



Leadshine

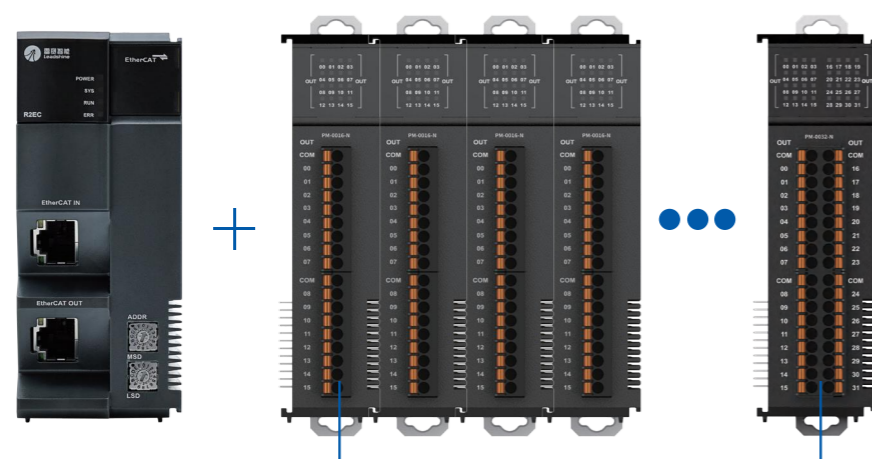
Stock Code: 002979



# R2 Series

EtherCAT I/O Module

## R2 SERIES GENERAL TYPE



As a high-speed real-time EtherNET, EtherCAT bus makes it possible to separate the master device and I/O. High-speed synchronization with the EtherCAT network increases efficiency and expands the connection to the sensing layer required for production lines and for most applications. It also provides significant savings in wiring and maintenance costs.

Leadshine R2 series I/O module supports standard network protocols and connecting to various mainstream masters.

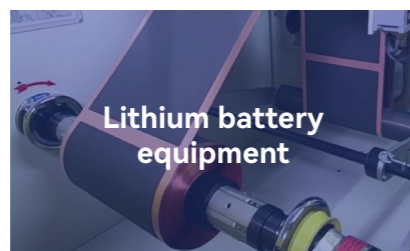
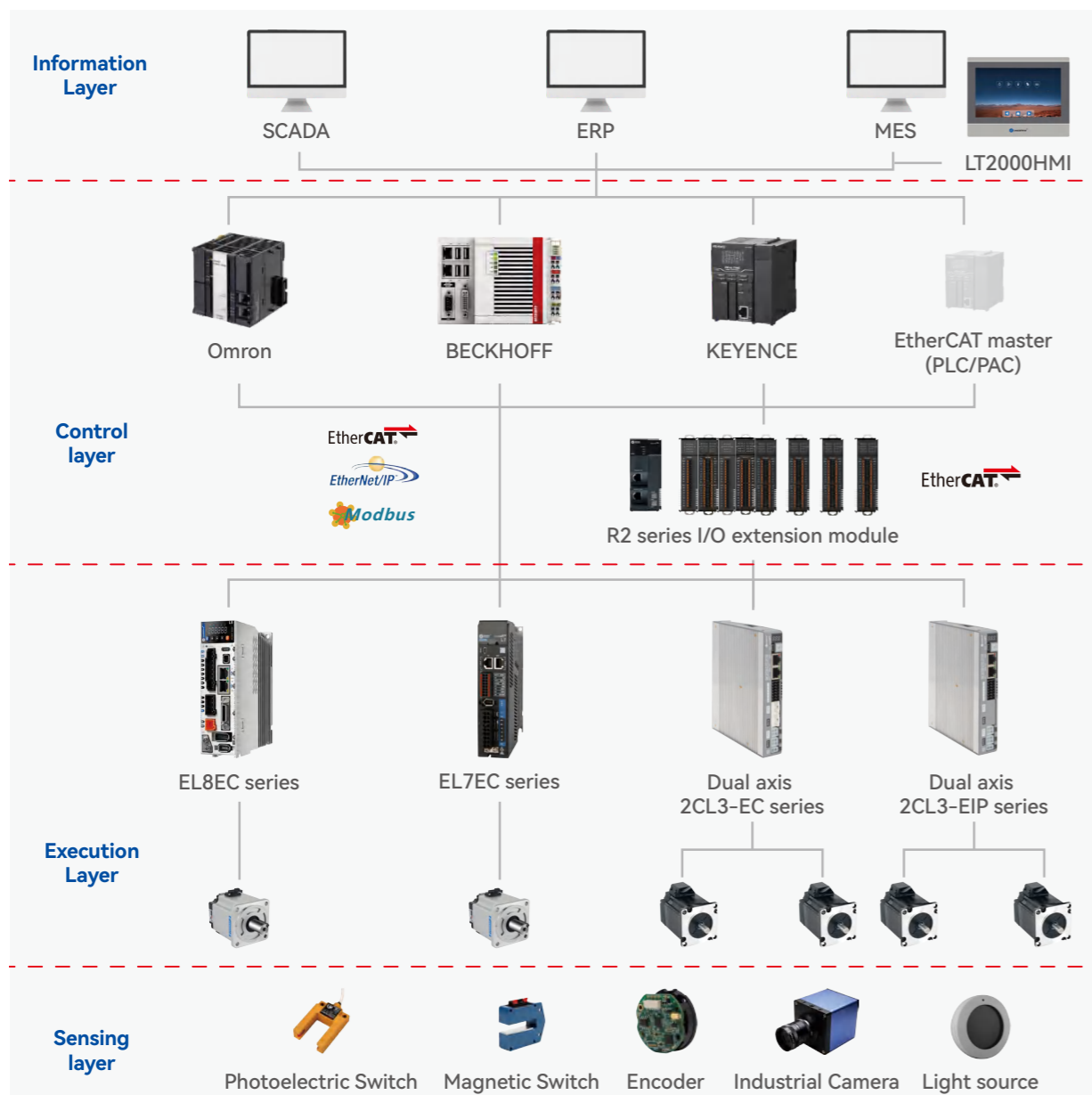
R2 series I/O module includes digital, analog, temperature, encoder, etc.

It can be configured according to the needs of the applications to meet the demands of customers.

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# Architecture Diagram of Motion Control System



Leadshine intelligent motion control products cover all scenarios of general automation applications, providing a complete set of comprehensive solutions based on information layer, control layer, execution layer, and sensing layer, and achieving widespread applications. We continuously provide stable, reliable, and high value-added motion control products and solutions for many OEM manufacturers, lithium batteries, photovoltaics, electronics, semiconductors, packaging, logistics, and other industries.

## General Purpose R2 Series I/O Module

### R2EC Coupler

- R2EC EtherCAT

### Digital Extension Module

- PM-1600, 16 digital inputs module PNP/NPN input
- PM-3200, 32 digital inputs module PNP/NPN input
- PM-3200-1, 32 digital inputs module PNP/NPN input, MIL terminal
- PM-3200-2, 32 digital inputs module PNP/NPN input, Fujitsu terminal
- PM-0016-N, 16 digital output module, NPN output
- PM-0016-R, 16 digital output module, Relay output
- PM-0032-N, 32 digital output module, NPN output
- PM-0032-N-1, 32 digital output module, NPN output, MIL terminal
- PM-0032-N-2, 32 digital output module, NPN output, Fujitsu terminal
- PM-1616-N, 32 digital I/O module, PNP/NPN input, NPN output
- PM-0016-P, 16 digital output module, PNP output



### Analog Extension module

- PM-A0400-IV, 4 analog input module.
- PM-A0004-IV, 4 analog output module.

### Motion Control Extension Module

- PM-E0200-S, 2 encoder input module, single-ended input.
- PM-E0200-D, 2 encoder input module differential input.

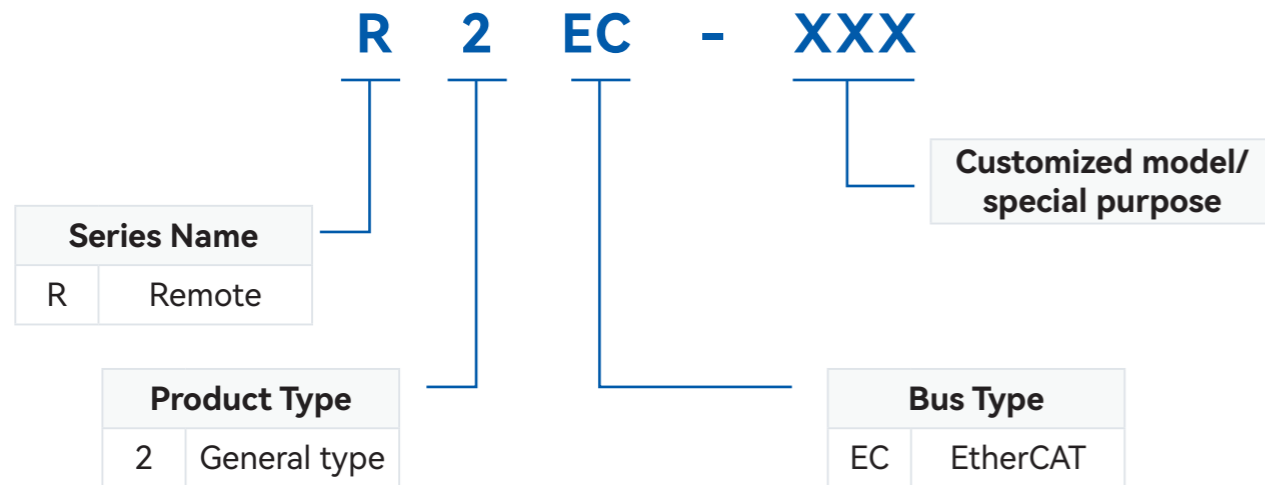
### Temperature Extension Module

- PM-T0400-TC, 4 temperature module, thermocouple type.
- PM-T0400-TR, 4 temperature module, thermal resistance type.

