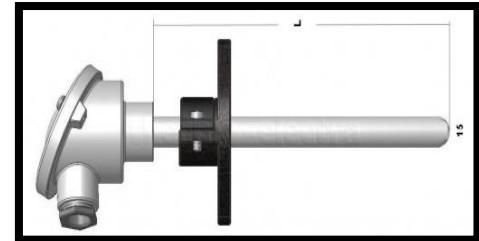


Lab-06

Interfacing of Sensor and Transducers

OBJECT:

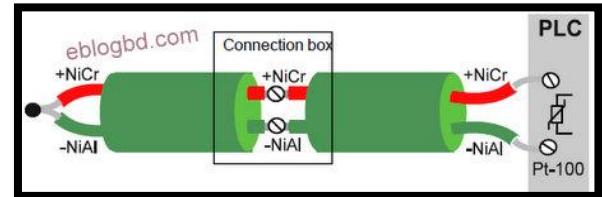
- To practice the interfacing of RTD, Thermocouple and Pressure transmitter with PLC
- To develop HMI for above sensors and show temperature & pressure in real time.



THEORY:

Type K Thermocouple:

Type K Thermocouple (Nickel-Chromium / Nickel-Alumel) the type K is the most common type of thermocouple. It's inexpensive, accurate, reliable, and has a wide temperature range. The type K is commonly found in nuclear applications because of its relative radiation hardness. Maximum continuous temperature is around 1,100C.



Pressure transmitter:

A pressure transducer consists of two main parts, an elastic material which will deform when exposed to a pressurized medium and a electrical device which detects the deformation. The elastic material can be formed into many different shapes and sizes depending on the sensing principle and range of pressures to be measured. The most common method of utilizing the elastic material is to form it into a thin flexible membrane called a diaphragm. The electrical device which is combined with the diaphragm to create a pressure transducer can be based on a resistive, capacitive or inductive principle of operation.



Range: 0-10 bar

WIRE:

Output: 4-20mA

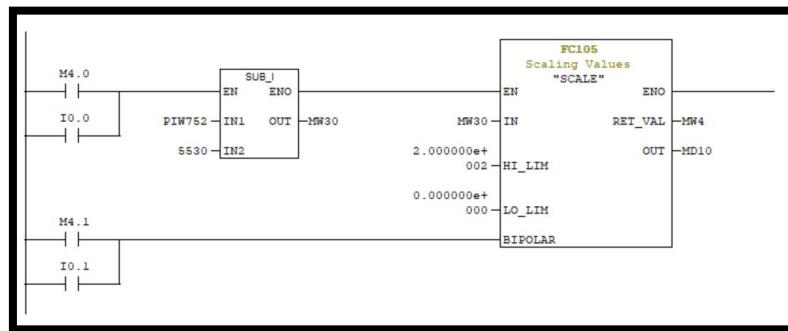
RED: IN+

Power: 9-32 VDC

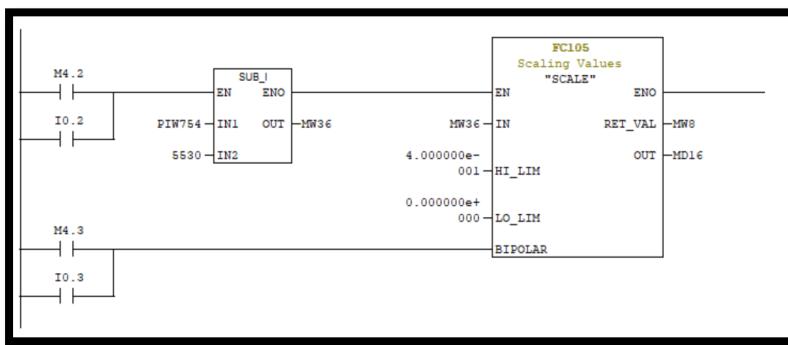
BLACK: IN-

Connection: G 1/4

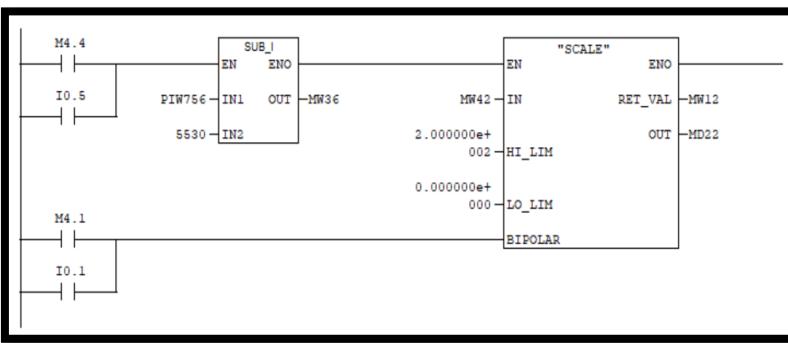
Network 1:



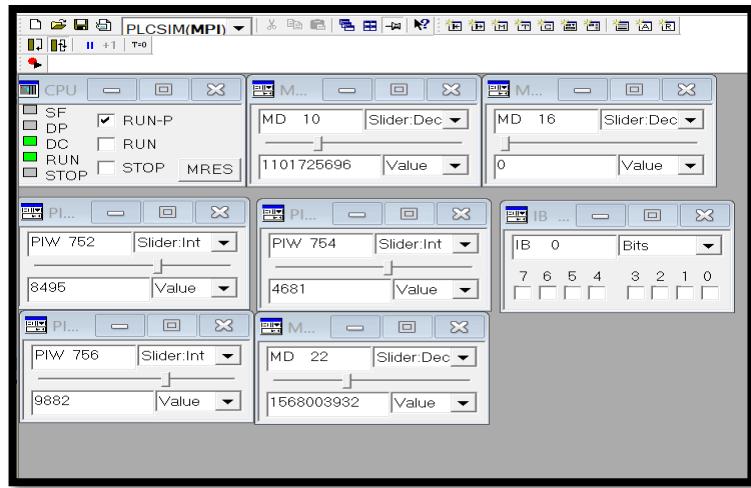
Network 2:



Network 3:



| | | | | | |
|--------|--------------|------|---------|---|--------|
| Tag_1 | Connection_1 | Int | PIW 752 | 1 | 1 s |
| Tag_10 | Connection_1 | Real | MD 22 | 1 | 1 s |
| Tag_12 | Connection_1 | Int | PIW 756 | 1 | 1 s |
| Tag_2 | Connection_1 | Real | MD 10 | 1 | 1 s |
| Tag_3 | Connection_1 | Bool | I 0.0 | 1 | 500 ms |
| Tag_7 | Connection_1 | Int | PIW 754 | 1 | 1 s |
| Tag_8 | Connection_1 | Real | MD 16 | 1 | 1 s |



HMI DISPLAY:

