DIGITAL INDICATING CONTROLLER 48 x 24mm
LT110 Series

PERFORMANCE SPECIFICATION CHINO

LT110 series, 1/32 DIN size, miniature digital indicating controllers, feature all functions that are convenient in various control applications.

The controllers are applicable to various equipment including semiconductor manufacturing equipment, electronic parts manufacturing equipment, food-processing machinery, packaging machinery, injection machine.

■ FEATURES

- Small size, lightweight, short space
- Universal input consisted of 5 kinds of T/C input and 4 kinds of RTD input, and multi-input of 5 kinds of T/C input
- Optimum PID values are automatically calculated for accurate and stable control by PID auto-tuning.
- Various functions including sensor correction, setpoint lock, setpoint limit, control output OFF, and alarm action delay timer are built-in.
- The controllers conform to CE and the front panel is dust-proof and water-proof conforming to IP-65.

■ MODEL

LT1 1□□ 0000-□ 0A

- Size
  - 1: 48 x 24mm
- Input signal
  - 0: Universal input (with 1 event output)
  - 1: Thermocouple multi- input
- Control output
  - 1: On-off pulse type
  - 2: Current output type
  - 3: SSR drive pulse type
- Options (Available in universal input only)
  - 0: None
  - 1: Setpoint change (DI) ... With 2 SVs and 1 DI
  - 2: Heater disconnection (CT) ... With current transformer
    Available in on-off pulse type and SSR drive pulse type only
- Power supply
  - A: 100 to 240VAC (universal)

■ SPECIFICATIONS

INPUT SPECIFICATIONS

Input signal: T/C … K, N, J, E, Platinel II
RTD … Pt100, JPt100
Measuring range: Refer to the measuring range.
Indication accuracy ratings:
T/C … ±0.3% of input span ± 1 digit or ±2ºC, whichever is larger
RTD … ±0.2% of input span ± 1 digit
Measuring unit: ºC or ºF
Sampling time: Approx. 0.25 second
Burnout: Upscale
Allowable signal source resistance: T/C … 100Ù or less
RTD … 10Ω or less (per wire)
Measuring input shift (sensor correction): -100.0 to 100.0ºC

CONTROL SPECIFICATIONS

Control cycle time: Approx. 0.25 second
Control system: PID (2-position control is available.
Setpoint limiter: Within measuring range
Setpoint ramp function: Setpoint ramp unit … ºC/minute
Setpoint rising ramp … 0 to 9999
Setpoint falling ramp … 0 to 9999
Control system: PID (* 2-position control available.)
Control setting accuracy ratings:
Same as indication accuracy rating
Auto-tuning: Standard (Manual setting of PID constant possible.)

PID constants: P … 0 to Maximum value of each range
I …. 0 to 3600 seconds
D … 1 to 3600 seconds
Hysteresis: 0.1 to 100.0ºC (2-position control only)
Anti-reset windup: Automatic
Control operation: Direct/reverse operation switching
Output:
- On-off pulse type
  Output signal … On-off pulse conductive signal
  Contact rating … Resistive load 250VAC 3A
  Inductive load 250VAC 1A
  On-off pulse time … Approx. 1 to 120seconds variable
- Current output type
  Output signal …4 to 20mADC
  Load resistance ... 550Ω or less
- SSR drive pulse type
  Output signal … On-off pulse voltage signal
  At ON 12VDC ± (0 to +2V), Max 40mA
  On-off pulse cycle … Approx. 1 to 120 seconds variable

Output limiter: 0 to 100% (–5 to 105% for current output type)
Control output OFF: Temporary OFF of control operation is possible.

ALARM SPECIFICATIONS

Alarm point: 1 point
Temperature alarm type:
Deviation high alarm, deviation low alarm
Absolute value deviation high alarm, absolute value deviation low alarm
Deviation high alarm with standby function
Deviation low alarm with standby function
Absolute value deviation high alarm with standby function
Absolute value deviation low alarm with standby function
Absolute value high alarm, absolute value low alarm
Absolute value high alarm with standby function
Absolute value low alarm with standby function
Loop break alarm:
Alarm activation when the control output is maximum or minimum and the process value does not vary more than a set band in a set time.
Heater disconnection, sensor disconnection, control equipment failure
Alarm time setting range: 0 to 200 minutes
Alarm band: 0 to150ºC or 0.0 to 150.0ºC
Alarm deadband: 0.1 to 100ºC
Alarm output: Open collector 24VDC 0.1A (maximum)

DISPLAY FUNCTION

Display: 4-digit LED
Display contents: PV or SV switching, Parameter item

GENERAL SPECIFICATIONS

Power voltage: 100 to 240VAC, 50/60Hz (universal)
Working temperature: 0 to 50ºC
Working humidity: 35 to 85%RH (no dew condensation)
Power consumption: Approx. 5VA
Case: Flame resisting resin
Color: Gray
Installation: Flush pane installation
Weight: Approx. 100g

