

A CORROSION RESISTANT CORIOLIS MASS FLOWMETER

Wellingborough, October 14, 2008:

KROHNE has launched a new Tantalum version of its OPTIMASS 7300 Coriolis mass flowmeter, to handle the highly aggressive and corrosive fluids found in the chemical industry.

The past decade has seen Coriolis flowmeter technology become the accepted standard in many chemical industries. However, one area where the technology was challenged was the measurement of highly aggressive and corrosive fluids. This was due to the commercial availability of a suitable measuring tube material to handle these chemicals.



OPTIMASS 7300 Tantalum

Generally, the wall thickness of Coriolis measuring tubes are significantly less than the associated process piping, which will tolerate a higher rate of corrosion before failing. This is an area where wetted material selection for a Coriolis meter is critical.

Tantalum has been used by some Coriolis manufacturers in the past, but the twin bent tube designs made these expensive. This was due to the flange, flow splitter as well as the measuring tubes all being made from Tantalum.

It was not until the advent of the single straight tube design, that the material looked more attractive, due to the design now only needing the measuring tube and the raised face of the process flange to be made from Tantalum. This brought major cost advantages over the equivalent bent tube designs, but was not easy to achieve as Tantalum does not have the same tensile strength as Titanium which is traditionally employed.

KROHNE, the world leader in straight tube technology, has applied its years of experience and been granted several patents, for perfecting the technology of containing the stress created in a straight tube due to thermal expansion and are now in a position to make this innovative technology available to highly aggressive and corrosive chemicals.

The Tantalum used by KROHNE is an alloy called Tantalum Ta10W, which is made up of 10% Tungsten and 90% Tantalum. KROHNE have found that it is the ideal material for use in its OPTIMASS 7300 mass flowmeter as Tungsten provides the additional tensile strength required to handle the stresses associated with straight tube technology.

“This is another innovation from our research and development team, who have employed over 15 years of experience in single straight tube design to harness this technology,” said Frank Grunert, global product manager for mass flow. “If you have measurement problems with a glass lined process pipe or glass lined vessels, then the OPTIMASS with Tantalum is the solution as Tantalum has similar chemical resistance to glass.”

With the addition of Tantalum, KROHNE can now offer a wide range of wetted materials for most chemicals. This now includes in addition, Hastelloy® C22, Duplex SS 318, Titanium as well as SS316L. Truly a wide choice and with this KROHNE can offer a solution for almost every application.

About KROHNE: Established in 1921, the family-owned business of KROHNE employs 2,510 people around the world and has representatives on all continents. The company has its headquarters in Duisburg, Germany and develops, manufactures and sells products in the field of measuring technology, standing for innovation and superior product quality. KROHNE is one of the market leaders in industrial process measuring technology.

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