

Use of Conductivity Meters in Determining the Concentration of Foam Firefighting Solution

Description:

AN #: 04_002_04_001
Subcategory: Fire Prevention

Market: Industrial
Product: HI 9033



Whether taking an airplane for a business meeting, vacation or to visit family, many people experience anxiety when the plane takes off and lands, fearing that something can go wrong and a massive fire will result. Every airport has a team of firefighters ready to take action in case of an accident. A chemical foam is used to combat fires. The equipment used to make the foam is called foam proportioning generating system.

As the name of the equipment implies, there is a proportion of foam concentrate mixed with another solution, such as water, to make the foam. The process to generate the foam is to mix these solutions and under pressure, generate the foam to be dispersed. The concentration of the foam concentrate mixed and the right proportion to the foam generating system have to be known in order to optimize the effectiveness. Historically, refractive meters were used to determine the concentrate concentration and the right proportion. The accuracy of the results obtained from a refractometer were in question, so an alternative method was desired. A study by the National Fire Protection Association studied the use of conductivity meters and found that they are an alternative method to be used. The method was incorporated into Federal Aviation Administration (FAA) guidelines.

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Application:

A firefighter contacted Hanna Instruments looking for a portable conductivity meter to be used to monitor the foam concentrate. The major criteria for the customer was that the meter must be rugged to be able withstand the use by a firefighter and it must be easy to use. The recommendation was the **HI 9033**. The HI 9033 is a rugged waterproof portable conductivity meter that is very easy to use with a single point manual calibration. The HI 9033 uses the four-ring potentiometric probe with a built in temperature sensor that allows for an accurate measurement from low to high conductivity solutions. Both are important, since weather varies

by season and the concentrate is much higher in concentration than when it is mixed with the solution. The HI 9033 is the ideal solution for firefighting to ensure that the foam produced will meet any necessary requirements.

