PROFLAME 1 SYSTEM

Troubleshooting Guide

SIT Proflame 1 GTMFS System main components overview:

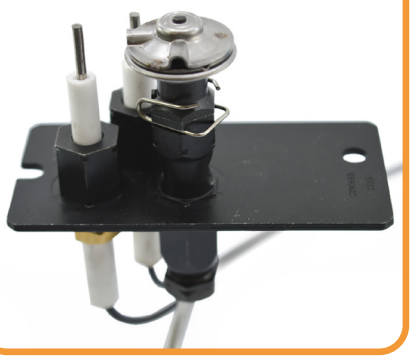
Gas Valve

Control Module

Receiver Box

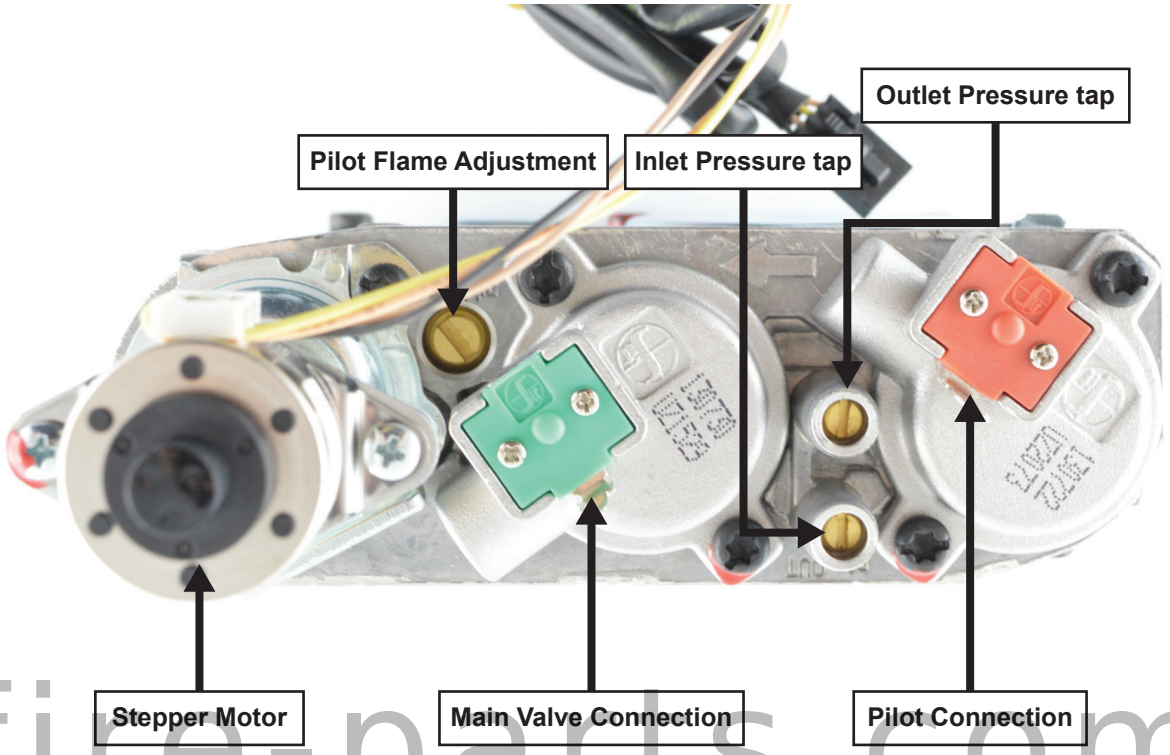
Fan Control Module (FCM)

Pilot Assembly



Proflame Remote

SIT Proflame GTMF Gas Valve



Solenoids on Valve:

EV1 (Pilot Connection Coil):
- Opens and closes to release gas to the pilot
- Orange in color furthest from step motor
- 5VDC and drops to 1.0VDC (See “Verifying Voltage on Solenoids”)

