

# MBs-6TC

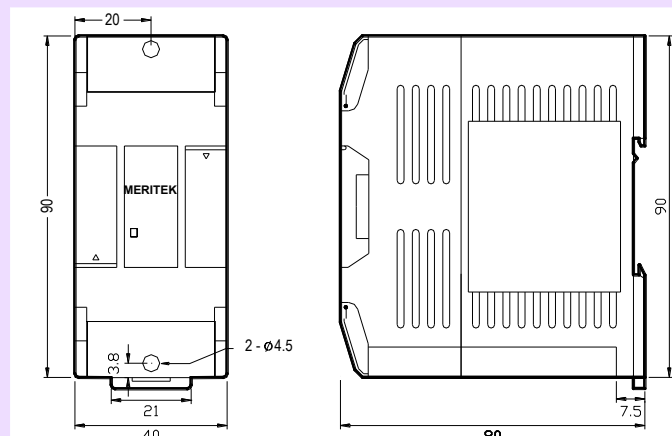
## 6 Channel Thermo-Couple Temperature Input Module



### Introduction

MBs-6TC is one of the temperature input modules of MERITEK MBs series PLC. It provides 6 channels of thermo-couple temperature measurement input with 0.1 °C or 1 °C resolution. The scan rate for 0.1 °C resolution is 4 seconds, while the scan rate for 1 °C resolution is 2 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.

### Dimensions



### Specifications

**Total Channels** - 6 CH

**Resolution**- 0.1 °C or 1 °C

**I/O Points Occupied** –

1 RI(Input Register)

8 Discrete Output(DO)

**Conversion Time**- 2 or 4 Seconds

**Accuracy**-  $\pm(1\% + 1^\circ\text{C})$

**Sensor Type**- J,K,R,S,E,T,B,N

**Software Filter**- Moving average

**Average Samples**- 1,2,4,8 configurable

**Compensation**- Built in cold junction compensation

**Measurement Range**-

J: -200~1200°C      K: -200~1200°C

R: 0~1800°C          S: 0~1700°C

E: -190~1000°C      T: -190~380°C

B: 350~1800°C      N: -200~1000°C

**Isolation**- Transformer(Power) and photo-coupler(Signal)

**Indicator(s)** – 5V PWR LED

**Supply Power**- 24V-15%/+20%, 2VA

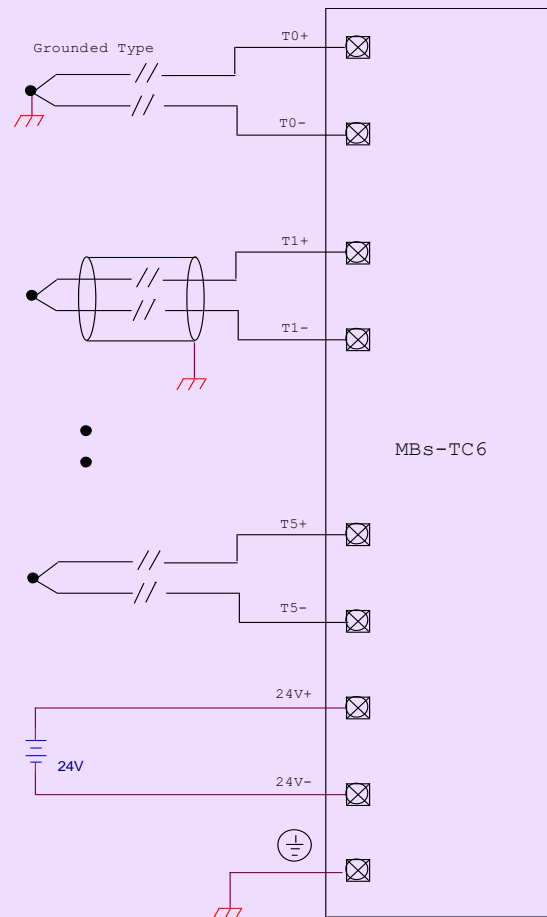
**Internal Power Consumption**- 5V, 35mA

**Operating Temperature**- 0 ~ 60 °C

**Storage Temperature**- -20 ~ 80 °C

**Dimensions**- 40(W)x90(H)x80(D) mm

### Wiring Diagram



#### Note:

Because the thermo-couple signal is very small (in an order of  $\mu V$ ), 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

Utilization

I/O No.	Function
X0	Undefined
X1	Undefined
X2	Undefined
X3	Undefined
X4	Undefined
X5	Undefined
X6	Undefined
X7	Undefined
X8	Undefined
X9	Undefined
X10	Undefined
X11	Undefined
X12	Undefined
X13	Undefined
X14	Undefined
X15	Undefined
Y0	Undefined
Y1	Undefined
Y2	Undefined

Input Setup | Temp. Configuration | AI Configuration

Temperature Configuration

Starting Address of Configuration Table: R100 (R100~R108)

Starting Address of Temperature Register: R200 (R200~R245)

Starting Address of Working Register: R300 (R300~R323)

Address	Module Name	Sensor Type
#1: R3840	MBs-6TC	J
#2: R3841	MBs-2TC	K
#3: R3842	MBs-16TC	T
#4: R3843	MBs-6RTD	PT100-DIN
#5: R3844	MBs-16RTD	PT1000-DIN
#6:		
#7:		
#8:		

Unit of Temp.: Celsius

Times of Average: No

Scan Rate: Normal

Ok Cancel

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. Please refer the advanced manual II for detail explanation.