



# Trinity Ti Series

## Quick Reference Guide

**Hard water:** Water with hardness higher than 100 ppm Calcium carbonate should incorporate "water softener" prior to entering the appliance or a least clean and flush system and refill with treated water and add additive (Use FERNOX provided with each unit)

**Venting:** Use: Schedule 40, Solid Core, PVC or CPVC must comply with ANSI/ASTM D1784 PVC DF441 CPVC  
Intake: Min. 12" above grade plus snow allowance / Increase immediately from 1½ to 3" at the boiler  
Exhaust: Min. 18" above intake and min. 4" off center / Increase immediately from 2 to 3" at the boiler

*Ti 400*

<i>Max vent length:</i>	<i>Natural Gas</i>	<i>Propane Gas</i>	<i>4" Diameter pipe = 30' max Nat. &amp; LP</i>
<i>Ti 100 :</i>	<i>105' max</i>	<i>105' max</i>	<i>6" Diameter pipe = 65' max Nat. &amp; LP</i>
<i>Ti 150 :</i>	<i>105' max</i>	<i>50' max</i>	
<i>Ti 200 :</i>	<i>105' max</i>	<i>50' max</i>	<u>Count 5' equivalent for each 90° or 45° elbow</u>

**Combustion setting:** *Natural Gas* 8 to 9.5% CO<sub>2</sub>      *Propane Gas* 9 to 10.5% CO<sub>2</sub>      *For both Nat. & LP the CO should be less than 140ppm*

**Gas line pressure:** *Natural Gas* 4 to 9" w/c      *Propane Gas* 9 to 12" w/c      *Gas pressure must be taken at the Gas valve No more than 1" drop when fired*

**Gas input Value:**      *Ti 100*      *Ti 150*      *Ti 200*      *Ti 400*  
*Low: 48 / High 240*    *Low: 48 / High 240*    *Low: 40 / High 240*    *Low: 35 / High 195*

**Flame rod:** 2.0 to 10.0 Micro Amps (in the presence of a flame) should be read at FC1

**Igniter:** When the igniter is cold it should have a resistance of 40 to 100 Ohms

**Fenwal:** The Fenwal powers the igniter with 120V AC  
The Fenwal provides 24V AC to the gas valve plug using only the 2 outside wires of the harness. The Plug has a rectifier which converts the signal to 24V DC. When testing on the 2 outside wires you should read +/- 15,000 Ohms. During the ignition sequence the igniter will glow for 5 seconds. The Gas valve will then open for 3 seconds for each try. The control will try to ignite 3 times.

**N/O Pressure Switch:** The Normally open pressure switch is factory set at .15 to .20

**Sentry:** The Sentry controls the fan speed through a 20-39V DC signal that is sent to the motor controller. The motor always has 120V AC wired to it.

A-C-T : The A-C-T terminals are DRY contacts ONLY (No voltage what so ever)  
Diagnostic codes : ASO, ASC, ER3, ER5, ER6, (see trouble shooting in the install manual)

