

Elimko KY-94-1123-1 E-94 Series Universal Advanced Controller User Guide

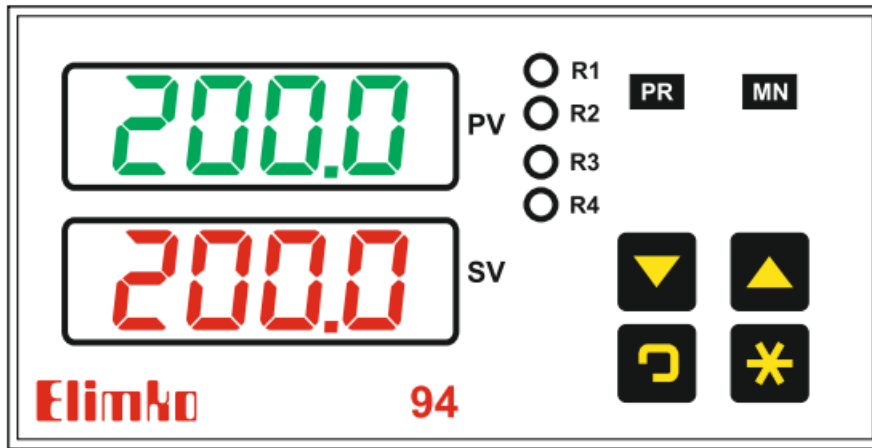
[Home](#) » [Elimko](#) » Elimko KY-94-1123-1 E-94 Series Universal Advanced Controller User Guide 

Contents

- [1 Elimko KY-94-1123-1 E-94 Series Universal Advanced Controller](#)
- [2 Product Information](#)
- [3 Product Usage Instructions](#)
- [4 DESCRIPTION](#)
- [5 DIMENSIONS and PANEL CUT-OUT](#)
- [6 CONNECTION DIAGRAM](#)
- [7 TYPE CODING](#)
- [8 TECHNICAL SPECIFICATIONS](#)
- [9 PARAMETER TABLE](#)
- [10 ACCESSING PARAMETERS](#)
- [11 APPLICATION EXAMPLES](#)
- [12 Documents / Resources](#)
 - [12.1 References](#)
- [13 Related Posts](#)



Elimko KY-94-1123-1 E-94 Series Universal Advanced Controller



Product Information

Specifications

- Model: E-94 Series
- Dimensions: 1/8 DIN (96×48 mm IEC/TR 60668)
- Control Forms: On/Off, PID, and other control forms
- Display Range: -1999 to 9999
- Inputs: T/C, R/T, mV, mA
- Outputs: Relay (RL1, RL2, RL3, RL4) or SSR (SSR1, SSR2)
- Analog Output: mA or 0-10 V DC

Product Usage Instructions

Installation

- The E-94 controller is designed for panel mounting and should be used in an industrial environment.
- 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 an explosion.

Cleaning

- 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.

Safety Precautions

- The E-94 controller is not intended for use in medical applications.

FAQ

- Q: What are the dimensions of the E-94 Series controller?

The dimensions of the E-94 Series controller are 1/8 DIN (96×48 mm IEC/TR 60668).

- Q: What types of inputs are supported by the E-94 Series controller?

The E-94 Series controller supports T/C, R/T, mV, and mA inputs.

- Q: Can the E-94 Series controller be used in medical applications?

