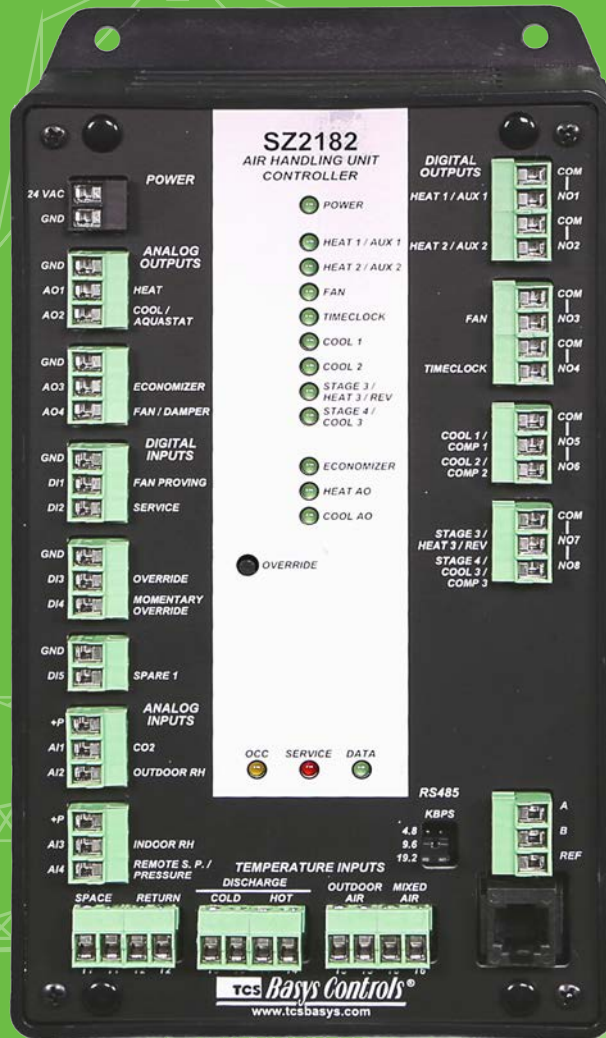# SZ2182

Advanced Air Handling Unit Controller

The SZ2182 is designed to control constant volume and variable air volume air handling units that require advanced control functionality such as dehumidification, face & bypass control or humidity & carbon dioxide sensor sharing.

Features

- Stand-alone or network operation
- 365-day time clock with two holiday schedules with automatic leap year and daylight savings correction
- Discharge air sensor input with high and low limits and reset.
- Hot deck/cold deck control with night zone option
- Outdoor air sensor input with heating & cooling lockouts
- Six stages for either heating or cooling
- Modulating output for heating and/or cooling
- Modulating economizer output with digital or analog enthalpy options
- Modulating output for fan or damper control
- Programmable minimum run times
- Adjustable delay on power-up for soft starts
- PIO control options
- Smart Recovery

- Fifteen status LEDs
- Remote setpoint capability
- User setpoint adjustment limits
- Local override and remote override capability
- Carbon dioxide demand control ventilation
- Auxiliary time clock output
- Fan interlock safety option
- Equipment monitoring inputs and indication
- External time clock input
- Dehumidification sequences with integrated or external reheat
- Face & Bypass control sequence
- Outdoor air humidity sharing capability
- Carbon dioxide sensor sharing capability
- Pre-occupied purge sequence
- Heat pump control functions

Specifications

GENERAL

Accuracy: +/- 0.5%
Programming: 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 O to 255 minutes

ENVIRONMENTAL

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

ELECTRICAL

Supply voltage: 24 VAC +/- 20%
Inputs: Six 1000 Q PRTD, momentary override, Four 4 to 20mA analog and 5 digital (dry contact)

Range: Space and Return: 20 to 120° F Discharge Air Temp: 20 to 220°F Mixed Air Temp: 20 to 220°F
Outdoor Air Temp: -40 to 160° F

Outputs: Eight digital (SPST dry contact, 24 VAC @ 2A), and four 4-20 mA DC analog
Max_ Load Resistance (analog output): 600 Q Common mode rejection: 100 db @ 60 Hz Power Consumption: 15 VA max.

Specifications subject to change without notice.

Specifications Suggestions

Air Handling Unit Controllers shall be microprocessor based with suitable 1/0 points to execute the required sequences and shall be of the low voltage type.

AHU controllers shall have 365-day time clock with vanishing holiday programming, two setback intervals per day and automatic leap year and daylight savings adjustment. An adjustable delay on power up shall be available for soft start of systems on power loss and occupied start up. Controllers shall accept six platinum RTD inputs for room and return air temperatures, discharge air, mixed air and outdoor air temperature. Controllers shall have three analog outputs for valves and dampers. Other control options shall include hot deck/cold deck control, enthalpy comparison economizer and carbon dioxide control. Controllers shall support outdoor air temperature heating and cooling lockouts, fan proving and be able to monitor filter status. AHU controller 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.

Controller shall have adjustable offsets and differentials on digital outputs and P+I+D control algorithm on modulating outputs. Controller 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.

Communications protocol shall be provided in accordance with EIA RS485 standards. All firmware communications protocol and command codes shall be published, open and non-proprietary. Air handling unit control modules shall be model SZ2182 as manufactured by TCS/Basys Controls.

Ordering Information

Part No.	Description
SZ2182	Air handling unit controller
TS2000	Remote sensor, room mount
TS3000	Remote sensor, room mount, decorator style
TX1140	Remote sensor, room mount, setpoint and override
TS1002	Remote sensor, duct mount
TS1003	Remote sensor, outdoor mount
PH Series	Relative humidity transmitters
PC Series	Carbon dioxide sensors
PO Series	Occupancy sensors
PR Series	Encased relays
PS Series	Current switches
PT Series	Control transformers
QD1010b	RS232 to RS485 communications converter (used for programming)
PX1060	Remote sensor, room mount, setpoint with display
QE82	Setpoint adapter, required when using PX1060
Insight	Hardware configuration software (used for programming)