

Rite RA Series Thermocouple Temperature Module Quick Start Guide

Rtelligent RA Series Thermocouple Temperature Module Quick Start Guide

Thank you for using the Rite RA-0400-TC expansion module product!

This manual provides information regarding the RA-0400-TC expansion module. Please read the relevant sections carefully before use to ensure proper operation!

- Before wiring, carefully review the terminal definitions; incorrect wiring may result in hardware damage.
- Insulate the connection area of the power terminal; otherwise, electric shock may occur.
- Do not perform setup, disassembly, or repairs unless specified personnel are involved, as this may result in electric shock or injury.
- Do not remove the cover, cables, connectors, or optional accessories while the device is powered on, as this may result in electric shock.
- Take measures to ensure that restarting does not endanger personal safety, otherwise it may result in injury.
- Do not modify this product under any circumstances, as it may result in injury or mechanical damage.
- Do not install in environments with corrosive or flammable gases, high temperatures, humidity, dust, or metal particles.
- To ensure proper heat dissipation, a sufficiently large spacing should be maintained during actual installation.
- For industrial control environments with significant interference, high-frequency input and output I/O ports should use shielded cables.

Product Information

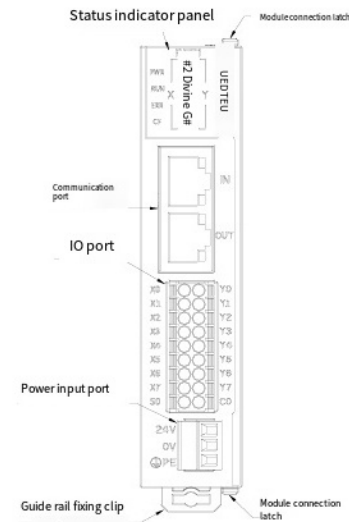
RA - 04 00 - TC

1 2 3 4

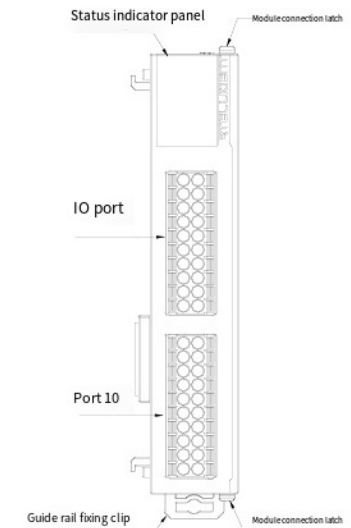
1 RA: Analog Expansion Module	3 00: Number of analog output points
2 04: Number of analog input points	4 Function Code N: NPN P: PNP IV: Supports current/voltage W: Weighing TC: Thermocouple TR: Resistance temperature detector

- 4-channel thermocouple input
- Resolution 0.1°C
- Fastest response time 250ms
- Supports J-type, K-type, R-type, S-type, T-type, E-type, N-type, and B-type thermocouples

