

CONPROSYS Robust I/O Series
Modbus-RTU RS-485 Remote I/O
Thermocouple Input 16bit 10ch
CPSR-M7018ZGS



* Specifications, color and design of the products are subject to change without notice.

Features

10 Analog Inputs
Provides Stable and Consistent Temperature Output
Current, Voltage, and Thermocouple Inputs
High Over-voltage Input Protection
High Common Voltage Protection
Individual Channel Configuration
Open Thermocouple Detection
Built-in Dual Watchdog

Support Software

Name	Contents	How to get
DAQ-LIBMB-WIN	Modbus communication library for Windows	Download from the CONTEC website
DAQ-LIBMB-LNX	Modbus communication library for Linux	Download from the CONTEC website
CONPROSYS Robust I/O Utility	Users can configure the communication parameters and I/O settings for each module by using CONPROSYS Robust I/O Utility.	Download from the CONTEC website
Modbus Master Tool	It provides a friendly interface for quick configuring and communicating our Modbus slave devices.	Download from the CONTEC website

Download the files from the following URL
<https://www.contec.com/download/>

The product is a 10-channel Analog Input module that measures thermocouples, voltage, and current inputs.

It has an RS-485 interface and features automatic cold-junction compensation for each channel to ensure temperature output consistency and stable temperature output in the field. The enhanced design improves thermocouple measurement accuracy. The module provides overvoltage protection of up to 240 Vrms and per-channel open wire detection for the thermocouple and +4 ~ +20 mA input channels.

- * 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 July, 2026.

Specifications

System specification

Model	Description
CPU Module	
Watchdog Timer	Module, Communication (Programmable)
Isolation	
Intra-module Isolation	3000 VDC
EMS Protection	
EFT (IEC 61000-4-4)	±4 kV for Power Line
ESD (IEC 61000-4-2)	±4 kV Contact for Each Terminal
Surge (IEC 61000-4-5)	±0.5 kV for Power Line
LED Indicators	
Status	1 x Power and Communication
COM Ports	
Ports	1 x RS-485
Baud Rate	1200 ~ 115200 bps
Data Format	(N, 8, 1), (N, 8, 2), (E, 8, 1), (Q, 8, 1)
Protocol	Modbus RTU
Power	
Reverse Polarity Protection	Yes
Input Range	+10 ~ +30 VDC
Consumption	1.0 W
Mechanical	
Dimensions (mm)	CPSR-M7018ZGS: 73(W) x 116(L) x 34(H) CPSR-DB1820: 65(W) x 78(L) x 22(H)
Installation	DIN-Rail Mounting
Environment	
Operating Temperature	-25 ~ +75 °C
Storage Temperature	-40 ~ +85 °C
Humidity	10 ~ 95% RH, Non-condensing
Standard	VCCI Class A, FCC Class A, CE Marking (EMC Directive Class A, RoHS Directive), UNKA