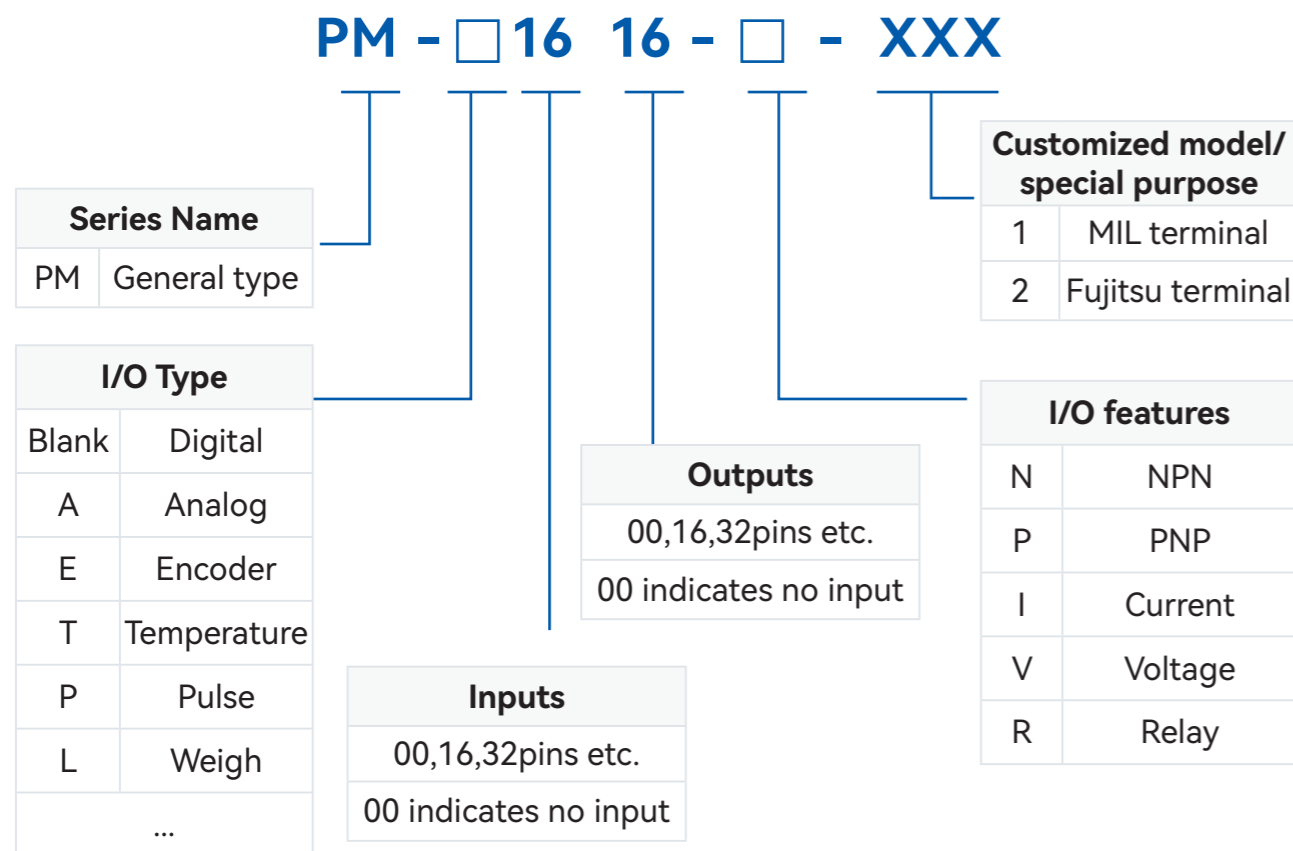


# R2 Series I/O Extension Module Naming Rules

## Coupler Naming Rules



## I/O Extension Module Naming Rules

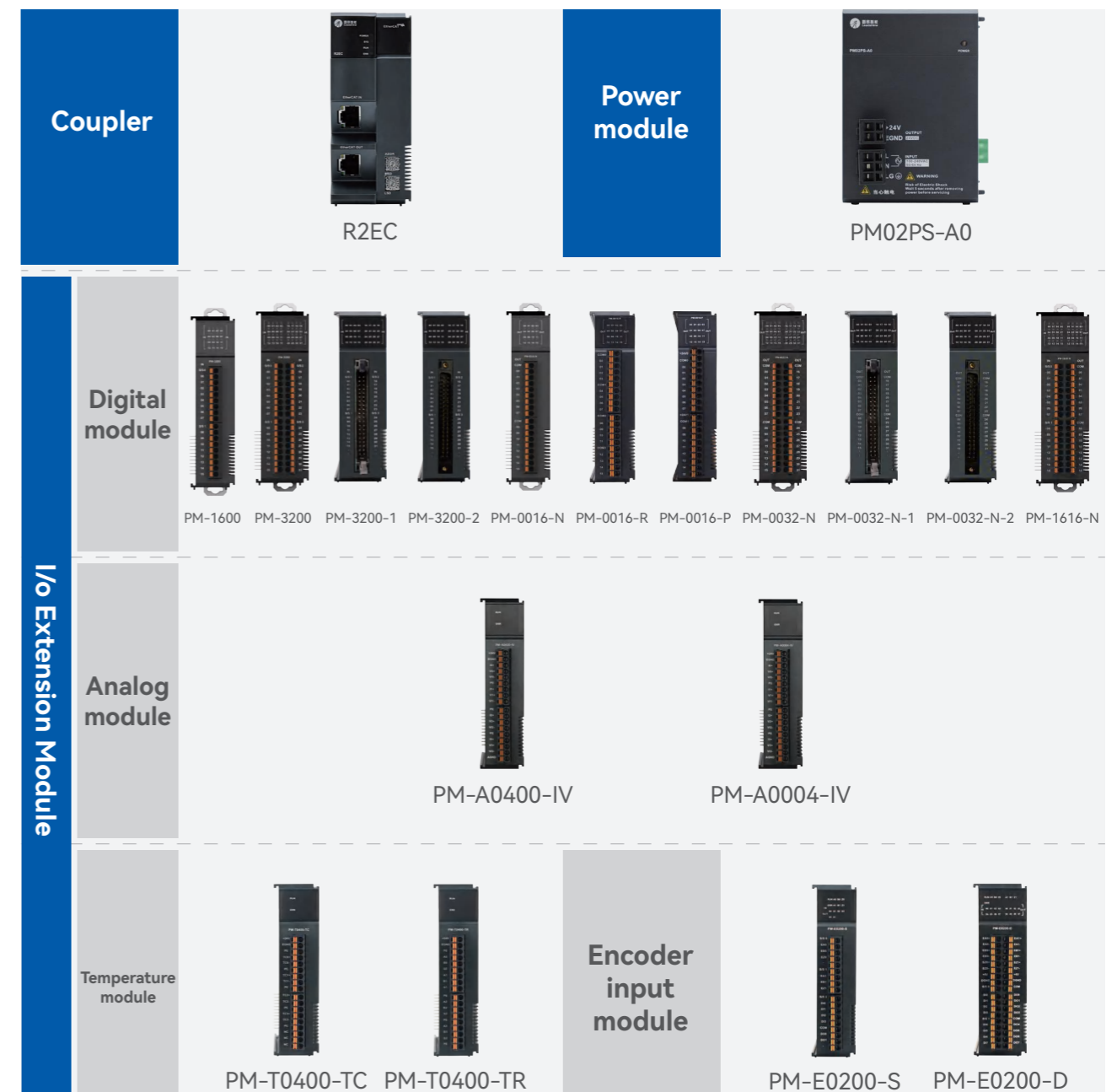


# R2 Series I/O Extension Module

- R2EC coupler
- Power module
- R2 series I/O extension module



## I/O Extension Module Product Composition



# R2 Series Coupler

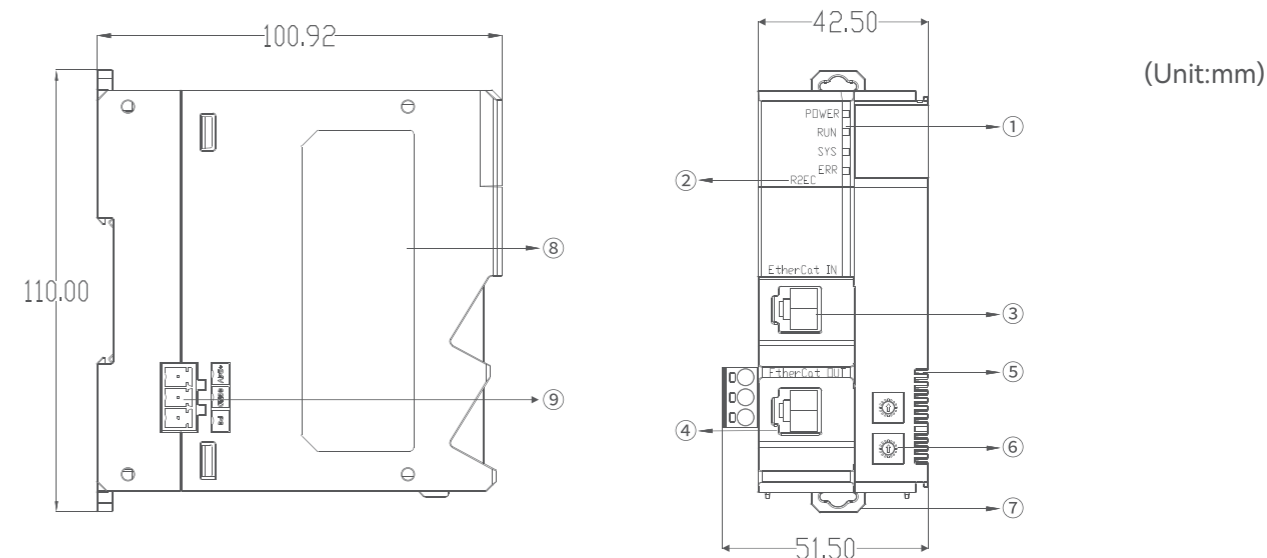
## Product Model and Technical Specification



**R2EC**

Specifications	Model	R2EC
Power	Input Power	DC24V(-15%~+20%),2A
	Output Power	DC24V(-15%~+20%),2A
Extension	Bus type	EtherCAT
	Bus port	RJ45 crystal head (inclined at 30 degrees), internal connector
Bus performance	Physical port	2*RJ45 with green and yellow status indicator light,one input one output ,rate :100M
	Bus type	EtherCAT
	Bus functions	Complies with EtherCAT bus standards, occupies one slave station, can expand up to 32 modules with one coupler, and supports SM/DC synchronization mode
Others	Installation	Standard DIN rail
	Dimension	L100.92mm*W42.5mm*H110mm
	Certification	CE

