



## TDS Based Auto Blowdown System

An ISO 9001:2015 Certified Company



Steam Distribution | Steam Generation | Customized Package Solution | Steam Accessories | Steam Services

## TDS Based Auto Blowdown System

**VOLFRAM** offers TDS based Auto Blowdown System which provides reliable, flexible and powerful control for your boiler.

The VB 1800 Boiler Blow-down Controllers represent the latest in technological and innovative advancements from Volfram.

All of the standard features you had expected in conventional boiler Blow-down monitors are included, plus optional simple-to-use information management tools that enable water treatment professionals to deliver more effectively to their customers.

### Effects of High TDS in steam Boiler

#### Foaming & Carryover:

Pure water does not foam when it boils. However, as the amount of impurities rise, a foam layer is formed at the steam separation surface. The amount of foaming is directly proportional to the TDS level in the boiler. Foaming (or "priming") causes carryover of water, or wet contaminated steam, which may be carried over into the steam system. The products of carryover would be deposited on heat transfer surfaces and ancillary equipment, reducing steam system efficiency and plant productivity. This is what causes fouling of heat exchangers, malfunctioning of control valves and steam traps etc.

#### Scale Deposition:

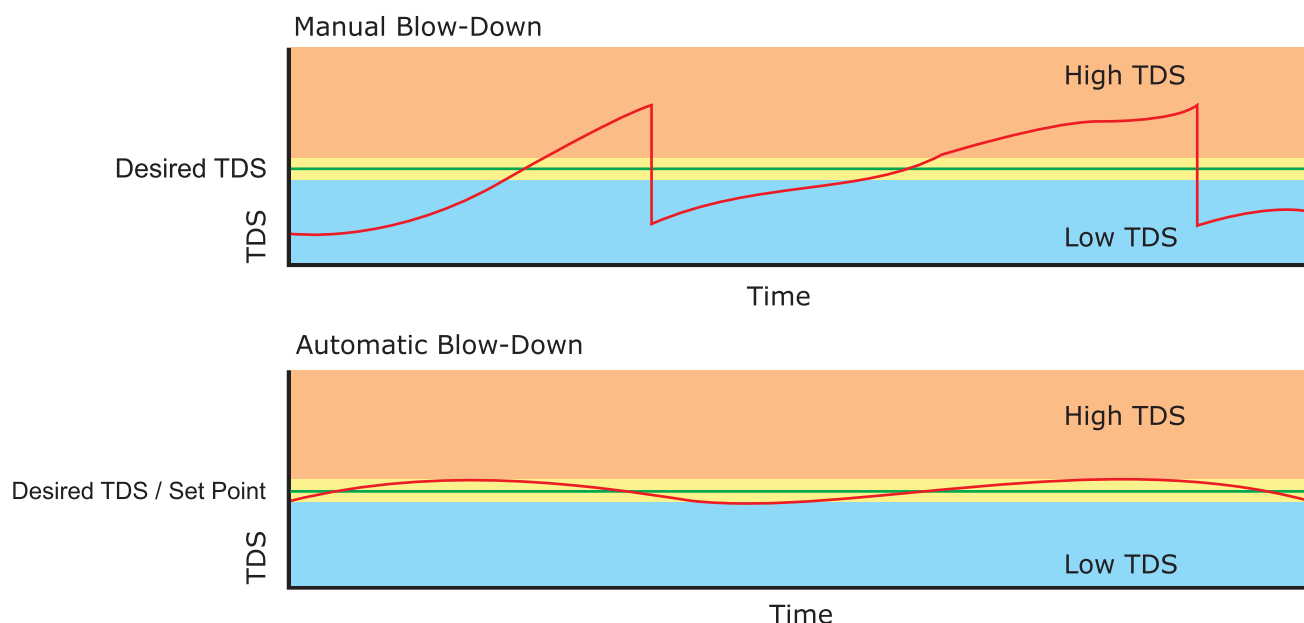
If the TDS is too high, scale will deposit on the boiler tubes and furnace (water side). This has the effect of reducing heat transfer with its subsequent effect on fuel consumption and safe operation of the boiler.

**A scale deposit 1mm thick on the water side could increase fuel consumption by 5 to 8%**

Above this results in to :

- Carry Over with Steam
- Wet Steam and Water Hammering
- Reduced Thermal Efficiency due to Scaling
- Increase in Stack Temperature
- Reduction in Boiler Efficiency

## Automatic vs Manual Blow-down



# Volfram VB 1800

## Performance Measurement

|              | Range                            | Resolution      | Accuracy   |
|--------------|----------------------------------|-----------------|--|
| Conductivity | 0-10,000 $\mu\text{S}/\text{cm}$ | 1 $\mu\text{S}$ | 10-10,000 $\mu\text{S}/\text{cm} \pm 1\%$ of reading<br>0-10 $\mu\text{S}/\text{cm} \pm 20\%$ of reading |
| Temperature  | 32 to 401°F (0 to 205°C)         | 0.1° C          | $\pm 1\%$ of reading   |

## Inputs

### Power

100-240 VAC, 50/60 Hz, 8A  
Fuse: 1.0 ampere, 5 x 20 mm

### Signals

Cond Electrode : 1.0 Cell factor, 10K thermistor  
Flow Meter (option) : Isolated, dry contact closure required (i.e. relay, reed switch)  
Flow Switch (option) : Isolated, dry contact closure required (i.e. reed switch)

## Outputs

### Mechanical Relays

- VB 1800: Two powered relays (Blowdown & Feed) 4 - 20 mA (optional)
- Internally powered Fully isolated 600 Ohm max resistive load Resolution .001% of span Accuracy  $\pm 1\%$  of reading

## Mechanical

Enclosure Polycarbonate  
NEMA Rating NEMA 4X ( Ip65)  
Display 128 x 64 graphic backlit display  
Ambient Temperature 0 to 50°C

## Features

### Choice of measurement units

To customize your control or complement your calibration procedures, conductivity may be displayed as  $\mu\text{S}$  or PPM; temperature as °F or °C.

