



Elimko E-2000M Universal Advanced Controller User Guide

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Elimko

E-2000M Serisi
Universal Advanced



Controller
Quick Start Guide
E-2000M

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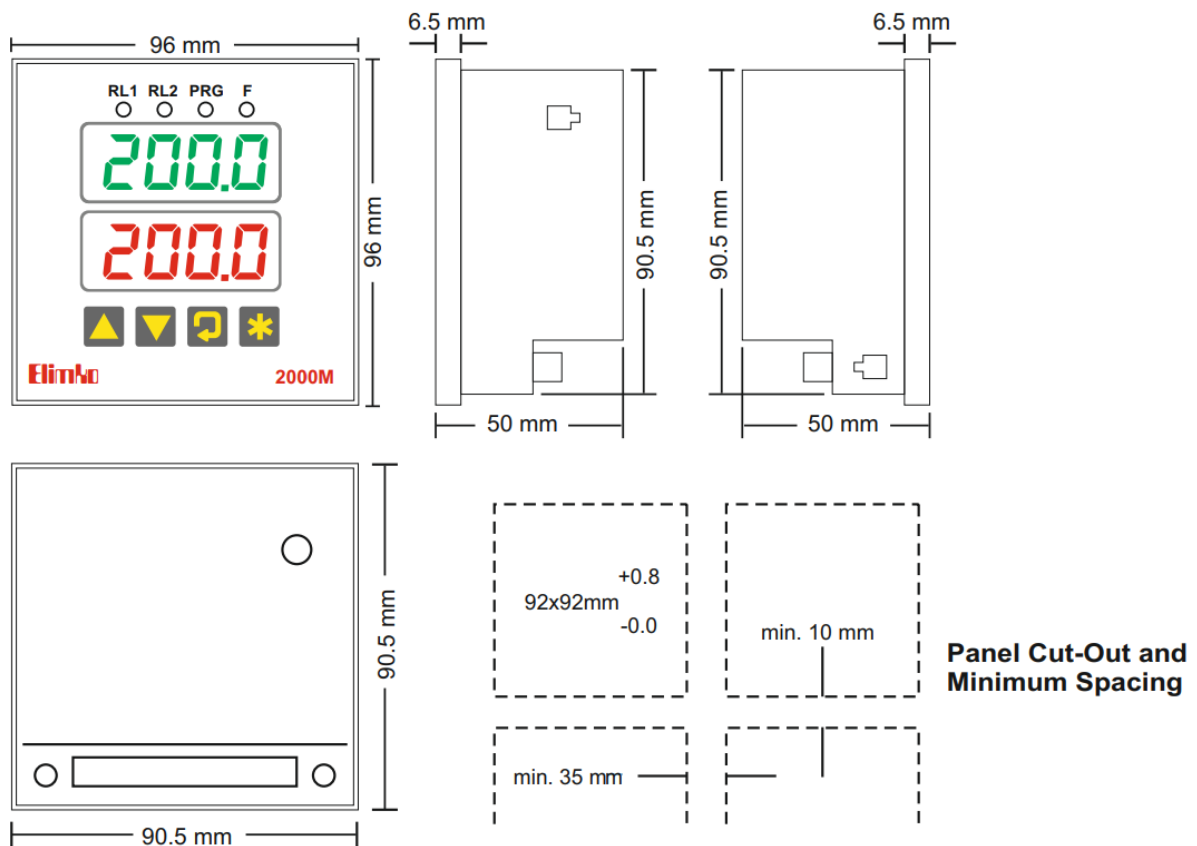
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DESCRIPTION

E-2000M Series general purpose process controllers are industrial devices in 1/4 DIN (96×96 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.

