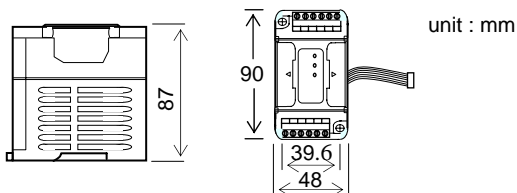# EX1N,1S

Ex1s2TC (Thermocouple) USER'S GUIDE

☞ This manual contains text, diagrams and explanations which will guide the reader in the correct installation and operation of the Ex1s2TC special function block.
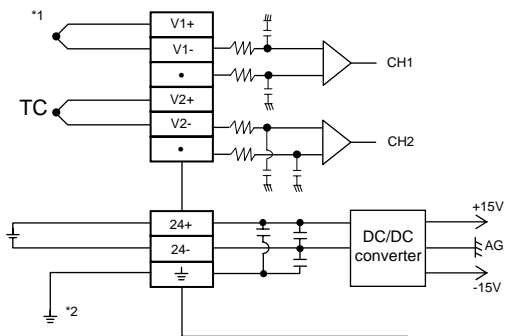
✽✽✽   Introduction   ✽✽✽

1) The Ex1s2TC type analog input block (Hereafter referred to as the Ex1s2TC) converts 2 points K Type or J Type Thermocouple temperature sensor of analog input values into digital values, and transfers them to the PLC main unit.

✽✽✽   External Dimensions   ✽✽✽

unit : mm

87

90

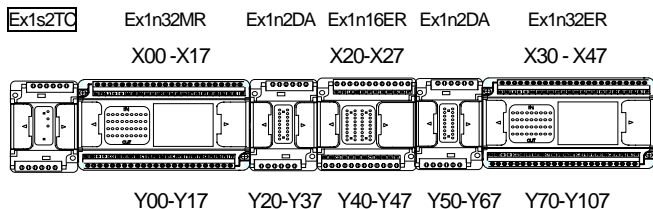39.6

48

✽✽✽   Wiring   ✽✽✽

*1 The analog input line. should separate it from other power lines or a lines easily induced.

*2 Make sure to connect the ⏚ terminal to the ⏚ terminal of the PLC main unit.

✽✽✽   Connection with PLC   ✽✽✽

1) The blocks not occupy any points. Only connect 1pc of module.
2) Applicable PLC : Ex1s, Ex1n, Ex2n series V2.22 or more.
3) Ex1s2TC are connected with the cable at the left of the main unit.

Ex1s2TC	Ex1n32MR	Ex1n2DA	Ex1n16ER	Ex1n2DA	Ex1n32ER
	X00 -X17		X20-X27		X30 - X47
	Y00-Y17	Y20-Y37	Y40-Y47	Y50-Y67	Y70-Y107

✽✽✽   Specifications   ✽✽✽

1. Environment specification

Item	Content
Directric Withstand voltage	500V AC 1min(Between analog input terminals and case)

Environmental specifications other than the above-mentioned are the same as the main unit of the Programmable controller. (Refer to the manual of the Programmable controller)

2. Power supply specification and isolation

Item	Content
Analog circuits	24V DC±10% 85mA (supplied from the External)
Digital circuits	5V DC 30mA (supplied from main unit)
Isolation	Photo-coupler isolation between analog and digital circuits.

3. Performance specifications

Item	Voltage input
Analog input	K Type or J Type temperature sensor
Analog output	12bit binary, 11bit + 1 sign bit
Resolution	K Type : 0.4°C or 0.72°F
A/D conversion time	1CH / 2 scan time

✽✽✽   Program Example   ✽✽✽

```
M8002
 ─┤├────[MOV   K0      D8120] : disable communication
                                 function
M8002
 ─┤├────[MOV   K250    D8114] : CH1 offset value
        [MOV   K415    D8116] : CH1 rise 10°C,
                                 increase 0.415mv
M8002
 ─┤├────[MOV   K250    D8115] : CH2 offset value
        [MOV   K415    D8117] : CH2 rise 10°C,
                                 increase 0.415mv
 X6
 ─┤├────(M8114) : 2TC CH1 enable flag
M8001
 ─┤├────(M8110) : CH1 degree Centigrade °C display
 X7
 ─┤├────(M8115) : 2TC CH2 enable flag
M8000
 ─┤├────(M8111) : CH2 degree Fahrenheit °F display
```

Measurement result stored into D8112(CH1) and D8113(CH2), unit = 0.1°C

♦ The different items of Thermocouple Temperature Sensor only changed the setting value of D8116 and D8117.

Ex1s2TC-edoc0406v100b

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