BASWS-M

CONTEMPORARY CONTROLS

BASWS-M

Modbus® Wall Setter

The BASWS-M Modbus-compliant wired communicating wall setter ensures easy integration into Modbus (EIA-485) networks. This wall setter is suited for communication with HVAC system controllers, such as the Contemporary Controls BASC-22WR, BASC-22WSR or BASC-E36. Configurable control parameters allow adaptability to the specific application.

The built-in temperature sensor and pushbutton inputs communicate directly to the Building Automation System via Modbus. The back-lit digital display with its graphical icons is easy to read and understand. Numerous icons indicate operating status such as: cooling, heating or ventilation modes, temperature set, fan auto/active, occupied/unoccupied state. Also, a clock icon indicates timed temporary occupancy. The temperature can be displayed in either Fahrenheit or Celsius. Front panel buttons are lockable to prevent system tampering.

Electrical *(Class 2 Circuits Only)*

INPUT	***AC only***
Voltage (±10%):	24 VAC
Power:	5 VA
Frequency:	47-63 Hz

Environmental

Operating temperature:	0°C to 50°C
Storage temperature:	–10°C to +60°C
Relative humidity:	5–95%, non-condensing

Functional	***Modbus***
Physical Layer:	EIA-485
Cable length limit:	100 ft / 30.5m @ 115.2Kbps max
data rate (bps):	2.4K – 115.2Kbps

Installation

The BASWS-M requires **24 VAC** while drawing no more than 5 VA of power. The recommended conductor size is 18-22 AWG or 1.5mm^2 wires.

WARNING: Internally, this device utilizes a half-wave rectifier and therefore can only share the same AC power source with other half-wave rectified devices. Sharing AC power with full-wave rectified devices is NOT recommended. Devices powered from a common AC source could be damaged if a mix of half-wave and full-wave rectified devices exists.

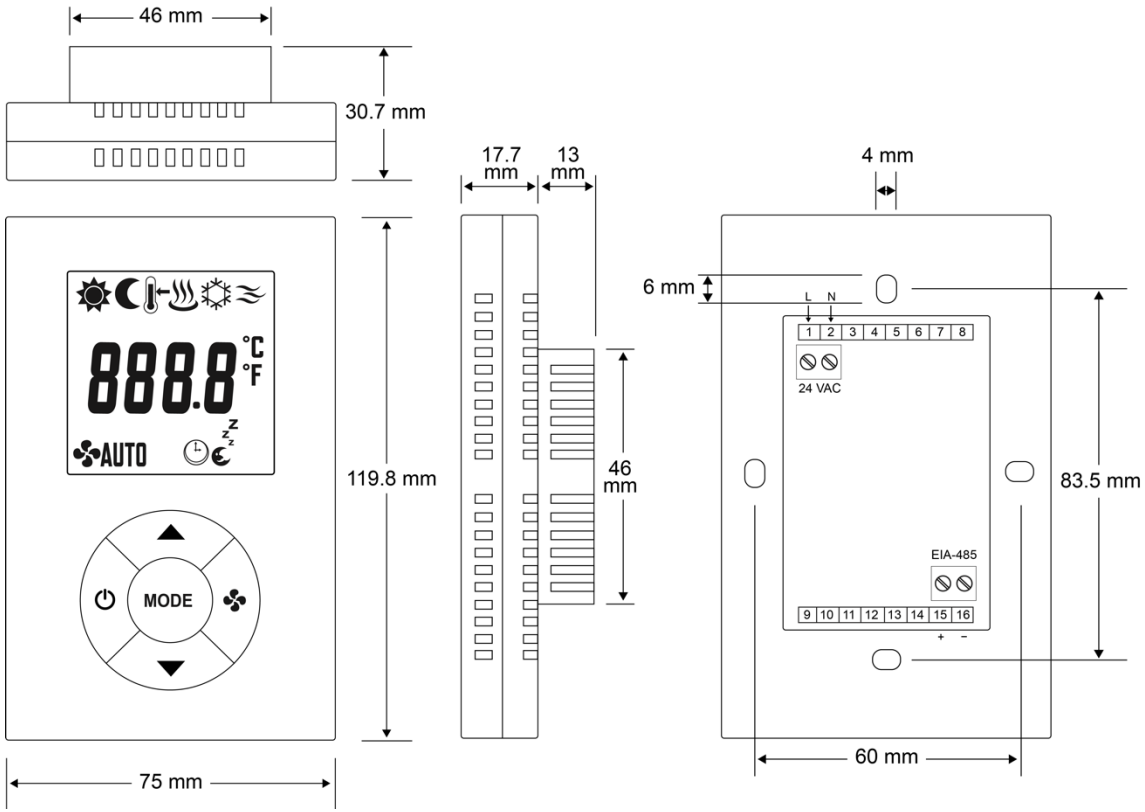
The BASWS-M does not provide End-of-Line termination. If the BASWS is the first or last device on the EIA-485 bus, a termination resistor (120Ω) must be applied across the EIA-485 input terminal to avoid network errors or failure.

