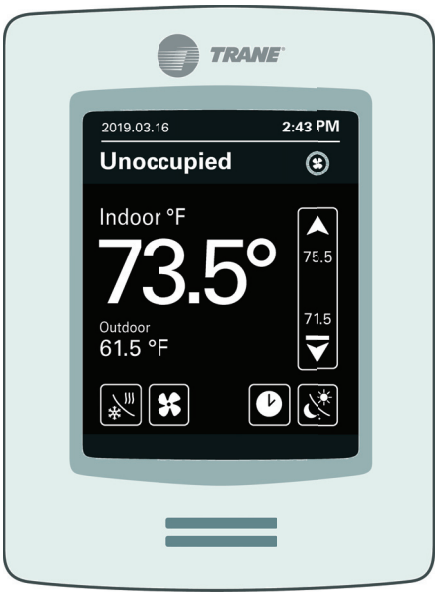
User Guide

Trane® Commercial Touch Screen Programmable Zone Sensor

for Tracer® UC400, ReliaTel™ and Symbio™ 400/700/800 Controls



Part Numbers: Symbio™ 400/UC400: X13790993 (SEN02587)
ReliaTel™: X13790994 (BAYSENS924)
Symbio™ 700/800: X13791009 (BAYSENS800)

⚠ SAFETY WARNING

Only qualified personnel should install and service the equipment. The installation, starting up, and servicing of heating, ventilating, and air-conditioning equipment can be hazardous and requires specific knowledge and training. Improperly installed, adjusted or altered equipment by an unqualified person could result in death or serious injury. When working on the equipment, observe all precautions in the literature and on the tags, stickers, and labels that are attached to the equipment.

August 2022 **BAS-SVU040H-EN**

Introduction

The Trane touch-screen wall sensor is easily installed and configured with multiple options. It is designed to communicate with HVAC equipment installed in a commercial environment that use the UC400, ReliaTel™, or Symbio™ 800 control system.

Keep this user guide in an accessible area for reference.

Warnings, Cautions, and Notices

Safety advisories appear throughout this manual as required. Your personal safety and the proper operation of this machine depend upon the strict observance of these precautions.

The three types of advisories are defined as follows:

⚠WARNING	Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
⚠CAUTION	Indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury. It could also be used to alert against unsafe practices.
NOTICE	Indicates a situation that could result in equipment or property-damage only accidents.

Important Environmental Concerns

Scientific research has shown that certain man-made chemicals can affect the earth's naturally occurring stratospheric ozone layer when released to the atmosphere. In particular, several of the identified chemicals that may affect the ozone layer are refrigerants that contain Chlorine, Fluorine and Carbon (CFCs) and those containing Hydrogen, Chlorine, Fluorine and Carbon (HCFCs). Not all refrigerants containing these compounds have the same potential impact to the environment. Trane advocates the responsible handling of all refrigerants-including industry replacements for CFCs and HCFCs such as saturated or unsaturated HFCs and HCFCs.

Important Responsible Refrigerant Practices

Trane believes that responsible refrigerant practices are important to the environment, our customers, and the air conditioning industry. All technicians who handle refrigerants must be certified according to local rules. For the USA, the Federal Clean Air Act (Section 608) sets forth the requirements for handling, reclaiming, recovering and recycling of certain refrigerants and the equipment that is used in these service procedures. In addition, some states or municipalities may have additional requirements that must also be adhered to for responsible management of refrigerants. Know the applicable laws and follow them.

⚠WARNING

Proper Field Wiring and Grounding Required!

Failure to follow code could result in death or serious injury. All field wiring MUST be performed by qualified personnel. Improperly installed and grounded field wiring poses FIRE and ELECTROCUTION hazards. To avoid these hazards, you MUST follow requirements for field wiring installation and grounding as described in NEC and your local/state/national electrical codes.

⚠WARNING

Personal Protective Equipment (PPE) Required!

