



RIMSEAL

FIRE PROTECTION SYSTEM
FOR FLOATING ROOF TANK



FITECH

EQUIPMENTS (I) PVT. LTD.

Fire Protection & Security System

RIMSEAL FIRE PROTECTION SYSTEM FOR FLOATING ROOF TANK WITH LINEAR HEAT HOLLOW METALLIC TUBE DETECTOR TECHNOLOGY

INTRODUCTION

Rim Seal fire protection system is designed to detect and extinguish fire in the Rim Seal area of the Floating Roof Tank at the incipient stage. The system is fully automated in operation and uses the latest state of the art technology based on **Hollow Metallic Tube** for early detection.

SYSTEM DESCRIPTION

The Entire System Consists of:

- Hollow Metallic Tube linear heat detection system
- Fire alarm panel with provision for graphics, SCADA & event logging
- Foam based fire suppression system

The System is designed as per **OSID 116/117** requirements meeting their latest specifications & **NFPA** guidelines for foam application.

LINEAR HEAT DETECTION SYSTEM

Electro - pneumatic linear fire / overheat detector (**FM** approved) uses special signal logic algorithms, which analyses the rate of rise in temperature within the Rim Seal area to confirm the presence of a fire or overheating.

The detector senses the fire, using stainless steel (titanium added) tubing routed to provide optimal coverage and monitoring over a circumferential area of tank roof.

The detector unit is housed in an ex-proof junction box having **PESO** approval.

Highly accurate & sensitive systems uses two different detection mechanisms: (a) direct & (b) indirect exposure to fire.

The electronic detector's heat sensitivity setting can be easily adjusted internally, enabling optimal detection in local conditions. The versatile detector is suitable for site applications in rim seal area and detects any fire in less than 10 seconds of its occurrence.

ALARM SYSTEM

The detector unit provides the alarm output in the form of:

- Volt free relay contacts direct to a fire alarm control panel
- The control panel can be connected to local SCADA system for tank graphics, listing fire & fault conditions
- The system has a facility of unlimited event logging

FOAM BASED SUPPRESSION SYSTEM

The fire suppression system consists of appropriate number of stainless steel foam vessels (modules) with premix foam solution of required capacity, duly pressurised with nitrogen and a piping network along with specially designed stainless steel nozzles of aspirating type, fitted at intervals of 2mtr. approx.

The system design incorporates explosion proof solenoid valve for actuation and canopy for protection of the module from heat, rain & sun.