### Detects flashing during timed samples

Rechecks the conductivity after the sample valve closes and reopens if the reading is now above set point.

### Self-diagnostics

Software, electronics and sensor are constantly monitored, without having to take the controllers off-line.

### Choices of Blowdown modes for timed samples

In intermittent sampling, the Blowdown valve is open until the set point conductivity is reached.

In intermittent with timed Blowdown, the Blowdown valve opens for a set programmable time.

In intermittent with time proportional blow-down, the Blowdown valve opens for a variable time that is calculated based on the conductivity of the sample versus the set point.

### Automatic temperature compensation

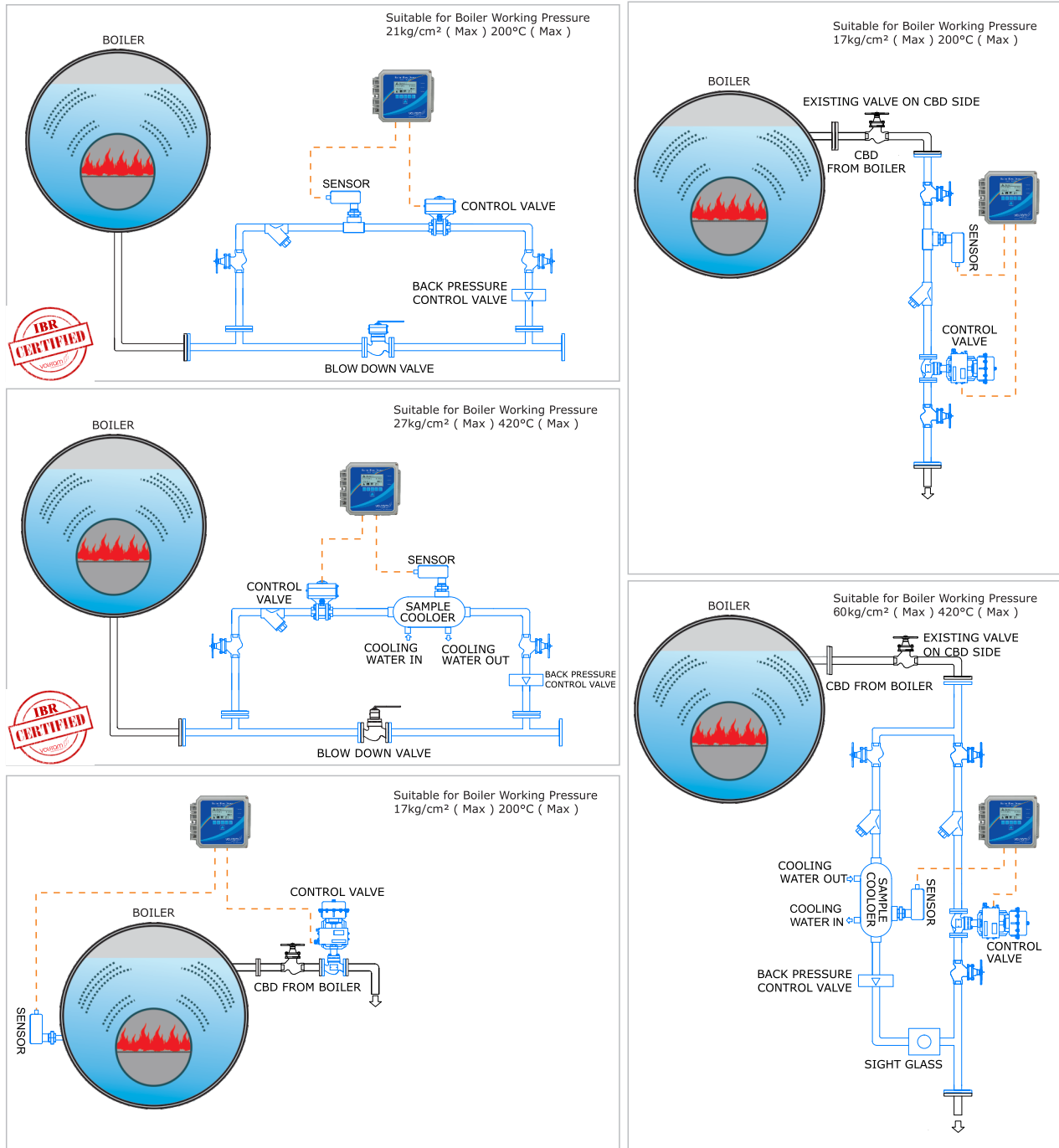
Conductivity measurements are temperature compensated to ensure the highest accuracy.

### USB Flash-stick Support (Optional)

Standard for data logs, event/relay and reset logs, and user configuration file import/export Programming your new controller this way can be accomplished in seconds. It's that simple!

# Boiler Automatic Blow-down system

Volfram offers customised prefabricated IBR certified blowdown systems for easy installations.  
 Visit our youTube channel **volfram systems** to watch the video.



The customised prefabricated piping assemblies are provided with IBR certification. With our certified team, we can undertake site installation.