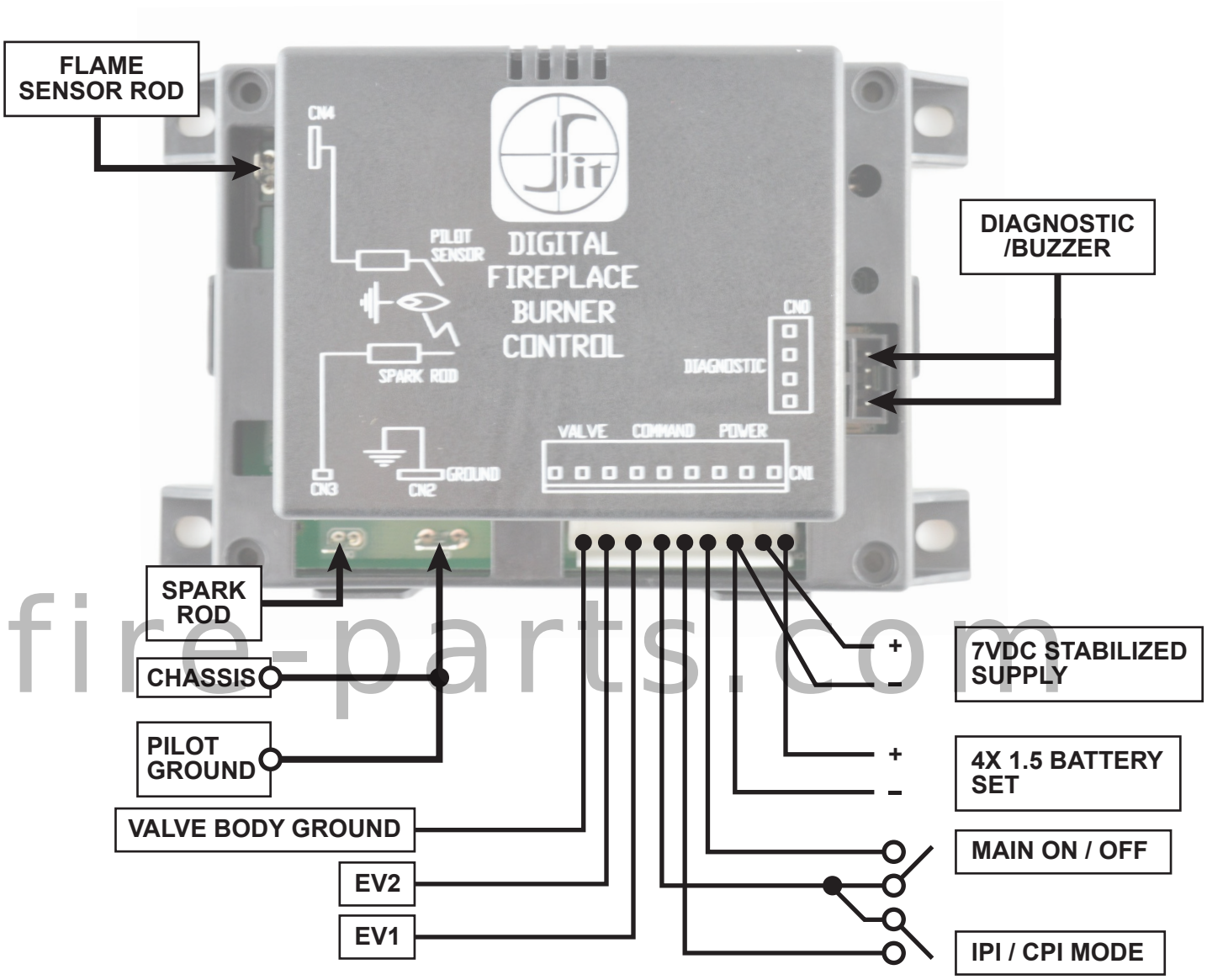
EV2 (Main Burner Coil):
- Opens and closes to release gas to the burner (needs rectification at pilot before voltage)
- Green in color closest to step motor
- 5VDC and drops to 1.0VDC (See “Verifying Voltage on Solenoids”)

Gas Pressure: Very Important for the Function of an IPI Pilot Assembly
Inlet Pressure Test Point
- Measures amount of gas coming into the valve
- NG 5.0” WC to 7.0” WC
- LP 11.0”WC to 13” WC
- Critical to check pressures with all gas appliances on in house (Full Load Pressure Check)

Outlet Pressure Test Point
- Measures amount of gas leaving the valve to burner orifices
- Need to have EV2 energized or burner turned on to verify

Pilot Adjustment Screw:
- May require adjustment.

Digital Fireplace Burner Control (DFC Module)



The DFC module:

- Acts as the “brain” of the IPI system
- Powered by 120VAC

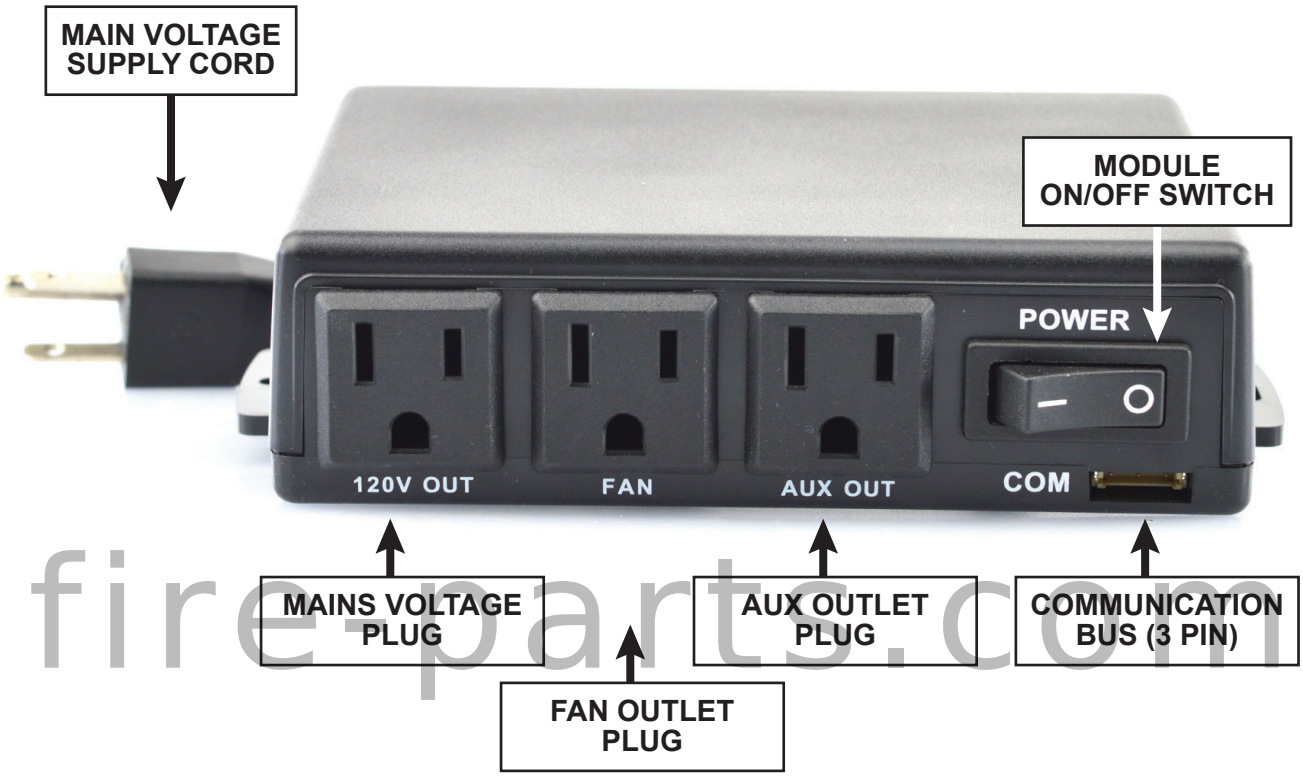
Testing Power Voltage:

