

## MODEL CUB4TC - THERMOCOUPLE INDICATOR



- PROGRAMMABLE TEMPERATURE OFFSET
- SELECTABLE °F or °C WITH 1 or 0.1 RESOLUTION
- °F OR °C DISPLAY ANNUNCIATORS
- CONFORMS TO ITS-90 TEMPERATURE SCALE
- COLD JUNCTION COMPENSATION (Enable/Disable)
- 0.48 INCH (12.2 mm) HIGH DIGITS
- 5 DIGIT LCD, POSITIVE REFLECTIVE OR NEGATIVE TRANSMISSIVE WITH RED BACKLIGHT
- OPEN CIRCUIT INDICATION



EMC  
COMPLIANT



NEMA 4X /  
IP65



PARAMETER  
LOCKOUT



FRONT PANEL  
PROGRAMMABLE

Click Icon For  
User Bulletin

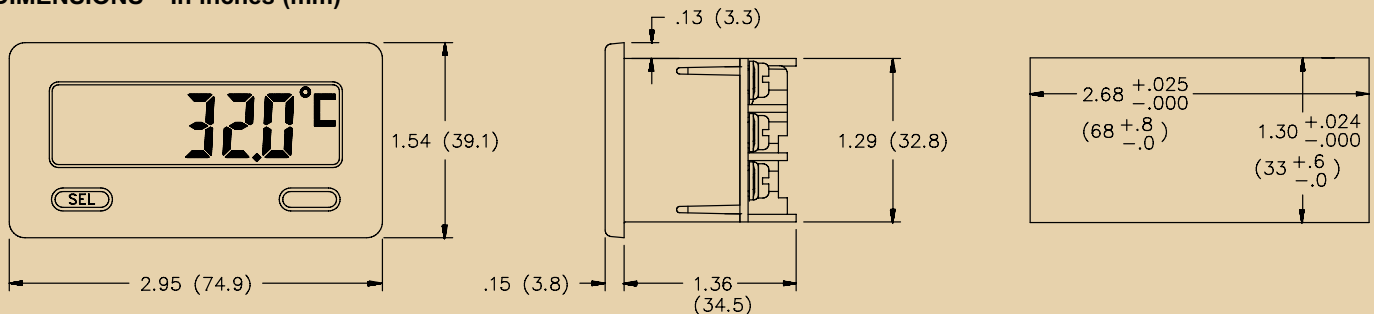


FAX/WEB  
DOC # 05003

### Product Features

The CUB4TC is a 9 to 26 VDC powered, microprocessor based temperature indicator, with decimal display, for use with T, E, J, K, R, S, B, or N thermocouple sensors. A mVDC display mode with a range of -10.00 to 60.00 mV is also selectable. Programmable features include thermocouple type, cold junction compensation, Fahrenheit, Celsius, or millivolt display, input filtering, input filter range, and a user offset. The 0.48", 5 digit LCD display provides annunciators for Fahrenheit or Celsius indication and is available with or without a backlight.

### DIMENSIONS "In inches (mm)"



### General Specifications

- DISPLAY:** Reflective LCD or Transmissive LCD with red backlight, 5 digit display 0.48" (12.2 mm) height, F or C annunciators.
- POWER:** 9 to 26 VDC @ 65 mA with backlight, 25 mA without backlight 28 VDC max. Reverse polarity protected. Must use the MLPS or a Class 2 or SELV rated power supply.  
**Backlight version only:** 0.15 °C/Volt CJC error if powered from other than 12 VDC. May be compensated with offset. Example: 24 VDC supply, (24V-12V)\*0.15 °C/V = 1.8 °C, Enter -1.8 °C user offset.
- ENVIRONMENTAL CONDITIONS:**
  - Operating Temperature Range:** 0 to 50°C
  - Storage Temperature Range:** -30 to 85°C
  - Operating and Storage Humidity:** 85% max. relative humidity (non-condensing) from 0 to 50°C.
  - Altitude:** Up to 2000 meters (6561 feet)
- CERTIFICATIONS AND COMPLIANCES:**
  - SAFETY**  
EN 61010-1, IEC 1010-1
  - ELECTROMAGNETIC COMPATIBILITY**  
Immunity to EN 50082-2  
Emissions to EN 50081-2
- CONNECTION:** Wire clamping screw terminals.
- CONSTRUCTION:** High impact plastic case with clear viewing window. (Panel gasket and mounting clips included.) Unit is rated for NEMA 4X/IP65 indoor use.
- WEIGHT:** 3.3 oz. (93.5 g)

## MODEL CUB4TC - THERMOCOUPLE INDICATOR

### Input Specifications

#### 1. INPUT:

**Isolation:** TC+ and TC- terminals are not electrically isolated from the power supply.

**Response Time:** 500 msec.

**Failed Sensor Display:**  $\overline{DPE}$

**Overrange/Underrange Input:**  $\overline{DL DL UL UL}$

**Overrange/Underrange Display:** "....."μ"....."

**Normal Mode Rejection:** 40 dB @ 50/60 Hz

**Common Mode Rejection:** 100 dB @ DC to 60 Hz

**Maximum Input Voltage:** 30 VDC, TC+ to TC-

**Maximum Input Voltage TC-:** 3 VDC max. with respect to common

**Thermocouple:** Conforms to ITS-90.

**Types:** T, E, J, K, R, S, B, N

**Input Impedance:** 20 MΩ

**Lead resistance effect:** 0.25 μV/ohm

**Cold junction compensation:** Less than 1.0 °C over 0 to 50 °C ambient temp range.

**Resolution:** 1 °C/F all types, or 0.1 °C/F for T, E, J, K and N only.

#### 2. RANGE & ACCURACY:

Accuracy reflects ALL errors @12 VDC supply and 15 minute warm-up, except thermocouple probe errors and any lead resistance effects of 0.25 μV/ohm.

TC TYPE	DISPLAY	RANGE	ACCURACY @ 23°C ±°C	ACCURACY @ 0 to 50°C ±°C	WIRE COLOR	
					ANSI	BS 1843
T	t	-200 to 400°C -328 to 752°F	2.3	5.8	BLUE	WHITE
K	μ	-200 to 1372°C -328 to 2502°F	2.3	5.8	YELLOW	BROWN
J	μ	-200 to 760°C -328 to 1400°F	1.9	4.3	WHITE	YELLOW
R	r	0 to 1768°C 32 to 3214°F	4.5	15.0	BLACK	WHITE
S	s	0 to 1768°C 32 to 3214°F	4.5	15.0	BLACK	WHITE
B	b	200 to 1820°C 300 to 3308°F	9.1<540°C 4.5>540°C	42.6<540°C 15.0>540°C	GREY	NONE
E	E	-200 to 787°C -328 to 1448°F	2.7	4.9	VIOLET	BROWN
N	n	-200 to 1300°C -328 to 2372°F	2.8	8.1	ORANGE	ORANGE
mV	L #	-10.00 to 60.00	0.02 mV	0.08 mV	N/A	N/A

#### 3. TEMPERATURE EFFECTS:

**Span Drift:** 150 ppm/°C Max.

**Zero Drift:** < 1 μV/°C Max.

### Ordering Information

MODEL	DESCRIPTION	PART NUMBER
CUB4TC	Thermocouple Indicator, Reflective LCD	CUB4TC00
	Thermocouple Indicator, Red Backlit Transmissive LCD	CUB4TC20
MLPS	Micro Line/Sensor Power Supply	MLPS0000