CONPROSYS Series
Analog Input Module
CPS-AI-1608LI (±10V Input)
CPS-AI-1608ALI (0-20mA Input)

This product is a configurable module to provide analog input interface and operates along with the configurable type CPU module controller of CONPROSYS series. It has 8channels of analog input per module and provides high accuracy.

* 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.

*The photograph is a CPS-AI-1608LI.
* Specifications, color and design of the products are subject to change without notice.

Features

Bus-isolated analog input module providing highly accurate measurement
This product contains bus-isolated analog input (16bit, 8ch) that measures with a high degree of accuracy. It supports differential input and is capable of precise measurement of voltage with potential differences.

We are offering the series of two product types to meet the needs of customers.
CPS-AI-1608LI features the function of the analog voltage input (16bit, 8ch).
CPS-AI-1608ALI features the function of the analog current input (16bit, 8ch).

Compact design
Compact design, 25.2 (W)×94.7(D)×124.8 (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.

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 not only mounted on DIN rail, but also is removable along the side rails, replacing is simple and 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.

Included Items

Product (one of the followings) ...1
  [CPS-AI-1608LI, CPS-AI-1608ALI]
Please read the following ... 1
10-pin Connector ...2

Specifications

Function specifications < CPS-AI-1608LI >

Item	CPS-AI-1608LI
Input type	Bus-isolated voltage input
Input range	±10V
Maximum input rating	±11V
Input impedance	10kΩ or more
Input channel	Differential Input 8 channels
Resolution	16bit
Non-Linearity error *1	±20LSB (at 25℃)
Channel switching rate *2	10μsec/ch
Conversion rate	10μsec/ch
Isolation	Bus Isolation
Voltage resistance	500VDC
Connector	2 pieces 3.81mm pitch 10-pin terminal
Applicable wire	AWG28 - 16
LED	Status (Green, Red)
Supply voltage	24VDC ±10%
Current consumption	0.1A (Max)
Physical dimensions (mm)	25.2(W)×94.7(D)×124.8(H) (No projection included)
Weight	200g
Installation method	Quick mounting on the 35mm DIN rail

*1 The non-linearity error means an error of approximately 0.18% occurs over the maximum range at -20℃ and 60℃ ambient temperature.
*2 The fastest sampling clock (sampling interval) that can be set is "10μsec/ch × the number of channels to be obtained".

Function specifications < CPS-AI-1608ALI >

Item	CPS-AI-1608ALI
Input type	Bus-isolated current input
Input range	0 - 20mA *3
Maximum input rating	30mA
Input impedance	250Ω (TYP.)
Input channel	Differential Input 8 channels
Resolution	16bit
Non-Linearity error *4＊5	±20LSB (at 25℃)
Channel switching rate *6	20μsec/ch
Conversion rate	20μsec/ch
Isolation	Bus Isolation
Voltage resistance	500VDC
Connector	2 pieces 3.81mm pitch 10-pin terminal
Applicable wire	AWG28 - 16
LED	Status (Green, Red)
Supply voltage	24VDC ±10%
Current consumption	0.1A (Max.)
Physical dimensions (mm)	25.2(W)×94.7(D)×124.8(H) (No projection included)
Weight	200g
Installation method	Quick mounting on the 35mm DIN rail

*3   With the analog ground as a benchmark, the voltage of terminal (+) each should stay between -0.5V and +7V, and the voltage of terminal (-) each should stay between -5.5V and +5.0V. (See connecting examples)
*4   The non-linearity error means an error of approximately 0.19% occurs over the maximum range at -20℃ and 60℃ ambient temperature or if analog terminal (-) is not an analog ground voltage.
*5   When the 1.5-meter or shorter cable is used.
*6   The fastest sampling clock (sampling interval) that can be set is "20μsec/ch × the number of channels to be obtained".
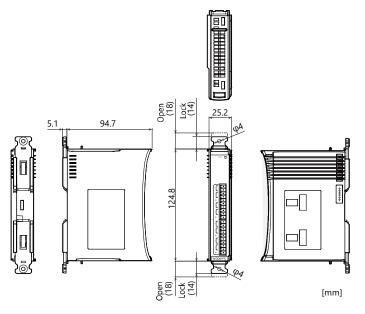
Caution

You can set the modules as you desire to the configurable controller up to 16 modules.
The total current consumption of the modules should be less than 3.3A.

Installation Environment Requirements

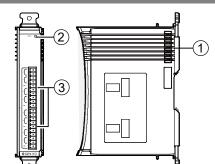| Item		CPS-AI-1608LI	CPS-AI-1608ALI
Operating ambient temperature		-20 - +60℃	
Operating ambient humidity		10 - 90%RH (No condensation)	
Non-operating ambient temperature		-20 - +60℃	
Non-operating ambient humidity		10 - 90%RH (No condensation)	
Floating dust particles		Not to be excessive	
Corrosive gases		None	
Line-noise resistance	Line noise	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)	
Standard		VCCI Class A, FCC Class A, CE Marking (EMC Directive Class A, RoHS Directive), UKCA, UL/c-UL	

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

Physical Dimensions

[mm]

Optional Products

Product Name	Model type	Description
Configurable Type Controller	CPS-MCS341-DS1-111	Configurable Type CPU module
	CPS-MCS341-DS1-131	Configurable Type CPU module + OPC UA server + MTConnect
	CPS-MCS341G5-DS1-130	Configurable Type CPU module +4G LTE WAN
	CPS-MCS341Q-DS1-131	Configurable Type CPU module +920MHz LAN
	CPS-ECS341-1-011	Ether CAT Slave Module
DIN rail mounting power supply	CPS-PWD-90AW24-01	DIN rail mounting power supply 90[w] (Input: 100 - 240VAC, output: 24VDC 3.8 A)
	CPS-PWD-30AW24-01	DIN rail mounting power supply 30[w] (Input: 100 - 240VAC, output: 24VDC 1.3 A)

Component Name

No.	Name	Function
1	Stack Bus	Used for power supply and communication with the configurable type module.
2	LED Indicator	This indicates status of the product.
3	Analog Input	This is a connector for analog input. (Use the 10-pin connector, included in the package)