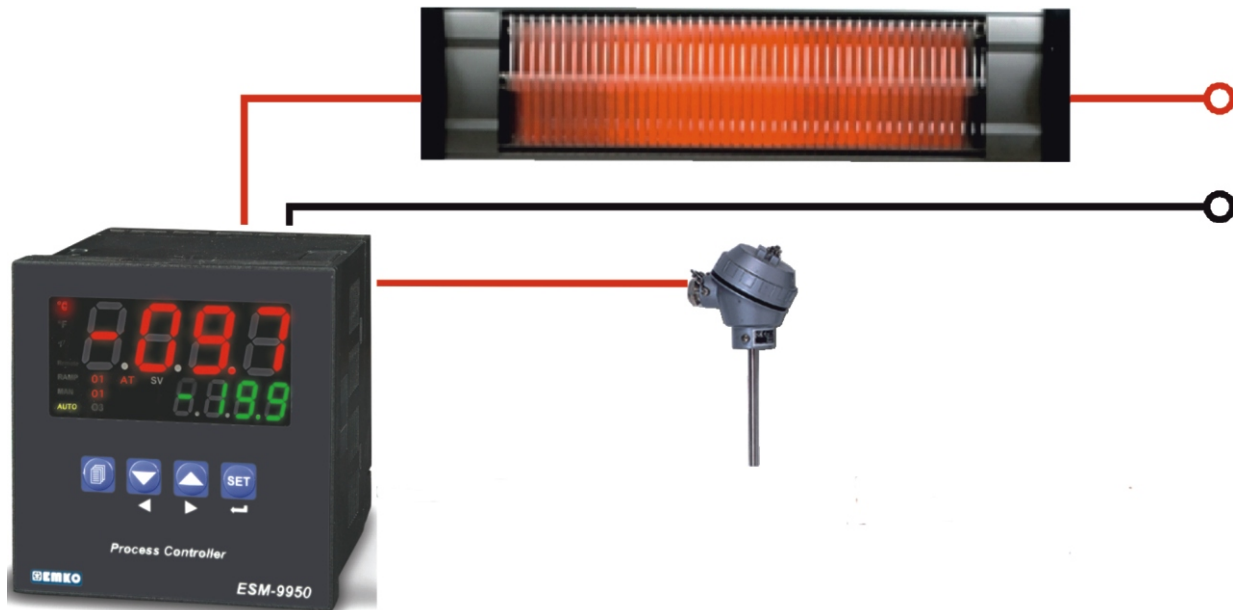


TEMPERATURE AND HUMIDITY CONTROL WITH ESM-XX50 SERIES



ESM-XX50 series process controllers can be used to process input value (temperature, humidity, weight, pressure etc.) and control desired outputs accordingly. The Input/Output modules, Universal Inputs, RS 232/ RS 485 serial communication modules enhance the application fields of ESM-XX50 series process controllers. Some of the applications can be listed as follows; PID Process Control, Motorized Valve Control, Profile Control, Heating Failure Detection.

Sample Application:

- Temperature and humidity measurement with two sensor inputs (universal input and 4-20 mA input module).
- Temperature control or alarm function through internal relay output (5A@250V) and alarm or control function according to humidity ratio through relay output module (3A@250V).
- Temperature value is displayed on upper display.
- Humidity ratio is displayed on lower display.

- Output3 is active if the temperature drops below 80 C.
- Alarm2 output is active if the humidity ratio exceeds %50.

- Two Sensor Inputs (Temperature and Humidity)
- Control Output (ON/OFF, P, PI, PD, PID)
- Alarm / Control Output (Relay, SSR, Digital, Analog)