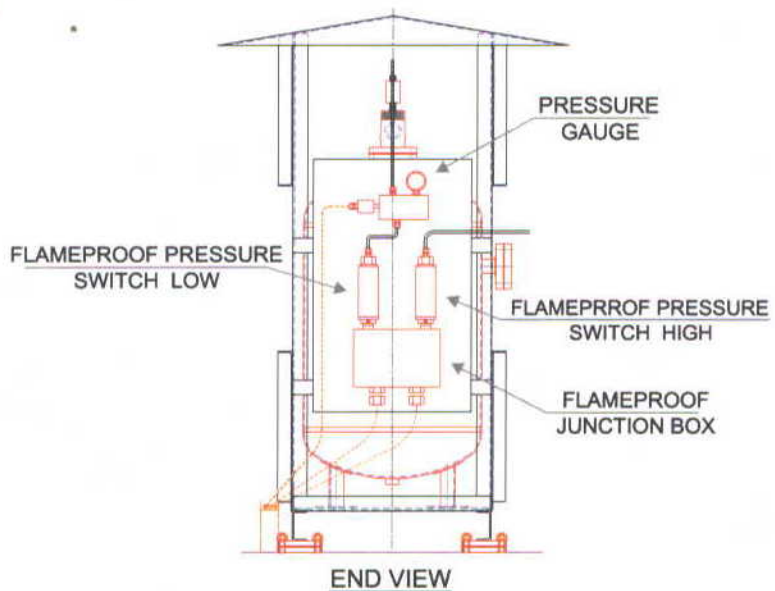
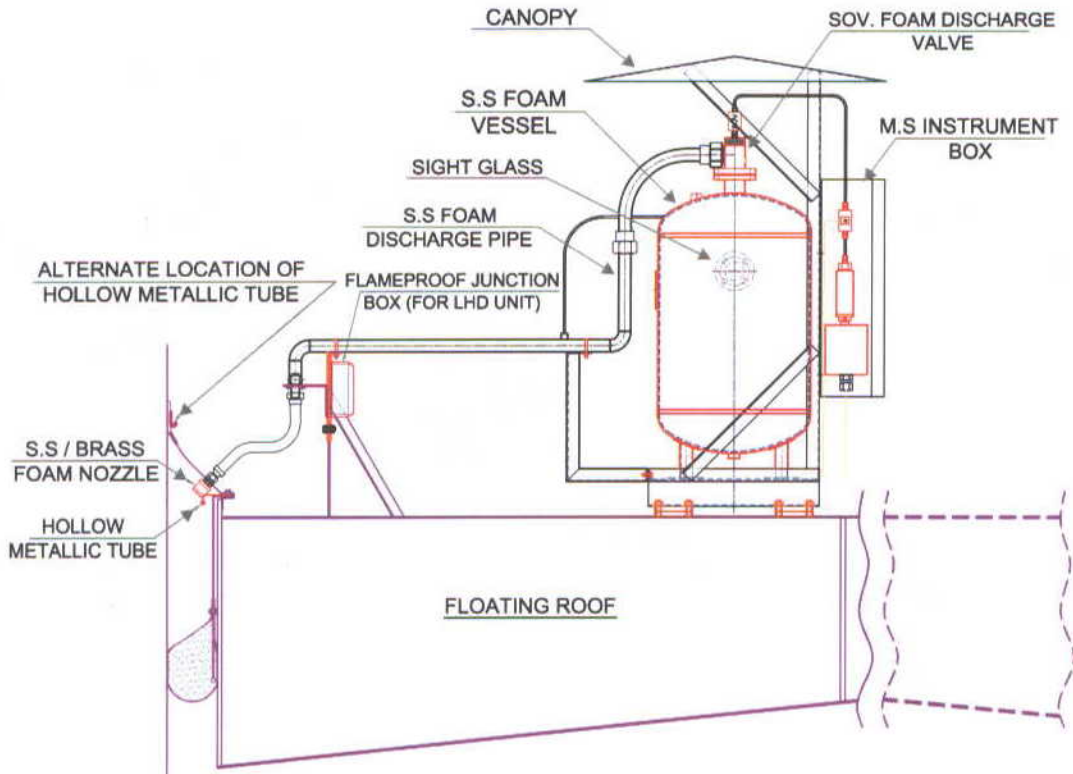
PRINCIPLE OF OPERATION

In the event of fire, the linear heat detection system detects the fire in less than 10 seconds & gives an annunciation in the panel. Simultaneously, the signal is used to automatically actuate the solenoid valve fitted on the foam module which is in turn mounted on the floating roof tank.

With the operation of the foam valve, foam is discharged into the rim seal area through aspirating nozzles fitted on the pipe network, which extinguishes the fire at the incipient stage.

ADVANTAGES

- **Fast Detection** - detection in less than 10 seconds & instant extinguishing of fire at the incipient stage which minimises damage & injuries
- **Distant Sensing** - identifies fire occurring at a considerable distance from sensor tubing
- **Customizable Sensitivity** - field adjustable system can be adjusted to the optimal sensitivity on site
- **Economical** - no wear & tear & hence less maintenance and low power consumption
- Easy installation
- Durable & flexible stainless steel tubing can be routed to cover rim seal circumferential area
- Robust structure & durability
- Non pressurised system better tolerates grime, dirt & extreme environmental conditions
- Hollow Metallic stainless steel tube life is in excess of 15 years
- Sensor immune to RFI & Electromagnetic fields
- Unlimited event logging facility
- BIT (Built-In-Test) integrity monitoring of the circuit and Stainless Steel Tube
- Detector calibrated to accommodate wide climatic conditions from sub zero to high tropical temperatures
- Simple in construction & no need of software licences for lifetime
- Stainless Steel Tube can withstand high temperatures upto 1100^o c
- Automatically resets by itself as the temperature comes down
- Absolutely zero down time




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