

Application Note

Providing operational wind data using WindSonic and MetStream to the fire service

Reference: AN0058

Introduction

Wind data is vital to any fire service, not only for the indication of which direction a fire could spread or avoiding having fire crews working in a smoke filled environment, but also for general safety when operating extending equipment.

Application

Emergency vehicles come in many forms from police cars, vans, ambulances, fire trucks and fire trucks that have operational ladders. This application note is focussing on those fire trucks with operational extending ladder operations.



Even though most fire truck ladders are only operational to an approximate 30m maximum height, the ladders when extended are vulnerable to high winds, which could cause the ladder to collapse or cause the ladder along with the truck to fall over. Both of these possibilities are not only dangerous for any fire crew on the ladders but also for fire crews / vehicles / other emergency services that are also attending an emergency incident.

Parameters Monitored

Many weather conditions can be monitored with regard to safety including temperature, humidity and rainfall, however, the most basic requirement is to monitor wind speed.

Different wind speed ranges are required by different fire services across the world for working in a safe environment, however, St Lucie County Fire District in Florida, USA use 60mph as their maximum wind speed at which all fire trucks with ladders must cease operations.

Installation

The St Lucie County Fire District in Florida, USA has invested in safety by deploying a total of eight wind monitoring systems around the district utilising WindSonic and MetStream to provide access remotely to the data. The WindSonic (Option 2 RS422) is installed on a tower at each fire station and connected to a MetStream (100) via LAN/Ethernet. This is then routed into each fire station, to their main workstation. The data from each station can also be monitored from their Central Headquarters (Emergency Operations Center) (basic process is shown below).



Below is the physical installation of the WindSonic on the mast at one of the St Lucie County Fire District in Florida, USA fire stations:





MetStream in an outdoor enclosure at the base of the tower



Interfaces

The compact, robust WindSonic along with its no maintenance and no recalibration requirement, offers a host of connection options, including RS422 which provides data over long cables with the best noise suppression. MetStream allows a direction connection to all GILL meteorological sensors along with a simple ability to view / download data across a host of platforms via an Ethernet/LAN connection to client servers.

** Installation details and images courtesy of Derek Nicolette @ the St Lucie County Fire District*