

E-2000M Serisi Universal Advanced Controller Quick Start Guide

Manufacturer / Technical Support :
Elimko Elektronik İmalat ve Kontrol Ltd. Şti.
ASO 2. Organize Sanayi Bölgesi Alçı OSB Mahallesi
2001. Cad. No:14 Temelli 06909 Ankara / TÜRKİYE
Tel: +90 312 212 64 50 (Pbx) • Fax: +90 312 212 41 43
E-mail: elimko@elimko.com.tr • www.elimko.com.tr

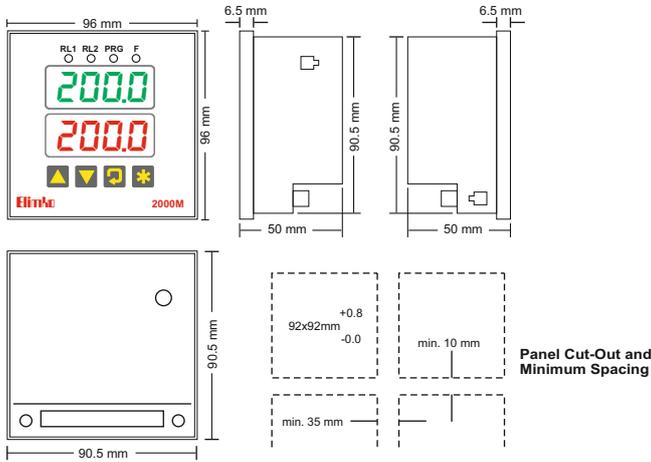


1. DESCRIPTION

E-2000M Series general purpose process controllers are industrial devices in 1/4 DIN (96x96 mm IEC/TR 60668) dimensions designed by using new generation microcontrollers with on/off, PID and other control forms. Inputs and outputs can be easily programmed by the user.

In E-2000M Series controllers, set value and measured value can be displayed from -1999 to 9999 on two 4-digit displays and general purpose inputs (T/C, R/T, mV, mA) can be programmed.

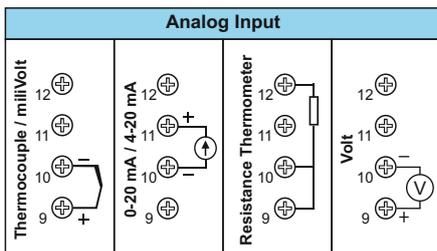
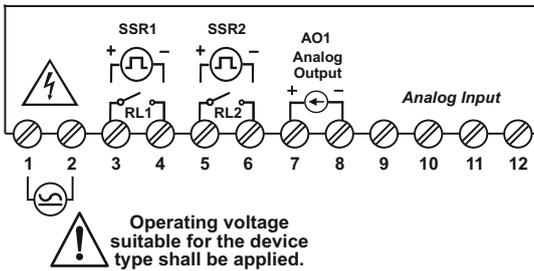
2. DIMENSIONS and PANEL CUT-OUT



3. CONNECTION DIAGRAM

1st and 2nd control outputs can be selected as either Relay (RL1, RL2) or SSR (SSR1, SSR2).

Analog output (AO1) can be selected as either mA or 0-10 V DC.



4. WARNINGS

E-2000M controller is designed for panel mounting and should be used in an industrial environment.



- The package of E-2000M controller contains; Controller, 2 pieces of mounting clamps, User manual and Guarantee certificate.
- After opening the package, please check the contents with the above list. If the delivered product is wrong type, any item is missing or there are visible defects, contact the vendor from which you purchased the product.
- Before installing and operating the controller, please read the user manual thoroughly.
- The installation and configuration of the controller must only be performed by a person qualified in instrumentation.
- Keep the unit away from flammable gases, that could cause explosion.
- Do not use alcohol or other solvents to clean the controller. Use a clean cloth soaked in water tightly squeezed to gently wipe the outer surface of the controller.
- It is not used in medical applications.

