

CONPROSYS Series
CODESYS EtherCAT Master
CPS-PCS341EC-DS1-1201



- * Specifications, color and design of the products are subject to change without notice.
- * CODESYS® is a registered trademark of 3S-Smart Software Solutions GmbH.

Hardware Features

Add configurable modules

This product allows you to install modules from a wide variety of types to suit the needs of the user.

- * Up to 16 modules can be set and the total current consumption should be less than 3.3A.

No base board required

As the product requires no base board for installation, it helps add modules easily and smoothly.

Installed modules can be removed from any set positions on DIN rail.

Compact design

Compact design, 44.7(W)×94.7(D)×124.8 (H), features flexibility in installation.

Adaptable to a temperature range 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.

A powerful running platform without fan

The product contains the ARM® Cortex®-A8 processor (600MHz) and the DDR3 512MB system memory.

Decrease damages by bus isolation and surge protection. (digital input/output)

Electrical isolation between the digital input/output and CPU can block electrical noise flow. Moreover, the surge protection elements are adopted

Opto-coupler Isolation input and semiconductor relay output

The product has the switchable four channels of opto-coupler isolation input (compatible with current sink output) and semiconductor relay output. It is usable for external switch inputting or LED lighting.

Max. 115,200bps RS-232C serial communication

The Product has one RS-232C-standard serial port. Baud rates from 300 to 115,200 bps can be set.

Installation easy with two pieces of terminal support and DIN rail

You can install and remove a terminal connector without a screwdriver so that it can shorten the time of the replacement. As the product can be mounted on a DIN rail, removing and replacing are easy as well.

Equipped with LED for an operation check

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

This product is an EtherCAT Master controller with isolated digital input and output (Input: 4ch, Output: 4ch), RS-232C, and LAN interface.

As you desire, add the configurable type modules of our CONPROSYS series.

This product contains the CODESYS® Soft PLC. You can create your own PLC program and run with the CODESYS software.

*CODESYS is a device-independent PLC-programming system that is complied with the IEC 61131-3 standard and supports all standard programming languages such as ST or LD.

- * 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, 2018.

No electrolytic capacitor battery

No electrolytic capacitor is used. The Contec is creating the product with a longer life.

Software Features

Feature the CODESYS SoftPLC

CODESYS is a device-independent-PLC-programming system that is compliant with the IEC 61131-3 standard and supports all standard programming languages such as ST or LD.

Harmonize with EtherCAT Master

EtherCAT is a strong, efficient real-time Ethernet field bus system with an open protocol. Various EtherCAT slave devices from differing makers can be performed together with EtherCAT Master of this product.

Together with OPC UA Server

OPC UA (Unified Architecture) is an advanced model of OPC specifications, which presents refined capability of communicating with higher-order system in addition to transferring and receiving data of devices or plants. OPC UA is a platform independent standard based on TCP. The product can be operated with HMI and SCADA software that support OPC UA clients from various makers.

Packing List

Product [CPS-PCS341EC-DS1-1201] ...1
End Cover...1(attached to the product)
Product Guide ... 1
Warranty Certificate ...1
Serial Number Label ...1
3-pin Connector...1
6-pin Connector...1
CODESYS Runtime License...1 (attached to the backside of the product)

- ※ Use the supplied plastic DIN rail when connecting this product and a module on a desk top for system development or validation. If you use the supplied plastic DIN rail in the field, it cannot be covered by warranty. Therefore, when you set the product and module in the field, use the commercially available DIN rail.

Specifications

Function specifications

Item		CPS-PCS341EC-DS1-1201
CODESYS Compatible Function	Version	V3.5 SP7 Patch2 or any later version
	Language	LD, SFC, FBD, ST, IL, CFC (IEC61131-3 compliant)
	Field Bus	EtherCAT Master, Modbus TCP Slave
	Communication Protocol	OPC UA Server
Program Size	ROM Size	1MB
	The Number of Maximum Steps	250K steps
CPU Basic Performance	Basic Command Operation Speed (LD)	1.6 nsec
	Applied Command Operation Speed (ST)	5.8 nsec
	Jitter	Maximum 300 μ sec approx.
	Scan Time	74 μ sec (at 20000 Steps)
EtherCAT Performance	Input Process Time (LD)	144 nsec
	Output Process Time (ST)	138 nsec
	Scan Time	166 μ sec (at 64 point-input, 64 point-output)