diSP LiSt: Function Selection for Top and Bottom Display

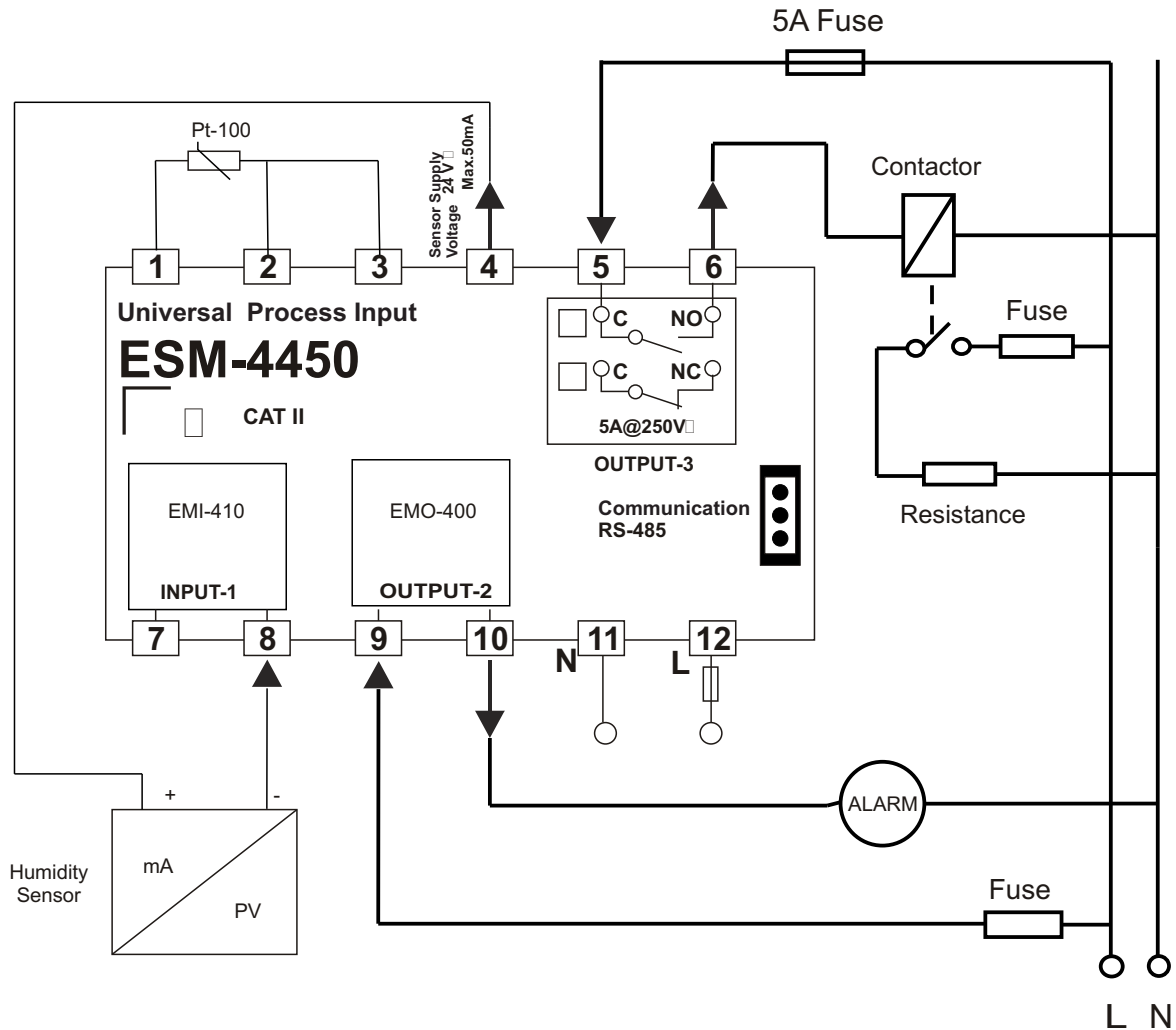
tdSP It defines the function of the top display.
This parameter determines which value is shown in top display.

0000 Temperature (PV) is shown on top display.

bdSP It defines the function of the bottom display.

0003 Humidity ratio is shown on bottom display.

Electrical Connections



PinP ConF: Process Input Type and Relevant Parameters with Process Input

- `.55L` Defines the process input type.
- `0001` RTD input type selection
- `rtd5` Defines type and scale of sensor for RTD input. It is active if RTD input is selected.
- `0000` PT-100 (-200°C ; 650°C) or (-328°F ; 1202°F)

ioP1 ConF: MODULE-1 Configuration Parameters

- `.5L1` Configuration of analogue input module in Module-1 socket.
- `0002` Voltage / Current input type selection. EMI-410 current input is selected.
- `uRS1` It is active if input type of Module-1 is selected Voltage/Current
- `0001` 4...20mA (-1999 ; 9999)

dpn1 Display decimal point selection

0001 000.0

ICA1 Calibration type

It is active if input type of Module-1 is selected □ Voltage /Current.

0001 Selectable dual point calibration is performed.

LC1 Lowest calibration point selection is set to 0.0 for this example

HC1 Highest calibration point selection is set to 100.0 for this example

unt1 Unit selection

- None

ioP2 ConF: MODULE-2 Configuration Parameters

out2 Defines output function for Module-2

Lout Logic output

Lout2 Defines logic output function for Module-2

0000 Alarm out is selected.

ALS2 Measurement input selection for Module-2 alarm output.

0001 Alarm output runs according to the analogue input module (2nd sensor input) in Module-1 socket.

ALt2 MODULE-2 alarm type

0000 Process high alarm

out3 ConF: Output-3 Configuration Parameters

out3 Defines output function for Output-3

HEAt Heating

Con3 Defines control algorithm of Output-3.

onof ON/OFF control algorithm is selected.

HYS3 Hysteresis value can be adjusted from 0% to 50% of defined scale.

HYN3 It determines operation form of hysteresis.

0000 SV+ HYS/2 and SV- HYS/2

0001 SV and SV+HYS or SV and SV-HYS

Set LiSt: Set Values

PSEt Process value is set to 80.

ALr2 Alarm-2 is set to 50.