

PROCESS CONTROLLER

FEATURES

- 4 Digits Process (PV) & 4 Digits Process Set (SV) Display
- Universal Process Input (TC, RTD, mV, V, mA)
- Dual or multi point calibration for Voltage / Current Input
- Configurable ON/OFF, P, PI, PD ve PID Control Forms
- Auto-tune & Self-tune PID
- Manual / Automatic Mode Selection for Control Outputs
- Bumpless Transfer
- Programmable Heating, Cooling & Alarm Functions for Control Outputs



ESM-4435

ESM Series Process Controllers are Designed for Measuring & Controlling Temperature & any Process Value. Sensitive & Developed controlling is done with it's selectable ON-OFF, P, PI, PD, PID, Auto Tune & Self Tune PID Properties.

SPECIFICATIONS

PROCESS INPUT

Universal Input: TC, RTD, Voltage / Current

Thermocouple (TC): L(DIN 43710), J, K, R, S, T, B, E & N (IEC584.1) (ITS90), C (ITS90)

Thermoresistance (RTD): PT-100 (IEC751) (ITS90)
Input: mV, V, mA

Measurement Range : Please refer to Table-1 for selection of input type and scale

Accuracy: $\pm 0.25\%$ of full scale for Thermocouple, Thermoresistance, mV, V
 $\pm 0.70\%$ of full scale for mA Input

Cold Junction Compensation: Automatically $\pm 0.1^\circ\text{C}/1^\circ\text{C}$

Line Compensation: Maximum 10 Ohm

Sensor Break Protection: Upscale

Sampling Cycle: 3 Samples per second

Input Filter: 0.0 to 900.0 seconds

CONTROL

Control Form: ON/OFF, P, PI, PD or PID (Control form can be programmed by the user)

Process Output : Current Output 0/4 to 20mA

Standard Relay Output (Alarm) : Two Relays. Their rating is 5A@250V~ (at resistive load)

DISPLAY

Process Display:

ESM-4435 : 10.1 mm Red 4 Digits LED Display

Set Value Display:

ESM-4435 : 8 mm Green 4 Digits LED Display

LEDs : AT(Auto Tune), M (Manual Mode), A (Automatic Mode), PSET / ASET-1 / ASET-2 (Control or Alarm Set) Leds, PO, AO1, AO2 (Control or Alarm Status) $^\circ\text{C}$ / $^\circ\text{F}$ / V Leds

SUPPLY VOLTAGE

100-240 V~ 50/60 Hz (-15% ; $+10\%$) -6VA Universal
24V (-15% ; $+10\%$) -6W Optional
(Must be determined in order)

ENVIRONMENTAL RATINGS and PHYSICAL SPECIFICATIONS

Operating Temperature : 0..... 50°C

Humidity : 0 to 90% RH (None Condensing)

Protection Class : IP65 at front, IP20 at rear

Weight :

ESM-4435 : 170 gr.

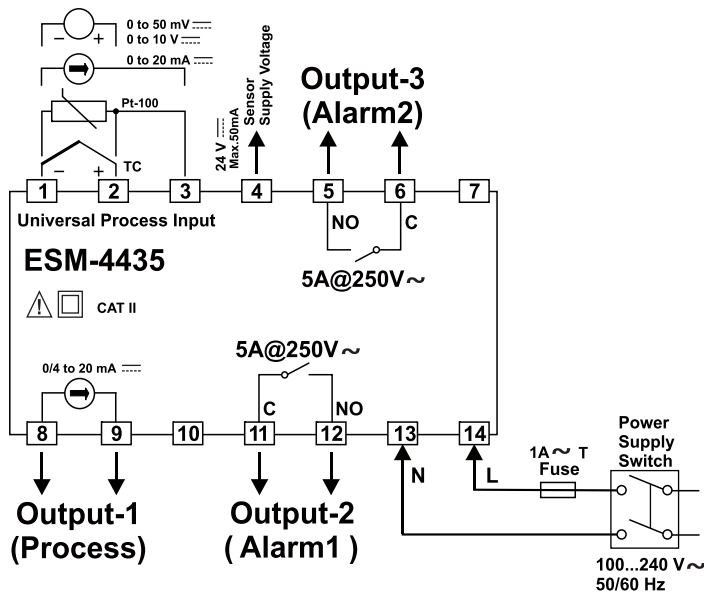
Dimensions :