## Dimension and Parts



No.	Name	description
①	Panel indicator light	POWER:Power indicator light(green) SYS:System running indicator light(green)RUN:EtherCAT Bus indicator light(green)ERR:EtherCAT Bus alarm indicator light(red)
②	Module name	Adapter model
③	EtherCAT·IN	RJ45network indicator light: Green: Link,constant light indicates successful link Yellow: Active,flashing indicates data transmission Theflashing rule meets the standards defined by the EtherCATbus
④	EtherCAT·OUT	Green: Link,constant light indicates successful link Yellow: Active,flashing indicates data transmission Theflashing rule meets the standards defined by the EtherCATbus
⑤	Extension module communication port	To communication with other extension modules
⑥	Switch	Set the slave node number
⑦	Snap	To install on DIN rail
⑧	Label	Product information
⑨	Power port	Power port, DC24V, +24V、EGND、PE from top to bottom

## R2 series I/O extension module

- Digital input module
- Digital output module
- Digital I/O module
- Analog input module
- Analog output module



### I/O Extension Module Product Introduction

The R2 series plug-in module is an I/O extension module developed by Leadshine based on the EtherCAT Bus protocol, it has a strong versatility, not only with Leadshine motion control card, motion control PLC master stations also can be used with other mainstream main stations. At the same time, it is small

in size and highly integrated, single module supports 16 I/O or 32 I/O. The input and output interfaces of the I/O extension module adopt optoelectronic isolation and filtering technology, which can effectively isolate external circuit interference.

### I/O Extension Module Product Composition

Module series	Model	Description
Digital input module	PM-1600	16 digital inputs module PNP/NPN input
	PM-3200	32 digital inputs module PNP/NPN input
	PM-3200-1	32 digital inputs module PNP/NPN input, MIL terminal
	PM-3200-2	32 digital inputs module PNP/NPN input, Fujitsu terminal
Digital output module	PM-0016-N	16 digital outputs module, NPN output
	PM-0016-R	16 digital outputs module, Relay output
	PM-0016-P	16 digital outputs module, PNP output
	PM-0032-N	32 digital outputs module, NPN output
	PM-0032-N-1	32 digital outputs module, NPN output, MIL terminal
	PM-0032-N-2	32 digital outputs module, NPN output, Fujitsu terminal
Digital I/O module	PM-1616-N	32 digital I/O module, PNP/NPN input, NPN output
Analog input module	PM-A0400-IV	4 analog input module, current/voltage input
Analog output module	PM-A0004-IV	4 analog output module, current/voltage output
Temperature module	PM-T0400-TC	4 temperature module, thermocouple type
	PM-T0400-TR	4 temperature module, thermal resistance type
Encoder input module	PM-E0200-S	2 encoder input module, single-ended input
	PM-E0200-D	2 encoder input module, differential input

### I/O Extension Module Features

#### Flexible combination

I/O extension module support 16 inputs, 16 outputs, 32 inputs, 32 outputs, 32 I/O.

#### Rich variety

Include coupler I/O extension module, analog module, Temperature module, Encoder input module.

#### Extension method

R2 series I/O Extension module include Coupler and I/O extension module, adopting the right extension method, single coupler can mount up to 32 I/O extension modules.

#### High speed and efficiency

Adopting an internal backplane communication protocol of up to 100M, Has very high I/O refresh speed and can achieve high-speed input output response

#### Wide adaptability

The module adopts a sliding rail design to ensure the stability of the connection between the modules, while making it easy to plug and unplug, facilitate electrical assembly, and modify network nodes.

#### Safe operation

The bus disconnection protection function can set whether the output status of the bus disconnection module is maintained, ensuring the safe operation of the equipment in case of accidental disconnection.

# Digital Input Module

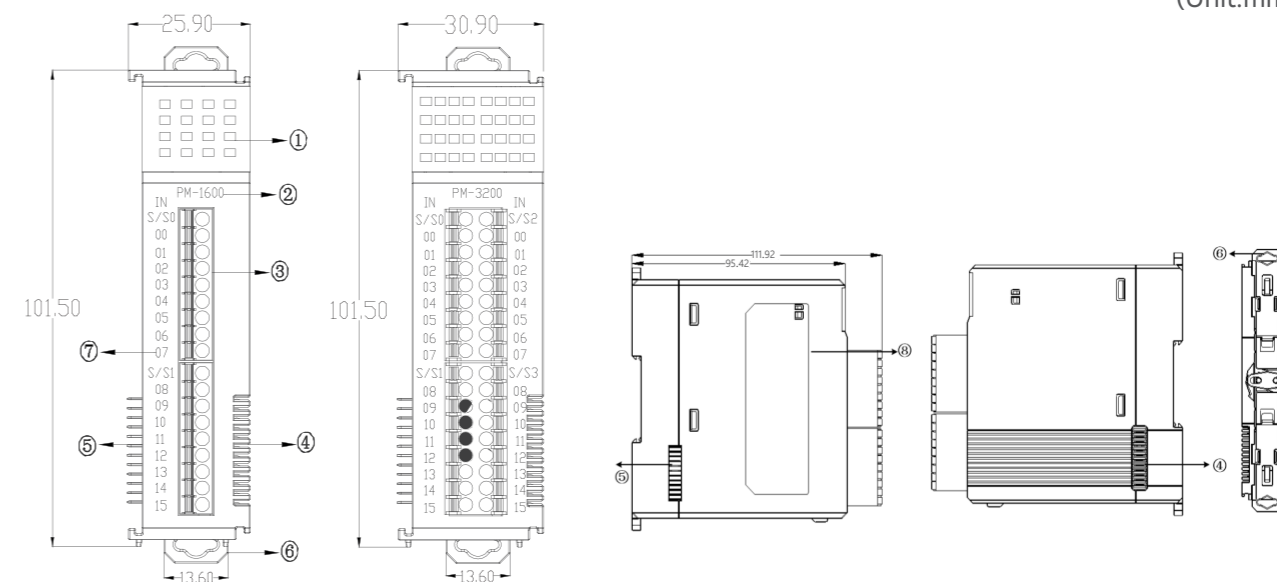
## Product Model and Technical Specification



Specifications		Model	PM-1600	PM-3200	PM-3200-1	PM-3200-2
I/O	Input pins		16	32	32	32
	Output pins		\			
Extension	Bus type		Internal backplane bus			
	Bus port		12PIN connector, internal backplane bus and power supply			
Power supply	Input voltage/current		DC 24V(-15% - +20%),2A			
I/O performance	Input control		Control power supply 24VDC, isolated			
	Single pin input voltage/current		DC 24V(-15% - +20%),5mA			
	Input OFF-ON		Over DC 15V, Current above 1.5mA			
	Input ON-OFF		Below DC 5V, Current above 1mA			
	Input frequency		10K			
	Input ON/OFF response time		20μs/50μs			
	Input type		NPN/PNP			
	Input resistance		4.7KΩ (max)			
	Input protection		Optocoupler isolated, anti-interference			
	Common		1 common for every 8 outputs			
	Power rating		24V/47mA	24V/53mA	24V/34mA	24V/34mA
I/O functions	Input function		Digital signal ON-OFF detection			
Others	Power port		Input and output is supplied 24V power supply by 12PIN			
	I/O terminal		Plug type terminals, gap 3.5mm, black orange colored	MIL connector	Fujitsu connector	
	Indicator light		Every input corresponds to 1 indicator light. Lights up when input ON, light off when input OFF			
	Installation		Standard DIN rail			
	Dimension		L 111.92mm* W 25.9mm* H 101.5mm	L 111.92mm*W 30.9mm*H 101.5mm		
	Certification		CE			

## Dimension and Parts (PM-1600/PM-3200)

(Unit:mm)



No.	Name	Description
①	output indicator light	Light up when output signal is valid
②	Module name	Module name
③	Terminal	Output signal line
④	Extension module communication port	To communication with other extension modules
⑤	Extension module communication port	To communication with other extension modules
⑥	Snap	To install on DIN rail
⑦	Pin number	Indicates output pin No.
⑧	Label	Product information