EU DIRECTIVE COMPLIANCE

Low Voltage Directive
EN 61010-1
EMC Directive
EN 61326-1



TS EN ISO 9001
Quality Management System Certificate

5. TYPE CODING

E-2000M Series Universal Advanced Controller

E-2000M - W - X - Y - Z

Relay Outputs

- None
- 1 relay (RL1)
- 2 relays (RL1, RL2)
- 1 SSR (SSR1)
- 1 SSR (SSR1) + 1 relay (RL2)
- 2 SSR (SSR1, SSR2)

0
1
2
3
4
5

Analog Outputs

- None
- 0-20 / 4-20 mA (AO1)
- 0-10 V DC (AO1)

0
1
2

Communication

- None

0

Operating Voltage

- 85-265 V AC / 85-375 V DC
- 20-60 V AC / 20-60 V DC

0
1

6. TECHNICAL SPECIFICATIONS

Parameter	Description
Control Type	On/Off, PID, Heat/Cool, Floating Control of Valves
Operating Voltage	20..60 V AC / 20..60 V DC or 85..265 V AC / 85..375 V DC
Relays / SSR	2 x SPST - NO 250 V AC 5A or 24 V DC 25 mA (SSR) drives
Dimensions (mm)	96 (Length) x 96 (Height) x 50 (Width)
Panel Cut-Out (mm)	92 (Length) X 92 (Height)
Analog Output	1 x 0..20 / 4..20 mA or 0..10 V DC optional
Analog Input	Universal (Note 1)
Communication (RS-485)	None
Digital Input	None
Valve Feedback	None
Transmitter Supply	None
Weight	230 g
Power Consumption	Max. 7 W (10 VA)
Operating Temperature	- 10 °C ... 55 °C
Storage Temperature	- 25 °C ... 65 °C
Memory	Maks. 100.000 write
Protection Class	IP-65 Front Panel, IP-20 Rear Case

Notes:

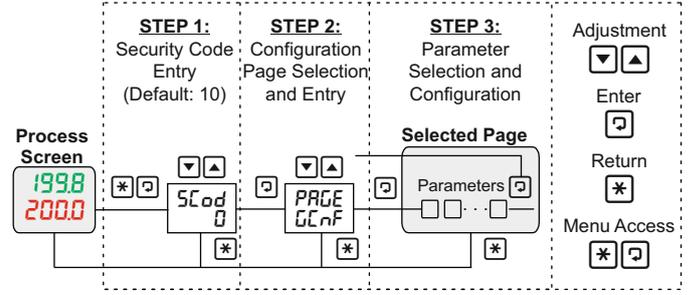
(1) Universal Input :

- Thermocouple : B, E, J, K, L, N, R, S, T, U
- Resistance Thermometer : Pt-100
- Current : 0-20 mA, 4-20 mA (Linear)
- Voltage : 0-50 mV, 0-1 V, 0.2- 1 V (Linear), 0-10 V DC, must be specified in the order.
- Resolution : 16 bit
- Accuracy : Thermocouple, Max. ± 1.0 °C (Conversion and CJC error)
Resistance Thermometer, Max. ± 0.5 °C (Conversion and wire resistance compensation)
Linear Input, Max. % 0.1

7. PARAMETER TABLE

		Description	Min	Maks	Unit		
INPUT SETTINGS	dLnF	inP i	Table 1				
		dP	0	3			
		SLo	-199.9	999.9	EU		
		SHi	-199.9	999.9	EU		
		UnIt	oF	oF			
		oFSt	-100.0	100.0	EU		
		FLtR	1	15	s		
5nBr	Lo	Hi					
CONTROL SET SETTINGS	SELP	SPSr	Table 2				
		SPLL	-199.9	SPHL	EU		
		SPHL	SPLL	999.9	EU		
		SPrr	oFF	60.0	EU/min		
		S-1	SPLL	SPHL	EU		
		t-1	oFF	999.9	min		
		S-2	SPLL	SPHL	EU		
		t-2	oFF	999.9	min		
		S-3	SPLL	SPHL	EU		
		t-3	oFF	999.9	min		
ALARM SETTINGS	RcNF	R iTP	Table 3				
		R iSP	-199.9	999.9	EU		
		R iHY	0.0	999.9	EU		
		R iLk	d5b	Enb			
		R2tP	Table 3				
		R2SP	-199.9	999.9	EU		
ALARM SETTINGS	RcNF	R2HY	0.0	999.9	EU		
		R2Lk	d5b	Enb			
		OUTPUT SETTINGS	oLnF	CLtYP	Table 4		
				CFrñ	d ir	rEu	
				CPrd	1	250	s
				ñnP r	d5b	Enb	
trtñ	10			2500	s		
dbnd	0.1			25.0	%		
OUTPUT SETTINGS	oLnF	oLL	0.0	oHL	%		
		oHL	oLL	100.0	%		
		oñr	oLL	oHL	%		
		PonC	0	4			
		trLL	-199.9	trHL	EU		
		trHL	trLL	999.9	EU		
		rL id	Table 5				
		rL2d	Table 5				
		Ro id	Table 6				
		Ro ir	Table 7.1 ve Table 7.2				
PID SETTINGS	tLnE	Rt	oFF	on			
		P id	Std	Rdu			
		Pb- i	0.1	999.9	EU		
		Pb-2	0.1	999.9	EU		
		ItH	oFF	9999	s		
		ItC	oFF	9999	s		
		dItH	oFF	2500	s		
		dItC	oFF	2500	s		
		HYS	0.0	999.9	EU		
SECURITY	PrLL	SLod	0	9999			
		dPrL	0	9			
		RPrL	0	9			
		FCSt	Factory Settings [oFF, LoRD, SRuE, dFLt]				

