



## E-48P Series Universal Advanced Digital Controllers Quick Start Guide

### Manufacturer / Technical Support

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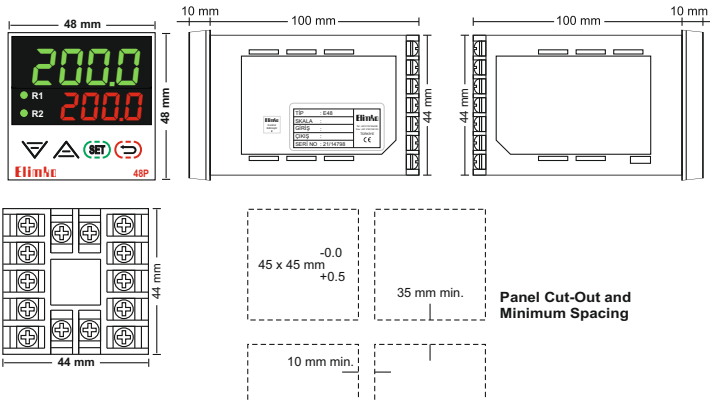


## 1. DESCRIPTION

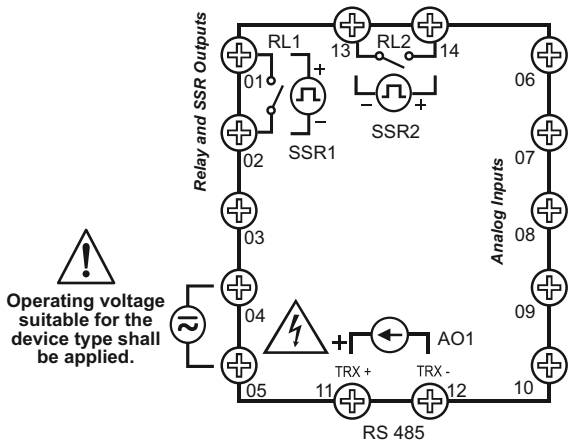
E-48P Series universal process controllers are industrial devices at 48x48 mm IEC/TR 60668 dimensions designed using new generation microcontrollers with on/off, PID and other control forms, where inputs and outputs can be easily programmed by the user.

In E-48P Series controllers, the set value and measured value can be displayed from -1999 to 9999 on two 4-digit displays; general purpose inputs (T/C, R/T, mV, mA) can be programmed.

## 2. DIMENSIONS and PANEL CUT-OUT



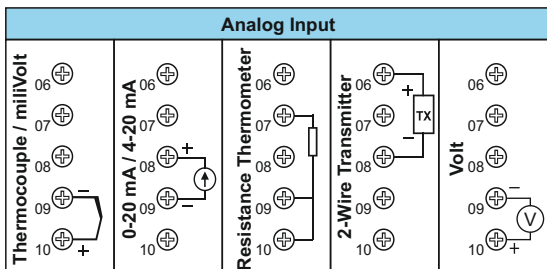
## 3. CONNECTION DIAGRAM



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

Only one of analog output (AO1) and RS-485 can be selected.

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



## 4. WARNINGS

E-48P controller is designed for panel mounting and should be used in an industrial environment.



- The package of E-48P 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-48P Series Universal Advanced Controller

E-48P - W - X - Y - Z

### Relay Outputs

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

- 0
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8

### Analog Outputs \*

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

- 0
- 1
- 2

### Communication

- None
- RS-485 \*\*

- 0
- 1

### Operating Voltage

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

- 0
- 1

\* Only one of the analog output and RS-485 options can be coded. For example, only one of the options (X) and (Y) can be coded as 1.

\*\* When E-48P Series controllers are ordered with communication, the E-IB-11 USB-RS485 converter can be used for PC connection. There are various control and monitoring software provided by Elimko.