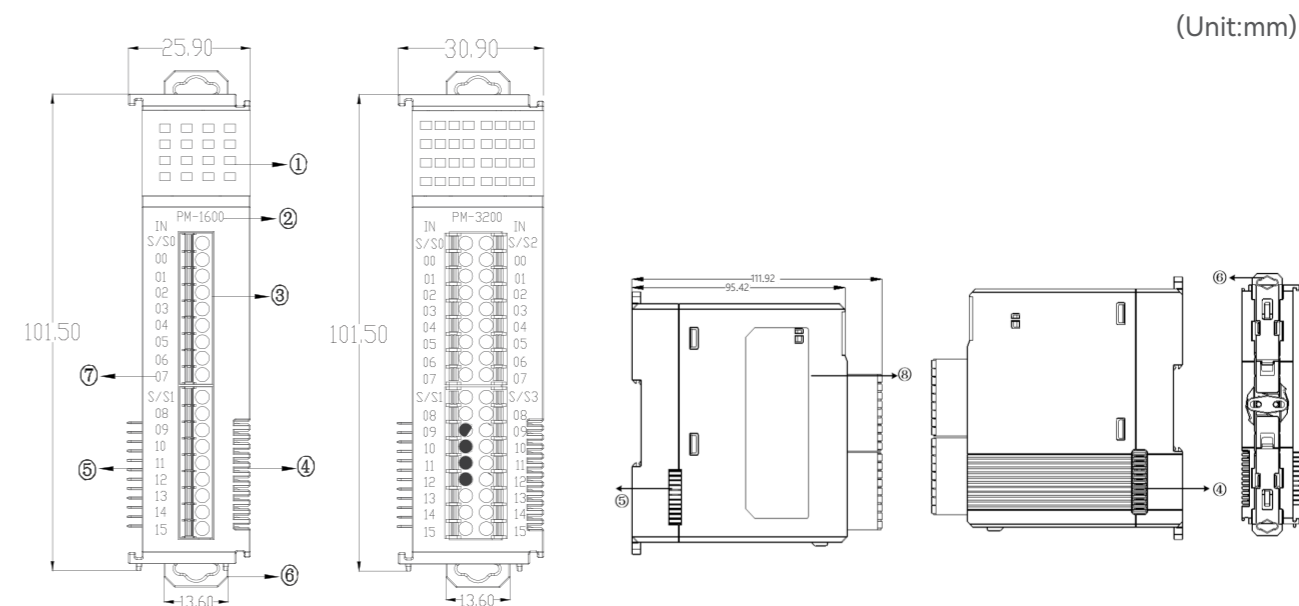
# Digital Output Module

## Product Model and Technical Specification



Specifications		Model	PM-0016-N	PM-0016-P	PM-0032-N	PM-0032-N-1	PM-0032-N-2
I/O	Input pins	\					
	Output pins	16	16	32	32	32	
Extension	Bus type	Internal backplane bus					
	Bus port	12PIN connector, internal backplane bus and power supply					
Power supply	Input voltage/current	DC 24V(-15% - +20%),2A					
I/O performance	Output current	500mA/route (Peak/Full load300mA)					
	Output voltage	5-24V					
	Output frequency	Low speed 10K	Low speed 1K	Low speed 10K	Low speed 10K	Low speed 10K	
	Output ON/OFF response time	20μs/50μs	15μs/40μs	20μs/50μs	20μs/50μs	20μs/50μs	
	Output type	NPN	PNP	NPN	NPN	NPN	
	Output protection	Against short circuit, over current. Opto-isolation					
	Common	1 common for every 8 outputs, common terminal is GND and externally grounded					
	Power rating	24V/69mA	24V/137mA	24V/107mA	24V/59mA	24V/59mA	
I/O functions	Output function	Digital signal ON-OFF control					
Others	Power supply port	Input and output is supplied 24V power supply by 12PIN					
	I/O terminal	Plug type terminals, gap 3.5mm, black orange colored			MIL connector	Fujitsu connector	
	Indicator light	18 (16-pin OUT) Each terminal has 9 pin with upper and bottom parts independent from each other	20 (16-pin OUT) Each terminal has 10 pin with upper and bottom parts independent from each other	36 (32-pin OUT) Each terminal has 18 pin with upper and bottom parts independent from each other	40 (32-pin OUT)		
	Installation	Standard DIN rail					
	Dimension	L 111.92mm*W 25.9mm* H 101.5mm			L 111.92mm*W 30.9mm*H 101.5mm		
Certification	CE						

## Dimension and Parts (PM-1600/PM-3200)

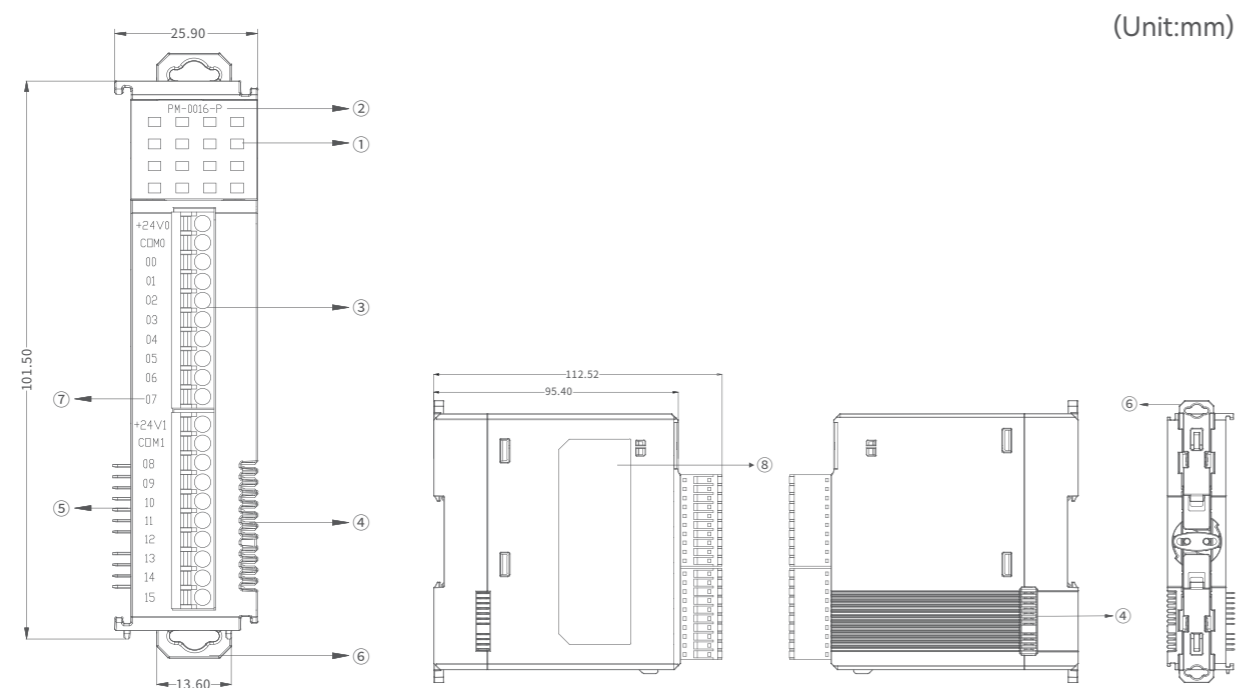


(Unit:mm)

No.	Name	Description
①	output indicator light	Light up when output signal is valid
②	Module name	Module name
③	Terminal	Output signal line
④	Extension module communication port	To communication with other extension modules
⑤	Extension module communication port	To communication with other extension modules
⑥	Snap	To install on DIN rail
⑦	Pin number	Indicates output pin No.
⑧	Label	Product information

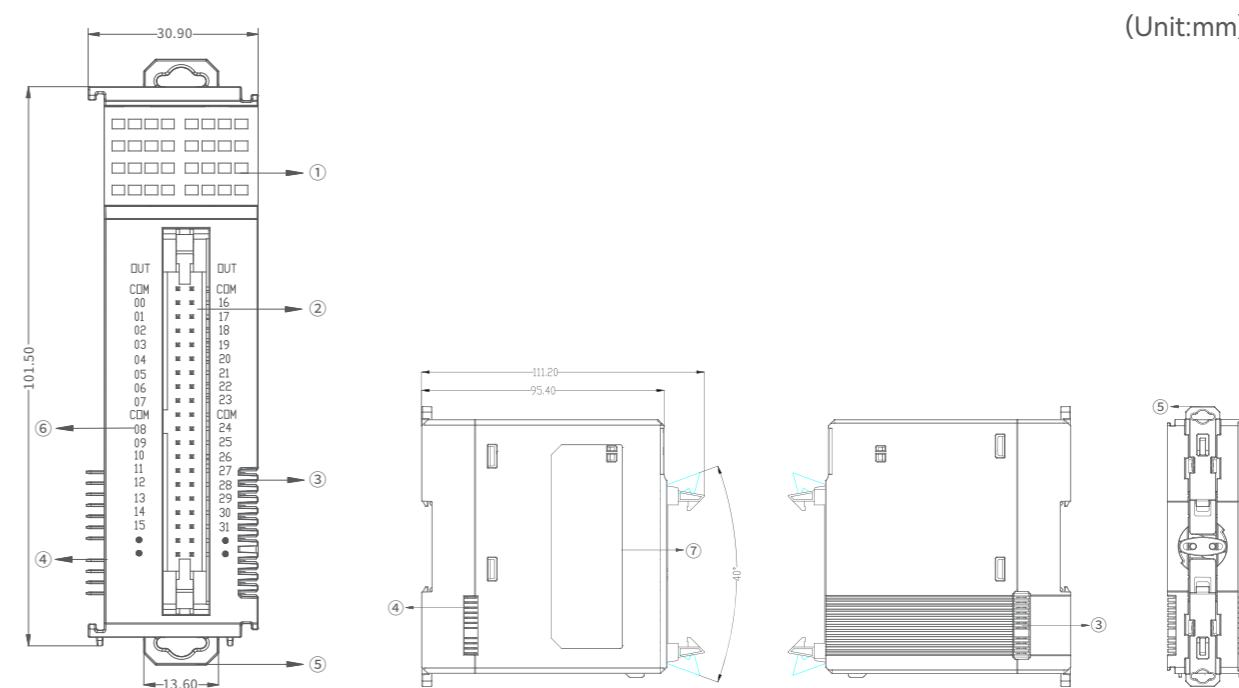


## Dimension and Parts (PM-0016-P)



No.	Label	Description
①	output indicator light	Light up when output signal is valid
②	Module name	Module name
③	Terminal	Output signal line
④	Extension module communication port	To communication with other extension modules
⑤	Extension module communication port	To communication with other extension modules
⑥	Snap	To install on DIN rail
⑦	Pin number	Indicates output pin No.
⑧	Label	Product information