- AC Power (Pins red and black) would be about 6.5VAC (See figure 1.1)

Diagnostic/Buzzer:

- This connection is used for an LED Indicator Light, which provides the technician with lockout codes.
- The LED is not on all models, but if you carry a spare it could be plugged in for a reading.
- For more information on LED Indicator Light and Lockout codes see page 10.

Fan Control Module (FCM)

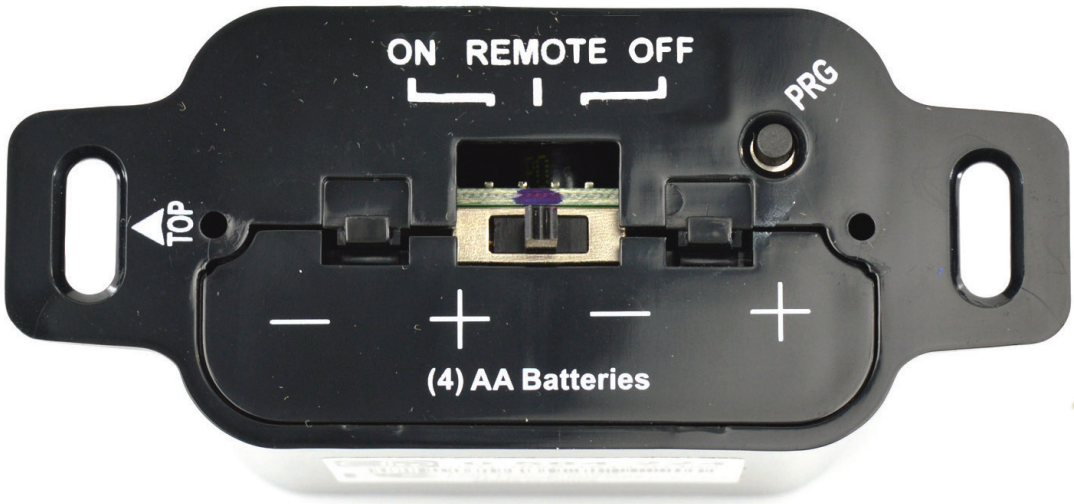


The Fan Control Module if equipped offers the ability to control the fan speed from off through six speeds, a remotely actuated 120V auxillary outlet, and a constantly powered 120V outlet.

Note: The 120V OUT outlet is not to be used or plug any tools into as the amperage of that tool could blow the fuse in the module.

The FCM provides DC power (communication bus shown above) to the receiver allowing the batteries to be used only in the event of line power loss. If equipped: Fans and lights would not function on battery back-up.

Receiver



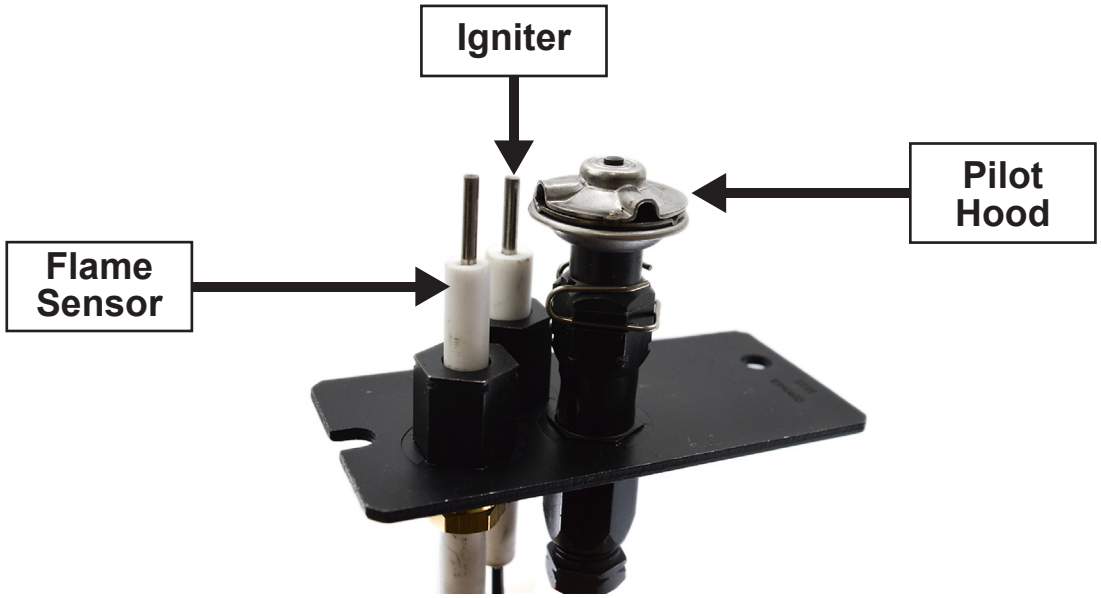
Function is to act as control box when using remote or manually running the fireplace. The receiver slider switch can operate in three positions.