## 6. TECHNICAL SPECIFICATIONS

Parameter	Description
Control Type	On/Off, PID, Heat/Cool, Floating and Feedback 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 pieces SPST - NO 250 V AC 5A relays or 24 V DC 25 mA (SSR) drives
Dimensions (mm)	48 (Length) x 48 (Height) x 100 (Width)
Panel Cut-Out (mm)	45 (Length) x 45 (Height)
Analog Output	1 x 0..20 / 4..20 mA or 0..10 V DC optional
Analog Input	Universal (Note 1),
Communication (RS-485)	Available (RS-485)
Digital Input	None
Valve Feedback	None
Transmitter Supply	Available
Weight	115 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.  $\pm 1.0$  °C (Conversion and CJC error)  
Resistance Thermometer, Max.  $\pm 0.5$  °C (Conversion and wire resistance compensation)  
Linear Input, Max. % 0.1

## 7. PARAMETER TABLE

Description		Min	Maks	Unit
INPUT SETTINGS G.C.N.F	inP 1	Analog Input 1 Type		
	dP	Decimal Point		
	5CLo	-199.9	999.9	EU
	5CHi	-199.9	999.9	EU
	UnIt	°C	°F	
	oF5t	-100.0	100.0	EU
	FLtF	1	15	s
	5nBr	Lo	Hi	
	RdS	1	127	
	bRtd	Modbus Baud Rate [48, 96, 192, 384 kbaud]		
PrLy	Modbus Parity [nonE, odd, EvEn]			

Description		Min	Maks	Unit
CONTROL SET SETTINGS SETP	5PSr	Control Set Point Source		
	5PLL	-199.9	5PHL	EU
	5PHL	5PLL	999.9	EU
	5PrR	oFF	60.0	EU/min
	5-1	5PLL	5PHL	EU
	t-1	oFF	999.9	min
	5-2	5PLL	5PHL	EU
	t-2	oFF	999.9	min
5-3	5PLL	5PHL	EU	
t-3	oFF	999.9	min	

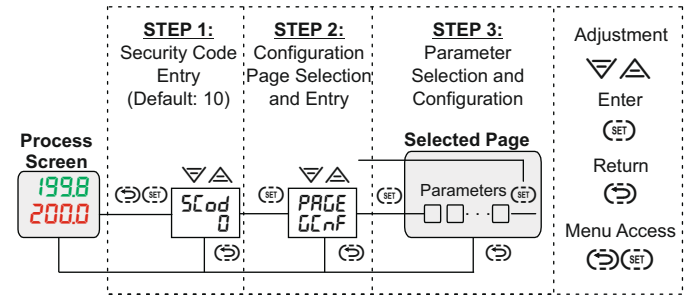
Description		Min	Maks	Unit
ALARM SETTINGS RLnF	R1tP	Alarm 1 Type		
	R1SP	-199.9	999.9	EU
	R1HY	0.0	999.9	EU
	R1Lt	d5b	Enb	
	R2tP	Alarm 2 Type		
	R2SP	-199.9	999.9	EU
	R2HY	0.0	999.9	EU
R2Lt	d5b	Enb		

Description		Min	Maks	Unit
OUTPUTS o.C.N.F	CLtYP	Control Type		
	CFrñ	dIr	rEu	
	CPrd	1	250	s
	nPr	d5b	Enb	
	tRtñ	10	2500	s
	dbnd	0.1	25.0	%
	oLL	0.0	oHL	%
	oHL	oLL	100.0	%
	oñr	oLL	oHL	%
	PonC	0	4	
	tRLL	-199.9	tRHL	EU
	tRHL	tRLL	999.9	EU
	rLid	Relay 1 Function		
rL2d	Relay 2 Function			
RoId	Analog Output 1 Function			
RoIr	Analog Output 1 Type			

Description		Min	Maks	Unit
PID SETTINGS L.U.N.E	Rt	oFF	on	
	PId	5td	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
	dItC	oFF	2500	s
HY5	0.0	999.9	EU	

Description		Min	Maks	Unit
SECURITY PrLc	5Csd	0	9999	
	dPrL	0	9	
	RPrL	0	9	
	FC5t	Factory Settings [oFF, LoAd, 5RuE, 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 1	R1tP	R1SP	R2tP	R2SP	CLtYP	rLid	rL2d	RoId	RoIr
Pt	Lo	50.0	Hi	55.0	5Co	RL-1	RL-2	Co-1	4-20

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

inP 1	R2tP	R2SP	CLtYP	rLid	rL2d
J	Hi	350.0	5Co	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 1	5PSr	5-1	t-1	5-2	t-2	CLtYP	tRLL	tRHL	rLid	rL2d	RoId	RoIr
K	PrFL	400	10.0	400	60.0	5Co	0	1200	Co-1	RL-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

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
5Co	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)
PuTr	Process Value
5Pr	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](http://www.elimko.com.tr). You can also use the QR Code on the front for this.