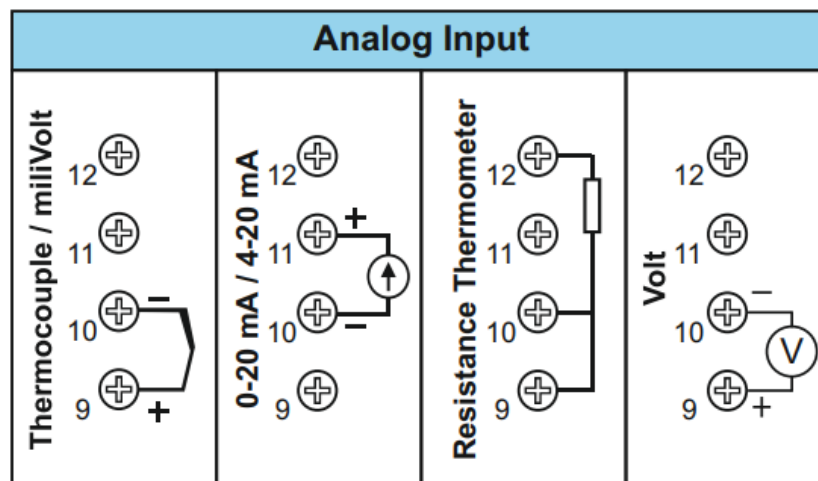
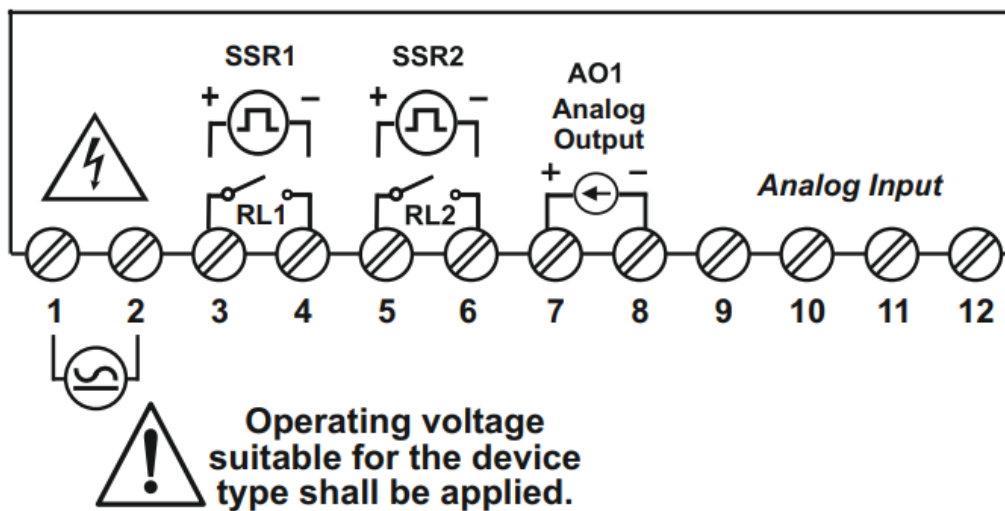
In E-2000M Series controllers, set value and measured value can be displayed from -1999 to 9999 on two 4-digit displays and general purpose inputs (T/C, R/T, mV, mA) can be programmed.

DIMENSIONS and PANEL CUT-OUT



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.



WARNING

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

TYPE CODING

E-2000M Series Universal Advanced Controller

Relay Outputs

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

Analog Outputs

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

Communication

- None

Operating Voltage

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

E-2000M	- W	- X	- Y	- Z
	0			
	1			
	2			
	3			
	4			
	5			
		0		
		1		
		2		
			0	
				0
				1

TECHNICAL SPECIFICATION

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 (Lenght) x 96 (Height) x 50 (Width)
Panel Cut-Out (mm)	92 (Lenght) 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

PARAMETER TABLE

		Description	Min	Maks	Unit
INPUT SETTI NGS	IGCrP	InP 1 Analog Input 1 Type	Table 1		
		dP Decimal Point	0	3	
		SCLo Analog Input 1 Linear Scale Lower Value	-199.9	999.9	EU
		SCHi Analog Input 1 Linear Scale Upper Value	-199.9	999.9	EU
		Un It Temperature Unit	oC	oF	
		oFSb Analog Input 1 Offset Value	-100.0	100.0	EU
		FLtr Analog Input 1 Filter	1	15	s
		Snbr Analog Input 1 Sensor Broken Behaviour	Lo	Hi	

