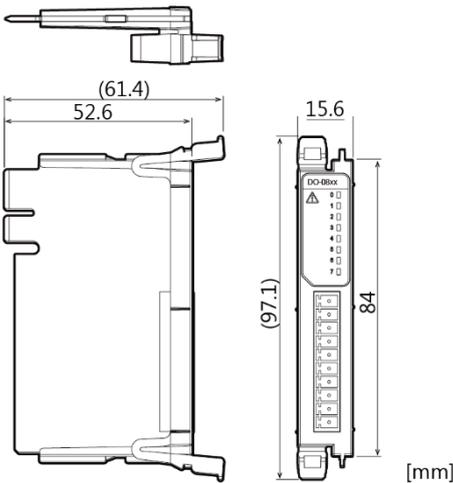
Item	Description
Operating ambient temperature *4	-20 - +60°C (Wall installation at an angle of 0°) -20°C to +55°C with a vertical installation at an angle of 90° to the left/right or with a plane installation
Operating ambient humidity	10 - 90%RH (No condensation)
Non-operating ambient temperature	-20 - +60°C
Non-operating ambient humidity	10 - 90%RH (No condensation)
Floating dust particles	Not to be excessive
Corrosive gases	None

Item		Description
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)
Vibration resistance	Sweep resistance	10 - 57Hz *5 /semi-amplitude vibration 0.15mm, 57 - 150Hz/2.0G 40minutes each in X, Y, and Z directions (JIS C60068-2-6-compliant, IEC60068-2-6-compliant)
Shock resistance		15G half-sine shock for 11ms in X, Y, and Z directions (JIS C 60068-2-27 -compliant, IEC 60068-2-27 -compliant)
Standard		VCCI Class A, FCC Class A, CE Marking (EMC Directive Class A, RoHS Directive), UKCA

*4 Output current derating is required.

*5 With the optional DIN rail fitting power supply: 10 - 55Hz (for details, see the user's guide of the optional power supply).

Physical Dimensions



Included Items

Product (One of the followings)

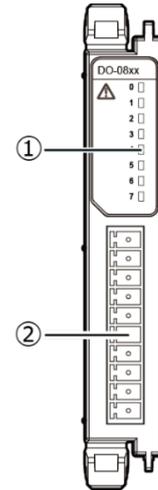
[CPSN-DO-08RL, CPSN-DO-08BRL] ...1

10-pin connector...1

Product Guide & Warranty Certificate... 1

Serial Number Label...1

Name of each parts

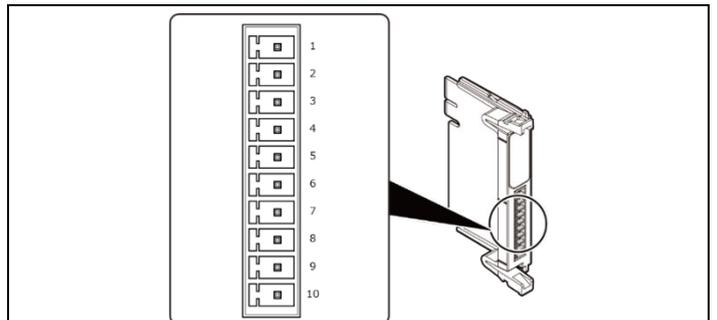


- (1) LED : Displays the digital output status.
- (2) Interface Connector : This is a connector for digital output. Use the 10-pin connector, included in the package.

Interface Connector

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

Connector type : DEGSON 15EDGKC-3.81-10P-13
PHOENIX CONTACT FRONT-MC1.5/10-ST-3.81
(or equivalent)



Pin No.	Signal Name	Meaning
1	PCOM	This connects the positive-side of the external power. It shares with 8 channels of output signal (DO0 - DO7).
2	MCOM	This connects the negative-side of the external power. It shares with 8 channels of output signal (DO0 - DO7).
3 - 10	DO0 - DO7	This indicates the output signals. It connects the input signals from the other devices.

