Tesla
Electrical Components

MODEL SM-PHE
AC PHOTOELECTRIC SMOKE & FIRE ALARM
WITH DC BATTERY BACKUP

BACKGROUND

There are two different types of smoke alarms currently in general use: the ionization smoke alarm and the photoelectric smoke alarm. While both types of alarms are suitable for general residential use, an ionization smoke alarm will normally response faster to fast flaming fires while a photo-electric smoke alarm may be more sensitive in detecting slow smoldering fires. Because home fires develop in different ways and are often unpredictable in their growth, it is impossible to predict which type of alarm will provide the earliest warning. For best home protection install at least one photoelectric and one ionization smoke alarm.

RECOMMENDED LOCATION OF ALARMS

* Locate the first smoke alarm in the immediate area of the bedrooms. Try to protect the exit path as the bedrooms are usually farthest from an exit. If more than one sleeping area exists, locate additional smoke alarms in each sleeping area.
* Locate additional smoke alarms to protect any stairway as stairways act like chimneys for smoke and heat.
* Locate at least one smoke alarm on every floor level.
* Locate a smoke alarm in any area where a smoker sleeps or where electrical appliances are operated in sleeping areas.
* Smoke, heat and other combustion products rise to the ceiling and spread horizontally. Mounting the smoke alarm in the ceiling in the center of the room places it closest to all points in the room. Ceiling mounting is preferred in ordinary residential construction. However, in mobile homes, wall mounting on an inside partition is preferred to avoid the thermal barrier that may form at the ceiling.
* When mounting smoke alarm on the ceiling, locate it a minimum of 10cm (4 inches) from a side wall and 0.61 meters (2 feet) from any inside corner (see Diagram A).

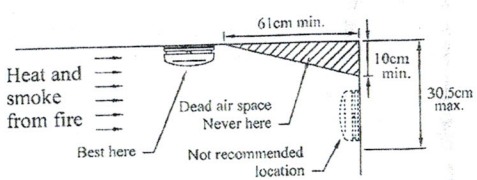
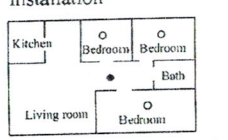


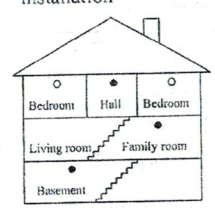
DIAGRAM A

Typical SINGLE floor installation



● Smoke alarm for minimum protection
○ Recommended smoke alarm for additional protection

Typical MULTIPLE floor installation



AVOID THESE LOCATIONS

DO NOT LOCATE YOUR SMOKE ALARM AT:

* the kitchen - smoke from cooking might cause an unwanted alarm.
* the garage - products of combustion are present when you start your automobile.
* the front of forced air ducts used for heating and air conditioning.
* the peak of an "A" frame type of ceiling.
* areas where temperatures may fall below 0°C or rise above 40°C.
* areas where relative humidity may be out from 10% to 90%.
* a vertical wall - if it is really needed, locate it at minimum of 10cm (4 inches) and a maximum of 30.5cm (12 inches) below the ceiling and at least 0.61 meters (2 feet) from any corner (see Diagram A).
* not mount a smoke alarm at the ceiling in a caravan or similar rooms. The shining sun is heating the ceiling and the air at the upper part of the room. Hot air at the ceiling prevents that smoke from a dangerous smolder process can reaches the smoke detector.

WARNING! Incorrect mounting orientation and non-recommended location may result the decrease in operational effectiveness.

DEVELOP AND PRACTICE A PLAN OF ESCAPE

BASICS OF ESCAPE PLAN

* Make a floor plan indicating all doors and windows and at least two escape routes from each room. Second story windows may need a rope or chain ladder.
* Have a family meeting and discuss your escape plan, showing everyone what to do in case of fire.
* Determine a place outside your home where all of you can meet if a fire occurs.
* Familiarize everyone with the sound of the smoke alarm and train them to leave your home when they hear the sound.
* Identify children's bedrooms with red stickers placed in the upper left corner of the windows for easy identification.
* Practice a fire drill at least six months. Practice allows you to test your plan before an emergency. You may not be able to reach your children. It is important they know what to do.

