

TEMP A TRIM™

Combustion Air Density Trim System

Specification & Dimensional Data

Product Description:

A combustion control system that corrects for changes in the combustion air temperature to maintain a constant Fuel-Air-Ratio. The TEMP A TRIM option uses a Variable Frequency Drive (VFD) to change the fan speed as required to exactly compensate for changes in air density due to temperature. This improves combustion efficiency and reduces electrical usage.

Product Applications:

- New and retrofit Webster burners
- All fuels and combination of fuels
- All control systems including parallel positioning
- All low emission burner options
- Not for oil firing with burner mounted oil pump (see option for gas firing on dual fuel versions)

Technical Specifications:

- Control Elec: 120 vac, 2 amp
- Motor style: Electric induction ,three-phase ¹
- Multiple voltages, 120, 208, 240, 480, & 575 VAC, 60 hertz
- Control Ranges: 10-90 °F or 40-120 °F (field selectable)
- Ambient temperature range: 0 to 120 °F
- Alarm Output: Dry contacts, 120 VAC, 3 amps
- Temperature Control Output: 4-20 ma signal (used by efficiency monitor)
- Junction Box: 14" W x 9"H x 7" D, NEMA 1 (N-4 available)
- VFD: ABB and Emerson. Voltage, amp & dimensions vary by application

Listings:

- UL 353 (circuit board)
- Package listing for 508 control panels

Options:

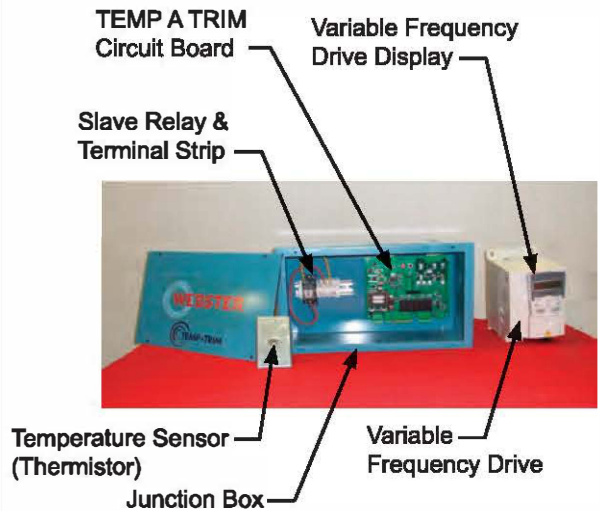
- Alarm Light
- Control by-pass switch (operates the VFD as a motor starter and bypasses all TEMP A TRIM functions)
- Dual Fuel: Gas only control (for burner mounted oil pump), control only operates on gas fuel.
- NEMA 4 enclosures (may require VFD to be shipped loose)
- Optional "Savings Meter" allows a continuous display of the efficiency savings of the control

Features:

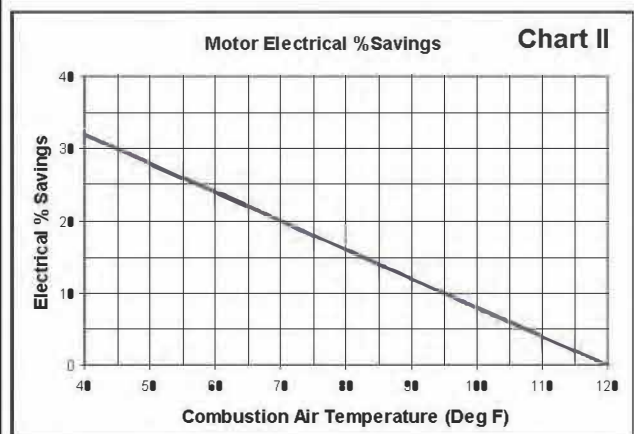
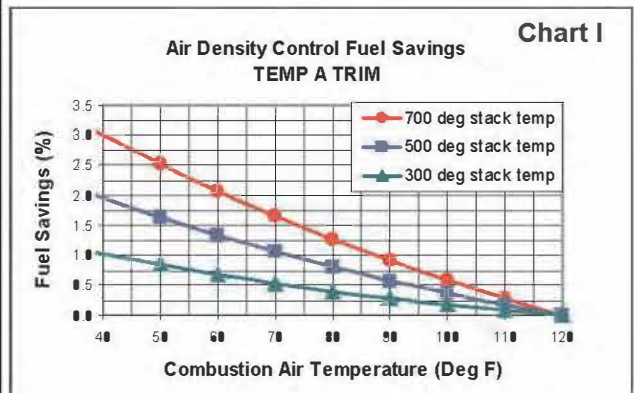
- Improved combustion efficiency (Chart I)
- Reduced electrical usage (Chart II)
- Reduced noise from slower motor & fan speed
- Soft start reduces electrical demand changes and improves motor life
- "Run/Test" switch allows quick verification of operation
- No programming or tuning required

Note 1: On 120 VAC burners, the VFD will convert the single phase to three phase. Burner must use a three phase motor.

TEMP A TRIM Components



1. Includes a wiring diagram for specific unit.
2. Includes an O & M manual for TEMP A TRIM and VFD.



Patent Pending

**TEMP A TRIM Model Designation
New & Retrofit Applications**

TAT - R - 07 - 220T - 1 - 1 - M - S - 1* - 3*

OPTION SERIES	
TAT	TAT SERIES

APPLICATION	
N	Installed On New Burner
R	Retrofitted to Existing Burner

BLOWER MOTOR HORSEPOWER	
02	1/4
03	1/3
05	1/2
07	3/4
10	1
15	1.5
20	2
30	3
50	5
75	7.5
100	10
150	15
200	20
250	25
300	30
400	40
500	50
600	60
750	75
1000	100
1500	150
2000	200

VFD INPUT VOLTAGE		
110S	110-120 vac	Single Phase
220S	200-240 vac	Single Phase
220T	200-240 vac	Three Phase
440T	440-480 vac	Three Phase
575T	575-600 vac	Three Phase

Note 1: The TAT circuit board is always powered by 110 vac single phase.
Note 2: For single phase input power, motor must be three phase with the VFD making the conversion from single to three phase.

ENGINEERING SPECIALS	
BLANK	None
1	By-Pass Switch
2	Oil By-Pass
3	Board Failure Alarm Light
4	Enclo. Cooling-Elec.
5	Enclo. Cooling-Pneu.

OPTIONAL SAVINGS METER	
BLANK	Not Included
S	Savings Meter System

CIRCUIT BOARD LOCATION	
R	Stand Alone
M	In Main Panel

Note 1. There is a 50 foot wire run limitation between the temperature sensor and the TAT circuit board.
Note 2. Remote panel applications require the TAT board to be mounted on the burner in its own enclosure.
Note 3. The temperature sensor must be located at the air louver box.
Note 4. All retro-fit applications are considered to be "Stand Alone" - R under "APPLICATION".

VFD NEMA RATING	
1	Nema 1
4	Nema 4

Note 1: For NEMA 1, VFD is not supplied with an enclosure but comes with a NEMA 1 wiring kit.
Note 2: For NEMA 4, VFD will be installed in a NEMA 4 enclosure. Cooling may be necessary.

TAT BOARD NEMA ENCLOSURE	
1	Nema 1
4	Nema 4

1. The above represents the common model designations. Contact the factory for other option and special applications.
 2. For Retrofit applications, the burner motor must be "inverter duty" or manufactured after 1995. If the motor was manufactured prior to 1996, a new motor must be used.