

The Hose Doctor User Manual

Updated: August 21, 2026

Introduction

Ever wonder if a hose or applicator (gun) is good? Well, wonder no more with The Hose Doctor! The Hose Doctor will let you know immediately if there is something wrong with the RTD, heater, or wiring in the hose and applicator.

Instead of making up to 28 manual resistance checks, the Hose Doctor will do them all in less than a second - and it will keep performing those tests over and over to catch those pesky intermittent faults. All 28 resistance tests are performed 4 times a second - *much* faster than could be done manually. Besides just checking the RTD and heater resistance, the Hose Doctor checks for all possible combinations of cross-wires along with all possible shorts to ground.

The Hose Doctor is powered by a standard 9V battery, so you never have to worry about finding an outlet or carrying an extension cord to test your equipment. The unit even comes with an Auto-Off feature to save your battery if you forget to turn it off.

The Hose Doctor is small and very portable, much like a standard multimeter. Just keep it in your toolbox for when you run into those hard-to-diagnose hot melt problems.

Do you have time to sit with an ohm meter performing these tests manually? I know I don't! Let the Hose Doctor save you time and money by automating these resistance checks. Maybe you will actually get home on time with the Hose Doctor's help.

How to Use the Hose Doctor

The Hose Doctor is very simple to use. Perform these steps to check the condition of your hose or gun:

1. Connect the hose/gun to the Hose Doctor.
2. Press the power button to turn on the Hose Doctor or press the Clear Faults button if the unit was already powered on. The lights on The Hose Doctor will flash an interesting pattern while it boots up and gives the readings time to stabilize.
3. Allow the Hose Doctor to test the hose/gun for a few seconds after the introductory light show stops.
4. Look at the LED's. If all are green, the hose is good. If some are yellow, the hose may still function but a failure could happen very soon. If any are red, the hose is not good.
5. Optionally, the Hi-Z scan mode can be used to check for higher resistance cross-wires and ground faults if the hose passed the initial tests but you still suspect something is wrong.

Helpful Hints

1. Sometimes a hose or gun only exhibits a problem when it is hot. You can check for this type of fault by unplugging the suspect hose/gun from the hot melt unit while hot and immediately plugging it into the Hose Doctor for testing.
2. Some intermittent faults do not appear unless the hose/gun is moved. Be sure to wiggle a suspect hose or gun while testing to find these faults.

3. To check the condition of the gun connector in the hose, make sure to have a gun attached to the hose while testing. NOTE: A bad gun connector in the hose will not be detected without a gun attached.
4. In the unlikely case of a hose that only faults due to high voltage arching across damaged insulation, be aware that the Hose Doctor may not detect this type of fault since it is a low voltage tester.

Specifications and Tests Performed

- Storage and operating temperature range: 0C to 50C (32F to 122F).
- Voltage/Power rating: DC 9V/0.4Watts
- IP Rating: IP20. Please note there is no water protection, so be sure to protect unit from liquids!
- Hose/Gun Shorts (cross-wire) and short-to-ground tests verify that the resistance between the wires being checked is greater than 10,000 ohms in normal scan mode or 300,000 ohms in Hi-Z scan mode.
- The RTD tests verify that the hose and gun RTD is between 0F to 500F (-17C to 260C) with a Nickel 120 ohm RTD.
- RTD at room temperature check range is: 60F to 85F (15C to 30C).
- The heater tests verify that the hose and gun heaters read a resistance value equivalent to 50W to 2000W (at 240V).
- Stability tests verify less than +/- 10 ohms variation for the RTD and the Heater resistance.
- The unit current draw is between 10 and 40 mA when operating from a 9V battery, depending on how many LED's are illuminated and the battery voltage.
- The following table lists the resistance checks performed by the Hose Doctor:

Connector pin	Connector pin	Test Performed
11	4	Cross-wire check: Hose RTD 1 to Hose Heater 1
11	12	Cross-wire check: Hose RTD 1 to Gun RTD 1
11	1	Cross-wire check: Hose RTD 1 to Gun Heater 1
11	6	Cross-wire check: Hose RTD 1 to Hose Heater 2
11	2	Cross-wire check: Hose RTD 1 to Gun Heater 2
4	12	Cross-wire check: Hose Heater 1 to Gun RTD 1
4	1	Cross-wire check: Hose Heater 1 to Gun Heater 1
4	9	Cross-wire check: Hose Heater 1 to RTD Common
4	2	Cross-wire check: Hose Heater 1 to Gun Heater 2
12	1	Cross-wire check: Gun RTD 1 to Gun Heater 1
12	6	Cross-wire check: Gun RTD 1 to Hose Heater 2
12	2	Cross-wire check: Gun RTD 1 to Gun Heater 2
1	9	Cross-wire check: Gun Heater 1 to RTD Common
1	6	Cross-wire check: Gun Heater 1 to Hose Heater 2
9	6	Cross-wire check: RTD Common to Hose Heater 2
9	2	Cross-wire check: RTD Common to Gun Heater 2
6	2	Cross-wire check: Hose Heater 2 to Gun Heater 2

Connector pin	Connector pin	Test Performed
11	7	Short to ground check: Hose RTD 1
4	7	Short to ground check: Hose Heater 1
12	7	Short to ground check: Gun RTD 1
1	7	Short to ground check: Gun Heater 1
9	7	Short to ground check: RTD Common
6	7	Short to ground check:Hose Heater 2
2	7	Short to ground check: Gun Heater 2
4	6	Hose Heater resistance check
1	2	Gun Heater resistance check
11	9	Hose RTD resistance check
12	9	Gun RTD resistance check

User Interface

The user interface on the Hose Doctor is intentionally simple and easy to use. LED's are used to quickly relay the status of the hose and gun. Colors are used for different functions as are simple flash sequences. Red LED's indicate a fault, yellow LED's indicate a potential problem, and green LED's indicate things are working as expected.

Red LED's are held on (latched) until cleared with the Clear Faults button. So don't think you have to stare at the unit while testing because you think you might miss a fault. The Hose Doctor will make sure you don't miss anything important. Yellow LED's will self-clear when the alarm condition is no longer present.

Power Button

The Hose Doctor uses a soft power button to save power when not in use. The unit will automatically turn off after 5 minutes of no activity to save the battery.

To turn on the unit, press and release the power button. To turn off the unit, press and release the power button.

Clear Fault Button

The Clear Fault button serves three purposes:

1. The clear faults button is used to clear out any latched faults and restart testing.
2. The clear faults button acts as an LED test button when held. All LED's will illuminate while the button is held or until the scan mode changes.
3. When the clear faults button is held for 2 seconds, the unit will toggle between normal and Hi-Z scan modes.

Hose RTD LED and Gun RTD LED

These LED's indicate the health of the hose and gun RTD's. If these LED's are solid green, it means that the RTD's are reading near room temperature. If they are reading above or below room

temperature – but still in the valid reading range – the LED's will flash green with a 1 flash sequence. This flash feature is supposed to make you think about what value the RTD's *should* be reading. If the RTD's are hot, then don't worry about the green flash. If they *should* be at room temperature but you see a green flash, then maybe further investigation is in order.

A check is done on the stability of the RTD readings since an unstable reading indicates a problem with the RTD or the wiring. If the RTD LED's are yellow and flashing with a 1 flash sequence, it indicates that the RTD readings are not stable – even if they are within the allowed range. This could indicate a failing RTD or wire connection. Stability warnings will self-clear when stable readings return.

If the RTD LED's are red, a fault has been detected – either an open circuit or a short circuit fault. A 1 flash sequence with a red LED indicates an open circuit fault. A two flash sequence with a red LED indicates a short circuit fault. The LED will stay red (latched) until you use the Clear Fault button to reset the fault.

Hose Heater LED and Gun Heater LED

These LED's indicate the health of the hose and gun heater. If these LED's are solid green, it means that the heater resistance is in the allowable range.

A check is done on the stability of the heater readings since an unstable reading indicates a problem with the heater or wiring. If the heater LED's are yellow and flashing with a 1 flash sequence, it indicates that the heater readings are not stable – even if they are within the allowed range. This could indicate a failing heater or wire connection. Stability warnings will self-clear when stable readings return.

If the heater LED's are red, a fault has been detected – either an open circuit or a short circuit fault. A 1 flash sequence with a red LED indicates an open circuit fault. A two flash sequence with a red LED indicates a short circuit fault. The LED will stay red (latched) until you use the Clear Fault button to reset the fault.

Short To Ground LED

The Hose Doctor tests each wire in the harness for shorts to ground (pin 7 of the hose/gun connector). The Short To Ground LED will turn red when a fault to ground is detected.

