



# Copperad<sup>®</sup>

## BOSS COPPERAD DELTA WATERSIDE CONTROLLER

**The BOSS Copperad Delta controller has been specially developed to complement our Unit Heaters, which benefit from waterside control rather than airside control.**

Units benefiting from waterside control include unit heaters which rely on blowing a powerful jet of air downwards. Using airside control to reduce the momentum of the jet will compromise the dynamic performance; waterside control modulates heat output rate without affecting the dynamics.

The BOSS Copperad Delta controller operates in conjunction with a two port valve and modulating actuator so as to vary the flowrate of hot water in response to changes in sensed temperature. Control is proportional with a typical proportional band of 4°C below the setpoint value. Below the proportional band the valve is fully open and modulates between this position and fully closed as the sensed temperature increases through the proportional band.

The proportional control ensures that heat output is closely matched to the instantaneous heat loss and maximises energy efficiency and comfort.

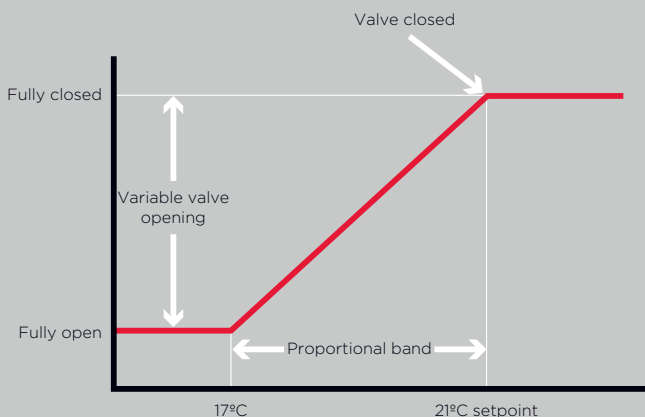
In addition to the 0-10V proportional signal the controller also incorporates volt free on/



off terminals which switch at the setpoint. This can be used to enable/disable a heating unit.

The BOSS Copperad Delta controller is also BACNET compatible and can communicate with a BMS system via this protocol.

A single controller can be arranged to control multiple units in a single zone. This can be achieved by daisy chaining control wires between units or star wiring from the controller. Maximum recommended distance between a unit and the zone controller is 30m.



The chart shows how the controller varies the valve opening in response to the difference between setpoint and actual temperature. Within the proportional band the valve opening is continuously varied to allow the heater to match the required load.

### Key Features

- Energy saving via proportional valve control
- Enhanced comfort via precise thermostatic control
- Waterside control - no compromise in throw of air
- Easy to use interface
- Master/slave control available for multiple units
- Volt free terminals
- BACNET compatibility

**For further technical support, please contact the BOSS<sup>™</sup> Technical Team on 03330 341920 or email [bosstechnicalteam@bssgroup.com](mailto:bosstechnicalteam@bssgroup.com)**