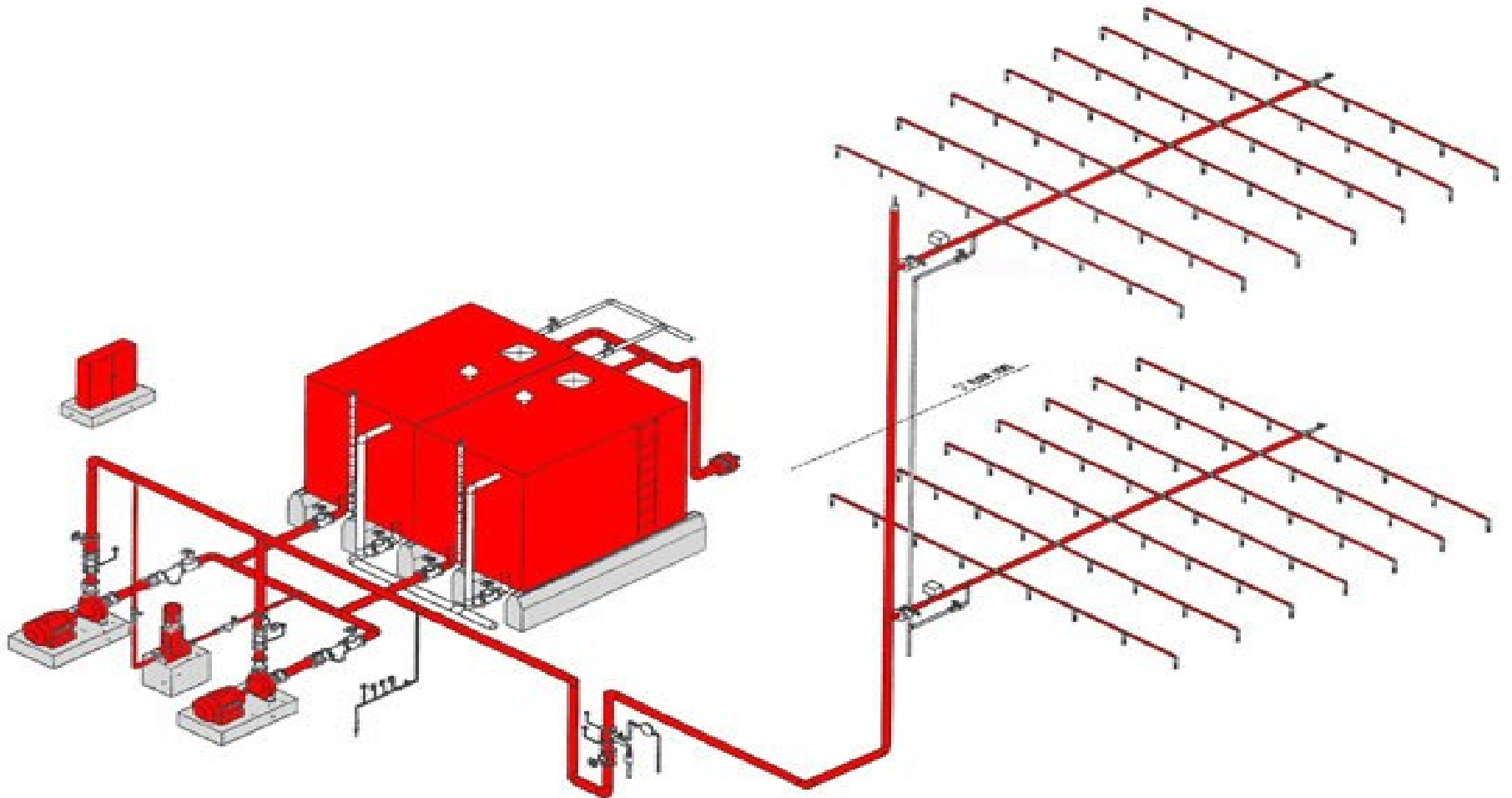
