ENDURABLE PID TEMP. CONTROLLERS

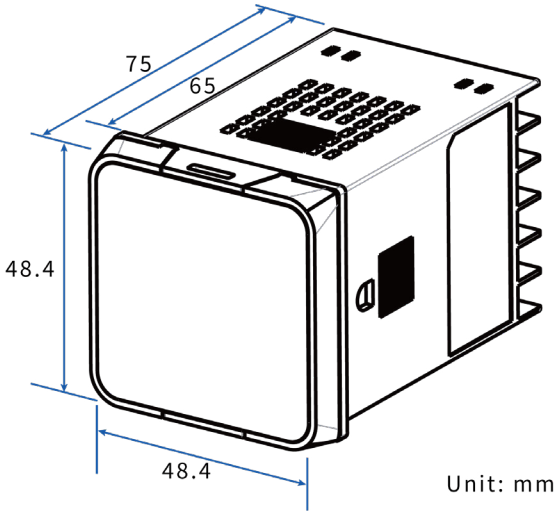
INFORMATION

E62 PID controller is specially designed for temperature control. It uses PID logic algorithm to make control more stable. E62 supports popular TC and RTD inputs. Besides, it is equipped with a dual-color LCD display, IP65 protection, and user-friendly operations at a competitive price which may fulfill various temperature control demands.

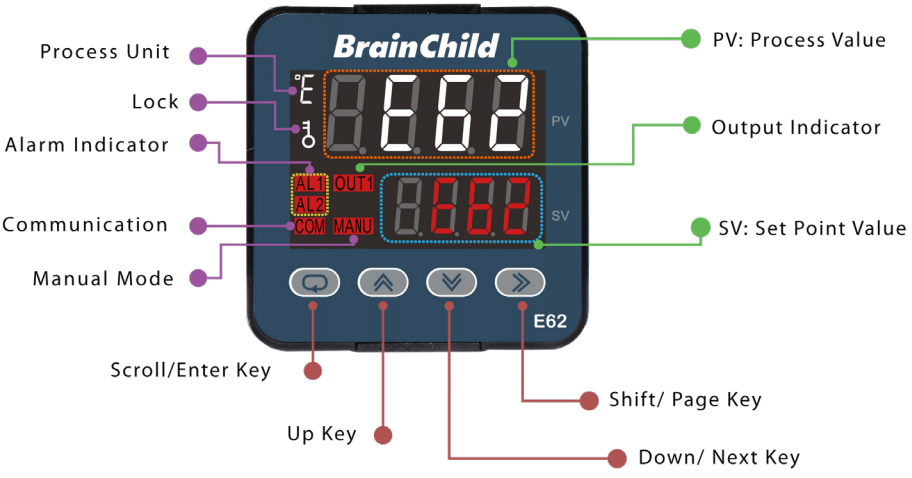
FEATURES

- High-brightness LCD display
- 200ms sampling rate
- PID control
- RS485 communication
- Parameter lockout protection
- High-accuracy 18-bit A-D input and 15-bit D-A output
- Input signals: TC (J, K, T, R, S), RTD (PT100)
- Auto-tuning

SPECIFCATIONS



Unit: mm



STANDARD SPECIFICATIONS

POWER

Power Supply	100-240 VAC, 47–63 Hz
Power Consumption	8VA, 4W maximum

SIGNAL INPUT

Type	Thermocouple(J,K,T,E,B,R,S,N,L,U,P,C,D), RTD(PT100(DIN), PT100(JIS)), Current(mA),Voltage(Volts)
Resolution	18 Bits
Sampling Rate	5 Times / Second (200msec)
Maximum Rating	-2VDC minimum, 12VDC maximum

Input Characteristics

Type	Range	Accuracy @ 25°C	Input Impedance
J	-120°C to 1000°C(-184°F to 1,832°F)	±2°C	2.2 MΩ
K	-200°C to 1370°C (-328°F to 2498°F)	±2°C	2.2 MΩ
T	-250°C to 400°C (-418°F to 752°F)	±2°C	2.2 MΩ
E	-100°C to 900°C(-148°F to 1652°F)	±2°C	2.2 MΩ
B	0°C to 1820°C(32°F to 3308°F)	±2°C(200°C to 1800°C)	2.2 MΩ
R	0°C to 1767.8°C(32°F to 3214°F)	±2°C	2.2 MΩ
S	0°C to 1767.8°C(32°F to 3214°F)	±2°C	2.2 MΩ
N	-250°C to 1300°C(-418°F to 2372°F)	±2°C	2.2 MΩ
L	-200°C to 900°C(-328°F to 1652°F)	±2°C	2.2 MΩ
U	-200°C to 600°C (-328°F to 1112°F)	±2°C	2.2 MΩ
P	0°C to 1395°C(32°F to 2543°F)	±2°C	2.2 MΩ
C	0°C to 2300°C(32°F to 4172°F)	±2°C	2.2 MΩ
D	0°C to 2300°C(32°F to 4172°F)	±2°C	2.2 MΩ
PT100(DIN)	-200°C to 850°C(-328°F to 1562°F)	±0.4°C	1.3KΩ
PT100(JIS)	-200°C to 600°C(-328°F to 1112°F)	±0.4°C	1.3KΩ
mA	-3mA to 27mA	±0.05%	2.5Ω
V	-1.3V to 11.5V	±0.05%	1.5MΩ

