



**I-7015(P) M-7015(P)**  
6-channel RTD Input Module

## Features

- 6-channel RTD Input
- 3-wire RTD Input with Lead Resistance Elimination
- High Resolution: 16-bit
- Individual Channel Configuration
- Open Wire Detection
- 4 kV ESD Protection
- 4 kV EFT Protection
- 3000 Vdc Intra-module Isolation
- Dual Watchdog
- Wide Operating Temperature Range: -25 to +75°C



## Introduction

The I-7015 is a series of 6-channel RTD input modules that are used for measuring temperatures using RTD sensors and each channel can be connected to a different type of sensor. The I-7015P/M-7015P is specifically designed for long-distance RTD measurement, and features automatic compensation for three-wire RTD, meaning that accurate measurements can be obtained regardless of the length of the wires. The I-7015 series is fully RoHS-compliant and features 4 kV ESD protection as well as 3000 Vdc intra-module isolation. The M-7015/M-7015P supports both the Modbus RTU and DCON protocols, which can be configured via software, and all hardware specifications are the same as the I-7015/I-7015P.

## System Specifications

Model	I-7015	I-7015P	M-7015	M-7015P
<b>Communication</b>				
Interface	RS-485			
Bias Resistor	No (Usually supplied by the RS-485 Master. Alternatively, add a tM-SG4 or SG-785.)			
Format	(N, 8, 1) (N, 8, 2) (E, 8, 1) (O, 8, 1)			
Baud Rate	1200 to 115200 bps			
Protocol	DCON		Modbus RTU, DCON	
Dual Watchdog	Yes, Module (1.6 Seconds), Communication (Programmable)			
<b>LED Indicators/Display</b>				
System LED Indicator	Yes, 1 as Power/Communication Indicator			
I/O LED Indicators	-			
7-segment LED Display	-			
<b>Isolation</b>				
Intra-module Isolation, Field-to-Logic	3000 Vdc			
<b>EMS Protection</b>				
ESD (IEC 61000-4-2)	±4 kV Contact for each Terminal			
EFT (IEC 61000-4-4)	±4 kV for Power Line			
Surge (IEC 61000-4-5)	-			
<b>Power</b>				
Reverse Polarity Protection	Yes			
Input Range	+10 ~ +30 Vdc			
Consumption	1.1 W	1.2 W	1.1 W	1.2 W
<b>Mechanical</b>				
Dimensions (L x W x H)	123 mm x 72 mm x 35 mm			
Installation	DIN-Rail or Wall Mounting			
<b>Environment</b>				
Operating Temperature	-25 to +75°C			
Storage Temperature	-40 to +85°C			
Humidity	10 to 95% RH, Non-condensing			

## Applications

- Building Automation
- Machine Automation
- Remote Diagnosis
- Factory Automation
- Remote Maintenance
- Testing Equipment

