

## CORE Fire Protection System

TB15-1001

September 4, 2015

### Product Description:

CORE Fire Protection System is an automatic, pre-engineered, commercial kitchen fire suppression system. The system utilizes electronic fire detection, self-cleaning hood technology and an unlimited supply of water along with a chemical surfactant to suppress high risk fires. The system is designed to provide primary coverage for ventilating equipment including hoods, ducts, plenum and grease filters. CORE also provides flexible total flood, overlapping protection for a variety of common commercial kitchen appliances. All critical components of the fire system are supervised for proper operation.

A microprocessor-based control board provides all necessary monitoring, timing and supervision functions required for reliable operation of the system. The following components are electrically supervised: electric thermal detector(s), manual actuation device(s) and electric water solenoids. The control board also detects faults within the system and will alert the user of the specific fault. With the electric fire detection, a battery backup system is provided.

The system is capable of automatic detection and actuation and/or remote manual actuation. The detection portion of the fire suppression system allows for automatic detection by means of an electric thermal detector(s) located in the hood duct connection and/or downstream in the grease duct. The standard temperature setting is 360°F, but other temperatures are available. The electric detectors will also automatically activate due to a rate of temperature rise that exceeds 40°F per minute.

### Product Certifications:

- The CORE Protection Fire System is ETL listed under report number 3132231SAT-004.
- Listed to UL Standard 300 and ULC/ORD-C1254.6
- Meets the requirements of NFPA 96 and NFPA17A
- Approved by the California State Fire Marshal Listing Number 7510-2199:0100
- The CORE circuit board is an ETL Recognized Component under Report number 101196419NYM-001 to UL Standard 864. The PCBCORE board is certified as a releasing service for the CORE Protection Fire System.
- CORE Protection Fire System is a patented product covered under patent numbers 7963282 and 8378834.

### Product Specification Details:

Maximum Hazard Coverage	48 Linear Feet of Hood
Appliance Surface Protection	Overlapping Total Flood Coverage, 36 Inches Maximum Spacing, Stainless Nozzle with Chrome Plated Pipe
Fire Detection	Supervised Electronic, Rate Compensated, Hermetically Sealed, Self-Resetting. Activates at 360°F, or 40°F/minute rate of rise.
Manual Activation Device	Electronic, Push to Activate, Twist to Reset, With Protective Cover and optional audible alarm
CORE Fire Protection Water	1.5 GPM per linear foot of hood, 30-70 PSI (Minimum pressure dependent on length of hood)
Self-Cleaning Supply Water (Domestic)	0.7 GPM per linear foot of hood, 140°F-170°F, 30-70 PSI (Minimum pressure dependent on length of hood)
Hood Drain	1-1/2 Inch NPT, Piped to Grease Trap
Electrical Outputs	Gas Valve Interlock (120VAC or 24VDC), Shunt Trip Activation (120VAC, 4Amps), Fire Alarm and Trouble Contacts
Main Power Requirements	120VAC, 15 Amp Breaker
Battery Backup	24VDC, 2 Year Lifespan, Monitored

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### Sequence of Operation:

CORE Protection Fire Systems is automatically activated by a hood/duct fire sensor or upon manual actuation. If any thermal detector senses a temperature greater than its internal set point or a rate of rise in temperature exceeding 40°F/minute, or if any manual actuation device is pushed, the fire system is activated. An electric water solenoid is energized allowing the flow of water to the hood duct and plenum through the self-cleaning hood spray bar manifold. Simultaneously, a second water solenoid is energized and allows the flow of water to the appliances below the hood. Surfactant is continually injected into the water stream to help suppress the fire.

Once the fire system is activated, a “fire system activated” light is illuminated on the CORE control panel and an audible alarm sounds. All gas and electric appliances under the hood are interlocked to shut off. This is achieved via a gas valve relay and/or a shunt trip breaker output (both integral features of CORE). A timer is also energized upon fire system activation; the timer is set for 30 minutes and keeps the water spray system running for a minimum of 30 minutes. This is necessary to help extinguish all remaining duct fire potential and to continually cool the system and appliances.

The fire system is electrically operated and thus requires a battery backup system. In the event of a loss of electrical power, all gas and electric appliances under the hood are electrically interlocked to shut off. The battery backup will automatically energize upon a loss of power. The battery backup will monitor the fire system circuit for one day and be able to operate the fire system circuit for a minimum of 30 minutes. Once power is restored, the battery will automatically recharge.