Product illustration

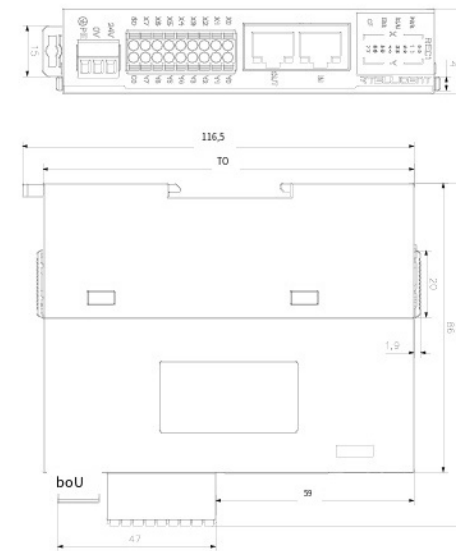


Coupler

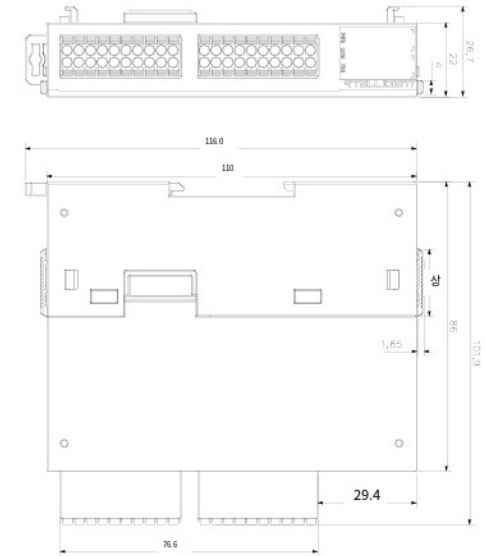


Module 10

Product dimensions



Coupler



Module 10

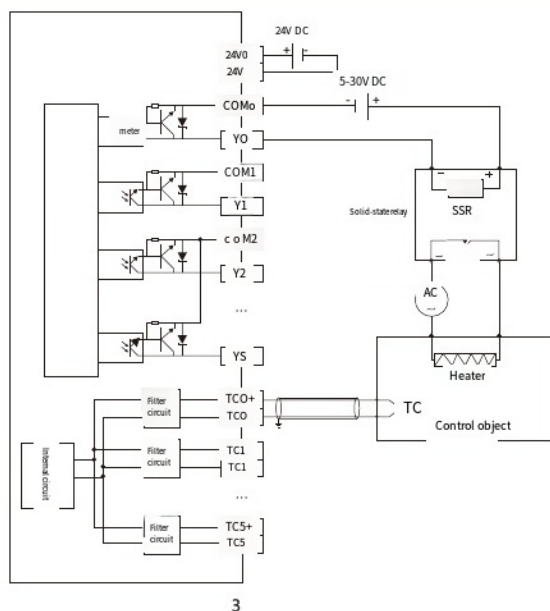
Input Module Terminal Definition

RA-0400-TC	Port
	24V
	GND
	PE
	TC0+
	TC0-
	PE
	TC1+
	TC1-
	PE
	NC
	TC2+
	TC2-
	PE
	TC3+
	TC3-
	PE
	NC
	NC
	NC
	NC

Note:

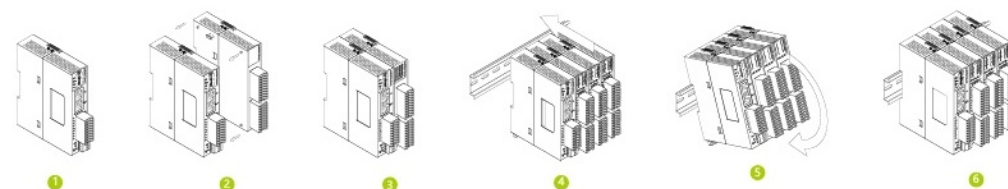
1. Connect the upper and lower terminals side by side on the same row. 2. Connect an external DC 24V power supply.

Wiring Diagram



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Installation Guide



General Specifications

RA-0400-TC Channel Specifications	
Sensor Input Type and Specifications	K, S, E, N, B, T, J, R type thermocouples
Input channel	4-channel
Sensor wiring	Two-wire system
Temperature measurement range	Type K: -1000°C to 1350°C / -148°F to 2462°F Type R: 0°C to 1750°C / 32°F to 3182°F Type E: -150°C to 980°C / -238°F to 1796°F Type B: 200°C ~ 1800°C / 392°F ~ 3272°F T-type: -150°C to 400°C / -238°F to 752°F Type N: -150°C to 1300°C / -238°F to 2372°F Type S: 0°C to 1750°C / 32°F to 3182°F Type J: -80°C to 1200°C / -112°F to 2192°F
Response time	250ms, 500ms, 1000ms / 4 channels
Sensitivity	0.1°C, 0.1°F
Resolution	Temperature: 0.1°C
Overall accuracy	±0.1% + 1°C (cold junction compensation) at full scale within the range of (25°C, 77°F); ±0.3% + 1°C (cold junction compensation) at full scale within the range of (-20 to 60°C, -4 to 140°F)
Power supply	DC24V ±10%
Diagnostic Protection	Line disconnection detection and power protection
Cold junction compensation	Supports cold junction compensation, accuracy ±1°C
Display mode	Celsius (°C)

Panel indicator lights

Indicator light	Function	Instructions
PWR	Power indicator light	The module power supply normal indicator light remains constantly
COM	Module online indicator light	The module's communication status light remains steadily on when online and off when offline
ERR	Module alarm indicator light	Normally off, flashes when alarm is triggered