Failure to wear proper PPE for the job being undertaken could result in death or serious injury. Technicians, in order to protect themselves from potential electrical, mechanical, and chemical hazards, MUST follow precautions in this manual and on the tags, stickers, and labels, as well as the instructions below:

- **Before installing/servicing this unit, technicians MUST put on all PPE required for the work being undertaken (Examples; cut resistant gloves/sleeves, butyl gloves, safety glasses, hard hat/bump cap, fall protection, electrical PPE and arc flash clothing). ALWAYS refer to appropriate Safety Data Sheets (SDS) and OSHA guidelines for proper PPE.**
- **When working with or around hazardous chemicals, ALWAYS refer to the appropriate SDS and OSHA/GHS (Global Harmonized System of Classification and Labeling of Chemicals) guidelines for information on allowable personal exposure levels, proper respiratory protection and handling instructions.**
- **If there is a risk of energized electrical contact, arc, or flash, technicians MUST put on all PPE in accordance with OSHA, NFPA 70E, or other country-specific requirements for arc flash protection, PRIOR to servicing the unit. NEVER PERFORM ANY SWITCHING, DISCONNECTING, OR VOLTAGE TESTING WITHOUT PROPER ELECTRICAL PPE AND ARC FLASH CLOTHING. ENSURE ELECTRICAL METERS AND EQUIPMENT ARE PROPERLY RATED FOR INTENDED VOLTAGE.**

⚠WARNING

Follow EHS Policies!

Failure to follow instructions below could result in death or serious injury.

- **All Trane personnel must follow the company's Environmental, Health and Safety (EHS) policies when performing work such as hot work, electrical, fall protection, lockout/tagout, refrigerant handling, etc. Where local regulations are more stringent than these policies, those regulations supersede these policies.**
- **Non-Trane personnel should always follow local regulations.**

⚠CAUTION

Take Precautions During Installation!

If replacing an existing sensor, label the wires before removal. Electronic controls are static-sensitive devices. Properly discharge yourself before manipulating and installing the sensor.

⚠CAUTION

Protecting the System!

All sensors are designed for use as operating units only and are not safety devices. Tampering with the device or unintended application of the device will void the warranty.

Copyright

Trademarks

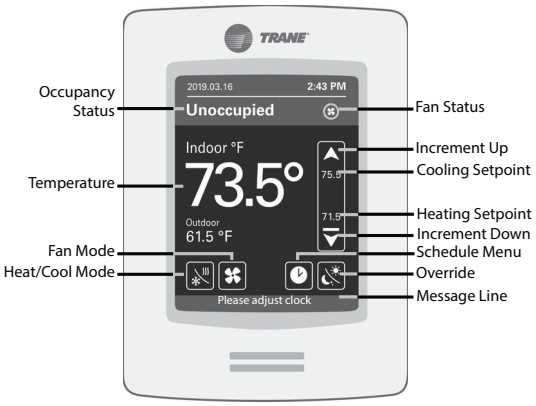
Revision History

Updated Specifications chapter.

Table of Contents

General Information

The unit displays **Power on** during initial power-up and advances to display the Home Screen. All user accessible functions are easily set from the Home screen:



- Occupancy Status: Displays either Occupied, Unoccupied, or Temp Hold to indicate current occupancy mode.
- Fan Status: When fan is running, exterior circle indicates current fan speed.
  - No Segments: Fan is OFF
  - One Segment: 1% to 33%
  - Two Segments: 34% to 66%
  - Three Segments: 67% to 100%
- Setpoints: When Heat/Cool Mode is Cool Only or Heat Only, the current setpoint in use is displayed in the center of the setpoint control bar.

  When mode is Auto or Off, the cooling setpoint is displayed just below the red bar and the heating setpoint is displayed just above the blue bar.
- Message Line: Displays information regarding the current state of the equipment.
  - Please adjust clock: Verify the date/time information is correct.
  - Shed demand: A demand shed signal is present and the sensor is controlling to demand shed setpoints.
  - Shed cancel: A demand shed signal is present and the user has overridden the demand shed signal. The zone sensor controls to the occupied setpoints.
  - Contact service: The zone sensor has detected an HVAC equipment temperature sensor failure, economizer fault, or loss of communication with the HVAC equipment.
- Temperature sensor failure: The space temperature sensor in use has failed. If the remote or wired sensor was in use, the zone sensor switches to the internal temperature sensor for temperature control.
- Single touch of ⋁ or ⋀ advances the setpoint value by one. Holding down ⋁ or ⋀ rapidly advances through the available range of values.
- If Temperature: Displays either the current space temperature or the temperature setpoint currently being used to condition the space.
- If configured to do so, the Home screen will revert to a blank standby screen after 2.5 minutes of user inactivity.
- All settings are retained in sensor memory in the event of a power outage.