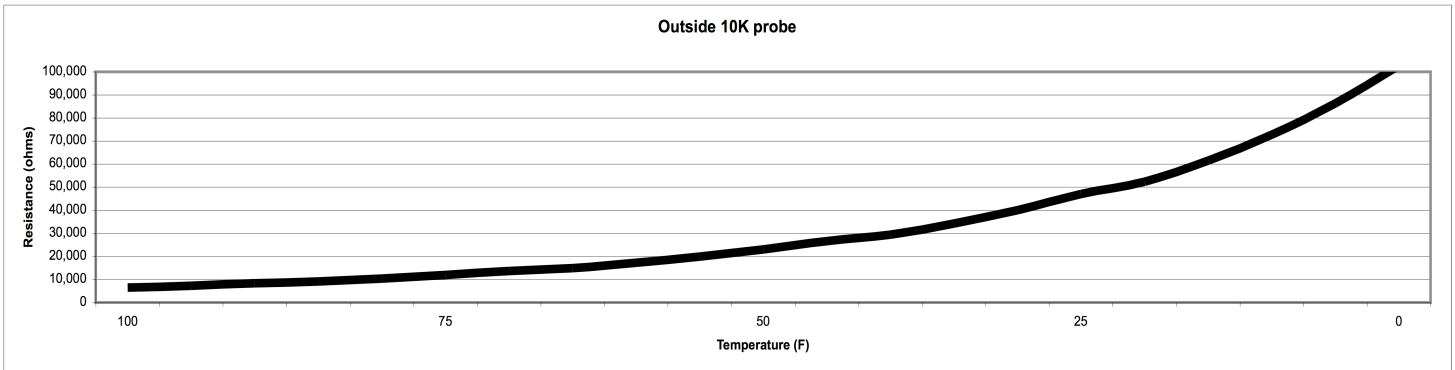
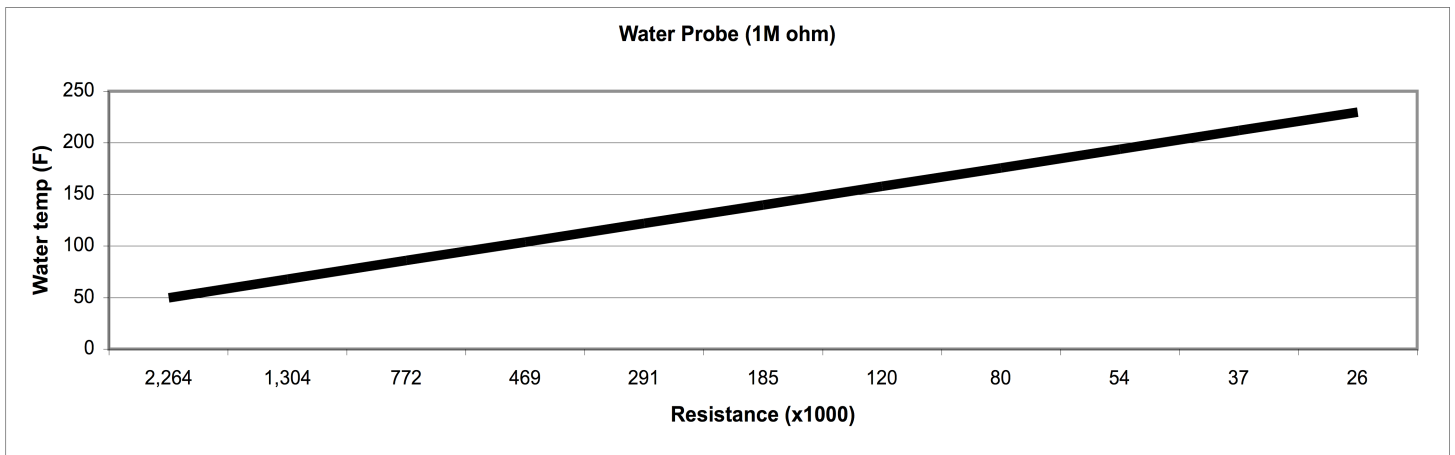
<b>Plumbing</b>	<b>Ti 100</b>	<b>Ti 150</b>	<b>Ti 200</b>	<b>Ti 400</b>
Circ. Pump Minimum flow	4.5gpm	6gpm	8gpm	13gpm
B&G Pump	NRF-22	PL-30	PL-36	PL-36
Grundfos Pump	UP 15-42	UP 26-64	UP 26-99	UP 26-99
Taco Pump	008	009	0011	0011
Primary loop pipe diam.	Min. 1"	Min. 1"	Min. 1 1/4"	Min. 1 1/2"

**Glycol:** Glycol from 0 to 30% mixture is accepted. From 31 to 50% mixture, increase the pump size by one. NOTHING above 50% mixture is allowed.

**Electrical:** Ensure that the polarity is correct before providing 120V AC to the boiler. The black wire must be line voltage.

The fan motor is provided with 120V AC directly from the source.

The following charts help you find the resistance and measurement of a boiler water probe and outdoor air probe at a given temperature.



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