FDX

Fluid Dynamix

The Next Generation Nozzle System

OsciNet

- movement without moving parts -

OsciJet

The smart nozzle

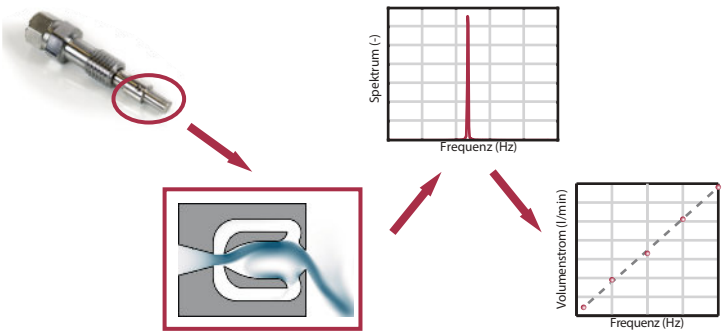
The OsciJet nozzle is the multitalented solution for your application. It is based on a smart flow channeling which induces an instability in the internal flow. Thereby, this innovative nozzle is able to emit a sweeping or pulsating stream of fluid – without any moving parts!

For the first time, the OsciJet nozzle is the first nozzle that is able to take advantage of dynamic jets even under the most difficult conditions and without concessions in durability, reliability and maintenance. With frequencies ranging from a few oscillations per second up to ultrasonic values, there is an OsciJet nozzle for every application:

- achieve up to 7 times better results for cleaning purposes
- optimize the distribution of liquids and spray generation
- improve mixing by a factor of 15 compared to conventional nozzles
- achieve 10 times better performance values for cooling and air conditioning

The jet oscillation produced by the OsciJet nozzle is simple to detect, for instance by using pressure sensors, microphones, or acceleration sensors. The frequency of the OsciJet nozzle is directly linked to the exiting flow rate. This way, not only real time acquisition of the current nozzle discharge is realized, but also detection of blockage and malfunction.

This feature is unique to OsciJet nozzles.



OsciNet

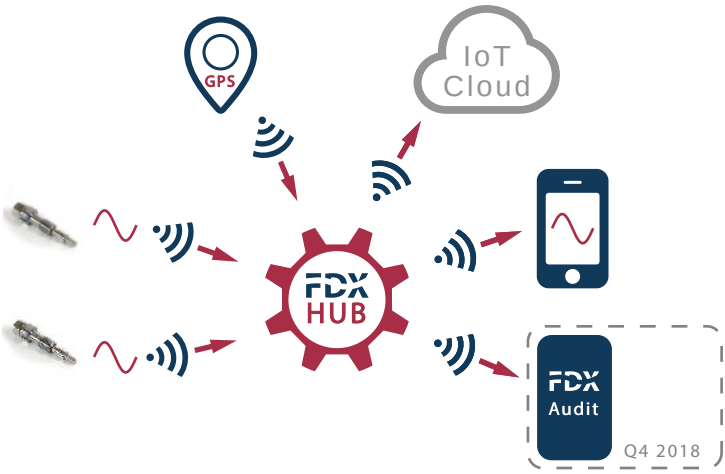
The smart system

OsciNet is a modular system that combines each OsciJet nozzle with a stand-alone sensor. The sensor unit controls and reports continuously the status of each nozzle. Within the OsciNet system, the OsciJet nozzle evolves into the next generation “nozzle 4.0”.

Status, discharge and pressure are detected in real time and send wirelessly to a central unit, the FDX HUB. Here, data of all connected nozzles are collected for further processing. The open source messaging protocol MQTT is used to ensure compatibility with external applications (e.g., Amazon AWS IoT, Google Cloud IoT, Microsoft Azure). Blockage of a nozzle is detected immediately and communicated by the FDX HUB to a registered device, for example to a cell phone with an installed OsciNet Control App.

OsciNet also measures the current nozzle discharge (i.e., flow rate) of each nozzle continuously and can record the data together with the current location through GPS.

The OsciNet system replaces flowmeters that are usually expensive in terms of cost and maintenance, and adds new features helpful for optimizing your processes.



As the next step, FDX will incorporate audit requirements. That means time stamps, current locations and the nozzle discharge are documented directly for regulatory reporting and certification.

Applications

A possible application of the OsciNet system is the agricultural sector. For crop protection active agents are distributed from boom sprayers. The unnoticed failure of one or more nozzles may cause severe crop shortfall. The OsciNet system reports failure immediately and also triggers a visual signal directly at the respective nozzle. In addition, the system issues a protocol of the local nozzle discharge which can optimize and minimize the use of active agent

OsciNet Control App

The smart app

The OsciNet Control App is the smart App that provides you with an overview of the current status of your nozzle system at any time.

Additional information at:

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