WHAT TO DO WHEN THE ALARM SOUNDS

* Leave immediately by your plan of escape. Every second counts, so don't waste time getting dressed or picking up valuables.
* In leaving, don't open any inside door without first feeling its surface. If hot, or if you see smoke seeping through cracks, don't open that door! Instead, use your alternate exit. If inside door is cool, place your shoulder against it, open it slightly and be ready to slam it shut if heat and smoke rush in.
* Stay close to the floor if air is smoky. Breathe shallowly through a cloth, wet if possible.
* Once outside, go to your selected meeting place and make sure everyone is there.
* Call the fire department from your neighbor's home - not from yours.
* Don't return to your home until fire officials say that it is all right to do so.

FALSE ALARMS

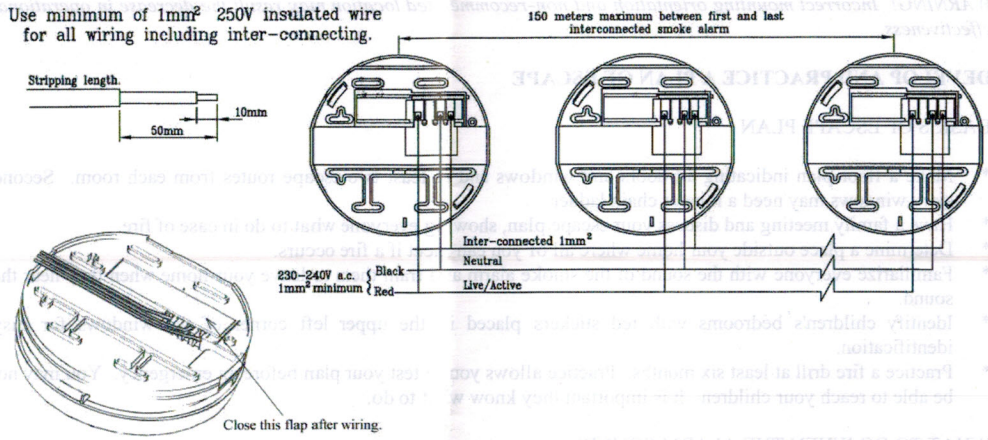
The smoke alarm is designed to minimize false alarms. Smoking will not normally set off the alarm unless smoke is blown directly into the smoke alarm. Combustion particles from cooking may set off the alarm if the smoke alarm is located close to the kitchen cooking surface. Large quantities of combustion particles are generated from spills or broiling.
If the smoke alarm does sound, check for fires first. If a fire is discovered, get out and call the fire department. If no fire is present, check to see if one of the reasons listed above may have caused the alarm.

INSTALLATION AND MOUNTING INFORMATION

The alarm must be installed by Licensed Electrician only!

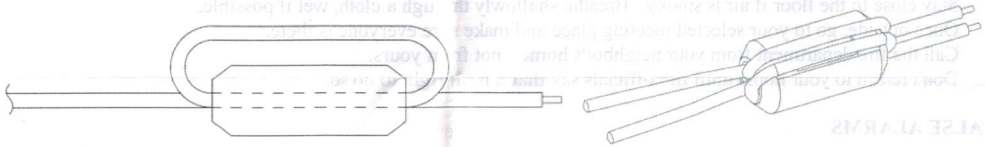
The smoke alarm will function correctly either as a stand-alone alarm or inter-connected.
All inter-connected smoke alarms must be supplied from a single power circuit.
Do not connect Inter-connect wire to Live or Neutral.
Do not connect the smoke alarm to a circuit protected by a Residual Current Device.
Connect and powered the smoke alarm with 220-240VAC only. The smoke alarm is suitable for use with non-pure sinusoidal power sources (e.g. power derived from square-wave invertors)

Solid wires with 1mm^2 (or larger) cross-section area are recommended for power supply and inter-connection. Strip the Live, Neutral, and Inter-connect wires back to the length of 10mm. Connect the wires to the terminals in the wall mount and ensure the screws are fully tightened. The colors of wires are: Live=Brown; Neutral=Blue, Inter-connect=White. The smoke alarms can be inter-connected as many as 20 units in series. **Check the connections carefully before closing the junction box. Incorrect connection may damage the unit.**



Your smoke alarm is designed for easy mounting on wall or ceiling. Ideally, this smoke alarm is designed for mounting on standard flush box (84mm mounting centers). Place the mounting bracket on it and locate the screw-holes of flush box. Then attach the bracket directly on it with the screws provided. Then, check the mounting firmly.

For electrical noise elimination, a ferrite bead is supplied with this smoke alarm. Two mains wires need reserve about 18cm length for winding the bead with 1 turn as shown in figures.



