

# The Truflow/Zoneflow

## Commercial Kitchen Exhaust and Supply Demand Ventilation Hood Controller Plus Zoneflow Modulating Volume Dampers

# RPD-P-TFZ

### General

Truflow/Zoneflow is the most energy efficient kitchen demand ventilation control available. The average commercial kitchen exhaust system operates at 100% capacity for 12 to 18 hours per day, blowing thousands of wasted energy dollars out the roof! The Truflow/Zoneflow controller provides the exact amount of exhaust required for each individual hood connected to a common fan to properly ventilate the appliances under each hood. No more, no less. This results in the lowest amount of exhaust possible to properly ventilate your commercial kitchen.

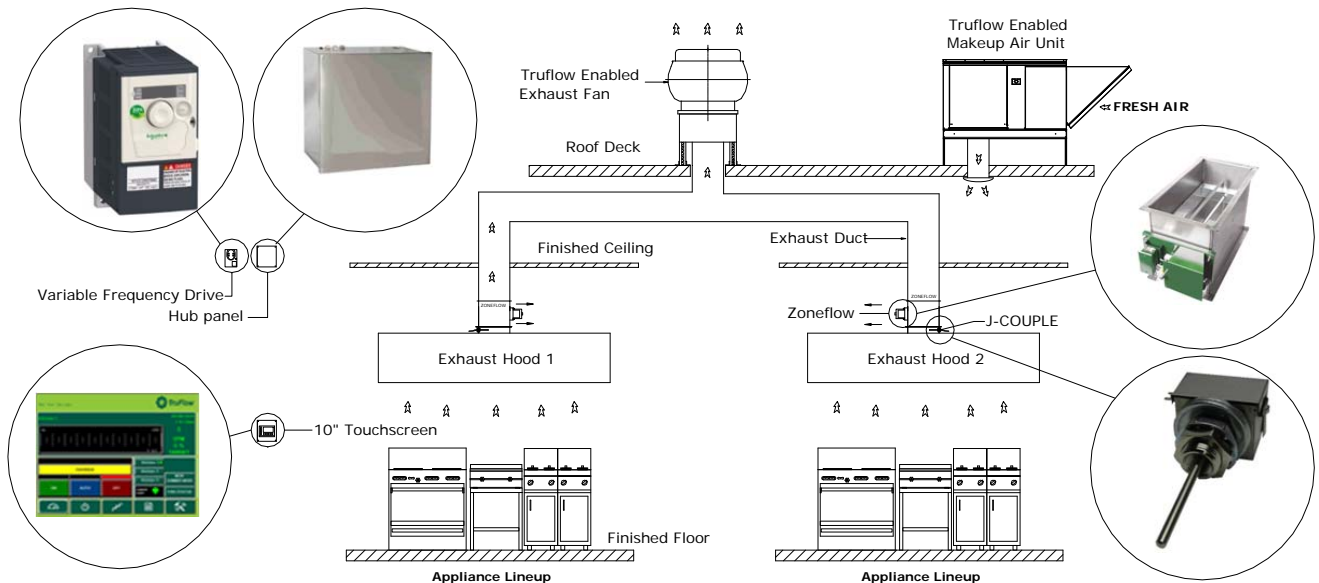
### How Does It Work?

J-Couples are mounted in each exhaust hood duct collar. The J-Couple is connected to the Truflow/Zoneflow Hub panel. A change in resistance at the J-Couple correlates to a change in the amount of exhaust volume that is required for the hood. In addition each hood exhaust duct collar has a motorized Zoneflow damper. With the change in resistance the

J-couple signals both the exhaust drive to increase air volume and the Zoneflow damper to open. Both devices continue modulating until the exhaust hood has the correct amount of exhaust air. All the other hoods connected to the common exhaust operate independently in a similar manner. As the exhaust hood J-Couples call for more exhaust their Zoneflow dampers open and the exhaust fan provides more exhaust air, giving you the precise amount of exhaust at all times.

Truflow/Zoneflow monitors ventilation system efficiency relative to your utility costs, in real-time, so that you can manage your kitchen to take advantage of off peak times by turning down appliances. Setting an energy reduction goal reduces your utility costs even more! You not only save money on energy expenses it can also help extend the life of your equipment by demanding exhaust only when it is really required. Truflow is available with BACnet, LON or Modbus accessibility.

