

Smart Overspill Detector

The Smart Overspill Detector is an overspill prevention device which is designed to help in preventing overflow of liquids from the loading tankers and rail wagons during loading operation.

- Prevents Overspill during loading operation of any hazardous/ non-hazardous liquid
- Also suitable for wide range of viscous liquids
- Overspill detection sensor is integral part of the nozzle of the loading arm
- Reliable & drift free operation
- No moving parts
- No requirement of calibration
- Free from maintenance

The Smart Overspill Detector is designed to prevent overflow of liquid from the tankers and rail wagons during loading operation. This is done with the help of special level sensor which is designed around a capacitance principle for the level detection. The media acts as a virtual capacitor and depends on the di-electric value of the media.

The sensor is fitted in the nozzle of the loading arm. It is fitted in such a way that the rate of flow of product is unaffected by the mounting arrangement in the nozzle. The nozzle height in the tanker while loading is so adjusted as to ensure that the sensor mounted in the nozzle attains the desired safe product level in the tanker. The sensor does not trigger false alarm due to product flow through the loading arm. It only triggers when the liquid level reaches the sensor before it overflows. Minor variations in the heights of liquid tanks are compensated by an optional adjustable clamping arrangement.

Intrinsic safe circuit/ certified barrier is used to provide intrinsic safe operation to the system. In this way the sensor can be directly mounted in the hazardous area Zone 0, Gas group IIC. The IS circuit is mounted in the certified flameproof junction box (monitor unit or MU) to be used in a hazardous area Zone 1, Gas group IIA and IIB. The sensor leads are terminated in a weatherproof Terminating Unit (TU) with the help of optional flexible conduits and cable glands. A suitable armored cable of standard length can be connected between the TU & MU. The Monitor unit generates an overspill permissive signal that can be connected to the batch controller to stop the loading operation in case of overflow. For non-TA applications, the permissive signal can be connected to trigger a relay through which a pump, valve or any associated device can be de-energized to prevent the overflow. Alternately this signal can also be connected to a PLC of alarm enunciator to provide an interface with other systems.

Specifications:

Model	Smart Overspill Detector
Working Principle	Detects the level of fluid at specified limit and provide the indication to facilitate appropriate action
Indicating Lamps	Three Nos. LED Cluster lamps <ul style="list-style-type: none"> • Red (Overspill) • Amber (Power ON) • Green (No Spill)
Protection Class	Sensor : Ex ia, Gr. IIC, IP67 Terminating Unit (TU) : IP65 Monitor Unit (MU) : Exd, Gr. IIA & IIB, IP65
Temperature Class (MU)	T6
Ingress Protection	IP 65
Max. Media Temperature	85°C
Max. Ambient Temperature	60°C
Nozzle MOC / Dia / Length	Aluminum / 3" OD / Length 600mm (from top surface of the flange)
Sensor Body	SS304 (Std.) / SS316L (Upon request)
Fail Safe	Yes (Interlock output in case of lead breakage or power fail)
Supply Voltage (MU) Output Characteristics	24 V DC \pm 10%, 10VA (a) Open Collector, Active low, -Vdc + 1.5V (b) Potential free relay, Contact rating 230V, 5A, 100 VA (AC) / 230V, 5A, 100 Watt (DC)
Mechanical Dimensions (MU)	320mm(H) x 220mm(W) x 175mm(D) (Mounting holes provided at 130 x 240mm apart)

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