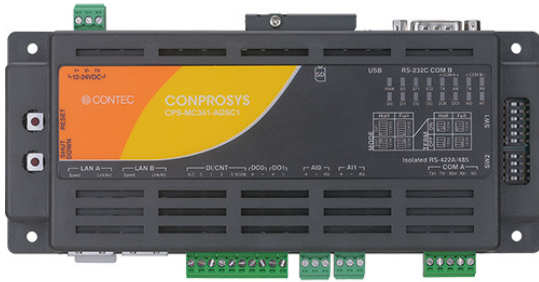CONPROSYS Series
Multi-Function Module
CPS-MC341-ADSC1-111 (RS422/485 1ch type)
CPS-MC341-ADSC2-111 (RS422/485 2ch type)

This product is a M2M controller with isolated RS-422A/485, isolated digital input/output, isolated counter input, inter-channel isolated analog input, RS-232C, and LAN interface. It is equipped with the ARM®Cortex®-A8 processor (600MHz) and the 512MB DDR3-SDRAM system memory. On-board NOR-FLASH is utilized for a booting device.

With the CONPROSYS series, data can be collected from various types of facilities and managed them all centrally.

All the processes from development to operation can be performed on a web browser. The functions such as Web monitoring of I/O information, alarm processing by I/O information, task divergence enable you to create a Cloud System at low cost and in a short time..

*The photograph is a CPS-MC341-ADSC1-111.

* 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 December, 2022.

Hardware features

Compact design
Compact design, 188.0(W) x 78.0(D) x 30.5(H), features flexibility in installation.

Adaptable to a temperature range between -20 and +60℃
The product is capable of operating in the temperature between -20 and + 60℃. It can be installed in the various environments.

Ethernet Hub function within
Use the product as Ethernet Hub so that you can connect devices in the daisy-chain.

A powerful running platform without fan
The product contains the ARM® Cortex®-A8 processor (600MHz) and the DDR3 512MB system memory.

Decrease malfunctions or damages by bus isolation and surge protection (RS-422A/485, digital/counter input)
Electrical isolation between the RS-422A/485 and the CPU, as well as between the digital/counter input and CPU can block electrical noise flow. Moreover, the surge protection elements are used for signal line and on top of that, the RS-422A/485 is protected with the communication IC that can withstand ±70 V input voltage, which reduces malfunctions or damages by surge.

Decrease malfunctions or damages by bus isolation, inter-channel isolation and surge protection (Analog Input)
Electric isolation is provided between analog input and channel as well as between analog input and CPU. This allows signals with different ground levels to be input to the channels. In addition, the surge protection elements are used for signal lines, which reduces malfunctions or damages by surge.

Capable of adapting a wide-range power (12- 24VDC)
The product is capable of dealing with a wide range of power in the differing environments. Power connector also has a FG terminal.

Easy installation with screws or on DIN rail
This product can be installed on the wall with screws or on DIN rail with simple mounting.

Installation with two pieces of terminal support
The terminal connector can be removed without a screwdriver. Even when a malfunction occurs, this product can be replaced in a short length of time.

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.

No electrolytic capacitor or primary battery
Neither an electrolytic capacitor, which has a limited life, nor a primary battery is used. The Contec is creating the product with a longer life.

With no use of electrolytic capacitor and primary battery
Neither an electrolytic capacitor, which has a limited life, nor a primary battery is used. We are creating the product with a longer life.

Software features

Measurement and upload
CPS-MC341-ADSC1-111 measures data with an external sensor and uploads them to the Cloud server.

Web monitoring
The product contains a Web server. Even with the PC located remotely, I/O information can be monitored and updated through a Web browser. On the monitoring screen, the standard GUI parts (graphic, slider, button, etc.) can be freely arranged.
All operations including monitoring layout, making relations with I/O information, can be achieved through a Web browser.

Web task script
By combining icons such as arithmetic operations, conditional branching, data outputting, you can set up the executions or its processes like drawing them in the flowchart. All operations can be completed through a Web browser.

Message communication function
With the RS-232C, the RS-422A/RS-485 or the Ethernet device (TCP/UDP), up to 10 links can be set to send or receive messages. Message communication can be accomplished from Web task script.