CONT ROL S ET SE TTING S	SEEP	SPSr Control Set Point Source	Table 2		
		SPLL Control Set Point Lower Limit	-199.9	SPHL	EU
		SPHL Control Set Point Upper Limit	SPLL	999.9	EU
		SPrr Control Set Point Ramping Rate	oFF	60.0	EU/min
		S-1 1. Step Set Value	SPLL	SPHL	EU
		t-1 1. Step Time	oFF	999.9	min
		S-2 2. Step Set Value	SPLL	SPHL	EU
		t-2 2. Step Time	oFF	999.9	min
		S-3 3. Step Set Value	SPLL	SPHL	EU
		t-3 3. Step Time	oFF	999.9	min

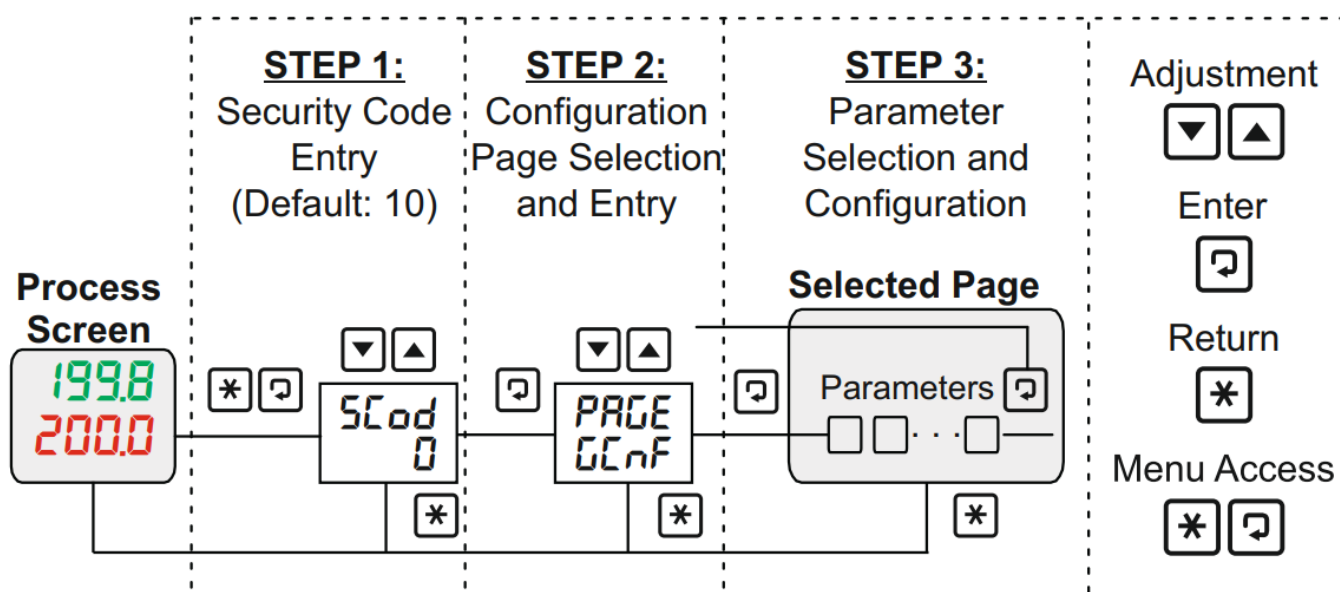
ALAR M SET TINGS	ALARM	A 1LP	Alarm 1 Type	Table 3		
		A 1SP	Alarm 1 Set Point	-199.9	999.9	EU
		A 1HY	Alarm 1 Hysteresis	0.0	999.9	EU
		A 1LT	Alarm 1 Lock	d5b	Enb	
		A 2LP	Alarm 2 Type	Table 3		
		A 2SP	Alarm 2 Set Point	-199.9	999.9	EU
		A 2HY	Alarm 2 Hysteresis	0.0	999.9	EU
		A 2LT	Alarm 2 Lock	d5b	Enb	

