Ultrasonic flowmeters on a compact variable pressure metering station

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A new type of compact metering stations with variable pressure has recently been developed in France. The advantages of the use of the variable pressure in addition to compacting the station size, is a 4-fold increase of the flow range of the metering station. To this day, these stations are equipped only with turbine meter whose range is about 20. With the development of small size ultrasonic flowmeters whose flow range is higher than 100, the CRIGEN proposes to replace the turbine flowmeters by these ultrasonic flowmeters. Thus, will probably increase the station flow range from 80 to 400. It is in this framework that the CRIGEN performs an important test campaign on two different ultrasonic flowmeters in a different configurations, such us: downstream a pressure regulator or a double out-of-plane bend, on a compact metering station. The aim of this work is to establish a correlation between the diagnostic parameters, the installation configurations and the metering error of ultrasonic meters.

This paper answers the flowing issues:

* the establishing of the metrological behaviour the tested ultrasonic flowmeters,
* the analysis of the diagnostic parameters,
* the validation whether ultrasonic flowmeters are adapted to be used on compact variable pressure metering station and the validation of the increase of the metering station flow range from 80 to 400.