



# SPECIFICATIONS

<b>Input Voltage</b>	Control: 24 VAC (18-30VAC) 50/60 Hz
<b>Input Current</b>	0.3 A nominal + valves
<b>Gas Valve Contact Rating</b>	4A Main @ 24 VAC
<b>Alarm Output</b>	2A @ 24 VAC
<b>Operating Temperature</b>	-40 to 176°F (-40 to 80°C)
<b>Flame Detection Means</b>	Flame Rectification
<b>Flame Detection Type</b>	Local/Internal or Remote/External
<b>Minimum Flame Current</b>	0.07 microamperes
<b>Flame Failure Response Time</b>	1.0 second maximum
<b>Ignition Source</b>	High voltage spark, capacitive discharge
<b>Maximum Spark Gap</b>	0.2 in. (5.1 mm)
<b>High Voltage Cable</b>	48 in. (1219mm) max., rated 15kV min. (Resistive recommended)
<b>Flame Sense Cable</b>	48 in. (1219mm) max (Shielded recommended)
<b>Spark</b>	30 sparks/second
<b>Humidity</b>	0% to 95% RH (non-condensing)
<b>Gas Types</b>	Natural, LP, or Manufactured
<b>Trials Before 100% Shutoff*</b>	Preset 1 thru 9 trials
<b>Trial for Ignition Time *</b>	Preset 4, 8, 11, 21, or 30 seconds
<b>Pre-Purge Time *</b>	Preset 0, 4, 10,15, or 30 seconds
<b>Inter-Purge Time *</b>	Preset 0, 10, 15, 30, 60, 90, 240 or 300 seconds
<b>Retry Delay Period *</b>	Preset 0, 5, or 60 minutes
<b>Lockout Recovery</b>	Power cycle / Thermostat (TH-W) cycle

\* For custom timings, contact BASO Gas Products.

## **AGENCY CERTIFICATIONS:** UL 60370-1, UL 60730-2-5

File:M2926 Software Conforms to UL 60730 Requirement Component  
Recognized System (US & Canada)

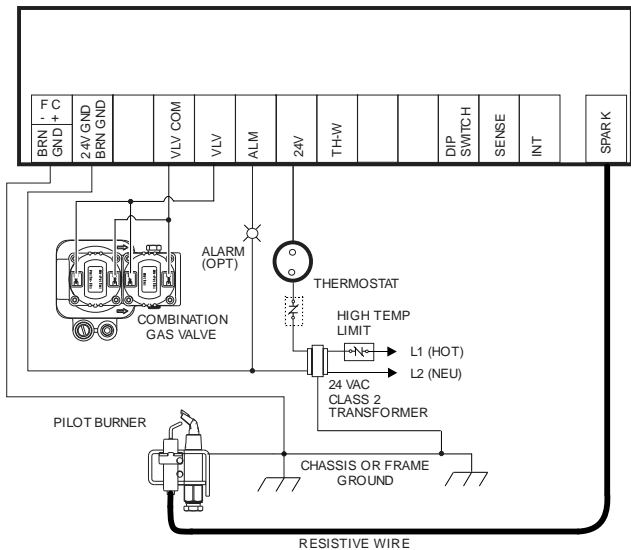
# WIRING

**Table 1: Typical Wiring Connections**

Label	Term. Type	Description
BRN GND	Mounting Tab	Burner Ground connection*
FC - +	2 Pin	Flame Current measuring for microammeter probes in $\mu$ Amp DC
24V GND BRN GND	¼" male QC	Common side (return) of transformer connection
VLV COM	¼" male QC	Gas Valve common terminal
VLV	¼" male QC	Valve connection
ALM	¼" male QC	Alarm Signal
24V	¼" male QC	24V Power Transformer connection
SENSE	¼" male QC	For dual rod (remote/external) flame sensing, connect the flame sense wire from burner/igniter to this terminal
INT	¼" male QC	For single rod (local/internal) sensing, there will be no connection
SPARK	¼" male QC	High voltage sparking electrode

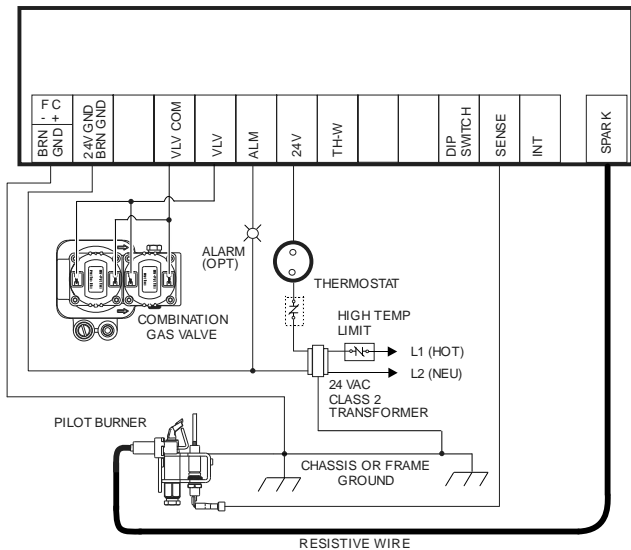
\* If the existing system uses a burner ground wire, this can be attached to the 24V GND / BRN GND terminal using the supplied dual spade connector, or otherwise connected to the burner ground mounting tab.