3 Position Slider

- On (Manual Override)
- Remote (Remote Control)
- Off

The receiver holds four AA type batteries for battery backup. When receiver batteries are low, no “beep” will be emitted from receiver when it receives on/off command from transmitter. This is an alert to change batteries in receiver box.

Pilot Assembly



Pilot Assembly is comprised of three parts:

Pilot Hood

• Splits the flame into two or three for burner and flame sensor.

Igniter/ Spark Electrode

• provides spark to the pilot hood

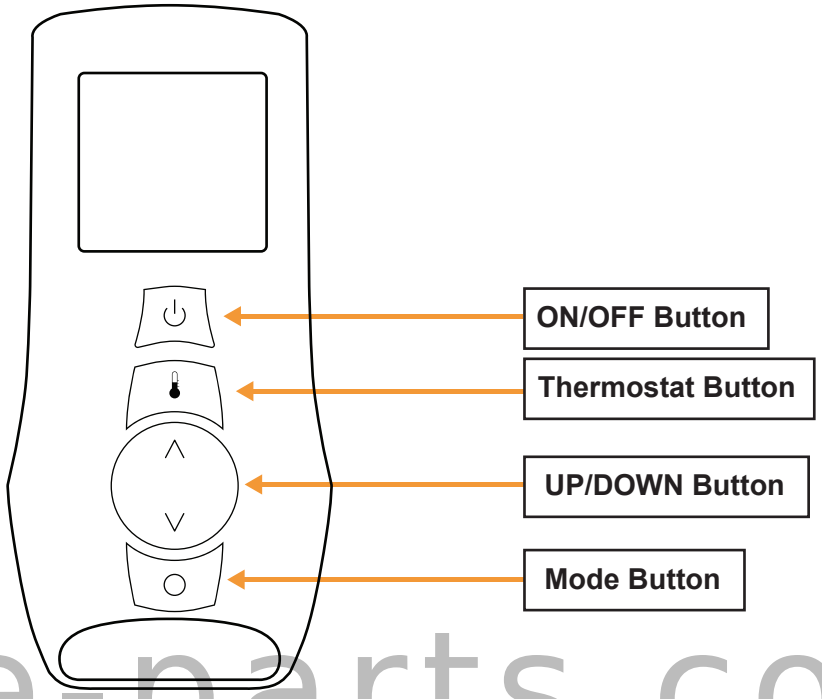
Flame Sensor

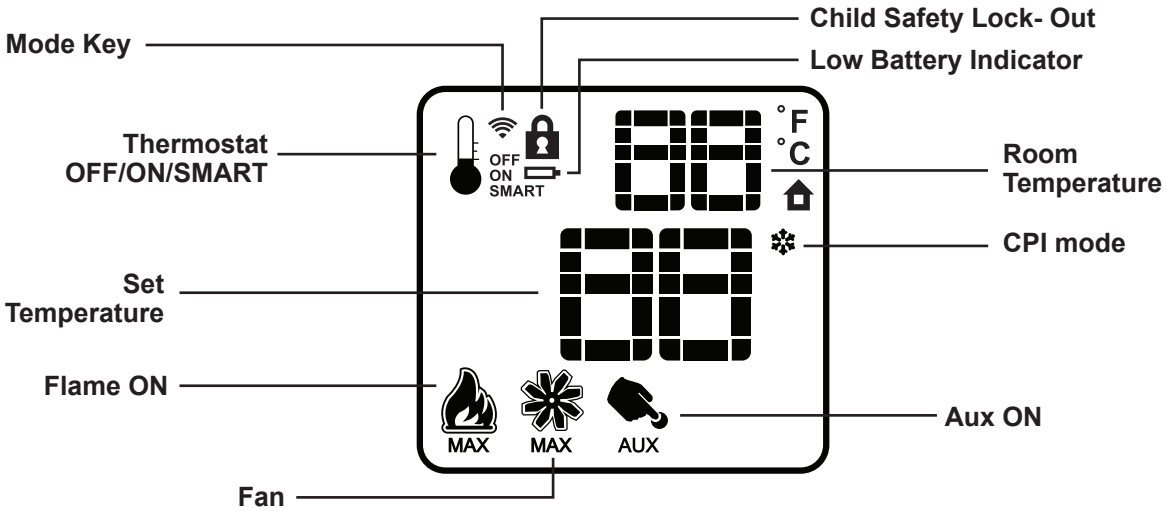
• Rectifies the pilot is lit and carries the voltage to the IFC module to stop sparking and allow main burner to open.

• Without rectification igniter will still spark and burner will not turn on.

• System lockout will occur after multiple failed ignitions.