The bead should be installed less than 15cm from the screwed terminals. Earth loop and interconnection wire are not necessary with any bead.

For mounting without standard flush box, place the mounting bracket on the wall or ceiling surface, use the pencil to mark down two drill-holes location on it. Usually, the distance between two centers of drill-holes should be 84mm. For wooden surface, attach the bracket directly on it with the screws provided. For the concrete surface or masonry, use drilling machine to drill these two holes on the surface firstly. The sizes of holes are around 5.5mm diameter and 25-30mm deep. Insert two dowels into the drilled holes before attached the bracket. Then, check the mounting firmly.

Insert a 9VDC battery. Fold the alarm to wall mount tightly. **The alarm cannot be hooked if the battery is not installed properly.**

Green LED will be brightened. Press TEST button to check the alarms work. Inter-connected alarms must also be checked. **Do not leave installation until the alarms have been checked for correct operation.**

During power up the unit, several 'beep' alarming may happen. It is normal operation for the unit.

OPERATION, TESTING & MAINTENANCE

OPERATION

The smoke alarm is operating once the power is connected and turned on (the battery must also be installed). When products of combustion are sensed, the unit sounds a loud alarm which continues until the air is cleared.

FALSE ALARM "SILENCE" CONTROL

Units with the 'silence' feature have the capability of temporarily reducing the sensitivity of the alarm circuit for approximately 8 minutes. This feature is to be used only when a known alarm condition such as smoke from cooking activates the smoke alarm. The smoke alarm is deactivated by pushing the hush button on the smoke alarm once. The smoke alarm will automatically reduce sensitivity and light up the red indicator for approximately 8 minutes to indicate the alarm is in the temporary silent condition. It will reactivate after such 8 minutes and sound the alarm if particles of combustion are still present. The "silence" feature may be used repeatedly until the air has cleared.

CAUTION: Before using the alarm "silence" feature, identify the source of smoke and be certain that safe conditions exist.

TESTING

Test by pressing the test button on the smoke alarm cover for at least four seconds, until the alarm sounds. It activates the self-test program and the alarm sounds if all electronic circuitry, horn and battery are working. When any smoke alarm is tested, all interconnected units should sound an alarm. **Highly recommend to test the alarm weekly to assure proper operation**. In case of no alarm sounds on test, and/ or the unit has a defective battery, then try to replace the battery by a new one. You can also test the alarm by blowing smoke into the unit.

PLEASE DISPOSE OFF THE BAD OR DISCHARGED BATTERIES PROPERLY TO PROTECT OUR ENVIRONMENT.

MAINTENANCE

Under dusty conditions, a vacuum hose may be used to clear the dust through the side opening. It is recommended to clean the alarm monthly to keep best performance. Normally, the alarm can be operated up to 10 years without replacement. See the replacing date on the bottom of alarm unit. If the smoke alarm fails to operate correctly, the advice of the supplier or manufacturer be sought.

BATTERY REPLACEMENT

The power of this smoke alarm is backup by one 9VDC battery. The battery should last for at least one year under normal operating conditions. The smoke alarm has a low battery indicator, and audible "chirp". It will operate at 30 - 40 second intervals for a minimum of 30 days. Replace the battery when this indication occurs. Only following 9VDC batteries (available at most drug, hardware or electronic parts stores) may be used for replacement.

Carbon-Zinc Type:	Eveready #1222; Gold Peak #1604P; Gold Peak #1604S; Gold Peak #1604G
Alkaline Type:	Energizer #522; Gold Peak #1604A; Duracell #MN1604
Lithium Type:	Ultralife U9VL-J-P; FDK CP-V9J; Gold Peak CR-V9

GOOD SAFETY HABITS

There are situations where a smoke alarm may not be effective in protecting against fire, for instance:

* Smoking in bed;
* Leaving children home alone; and
* Cleaning with flammable liquids, such as gasoline.

ELECTRICAL RATING

MAINS POWER		BACKUP BATTERY	
Operating voltage (Max.):	220-240VAC, 50Hz	Operating voltage (Max.):	9VDC
Operating current (Max.):	40Ma	Operating current (Max.):	20mA
		Battery type:	6F22

DISTRIBUTOR

Tesla Electrical Components
TESLA ELECTRICAL COMPONENTS, 4-8 FERNDELL STREET, SOUTH GRANVILLE. NSW 2142