Hardware Specifications

Item		CPS-PCS341EC-DS1-1201
CPU		ARM Cortex-A8 600MHz
Memory		On Board 512MB DDR3 SDRAM
ROM		On-Board 32MB NOR Flash for OS
LAN	Transmission standard	10BASE-T/100BASE-TX
	The number of channels	2
	Connector	RJ-45 Connector
	LED	Speed (Yellow), Link/Act (Green)
USB	Transmission standard	USB2.0 standard follow
	The number of channels	1
	Connector	TYPE-A
SD card slot	Standard	SD standard follow
	Connector	SD memory card slot
	LED	Read/Write (Green)
RS-232C	Baud Rate	300bps - 115.2kbps
	Data length	5, 6, 7, 8 bit 1, 1.5, 2 stopbit
	Parity check	Even, Odd, Non-parity
	Isolation/Resistance	Non-isolated
	The number of channels	1
	Connector	9-pin D-SUB connector (Male)
	LED	Transmission (Green), Reception (Green)
	LED	Transmission (Green), Reception (Green)
Digital input and Output	Input type	Opto-coupler isolation input (Compatible with current sink output) (negative logic) *1
	Input isolation	Opto-coupler isolation
	Input voltage resistance	1000V
	The number of input signal channels	4
	Open-circuit impedance	10k Ω or more
	Short-circuit impedance	500 Ω or less
	Response time (digital input)	Within 200 μ sec
	Interrupt (digital input)	4 interrupt input signals are arranged into a single output of interrupt signal. An interrupt is generated at the falling edge (HIGH-to-LOW transition) or rising edge (LOW-to-HIGH transition). (setting can be done by software)
	Output type	Semiconductor relay output
	Output isolation	Semiconductor relay isolation
	Output voltage resistance	1000V
	The number of output signal channels	4 *usable as digital input or digital output
	Maximum output voltage/current	13.2V/100mA
	Response time	Within 2msec
	ON resistance	8 Ω or less (at 25 $^{\circ}$ C)
	OFF leakage current	4 μ A or less (at 25 $^{\circ}$ C)
	Surge protection element	Interactive TVS Diode

Item		CPS-PCS341EC-DS1-1201
		Stand off voltage : $\pm$ 30V, Peak pulse power : 400W (1ms)
	LED	DIO0 - DIO3 (Green)
	Connector	2 pieces 3.81mm pitch 6-pin Terminal (N.C., DIO3, DIO2, DIO1, DIO0, MCOM)
	Applicable wire	AWG28 - 16
Stack Bus	The maximum number of stack buses	16 *2
LED		Power (Green)/Status 1 (Green)/Status 2 (Red) /Error (Red)
Switch		Power SW, Rotary SW, DIP SW
RTC		RTC built-in (battery within)
Power supply *3	Rated input voltage	24VDC
	Input voltage range	21.6 - 26.4VDC
	Power consumption	Controller alone: 24V 0.3A (Max) With module(s): 24V 3.6A (Max)
	Connector	2-piece 3.5mm pitch 3-pin terminal (V+, V-, FG)
	Applicable wire	AWG20 - 16
	Surge protection element	Interactive TVS diode Stand off voltage : $\pm$ 30V, Peak pulse power : 400W(1msec)
	Physical dimensions (mm)	44.7(W) $\times$ 94.7(D) $\times$ 124.8(H) (No projection included)
Weight		300g
Installation method		Quick mounting on the 35mm DIN rail
OS		Linux kernel 3.2

*1 Data 0 corresponds to High level and Data 1 corresponds to Low level.

*2 The total current consumption of the devices should be less than 3.3A

*3 Use power cable within 3meters.

Installation Environment Requirements

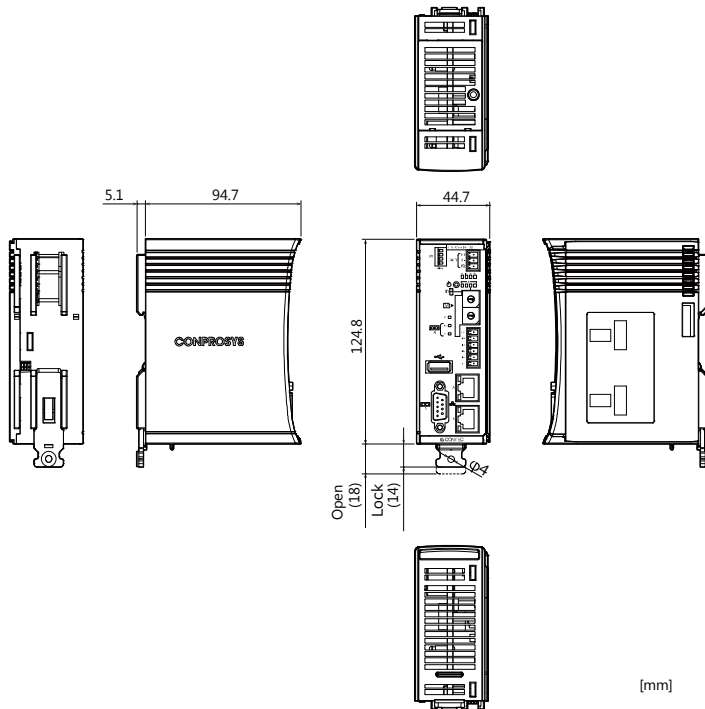
Item		CPS-PCS341EC-DS1-1201
Operating ambient temperature		-20 - +60 $^{\circ}$ C *4
Operating ambient humidity		10 - 90%RH (No condensation)
Non-operating ambient temperature		-20 - +60 $^{\circ}$ C
Non-operating ambient humidity		10 - 90%RH (No condensation)
Floating dust particles		Not to be excessive
Corrosive gases		None
Line-noise resistance	Line noise	AC Line/ $\pm$ 2kV *5 Signal Line / $\pm$ 1kV(IEC61000-4-4 Level 3, EN61000-4-4 Level 3)
	Static electricity resistance	Touch / $\pm$ 4kV(IEC61000-4-2 Level 2, EN61000-4-2 Level 2) Air / $\pm$ 8kV(IEC61000-4-2 Level 3, EN61000-4-2 Level 3)
Vibration resistance	Sweep resistance	10 - 57Hz *6 /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)
Grounding		Class D grounding (previous class 3 grounding), SG-FG/ non-conduction
Standard		VCCI Class A, FCC Class A, CE Marking (EMC Directive Class A, RoHS Directive), UL