BASWS-M mounts directly onto wall, panel, standard 65×65mm junction box (hole pitch 60 mm), or standard 2×4 inch vertical junction box (hole pitch 83.5 mm). To mount on electric box, separate back plate from the controller by loosening the cover screw. Align the mounting holes of the back plate to the screw holes of the electric box. Fix the back plate to the electric box using screws. Suggested screws for use are Phillips wide “truss head” or “washer head” screws #6-32 x ¾” (20mm). Wire the controller and mount on top of back plate. Secure by tightening the mount screw at the bottom. **WARNING:** DO NOT let the back-mount screw heads rise above the back plate or they may touch the circuit board and cause a short.

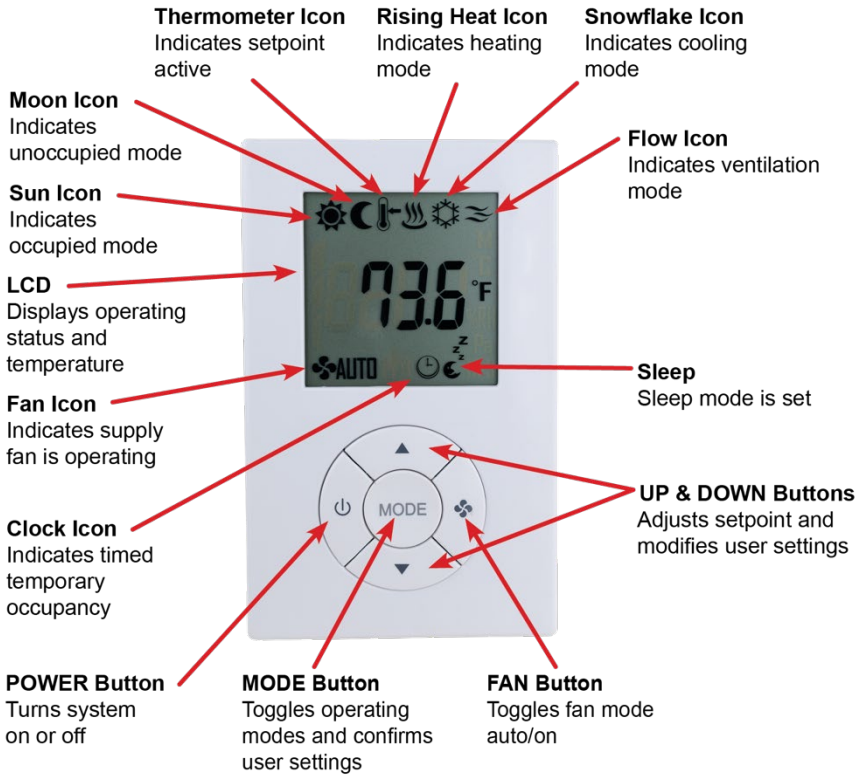
Modbus configuration requires setting the baud rate (2.4kbps – 115.2kbps) or using the default baud rate of 38.4kbps and parity N81. A unique Modbus node ID is required to distinguish each wall setter from other devices on the bus (default address is 1). When more than one BASWS-M is installed at the same time on the same EIA-485 bus, their Node IDs must be configured prior to communicating on the bus, or communication will fail due to duplicate Node IDs. The Node ID can be set from Engineering Menu item (id) with values of 1 - 255.

The baud rate can be set from menu item (baud) 2.4kbps – 115.2kbps. The built-in temperature display can be changed between Fahrenheit and Celsius by simply holding the *MODE* button in for 5 seconds. To enter the *Engineering Menu*, press the *UP* and *DOWN* buttons simultaneously for 5 seconds. Use the *UP* and *DOWN* buttons to navigate through the menu and change menu item values. Use the *MODE* button to enter a menu item and accept/confirm a selected value. To exit the Engineering Menu, navigate to menu item (End) and press *MODE*, or the menu will exit automatically when not used. The temperature display can be toggled between Fahrenheit and Celsius by simply pressing the *MODE* button for 5 seconds.

Mechanical Drawing



Operation Overview



A large LCD display indicates setpoint, space temperature, and current mode of operation using graphic icons. The BASWS has a built-in space temperature sensor. There are two options for temperature sensing in the Engineering Menu (rS)—built-in temperature sensor (option 0), or remote temperature sensor via Modbus (option 2). Option 1 is blank. Set point high and low limits (SP-H and SP-L) and temperature offset (OFSt) are also adjusted via the Engineering Menu.

User-side control is accomplished with five buttons: *FAN, UP, DOWN, MODE*, and *POWER*. There are also options to lock select buttons or all buttons on the thermostat via the (LOC) function in the Engineering Menu. 0- Unlock/enable all buttons,1- Lock *MODE* Button, 2- Lock *DOWN* Button, 3- Lock *MODE* & *DOWN* Buttons, 4- Lock *UP* button, 63- lock all buttons.

Reset settings can be performed from Engineering Menu item (rSt) which will reset all parameters including communication (ID) and all control values back to factory-programmed defaults.

For complete datasheet and details on BASstat, support, or compliance information, please download our User Manual and Data Sheet at:
https://www.ccontrols.com/basautomation/basws.php
Free BACnet Discovery Tool for configuration: https://www.ccontrols.com/sd/bdt.htm