Submittal Data

TCS Basys Controls®

SZ1041a
Make Up Air Unit Thermostat

S U P E R S T A T ™
Communicating Thermostats

Description

The SZ1041a is a microprocessor-based programmable thermostat designed to control air handling units and make up air units with modulating economizers and/or modulating heating or cooling. The SZ1041a has a 365-day time clock.

The SZ1041a features:
• 0 to 20 mA or 4 to 20 mA analog PID output
• Stand-alone or network operation
• 365-day time clock with two holiday schedules with automatic leap year and daylight savings correction
• Control based on discharge air, outdoor air, or space temperature
• Adjustable discharge air reset based on space temp.
• Outdoor air sensor input
• Two heating and cooling stages
• Programming option to use two relays for three cooling stages
• Adjustable delay on power-up and start-up for soft starts
• P+I control option on digital stages
• Smart Recovery
• No backup battery required
• Minimum on/off times for HVAC equipment protection
• 32 character LCD display and six status LEDs
• Remote room sensing capability
• User setpoint adjustment limits
• Local and remote override capability
• System and fan switching with access lockouts
• Fan interlock safety option
• Filter service input and indication
• Equipment monitoring inputs and indication
• External time clock input
• Energy management input for setpoint shift
• Access to programming or schedule may be locked out or limited with the use of an access code
• Fahrenheit or Celsius temperature display

Specifications

General

Accuracy: +/- 0.5%
Display resolution: +/-1°F (0.6°C)
Display: 32-character LCD
Programming: Front panel keypad or EIA RS485 interface
Communications: RS485, half duplex
Memory backup: Non-volatile EEPROM,no battery required
Program Setting: 2 events per day with 7 days per week and 2 holiday schedules (12 periods of up to 99 days each)
Override: Programmable from 0 to 255 minutes

Environmental

Operating temperature: 32 to 131°F (0 to 55°C)
Operating humidity: 0 to 100% RH, noncondensing
Storage temperature: 14 to 140°F (-10 to 60°C)

Electrical

Supply voltage: 24 VAC +/- 20%
Inputs: Built-in and remote platinum RTDs, momentary override and three digital (dry contact)
    Range: Room Temp: 40 to 90°F (built-in or remote)
    Outdoor Air Temp: -40 to 160°F (remote)
    Discharge Air Temp: 0 to 150°F (remote)
Outputs: Five digital (SPST dry contact, 24 VAC @ 2 A), one 4-20 mA DC analog
Max. Load Resistance (analog output): 600 Ω
Common mode rejection: 100 db @ 60 Hz
Power Consumption: 8 VA max.

Specifications subject to change without notice.

TCS Basys Controls®

Specification Suggestions

Microprocessor-based room thermostats shall have a built in keypad and display for programming and scheduling, and utilize a 365 day time clock with four setback intervals per day. Thermostats shall be of the low voltage type.

Thermostats shall have a limited temporary setpoint adjustment, definable in programming, and a local override button with remote override capability. The status of all inputs and outputs shall be monitored locally through the use of the keypad and display. Thermostats shall support outdoor air temperature heating and cooling lockouts, fan proving, and be able to monitor filter status. Thermostats shall be capable of modulating a heating device, a cooling device or an economizer based on outdoor air temperature and cooling demand, and shall modulate the outdoor air dampers shut when a discharge air low limit temperature setpoint is reached. An adjustable delay on power up shall be available for soft start of systems on power loss.

Thermostats shall support a setpoint shift feature in which a digital input is used to shift the heating setpoint down and the cooling setpoint up by an adjustable amount. All system and fan switching shall be done through the microprocessor and must allow for disabling. The ability to edit operating control parameters shall be password protected via a user-definable security access code. The thermostat housing shall be off-white or white and mounted 60" above the finished floor. The keypad, unoccupied override and RS-485 communications jacks shall be accessible, without requiring the removal of the housing. Thermostats must support non-volatile memory, so that in the event of power loss, all programmed operating parameters shall be unaffected without the use of battery backup. All control functions shall continue in the event of a communications failure.

Thermostats shall provide both remote and local communications in accordance with EIA RS-485 standards. All firmware communications protocol and command codes shall be published, open and non-proprietary. Room thermostats shall be model SZ1041a as manufactured by TCS/Basys Controls.

Ordering Information

Part No.	Description
SZ1041a	Programmable 365-day thermostat for make up air units with modulating output

SZ1041a Accessories

Part No.	Description
TS2000	Remote sensor, room mount
TS3000	Remote sensor, room mount, decorator style
TS1002	Remote sensor, duct mount
TS1003	Remote sensor, outdoor mount
PD Series	Differential pressure switches
PO Series	Occupancy sensors
PR Series	Encased relays
PS Series	Current switches
PT Series	Control transformers

Dimensions

SZ1041a   Note: inches [mm]

7.13 [181.1]   1.47 [37.3]

3.88 [98.6]

MON
04:54PM   72F