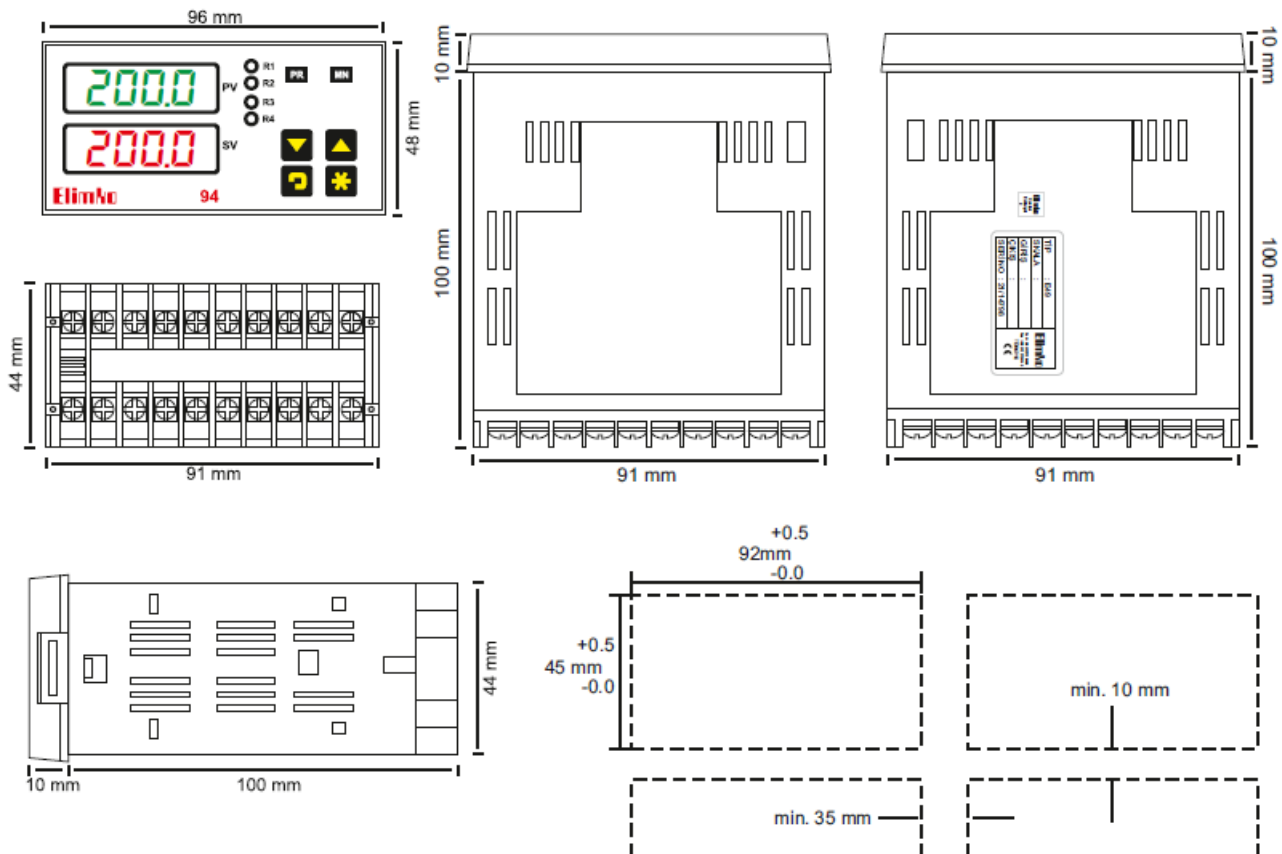
No, the E-94 Series controller is not intended for use in medical applications.

DESCRIPTION

E-94 Series general-purpose process controllers are industrial devices in 1/8 DIN (96×48 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.

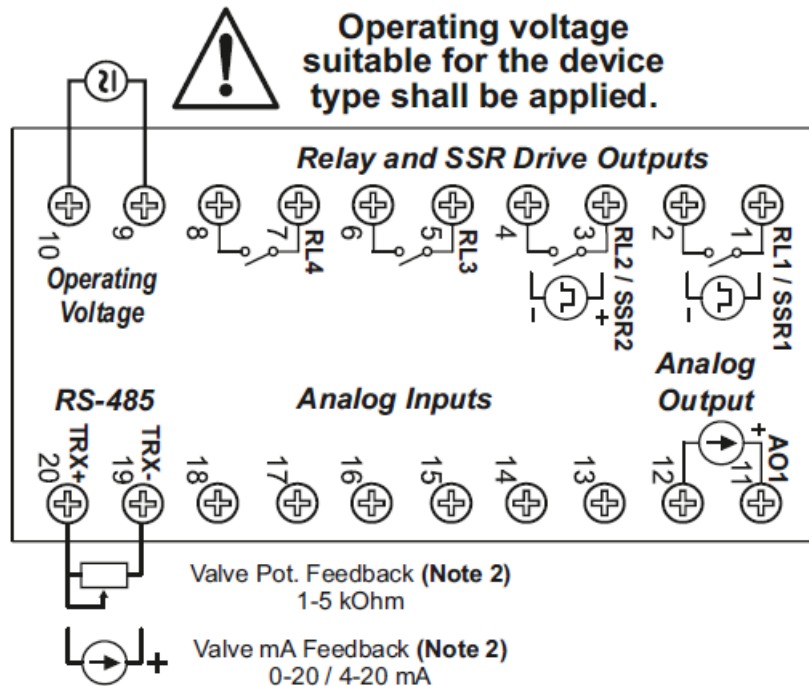
In E-94 Series controllers, set value and measured value can be displayed from -1999 to 9999 on two 4-digit displays and general purpose inputs (T/C, R/T, mV, mA) can be programmed

DIMENSIONS and PANEL CUT-OUT



Panel Cut-Out and Minimum Spacing

CONNECTION DIAGRAM



- 1st and 2nd control outputs can be selected as either Relay (RL1, RL2) or SSR (SSR1, SSR2).
- Controllers with RS-485 do not have a Valve Feedback input.
- Analog output (AO1) can be selected as either mA or 0-10 V DC.

