

E-72P Series Universal Advanced Digital Controllers Quick Start Guide

Manufacturer / Technical Support

Elimko Elektronik İmalat ve Kontrol Ltd. Şti.
8. Caddesi 21. Sokak No:16 Emek 06510 Ankara / TÜRKİYE
Telefon: + 90 312 212 64 50 Faks: + 90 312 212 41 43
www.elimko.com.tr • e-mail:elimko@elimko.com.tr

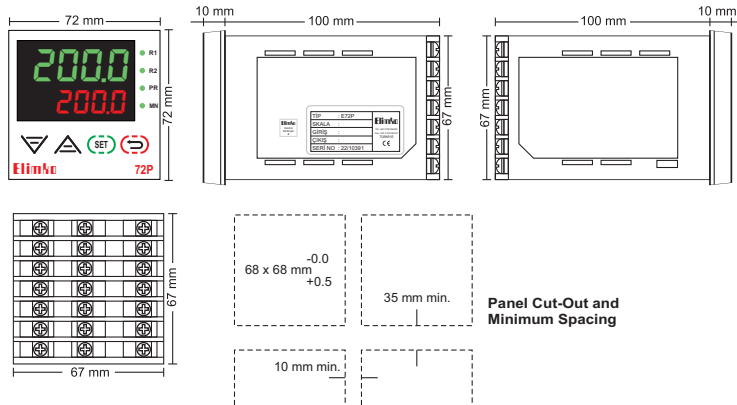


1. DESCRIPTION

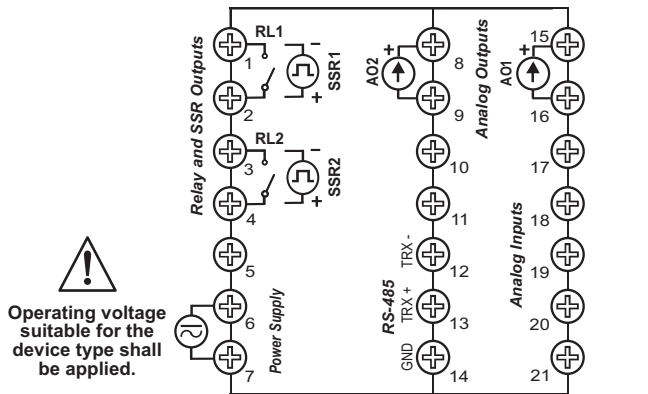
E-72P Series universal process controllers are industrial devices at 72x72 mm IEC/TR 60668 dimensions designed using new generation microcontrollers with on/off, PID and other control forms, where inputs and outputs can be easily programmed by the user.

In E-72P 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

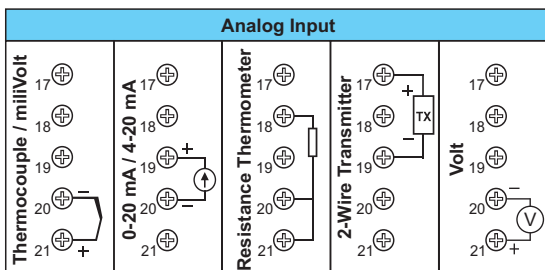


3. CONNECTION DIAGRAM



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

Analog output (AO1, AO2) mA or 0-10 V DC can be selected.



4. WARNINGS

E-72P controller is designed for panel mounting and should be used in an industrial environment.

- The package of E-72P 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-72P Series Universal Advanced Controller

E-72P - 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
- 1 x 0-20 / 4-20 mA (AO1)
- 2 x 0-20 / 4-20 mA (AO1, AO2) *
- 1 x 0-10 V DC (AO1)
- 2 x 0-10 V DC (AO1, AO2) *
- 1 x 0-20 / 4-20 mA (AO1) + 1 x 0-10 V DC (AO2)

Communication

- None
- RS-485 **

Operating Voltage

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

* Analog outputs are isolated from each other.