Remote Control



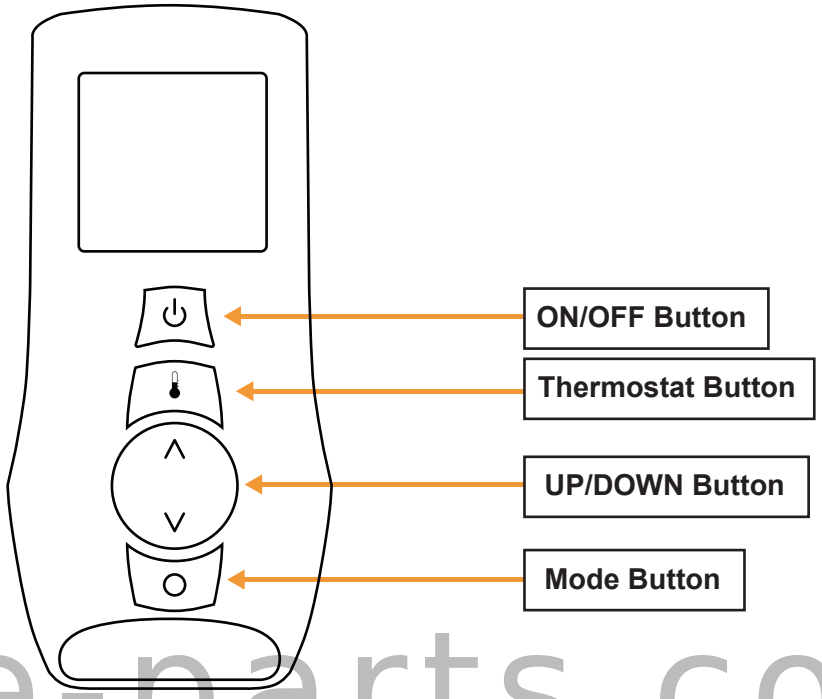


The Proflame transmitter uses radio frequency to communicate information to the receiver box located in the fireplace or wall switch location.

The transmitter is powered by three (3) AAA batteries. As these batteries begin to wear down the blue backlight feature on the remote will deactivate indicating the batteries require replacement.

There is also an indicator on the display to indicate low battery power in transmitter.

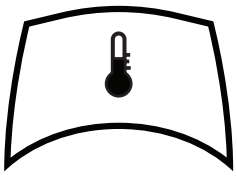
Remote Control Button Function



ON/OFF Button

• Pressing this button one time will turn the fireplace ON in manual mode. Pressing it once more will turn the fireplace off.

Note: The thermostat image on the left should read OFF for fireplace to run manually.



THERMOSTAT Button

3 Settings

ON

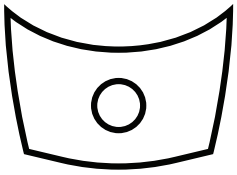
- Fireplace will operate in thermostat mode with ability to manually set the flame height.

OFF

- Thermostat is off, but will operate manually from remote using ON/OFF button.

SMART

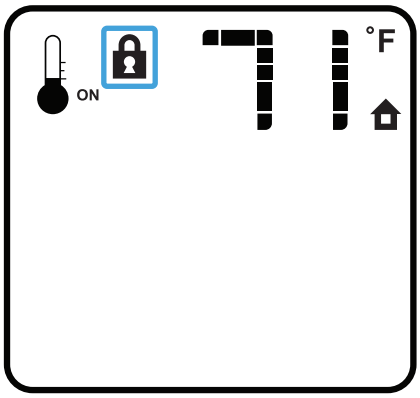
- Works the same as ON thermostat, but the SMART function will modulate the flame height as the fireplace nears the set temperature.



MODE Button

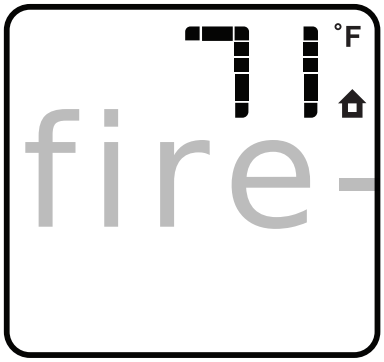
Pressing the MODE button will cycle the display screen from flame modulation, to fan modulation, to light kit on/off, split flow, auxillary, and standing pilot mode.
Use the UP/DOWN button to adjust each setting accordingly.

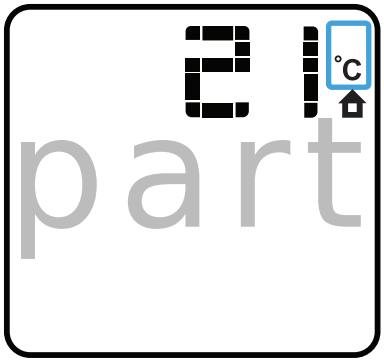
Remote Control Display Icons



Child Lock

To activate child lock, press the Mode button and the Up button at the same time.
To deactivate press the same button sequence.





Fahrenheit / Celsius Adjustment:

With the system in the OFF position, press the Thermostat button and the Mode button at the same time.

SIT Proflame DFC Module Ignition and Reset Information

Ignition Sequence:

Starting from OFF, press the remote power button. Approximately four seconds after it is pushed the DFC module will send spark to the pilot hood. It will spark for 60 seconds.

If there is no flame ignition (rectification) during the first try for ignition, the DFC module will stop sparking for approximately 35 seconds and then it will begin sparking again. The second attempt will spark for another 60 seconds.

If there is no positive rectification after the second sequence the DFC module will go into a Lock Out and the LED Indicator Light (if equipped) will blink three times in intervals until the system is reset.

LED Indicator Light: Based on the fireplace model and design it may be located in the component housing behind the lower grill or behind the left access panel.

Standard Ignition Sequence
1) Ignition sequence is 60 seconds spark, 35 second wait, 60 second spark and then lock out if flame is not rectified.
2) Lock Out blink on the LED Indicator Light is 3 blinks in sequence

Resetting Proflame DFC Module When In Lock Out:

Reset Using the Transmitter ON/OFF power button:
Turn the system off by pressing the remote power button. After approximately 2 seconds press it again.

Reset Using the Remote Flame Adjustment buttons:
In the manual mode, use the down arrow to lower the flame all the way to OFF. Wait 2 seconds and then use the up arrow to turn the flame back on.

Reset Using Receiver Switch:
With the remote off, move the ON-REMOTE-OFF switch to the OFF position on the receiver box. Wait approximately 2 seconds and slide back to ON position. (Note: You will need to move to REMOTE if you prefer to turn on via remote).

Additional LED Diagnostic Information:
Low Battery Condition (<4V): LED Indicator will blink one time in continuous interval. Replace batteries in backup.