## Dimension and Parts (PM-0032-N-1)



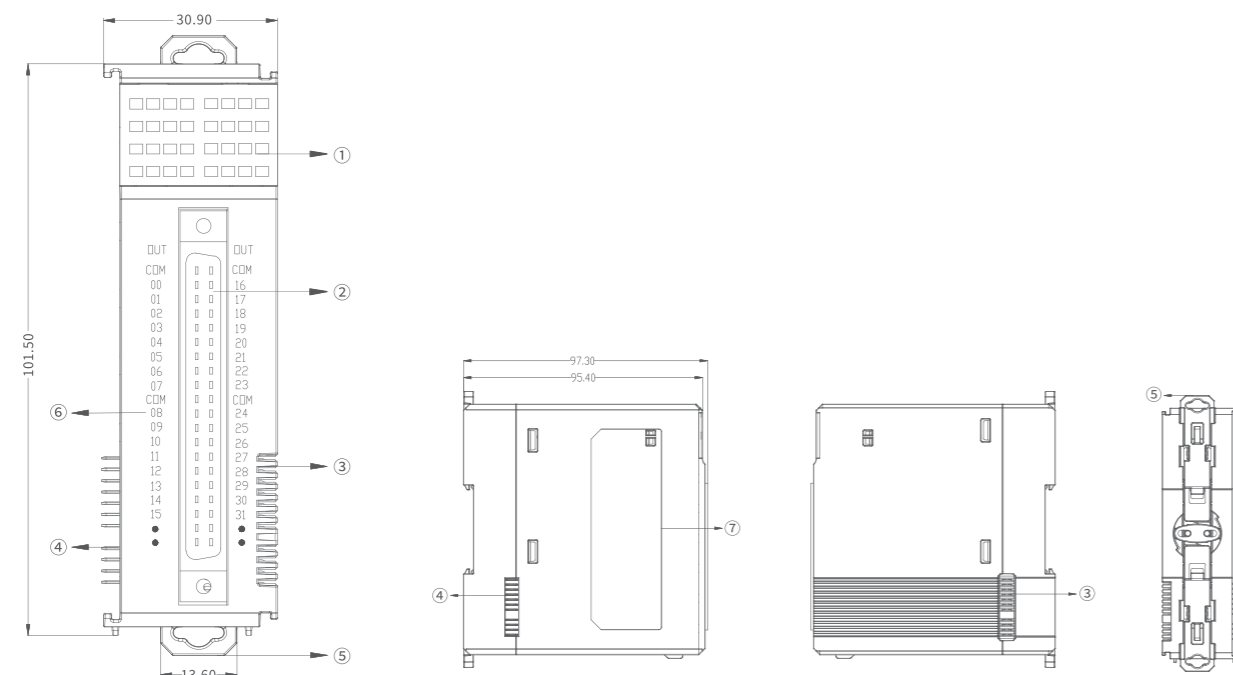
No.	Label	Description
①	output indicator light	Light up when output signal is valid
②	Terminal	Output signal line
③	Extension module communication port	To communication with other extension modules
④	Extension module communication port	To communication with other extension modules
⑤	Snap	To install on DIN rail
⑥	Pin number	Indicates output pin No.
⑦	Label	Product information

## Relay Output Module

### Product Model and Technical Specification

### Dimension and Parts (PM-1600/PM-3200)

(Unit:mm)



No.	Name	Description
①	output indicator light	Light up when output signal is valid
②	Terminal	Output signal line
③	Extension module communication port	To communication with other extension modules
④	Extension module communication port	To communication with other extension modules
⑤	Snap	To install on DIN rail
⑥	Pin number	Indicates output pin No.
⑦	Label	Product information



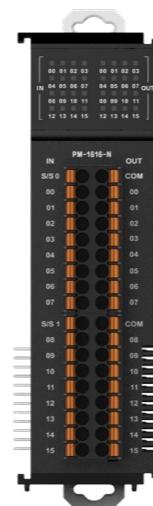
**PM-0016-R**

Specifications	Model	PM-0016-R
I/O	Input pins	0
	Output pins	16
Extension	Bus type	Internal backplane bus
	Bus port	12PIN connector, internal backplane bus and power supply
I/O performance	Power rating	AC250V/DC30V,2A (single input)
	Output ON/OFF response time	OFF-ON,<15ms ON-OFF,<15ms
	Output type	Relay
	Common	4 common for every 16 outputs
	Working frequency	Max 1Hz
I/O function	Relay switch times	inductive load:20000Times@DC30V2A Resistive load:100000Times@DC30V、AC
	Output function	Digital signal on/off control
Others	Power port	Power supply by 12PIN,AC250V/DC30V
	I/O terminal	Plug type terminals, gap 3.5mm, black orange colored
	Indicator light	Every output corresponds to 1 indicator light. Lights up when output ON, light off when output OFF
	Installation	Standard DIN rail
	Dimension	L 111.92mm*W 25.9mm*H 101.5mm
	Certification	CE

# Digital I/O Module

## Product Model and Technical Specification

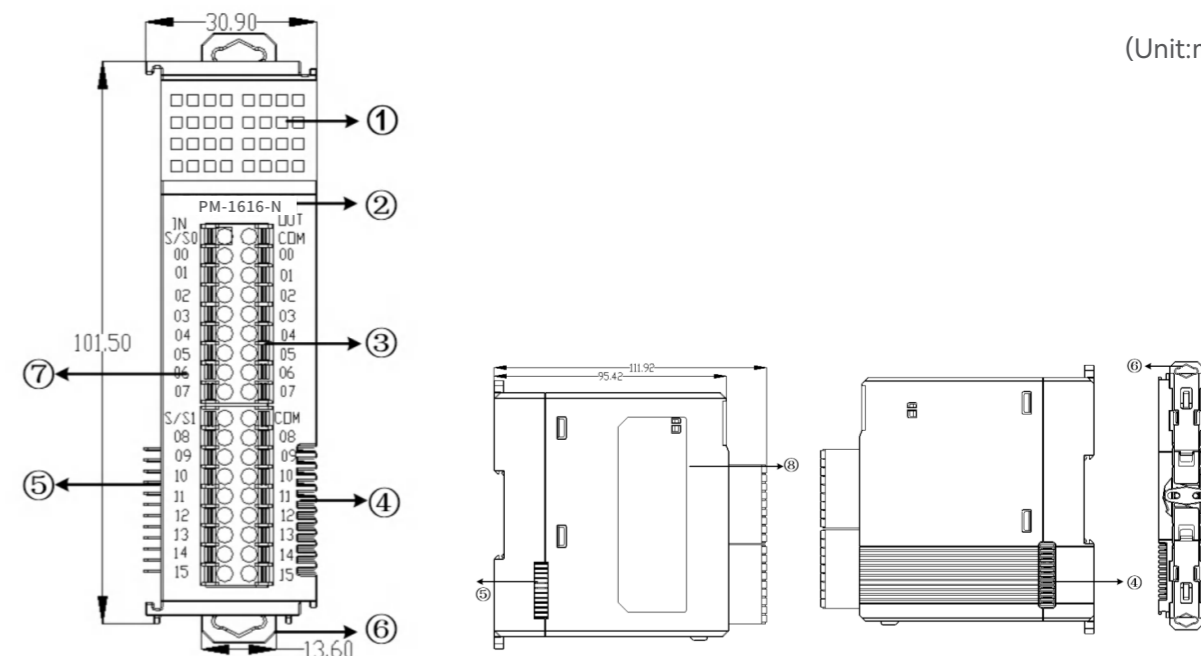
**PM-1616-N**



Specifications	Model	PM-1616-N
I/O	Input pins	16
	Output pins	16
Extension	Bus type	Internal backplane bus
	Bus port	12PIN connector, internal backplane bus and power supply
Power supply	Input voltage/current	DC 24V (-15% - +20%),2A
	Power supply port	Input and output is supplied 24V power supply by 12PIN
I/O performance	Input control	Control power supply 24VDC, isolated
	Single pin input voltage/current	DC 24V (-15% - +20%),5mA
	Input OFF-ON	Over DC 15V, Current above 1.5mA
	Input ON-OFF	Below DC 5V, Current above 1mA
	Output current	500mA/route (Peak/Full load300mA)
	Output voltage	5-24V
	Input frequency	10K
	Output frequency	Low speed, 10K
	I/O ON/OFF response time	20μs/50μs
	Input type	NPN/PNP
	Output type	NPN
	Input resistance	4.7KΩ (Max)
	Input protection	Optocoupler isolated, anti-interference
	Output protection	Against short circuit, over current. Opto-isolation
I/O function	Common	1 common for every 8 outputs
	Power rating	24V/59mA
Others	Output function	Digital signal on/off control
	Input function ①	Digital signal ON-OFF detection
	Output function ②	Digital signal ON-OFF control
	I/O terminal	Plug type terminals, gap 3.5mm, black orange colored
	Indicator light	Every I/O corresponds to 1 indicator light. Lights up when signal ON, light off when signal OFF.
	Terminal	36 (16-pin OUT, 16-pin IN) Each terminal has 18 pin with upper and bottom parts independent from each other
	Installation	Standard DIN rail
	Dimension	L 111.92mm* W 30.9mm* H 101.5mm
Certification	CE	

## Dimension and Parts

(Unit:mm)



No.	Name	Description
①	I/O indicator light	Light up when I/O signal is valid
②	Module name	Module name
③	Terminal	Input: Sensor and switch wiring
④	Extension module communication port	Output: Driver's load wiring
⑤	Extension module communication port	To communication with other extension modules To communication with other extension modules
⑥	Snap	To install on DIN rail
⑦	Pin number	Indicates I/O pin no.
⑧	Label	Product information

# Analog Input Module

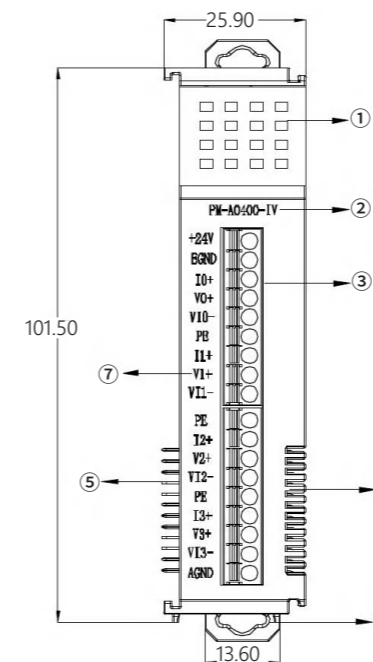
## Product Model and Technical Specification



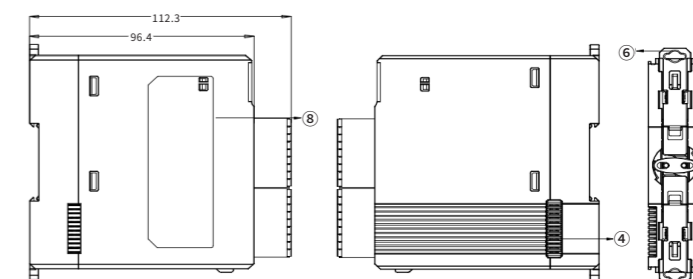
**PM-A0400-IV**

Specifications	Model	PM-A0400-IV							
AD performance	Input type	voltage/current							
	Input channels	4							
	Rating input range	1V~5V	-5V~5V	0V~10V	-10V~10V	0V~5V	4mA~20mA	0mA~20mA	-20mA~20mA
	Rating digital conversion range	0~32000	-32000~32000	0~32000	-32000~32000	0~32000	0~32000	0~32000	0~32000
	Resolution	16-bit							
	Input resistance	Voltage input resistance: > 1MΩ; Current sampling resistance: 250Ω							
	Overall accuracy (25°C)	Voltage±0.1%; Current±0.2%							
	Overall accuracy (0~55°C)	Voltage±0.2%; Current±0.3%							
	Response time	1ms/4 Channels							
	Input method	Single-ended/differential (compatible)							
Others	Data format	Integer							
	Alarm	Software+hardware indicator							
	Power supply port	Power supply by 12PIN, 24V							
	I/O terminal	Plug type terminals, gap 3.5mm, black orange colored							
	Indicator light	RUN (green) /ERR(red)two indicator light (RUN; running status indicator light, After power on, it will light up normally and go out if a fault occurs; ERR: error status indicator light, go out if a fault occurs)							
	Installation	Standard DIN rail							
	Dimension	L 111.92mm* W 25.9mm* H 101.5mm							
	Label	Product information							
Certification	CE								
Hardware circuit over-voltage protection	Analog limit 24V, power limit 30V								

