ROBUST HIGH QUALITY FLOW MONITORS

Application nitrogen measurement

m3

Eletta M Series Flowmeter with Eletta-C HMI (Human Machine Interface on nitrogen measurement

For this application, the customer wanted to compare and record his nitrogen consumption with that billed by his industrial gas supplier. Using a complete system with M325 and Eletta-C flowmeters allows him to "inject" the data into his own supervision. This is extremely simple with a turnkey delivered system. Indeed, before optimizing his gas consumption, it is important to start by measuring it.

Nitrogen is an inert gas that is suitable for a wide range of applications, covering various aspects of chemical manufacturing, processing, handling and transportation.

Nitrogen is unreactive, excellent for blanketing and is often used as a purge gas. It can be used to remove contaminants from process streams by methods such as pickling and bubbling. Due to its properties, it can be used for the protection of valuable products from harmful contaminants. It also allows safe storage, use of flammable compounds and can help prevent combustible dust explosions.

For the application below, nitrogen is used for the regeneration, conditioning, custom production and recycling of catalysts.

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Catalysts, what is it?

Elements that affect the rate or direction of a chemical reaction. After a period of use, they must, to regain their intrinsic properties, be regenerated, and after several cycles of use, they must be destroyed because they have lost their physical properties. These catalysts are widely used to produce gasoline, kerosene, diesel, and other chemicals.

For this application, in 2 sectors of the plant, 2 x Eletta-C HMI are used to display and record data from 2 x M325 FA25 and FA32 flowmeters.
The following data are transmitted via Modbus RTU communication, for each flowmeter :
Flow, Upstream Pressure, Downstream Pressure, Differential Pressure, Temperature, Totalization.
All of this data are transmitted to customer supervision via a RS232 link.

The data are stored in the internal memory or on the SD card of the Eletta-C. The operator can come and retrieve his data via the USB port on the front of the Eletta-C.

Each kit, Eletta-C + 2 x M310 flowmeters is delivered fully configured. All the user has to do is connect it to a 230VAC or 24VDC power supply according to their needs.

The pressure and temperature compensation of the M325 flowmeters makes it possible to measure a corrected flow rate in Nm3/h, which will take into account pressure and temperature variations

View of the Eletta-C screen

The screens can be customized according to the specific needs of each customer.
Here visual alarms on the variables P1 = upstream pressure and Flow Value = flow have been added.

Pictures of the installation on nitrogen measurement on the general network and additional unit:

1st line :
M325 FA25 40-400 Nm3/h N2,
12 bar G, 20°C

2nd line :
M325 FA32 60-600 Nm3/h N2,
12 bar G, 20°C