Pilot Flame Error Condition: LED Indicator will blink twice in continuous interval. Reason for error is pilot is called to turn on and the flame sensor already detects there is a flame present. Using multimeter you can troubleshoot to determine if the module is still sending voltage to the EV1 and in that case module would be our focus. If there is no voltage present and gas is still flowing it would likely be a valve that is stuck open. See later troubleshooting for how to test voltage on EV1.

System Lock Out Condition: LED Indicator will blink three times. Follow later troubleshooting steps for pilot not lighting.

Remote Not Learning to Receiver

Begin

Verify proper 120VAC power supply

A. Remove the batteries from battery back up found in the receiver box

B. Attempt to light continuous pilot from switch. If pilot lights or if spark is present we know power is supplied and we can proceed. If spark or pilot is not present proceed in troubleshooting steps for pilot does not light. (if you now re-install batteries and the pilot turns on you know receiver harness is correct along with receiver box. Focus would be on power supply which is explained later in the guide with voltage readings)

↓

It is possible the digital fireplace control (DFC) module is in a lockout position. On the receiver box slide the ONREMOTE-OFF switch to OFF position and leave for 30 seconds to reset the module. Then slide it back into remote position.

↓

Press and hold the PRG button the on the receiver box until you hear 3 fast beeps indicating the receiver box is ready to learn the remote code. Did you hear the beep code?

No → Verify wring harness is secure in back of receiver box by unplugging and plugging back in and test. Still no progress replace receiver box.

↓ **Yes**

Quickly press the ON/OFF power button on the remote control. You should now hear 4 beeps indicating the receiver has learned the remotes unique programming code. Did you hear the beep?

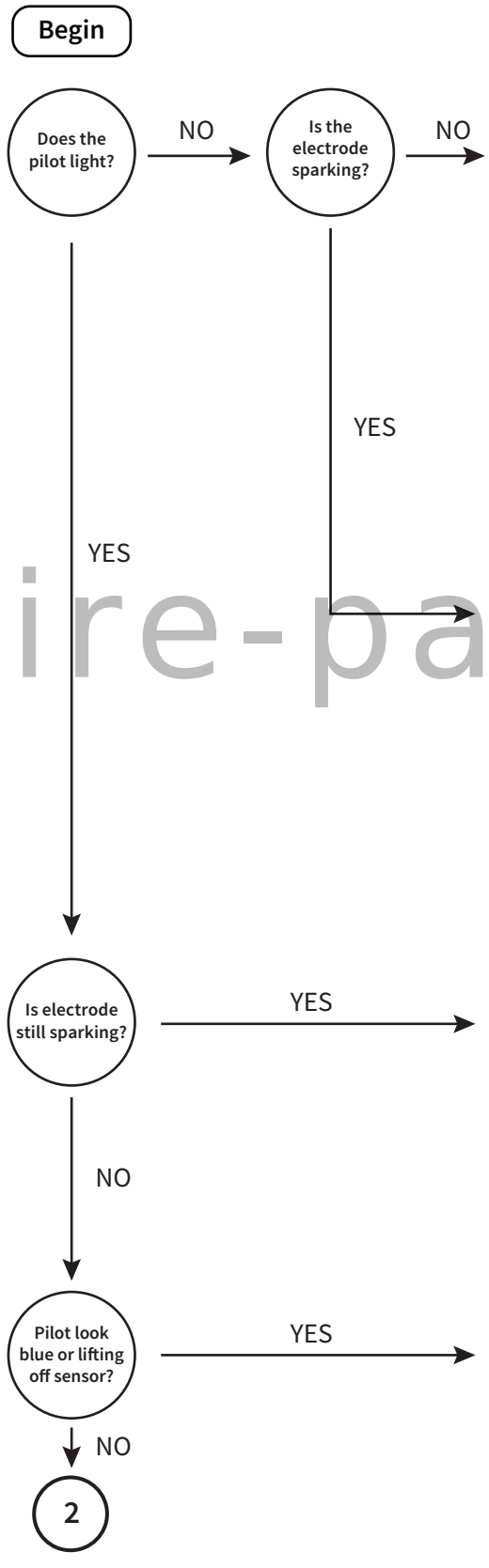
No → Verify batteries are new in remote, and if so replace remote control.

↓ **Yes**

Remote is learned to the receiver and should operate the fireplace.

