

E-200 Series Universal Advanced Controller Quick Start Guide

Manufacturer / Technical Support :

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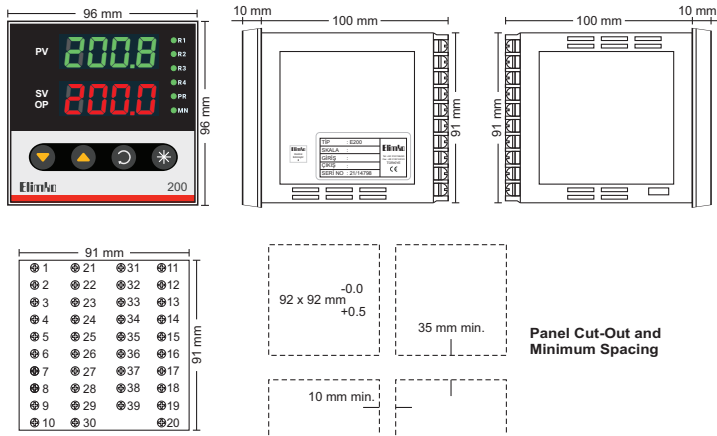


1. DESCRIPTION

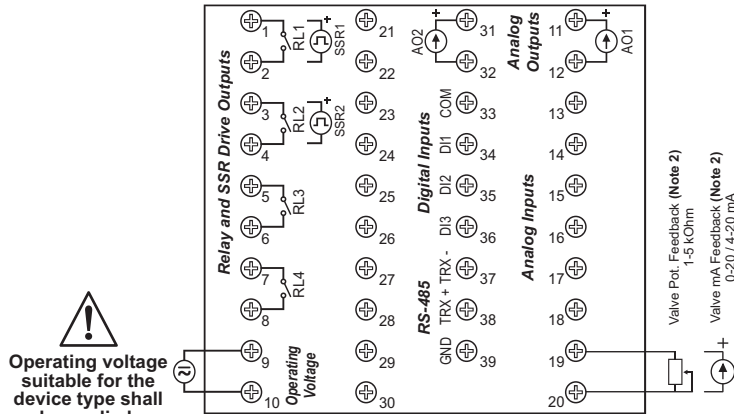
E-200 Series general purpose process controllers are industrial devices in 1/4 DIN (96x96 mm IEC/TR 60668) dimensions designed by using new generation microcontrollers with on/off, PID and other control forms. Inputs and outputs can be easily programmed by the user.

In E-200 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



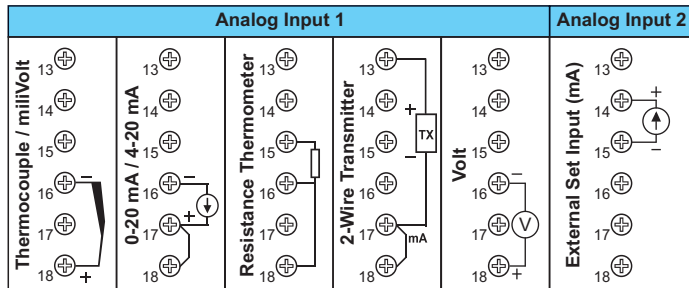
3. CONNECTION DIAGRAM



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

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

Digital inputs are used by connecting a dry contact output between the COM terminal and the desired input (DI1, DI2 or DI3).



4. WARNINGS

E-200 controller is designed for panel mounting and should be used in an industrial environment.

- The package of E-200 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-200 Series Universal Advanced Controller

E-200 - W X Y Z

Relay Outputs

- 2 relays (RL1, RL2)
- 3 relays (RL1, RL2, RL3)
- 4 relays (RL1, RL2, RL3, RL4)
- 1 SSR (SSR1) + 1 relay (RL2)
- 1 SSR (SSR1) + 2 relays (RL2, RL3)
- 1 SSR (SSR1) + 3 relays (RL2, RL3, RL4)
- 2 SSR (SSR1, SSR2) + 1 relays (RL3)
- 2 SSR (SSR1, SSR2) + 2 relays (RL3, RL4)

Analog Outputs *

- 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 adet 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-200 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	4 Adet SPST - NO 250 V AC 5A relays or 24 V DC 25 mA (SSR) drives
Dimensions (mm)	96 (Length) x 96 (Height) x 100 (Width)
Panel Cut-Out (mm)	92 (Length) X 92 (Height)
Analog Output	2 x 0..20 / 4..20 mA or 0..10 V DC optional
Analog Input	Universal (Note 1), 1 x External set (mA)
Communication (RS-485)	Available (optional)
Digital Input	3 inputs
Valve Feedback	Available (Note 2)
Transmitter Supply	Available
Weight	430 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 :

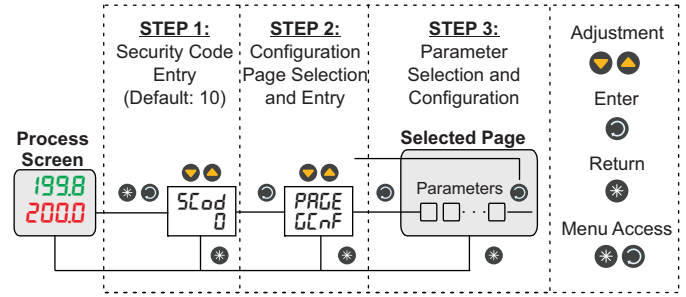
- Thermocouple : B, E, J, K, L, N, R, S, T, U
- Resistance Thermometer : Pt-100
- Current : 0-20 mA, 4-20 mA (Linear)
- Voltage : 0-50 mV, 0-1 V, 0.2- 1 V (Linear), 0-10 V DC, must be specified in the order.
- Resolution : 16 bit
- Accuracy : Thermocouple, Max. ± 1.0 °C (Conversion and CJC error)
Resistance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

(2) Valve Feedback are supplied as potentiometer input in standard controllers. If the feedback type is requested as mA, it must be specified in the order.

