E-2000M SERIES
DIGITAL INDICATING CONTROLLERS

DESCRIPTION

E-2000M Series controllers are designed using new generation micro-controllers for on/off and PID control. Unit dimensions are 96 x 96mm, conforming to IEC/TR 60668.

E-2000M Series has a 2x4 digits LED display range between -1999 and +9999, configurable universal inputs (T/C, R/T, mV, mA) with 16 bit resolution and low calibration drifts with environmental conditions.

E-2000M Series controllers have easy programming facilities providing on/off and PID forms and are used in every field of industry for the measurement and control of temperature, pressure, level, current, voltage, resistance and other process parameters in the industries of iron & steel, cement, plastic, chemistry, metallurgy, petrochemical plants, refineries, ceramic, glass 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	2 readings/second
Input Resistance	T/C, mV ≥ 1 MΩ mA, ≤ 51 Ω
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. 4 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
Memory	EEPROM max. 10^5 writing
Weight	230 gr

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
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	∝=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.
E-2000M Series instruments are general purpose instruments and can be configured according to the application.

CE

- 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.

FEATURES

Set Adjustment	Between set point limits
Control Form	Low (LO), High (HI), Lob, Hlb, Lod, Hld
Dead Band (Hysterisis)	0-999.9 (EU)*
Resolution	0.1 or 1
Proportional Band (Pb)	0.1-999.9 (EU)*

Integral Time (It)	0-3600 second
Derivative Time (Dt)	0-3600 second
Bias	% 0-100
Control Form	On / Off, PID
Control Outputs	0-20 mA, 4-20 mA, 0-10 V DC NA Contact, SSR

* (EU) °C or °F for the thermocouples and resistance thermometer inputs, for the linear inputs, same with the unit which is controlled. The decimal point can be determined by the parameter of dP

ORDERING GUIDE

E-2000M Series Controllers — E-2000M -W- X - Y - Z

Standard Features

- Programmable universal inputs
- Programmable outputs
- Auto-tune

Configurable by the customer

Relay Outputs

None	0
1 relay, 1 x (NO-0)	1
2 relays, 2 x (NO-0)	2
Pulse Voltage to drive SSR, 24V DC/20 mA	3
Pulse Voltage to drive SSR, 24V DC/20 mA + 1 relay 1 x (NO-0)	4

Analog Output

None	0
0-20 mA / 4-20 mA (isolated)	1
0-10 V DC	2

Communication

None	0

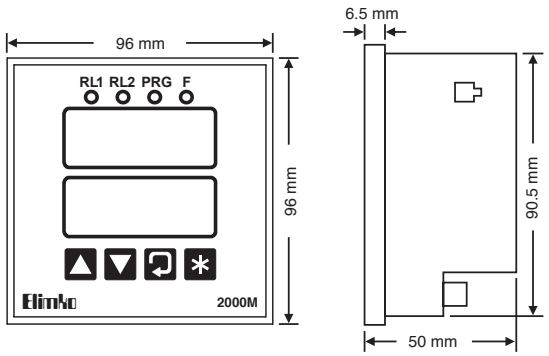
Power Supply

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

Sample

E-2000M-0-0-0-0	Only indicator, operates with 220 V AC.
E-2000M-1-0-0-0	1 relay output, operates with 220 V AC.
E-2000M-2-1-0-1	2 relays, single analogue output, operates with 24 V DC.

DIMENSIONS



Panel cut-out = 92 x 92 mm