Specifications

Function Specifications

Item		CPS-MC341-ADSC1-111	CPS-MC341-ADSC2-111
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)	
RS-422A/485	Transmission scheme	Asynchronous serial transmission (Full Duplex/Half Duplex)	
	The number of channels	1	2
	Isolation/Resistance	Bus Isolation/500VDC(when surge protected parts between SG-FG are unimplemented)	
	Baud Rate	300bps - 115.2kbps	
	Data length	5, 6, 7, 8bit　1, 1.5, 2stopbit	
	Parity check	Even, Odd, Non-parity	
	Connector	2-piece 3.5mm pitch 5-pin terminal (TX+, TX-, RX+, RX-, SG)	
	Applicable wire	AWG28 - 16	
	LED	Transmission (Yellow), Reception (Yellow)	
	Switch	DIP Switch (Full Duplex/Half Duplex, Terminator (ON/OFF))	
	Surge protection element each signal - SG	Interactive TVS diode Stand off voltage : ±13V, Peak pulse power : 400W(1msec)	
	Surge protection element SG - FG	Gas discharge tube arrester Discharge voltage : ±300V, impulse current tolerance : 2000A(8/20μsec, 10 times)	
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 (Yellow)	
RS-232C	Baud Rate	300bps - 115.2kbps	
	Isolation/Resistance	Non-isolated	
	Data length	5, 6, 7, 8bit　1, 1.5, 2stopbit	
	Parity check	Even, Odd, Non-parity	
	The number of channels	1	
	Connector	9-pin D-SUB connector (Male)	
	LED	Transmission (Yellow), Reception (Yellow)	
Digital input/ Counter input	Input type	Opto-coupler Isolation Input (Compatible with current sink output and current source output) (negative logic) *1	
	Isolation/Resistance	Bus Isolation /500VDC, Opto-coupler Isolation/1000V	
	Built-in power supply	12VDC	
	Input resistance	5.6kΩ	
	Input ON current	1.6mA or more	
	Input OFF current	0.16mA or less	
	Response time	Within 200μsec *2	
	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)	
	The number of channels	4 (It is possible to allocate 2channels to counter input)	
	Count type	Up count	
	Max. count	FFFFFFH (binary data)	
	Counter response speed	1kHz (Max.), Duty: 50% (Max.)	
	Interrupt (Counter input)	One interrupt caused upon channel count match	
	Timer	None	
	LED	DI0 - DI3 (Yellow)	
	Surge protection element each signal to B_COM	Interactive TVS diode Stand off voltage : ±30V, Peak pulse power : 400W(1msec)	
Digital output	Output type	Semiconductor relay output	
	Isolation/Resistance	Semiconductor relay isolation/1000V	
	Maximum output voltage / current	26.4VAC/VDC/100mA	
	Response time	Within 2msec	
	ON resistance	8Ω or less (at 25℃)	

Item		CPS-MC341-ADSC1-111	CPS-MC341-ADSC2-111
	OFF leakage current	4μA or less (at 25℃)	
	The number of channels	2	
	LED	DO0 - DO1 (Yellow)	
	Surge protection element + to -	Interactive TVS diode Stand off voltage : ±30V, Peak pulse power : 400W(1msec)	
Digital input / Counter input / Digital output	Connector	2-piece 3.5mm pitch 10-pin terminal (DI_ACOM, DI0, DI1, DI2, DI3, DI_BCOM, DO0+, DO0-, DO1+, DO1-)	
	Applicable wire	AWG28 - 16	
Analog input	Input type	Current Input	
	Input range	0 - 20mA	
	Maximum input rating	30mA	
	Input impedance	250Ω	
	The number of channels	Differential Input 2ch	
	Channel switching rate	3msec/ch (Max.) *3	
	Conversion rate	The sampling interval differs by the software programmed by the user.	
	Data buffer	None	
	Resolution	12bit	
	Non-Linearity error *4	±10LSB	
	Isolation/Resistance	Bus Isolation /500VDC, Inter Channel Isolation /200V	
	Connector	2-piece 3.5mm pitch 3-pin terminal (AI+, AI-, AG)	
	Applicable wire	AWG28 - 16	
	LED	AI0 - AI1 (Yellow)	
LED		Power (Green)/Status 1 (Green)/Status 2 (Red)	
Switch		Reset SW, Shut Down SW, Full Duplex/Half Duplex Switching SW	
RTC		RTC built-in (battery not equipped)	
Power supply *5	Rated input voltage	12 - 24VDC	
	Input voltage range	10.8 - 30VDC	
	Power consumption	12V 0.8A (Max.), 24V 0.4A (Max.)	
	Connector	2-piece 3.5mm pitch 3-pin terminal (V+, V-, FG)	
	Applicable wire	AWG24 - 16	
	Surge protection element V+ - V-, V- - FG	Interactive TVS diode Stand off voltage : ±30V, Peak pulse power : 400W(1msec)	
Physical dimensions (mm)		188.0(W)×78.0(D)×30.5(H) (No projection included)	
Weight		250g	
Installation method		Quick mounting on the 35mm DIN rail, Mounting on the wall using the screws *6	
OS		Linux kernel 3.2	

