TUC2

Microprocessor Sensor [Resistive Temp]

The A/TUC2 Series is a customizable sensor which features an on-board microprocessor, large backlit LCD display, set point, override and local system status when using the Override Feedback option. A single or dual sensing technology is employed when ordering NTC thermistor's due to their increased sensor resolution. The Platinum, Nickel, and Silicon RTD's all use a dual sensing technology due to their much lower sensor resolution. The single sensor technology reduces the error between the displayed and measured temperature output sent to your building management system. All accuracy measurements should be measured from the sensor output terminals with the LCD display being used for reference purposes only due to the rounding of the display to the nearest 0.5ºF. To eliminate errors between the temperature shown on the LCD display and the temperature output to your building management system, a single point temperature offset can be entered in the TUC2. These units are factory configured to your desired specifications to reduce onsite programming. Additional features can be modified using the integral keypad and menu system, providing you with greater flexibility to meet any additional requirements. Additional features include additional Set Point configurations, Backlit Display brightness and functionality, Set Point Lockout, Direct and Reverse Acting Output adjustments, temperature offset, test functions and more. For additional features including Fan Speed and System Configurations, please contact ACI for more information.

Applications: Schools/Universities, Office Buildings, Commercial Buildings, Laboratories, Hospitals, Clean Rooms, Pharmaceutical, Process Control, OEM's

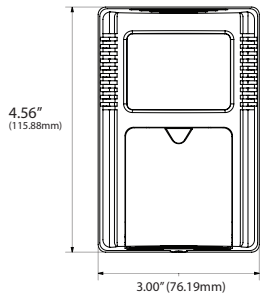
The ACI TUC2 Series is covered by ACI's Five (5) Year Limited Warranty. The warranty can be found in the front of ACI's Sensors & Transmitters catalog, as well as on ACI's website, www.workaci.com.

PRODUCT SPECIFICATIONS

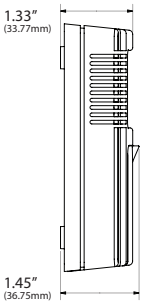
Supply Voltage:	20-28 VAC / +12-40 VDC
Supply Current (Maximum):	16 mA
Temperature Sensor Technology [1]:	NTC Thermistor's (Single Sensor); PTC RTD's (Dual Sensor)
Temperature Sensor Type:	See Ordering Grid
Temperature Measurement Range:	40 to 104ºF (4.5 to 40ºC)
Temperature Accuracy:	+/- 1ºF (+/- 0.5ºC) (Display rounded to nearest 0.5ºF/ºC)
Set Point Midpoint:	Select single point Temp from 55 to 89ºF (14 to 31ºC)
Set Point Differential (Scale Above/Below Midpoint):	Select single point from +/- 1º to +/- 20º
Temperature Set Point Resistance Range:	See Ordering Grid for Standard Options (Custom Ranges Available)
Set Point Resistance Action:	Direct Acting (ie. 0 to 10K = 55 to 85ºF) or Reverse Acting (ie. 10K to 0 = 55 to 85ºF)
Temperature Set Point Accuracy:	+/- 5% Full Scale Output
"After Hours" Override Contact Style (Optional):	Normally-Open (N/O) Short Sensor (Default); Optional Dry Contact or Short Set Point (Must Specify when ordering)
Override Contact Resistance | Life Expectancy:	< 30 Ohms | 500,000 Actuations minimum
Override Feedback Signal:	Dry Contact (Logic Low) or 5-30 VDC / 24 VAC (Logic High) (Specify when Ordering)
LCD Backlight Color | LCD Backlight Function:	Blue | Turns on w/ Button Press (Default); Field adjustable (ALWAYS ON or OFF)
Display Mean Time Between Failure (MTBF):	100,000 Hours typical (When LCD Backlight set to ALWAYS ON)
Display Numeral Height:	Large: 0.600" (15.24 mm); Small: 0.280" (7.11 mm)
LCD Display Descriptors:	ºF, ºC, Set Point, Occupied/Unoccupied (Override Feedback)
Communication Jacks (Optional):	RJ4 (4 Pin 4 Cond (RJ9, RJ10, RJ22 Phone)), RJ6 (6 Pin 6 Cond (RJ12 Phone)) and RS232 (1/8" (3.5 mm) Stereo Jack)
Power / Output Connections:	12 Position Screw Terminal Block
Communication Jack Connections:	Six 7" (17.78 cm) Long x 26 AWG lead wires with wire nuts
Terminal Block Wire Size | UL (SEL) Torque Rating:	Accepts 28 to 14 AWG (0.08 to 2.5 mm2) | 4.4 lb-in (0.5 Nm)
Enclosure Material | Color | UL Flammability Rating:	ABS/Polycarbonate Blend | White | UL 94-5VB
Operating Temperature / Storage Temperature:	40 to 104ºF (4.5 to 40ºC) -4 to 158ºF (-20 to 70ºC)
Operating / Storage Humidity:	5 to 90% RH, non-condensing
Product Dimensions (H x W x D):	4.56" (115.82 mm) x 3.00" (76.2 mm) x 1.45" (36.75 mm)
Product Weights:	0.21 lbs. (0.095 kg)
Agency Approvals:	CE (EMC 2014/30/EU); RoHS2 2011/65/EU

Note [1]: Power must be applied to the single sensor version of this unit with the NTC Thermistor Output signal before you can measure the sensors resistive output

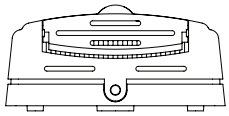
DIMENSIONAL DRAWING



Front View



Right View



Top View

TEMPERATURE ORDERING OPTIONS

Model # Example: TUC2 (A.) – CP (B.) – F1 (C.)