## Dimension and Parts



(Unit:mm)



No.	Name	Description
①	Status indicator light	RUN、ERR indicator light
②	Module name	Module name
③	Terminal	4 input (voltage or current input)
④	Extension module communication port	To communication with other extension modules
⑤	Extension module communication port	To communication with other extension modules
⑥	Snap	To install on DIN rail
⑦	Pin number	Indicates I/O pin no.
⑧	Label	Product information



# Analog Output Module

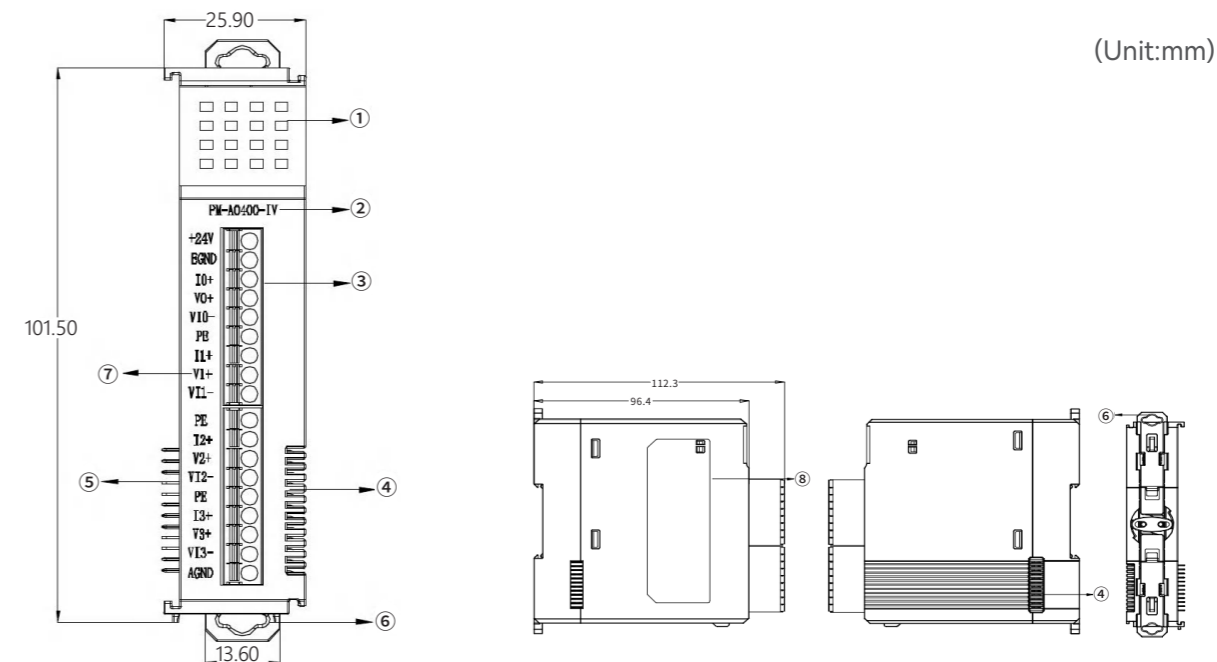
## Product Model and Technical Specification



**PM-A0004-IV**

Specifications	Model	PM-A0400-IV							
AD performance	Output type	voltage/current							
	Output channels	4							
	Rating input range	1V~5V	0V~5V	-5V~5V	0V~10V	-10V~10V	0mA~20mA	4mA~20mA	
	Rating digital conversion range	0~32000	0~32000	-32000~32000	0~32000	-32000~32000	0~32000	0~32000	
	Resolution	16-bit							
	Output resistance	Voltage output load: 1K~1MΩ; Current load resistance: 100Ω~500Ω							
	Overall accuracy (25°C)	Voltage: ±0.1%; Current: ±0.2%							
	Overall accuracy (0~55°C)	Voltage: ±0.2%; Current: ±0.3%							
	Response time	1ms/4 channels							
	Output method	Single-ended/differential (compatible)							
Others	Data format	Integer							
	Alarm	Software+hardware indicator							
	Power supply port	Power supply by 12PIN, 24V							
	Power protection	Over-current protection, reverse polarity protection							
	I/O terminal	Plug type terminals, gap 3.5mm, black orange colored							
	Indicator light	RUN (green) /ERR(red)two indicator light (RUN: running status indicator light, After power on, it will light up normally and go out if a fault occurs; ERR: error status indicator light, go out if a fault occurs)							
	Installation	Standard DIN rail							
	Dimension	L 111.92mm* W 25.9mm* H 101.5mm							
Label	Product information								
Certification	CE								
Hardware circuit over-voltage protection	Analog limit 24V, power limit 30V								

## Dimension and Parts



(Unit:mm)

No.	Name	Description
①	Status indicator light	RUN、ERR indicator light
②	Module name	Module name
③	Terminal	4 output (voltage or current output)
④	Extension module communication port	To communication with other extension modules
⑤	Extension module communication port	To communication with other extension modules
⑥	Snap	To install on DIN rail
⑦	Pin number	Indicates I/O pin no.
⑧	Label	Product information

# Thermocouple Temperature Module

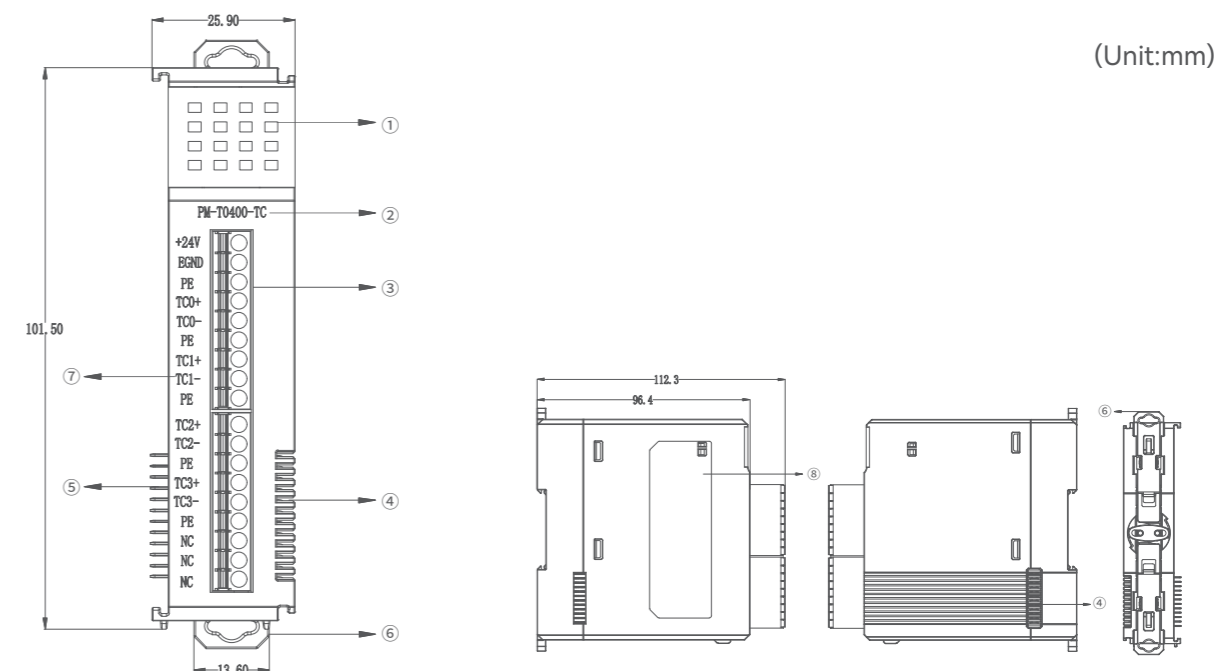
## Product Model and Technical Specification



**PM-T0400-TC**

Specifications		Model	PM-T0400-TC	
Hardware specification	Sensor Type	J, K, R, S, T, E, N, B type, ±100mV voltage input (deviation 0.5%) (16-bit data converter -32000-32000)		
	Wiring Type	two wire		
	Channel	4 channels		
	Resolution	voltage: 24-bit; temperature: 0.1°C/0.1°F		
	Precision	±0.1% +1°C (cold junction compensation) in (25°C, 77°F) the measure range ±0.3% +1°C (cold junction compensation) in (-20~60°C, -4~140°F) the measure range		
	Sensitivity	0.1°C, 0.1°F		
	Respond Time	250ms, 500ms, 1000ms/ four channels (configurable by software)		
	Measure Range	J:	-80°C~1200°C/-112°F~2192°F	K: -90°C~1300°C/-130°F~2372°F
		R:	0°C~1300°C/32°F~2372°F	S: 0°C~1300°C/32°F~2372°F
		T:	-100°C~400°C/-148°F~752°F	E: -100°C~950°C/-148°F~1742°F
		N:	-100°C~1300°C/-148°F~2372°F	B: 200°C~1800°C/392°F~3272°F
			-100mv~100mv	
	Diagnosis Protection	disconnection detection, power protection		
	Cold Junction Compensation	precision ±1°C		
Temperature	°C/°F			
Interface Protection	maximum voltage 28.8V			
Other	Power Port	push-in terminal, 24V		
	Power Protection	over-current protection, anti-reverse connection protection		
	Terminal	push-in terminal		
	Indicator Light	RUN(green)/ERR(red)		
	Installation	standard DIN rail installation		
	Dimension	L 111.92mm* W 25.9mm* H 101.5mm		
	Certification	CE		