No → Proceed to next troubleshooting tree to verify there is not another problem

Troubleshooting



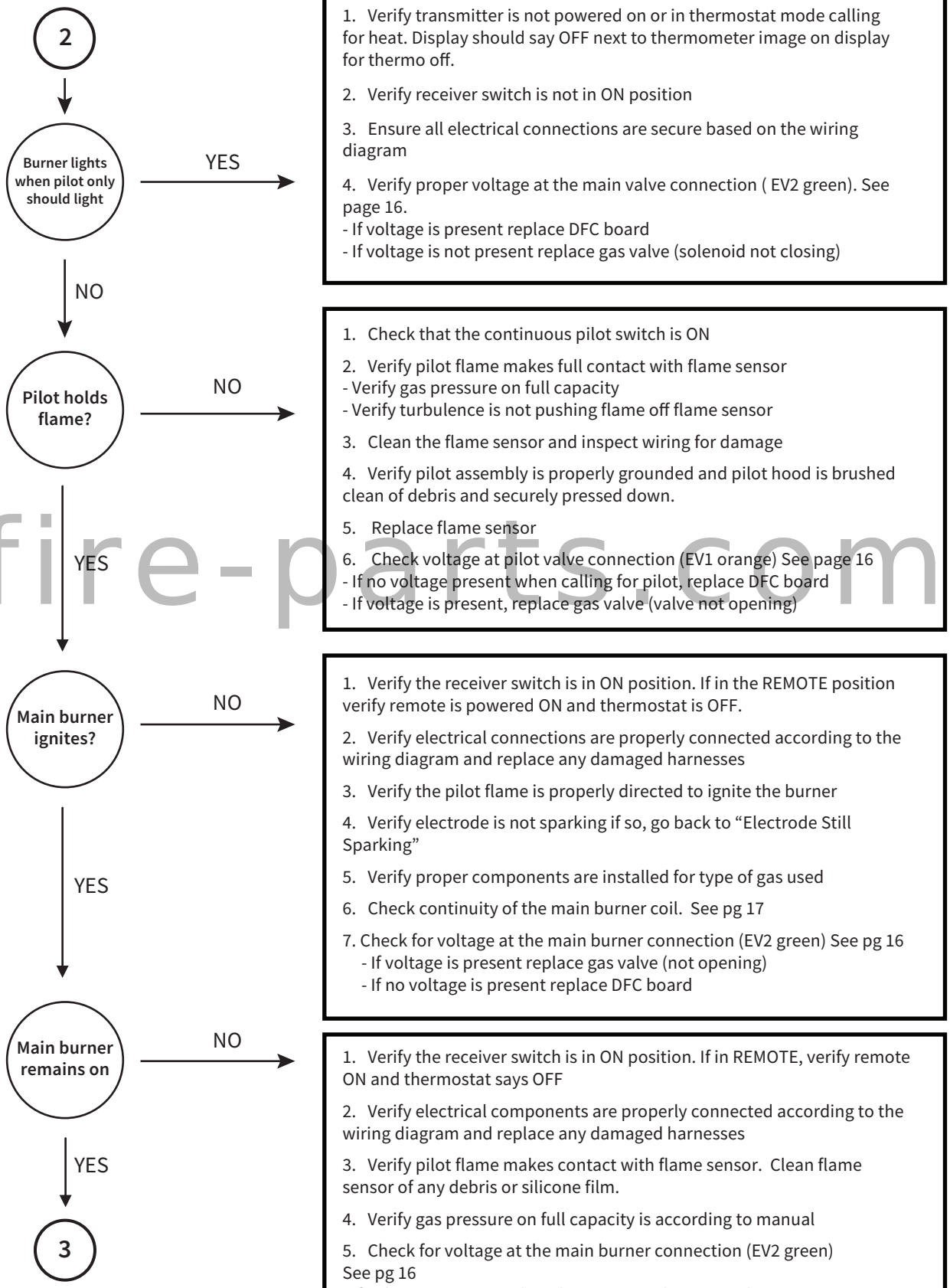
1. Verify proper power supply throughout system (See page 15 for multimeter images)
2. Make sure FCM module power switch is in (-) position
3. Verify wires are properly connected to DFC module
4. Make sure system is properly grounded
5. Check electrode positioning to pilot hood. Adjust as needed. If porcelain is damaged replace igniter
6. Inspect wiring for damage. Replace if necessary
7. If no spark continues, replace DFC board

1. Verify gas supply is ON and gas line is bled to valve
2. Inspect wires for damage and replace if needed
3. Inspect pilot tube for damage and replace if needed
4. Inspect pilot orifice and clean if necessary
5. Clean any corrosion from pilot assembly for proper grounding
6. Check continuity of EV2 valve coil. (Image on pg 17)
   - If no continuity replace valve
7. Verify proper voltage at EV1 pilot valve connection (Image on pg 16)
   - If voltage is present and no gas released, replace valve.
   - If no voltage is present, replace DFC board!

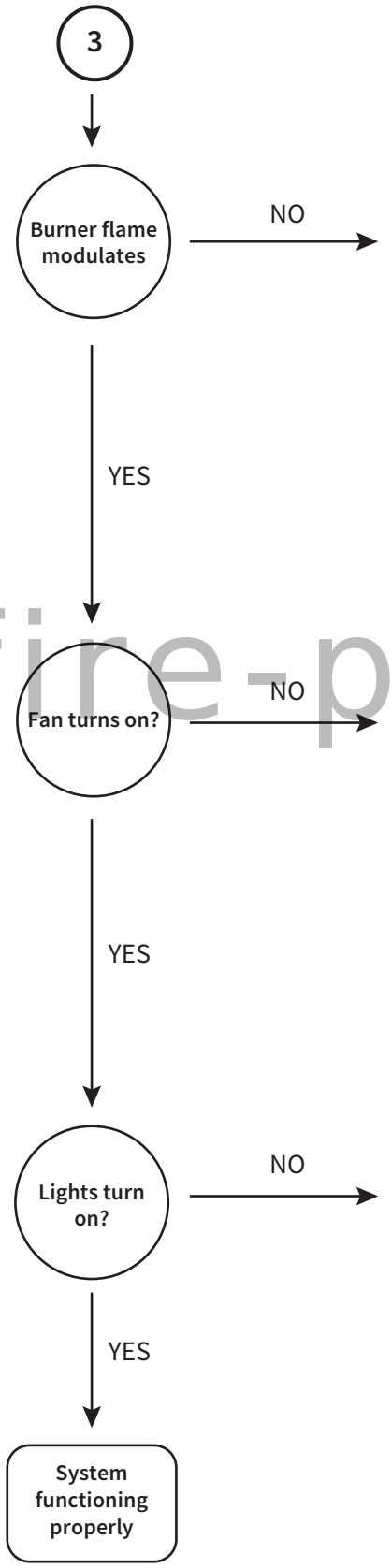
1. Verify flame sensor is in the pilot flame, adjust flame as needed
2. Verify flame sensor wire is properly connected to module and the system is grounded
3. Clean flame sensor rod and any corrosion from pilot assembly
4. Check porcelain is not cracked on flame sensor. If cracked replace flame sensor
5. If sparking continues, replace DFC board

1. Verify proper pilot orifice for type of gas is used.
2. Verify the unit is properly converted for type of gas used.
3. Inspect venting is to manufacturers specifications and is not damaged or blocked.

