

There are various configurations of electric pre-heaters and thermostats available for the Fuel Pro/Diesel Pro. These include 12V pre-heaters, 24V pre-heaters, 120VAC overnight heaters/thermostats, and combination pre-heater thermostats. The voltage and wattage ratings are stamped either on the sheath or the hex of each component for identification.

Equipment Needed

- A precision low resistance ohm meter capable of measuring 1/10th ohm or less.
- Current flow meter (clamp-on type for DC current).
- Ice, dry-ice, CO₂ or some means of chilling the thermostat.
- A flameless source of heat. (ie: infrared heat lamp, etc.)
Note: A Vortex tube is a good tool to heat and cool for testing.

⚠ DO NOT USE a test light that has a wire probe for any of these tests. If the wiring insulation is punctured, moisture and road salt can penetrate into the wires creating a corrosion issue and potential failure.

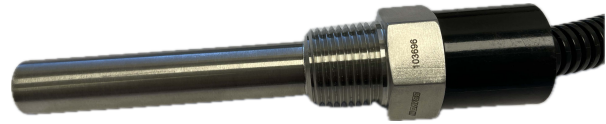
Draining the Fuel Pro/Diesel Pro

1. Shut off the engine and set the parking brake.
2. Attach a length of hose to the drain valve and place a receptacle under the Fuel Pro/Diesel Pro.
3. Remove the vent cap on top of the clear cover. Open the drain valve and drain the fuel into the receptacle.
4. When the fuel is drained, inspect the inside of the housing and flush with clean diesel fuel or brake cleaner as needed. close the drain valve.
5. Close the drain valve

Pre-heater Operation Test

⚠ DO NOT energize the heater outside of the Diesel Pro or Fuel Pro. It can become very hot.

1. Disconnect the pre-heater from the harness.
2. Connect the ohm meter leads to the pins of the pre-heater. For heaters with one pin, connect to the pin and the bushing. Use the following to determine whether the pre-heater resistance value is in the acceptable range.



Section 1: 12V and 24V PTC heater with thermostatic switch continuity test (heaters sold after 9/2024):

1. Disconnect chassis harness from the heater/thermostatic switch.
2. Using one of the cooling methods listed in the equipment required section, reduce the temperature of the thermostatic switch to below 26° F.
3. Connect ohmmeter leads to the pre-heater pins. Use Table 1 to determine whether the pre-heater resistance value is in the acceptable range.
4. Using one of the pre-heating devices listed in the equipment required section, raise the pre-heater temperature to 85°F. The ohm meter should read “open circuit”

PTC Pre-heater w/ thermostatic switch	Watts	Resistance Range (ohms)
12V (two pin)	150	0.6 to 1.4
24V (two pin)	135	2.0 to 6.0

Table 1. Acceptable resistance across pins in “on” condition



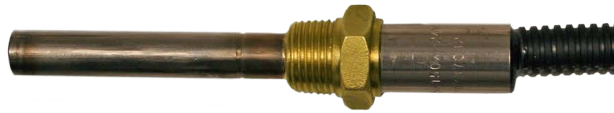
Section 2: 12V/24V PTC heater (without thermostatic switch) continuity test (heaters sold 12/2013 to 9/2024):

12 V / 24V PTC Performance Test

1. Disconnect the harness from the heater.
2. Connect the ohm meter leads to the pins of the heater. Use table 2 to determine whether the pre-heater resistance value is in the acceptable range.

PTC Heater	Watts	Resistance Range (ohms)
12V (PTC)	155 W	0.9 to 1.2 @ 77°F
12V (PTC)	195 W	0.4 to 0.6 @ 77°F
24V (PTC)	195 W	2.0-3.0 @ 77°F

Table 2. Acceptable resistance across pins



Section 3: 12V/24V Non-PTC heater single and two pin continuity test (heaters sold prior to 12/2013)

1. Disconnect chassis harness from the heater.
2. Connect ohmmeter leads to heater pins. Use Table 3 to determine whether the pre-heater resistance value is in the acceptable range.

Pre-heater	Watts	Resistance Range (ohms)
12V (two pin)	250	0.6 to 0.8
12V (single pin)	250	0.6 to 0.8
12V (single pin)	150	0.8 to 1.1
12V (two pin)	150	0.8 to 1.1
24V (two pin)	250	2 to 2.5
24V (single pin)	250	1.8 to 2.3
24V (single pin)	150	3.6 to 4.1
24V (two pin)	150	3.6 to 4.1

Table 3. Acceptable resistance across pins

Legacy Design



New Design- Start 10/2023



Section 4: 120VAC Overnight heater (all)

1. Disconnect chassis harness from the heater.
2. Connect ohmmeter leads to heater pins. Use Table 4 to determine whether the pre-heater resistance value is in the acceptable range.

Overnight Heater	Watts	Resistance Range (ohms)
120VAC	75	173 to 203
120VAC	37	369 to 411

Table 4. Acceptable resistance across pins