

INTRODUCTION TO SURESENSE DUAL FOAM

The Hycontrol SureSense Dual Foam is an advanced purpose designed Dual Foam Controller unit intended for use in a permanent installation to sense and control foam in a reactor or other containment area and should only be used with a Hycontrol Foam Sensor to achieve the operation described. The principle parts of a system are as follows:

- 1 x Dual Foam Sensor or 2 x SureSense Sensors
- Interconnecting Cable
- Dual Foam Controller Unit (safe area)

There are a variety of sizes and styles of Foam Sensor. They are all designed for hygienic applications and will operate in the presence of high levels of fouling (i.e. surface coating). The Controller Unit can be used as a transmitter to signal to a process controller or alarm via volt free contacts. The controller can also be used to control a pump or valve directly to dose antifoam by means of an additional contact closure. The Dual Foam Controller is designed to be wall mounting and is IP65. This controller has two measurement channels and can be used for two separate sensors. Alternatively it can be connected to one Dual Foam sensor which has low & high measuring points in one assembly. The lower sensor is often used to control foam and the upper one as a high alarm. The Dual Foam and SureSense sensors are simple apparatus and can be used as part of an Intrinsically Safe (I.S.) system if used with MTL zener barriers type 7756 or 7755 but the controller must be installed in a safe area. This is one of a series of products designed and manufactured by Hycontrol for the sensing and control of foam.

PRINCIPLE OF OPERATION

The Hycontrol Foam Sensor operates by passing a small alternating current through the foam under test, and uses this to measure impedance. The impedance of the material being sensed is used to determine when foam is present. The Sensor is designed with one or two pairs of electrodes. One is used to sense foam while the other is designed to supply any leakage currents which pass along the body of the Sensor. If the Sensor is covered with a fouling layer deposited on it, then a leakage current must pass through that layer and down to earth. This leakage may be measured as part of the sensing current and consequently cause false readings. In the case of serious fouling this could cause a false alarm and an unnecessary intervention to the process. In the Hycontrol design the guard electrode supplies all the leakage current leaving the sense electrode to sense only foam. The guard electrode effectively isolates the sensor from the interference caused by fouling. This gives the Sensor the ability to continue working reliably even in conditions of extreme fouling. The controller energizes the sensor and processes the measured data. It discriminates between foam spurious events such as splashing. It also determines when foam is present and signals to a process controller or alarm that foam has been detected.