MODEL

A. Sensor Series *No Selection Required*	**TUC2** ⟶	**TUC2**
B. Sensor Type *Select One (1)*	**NTC Thermistors:** **18** = 1.8K Ohms @ 77ºF (25ºC) **3K** = 3K Ohms @ 77ºF (25ºC) **20** = 20K Ohms @ 77ºF (25ºC) **AS** = 3K Ohms @ 77ºF (25ºC) (3K-ASI) **AN** = 10K Ohms (Type III) @ 77ºF (25ºC) (10K-AN) **BC** = 10K Ohms (Type III) w/ 11K Shunt (5.238K @ 77ºF (25ºC)) (10K-AN-BC) **CP** = 10K Ohms (Type II) @ 77ºF (25ºC) (10K-CP) **CS** = 10K Ohms @ 77ºF (25ºC) (10K-CSI) **KS** = 10K Ohms @ 77ºF (25ºC) (10KS) **PTC RTD's:** **1K** = 1K Ohms @ 32ºF (0ºC); Class A Platinum RTD; 385 TC **NI** = 1000 Ohms @ 70ºF (21.1ºC); Nickel RTD; 6370 TC (1000-NI) **35** = 1035 Ohms @ 77ºF (25ºC); Silicon Sensor; +/- 3% from 40 to 104ºF	
C. Temperature Scale *Select One (1)*	**XX** = No Temperature Scale | **F1** = 40 to 104ºF | **C1** = 4.5 to 40ºC	

TEMPERATURE ORDERING OPTIONS *continued*

Model # Example: IM (D.) - ZW (E.) - S (F.) - X (G.) - 6 (H.) - X (I.)

		MODEL #
D. Set Point Temperature Scale: *Select One (1)* *See Specifications for more details regarding Midpoint/Differential set point specifications available)*	**XX** = No Set Point **Centigrade:** **1A** = 6 to 30 (Midpoint = 18, Set Point Differential = +/- 12) **1B** = 10 to 30 (Midpoint = 20, Set Point Differential = +/- 10) **1C** = 15 to 31 (Midpoint = 23, Set Point Differential = +/- 8) **1D** = 18 to 28 (Midpoint = 23, Set Point Differential = +/- 5) **Fahrenheit:** **1E** = 50 to 90 (Midpoint = 70, Set Point Differential = +/- 20) **1F** = 55 to 85 (Midpoint = 70, Set Point Differential = +/- 15) **1G** = 55 to 95 (Midpoint = 75, Set Point Differential = +/- 20) **1H** = 60 to 80 (Midpoint = 70, Set Point Differential = +/- 10) **1I** = 62 to 82 (Midpoint = 72, Set Point Differential = +/- 10) **1J** = 65 to 75 (Midpoint = 70, Set Point Differential = +/- 5) **1K** = 67 to 73 (Midpoint = 70, Set Point Differential = +/- 3) **1L** = 67 to 77 (Midpoint = 72, Set Point Differential = +/- 5) **1M** = 68 to 72 (Midpoint = 70, Set Point Differential = +/- 2) **1N** = 68 to 76 (Midpoint = 72, Set Point Differential = +/- 4) **1O** = 68 to 78 (Midpoint = 73, Set Point Differential = +/- 5) **Custom** = Specify (Midpoint = ??, Set Point Differential = +/- ??)	
E. Set Point Temperature Output: *Select One (1)* *See Specifications for more details regarding Midpoint/Differential set point specifications available)*	**XX** = No Set Point **A0** = 0 to 1 VDC **B0** = 0 to 5 VDC **C0** = 0 to 10 VDC **D0** = 1 to 5 VDC **E0** = 2 to 10 VDC **F0** = 0 to 20 mA **G0** = 4 to 20 mA **ZZ** = 0 to 1.5K Ohms **ZY** = 0 to 10K Ohms **ZW** = 0 to 20K Ohms **ZT** = 0 to 100K Ohms **ZS** = 100 to 6500 Ohms **ZR** = 333 to 1695 Ohms **ZQ** = 866 to 1290 Ohms **ZP** = 889 to 111 Ohms **ZO** = 1089 to 879 Ohms **ZN** = 3890 to 6110 Ohms **ZM** = 4550 to 6650 Ohms **ZL** = 5K to 15K Ohms **ZK** = 7.8K to 27.8K Ohms **ZJ** = 9577 to 1421 Ohms **ZI** = 9843 to 1290 Ohms **ZH** = 10K to 30K Ohms **ZG** = 10K to 20K Ohms **ZF** = 2.49K to 3.49K Ohms	
F. "After Hours" Override Options: *Select One (1)*	**X** = No Override | **S** = Short Sensor | **C** = Dry Contact/Logic Low | **P** = Short Set Point	
G. Override Feedback Options: *Select One (1)*	**X** = None | **L** = Dry Contact / Logic Low | **H =** Logic High / 24 VAC or 5 to 30 VDC	
H. Communication Jack Options: *Select One (1)*	**X** = None **4** = 4 Pin 4 Conductor RJ9, RJ10, or RJ22 Style Head Set Modular Connector **6** = 6 Pin 6 Conductor RJ12 Modular Phone Connector **8** = 3.5mm (1/8") Stereo Jack	
I. Manufacturer Provided *No Selection Required*	**X** = Default →	**X**

ACCESSORIES ORDERING

Model # Example: A/LOCKING COVER -OR- 10370

Model #	Item #	Description
A/MOUNT PLATE W	126386	Wall Mounting Back Plate, Plastic, White
A/LOCKING COVER	107370	Clear Thermostat Guard, Locking Cover, Low Profile