

DIGITAL INDICATING CONTROLLER LT110 SERIES



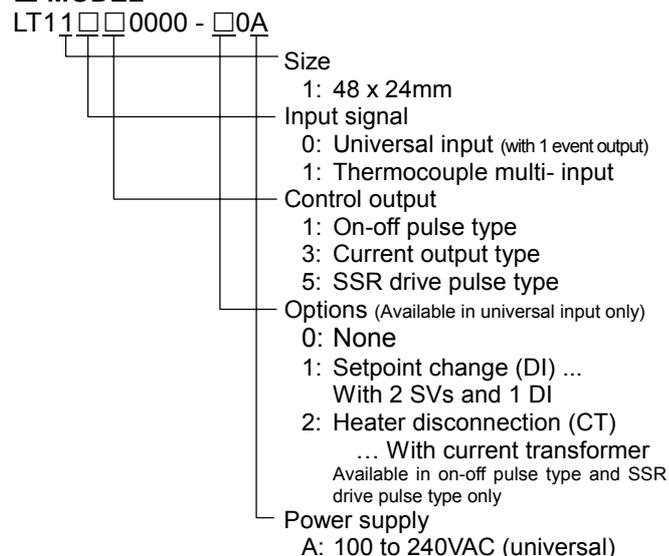
LT110 series, 1/32 DIN size, miniature digital indicating controllers, feature all functions that are convenient in various control applications.

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



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 ±2°C, whichever is larger
RTD...±0.2% of input span ± 1 digit

Measuring unit: °C or °F

Sampling time: Approx. 0.25 second

Burnout: Upscale

Allowable signal source resistance: T/C ... 100Ω or less
RTD ... 10Ω or less (per wire)

Measuring input shift (sensor correction): -100.0 to 100.0°C

CONTROL SPECIFICATIONS

Control cycle time: Approx. 0.25 second

Control system: PID (2-position control enabled)

Control setting accuracy ratings:

Same as indication accuracy rating

Auto-tuning: Standard (Manual setting of PID constants enabled)

PID constants: P ... 0 to Maximum value of each range

I ... 0 to 3600 seconds

D ... 1 to 3600 seconds

Pulse cycle: 1 to 120 seconds (Available in on-off pulse type and SSR pulse type only)



Hysteresis: 0.1 to 100.0°C (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 500Ω 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)

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 to 150°C or 0.0 to 150.0°C

Alarm deadband: 0.1 to 100°C

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 50°C

Working humidity: 35 to 85%RH (no dew condensation)

Power consumption: Approx. 5VA

Case: Non-flammable resin

Color: Gray

Installation: Flush panel installation

Weight: Approx. 100g

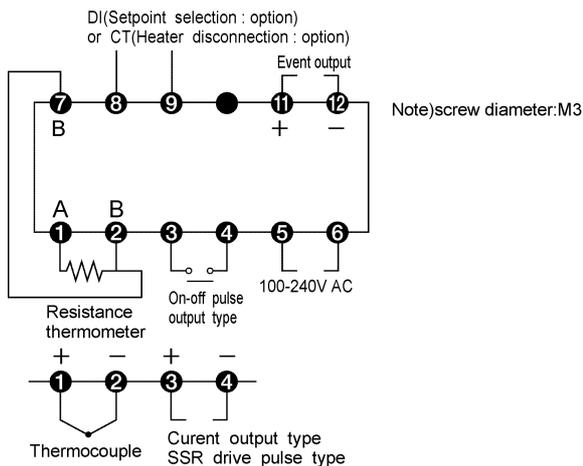
MEASURING RANGES

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

OPTIONS

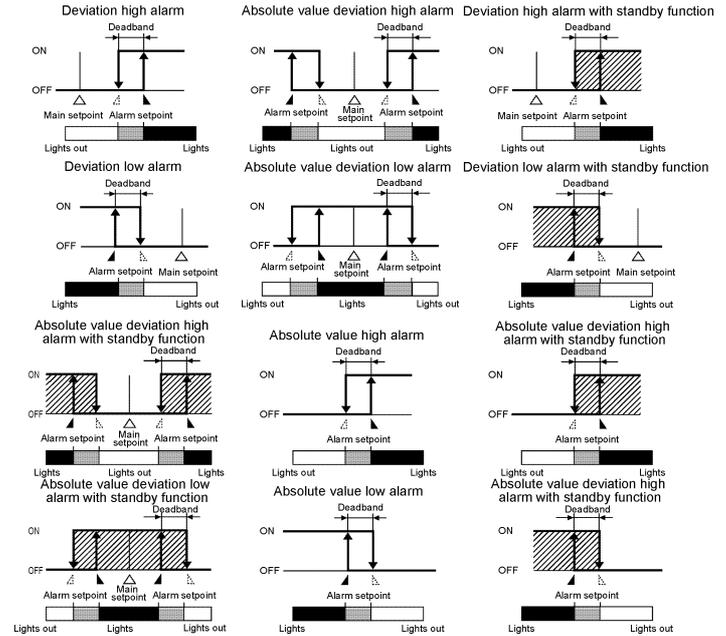
Option	Contents
Setpoint switching	For switching Setpoint 1 and Setpoint 2 (This option can be added to the universal input type.)
Heater disconnection alarm output	For detecting heater disconnection by monitoring a heater power source with a CT (current transformer) Use the CTL-12-S36-10L1 current transformer attached. Rating: 50A Setting range: 0.0 to 50.0A (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.)

TERMINAL BOARD



* Event output is available in universal input type only.

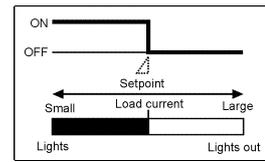
ALARM FUNCTION



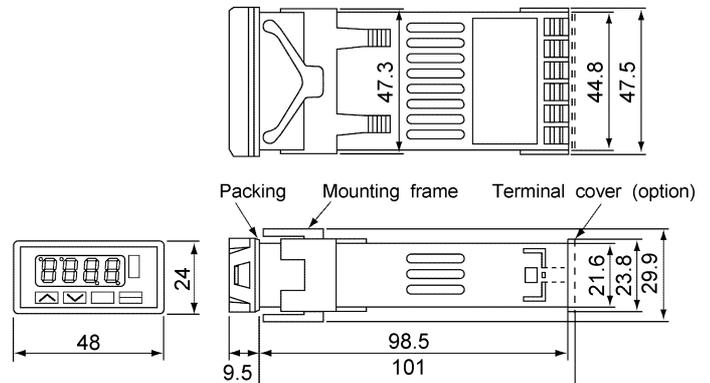
At indicates ON or OFF operation.

At indicates the standby function operated.

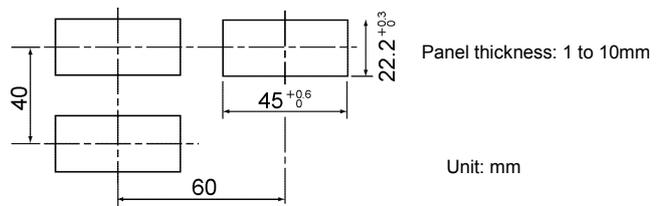
- Heater disconnection alarm output



DIMENSIONS



- General installation



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