Digital Output Cable

Use the digital output cable described below.

Cable	Use copper wires that withstand the temperature of 75 °C and higher.
Applicable wire	AWG28 - 16
Cable Length	Vary according to the environment where the product is used.

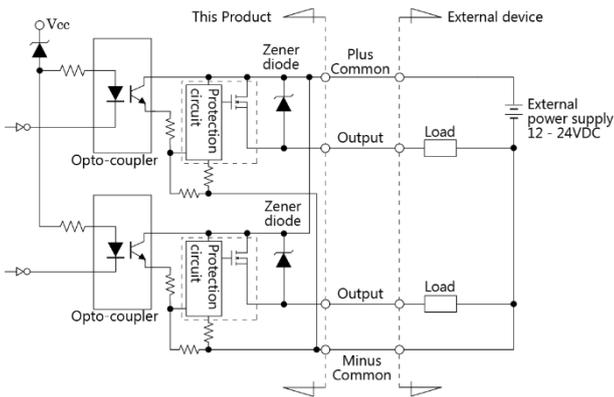
Digital Output

The equivalent circuit of the digital output interface part is shown in the following figure. Connect this interface to a device that is driven by current such as a relay or an LED. For the connection to the CPSN-DO-08RL, an external power supply is required in order to supply the current. The turning ON/OFF of the device that is driven by current is controlled with a digital value.

The rated output of the CPSN-DO-08RL is 26.4VDC to the maximum, 500mA per channel.

As for the CPSN-DO-08BRL, the rated output is 12VDC, 56mA to the maximum (The total value of all output channels).

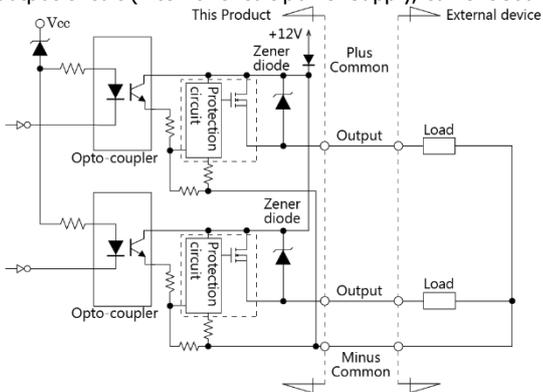
Digital Output circuit (external circuit power supply, current source type)



CAUTION

- When supplying power, all output will be OFF.

Digital Output circuit (internal circuit power supply, current source type)

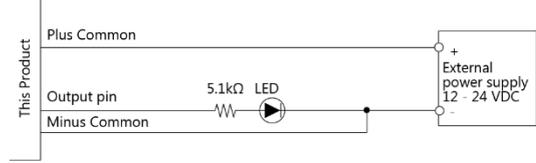


CAUTION

- When supplying power, all output will be OFF.

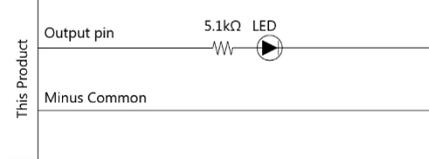
Example of connecting the product to LED

< CPSN-DO-08RL > (current source type)



The corresponding LED will be lit up when you output "1" into the appropriate bit. The corresponding LED will be turned off when you output "0" into the appropriate bit.

< CPSN-DO-08BRL > (current source type)



The corresponding LED will be lit up when you output "1" into the appropriate bit. The corresponding LED will be turned off when you output "0" into the appropriate bit.

CAUTION

- About the material of supplied connecting wires. Strip off 8 mm ± 0.5 mm of the wire's covering to use them.
- About a caution mark ⚠ on the product: Please use copper wires that withstand the temperature of 75 degrees Celsius and higher.

Derating

The characteristic of derating by way of the output current is shown in the following figure. Use this product within the derating range. Failing to do so may lead to malfunctions.

Characteristic of derating by way of the output current

