FBs-TC16

16 Channel Thermo-Couple Temperature Input Module

Introduction

FBs-TC16 is one of the temperature input modules of FATEK FBs series PLC. It provides 16 channels of thermo-couple temperature measurement input with 0.1 ℃ or 1 ℃ resolution. The scan rate for 0.1 ℃ resolution is 6 seconds, while the scan rate for 1 ℃ resolution is 3 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.

Specifications

Total Channels - 16 CH

Resolution- 0.1 ℃ or 1 ℃

I/O Points Occupied –

1 RI(Input Register)

8 Discrete Output(DO)

Conversion Time- 3 or 6 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 configurable

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-coupler(Signal)

Indicator(s) – 5V PWR LED

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

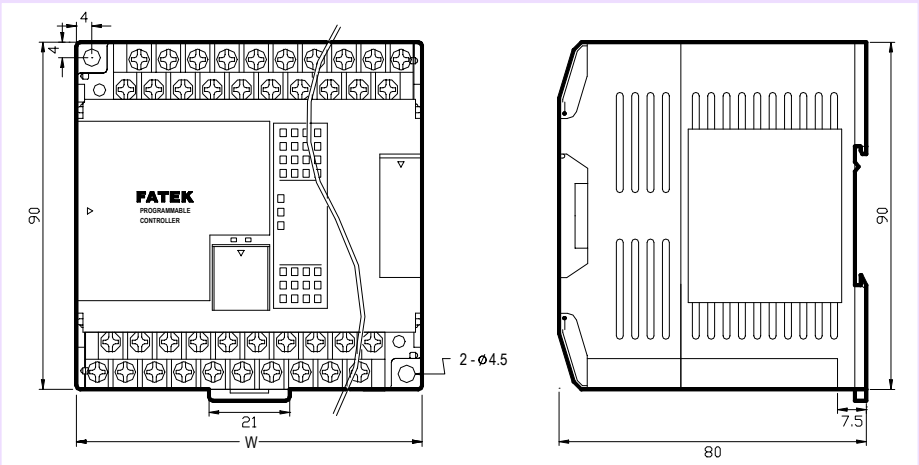
Internal Power Consumption- 5V, 35mA

Operating Temperature- 0 ~ 60 ℃

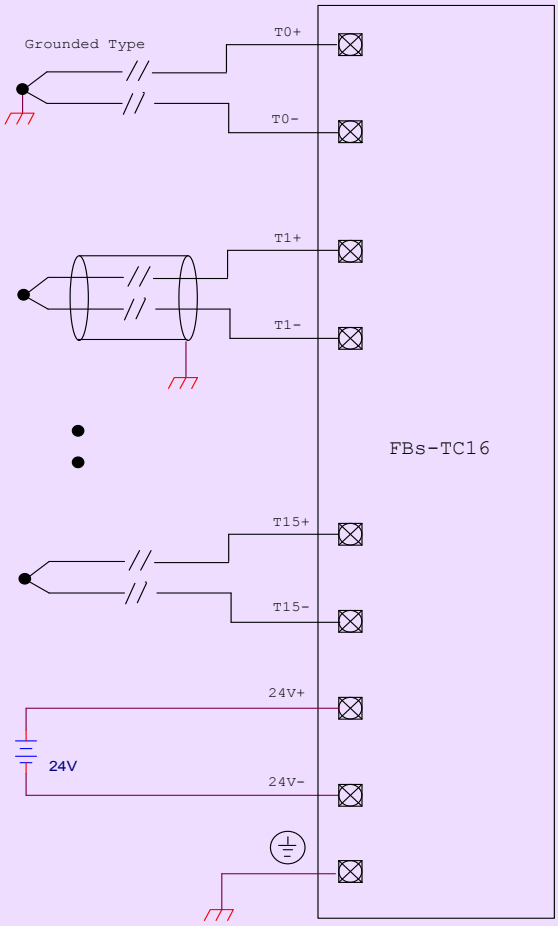
Storage Temperature- -20 ~ 80 ℃

Dimensions- 90(W)x90(H)x80(D) mm

Dimensions



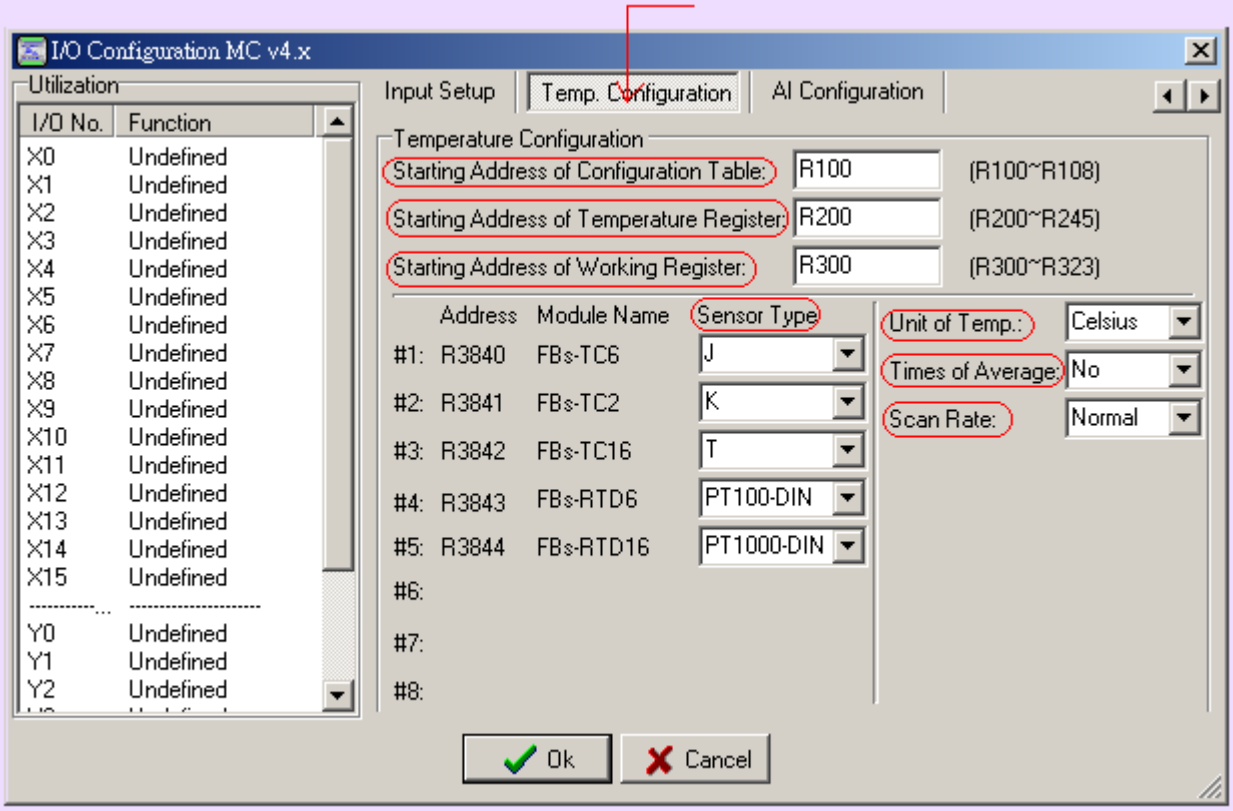
Wiring Diagram



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. Please refer the advanced manual II for detail explanation.