

Fire sprinkler validation torques sense

Grundfos Pumps has replaced a torque meter with a torque sensor for the validating process for its bespoke Fireset sprinkler systems. The company designs and builds a range of electric and diesel driven Firesets featuring control systems that activate automatically when the presence of a fire is detected.

The Fireset set is pump sized to meet maximum demand. The control system is designed to automatically start the system up when a fire is detected and then to control the pressure of water needed to address the fire.

Huw Lloyd of Grundfos Pumps explained: "Even a moderate sized system can have many of the sprinkler heads. Typically just a few of these will go off to contain a small local fire, but the Fireset has to be able to deliver a predetermined pressure range to every head, even if they are all deployed."

He added: "The critical part of the testing process is to confirm that the pumps performance is

being achieved, and to do this we need a torque meter that will withstand the tremendous amount of vibration present."

For this, a TorqSense unit

from Sensor Technology was recommended. TorqSense does not have to be physically connected to the Fireset under test by slip rings etc., but monitors the torque

via radio waves.

A shaft deforms very slightly when it rotates, the amount of deformation being proportional to the torque. The unit measures the deformation so that it can calculate torque. To do this, two tiny piezo electric combs are glued to the surface of the shaft at right angles to one another; and shaft deformation will expand one comb and compress the other. The radio frequency signal emitted by the unit is reflected back by the combs, with its frequency changed in proportion to the combs' deformation.

Commenting on the installation, Lloyd said: "We've been using the TorqSense for the best part of two years now, so we've tested many different Firesets – big, small, simple and complex. The best thing I can say about it is that we had forgotten it was there; it does its job perfectly time after time."

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