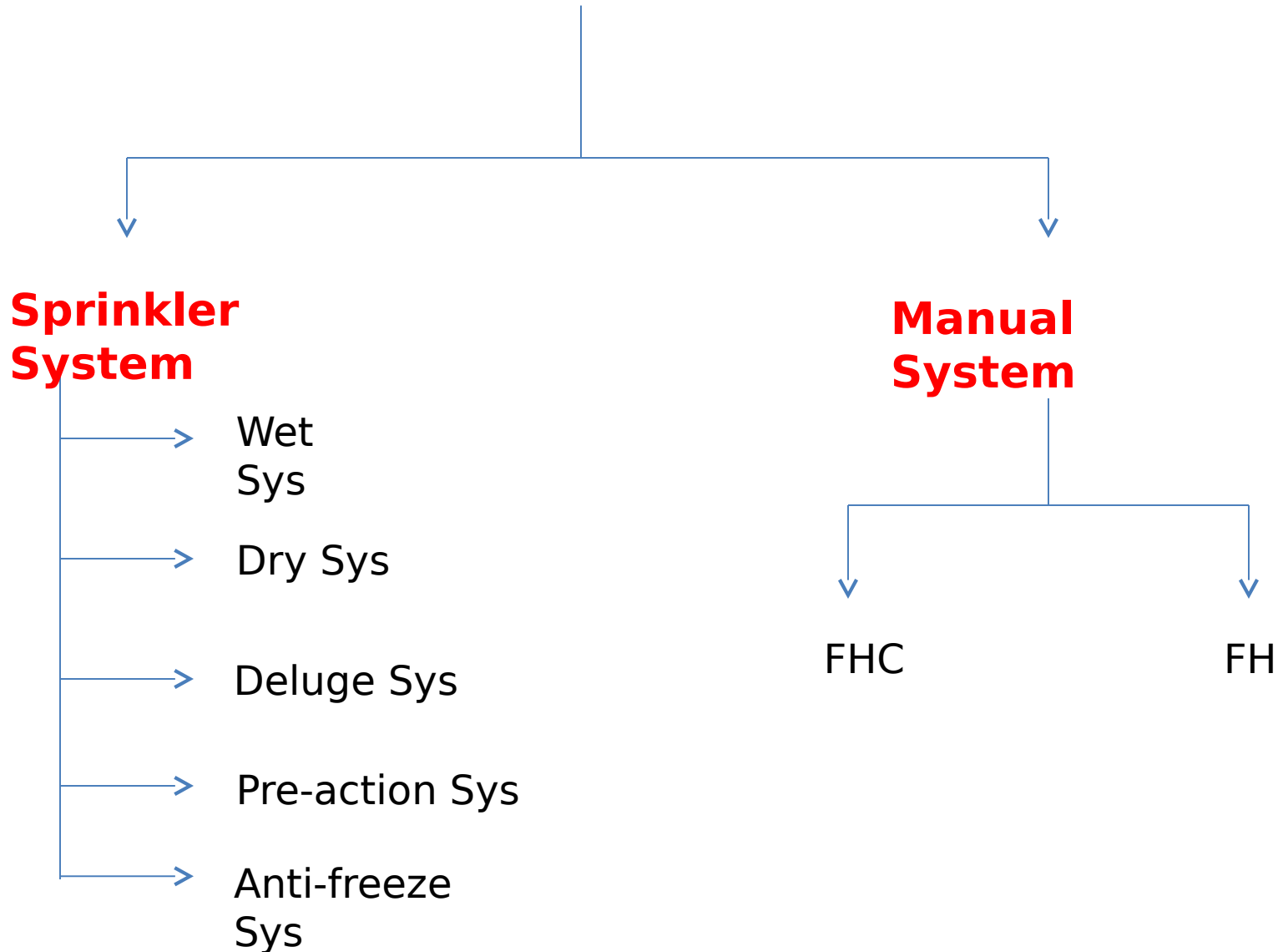


Automatic Water System component

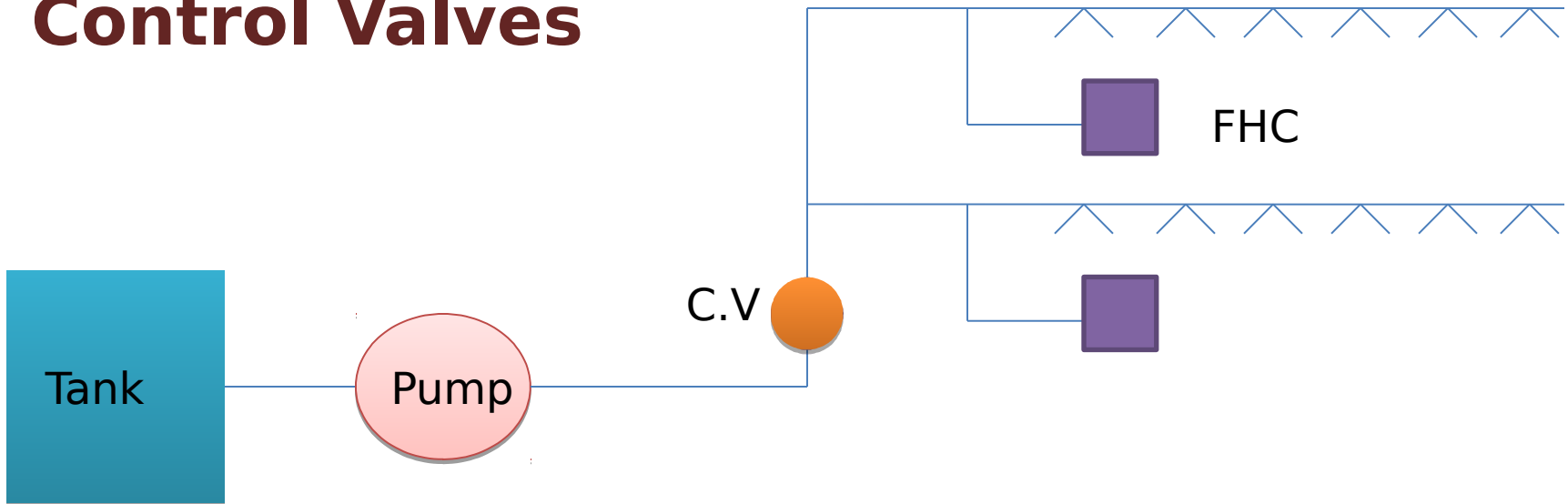


Water System



Main Components of Water Sys.

- **Water Tank**
- **Fire Pump**
- **Pipes, Fittings and Valves**
- **Discharge Devices (SPK, FHC,)** SPKs
- **Control Valves**



SPRINKLERS

- Function
- Components

1. Deflector

2. Threaded end + Frame

3. Cap or Plug

4. Sensing Element →

Glass
Bulb

Fusible Link



Theory of Operation

Fusible Link
Type

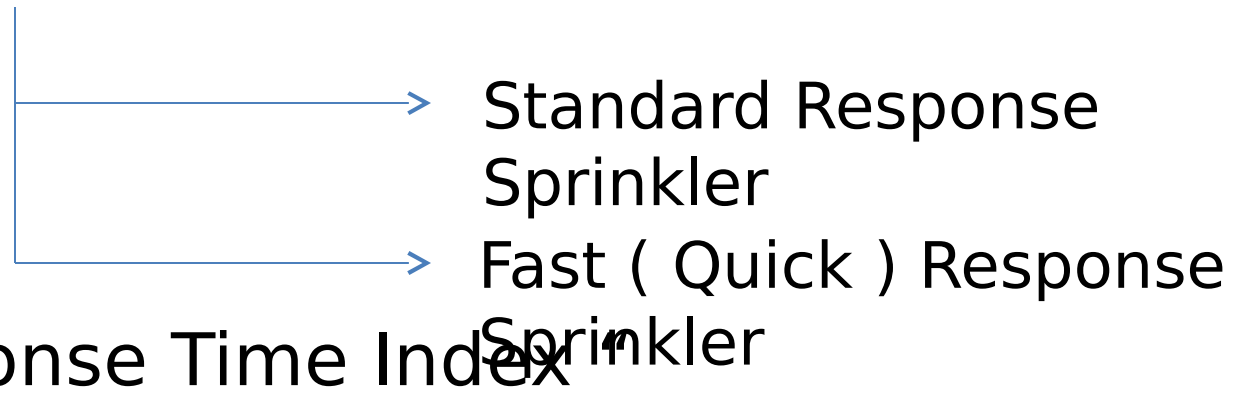


Glass Bulb
Type



Sprinkler Characteristics

1. Thermal Sensitivity



RTI “ Response Time Index ”

When, $RTI = 50 (ms)^{0.5}$ “Fast Resp. ”

$RTI \geq 80 (ms)^{0.5}$ “Standard

Resp. ”

Sprinkler Characteristics

2. Temperature Rating

Maximum Ceiling Temperature		Sprinkler Temperature Rating		Temperature Classification	Color Code	Glass Bulb Color
°F	°C	°F	°C			
100	38	135-170	57-77	Ordinary	Uncolored or black	Orange or red
150	66	175-225	79-107	Intermediate	White	Yellow or green
225	107	250-300	121-149	High	Blue	Blue
300	149	325-375	163-191	Extra high	Red	Purple
375	191	400-475	204-246	Very extra high	Green	Black
475	246	500-575	260-302	Ultra high	Orange	Black
625	329	600	343	Ultra high	Orange	Black



200°



155°



175°



250°



325°



325°



400°



500°



650°



?

3. Orifice Size (K-Factor)

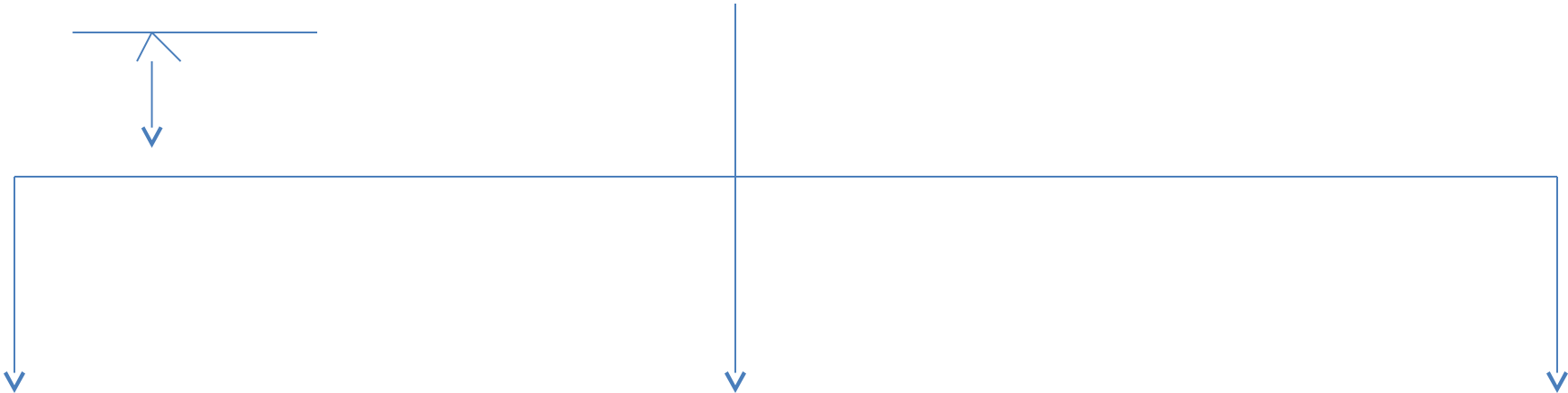
$$Q_{\text{sprinkler}} = K \sqrt{P} \quad K *$$

K-Factor	Orifice Size
5.6	"1/2
8	"3/4
19 28	"1 →

Celling above 18m	Celling up to 9 m- 18m	Celling up to 9 m	Height
25.2	8	5.6	K-Factor

4. Installation Orientation

Types



Pendent Type



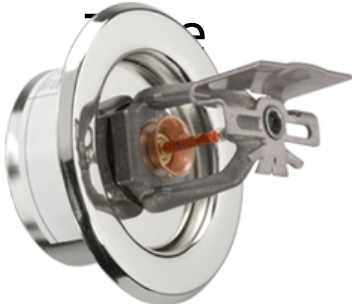
TUNA®



UP-Right Type



Side Wall Type



Sprinkler

- **Pendent Type**

1. Concealed Type



2. Recessed Type



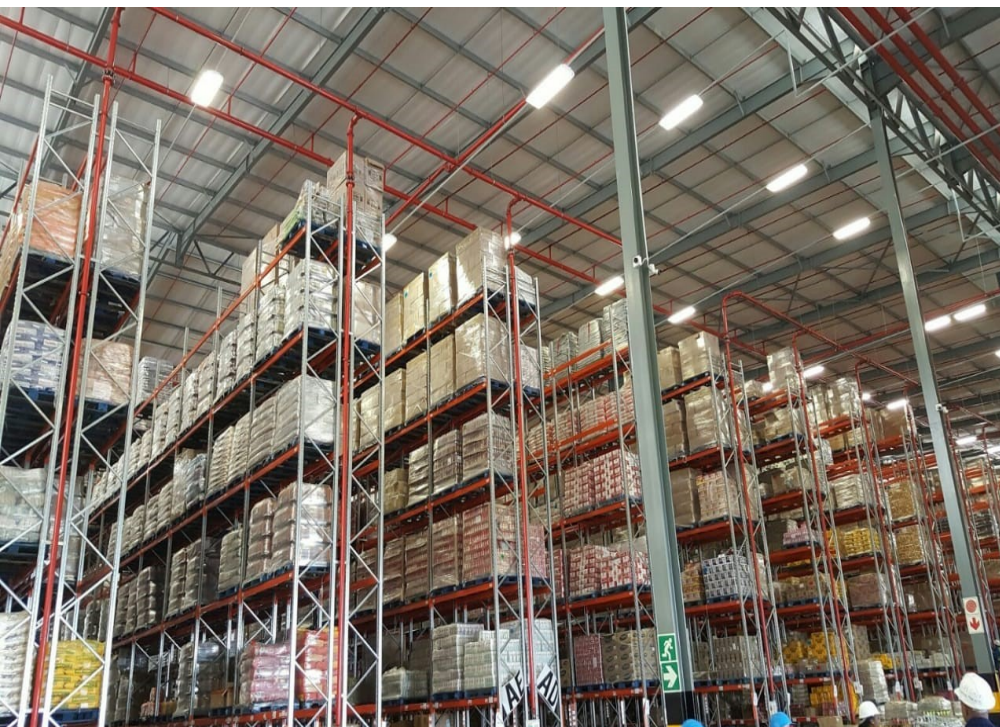
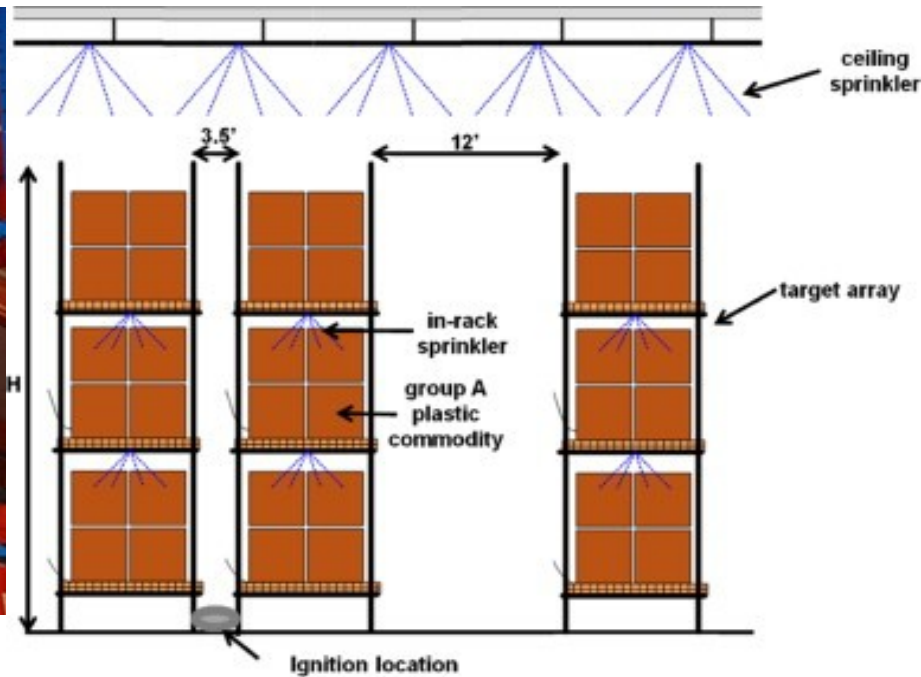
3. Institutional Sprinkler



Special Service Condition

1. Corrosion Resistance SPK
2. Dry SPK
3. Open SPK
4. Spray SPK
5. In-Rack SPK
6. Early Suppression fast Response SPK (ESFR)
7. Control Mode Specific Applications







Example

1. Standard Response SPK
2. Glass Bulb Type
3. Pendant Type SPK
4. Chrome Plate
5. Temp. Rating 68 °c
6. 1/2 " Orifice Size K-Fact
7. Approved Organization
(UL, ULC, FM,)



Stock of Spare SPK

No. of Spare SPKs	.No. of SPKs in Sys
6	300 >
12	1000 > & 300 =<
24	1000 <

Technical Data of SPK

- **SSU** Standard SPK
UP-Right
- **SSP** Standard SPK
Pendent

- **VSW** Vertical Side wall
SPK
- **HS** Side
Wa