8. ACCESSING PARAMETERS



9. APPLICATION EXAMPLES

- 1) Input: Pt-100 Relay / Alarm1: 50 °C Low, Relay2 / Alarm2: 55 °C High
AO1: 4-20 mA PID Control Output

inP i	R iTP	R iSP	R2tP	R2SP	CLtYP	rL id	rL2d	Ro id	Ro ir
Pt	Lo	50.0	Hi	55.0	SLo	Ri-1	Ri-2	Lo-1	4-20

- 2) Input: TC Type J, Relay1: On-Off Control Output, Relay2 / Alarm2: 350 °C High

inP i	R2tP	R2SP	CLtYP	rL id	rL2d
J	Hi	350.0	SLo	do-1	Ri-2

- 3) Input: TC Type K, Profile Control (Ramp up to 400°C in 10 minutes and wait for 60 minutes),
Relay1: PID Control Output, AO1: Retransmission Output (4-20 mA, 0-1200 °C)

inP i	SPSr	S-1	t-1	S-2	t-2	CLtYP	trLL	trHL	rL id	rL2d	Ro id	Ro ir
t	PrFL	400	10.0	400	60.0	SLo	0	i200	Lo-1	Ri-2	PuTr	4-20

Table 1. Input Type Options

b	Type B Thermocouple
E	Type E Thermocouple
J	Type J Thermocouple
K	Type K Thermocouple
L	Type L Thermocouple
n	Type N Thermocouple
r	Type R Thermocouple
S	Type S Thermocouple
t	Type T Thermocouple
U	Type U Thermocouple
Pt	Pt-100
0-20	0-20 mA
4-20	4-20 mA
0-50	0-50 mV
00-1	0-1 V
02-1	0.2-1 V
0-10	0-10 V (*)
2-10	2-10 V (*)

(*) Custom specified volt input

Table 2. Control Set Options

Ink	Internal adjustment with keys
PrFL	With Profile Control

Table 3. Alarm Options

oFF	Off
Lo	Low Alarm
Hi	High Alarm
LoD	Low Deviation
HiD	High Deviation
LoB	Band Alarm (In)
HiB	Band Alarm (Out)

Table 4. Control Type Options

oFF	No Control
SLo	Single (Heat)
dLo	Double (Heat/Cool)
bnd	Floating Control of Valve

Table 5. Relay Output Options

Lo-1	PID + (Heating)
Lo-2	PID - (Cooling)
do-1	On-Off + (Heating)
do-2	On-Off - (Cooling)
Ri-1	Alarm 1
Ri-2	Alarm 2
Ri-3	Alarm 3
Ri-4	Alarm 4

Table 6. Analog Output Options

Lo-1	PID + (Heating)
Lo-2	PID - (Cooling)
PuTr	Process Value
SPTr	Control Set Value

Table 7.1. Analog Output Range

0-20	0-20 mA
20-0	20-0 mA
4-20	4-20 mA
20-4	20-4 mA

Table 7.2. Analog Output Range

0-10	0-10 V
10-0	10-0 V
2-10	2-10 V
10-2	10-2 V

For detailed information, you can access the comprehensive user manual of the device under the heading "User Manuals" at www.elimko.com.tr. You can also use the QR Code on the front for this.