PROCESS INSTRUMENTATION

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LAB 6:

Aim - Study of conventional and intelligent temperature transmitters

Implementation of RTD Intelligent transmitter features (voting and averaging logic) using Python:

Python Code:

```
print("Enter the output of 3 RTDs :")
a = int(input("RTD 1: "))
b = int(input("RTD 2: "))
c = int(input("RTD 3: "))

if(a==b==c):
    print("\nVoting Logic Output: " + str(a))
else:
    if(a==b):
        print("\nVoting Logic Output: " + str(a))
    elif(b==c):
```

print("\nVoting Logic Output: " + str(b))

else:

print("\nAveraging Output: " + str((a+b+c)/3))

Output:

Voting Logic:

```
In [8]: print("Enter the output of 3 RTDs :")
        a = int(input("RTD 1: "))
        b = int(input("RTD 2: "))
        c = int(input("RTD 3: "))

        if(a==b==c):
            print("\nVoting Logic Output: " + str(a))
        else:
            if(a==b):
                print("\nVoting Logic Output: " + str(a))
            elif(b==c):
                print("\nVoting Logic Output: " + str(b))
            else:
                print("\nAveraging Output: " + str((a+b+c)/3))
```

```
Enter the output of 3 RTDs :
RTD 1: 119
RTD 2: 120
RTD 3: 120

Voting Logic Output: 120
```

Averaging:

In [9]:
```
print("Enter the output of 3 RTDs :")
a = int(input("RTD 1: "))
b = int(input("RTD 2: "))
c = int(input("RTD 3: "))

if(a==b==c):
    print("\nVoting Logic Output: " + str(a))
else:
    if(a==b):
        print("\nVoting Logic Output: " + str(a))
    elif(b==c):
        print("\nVoting Logic Output: " + str(b))
    else:
        print("\nAveraging Output: " + str((a+b+c)/3))
```

```
Enter the output of 3 RTDs :
RTD 1: 119
RTD 2: 120
RTD 3: 118

Averaging Output: 119.0
```

Conclusion:

Studied conventional and intelligent temperature transmitters. Implemented voting and averaging logic of intelligent transmitters using python programming.