Intelligent fire sprinkler system

Aim:

A **fire sprinkler** is the part of that discharges water when the effects of a fire have been detected, such as when a predetermined temperature has been reached.

Automatic fire sprinklers operate at a predetermined temperature, utilizing a fusible link, a portion of which melts, or a frangible glass bulb containing liquid which breaks, allowing the plug in the orifice to be pushed out of the orifice by the water pressure in the fire sprinkler piping, resulting in water flow from the orifice. The water stream impacts a deflector, which produces a specific spray pattern designed in support of the goals of the sprinkler type (i.e., control or suppression). Modern sprinkler heads are designed to direct a spray downward. Each individual automatic fire sprinkler operates individually in a fire. Contrary to as often shown in movies, the entire sprinkler system does not activate, unless the system is a special deluge type.

Open orifice sprinklers are only used in water spray systems or deluge sprinklers systems. They are identical to the automatic sprinkler on which they are based, with the heat sensitive operating element removed.

Automatic fire sprinklers utilizing frangible bulbs follow a standardized color coding convention indicating their operating temperature. Activation temperatures correspond to the type of hazard against which the sprinkler system protects. Residential occupancies are provided with a special type of fast response sprinkler with the unique goal of life safety.

Maximum Ceiling Temperature	Temperature Rating	Temperature Classification
100°F / 38°C	135-170°F / 57-77°C	Ordinary
150°F / 66°C	175-225°F / 79-107°C	Intermediate
225°F / 107°C	250-300°F / 121-149°C	High
300°F / 149°C	325-375°F / 163-191°C	Extra High

375°F / 191°C	400-475°F / 204-246°C	Very Extra High
475°F / 246°C	500-575°F / 260-302°C	Ultra High
625°F / 329°C	650°F / 343°C	Ultra High

Sprinkler System Benefits

Fire sprinklers are most effective during the fire's initial flame growth stage. A properly selected sprinkler will detect the fire's heat, initiate alarm and begin suppression within moments after flames appear. In most instances sprinklers will control fire advancement within a few minutes of their activation. This will in turn result in significantly less damage than otherwise would happen without sprinklers.

Sprinkler systems offer several benefits to building owners, operators, and occupants. These benefits include:

Immediate identification and control of a developing fire.

Sprinkler systems respond at all times, including periods of low occupancy. Control is generally instantaneous.

Immediate alert.

In conjunction with the building fire alarm system, automatic sprinkler systems will notify occupants and emergency response personnel of the developing fire.

Reduced heat and smoke damage.

Significantly less heat and smoke will be generated when the fire is extinguished at an early stage.

Enhanced life safety.

Staff, visitors and fire fighters will be subject to less danger when fire growth is checked.

Design flexibility.

Egress route and fire/smoke barrier placement becomes less restrictive since early fire control minimizes demand on these systems. Greater utilization of exhibition and assembly spaces is usually a benefit.

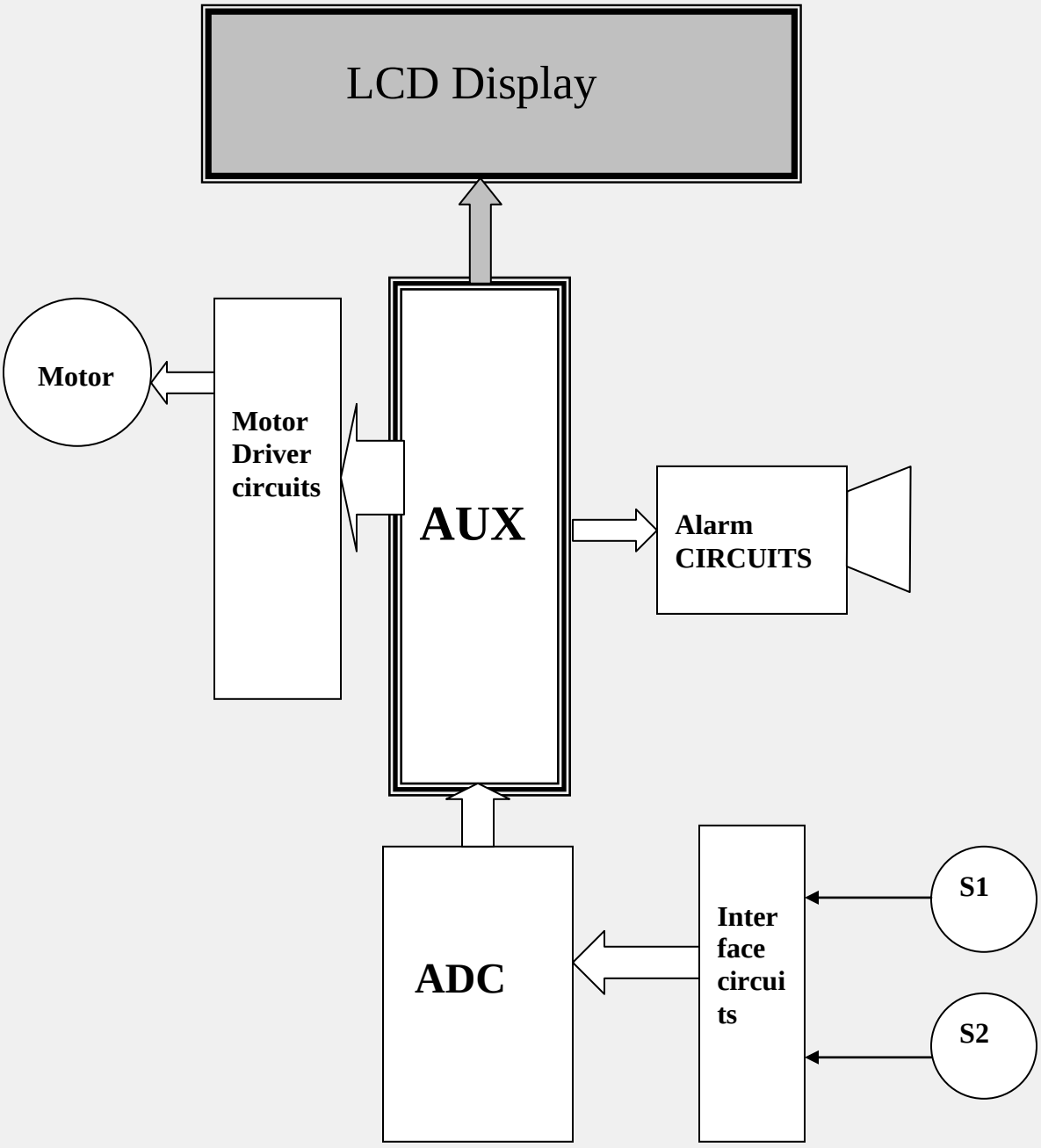
Enhanced Security.

A sprinkler controlled fire decreases demand on security forces, minimizing intrusion opportunities.

Decreased insurance expenditure.

Sprinkler controlled fires are less damaging than fires in non-sprinklered buildings. This results in lower insurance reimbursements. Insurance underwriters will usually offer reduced premiums in sprinkler protected properties which can save a large amount of capital. This is especially important when funds are limited.

These benefits should be considered when deciding on the selection of automatic fire sprinkler



Embedded sensor controller: This system will sense fire and find the angle of the place, then it spray through Motor and it will give the alarm.

It consists of all sensor modules. To receive and send the data from the Embedded Server controller Machine through RF Communication using wireless mode.