** When E-72P Series devices 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)	72 (Length) x 72 (Height) x 100 (Width)
Panel Cut-Out (mm)	68 (Length) x 68 (Height)
Analog Output	2 x 0..20 / 4..20 mA (Max. Load 600 Ohm) or 0..10 V DC optional
Analog Input	Universal (Note 1),
Communication (RS-485)	Available (RS-485)
Digital Input	Available (optional)
Valve Feedback	None
Transmitter Supply	Available
Weight	232 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 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
	UnIt Temperature Unit	°C	°F	
	oFSt 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	
	RdRS Modbus Address	1	127	
SECURITY	bRid Modbus Baud Rate [48, 96, 192, 384 kbaud]	48	384	
	Prty Modbus Parity [none, odd, even]			

CONTROL SET SETTINGS	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

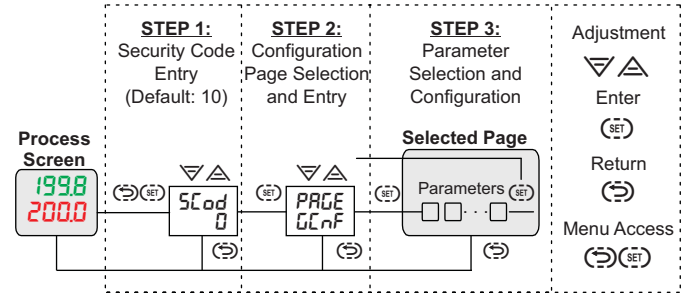
ALARM SETTINGS	RIpP Alarm 1 Type		Table 3	
	RIpP Alarm 1 Set Point	-199.9	999.9	EU
	RIHy Alarm 1 Hysteresis	0.0	999.9	EU
	RIIt Alarm 1 Lock	d5b	Enb	
	R2pP Alarm 2 Type		Table 3	
	R2pP Alarm 2 Set Point	-199.9	999.9	EU
	R2Hy Alarm 2 Hysteresis	0.0	999.9	EU
	R2It Alarm 2 Lock	d5b	Enb	

OUTPUTS	CTYP Control Type		Table 4	
	CFrn Control Form [dIr, rEu]	dIr	rEu	
	CPrd Control Period	1	250	s
	nPr 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	%
	oRr Control Output Manual Reset	oLL	oHL	%
	PonC PID Power On Behaviour	0	4	
PID SETTINGS	trLL Retransmission Scale Lower Value	-199.9	trHL	EU
	trHL Retransmission Scale Upper Value	trLL	999.9	EU
	rLId Relay 1 Function		Table 5	
	rLZd Relay 2 Function		Table 5	
	RoId Analog Output 1 Function		Table 6	
	RoIr Analog Output 1 Type		Table 7.1 ve Table 7.2	
	RoZd Analog Output 2 Function		Table 6	
	RoZr Analog Output 2 Type		Table 7.1 ve Table 7.2	

PID SETTINGS	RI PID Auto Tune	oFF	on	
	PId PID Parameter Type	Std	Rdu	
	Pb+ Proportional Band +	0.1	999.9	EU
	Pb- Proportional Band -	0.1	999.9	EU
	ItH Integral Time +	oFF	9999	s
	ItL Integral Time -	oFF	9999	s
	dItH Derivative Time +	oFF	2500	s
	dItL Derivative Time -	oFF	2500	s
	HYS Hysteresis	0.0	999.9	EU

SECURITY	SCod Security Code	0	9999	
	dPrL Parameter Access Level	0	9	
	RPRL Parameter Setting Level	0	9	
	FCSt Factory Settings [oFF, LoAd, 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	RIpP	RIpP	R2pP	R2pP	CTYP	rLId	rLZd	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	R2pP	R2pP	CTYP	rLId	rLZd
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	SPSr	S-1	t-1	S-2	t-2	CTYP	trLL	trHL	rLId	rLZd	RoId	RoIr
K	PrFL	400	10.0	400	60.0	SCo	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
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

InL	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)
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.