### The Truflow/Zoneflow System



### ZM Zoneflow Volume Control

The Spring Air Systems ZM Zoneflow is designed to be installed in a commercial kitchen NFPA-96 exhaust duct to automatically modulate or balance the exhaust air volume between multiple hoods connected to a common fan. The ZM Zoneflow is cUL/UL listed and can be supplied loose or welded to the exhaust duct collar of any Spring Air Systems hood. The ZM Zoneflow provides automatic modulation of the commercial kitchen hood exhaust volume. The ZM Zoneflow is powered by 24VDC and controlled using a 4-20 milliamp signal. The ZM Zoneflow damper

position is modulated to balance a series of individual hoods connected to one exhaust fan or to provide demand ventilation control of a series of hoods connected to one exhaust fan using the Spring Air Truflow/Zoneflow demand control system...



### Specification

The commercial kitchen demand ventilation controller shall be a Spring Air Systems Truflow-Zoneflow model RPD-P-TFZ. The Truflow-Zoneflow shall provide 24 hour/day demand ventilation for the commercial kitchen system. The touchscreen panel shall be CSA certified and supplied in an 18GA stainless steel enclosure with No. 4 finish for hood, surface wall, or wall mounting. The NEMA4x Touchscreen operates in conjunction with the Truflow-Zoneflow HUB panel with integral PLC to provide daily reduction of the commercial kitchen exhaust and supply, and real-time temperature based control of energy target goal management. Truflow-Zoneflow has optional BACnet interfaced to the building automation systems (BAS). The Touchscreen controller shall be complete with Dashboard, System Control, Alarm Status, and Reports and Setup & Diagnostic screens.

The Dashboard screen shall graph energy usage throughout the day measuring energy consumption against user set goals. The Dashboard screen also displays exhaust volume, outdoor temperature, hood lights, and % of goal reduction that is achieved each minute of the day.

The System Control screen displays all components of the kitchen ventilation system: Hood lights, fan on/off, summer/winter switch, and overrides. The Truflow-Zoneflow is capable of providing up to two independent kitchens with a maximum of four exhaust variable speed drives and one supply variable speed drives. The Truflow-Zoneflow provides a 4-20 milliamp output for each makeup air connected.

The Alarm Status Screen indicates and logs all alarm events which include; high temperature operation, electrical faults, J-couple faults, and supply drive communication error/failure and exhaust/supply drive communication error/failure.

The Report screen provides fingertip selection of reports for Year to Date cost of gas, Year to Date cost of electricity, Daily cost of Utilities, % time exceeding goal and % time in override.

The Truflow-Zoneflow panel can operate up to 12 Spring Air Systems UL/ULC listed commercial kitchen exhaust hoods. Each hood has a Modulating Zoneflow damper and a hood exhaust duct J-Couple. The J-Couple opens the Zoneflow damper and sends a signal to the Truflow-Zoneflow HUB panel to modulate the exhaust VFD to match the total exhaust volume to the cooking operation under each individual hood. In addition the Truflow-Zoneflow HUB panel modulates the supply VFD and sends a 4-20milliamp or 2-10VDC modulating signal. The kitchen demand ventilation system modulates from 30 to 100%. Pressing the touchscreen override button modulates the VFD's and Zoneflow dampers to high volume position.

The HUB panel is connected to an outdoor temperature transducer supplied by Spring Air to data log the actual real time energy savings during the winter and summer.

Wiring Connections:

- High voltage power supply from breaker panel to input side of each drive
- High voltage power wiring from output side of each drive to fan mounted motor disconnect switch.
- Power supply to the HUB panel at 15 amps 120V/1/60
- Power supply from the variable speed supply fan drive to the supply fan disconnect switch if equipped with VFD (SV supply only)
- Interlock each VFD with CAT5 connection in series.
- CAT5 cable to Outdoor temperature transducer located in a fresh air stream
- Interlock from Building Automation System using BACnet, LON or Modbus.
- Interlock to shunt trip 120V/1/60 2 amps maximum
- Interlock to fire suppression system 120V/1/60 2 amps maximum
- Interlock two (2) wires 4-20 milliamp signal to supply fan variable speed drive. (SC supply only).