# B1-2TC – Right Side 2 Channel Thermo-couple Temperature Input Module

Introduction

B1-TC6 is one of the temperature input modules of FATEK B1 series PLC. It provides 2 channels of thermo-couple temperature measurement input with 0.1 ℃ or 1 ℃ resolution. The scan rate for 0.1 ℃ resolution is 2 seconds, while the scan rate for 1 ℃ resolution is 1 seconds. The cold junction compensation is carried out inside the module, also it provides wire broken detection feature. To give the user more choices for the selection of thermo-couple type and in order to enhance the noise immunity, the isolation scheme is per channel basis. All the optional features of this module are software configurable. There are no hardware jumpers or switches for user to setup.

Dimension
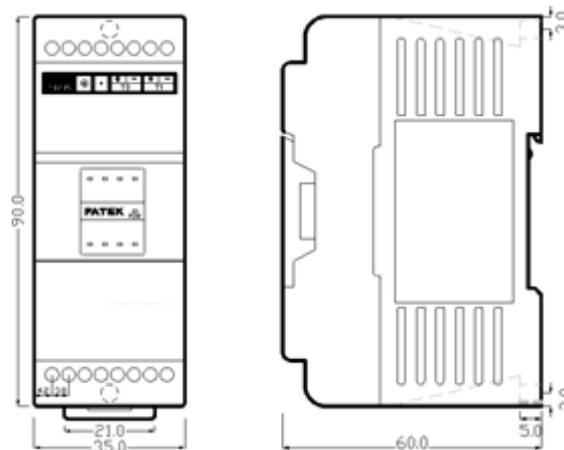
## Specifications

Expansion Type	Right Side
Total Channels	2 CH
Resolution	0.1℃ or 1℃
I/O Points Occupied	1 RI(Input Register) and 8 DO
Conversion Time	1 or 2 Seconds
Accuracy	±(1 %+1℃)
Sensor Type	J, K, R, S, E, T, B, N
Software Filter	Moving Average
Average Samples	1, 2, 4, 8, 16 Samples
Compensation	Built in cold junction compensation
Measurement Range	J: -200~1200℃ K: -200~1200℃ R: 0~1800℃ S: 0~1700℃ E: -190~1000℃ T: -190~380℃ B: 350~1800℃ N: -200~1000℃
Isolation	Transformer (Power) and Photo-couple (Signal)
Indicator(s)	5V PWR LED
Supply Power	24V-15%/+20%, 2VA

Internal Power Consumption	5V, 35mA
Operating Temperature	0 ~ 60 ℃
Storage Temperature	-20 ~ 80 ℃
Case Type Support	Standard Case
Dimensions	35(W)x90(H)x60(D) mm

Wiring Diagram
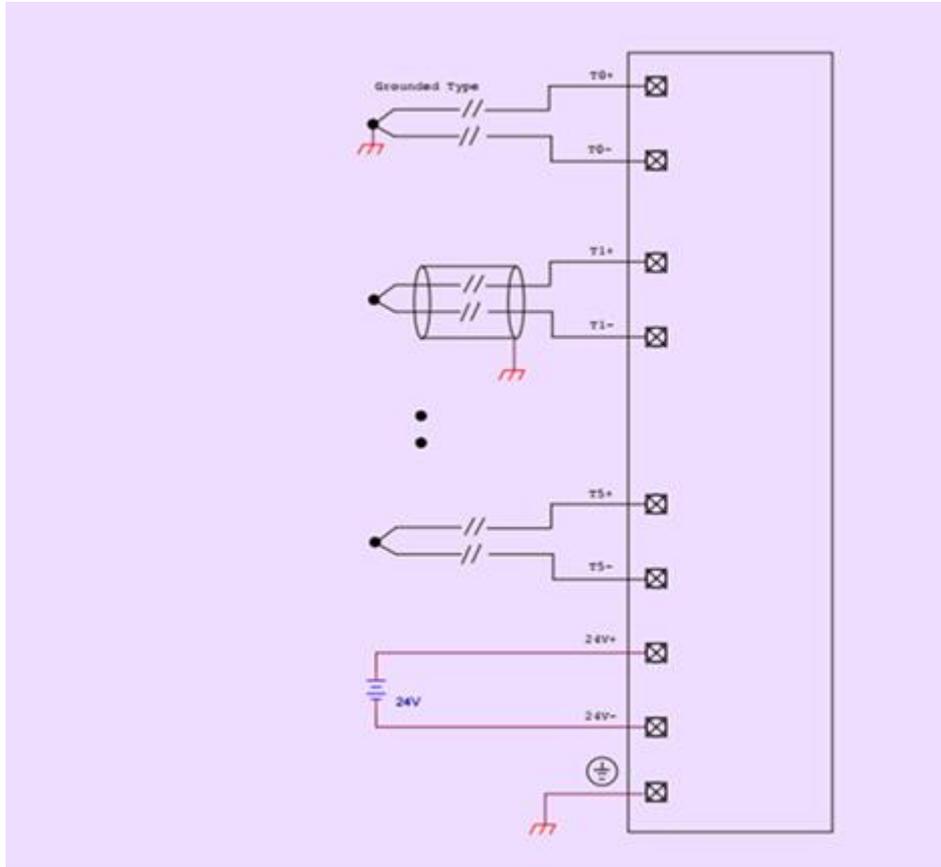
Note:

Because the thermo-couple signal is very small (in an order of uV), if possible please use the shielded twisted cable for signal wiring. Also if the length of thermo-couple wire is not long enough, please make sure to use the proper compensation wire otherwise will cause excessive error on cold junction compensation.

I/O Configuration

Before the temperature value can be retrieved, the user should perform the I/O configuration of temperature module with the help of Winproladder software. The following screen will be shown when perform the I/O configuration.
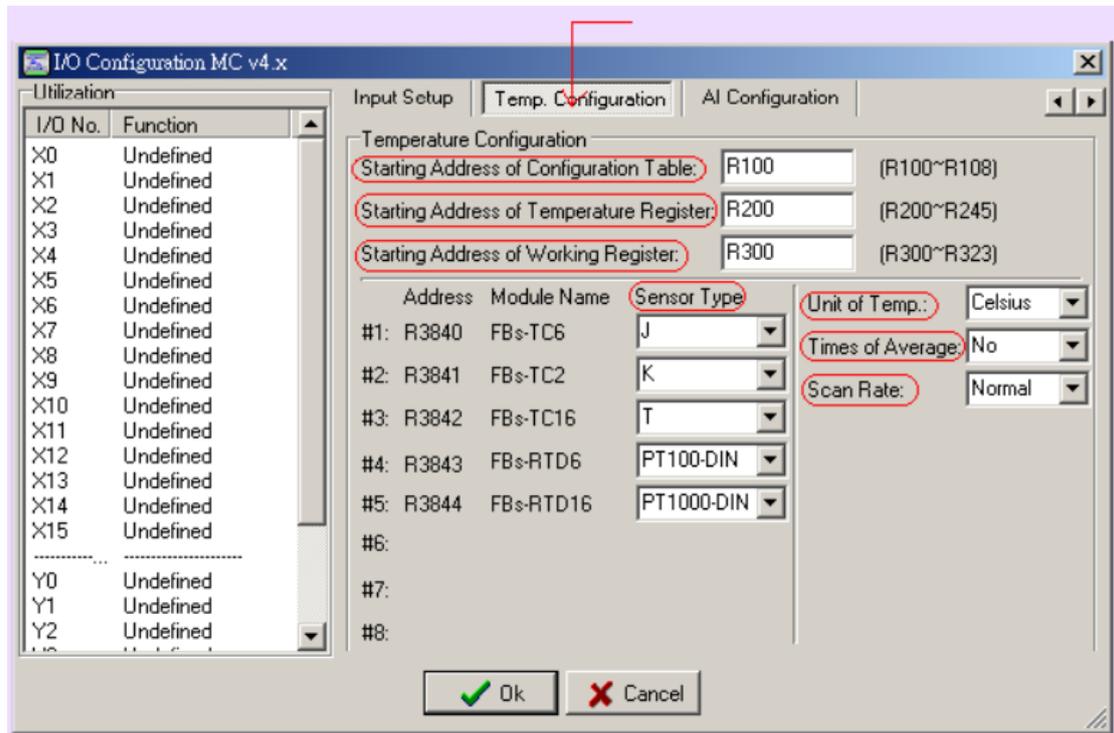
The user need to assign a starting register of a contiguous register area for holding temperature reading value and areas for storing the configuration table and working scratchpad and define the sensor type, unit of temperature, scan speed and samples for average.