If the exact pin shorted to ground can be determined, the LED will flash that pin number. If the exact pin cannot be accurately determined, the LED will illuminate solid red with no flashing. The faulted pin number is not flashed in Hi-Z mode.

The LED will stay red (latched) until you use the Clear Fault button to reset the fault.

RTD/Heater Short (cross-wires) LED

The RTD/Heater Short test looks for any crossed wires in the hose/gun wiring. This type of fault can be serious since a short between a heater and an RTD will usually damage the hot melt unit, resulting in an expensive repair.

When a cross-wire fault is detected, the RTD/Heater Short LED will turn red. If the exact pins faulted can be determined the LED will flash the two pin numbers that have the lowest resistance between them. If the exact pins cannot be accurately determined, the LED will illuminate solid red with no flashing. The faulted pin numbers are not flashed in Hi-Z mode.

The LED will stay red (latched) until you use the Clear Fault button to reset the fault.

Low Battery LED

When the 9V battery voltage drops to approximately 6V, the Low Battery LED will illuminate. You better find another battery soon because the unit probably won't run much longer.

The Low Battery LED will also flash the software version on power up or when the scan mode is changed.

The Low Battery LED will turn off automatically when the battery is replaced or is back in the normal voltage range.

Scan Modes

The Hose Doctor supports two scan modes – normal and Hi-Z (high impedance). The unit always powers up in normal scan mode and is the mode used for almost all testing.

The following table compares the two scan modes:

Scan Mode	Advantages	Disadvantages
Normal	Ideal for most testing. Fast scan rate of 250 ms. Good for detecting intermittent faults.	None.
Hi-Z	Detects higher resistance cross-wire and ground shorts than Normal mode.	Slow scan rate of 4 seconds. Not good for detecting intermittent faults. Faulted pin numbers not flashed.

The only time the Hi-Z mode may be needed is if a hose tests good in the normal mode, but you still suspect something might be wrong with the hose or gun. The Hi-Z mode can provide more confidence that the hose/gun checks out electrically since it can detect higher resistance cross-wire faults.

To toggle between the two scan modes, hold the clear faults for 2 seconds until you see an introductory light show. The lights will flash slower for the Hi-Z scan mode and use a different pattern than the normal scan mode.

When using the Hi-Z Scan mode, be sure to allow the Hose Doctor to test for at least 8 seconds to ensure one or more complete scans have been performed.

Powering the Hose Doctor

The Hose Doctor is powered with a 9V battery (included). Battery life is approximately 30 hours continuous operating time.

All voltages in the Hose Doctor are safe to touch. The Hose Doctor applies a maximum of 3.3V to the hose during testing, so there are no concerns with any hazardous voltages being present while testing with the Hose Doctor.

If no activity has been detected for 5 minutes, the unit will automatically shut off to save the battery. Simply press the power button to turn the Hose Doctor back on.

Replacing the Battery

To replace the 9V battery, remove the rubber boot from the Hose Doctor starting at the top of the unit. Open the battery door by sliding the door toward the bottom of the unit. The door is located on the rear of the unit. Replace the 9V battery and put it back together in reverse order.

Hose-only Testing (no gun connected)

If both the gun RTD and gun heater are open circuit, the unit assumes there is no gun attached and turns off the gun LED's. This prevents confusion from having red LED's illuminated for devices not installed.

Please note that the gun connector in the hose is not tested when no gun is connected. Please connect a gun or dummy plug that simulates a gun for complete test coverage of the hose.

Testing Guns/Applicators Only

In order to test a gun without a hose, a splitter cable is required that separates the 12 pin connector on the Hose Doctor into gun connectors. Contact your local equipment supplier for the correct splitter cable or adapter for your specific system.

Testing Various Manufacturer's Hoses and Guns

In order to test hoses and guns that use different connectors than the Hose Doctor, please contact your local equipment supplier for the correct adapter for your specific system.

Storage and Care

It is recommended to store The Hose Doctor in the box in which it arrived. Doing so will protect the connectors from debris, protect The Hose Doctor from damage, and keep the power button from being inadvertently pressed repeatedly which could result in a drained battery.

Do not use any harsh chemical cleaners on The Hose Doctor. Doing so could damage the printing and plastic enclosure. Only use a damp rag with a mild detergent if cleaning is needed.