PERFORMANCE SPECIFICATION

■ MEASURING RANGES

Input kind		Input range	
Thermocouple	K	0 to 1370 ºC	0 to 2500 ºF
	J	0 to 1000 ºC	0 to 1800 ºF
	E	0 to 800 ºC	0 to 1500 ºF
	Platinel II	0 to 1390 ºC	0 to 2500 ºF
	N	0 to 1300 ºC	0 to 2300 ºF
Resistance thermometer	Pt100	-199.9 to 850.0 ºC	-199.9 to 999.9 ºF
		-200 to 850 ºC	-300 to 1500 ºF
	JPt100	-199.9 to 500.0 ºC	-199.9 to 900.0 ºF
		-200 to 500 ºC	-300 to 900 ºF

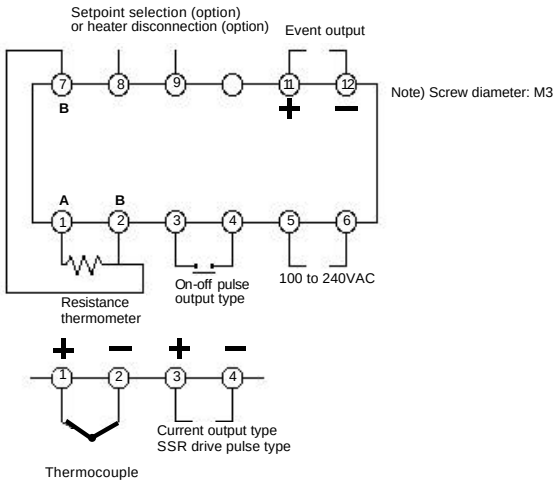
■ OPTIONS

Option	Contents
Setpoint switching	For switching Setpoint 1 and Setpoint 2 (This option can be added to the universal input type.)
Heater disconnection alarm output	For detecting heater disconnection by monitoring a heater power source with a CT (current transformer) Use the CTL-12-S36-10L1 current transformer attached. Rating: 50A Setting range: 0.0 to 5.0A (0.0: no operation) Setting accuracy: ±5% Operation: ON/OFF Output: Open collector control rating 0.1A (max) at 24VDC (This option can be added to the on-off pulse type and the SSR drive pulse type only in the universal input type.)
Terminal cover	For preventing from electrical shock (Purchasing with controller is requested.)

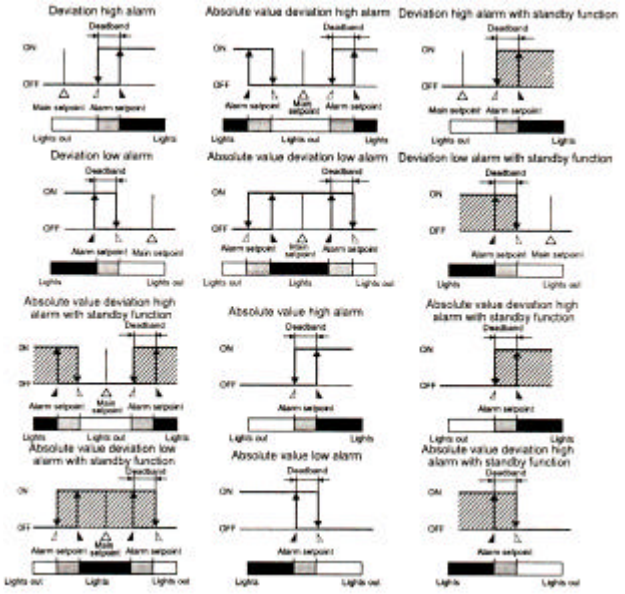
■ STANDARD ACCESSORIES

Mounting frame 1 piece, Instruction manual 1 copy

■ TERMINAL BOARD

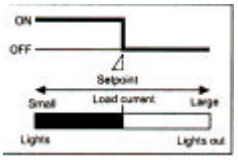


■ ALARM FUNCTION

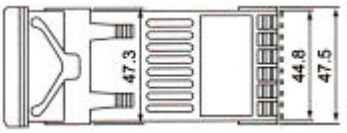


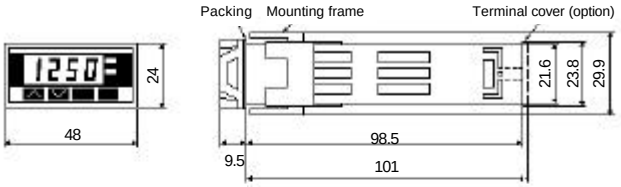
At ▭ indicates ON or OFF operation.
At ▭ indicates the standby function operated.

● Heater disconnection alarm output

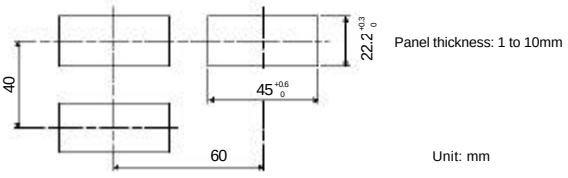


■ DIMENSIONS





● General installation



Specifications subject to change without notice. Original 2000.5

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