

# Ignition/Flame Monitoring Terms

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| <b>Amplifier</b>                     | A device used to increase the magnitude of a small pilot signal to proportions sufficient to perform some desirable function.                                                                                                                                    |
| <b>Automatic Ignition</b>            | A system in which a burner is ignited directly by an automatically-supervised transformer provided spark or by a gas or oil pilot.                                                                                                                               |
| <b>Conductivity Circuit</b>          | A flame proving system which operates on an AC flame signal and utilizes the conduction of a flame.                                                                                                                                                              |
| <b>Conductivity Flame Rod System</b> | A flame rod detection system based on the ability of the flame to conduct a current.                                                                                                                                                                             |
| <b>Flame Conduction</b>              | The ability of the ionized gases of a flame to conduct an electric current.                                                                                                                                                                                      |
| <b>Flame Failure Response Time</b>   | The time interval between loss of flame and the reaction of the flame detector control.                                                                                                                                                                          |
| <b>Flame Rectification</b>           | Use of the flame as a half wave rectifier in a flame sensing circuit.                                                                                                                                                                                            |
| <b>Flame Rod</b>                     | A metal rod projected into the flame envelope to function as an electrode in a flame sensing circuit.                                                                                                                                                            |
| <b>Ignition Temperature</b>          | The minimum temperature at which combustion can be started.                                                                                                                                                                                                      |
| <b>Ignition Timing</b>               | A period of time, during which ignition means are on.                                                                                                                                                                                                            |
| <b>Interlock</b>                     | A device which proves that conditions for combustion are established, or proves that the burner is ready to be started.                                                                                                                                          |
| <b>Low Fire Start</b>                | The firing of a burner with the fuel controls in a low-fire position to provide safe operating conditions during light-off. In a system with guaranteed low-fire start, interlocks are used to prevent start up if burner is not in the low-fire start position. |
| <b>Manual Reset Valve</b>            | A valve opened manually and held in the open position electrically or closed automatically by the Control System. It cannot be opened manually until power is restored by the Control System.                                                                    |
| <b>Purging</b>                       | The replacement of the gaseous volume of a chamber and all flue passages with air for a pre-set time interval in order to accomplish the removal of all fuel gas or vapors prior to ignition.                                                                    |



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| <b>Safe Start Check</b>   | A feature of flame safeguard controls to prevent a burner start if a flame is sensed or a flame simulating failure exists in the flame detection circuit.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Switches, Pressure</b> | <p><b>Low Pressure</b>—A device designed to close an electrical circuit when a minimum, adjusted positive gas/air pressure is sensed.</p> <p><b>High Pressure</b>—A device designed to break an electrical circuit when a maximum, adjusted positive pressure is sensed.</p>                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Trial for Pilot</b>    | The period of time in the starting sequence during which the flame safeguard control permits the pilot valve to be opened before the flame detector is required to prove the presence of the pilot flame.                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Pilots</b>             | <p><b>Constant</b>—A pilot that is ignited when the burner is initially started, and remains burning until the burner is shut off manually or through the safety supervisory circuit.</p> <p><b>Intermittent</b>—A pilot that is ignited prior to main burner operation, remains burning during the main burner firing period, and is shut off simultaneously with the main burner.</p> <p><b>Interrupted</b>—A pilot that is ignited prior to main burner operation and continues to burn for a sufficient length of time to ignite the main burner. At the end of the main burner “trial for ignition” the pilot burner shuts off automatically.</p> |