1. Product Name

- AMEREX® Kitchen Protection (KP™) Fire Suppression System:
  - STRIKE™ Control Unit
  - KP Agent Cylinder(s) with Wet Chemical Agent
  - Nozzles
  - Piping
  - Manual Pull Station
  - Linear Heat Detector (LHD)
  - Spot Heat Dectectors (SHDs)
  - Gas Shut-off Valve

2. Manufacturer

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3. Product Description

Basic Use

The KP Restaurant Fire Suppression System is used in commercial kitchens. This fire system is listed with Underwriters Laboratory to the UL 300 standard and complies with NFPA regulations. The KP system is activated either manually with a remote pull station or automatically by fire detection.

Pressurized agent cylinders store wet chemical agent, a low pH, potassium acetate solution that suppresses cooking grease through saponification and cooling. This fire-fighting agent is discharged by a distribution network, which includes piping and nozzles. The nozzles are configured in one of two appliance protection schemes, appliance-specific or the more versatile KP Zone Defense (ZD).

This KP system is equipped with the Strike Electronic Control Unit, the heart of the system, responsible for receiving a fire signal from a fire detector or manual pull station and activating the agent cylinders.

The STRIKE Control Unit is the result of years of rugged mining, transit and military electronics experience. Specifically designed to work with the Amerex KP Restaurant System, the STRIKE control unit can monitor and two separate kitchen protection systems, actuating them either separately or simultaneously.

Unlike traditional restaurant systems, KP with STRIKE utilizes electric components to detect fire with a Linear Heat Detector (LHD) and/or a Spot Heat Detector (SHD). In addition, agent cylinders are actuated electrically with a linear actuator. Lastly, the manual pull station is operated electrically, so the installer does not have to run steel cable with corner pulleys.

In the United Sates of America fire codes require restaurant fire suppression systems to be installed into ventilation hoods above any appliances that produce grease-laden vapors. Furthermore, code requires regular maintenance and inspection of the systems. Therefore, the KP product fits into the building process anytime a commercial kitchen is included in the project.

In summary, the KP restaurant fire suppression system is used to prevent lost revenue, building damage, and even permanent closure, but most importantly it is a life safety product. According to NFPA's *Structure Fire in Eating and Drinking Establishments,* 57 percent of restaurant fires involve cooking equipment.

System Components and Materials

STRIKE Control Unit

The STRIKE Control Unit is an alarm initiating and release unit designed to function without external power, using two non-rechargeable batteries as a primary and secondary (backup) power supply. The unit and batteries are housed within a protective stainless-steel enclosure that can be surface mounted. The enclosure features a hinged, lockable door for internal access.

KP Agent Cylinder(s)

The Amerex KP275, KP375, KP475 & KP600 Agent Cylinder Assemblies are shipped factory filled with Amerex Kitchen Protection Wet Chemical agent. The cylinders are constructed from mild steel, and they are painted silver to resist corrosion and blend seamlessly into the commercial kitchen environment.

The cylinders are pressurized with dry nitrogen gas to a pressure of 240 psi (1655 kPa) at 70 degrees F (20 degrees C). The gas charge is the expellant gas which discharges the wet chemical agent through the distributor network. The machined stainless-steel discharge valve is actuated pneumatically by the STRIKE Release Module (SRM) or electrically by a linear actuator.

The Wet Chemical Agent is a special formulated potassium acetate-based solution specifically designed for use on cooking grease and cooking oil fires.

Nozzles

Nozzles are made of chrome-plated brass, and consist of a one piece tip/body, strainer and stainless-steel blowoff cap.

Piping

The distribution pipe is schedule 40 black iron, chrome, or stainless steel pipe. Glavanized pipe is not allowed.

Manual Pull Stations

Manual Pull Stations are used to manually activate the STRIKE Control Unit from a remote location 10–20 feet from the hazard when a fire condition is observed. The Manual Pull Station contains a normally open internal switch that closes and locks when pulled, recording the time and date the system was activated. A Lock Pin and Tamper Seal are provided and prevent accidental pulling of the station.

Linear Heat Detector (LHD)

A LHD is a normally open device that closes when subjected to heat. The device is comprised of two internal coiled spring-loaded conductors that make contact in the event of an overheat or fire condition. LHDs have a temperature set point of 356 degrees F (180 degrees C).

Spot Heat Detectors (SHDs)

SHDs are normally open, self-resetting, contact closure devices. These optional detection devices are configured with four wires allowing supervision of series connected circuitry. The internal contacts of the devices will close upon reaching designed temperature set point parameters.

Gas Shut-off Valve

Gas Shut off valves shall be installed to automatically shut off gas to the cooking appliances upon activation of the Amerex Kitchen Protection System and shall be installed by a licensed gas fitter. The KP restaurant fire system is UL listed to operate with either electric or mechanical gas valves. A gas valve turns off the fuel source whenever the STRIKE Control Unit gives an alarm condition. The gas valve is installed in the gas supply line to the appliance.