ESM-4435 : (48 × 48 mm, Depth: 87.5 mm)

Panel Cut-Out :

ESM-4435 : (46 × 46 mm)

ELECTRICAL WIRING



ORDERING INFORMATION

ESM-4435 (48x48 DIN 1/16)

A	BC	D	E	/	FG	HI	/	U	V	W	Z
		0		/	01	01	/	0	0	0	0

A Supply Voltage		
1	100-240V ~ (-15%;+10%) 50/60Hz	
2	24V --- (-15%; +10%)	
BC Input Type		Scale
20	Configurable(Table-1)	Table-1
D Serial Communication		
0	None	
E Output-1 (Process)		
1	Current Output (0/4 to 20mA---)	
FG Output-2 (Alarm1)		
01	Relay Output (5A@250V~ at resistive load)	
HI Output-3 (Alarm2)		
01	Relay Output (5A@250V~ at resistive load)	

Table-1

BC	Input Type(TC)	Scale(°C)	Scale(°F)
21	L, Fe Const DIN43710	-100°C, 850°C	-148°F, 1562°F
22	L, Fe Const DIN43710	-100.0°C, 850.0°C	-148.0°F, 999.9°F
23	J, Fe CuNi IEC584.1(ITS90)	-200°C, 900°C	-328°F, 1652°F
24	J, Fe CuNi IEC584.1(ITS90)	-199.9°C, 900.0°C	-199.9°F, 999.9°F
25	K, NiCr Ni IEC584.1(ITS90)	-200°C, 1300°C	-328°F, 2372°F
26	K, NiCr Ni IEC584.1(ITS90)	-199.9°C, 999.9°C	-199.9°F, 999.9°F
27	R, Pt13%Rh Pt IEC584.1(ITS90)	0°C, 1700°C	32°F, 3092°F
28	S, Pt10%Rh Pt IEC584.1(ITS90)	0°C, 1700°C	32°F, 3092°F
29	T, Cu CuNi IEC584.1(ITS90)	-200°C, 400°C	-328°F, 752°F
30	T, Cu CuNi IEC584.1(ITS90)	-199.9°C, 400.0°C	-199.9°F, 752.0°F
31	B, Pt30%Rh Pt6%Rh IEC584.1(ITS90)	44°C, 1800°C	111°F, 3272°F
32	B, Pt30%Rh Pt6%Rh IEC584.1(ITS90)	44.0°C, 999.9°C	111.0°F, 999.9°F
33	E, NiCr CuNi IEC584.1(ITS90)	-150°C, 700°C	-238°F, 1292°F
34	E, NiCr CuNi IEC584.1(ITS90)	-150.0°C, 700.0°C	-199.9°F, 999.9°F
35	N, Nicrosil Nilil IEC584.1(ITS90)	-200°C, 1300°C	-328°F, 2372°F
36	N, Nicrosil Nilil IEC584.1(ITS90)	-199.9°C, 999.9°C	-199.9°F, 999.9°F
37	C, (ITS90)	0°C, 2300°C	32°F, 3261°F
38	C, (ITS90)	0.0°C, 999.9°C	32.0°F, 999.9°F

BC	Input Type(RTD)	Scale(°C)	Scale(°F)
39	PT 100, IEC751(ITS90)	-200°C, 650°C	-328°F, 1202°F
40	PT 100, IEC751(ITS90)	-199.9°C, 650.0°C	-199.9°F, 999.9°F

BC	Input Type(--- Voltage and Current)	Scale
41	0...50 mV ---	-1999,9999
42	0...5 V ---	-1999,9999
43	0...10 V ---	-1999,9999
44	0...20 mA ---	-1999,9999
45	4...20 mA ---	-1999,9999



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