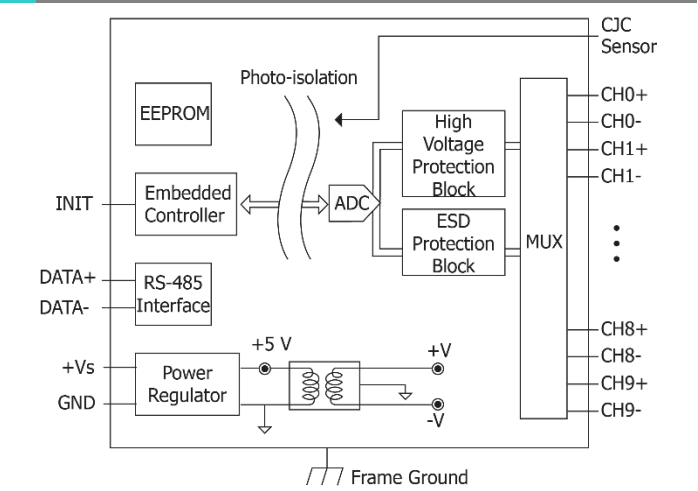
I/O specification

Item	Description
Analog Output	
Channels	10 Differential
Type	Voltage, Current, Thermocouple
Sensor Types	J, K, T, E, R, S, B, N, C, L, M, LDIN43710
Range	Voltage: ±15 mV, ±50 mV, ±100 mV, ±500 mV, ±1 V, ±2.5 V
	Current: ±20 mA, 0 ~ 20 mA, 4 ~ 20 mA (requires an optional external 125 Ω resistor)
Resolution	16-bit
Accuracy	0.1% of FSR
Sampling Rate	10 Hz (Total)
Input Impedance	> 400 kΩ
Common Voltage Protection	±200 VDC
Overvoltage Protection	240 Vrms
Individual Channel Configuration	Yes
Open Wire Detection	For Thermocouple and 4 ~ 20 mA

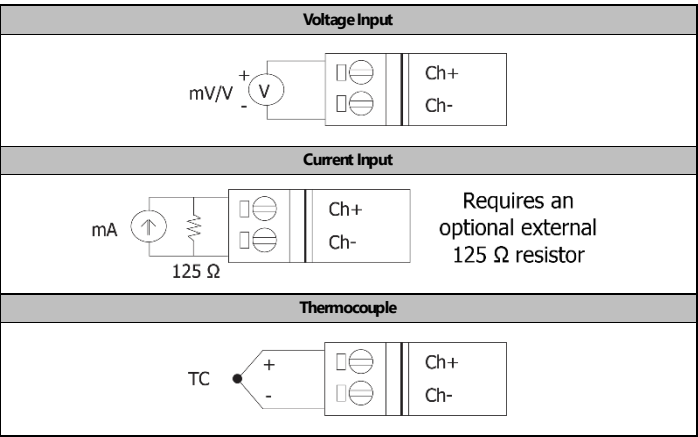
Measuring temperature range

Type Code	Thermocouple Type	Temperature Range
0E	Type J Thermocouple	-210°C ~ 760°C
0F	Type K Thermocouple	-270°C ~ 1372°C
10	Type T Thermocouple	-270°C ~ 400°C
11	Type E Thermocouple	-270°C ~ 1000°C
12	Type R Thermocouple	0°C ~ 1768°C
13	Type S Thermocouple	0°C ~ 1768°C
14	Type B Thermocouple	0°C ~ 1820°C
15	Type N Thermocouple	-270°C ~ 1300°C
16	Type C Thermocouple	0°C ~ 2320°C
17	Type L Thermocouple	-200°C ~ 800°C
18	Type M Thermocouple	-200°C ~ 100°C
19	Type LDIN43710 Thermocouple	-200°C ~ 900°C

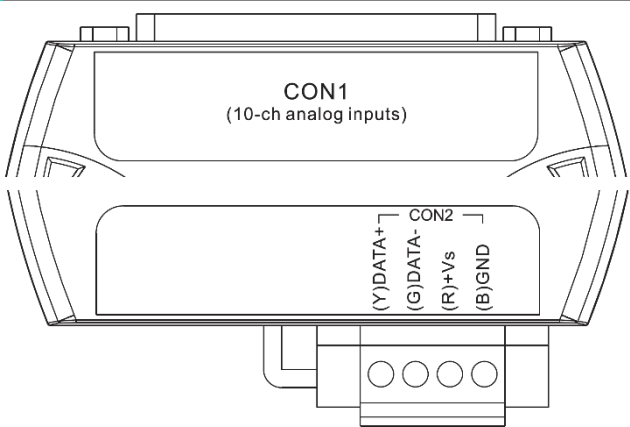
Internal I/O Structure



Wire Connections



Pin Assignments



CON1				
Pin Assignment	Terminal		No.	Pin Assignment
+5V	01		14	AGND
CJC	02		15	CH 0+
CH 0 -	03		16	CH 1+
CH 1 -	04		17	CH 2+
CH 2 -	05		18	CH 3+
CH 3 -	06		19	CH 4+
CH 4 -	07		20	CH 5+
CH 5 -	08		21	CH 6+
CH 6 -	09		22	CH 7+
CH 7 -	10		23	CH 8+
CH 8 -	11		24	CH 9+
CH 9 -	12		25	N.C.
N.C.	13		Shield	F.G.
			25-pin Female D-Sub Connector	

CPSR-DB1820