Troubleshooting



Troubleshooting



1. Thermostat in SMART mode will not modulate flame height
2. Check in/out pressure readings according to owner's manual
3. Check electrical connections and inspect wiring for damage
4. Inspect main burner orifice for blockage and correct size
5. Verify receiver is receiving transmitter command by beeping
- If no beep, see Remote Not Learning troubleshooting
6. Check continuity of step motor. Resistance between yellow/orange and black/brown wires should be 25 ohms. (See pg 18)
- If no continuity or step motor is not regulating out pressure, replace step motor.

Note: Not all fireplaces are equipped with fan

1. Remove batteries from battery backup and test fireplace turns on. If fireplace doesn't turn on, see pg 15 for 120VAC issue
2. Verify the fan control module is connected to AC Power and FCM switch is in (-) position
3. Verify there is power at FCM outlet fan is plugging into
4. Verify the remote does not say OFF on remote
Note: Fan in thermo settings is time delay.
5. Verify electrical connections are secure
6. Unplug the fan from FCM module and plug into verified 120V supply
- If fan works replace FCM module.
- If fan does not work, replace fan

Note: Not all fireplaces are equipped with lights

1. Remove batteries from battery back-up and test fireplace turns on
- If fireplace doesn't turn on, see pg 15 for 120VAC issue
2. Verify the fan control module is connected to AC Power and FCM switch is in "-" position
3. Inspect light bulbs and fixture for damage. Replace if necessary
4. Inspect wiring and verify proper ground to the DFC is established
5. If equipped, check if dimmer switch is turned ON
6. Bypass the dimmer switch to complete circuit and test lights
- If lights come on replace dimmer switch
- If lights do not come on proceed
7. Unplug the light from AUX OUT on FCM module and plug into the 120V supply
- If the lights work replace FCM
- If the lights device do not work, replace the light kit

Verifying Power Supply off DFC Supply and off DFC Harness

The following images are a series of tests to determine if 120V is supplied throughout the system.

Figure 1.1 displays how to test if 120VAC is supplied to the FCM module. Take note that if you are getting a reading of 0 VAC out of this test, make sure the POWER switch is on the (-) position and if so test the outlet the FCM is plugged into for power.

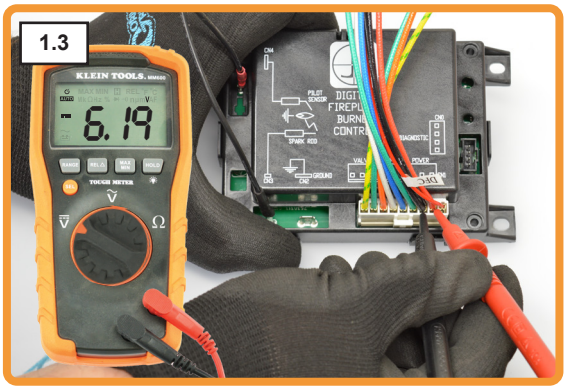
Note: This test will be a VAC reading

Figure 1.2 would be the next step if we have power at the FCM module to determine if the harness is supplying power. Location of this connection will vary on the model of fireplace, however following the red/black wires off the the DFC harness will lead to the DFC supply connection.

Note: This test will be a VDC reading

Figure 1.3 would be the final power supply test prior to the DFC module. It is important to get your multimeter pins on the contacts for an accurate reading.

Note: This test will be a VDC reading



Verifying Voltage on Solenoids (EV1 and EV2)

This test performed would be done if we wanted to know if the IFC module is supplying power to the Pilot solenoid (EV1) telling it to open.

Multimeter would be in VDC.

EV1 Solenoid
One multimeter pin would be placed on the ground at the top of the valve where yellow/green wire connect, while the other pin would be placed on the spade connection where the Orange wire connects to the EV1 solenoid.

Initially when you turn on the pilot you will get a reading of about 4.3VDC (Figure 2.1) and drop to about 0.950 (Figure 2.2).

This reading tells us the IFC module is sending power through the harness to open the corresponding solenoid.

If you are getting power and valve is still not supplying gas our focus would be is gas turned on, pilot lined crimped, or bad valve. (see troubleshooting tree for complete steps)

EV2 Solenoid
To test Burner solenoid (EV2) follow the same process, but connect multimeter pins to ground and to the green solenoid and NOT the orange.

Important: To test the Burner Solenoid (EV2) there would need to be a proven/ rectified pilot flame.

Performing Ohms Reading of Valve Solenoids

This test performed in Figures 3.1 and 3.2 are a continuity test of the valve solenoids. Your multimeter would need to be in the Ohms position and disconnect the wiring harness from EV1 and EV2.

Using one multimeter pin on the solenoid and the other on the ground your reading should be approximately 331.5 ohms.

Same process is conducted for either EV1 or EV2, just need to touch the corresponding spade connector.

Performing Ohms Reading of Valve Solenoids

This test performed in Figure 4.1 is a continuity test of the step motor. Your multimeter would need to be in the Ohms position and disconnect wiring harness from the step motor to expose the leads.

Using a multimeter place the two pins on the two leads of the connector. Your reading should be approximately 25.3 ohms.

Proflame 1 System Configuration
Wiring diagram