7. PARAMETER TABLE

Description		Min	Maks	Unit
INPUT SETTINGS	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
	UnIt Temperature Unit	°C	°F	
	oFFt Analog Input 1 Offset Value	-100.0	100.0	EU
	FLtF Analog Input 1 Filter	1	15	s
	Snbr Analog Input 1 Sensor Broken Behaviour	Lo	Hi	
	INP2 Analog Input 2 Type	0-20	4-20	
	S2Lo Analog Input 2 Linear Scale Lower Value	-199.9	999.9	EU
	S2Hi Analog Input 2 Linear Scale Upper Value	-199.9	999.9	EU
	S2br Analog Input 2 Sensor Broken Behaviour	Lo	Hi	
CONTROL SET SETTINGS	Adr5 Modbus Address	1	127	
	bRd Modbus Baud Rate [48, 96, 192, 384 kbaud]	48	384	
	Prty Modbus Parity [none, odd, even]			
	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
ALARM SETTINGS	S-3 3. Step Set Value	SPLL	SPHL	EU
	t-3 3. Step Time	oFF	999.9	min
	SEt1 Digital Input Selectable Set 1	SPLL	SPHL	EU
	SEt2 Digital Input Selectable Set 2	SPLL	SPHL	EU
	SEt3 Digital Input Selectable Set 3	SPLL	SPHL	EU
	SEt4 Digital Input Selectable Set 4	SPLL	SPHL	EU
	Al1P Alarm 1 Type	Table 3		
	Al1SP Alarm 1 Set Point	-199.9	999.9	EU
	Al1Hy Alarm 1 Hysteresis	0.0	999.9	EU
	Al1Lt Alarm 1 Lock	d5b	Enb	
	Al2P Alarm 2 Type	Table 3		
	Al2SP Alarm 2 Set Point	-199.9	999.9	EU
	Al2Hy Alarm 2 Hysteresis	0.0	999.9	EU
	Al2Lt Alarm 2 Lock	d5b	Enb	
	Al3P Alarm 3 Type	Table 3		
	Al3SP Alarm 3 Set Point	-199.9	999.9	EU
	Al3Hy Alarm 3 Hysteresis	0.0	999.9	EU
	Al3Lt Alarm 3 Lock	d5b	Enb	
	Al4P Alarm 4 Type	Table 3		
	Al4SP Alarm 4 Set Point	-199.9	999.9	EU
	Al4Hy Alarm 4 Hysteresis	0.0	999.9	EU
	Al4Lt Alarm 4 Lock	d5b	Enb	
OUTPUTS	CTYP Control Type	Table 4		
	CFrñ Control Form [dir, rEu]	dIr	rEu	
	CPrd Control Period	1	250	s
	ñnPr Manual Mode Selection	d5b	Enb	
	trtñ 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	%
	oñr Control Output Manual Reset	oLL	oHL	%
	PonC PID Power On Behaviour	0	4	
	trLL Retransmission Scale Lower Value	-199.9	trHL	EU
	trHL Retransmission Scale Upper Value	trLL	999.9	EU
PID SETTINGS	rLId Relay 1 Function	Table 5		
	rL2d Relay 2 Function	Table 5		
	rL3d Relay 3 Function	Table 5		
	rL4d Relay 4 Function	Table 5		
	RoId Analog Output 1 Function	Table 6		
	RoIr Analog Output 1 Type	Table 7.1 ve Table 7.2		
	Ro2d Analog Output 2 Function	Table 6		
	Ro2r Analog Output 2 Type	Table 7.1 ve Table 7.2		
	SrUL Feedback Valve Fully-Closed Position			
	SrUH Feedback Valve Fully-Open Position			
	PId PID Auto Tune	oFF	on	
SECURITY	PId PID Parameter Type	Std	Rdu	
	Pb-1 Proportional Band +	0.1	999.9	EU
	Pb-2 Proportional Band -	0.1	999.9	EU
	ItH Integral Time +	oFF	9999	s
	ItC Integral Time -	oFF	9999	s
	dH Derivative Time +	oFF	2500	s
	dC Derivative Time -	oFF	2500	s
	HYS Hysteresis	0.0	999.9	EU
	SCod Security Code	0	9999	
	dPrL Parameter Access Level	0	9	
	RPRL Parameter Setting Level	0	9	
	FCSt Factory Settings [oFF, LoRd, SRdE, 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	AL1P	AL1SP	AL2P	AL2SP	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 1	AL2P	AL2SP	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 1	SPSr	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

4) Input: 4-20 mA, Scale: 0-600, External Set Point: 4-20 mA, Scale: 0-600,
Floating Valve Control (Travel Time 30 s), Relay1: Valve Open, Relay2: Valve Close

INP 1	SCLo	SCHi	INP2	S2Lo	S2Hi	CTYP	trtñ	rLId	rL2d
4-20	0.0	600.0	4-20	0.0	600.0	bnd	30	Co-1	Co-2

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

InE	Internal adjustment with keys
PrFL	With Profile Control
ErE	External adjustment with AI/N2 external input
dInP	With Digital Input

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
PFB	Feedback 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.

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