## Dimension and Parts



(Unit:mm)

No.	Name	Description
①	Indicator light	Indicate the channel status
②	Module name	Module name
③	Terminal	Push-in terminal
④	Backplane interface	Connect the extension module
⑤	Backplane interface	Connect the extension module
⑥	Snap	Install to the din rail
⑦	Pin number	Channels number
⑧	Label	Product information

# Thermocouple Temperature Module

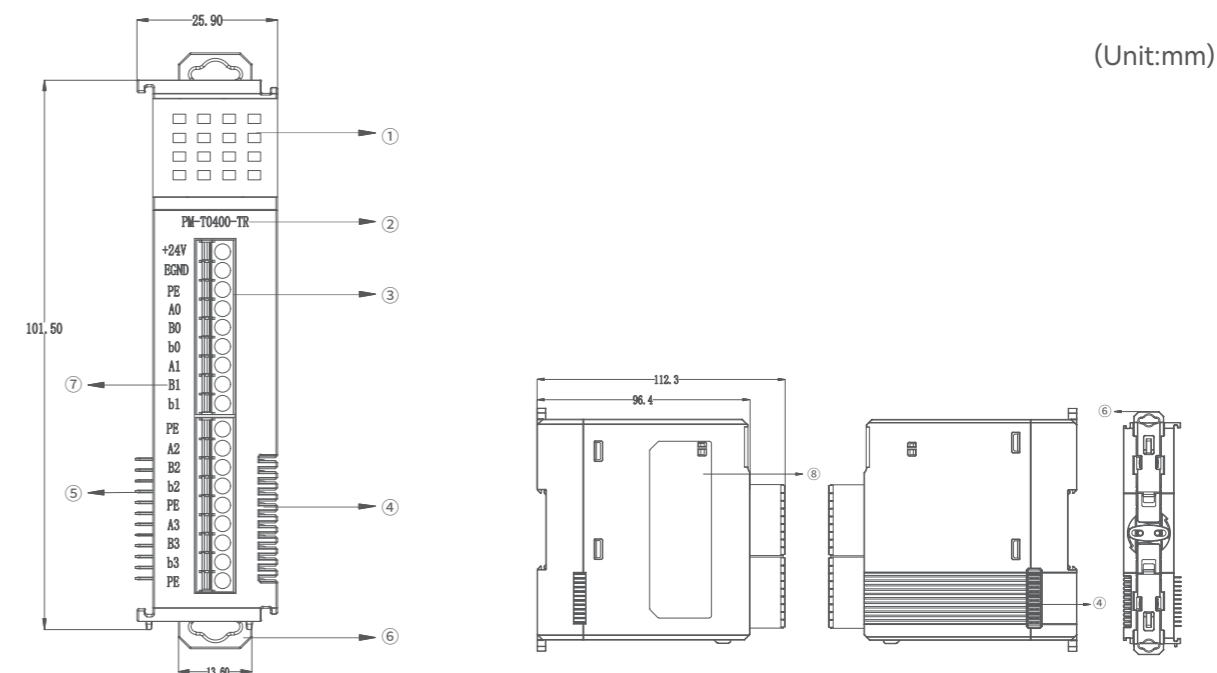
## Product Model and Technical Specification



**PM-T0400-TR**

Specifications		Model	PM-T0400-TR	
Hardware Specification	Sensor Type	thermocouple(J, K, R, S, T, E, N, B type) ±100mV voltage input(deviation 0.5%)(16-bit data converter -32000~32000)		
	Wiring Type	two wire		
	Channel	4 channels		
	Resolution	voltage: 24-bit; temperature: 0.1°C/0.1°F		
	Precision	25°C ordinary temperature; 0~50 °C environment temperature		
	Sensitivity	0.1°C, 0.1°F		
	Respond Time	250ms, 500ms, 1000ms/ four channels (configurable by software)		
	Measure Range	PT100:	-150°C~-750°C/-238°F~1382°F	PT1000: -150°C~-750°C/-238°F~1382°F
		JPt100:	-150°C~450°C/-238°F~842°F	Ni100: -70°C~150°C/-94°F~302°F
		Ni1000:	-70°C~150°C/-94°F~302°F	LG-Ni1000: -50°C~180°C/-238°F~356°F
		Cu50:	-50°C~150°C/-238°F~302°F	Cu100: -50°C~150°C/-238°F~302°F
			0~300Ω	0~300Ω
	Diagnosis Protection	disconnection detection, power protection		
Temperature	°C/°F			
Interface Protection	maximum voltage 28.8V			
Other	Power Port	push-in terminal, 24V		
	Power Protection	over-current protection, reverse polarity protection		
	Terminal	push-in terminal		
	Indicator Light	RUN(green)/ERR(red)		
	Installation	standard DIN rail installation		
	Dimension	L 111.92mm* W 25.9mm* H 101.5mm		
	Certification	CE		

## Dimension and Parts



(Unit:mm)

No.	Name	Description
①	Indicator light	Indicate the channel status
②	Module name	Module name
③	Terminal	Push-in terminal
④	Backplane interface	Connect the extension module
⑤	Backplane interface	Connect the extension module
⑥	Snap	Install to the din rail
⑦	Pin number	Channels number
⑧	Label	Product information

# Single-End Encoder Module

## Product Model and Technical Specification

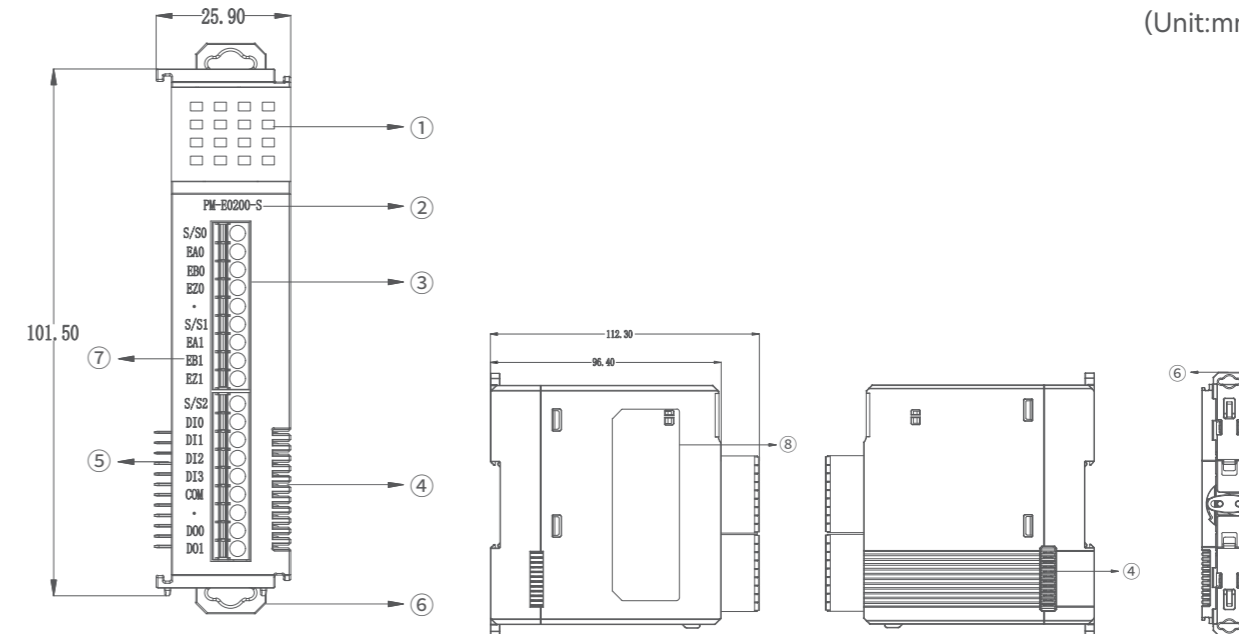
### PM-E0200-S



Specifications	Model	PM-E0200-S
Encoder Counter Input Interface	Terminal	push-in terminal
	Channel	2 channels(EA+EB+EZ)
	Input Type	single-end ABZ(multiple 1/2/4), pulse+direction, or CW/CCW
	Voltage Range	DC21-27V
	Frequency Range	single phase 500KHz(quaduple frequency 2MHz)
	Maximum Current	400mA
High Speed Input Port	Terminal	push-in terminal
	Channel	2 channels(DI0/DI1)
	Input Type	low/high voltage valid
	Input Range	DC21-27V
	Rated Voltage	DC24V
	Peak Voltage	DC30V
	Surge	DC35V, 500ms
	Circuit Current	ON:above3.5mA/above 19V OFF:below 1.5mA/below 5V
	Opto-Isolated	AC500V, 1minute
	Input Type	NPN/PNP
Frequency	200K	
Isolated Group	1 group	
High Speed Output Port	Terminal	push-in terminal
	Channel	2 channels(DO0/DO1)
	Output Type	NPP
	Load Voltage	DC 5-24V
	Output Current	300mA/channel
	Leakage Current	maximum 8μA per channel
	Surge	2A,100ms
	Opto-Isolated	AC500V, 1minute
Frequency	200K	
Isolated Group	1 group	
Normal Input (Low Speed)	Channel	2 channels(DI2/DI3)
	Input Specification	control power DC24V, isolated
	Per Input Voltage/Current	24V(-15%- +20%), 5mA
	On/Off Status	ON:above3mA/above 15V OFF:below 1mA/below 5V
	Frequency	1K
	Input Type	NPN/PNP
	Input Impedance(maximum)	4.7KΩ
	Input Protection	optical isolated anti-interference
Respond Time	20μs/50μs	
Common	4 channels share a common terminal	

## Dimension and Parts

(Unit:mm)



No.	Name	Description
①	Indicator light	Indicate the channel status
②	Module name	Module name
③	Terminal	Push-in terminal
④	Backplane interface	Connect the extension module
⑤	Backplane interface	Connect the extension module
⑥	Snap	Install to the din rail
⑦	Pin number	Channels number
⑧	Label	Product information



