

E-2000M Serisi Universal Advanced Controller Quick Start Guide

Manufacturer / Technical Support :
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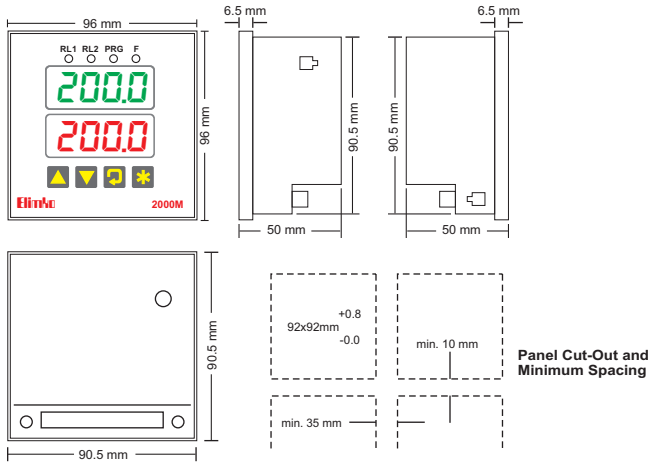


1. DESCRIPTION

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.

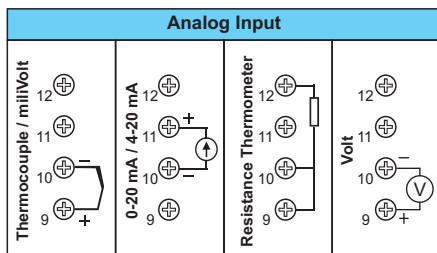
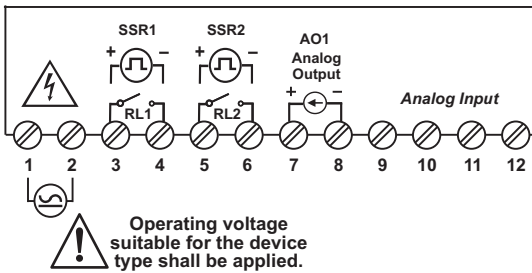
2. DIMENSIONS and PANEL CUT-OUT



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)

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

W	X	Y	Z
0	1	2	0
1	2	3	1
2	3	4	
3	4	5	

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:

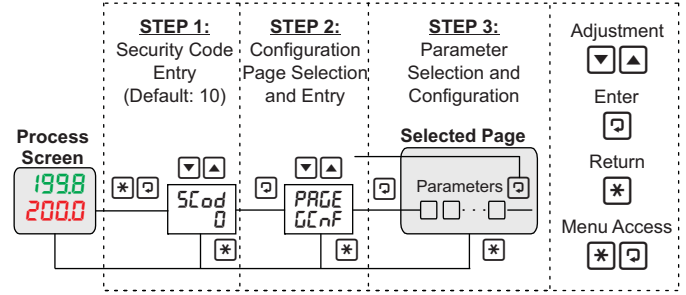
(1) Universal Input :

- 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	SCnf			
	inP i	Table 1		
	dP	0	3	
	SCLo	-199.9	999.9	EU
	SCHi	-199.9	999.9	EU
	UnIt	oC	oF	
	oFSt	-100.0	100.0	EU
CONTROL SET SETTINGS	FLtR	1	15	s
	Snbr	Lo	Hi	
	SP5r	Table 2		
	SPLL	-199.9	SPHL	EU
	SPHL	SPLL	999.9	EU
	SPrr	oFF	60.0	EU/min
	S-1	SPLL	SPHL	EU
ALARM SETTINGS	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
	RItP	Table 3		
	RISP	-199.9	999.9	EU
OUTPUT SETTINGS	RHY	0.0	999.9	EU
	RItL	dSb	Enb	
	R2tP	Table 3		
	R2SP	-199.9	999.9	EU
	R2HY	0.0	999.9	EU
	R2tL	dSb	Enb	
	CTYP	Table 4		
PID SETTINGS	CFrñ	dIr	rEu	
	CPrd	1	250	s
	nnPr	dSb	Enb	
	trtñ	10	2500	s
	dbnd	0.1	25.0	%
	oLL	0.0	oHL	%
	oHL	oLL	100.0	%
SECURITY	oñr	oLL	oHL	%
	PonC	0	4	
	trLL	-199.9	trHL	EU
	trHL	trLL	999.9	EU
	rLId	Table 5		
	Roid	Table 6		
	Roir	Table 7.1 ve Table 7.2		
SECURITY	Rt	oFF	on	
	PId	Std	Rdu	
	Pb-1	0.1	999.9	EU
	Pb-2	0.1	999.9	EU
	ItH	oFF	9999	s
	ItC	oFF	9999	s
	dItH	oFF	2500	s
SECURITY	dItC	oFF	2500	s
	HYS	0.0	999.9	EU
	SCod	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	RItP	RISP	R2tP	R2SP	CTYP	rLId	rL2d	Roid	Roir
Pt	Lo	50.0	Hi	55.0	SCo	RL-1	RL-2	Co-1	4-20

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

inP i	R2tP	R2SP	CTYP	rLId	rL2d
J	Hi	350.0	SCo	do-1	RL-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	SP5r	S-1	t-1	S-2	t-2	CTYP	trLL	trHL	rLId	rL2d	Roid	Roir
K	PrFL	400	10.0	400	60.0	SCo	0	1200	Co-1	RL-2	PuEr	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

InC	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

Table 5. Relay Output Options

Co-1	PID + (Heating)
Co-2	PID - (Cooling)
do-1	On-Off + (Heating)
do-2	On-Off - (Cooling)
RL-1	Alarm 1
RL-2	Alarm 2
RL-3	Alarm 3
RL-4	Alarm 4

Table 6. Analog Output Options

Co-1	PID + (Heating)
Co-2	PID - (Cooling)
PuEr	Process Value
SPEr	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.