THE ENCLOSURE is the DISTINCTIVE FEATURE

When a customer-specific development is needed, reliable DC motors and controllers are a good basis. In a flameproof casing, the duo consisting of motor and Motion Controller can perform tasks even in potentially explosive atmospheres. A masterpiece in terms of development that proves itself not least of all on critical ground – and that's what systems in chemical engineering are.

Systems used in chemical engineering applications require certified explosion protection

The enclosure establishes the basis for ATEX and EX certification

As with so many good projects, it began with the cooperation of competent partners. Here, the mechatronic experts from the Mattke company in Freiburg and the drive technology engineers from FAULHABER make a good team. Last but not least, good and solid drive technology from Schönaich serves as the ignition spark for creative ideas.

The task of the specialists from Freiburg was to use a brushless FAULHABER motor with Hall sensors and a Motion Controller with RS232 interface to construct an explosion-proof system. The fact that Mattke is well versed in the world of movement is apparent in motto of the firm's 50th anniversary: "Mattke moves", to be celebrated later in 2015.

The development goal of the collaboration between Mattke and FAULHABER was to create a suitable drive for a micro annular gear pump (mzr® pump). This is where the third partner came into play, the pump specialist HNP Mikrosysteme from Schwerin. The design of the pump was already specified, as the pumps are successfully used in numerous customer systems. The possibility of obtaining an ATEX motor with integrated control would allow additional customer requests to be satisfied that could not previously be met. There was a discussion early on with Faulhaber and Mattke about desires regarding function and design; the two motor specialists realized the technical implementation. Just finished and sufficiently tested, the motor is already used as the drive of a hermetic inert micro annular gear pump in a drinking water treatment plant in a chemical engineering application.

"Our partner for motors and controllers"

"What is special about the pump drive is the integrated Motion Controller, which is located with the motor in an explosion-proof housing", says Werner Böhringer. As director of Mattke AG, he is responsible for this project. Previously, DC motors were combined in a flameproof casing with micro annular gear pumps.

Today, integration is called for. "To make the pumps efficient and more controllable and to reduce the installation space, HNP Mikrosysteme uses micro annular gear pumps for both: brushless motors and Motion Controllers from our partner FAULHABER", declares Böhringer.

CLEAN WATER THANKS TO INTELLIGENT SOLUTIONS

Integrated in the flameproof enclosure according to ATEX is a Motion Controller that can be controlled via CANopen or RS232

The Mattke engineers developed a flameproof, enclosed housing for the drive pair "that did not exist previously on the market, even though it is exceptionally effective", notes Böhringer. By enclosing the Motion Controller in a capsule together with the motor, cumbersome precautions for the sensitive electronics of the servo controller can be dispensed with. In addition, signal losses that arise due to long supply lines if the electronics are placed outside of the potentially explosive area are avoided.

"The integration of all components in a flameproof casing makes life easier for the pump manufacturer and his customers", finds Werner Böhringer, making reference to the certification without which nothing happens in most of the places where the pumps are used. It is the reward for good development work. "By enclosing the electronics, we were able to clear the hurdle for ATEX certification for motor plus servo controller."

BRUSHLESS DC-SERVOMOTORS SERIES 3268...BX4

Ø 32 mm, length 68 mm
Torque 96 mNm

MOTION CONTROLLER SERIES MCBL 3003

V2.5, 4-Quadrant PWM with RS232 or CAN interface