Configuring Settings on the Home Screen

Icon buttons displayed on the Home screen can be changed by selecting 1 of 3 available home screen configurations. See the "*Trane Commercial Touch Screen Programmable Zone Sensor Installation Guide,*" BAS-SVN028*-EN, for configuration instructions.

Cool/Heat System Mode Settings

- Off: The system will not cool or heat the space.
- Auto: The system switches between cooling and heating automatically to condition the space.
- Cool: The system will only provide cooling to the space.
- Heat: The system will only provide heat to the space.

Fan Mode

- Auto: The system fan runs only when there is a call for either cooling or heating.
- On: The system fan runs continuously in occupied mode. The fan runs only when there is a call for heating or cooling in unoccupied mode.

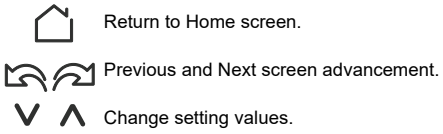
Schedule Menu

Touch to access the Schedule Menu. From this menu the date/time, schedule events, and temperature setpoints, can be adjusted. The Options sub-menu allows the user to override schedule control and change the schedule type.

Override

Touch to override/cancel occupancy mode, cancel temperature setpoint overrides, and exit/enter demand shed mode.

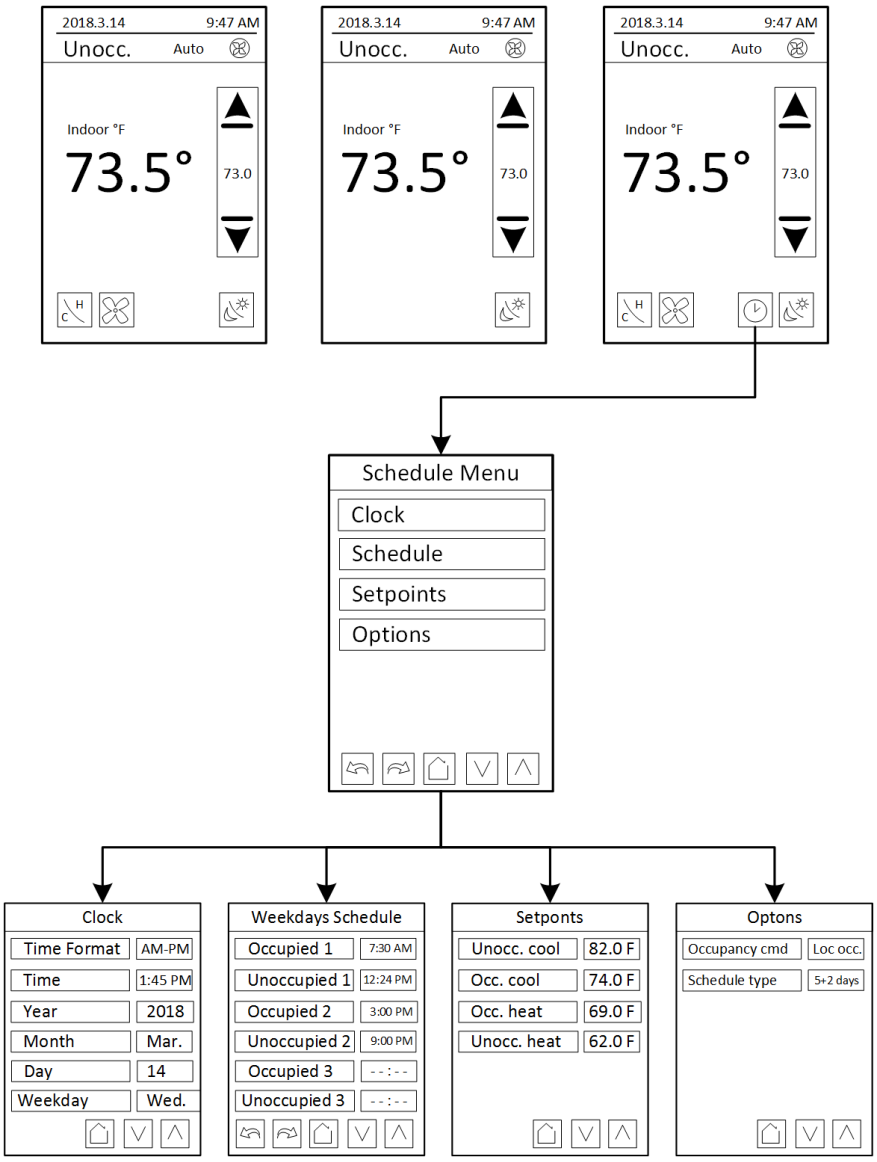
Touch Button Legend



Interface Flowcharts

User Menus

Touch the Schedule Menu button on the Home screen to configure the sensor.



