

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 μsec approx. |
| | Scan Time | 74 μsec (at 20000 Steps) |
| EtherCAT Performance | Input Process Time (LD) | 144 nsec |
| | Output Process Time (ST) | 138 nsec |
| | Scan Time | 166 μsec (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) |
| | Digital input and Output | Input type |
| | Input isolation | Opto-coupler isolation |
| | Input voltage resistance | 1000V |
| | The number of input signal channels | 4 |
| | Open-circuit impedance | 10kΩ or more |
| | Short-circuit impedance | 500Ω or less |
| | Response time (digital input) | Within 200μsec |
| | 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 | 8Ω or less (at 25 °C) |
| | OFF leakage current | 4μA or less (at 25 °C) |
| | Surge protection element | Interactive TVS Diode |

| Item | | CPS-PCS341EC-DS1-1201 |
|--------------------------|---|---|
| | | Stand off voltage : ±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 V+ - V-, V- - FG | Interactive TVS diode Stand off voltage : ±30V, Peak pulse power : 400W(1msec) |
| Physical dimensions (mm) | | 44.7(W)×94.7(D)×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

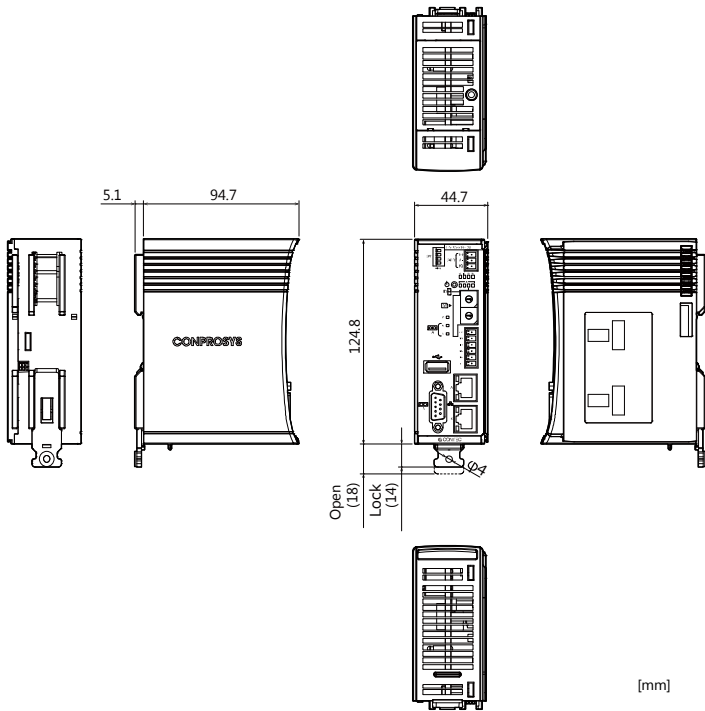
| Item | | CPS-PCS341EC-DS1-1201 |
|-----------------------------------|-------------------------------|---|
| Operating ambient temperature | | -20 - +60°C *4 |
| Operating ambient humidity | | 10 - 90%RH (No condensation) |
| Non-operating ambient temperature | | -20 - +60°C |
| Non-operating ambient humidity | | 10 - 90%RH (No condensation) |
| Floating dust particles | | Not to be excessive |
| Corrosive gases | | None |
| Line-noise resistance | Line noise | AC Line/±2kV *5 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 *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°C.

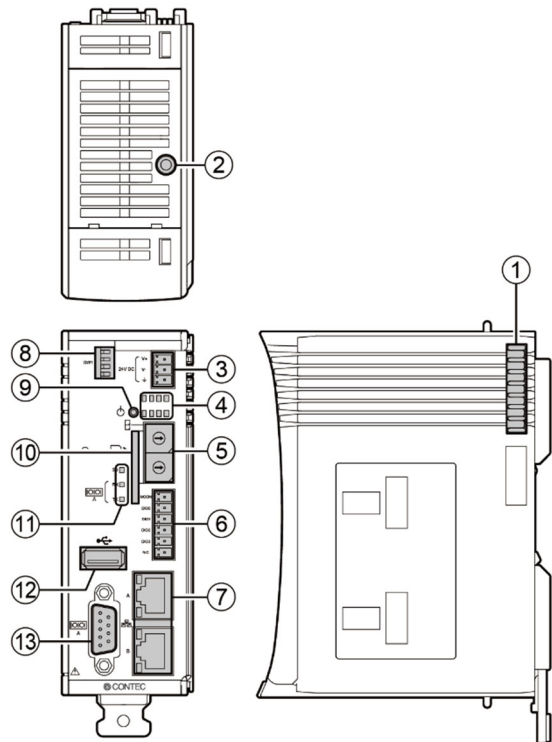
*5 When you use the optional power product.

*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). |