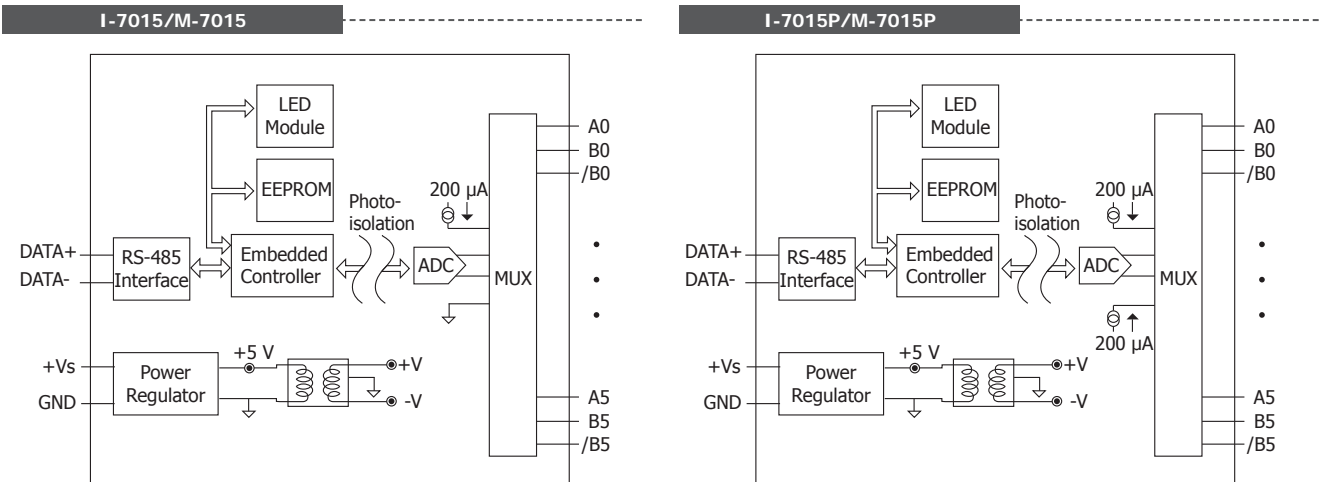
## I/O Specifications

Model	I-7015	I-7015P	M-7015	M-7015P
<b>Analog Input</b>				
Channels	6			
Wiring	2/3-wire			
Sensor Types	Pt100, Pt1000, Ni120, Cu50, Cu100, Cu1000			
Resolution	16-bit			
Accuracy	±0.05% of FSR			
Sampling Rate	12 Hz (Total)			
Individual Channel Configuration	Yes			
Overvoltage Protection	120 Vdc			
Open Wire Detection	Yes			
3-wire RTD Lead Resistance Elimination	-	Yes	-	Yes
Resistance Measurement	3.2 kΩ Max.			

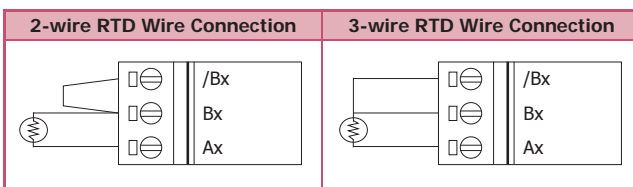
## RTD Type Settings (TT)

Type Code	RTD Type	Temperature Range
20	Platinum 100, α= 0.00385	-100 to +100°C
21	Platinum 100, α= 0.00385	0 to +100°C
22	Platinum 100, α= 0.00385	0 to +200°C
23	Platinum 100, α= 0.00385	0 to +600°C
24	Platinum 100, α= 0.003916	-100 to +100°C
25	Platinum 100, α= 0.003916	0 to +100°C
26	Platinum 100, α= 0.003916	0 to +200°C
27	Platinum 100, α= 0.003916	0 to +600°C
28	Nickel 120	-80 to +100°C
29	Nickel 120	0 to +100°C
2A	Platinum 1000, α= 0.00385	-200 to +600°C
2B	Cu 100 at 0°C, α= 0.00421	-20 to +150°C
2C	Cu 100 at 25°C, α= 0.00427	0 to +200°C
2D	Cu 1000 at 0°C, α= 0.00421	-20 to +150°C
2E	Platinum 100, α= 0.00385	-200 to +200°C
2F	Platinum 100, α= 0.003916	-200 to +200°C
80	Platinum 100, α= 0.00385	-200 to +600°C
81	Platinum 100, α= 0.003916	-200 to +600°C
82	Cu 50 at 0°C	-50 to +150°C
83	Nickel 100	-60 to +180°C

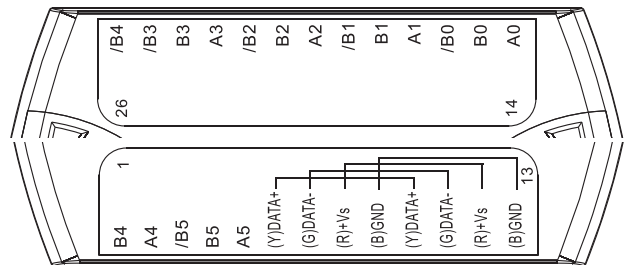
## Internal I/O Structure



## Wire Connections



## Pin Assignments



## Ordering Information

<b>I-7015 CR</b>	6-channel RTD Input Module using the DCON Protocol (Blue Cover) (RoHS) Art. No. 113906
<b>I-7015-G CR</b>	6-channel RTD Input Module using the DCON Protocol (Gray Cover) (RoHS)
<b>I-7015P-G CR</b>	6-channel RTD Input Module with 3-wire Lead Resistance Elimination using the DCON Protocol (Gray Cover) (RoHS) Art. No. 119069
<b>M-7015-G CR</b>	6-channel RTD Input Module using the DCON and Modbus Protocol (Gray Cover) (RoHS) Art. No. 113965
<b>M-7015P-G CR</b>	6-channel RTD Input Module with 3-wire Lead Resistance Elimination using the DCON and Modbus Protocol (Gray Cover) Art. No. 119109 (RoHS)

## Accessories

	tM-7520U CR	RS-232 to RS-485 Converter (RoHS)
	tM-7561 CR	USB to RS-485 Converter (RoHS)
	tM-SG4 CR	RS-485 Bias and Termination Resistor Module (RoHS)
	I-7514U CR	4-channel RS-485 Hub (RoHS)
	SG-770 CR	7-channel Differential or 14-channel Single-ended Surge Protector (RoHS)
	SG-3000 Series	Signal Conditioning Modules for Thermocouple, RTD, DC Voltage, DC Current and Power Input Transformers