Analog Input 1					Analog Input 2
Thermocouple / milliVolt 	0-20 mA / 4-20 mA 	Resistance Thermometer 	2-Wire Transmitter 	Volt 	External Set Input (mA)

WARNINGS

E-94 controller is designed for panel mounting and should be used in an industrial environment.

- The package of E-94 controller contains; Controller, 2 pieces of mounting clamps, User manual, and Guarantee certificate.
- After opening the package, please check the contents of the above list. If the delivered product is the 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 an 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

TSE-ISO-EN 9000
 Quality Management System Certificate

TYPE CODING

E-94 Series Universal Advanced Controller

E-94 Series Universal Advanced Controller		E-94 - W - X - Y - Z			
<u>Relay Outputs</u>					
	2 relays (RL1, RL2)	2			
	3 relays (RL1, RL2, RL3)	3			
	4 relays (RL1, RL2, RL3, RL4)	4			
	1 SSR (SSR1) + 1 relay (RL2)	5			
	1 SSR (SSR1) + 2 relays (RL2, RL3)	6			
	1 SSR (SSR1) + 3 relays (RL2, RL3, RL4)	7			
	2 SSR (SSR1, SSR2) + 1 relays (RL3)	8			
	2 SSR (SSR1, SSR2) + 2 relays (RL3, RL4)	9			
<u>Analog Outputs</u>					
	None		0		
	0-20 / 4-20 mA (AO1)		1		
	0-10 V DC (AO1)		2		
<u>Communication *</u>					
	None			0	
	RS-485 **			1	
<u>Operating Voltage</u>					
	85-265 V AC / 85-375 V DC				0
	20-60 V AC / 20-60 V DC				1

When E-94 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.
 Controllers with RS-485 do not have a Valve Feedback input.

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 x SPST – NO 250 V AC 5 A relays or 24 V DC 25 mA (SSR) drives
Dimensions (mm)	96 (Lenght) x 48 (Height) x 100 (Width)
Panel Cut-Out (mm)	92 (Lenght) X 45 (Height)
Analog Output	0..20 / 4..20 mA or 0..10 V DC optional
Analog Input	Universal (Note 1) , 1 x External set point (mA)
Communication (RS-485)	Available (Note 2)
Digital Input	None
Valve Feedback	Available (Note 2)
Transmitter Supply	Available
Weight	220 g
Power Consumption	Max. 7 W (10 VA)
Operating Temperature	– 10 °C ... 55 °C
Storage Temperature	– 25 °C ... 65 °C
Memory	Max. 100.000 write
Protection Class	IP-65 Front Panel, IP-20 Rear Case

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

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. Controllers with RS-485 do not have a Valve Feedback input

PARAMETER TABLE

		Description		Min	Maks	Unit
INPUT SETTINGS	gcnf	INP1	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	
		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	
		ADRS	Modbus Adress	1	127	
		BAUD	Modbus Baud Rate [4.8, 9.6, 19.2, 38.4 kbaud]	4.8	38.4	
		PRTY	Modbus Parity [None, ODD, Even]			