*1 Data 0 corresponds to High level and Data 1 corresponds to Low level.
*2 Response time of Opto-coupler
*3 Switching time of Inter Channel
*4 The non-linearity error means an error of approximately 0.07% occurs over the maximum range
　 at -20 ℃ and +60 ℃ ambient temperature.
*5 Use power cable within 3meters.
*6 Commercial screws are required (fit into φ3.5 hole).

Installation Environment Requirements

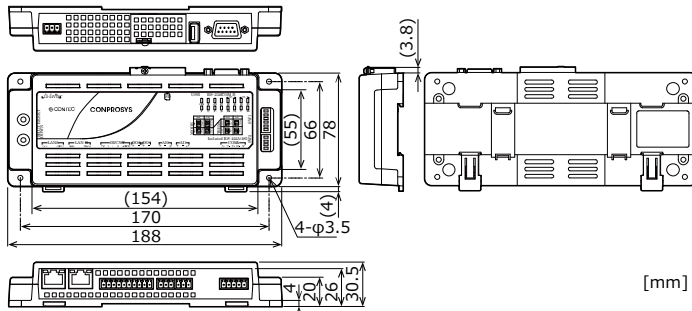| Item		CPS-MC341-ADSC1-111, CPS-MG341-ADSC1-111
Operating ambient temperature		-20 - +60℃ *7
Operating ambient humidity		10 - 90%RH (No condensation)
Non-operating ambient temperature		-20 - +60℃
Non-operating ambient humidity		10 - 90%RH (No condensation)
Floating dust particles		Not to be excessive
Corrosive gases		None
Line-noise resistance	Line noise	AC Line/±2kV *8 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 *9 /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), UKCA, UL

*7 If you use the USB with bus power, operate the product at between -20 and +55℃.
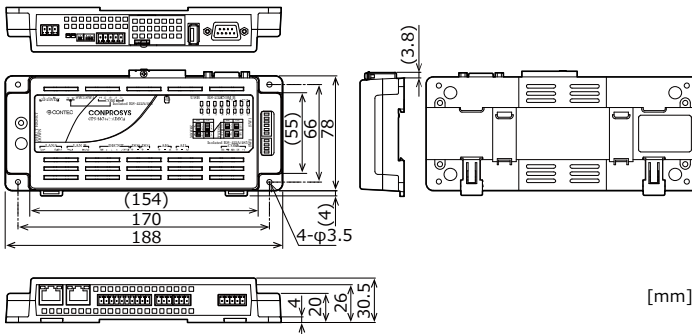
*8 When you use the CPS-PWD15AW12-01 (optional product).
*9 When you use an optional power product: 10-55Hz (See the manual of optional power product for details)

Physical Dimensions

CPS-MC341-ADSC1-111

[mm]

CPS-MC341-ADSC2-111

[mm]

