

CONPROSYS Series M2M Gateway for PLC Stack CPU Module CPS-MGS341-DS1-131



- * 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 April 2024.

Features

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.

This product is a M2M controller with isolated digital I/O (4 inputs/outputs), RS-232C, LAN interface, and Ethernet Hub. As you desire, add the configurable type modules of our CONPROSYS series. 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.

In addition, CPS-MGS341-DS1-131 contain OPC UA server function within. It can communicate directly with HMI and SCADA software that support OPC UA clients from various makers. CPS-MGS341-DS1-131 is the data collector [M2M Gateway for PLC] controller that supports respective PLCs as well as various Modbus devices. In the facilities with PLC controlling, data can be collected by M2M Gateway for PLC controller, and the facilities without PLC controlling, data can be collected by M2M controller. "M2M Gateway for PLC" can connect up to 10 Ethernet/calculating links with differing makers' PLCs simultaneously. 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.

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.

No electrolytic capacitor battery

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

Software Features

Together with OPC UA Server

OPC UA (Unified Architecture) is an advanced model of OPC specifications, which presents refined capability of transmitting and receiving semantic description data. The product can communicate directly with HMI and SCADA software that support OPC UA clients from various makers.

Promoting a multi-vendor system supporting a varied lineup of PLCs and Modbus devices

The product connects and supports every PLC and each Modbus device simultaneously. *Visit our website regarding the details of supportive information.

Connect up to 10 links and collect data from 256 group registers

Up to 10 Ethernet/calculating links can be connected. Data collection from 128 PLCs and 256 group registers can be carried out. Up to 1000 data mapping for Modbus is possible.

Measurement and upload

CPS-MGS341-DS1-131 measures data with an external sensor and uploads them to the Cloud server.

Web monitoring

The product contains a Web server (Java applet). 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

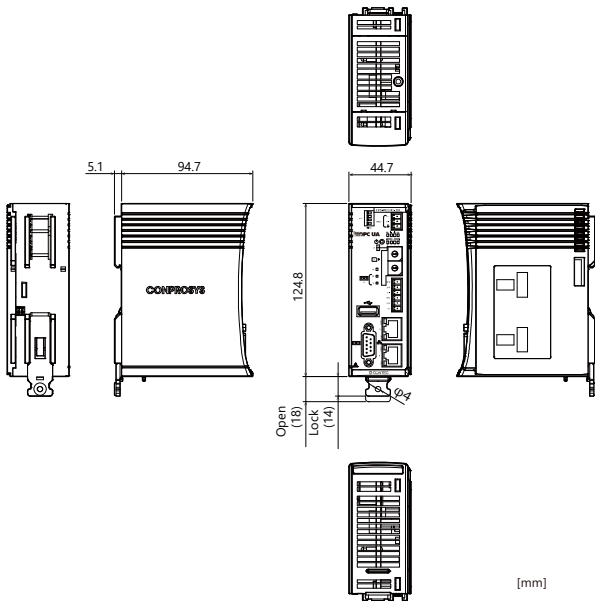
With the RS-232C or the Ethernet device (TCP/UDP), up to 10 links can be set to send or receive messages.

Message communication can be accomplished from Web task script.

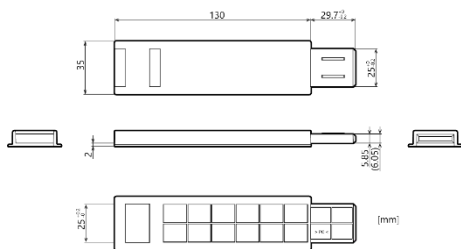
Support a communication protocol MTConnect for machine tools

MTConnect is a communication protocol for machine tools and standardized by MTConnect Institution. CONPROSYS has MTConnect Adapter and Agent built-in and can be operated with client software that supports MTConnect.

Physical Dimensions



Included DIN Rail



Packing List

- Product [CPS-MGS341-DS1-131] ...1
- End Cover ... 1
- 3-pin Connector ...1
- 6-pin Connector ...1
- DIN Rail ...1
- Please read the following...1

Specification

Function specification

Item	Description	
CPU	ARM Cortex-A8 600MHz	
Memory	On Board 512MB DDR3 SDRAM	
ROM	On-Board 64MB NOR Flash for OS	
LAN	Transmission standard	10BASE-T/100BASE-TX
	The number of channels	2ch *1
	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	Opto-coupler isolation input (Compatible with current sink output) (negative logic) *2
	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 Stand off voltage : ±30V, Peak pulse power : 400W (1ms)
	LED	DIO-DI3 (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 *3
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 *4	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)

Item	Description
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) x 94.7(D) x 124.8(H) (No projection included)
Weight	300g
Installation method	Quick mounting on the 35mm DIN rail
OS	Linux kernel 3.2

- *1 The LAN ports of the CPS-MGS341-DS1-131 are independent, which makes it possible to split the network segment.
- *2 Data 0 corresponds to High level and Data 1 corresponds to Low level.
- *3 The total current consumption of the devices should be less than 3.3A
- *4 Use power cable within 3meters.

Installation Environment Requirements

Item	Description
Operating ambient temperature	-20 - +60°C *5
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 *6 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 *7 /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, UKCA

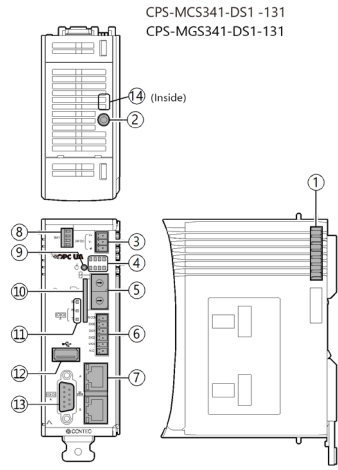
- *5 If you use the USB with bus power, operate the product at between -20 and +55°C.
- *6 When you use an optional power product
- *7 When you use an optional power product: 10-55Hz (See the manual of optional power product for details)

Optional Products

Product Name	Model type	Description
DIN rail fitting power supply	CPS-PWD-90AW24-01	Fitting power supply 90W (Input: 100-240VDC, Output: 24VDC 3.8 A)
	CPS-PWD-30AW24-01	Fitting power supply 30W (Input: 100-240VDC, Output: 24VDC 1.3 A)
FANUC CNC connection cable	CPS-CAB-S01-1	CNC connection cable 1m
FANUC CNC connection cable	CPS-CAB-S01-3	CNC connection cable 3m
FANUC CNC connection cable	CPS-CAB-S01-5	CNC connection cable 5m
MITSUBISHI CNC connection cable	CPS-CAB-S02-1	CNC connection cable 1m
SD Card	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 (current sink)
	CPS-DI-16RL	with digital input (current source)
	CPS-DO-16L	with digital output (current sink)
	CPS-DO-16RL	with digital output (current source)
	CPS-AI-1608LI	with analog input (voltage input 8 channels)
	CPS-AI-1608ALI	with analog input (current input 8 channels)
	CPS-AO-1604LI	with analog output (current output 4 channels)
	CPS-AO-1604VLI	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
	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-COM-1QL	with LoRa communication	
CPS-MM-LC	with Insulation Deterioration Monitoring	

* Visit the Contec website for the latest optional products.

Component Name



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).
14	DIP Switch 2	This is used to run SDK