O U T P U T S E T T I N G S	CONTROL	CTYP	Control Type	Table 4		
		CFrn	Control Form [d lr, rEu]	d lr	rEu	
		CPrd	Control Period	1	250	s
		nnPr	Manual Mode Selection	d5b	Enb	
		trtn	Floating Control Valve Travel Time	10	2500	s
		dbnd	Dead Band	0.1	25.0	%
		oLL	Control Output Lower Limit	0.0	oHL	%
		oHL	Control Output Upper Limit	oLL	100.0	%
		onr	Control Output Manual Reset	oLL	oHL	(Y0)
		PonC	PID Power On Behaviour	0	4	
		trLL	Retransmission Scale Lower Value	-200.	trHL	EU
		trHL	Retransmission Scale Upper Value	trLL	1000.	EU
		rL 1d	Relay 1 Function	Table 5		
		rL 2d	Relay 2 Function	Table 5		
		Ro 1d	Analog Output 1 Function	Table 6		
		Ro 1r	Analog Output 1 Type	Table 7.1 ve Table 7.2		

PID S ETTIN GS	EURE	At	PID Auto Tune	off	on	
		PId	PID Parameter Type	Std	Adv	
		Pb-1	Proportional Band +	0.1	999.9	EU
		Pb-2	Proportional Band –	0.1	999.9	EU
		ItH	Integral Time +	off	9999	s
		ItL	Integral Time –	off	9999	s
		dtH	Derivative Time +	off	2500	s
		dtL	Derivative Time –	off	2500	s
		HYS	Hysteresis	0.0	999.9	EU

SECURI TY	PrteC	SCod	Security Code	0	9999
		dPrL	Parameter Access Level	0	9
		APrL	Parameter Setting Level	0	9
		FCSt	Factory Settings [off, LoAd, SRuE, dFLt]		

ACCESSING PARAMETERS



APPLICATION EXAMPLES

1. Input: Pt-100 Relay / Alarm1: 50 °C Low, Relay2 / Alarm2: 55 °C High

AO1: 4-20 mA PID Control Output

InP1	A1tP	A1SP	A2tP	A2SP	CtYP	rL1d	rL2d	Ro1d	Ro1r
Pt	Lo	50.0	H1	55.0	SCo	AL-1	AL-2	Co-1	4-20

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

InP1	A2tP	A2SP	CtYP	rL1d	rL2d
J	H1	350.0	SCo	do-1	AL-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)

InP1	SPSr	S-1	t-1	S-2	t-2	CtYP	trLL	trHL	rL1d	rL2d	Ro1d	Ro1r
K	PrFL	400	10.0	400	60.0	SCo	0	1200	Co-1	AL-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
0.0-1	0-1 V
0.2-1	0.2-1 V
0-10	0-10 V (*)
2-10	2-10 V (*)

(*) Custom specified volt input

Table 2. Control Set Options	
Int	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
SCo	Single (Heat)
dCo	Double (Heat/Cool)
bnd	Floating Control of Valve

Tablo 5. Relay Output Options	
Co-1	PID + (Heating)
Co-2	PID – (Cooling)
do-1	On-Off + (Heating)
do-2	On-Off – (Cooling)
AL-1	Alarm 1
AL-2	Alarm 2
AL-3	Alarm 3
AL-4	Alarm 4

Table 6. Analog Output Options	
Co-1	PID + (Heating)
Co-2	PID – (Cooling)
Pvtr	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.



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<https://elimko.com.tr/en/technical-support/user-manuels>

Documents / Resources

	Elimko E-2000M Universal Advanced Controller [pdf] User Guide E-2000M Universal Advanced Controller, E-2000M, Universal Advanced Controller, Advanced Controller, Controller
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References

- [Elimko - Otomatik Kontrol'da Güvenilir İsim](#)