Features and Benefits:

- Supervised detection, manual pull and actuation circuits
- Local piezo audible alarm
- Keyed locking access door
- Real time event recording and logging
- No external A/C power required
- Firefighting agent does not corrode stainless steel appliances
- UL 300 Listed and NFPA compliant
- Filled, stored pressure agent cylinders
- Designed for new installation or retrofit
- Appliance-specific or Zone Defense coverage
- Robust manual pull station design reduces unwanted discharges
- Compatible with building fire alarm panels and other auxiliary devices
- Provides dedicated interface to supervised auxiliary remote FACP for fire and trouble indication
- Windows-based programming software
- Provides gas shut down via UL listed mechanical or electric gas valve
- Provides electrical controls for ventilation control and electrical shutdowns
- Trouble indication LED and annunciation
- Provides 24/7/365 fire detection, actuation, supervision and notification for any commercial cooking operation. capability for restaurants
- Single- and dual-hazard zone detection and suppression
- Allows for remote FACP fire system initiating input

Sizes/Dimensions/Weights

See Table 1.

Accessories/Options

Relay Module

Relay Modules are used to control external 110-220 VAC devices in the event of an alarm condition or loss of power. These modules are controlled by and connected to the STRIKE Control Unit and contain electrical terminals for AC power and external devices. These modules are surface mounted to a wall and consist of a stainless-steel housing with a hinged cover for internal access. In the event of a STRIKE Control Unit alarm condition or AC power failure, this relay will electrically close the associated gas valve, preventing gas flow to a connected appliance.

Cylinder Mounting Bracket

The Agent Cylinder Mounting Bracket is used to secure the Models KP275, KP375, KP475 & KP600 Agent Cylinder Assemblies to the mounting surface. The Cylinder Mounting Bracket is made from thick formed steel and painted black to resist corrosion.

STRIKE Releasing Module (SRM)

The SRM is used in conjunction with the STRIKE Control Unit and is designed for actuation networks with more than two agent cylinders and/or installations using a mechanical gas valve, and it is capable of actuating up to 10 agent cylinders. The STRIKE Releasing Module houses one Nitrogen Actuation Cylinder, which pneumatically activates the agent cylinder with nitrogen gas pressure. The Actuation Cylinder is charged to 1800 PSI (12410Kpa) at 70 degrees F (21 degrees C).

Linear Actuator

The Linear Actuator is a device that, when eclectically activated by the STRIKE control unit, extends a metal shaft to mechanically open an agent cylinder with an installed electric control head.

Models/Types

AMEREX offers two appliance protection methods to meet commercial kitchen needs.

Appliance-Specific

This coverage offers appliance-specific coverage that generally offers lower initial cost. The KP Appliance Specific coverage is the ideal choice in commercial kitchens where appliance location is fixed, such as in fast food chains, casual dining, cruise ships, and school cafeterias.

Zone Defense

The Zone Defense coverage method adds greater flexibility by allowing kitchen appliances to be reconfigured without having to move system discharge nozzles. Because of the adaptability of the ZD coverage, it is the most cost-effective choice over the life of the system.

Safety Data Sheet (SDS)

The SDS for this wet chemical agent is located **here.**

Product Limitations

The Amerex KP Restaurant Fire Suppression System shall be capable of operating at temperatures not below 32 degrees F (0 degrees C) not above 120 degrees F (49 degrees C).

4. Technical Data

Applicable Standards

UL International

- **UL listed GOAS.EX4658** Wet-chemical-solution Extinguishing System Units, listed **here**
- **UL 300** Standard for Fire Testing of Fire Extinguishing Systems for Protection of Commercial Cooking Equipment

Other technical information available from Amerex.

5. Installation

Installation instructions are provided in the manufacturer-supplied manual: ***Design, Installation, Maintenance & Recharge***

Manual No. 20150 Amerex Restaurant Fire Suppression System.

Please contact Amerex Corporation to obtain this manual.

6. Availability and Cost

Please contact Amerex Corporation for pricing and availability.

7. Warranty

The system components have a limited warranty of three years from the date of delivery against manufacturer's defect in material and workmanship.

8. Maintenance

Maintenance is provided in the manufacturer-supplied manual: ***Design, Installation, Maintenance & Recharge Manual No. 20150 Amerex Restaurant Fire Suppression System.***

Please contact Amerex Corporation to obtain this manual.

9. Technical Services

10. Filing Systems

- ConstructConnect
- Additional product information is available from the manufacturer upon request

Table 1—Agent Cylinder Sizes and Weights

Model	Height (in inches)	Diameter (in inches)	Weight (full) (in pounds)	Capacity (in gallons)
KP275	235⁄8	9	551⁄4	2.75
KP375	2413⁄16	10	641⁄2	3.75
KP475	2913⁄16	10	801⁄4	4.8
KP600	27.59	12	114	6.14