CONTROL SET SETTINGS	SETP	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

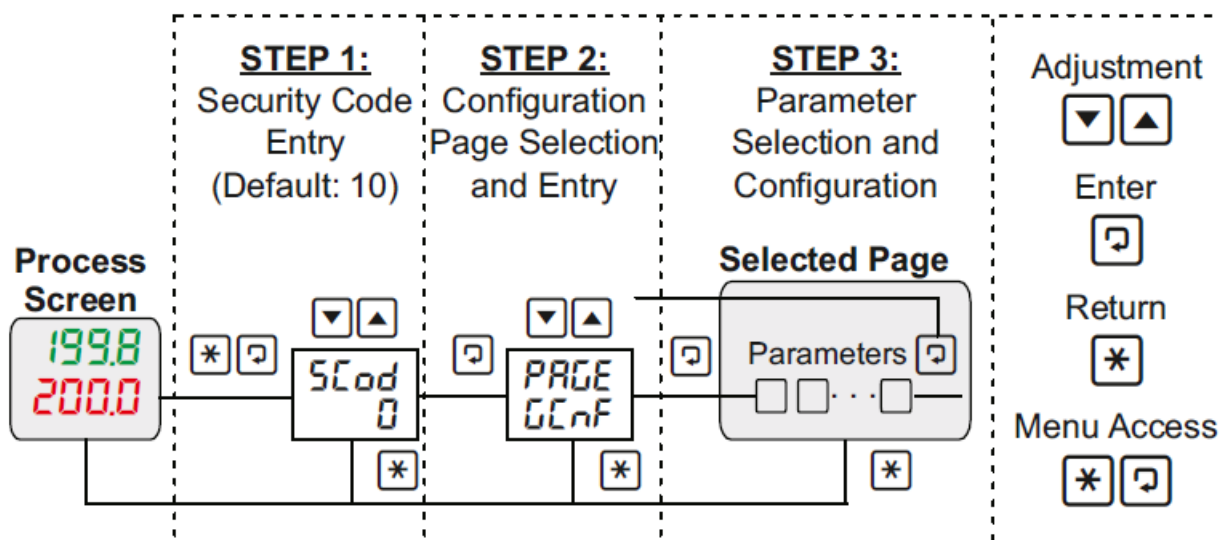
ALAR M SET TINGS	ACNF	A1TP	Alarm 1 Type	Table 3		
		A1SP	Alarm 1 Set Point	-199.9	999.9	EU
		A1HY	Alarm 1 Hysteresis	0.0	999.9	EU
		A1LT	Alarm 1 Lock	DSB	ENB	
		A2TP	Alarm 2 Type	Table 3		
		A2SP	Alarm 2 Set Point	-199.9	999.9	EU
		A2HY	Alarm 2 Hysteresis	0.0	999.9	EU
		A2LT	Alarm 2 Lock	DSB	ENB	
		A3TP	Alarm 3 Type	Table 3		
		A3SP	Alarm 3 Set Point	-199.9	999.9	EU
		A3HY	Alarm 3 Hysteresis	0.0	999.9	EU
		A3LT	Alarm 3 Lock	DSB	ENB	
		A4TP	Alarm 4 Type	Table 3		
		A4SP	Alarm 4 Set Point	-199.9	999.9	EU
		A4HY	Alarm 4 Hysteresis	0.0	999.9	EU
		A4LT	Alarm 4 Lock	DSB	ENB	

OUTPUT SETTINGS	OCNF	CTYP	Control Type	Table 4		
		CFRM	Control Form [DIR, REV]	DIR	REV	
		CPRD	Control Period	1	250	s
		MNPR	Manual Mode Selection	DSB	ENB	
		TRTM	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	%
		OMR	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
		RL1D	Relay 1 Function	Table 5		
		RL2D	Relay 2 Function	Table 5		
		RL3D	Relay 3 Function	Table 5		
		RL4D	Relay 4 Function	Table 5		
		AO1D	Analog Output 1 Function	Table 6		
		AO1R	Analog Output 1 Type	Table 7.1 ve Table 7.2		
		SRVL	Feedback Valve Fully-Closed Position			
		SRVH	Feedback Valve Fully-Open Position			

PID SETTINGS	tUNE	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
		ITC	Integral Time –	OFF	9999	s
		DTH	Derivative Time +	OFF	2500	s
		DTC	Derivative Time –	OFF	2500	s
		HYS	Hysteresis	0.0	999.9	EU

SECURITY	PRTC	SCOD	Security Code	0	9999	
		DPRL	Parameter Access Level	0	9	
		APRL	Parameter Setting Level	0	9	
		FCST	Factory Settings [OFF, LOAD, SAVE, 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	RIbP	RI5P	R2bP	R25P	CtYP	rL1d	rL2d	Ro1d	Ro1r
Pt	Lo	50.0	H1	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

InP1	R2bP	R25P	CtYP	rL1d	rL2d
J	H1	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)

InP1	SP5r	S-1	t-1	S-2	t-2	CtYP	trLL	trHL	rL1d	rL2d	Ro1d	Ro1r
K	PrFL	400	100	400	600	SCo	0	1200	Co-1	RL-2	Putr	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

InP1	SCLo	SCH1	InP2	S2Lo	S2H1	CtYP	trtñ	rL1d	rL2d
4-20	00	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 (*)

Table 2. Control Set Options	
int	Internal adjustment with keys
prfl	With Profile Control
e/t	External adjustment with AIN2 external 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)
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

Elimko Elektronik İmalat ve Kontrol Ticaret Ltd. Şti.

Ankara Sanayi Odası 2. Organize Sanayi Bölgesi Alcı OSB Mahallesi 2001. Cad. No:14 Temelli 06909 Ankara / TÜRKİYE

Tel: +90 312 212 64 50 (Pbx)

Fax: +90 312 212 41 43

E-mail: elimko@elimko.com.tr www.elimko.com.tr



Documents / Resources

	Elimko KY-94-1123-1 E-94 Series Universal Advanced Controller [pdf] User Guide KY-94-1123-1 E-94 Series Universal Advanced Controller, KY-94-1123-1, E-94 Series Universal Advanced Controller, Universal Advanced Controller, Advanced Controller, Controller
--	---

References

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