Included Items

Product (One of the followings) ...1
  [CPS-MC341-ADSC1-111, CPS-MC341-ADSC2-111]
Please read the following ... 1
3-pin Connector (Power/Analog) ...3
5-pin Connector (RS-422A/485)
  CPS-MC341-ADSC1-111 ...1, CPS-MC341-ADSC2-111 ...2
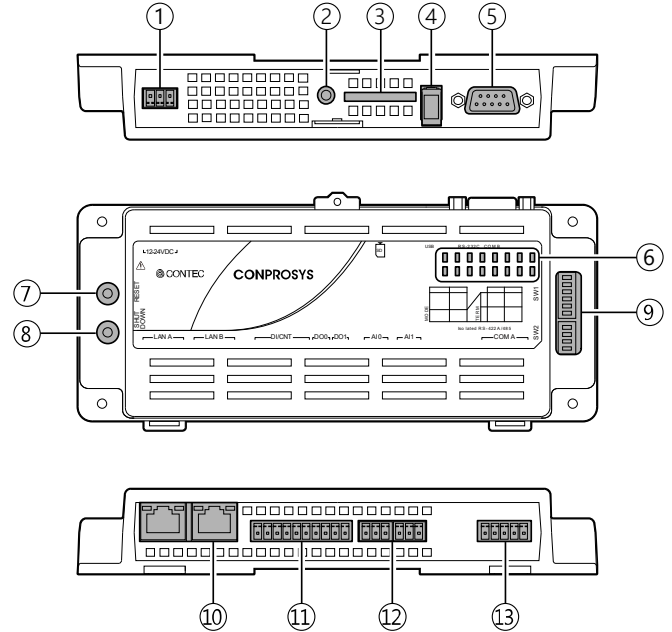10-pin Connector (Digital) ...1

Optional Products

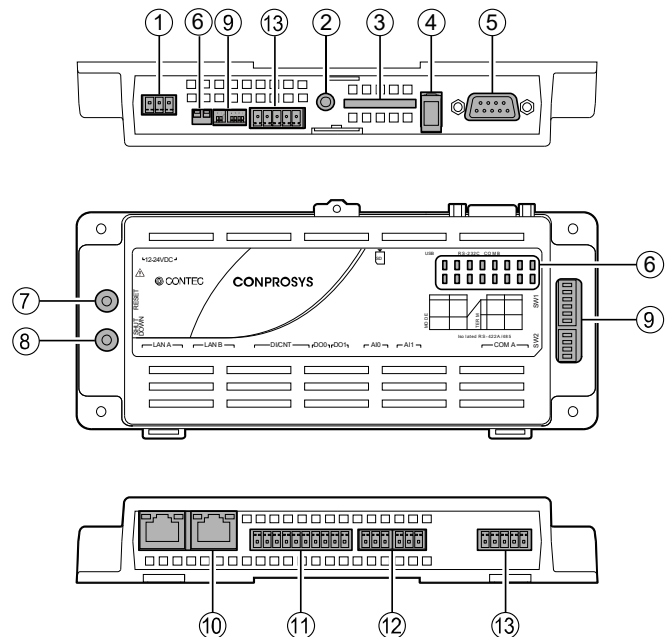| Product Name	Model type	Description
DIN rail mounting power supply	CPS-PWD-15AW12-01	DIN rail mounting power supply 15[w] (Input: 100 - 240VAC, output: 12VDC 13 A)
SD card	SD-4GB-A	SD card 4GB
Magnet	CPS-MAG01-4	Magnets for installation (Four Piece Set)

*   Information about the option products, see the Contec's website.

Component Name

CPS-MC341-ADSC1-111

CPS-MC341-ADSC2-111

No.	Name	Function
1	Power Connector	This is a connector for power. Use the 3-pin connector included in the package.
2	Debug Connector	Do not use this.
3	SD Card Slot	This a slot for inserting SD card to store data.
4	USB Port	This is a TYPE-A USB port.
5	RS-232C Serial Port	This is a RS-232C serial port. (male)
6	LED Indicator	This indicates status of the product.
7	Reset Switch	This resets the product.
8	Shutdown Switch	This shuts down the product.
9	DIP Switch	This is used for system setup and RS-422A/485 setup.
10	LAN Port	This is a connector for LAN.
11	Digital Input/Counter Input/Digital Output Connector	This is a connector for digital input/counter input/digital output. (Use the 10-pin connector included in the package)
12	Analog Input Connector	This is a connector for analog input. (Use the 3-pin connector included in the package)
13	RS-422A/485 Connector	This is a connector for RS-422A/485 communication. (Use the 5-pin connector included in the package)