

LCU032 1/32 DIN Single Display Temperature / Process Control

The LCU032 Series temperature/process controls set a new standard in power, flexibility, and value in a low cost 1/32 DIN control. This family of controls offers family interchangeability with universal input and universal output.



STANDARD FEATURES

- Large Single display
- Self-Tune / Fuzzy logic
- Universal Input
- Universal Output
- IP65 (NEMA 4X) Front Panel



The LCU032 offers universal input (13 thermocouple scales, 2 RTD types, voltage, and current), universal single set point with alarm, or heat / cool output. Standard features include Fuzzy Logic and Self-tune. Process protection is provided by open sensor protection and shorted sensor protection.

Options for the LCU032 include RS-485 Modbus Serial Communication, and Heat/Cool operation.

The LCU032 family of controls offers a high level of features, function, and quality available in a low cost 1/32 DIN package.

Input Ranges

INPUT TYPE	RANGE °F	RANGE °C
Type J Thermocouple	-300 to +2300	-199.9 to +999.9
Type K Thermocouple	-300 to +2500	-200 to +1370
Type K Thermocouple	0 to 2300	-199.9 to +999.9
Type T Thermocouple	-300 to +750	-199.9 to +400.0
Type E Thermocouple	-300 to +1800	-199.9 to +999.9
Type L Thermocouple	-300 to +1300	-199.9 to +900.0
Type R Thermocouple	32 to 3100	0 to +1700
Type S Thermocouple	32 to 3100	0 to +1700
Type B Thermocouple	+32 to +3300	0 to +1800
Type N Thermocouple	-300 to +2400	-200 to +1300
Type U Thermocouple	-300 to +750	-199.9 to +400.0
Type W Thermocouple	32 to 4200	0 to 2300
Platinel II	32 to 2500	0 to 1390
100 Ω Plt. 0.00385 DIN RTD	-328 to 1607	-200 to +875
100 Ω Plt. 0.00392 Nist RTD	-328 to 1607	-200 to +875
1 to 5 V*	Scalable Units from -1999 to +9999	
-10 to +20 mV*	Scalable Units from -1999 to +9999	
0 to 100 mV*	Scalable Units from -1999 to +9999	

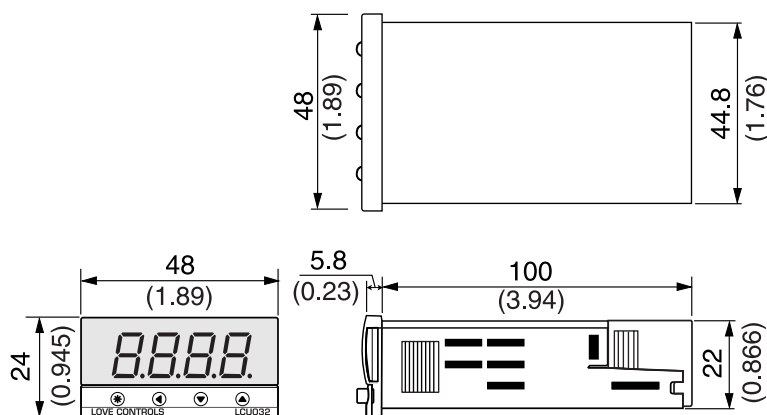
* These inputs are fully scalable from a minimum of 100 counts span placed anywhere within the within the range of -1999 to +9999. Decimal point position is adjustable from the zero place (9999), tenths (999.9), hundredths (99.99), thousandths (9.999), or ten thousandths (.9999).

FRONT PANEL KEY FUNCTIONS



DIMENSIONS

All dimensions in millimeters (inches).



MODEL IDENTIFICATION

To order, specify part number by filling the boxes with the appropriate numbers.

LCU032 -

OUTPUT / OPTIONS

- 00 = Universal / None
- 10 = Heat-Cool / None
- 01 = Universal / RS-485 Communications
- 11 = Heat-Cool / RS-485 Communications

SPECIFICATIONS

Selectable Inputs: (See range chart)

13 Thermocouple, 2 RTD, DC Voltage, or DC Current selectable.

Input Impedance:

Thermocouple = 1 megohm minimum.

Current = 250 ohms (shunt resistor).

RTD current = 500 μ A. (Max. lead resistance = 10 ohms/wire)

Voltage = 1 megohm.

Sample Time: 250mS.

Sensor Break Protection: Upscale or downscale for thermocouples, upscale only for RTD.

Set Point Range: Selectable (See Range Chart).

Display: One 4 digit, 7 segment LEDs, .

Control Action: Reverse (usually heating), Direct (usually cooling) selectable.

Proportional Band: 0.1 to 999.9% of full scale.

Reset Time (Integral): Off or 1 to 6000 seconds.

Rate Time (Derivative): Off or 1 to 6000 seconds.

Cycle Rate: 1 to 80 seconds.

On-Off Differential: Adjustable 0.0 to 100% of full scale.

Alarm On-Off Differential: Adjustable 0.0 to 100% of full scale.

Fuzzy Logic: On or Off.

Accuracy: $\pm 0.5\%$ of span, ± 1 least significant digit.

Resolution: 1 count or 1 degree or 0.1 degree per range.

Temperature Stability: 100 ppm/ $^{\circ}$ C typical, 200 ppm/ $^{\circ}$ C max.

Reference Junction Accuracy: $\pm 1.5^{\circ}$ C @ 15 to 35 $^{\circ}$ C, $\pm 2.0^{\circ}$ C 0 to 50 $^{\circ}$ C

Supply Voltage: 100 to 240 VAC 50/60 Hz.

Power Consumption: 10 VA maximum.

Operating Temperature: -0 to +50 $^{\circ}$ C (+32 to 131 $^{\circ}$ F).

Storage Temperature: -25 to +70 $^{\circ}$ C (-40 to 176 $^{\circ}$ F).

Humidity Conditions: 20 to 90% non-condensing.

Memory Backup: Nonvolatile memory. No batteries required.

Control Output Ratings:

SSR Drive (non-isolated): 24 VDC @ 20 mA (max load 600 ohms).

Relay: SPST, 1 A @ 240 VAC resistive.

Current (non-isolated): 4 to 20 mA across 600 ohms max.

Panel Cutout: 45 mm x 22 mm (1.775" x 0.874").

Depth Behind Mounting Surface: 100 mm (3.94").

Weight: 114 g (4 oz).

Agency Approvals: CE, UL E83725.

Front Panel Rating: IP65 (Type 4X).

Communications Option:

Standard: RS-485

Address Range: 1 to 99.

Connection: 2-wire, Half Duplex

Communications Rate: Selectable, 600, 1200, 2400, 4800, 9600 Baud.

Start Bit: 1.

Data Bits: 7 or 8, programmable.