*4 If you use the USB with bus power, operate the product at between -20 and +55 $^{\circ}$ C.

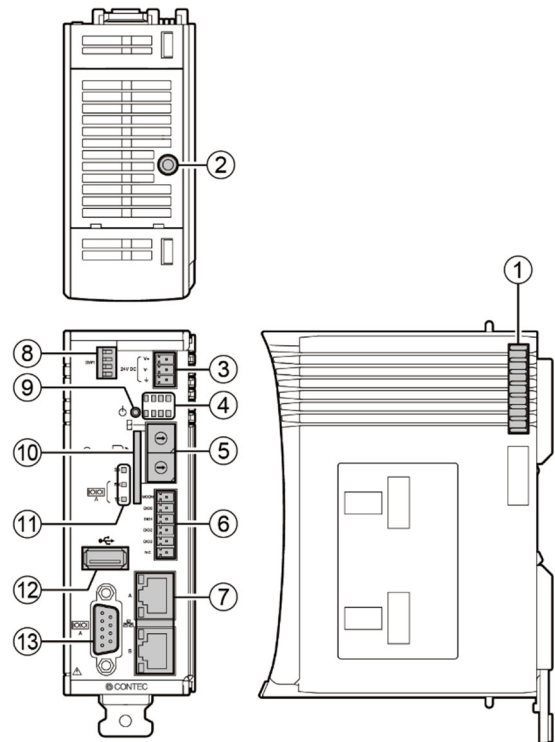
*5 When you use the optional power product.

*6 When you use an optional power product: 10 - 55Hz (See the manual of optional power product for details)

Physical Dimensions



Component Name



List of Option

DIN rail fitting power supply

- CPS-PWD-90AW24-01 DIN rail fitting power supply 90[w]
(Input: 100 - 240VAC, output: 24VDC 3.8 A)
- CPS-PWD-30AW24-01 DIN rail fitting power supply 30[w]
(Input: 100 - 240VAC, output: 24VDC 1.3 A)

SD Card

- SD-2GB-B SD Card 2GB
- SD-4GB-A SD Card 4GB

Configurable Type Module

- CPS-DIO-0808L with digital input/output (no built-in power supply)
- CPS-DIO-0808BL with digital input/output (built-in power supply)
- CPS-DIO-0808RL with digital input/output (current source)
- CPS-DI-16L with digital input (16ch, current sink)
- CPS-DI-16RL with digital input (16ch, current source)
- CPS-DO-16L with digital output (16ch, current sink)
- CPS-DO-16RL with digital output (16ch, current source)
- CPS-COM-1PC with RS-232C (contains 1port)
- CPS-COM-2PC with RS-232C (contains 2 ports)
- CPS-COM-1PD with RS-422A/485 (1channel)
- CPS-COM-2PD with RS-422A/485 (2 channels)
- CPS-AI-1608LI with analog input (voltage input 8 channels)
- CPS-AI-1608LI with analog input (current input 8 channels)
- CPS-AO-1804LI with analog output (current output 4 channels)
- CPS-AO-1804LI with analog output (voltage output 4 channels)
- CPS-CNT-32021 with counter input
- CPS-RRY-4PCC with Relay output
- CPS-SSI-4P with temperature sensor input

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

No.	Name	Function
1	Stack Bus	Used for power supply and communication with the configurable type module.
2	Maintenance Connector	Do not use it.
3	Power Connector	Use the 3-pin connector, included in the package.
4	LED Indicator 1	This indicates status of the product.
5	Rotary Switch	Used for user setup.
6	Digital I/O Connector	This is a connector for digital I/O. (Use the 6-pin connector, included in the package)
7	LAN Port	This is a connector for LAN.
8	DIP Switch	This is used for user setup.
9	Power Switch	This is used for controlling of the power supply.
10	SD Card Slot	This is for data storage.
11	LED Indicator 2	This indicates the status of the product.
12	USB Port	This is a USB port of type-A.
13	RS-232C Serial Port	This is a RS-232C serial ports (male).