**Figure 1: Wiring for 1 Rod Flame Sense used for Local (Internal) Sense**



**Warning:** Risk of explosion or fire. Do not install the control in an area that is exposed to water (ex. dripping, spraying or rain). Do not use the control if it has been exposed to water. Exposure to water may cause a malfunction and can lead to an explosion, which can lead to severe personal injury or death.

## Figure 2: Wiring for 2 Rod Flame Sense used for Remote (External) Sense



# LED STATUS AND TROUBLESHOOTING

The ignition control has a multi-colored (GREEN, ORANGE, and RED) LED which will flash different colors and codes to show status of the ignition, and will help troubleshoot the control.

**Table 3: GREEN LED Indications of Normal Operation**

Flash	Indication
On ½ sec, Off 4-½ sec	Waiting for "Call for Heat"
On ½ sec, Off ½ sec	Pre-purge, Inter-purge, Post-purge
On ¼ sec, Off ¼ sec	Trial for Ignition (TFI)
On Solid	RUN (Flame, Main valve on)

**Table 4: ORANGE LED Indications**

Flash	Indication	ERROR Type
On ½ sec, Off 4-½ sec	Retry	Standby
On ½ sec, Off ½ sec	Flame present	Standby
On ½ sec, Off ½ sec	Pressure present	Standby

**Table 5: RED LED Indications of ERROR Codes (100% Lockout).**

Flash	Error Indications	ERROR Type
1 flash	No flame in trial time	100% Lockout
2 flashes	Flame sense stuck	100% Lockout
3 flashes	Valve relay circuit	100% Lockout
4 flashes	Inducer (Blower) relay circuit	100% Lockout
5 flashes	Rollout error	100% Lockout
6 flashes	Pressure switch	100% Lockout
7 flashes	Repetitive flame loss	100% Lockout
8 or 9 flashes	Internal control	100% Lockout
Solid On	Line voltage/Freq.	Standby

Note: 1 second pause after each flash code.

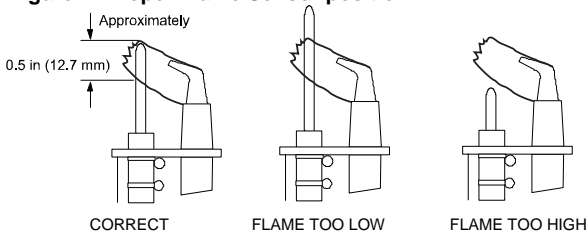
# TROUBLESHOOTING GUIDE

## Symptom                      Possible Cause

1. No power up
  - Faulty 24 VAC wiring
  - Thermostat or transformer
  - Faulty control
  - Safety limits
2. Control LED is blinking RED
  - Determine error code, refer to error codes (TABLE 5), also refer to the troubleshooting flow chart in the installation instructions
3. No spark during Trial for Ignition (TFI) time
  - Faulty spark electrode wiring
  - Spark gap too wide
  - Faulty control
4. Burner does not light during trial for ignition time
  - Faulty valve wiring
  - Bad Gas Valve
  - Faulty control
5. Burner lights but Gas Valve turns off after TFI
  - Weak flame, Flame not in contact with the spark electrode or flame sensor. Check that Flame Sensor tip is in the flame. For proper sensing the rod tip must be  $3/8"$  (10mm) to  $1/2"$  (13 mm) in the flame. See figure 1.
  - Dirty or corroded flame sensor
  - Faulty flame sensor wiring
  - Poor burner ground

**Note:** For more information on BASO ignitions and other products, plus

**Figure 1: Proper Flame Sensor position**

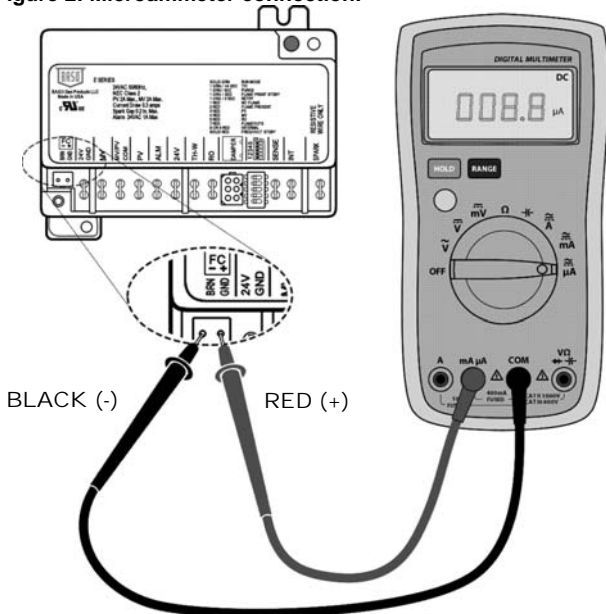


# FLAME CURRENT MEASUREMENT

Flame current of the device can be measured using a standard microammeter by simply touching the meter leads to the 2 PIN labeled FC, as shown in Figure 2.

- Flame current must be measured with flame lit and main gas flowing.
- Set meter to DC  $\mu$ Amp scale.
- Make sure meter leads are positioned correctly [+/-].
- Recommended Minimum Flame Sense Current of 0.4  $\mu$ Amp DC.

**Figure 2: Microammeter connection.**



2 year warranty