Temperature effect	1.5μV /°C for all inputs except mA input, 3.0μV /°C for mA
Sensor lead resistance effect	Thermocouple: 0.2 μV /Ω; 3-wire RTD: 2.6°C /Ω of Difference of Resistance of two leads 2-wire RTD: 2.6°C /Ω of Sum of Resistance of two leads

Burn-out current	200nA
Common mode rejection ratio(CMRR)	120 dB
Normal mode rejection ratio (NMRR)	55 dB
Sensor break detection	Sensor open for Thermocouple and RTD inputs, sensor short for RTD input , below 1mA for 4-20mA input, below 0.25V for 1-5V input, not available for other inputs
Sensor break responding time	Within 4 seconds for Thermocouple and RTD inputs

OUTPUT

Type	Relay, Pulsed Voltage, Linear Voltage and Linear Current
Relay rating	2A,240V AC, 200000 Life Cycles for Resistive Load
SSRD	12V/30mA
Linear output resolution	15 Bits
Linear output regulation	0.02% for full load change
Linear output settling time	0.1 Second (Stable to 99.9%)
Isolation breakdown voltage	1000 V AC
Temperature effect	±0.01% of Span/ °C
Load capacity of linear output	Linear Current: 500Ω maximum, Linear Voltage: 10KΩ minimum

ALARM

Relay type	Form A
Maximum rating	2A, 240V AC, 200000 Life Cycles for Resistive Load
Alarm functions	Deviation High, Deviation Low, Deviation Out-of-Band, Deviation In-Band, Process High, Process Low, None
Alarm mode	Latching, Hold, Normal, Latching/Hold

DATA COMMUNICATION

Interface	RS-485
Protocol	Modbus RTU (Slave Mode)
Address	1 to 247
Baudrate	2.8 KBPS to 115.2 KBPS
Parity bit	None, Even or Odd
Stop bit	1 or 2 Bits
Data length	7 or 8 Bits
Communication buffer	150 Bytes

USER INTERFACE

Keypad	4 Keys
Display type	4 digit LCD display
No. of display	2
Upper display size	0.58”(15mm)
Lower display size	0.3”(7.8mm)

PROGRAMMING PORT

Interface	Micro USB
PC communication function	Automatic Setup, Calibration and Firmware Upgrade

CONTROL MODE

Output	Reverse (Heating) or Direct (Cooling) Action
ON-OFF	0.1 – 90.0 (°F) hysteresis control (P band = 0)
P or PD	0 – 100.0 % offset adjustment
PID	Fuzzy logic modified Proportional band 0.1 ~ 900.0°F, Integral time 0 – 3600 seconds, Derivative time 0 – 360.0 seconds
Cycle time	0.1 to 90.0 seconds
Manual control	Heat (MV1) and Cool (MV2)
Auto-tuning	Cold Start and Warm Start
Failure mode	Auto transfer to manual mode while sensor break or A-D Converter damage

DIGITAL FILTER

Function	First order
Time constant	0,0.2, 0.5, 1, 2, 5, 10, 20, 30, 60 seconds programmable

ENIVRONMENTAL & PHYSICAL

Operating temperature	-10°C to 50°C
Storage temperature	-40°C to 60°C
Humidity	0 to 90 % RH (Non-Condensing)
Altitude	2000 Meters maximum
Pollution	Degree II

Insulation resis-tance	20MΩ minimum (@500V DC)
Dielectric strength	2000V AC,50/60 Hz for 1 Minute
Vibration resistance	10 to 55 Hz , 10m/s2 for 2 Hours
Shock resistance	200 m/s2 (20g)
Moldings	Flame retardant polycarbonate
Mounting	Panel
Dimensions (W*H*D) (mm)	48*48*59
Depth behind panel (mm)	50
Cut out dimensions (mm)	45*45
Weight (grams)	98g

APPROVAL STANDARDS

Certificate	CE, RoHS, REACH, WEEE
Protective class	IP50 Rated Front Panel, IP20 Housing, Optional IP65 Front Panel/ Terminal Cover
EMC	EN1326-1