Clock, Schedule, Setpoints, and Options

Clock	Defines the time and date used with the programmable time schedule function: • Time format: – AM-PM: 12 hour format. (Displays as 8:00 PM) – 24 Hours: 24 hour format. (Displays as 20:00 hours) • Time – Defines the hour and minute of the current day. • Year – Defines the current year. • Month – Defines the current month. • Day – Defines the current day of the month. • Weekday – Displays a day of the week corresponding to the date entered into the sensor.
Schedule	Defines the time values that are used to determine when to transition from the current occupancy state to the next state. Three occupied/unoccupied event pairs are supported. Setting an event to a time value enables the event. Setting the event to - - : - - disables the event.
Setpoints	Defines the following: • Unocc. cool – The temperature setpoint in use when the equipment is in cooling mode and occupancy mode is unoccupied. • Occ. cool – The temperature setpoint in use when the equipment is in cooling mode and occupancy mode is occupied. • Occ. heat – The temperature setpoint in use when the equipment is in heating mode and occupancy mode is occupied. • Unocc. heat – The temperature setpoint in use when the equipment is in heating mode and occupancy mode is unoccupied. (50.0°F to 90.0°F [10.0°C to 32.2°C])
Options	Defines the occupancy commands and schedule type. • Occupancy cmd – Loc. occ.: Occupancy is determined by the schedule – Occupied: Force occupied mode – Unocc.: Force unoccupied mode. • Schedule type – 7 days: Each day of the week. – 5+2: Weekdays + Weekend. – 5+1+1: Weekdays + Saturday + Sunday.

Specifications

Sensor Operating Temperature	32°F to 122°F (0°C to 50°C)
Storage Temperature	-22°F to 122°F (-30°C to 50°C)
Storage and Operating Humidity Range	0% to 95%, non-condensing
Temperature Control Accuracy	+/- 0.9°F (+/- 0.5°C) @ 70°F (21°C) typical calibrated
Temperature Sensor Resolution	+/- 0.2°F (+/- 0.1°C)
Room Air Temperature Display Range	-40°F to 122°F (-40°C to 50°C)
Occupied/ Unoccupied Setpoint Range	• Cooling: 60°F to 85°F (15.5°C to 29.4°C) • Heating: 55°F to 80°F (12.7°C to 26.6°C)
Heating/Cooling Setpoint Minimum Deadband	2°F to 5°F (1.0°C to 2.5°C)
Power Supply	24 Vdc/24 Vac (190–30 Vac), 50/60 Hz, Class 2
Power Wire	18 AWG or Larger
Power Consumption	4 VA
Housing	• Polycarbonate/ABS blend • UV protected • U.L. 94–5VA flammability rating • Suitable for application in a plenum
Weight	0.75 lb. (0.34 kg)
Mounting	3.24 inches. (8.26 cm) for 2 mounting screws (supplied)
Communication Wire	• 22 AWG or Larger • Two conductor shielded twisted pair with drain wire • Characteristic impedance between 100 and 130 ohms • Capacitance between conductors, less than 100 pF per meter (30 pF per foot) • Capacitance between conductors and shield, less than 200 pF meter (60 pF per foot)
Standards	• CAN/CSA-E60730-1:2015 • UL 60730-1:2016 • UL 60730-2-9:2017 • UL 90730-2-13:2014 • CAN/CSA-E60730-2-9:15 • IEC 60730-2-13:2006 • EN 60730-1:2016 • EN 60730-2-9:2010 • EN 60730-2-13:2008 • EN 60730-1:2011 • IEC 60730-1:2013
RoHS Compliance	Enclosure and components are RoHS compliant (RoHS 2002/95/EC)

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BAS-SVU040H-EN 06 Aug 2022
Supersedes BAS-SVU040G-EN (May 2020)