Multivariate Alicat IS-Max intrinsically safe MFC with relative humidity compensation for hydrogen electrolysis

Alicat™ Scientific releases digital mass flow controller for Zone 0 explosive environments

Intrinsically safe gas flow and pressure controllers and meters from Alicat Scientific.

TUCSON, ARIZONA, UNITED STATES, July 30, 2024 /EINPresswire.com/ -- Alicat Scientific, of Tucson, Arizona, released their new IS-Max ATEX and IECEx Zone 0-certified mass flow controller (MFC) and meter (MFM). In gas flow processes where automation, repeatability, and accuracy of flow as good as ± 0.5% of reading are needed, an MFC replaces mechanical flow devices such as rotameters and pneumatic, non-proportional valves. IS-Max mass flow controller allows for easy automation and rapid integration in an environment that presents explosive atmospheres continuously, or for long periods of time.

> Engineers are going to be delighted at the IS-Max MFC's multivariate reporting, ease-of-use, and the rich functionality in these ATEX/IECEx Zone 0 certified instruments."
> *David Davis, VP of Engineering*

The mass flow controllers handle flow rates as low as 0.5 SCCM full scale, or as high as 250 SLPM full scale, while the meters read up to 5,000 SLPM. IS-Max devices can be built using media-isolated materials, permitting up to 128 different field-selectable gas calibrations. The IS-Max lines use the same ultra-fast, highly versatile, very accurate laminar differential pressure technology that has made Alicat a leader in gas flow measurement. Alicat customers use their devices in settings from analyzer laboratories, to R&D, to industrial processing.

For hydrogen electrolysis systems:

A relative humidity sensor option in an Alicat IS-Max can compensate for water vapor in hydrogen production calculations, providing a continuous, precise measurement of hydrogen

output. At the same time, the intrinsically safe design and IP66 integrated case means it can be employed in the field, in a gas shed, or in the lab while supplementing safety protocols. Continuous reporting of temperature, pressure and flow rate—up to 13 such condition variables—provide more insight, more responsiveness, and better results for an electrolysis process:

- Temperature
- Mass flow
- Volumetric flow
- Absolute pressure
- Gauge pressure
- Barometric pressure
- Relative humidity
- Dew Point
- Percent water vapor
- Total mass
- Total volume
- Valve drive

Alicat Scientific makes science-grade meters and controllers for fluids and gases.

Get high speed data and premium features, while intrinsically safe

The IS-Max MFCs and meters offer digital MODBUS RTU and Alicat ASCII communications, as well as 4-20 mA input/output. Alicat's Gas Select™ feature allows end users to choose from up to 128 onboard gas calibrations, for versatility and easy repurposing, without recalibration. An autotune menu option optimizes flow control when a process system changes—for example, when an increase or decrease of pressure occurs in a system. Batch processing and totalizing can help automate sample delivery, monitor cumulative flow, and even create custom reference gas mixes.

David Davis, VP of Engineering at Alicat said, "While there's no flow meter quite like Alicat's for intrinsically safe operation, we think that engineers that need to automate both metering, and flow control valves, in their explosive environment flow process—they are going to be delighted at the IS-Max MFC's beautifully optimized level of control, while banking the cost savings that comes from the ease-of-use and the rich functionality that are so competently intertwined in these ATEX/IECEx certified instruments."

Alicat flow and pressure devices are performing such varied activities as perfecting hydrogen-electric energy generation, drawing glass optical fibers for telecommunications, testing rocket

parts for leaks, heating furnaces for ceramics, and generating pharmaceuticals through biochemical processing.

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