# Differential Encoder Module

## Product Model and Technical Specification

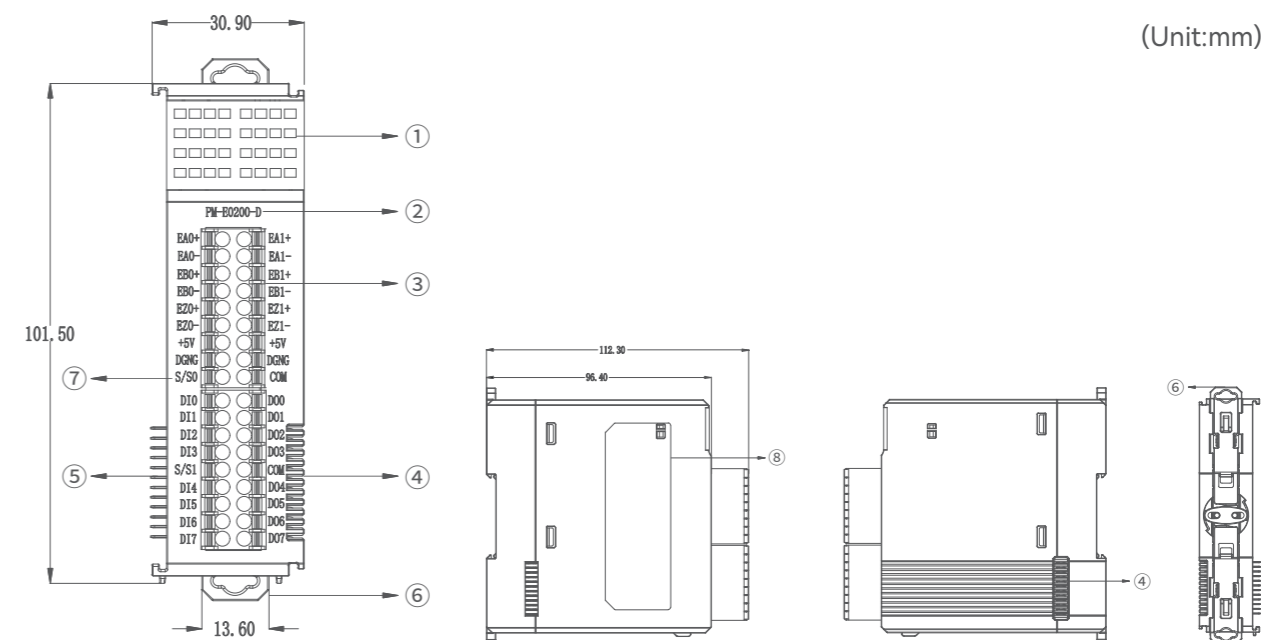
### PM-E0200-D



Specifications	Model	PM-E0200-D
Encoder Counter Input Interface	Terminal	push-in terminal
	Channel	2 channels(EA+EB+EZ)
	Input Type	5V differential input/single-end input
	Minimum Differential Voltage	DC±200mV
	Voltage Range	0-7V
	Frequency Range	4MHz(quadruple frequency 16MHz)
	Power	5V power with isolation
High Speed Input Port	Maximum Current	400mA
	Terminal	push-in terminal
	Channel	4 channels(DI0/DI3)
	Input Type	low/high voltage valid
	Input Range	DC21-27V
	Rated Voltage	DC24V
	Peak Voltage	DC30V
	Surge	DC35V, 500ms
	Circuit Current	ON:above3.5mA/above 19V OFF:below 1.5mA/below 5V
	Opto-Isolated	AC500V, 1minute
	Input Type	NPN/PNP
	Frequency	200K
	Isolated Group	1 group
High Speed Output Port	Terminal	push-in terminal
	Channel	4 channels(DO0/DO3)
	Output Type	NPP
	Load Voltage	DC 5-24V
	Output Current	300mA/channel
	Leakage Current	maximum 8µA per channel
	Surge	2A,100ms
	Opto-Isolated	AC500V, 1minute
Normal Input (Low Speed)	Frequency	200K
	Isolated Group	1 group
	Channel	2 channels(DI2/DI3)
	Input Specification	control power DC24V, isolated
	Per Input Voltage/Current	24V(-15%- +20%), 5mA
	On/Off Status	ON:above3mA/above 15V OFF:below 1mA/below 5V
	Frequency	1K
	Input Type	NPN/PNP
	Input Impedance (maximum)	4.7KΩ
	Input Protection	optical isolated anti-interference
Respond Time	20µs/50µs	
Common	4 channels share a common terminal	

Specifications	Model	PM-E0200-S
Normal Output (Low Speed)	channel	4 channels(DO4-DO7)
	output current	500mA/channel(full-load peak current 300mA/channel)
	output voltage	5-24V
	output frequency	1K
	output type	NPN
	respond time	20µs/50µs
	common	4 channels share a common terminal
	function	digital signal output, mapping, keep output status when be disconnected
	output protection	short circuit protection, over-current protection, opto-isolated

## Dimension and Parts

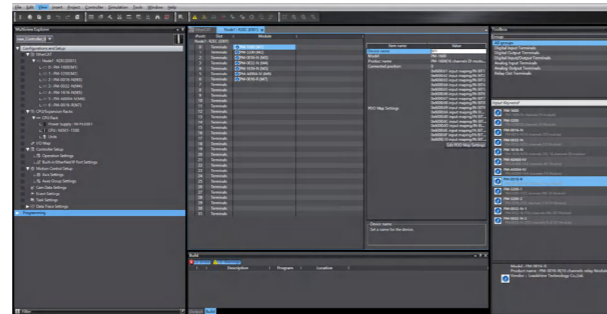
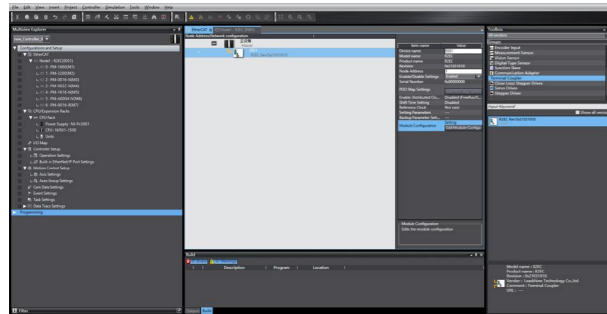


No.	Name	Description
①	Indicator light	Indicate the channel status
②	Module name	Module name
③	Terminal	Push-in terminal
④	Backplane interface	Connect the extension module
⑤	Backplane interface	Connect the extension module
⑥	Snap	Install to the din rail
⑦	Pin number	Channels number
⑧	Label	Product information

## R2 Series I/O Extension Module Software Function

### Flexible Configuration of Different Bus Master Stations

- Add the Leadshine Intelligent R series coupler and remote I/O module to the master station programming software for hardware configuration. After downloading the configuration, the number of master and slave stations can be established According to communication.
- Omron master config leadshine R2 series I/O Extension module.



## Ordering Information

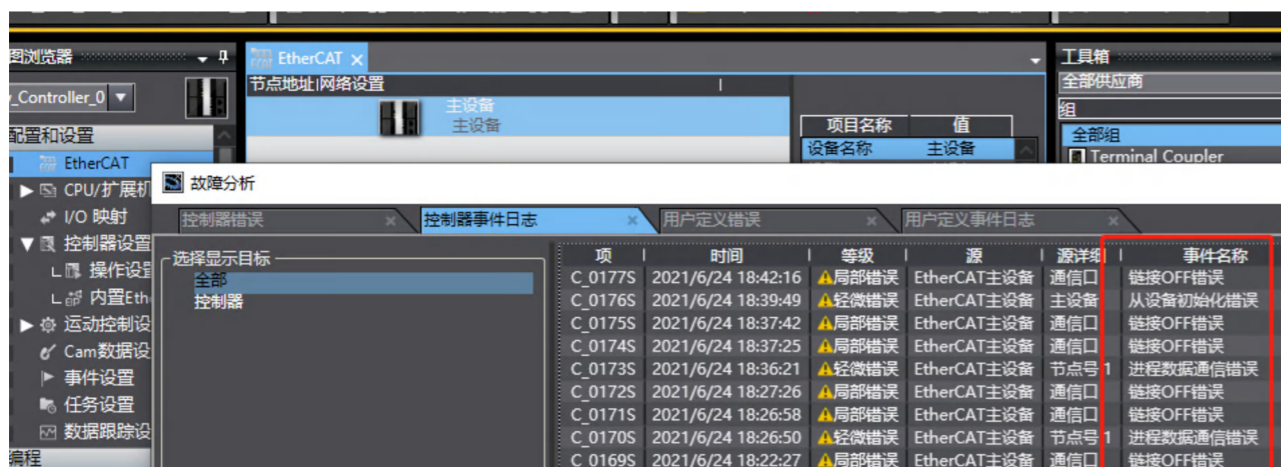
### R2 Series I/O Extension Module

Module Type	Model	Description
Coupler	R2EC	EtherCAT bus coupler, 32Plug-in module
Digital input module	PM-1600	16digital inputs module PNP/NPN input
	PM-3200	32 digital inputs module PNP/NPN input
	PM-3200-1	
	PM-3200-2	
Digital output module	PM-0016-N	16 digital outputs module , NPN output
	PM-0016-R	16 digital outputs module, Relay output
	PM-0016-P	16 digital outputs module, PNP output
	PM-0032-N	32 digital outputs module , NPN output
	PM-0032-N-1	
	PM-0032-N-2	
Digital I/O module	PM-1616-N	32 digital I/O module, PNP/NPN input, NPN output
Analog input module	PM-A0400-IV	4 analog input module, current/voltage input
Analog output module	PM-A0004-IV	4 analog output module, current/voltage output
Temperature module*	PM-T0400-TC*	4 temperature module ,thermocouple type
	PM-T0400-TR*	4 temperature module,thermal resistance type
Encoder input module*	PM-E0200-S*	2 encoder input module ,single-ended input
	PM-E0200-D*	2 encoder input module, differential input

Note\*: \* indicates upcoming release, please stay tuned

### Multiple Ways to Troubleshoot Faults

- The communication fault situation can be displayed synchronously through the ERR and CF fault indicator lights defined on the distributed I/O panel, and can also be diagnosed and identified by the main station to assist users in quickly locating the cause of the fault.





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