

## E-210 SERIES UNIVERSAL-ADVANCED PROFILE CONTROLLERS



### DESCRIPTION

E-210 Series universal profile controllers are designed using new generation micro-controllers. Dimensions are 96x96 mm conforming to IEC/TR 60668 standard. Controllers have two 4-digit, seven segment, led displays each capable of displaying numeric values from -1999 to 9999 and 4-character alphanumeric messages. Configurable universal inputs (T/C, R/T, mV, mA) are measured with 16-bit resolution. Calibration drifts are ultra low with environmental conditions. Profile controller can store up to 10 programs with 10 segments per program. Programs can be linked if more than 10 segments are necessary.

Each segment is configurable for ramp and soak and is defined by the segment setpoint and segment time. The guaranteed ramp/soak function can be assigned to a segment if required. Program cycling can be implemented through programmable repeat cycles to repeat the entire program. Power recovery function determines the profile restart position. E-210 Series universal profile controllers have advanced programming facilities providing different profile control forms and functions suitable for industries such as chemical, metallurgy, food, tyre, ceramics and others.

### TECHNICAL SPECIFICATIONS

Accuracy Class	0.5
Display Resolution	1/9999
Display	2x4 Digit LED (14 mm)
A/D Conversion	16 bit
D/A Conversion	12 bit
Reading Speed	10 readings/second
Input Resistance	T/C, mV $\geq 1 \text{ M}\Omega$ mA, $\leq 51 \Omega$
Noise Suppression	120 dB 50 Hz
Operating Temperature	-10 ... 55°C
Temperature Comp.	0 ... 50°C
Power Supply	85-265 V AC / 85-375 V DC 20-60 V AC / 20-85 V DC
Power Consumption	Max. 7 W
Relay Output	NA Contact 250 V AC 5 A
Input Signal	T/C, R/T, mA, mV
Sensors	Thermocouple Resistance thermometer Others= Standard and nonstandard transmitters and converters
Transmitter Power Supply	24 V DC 25 mA
Memory	EEPROM max. $10^5$ writing
Protection Class	IP66 front panel (NEMA 4X) IP20 rear panel
Weight	430 gr

### FEATURES

- 1 analog input: T/C, R/T, 0-20mA, 4-20mA, 0-50mV, or 0-1 V
- 1 motorised valve feedback input
- 1 external set adjustment: 0-20mA, 4-20 mA
- 3 digital inputs
- 4 relay outputs
- 2 analog outputs
- Transmitter power supply ( 24 V DC )
- Communication port: RS485 Modbus
- Control form: On/Off, PID, auto-manual station, heat/cool, ratio station
- Auto-tune

Set Adjustment	Between set point limits
Control Form	Low (LO), High (HI), Lob, Hlb, Lod, Hld
Dead Band (Hysteresis)	0-999.9 (EU)*
Proportional Band (Pb)	0.1-999.9 (EU)*
Integral Time (It)	0-3600 seconds
Derivative Time (Dt)	0-3600 seconds
Bias	0-100%
Control Outputs	0-20 mA, 4-20 mA, 0-10 V DC, Relay contact, SSR



- This controller complies with the European Low Voltage Directive 2006/95/EC, by the application of safety standard TS EN 61010-1. (Pollution degree 2)
- This controller complies with the EMC Directive 2004/108/EC by the application of EMC standard TS EN 61326.

## STANDARD WORKING LIMITS

Inputs	Type	Min.	Max.
Cu-Const	Type-U*	-200°C	600°C
Cu-Const	Type-T	-200°C	400°C
Fe-Const	Type-L*	-200°C	850°C
Fe-Const	Type-J	-200°C	1100°C
NiCr-Ni	Type-K	-200°C	1300°C
Cr-Const	Type-E	-200°C	1000°C
Nicrosil-Nisil	Type-N	-200°C	1200°C

Inputs	Type	Min.	Max.
Pt%10Rh-Pt	Type-S	0°C	1760°C
Pt%13Rh-Pt	Type-R	0°C	1760°C
Pt%18Rh-Pt	Type-B	60°C	1800°C
Pt-100	$\alpha=0.385$	-200°C	840°C
mV	0-1000 mV	-1999 unit	9999 unit
mA	0-20/4-20 mA	-1999 unit	9999 unit

\* DIN 43710 standards, others conform to IEC 60584-1.

\*(EU) °C or °F for the thermocouples and resistance thermometer inputs, for the linear inputs, same with the unit which is controlled.

## ORDERING GUIDE

E-210 Series Controllers

E-210 -W- X - Y - Z

### Standard Features

- Programmable universal inputs
  - 2 relay outputs
  - 3 digital inputs
  - 1 analog outputs
  - 1 motorised valve feedback input
  - Transmitter power supply
  - Heat / cool
  - Auto-tune
- Configurable by the customer

### Relay Outputs

2 relays (2xNO-0) .....	2
3 relays (3xNO-0) .....	3
4 relays (4xNO-0) .....	4
Pulse Voltage to drive SSR, 1 relay + 24V DC/20 mA .....	5
Pulse Voltage to drive SSR, 2 relays + 24V DC/20 mA .....	6
Pulse Voltage to drive SSR, 3 relays + 24V DC/20 mA .....	7

### Analog Outputs

1 analog output 0-20mA/4-20mA (isolated) .....	1
2 analog outputs 0-20mA/4-20mA (isolated) .....	2
1 analog output 0-10 V DC (isolated) .....	3
2 analog outputs 0-10 V DC (isolated) .....	4

Analog outputs are non-isolated from each other

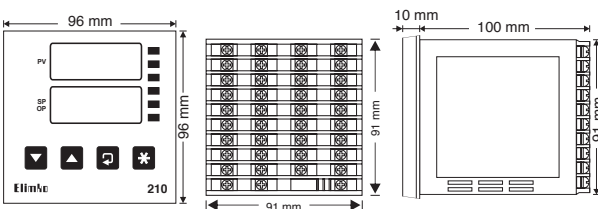
### Communication

None .....	0
RS485 Modbus .....	1

### Power Supply

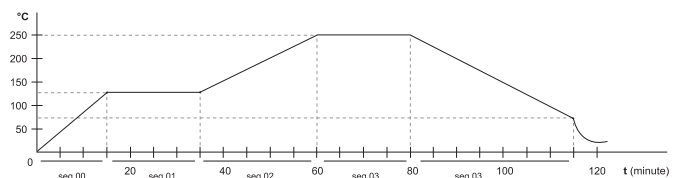
85-265 V AC / 85-375 V DC .....	0
20-60 V AC / 20-85 V DC .....	1

## DIMENSIONS



Panel cut-out = 92 x 92 mm

## A TYPICAL PROFILE CONTROL PROGRAM



The company's policy is one of continuous product improvement. We reserve the right to modify the information contained herein without notice.



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