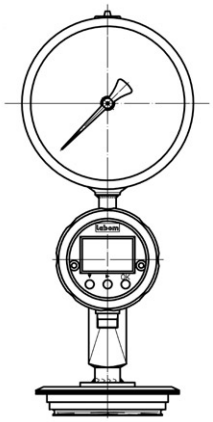
labom
MEASUREMENT TECHNOLOGY

Pressure measurements in the food and beverage industry

Application:

Safety monitoring for pressure vessels



PASCAL CV Combibar system with mechanical pressure gauge and VARIVENT diaphragm seal.

For this new pressure vessel for a northern German brewer, LABOM ensured failure-proof pressure monitoring by means of a Combibar system and helped to fulfil the strict TÜV (German technical monitoring association) requirements.

Safety monitoring for pressure vessels during brewing

Automatic self-monitoring and readability of the pressure situation even in the event of a fault

Beer is a fixed part of German cultural history. The poet Friedrich Schiller admitted: “I drink beer with pleasure.” And Johann Sebastian Bach even composed a small opera with the title: “The wisdom of authority in the management of brewing”. Germany – the land of poetry and philosophy is also the country of beer drinkers. Nine out of ten Germans drink beer. It has even been proven by medical science that beer – if enjoyed in moderation – is a very nourishing and healthy drink. Good that the Germans are not only a beer drinking people but also a beer brewing one and as a result first class production in conformity to the German purity law is ensured. The number of breweries in relation to the number of square kilometres of the country or the population size is not exceeded anywhere else in the world. A PASCAL CV Combibar system from LABOM provides the precise pressure monitoring of a pressure vessel during brewing for a north German brewery. In the event of a fault, protective measures are initiated automatically and at the same time the pressure situation can be monitored continuously.

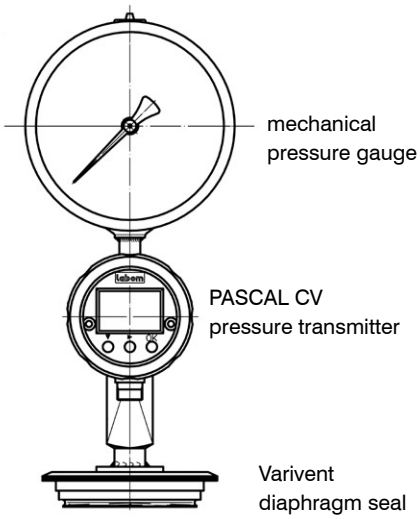
Task: Before crushed barley malt and water turn into malt sugar and sweet wort, which then, after the addition of hops and brewer’s yeast, finally turn into clear beer, the liquid will pass in its changing state through several brewing vessels. Via mash tun, lauter tun, wort pan, whirlpool, fermentation tank, storage tank, beer filter and a maturation time, the brewer obtains a freshly brewed beer with a characteristic flavour. As part of this brewing process a northern German brewery wanted to use a new pressure vessel. The pressure vessel monitoring, however, had to fulfil several TÜV requirements. The measuring system used was to be equipped with a self-monitoring system and fulfil all the criteria required by SIL 2. The self-monitoring system was to make sure that, by means of an integrated contact module, in the event of electric power failure and the subsequent loss of signal, in the event of pressure loss the planned protection measures are automatically triggered. It must then be ensured that the pressure situation continues to be able to be read via a mechanical display.

Solution: LABOMs CV Combibar system with the PASCAL CV 3100 pressure transmitter and mechanical pressure gauge and Varivent diaphragm seal.

Customer benefit: LABOM was able to solve this customer’s problem straight away by means of the Combibar system! PASCAL CV 3100 is certified in conformity with SIL 2. The self-monitoring was realised by means of an integrated contact module. With this Combibar stem,

the analogue hand of the mechanical pressure gauge ensures that, after a possible failure of the digital signals, the pressure situation can continue to be monitored. The Varivent diaphragm seal is simply connected by means of a clamp to the process. PASCAL CV has a large number of different process connections available and smart modular technology for displaying, operating and communication functions. These function modules can be replaced or extended without much trouble and without having to remove the device from the process.

LABOM was able to beat three competitors not only because an immediate solution could be provided but also by the unrivalled compact construction of the Combibar system, which also allows the combination pressure gauge to be produced more cost efficiently.



The LABOM Combibar system with the PASCAL CV pressure transmitter and mechanical pressure gauge and Varivent diaphragm seal conforms to all the requirements for self-monitoring and the SIL 2 certificate. The customer had his new pressure vessel immediately approved by the TÜV without difficulty.

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Additional information on this topic is available directly from LABOM (Export Manager Thomas Tempel Fon: +49 4408 804-460) or from our local office near you (see **www.labom.com**).

DESCRIPTION OF DEVICE

PASCAL CV Combibar system with pressure gauge and VARIVENT diaphragm seal

PRESSURE TRANSMITTER PASCAL CV

- Construction for use in food, pharmaceutical and bio-technological applications
- Stainless steel housing
- Version of protection type IP 66, connection with plug and socket connector
- Turndown 5:1
- Nominal range: 4 bar
- Precision: 0.25 % of the set span
- Output signal 4 to 20 mA
- Default alarm setting < 3.6 mA, standard

BOURDON TUBE PRESSURE GAUGE

- Stainless steel housing: DN 100 conforming to EN 837-S1, version IP 66
- Display range -1 to 3 bar

DIAPHRAGM SEAL FOR FOOD APPLICATIONS

- VARIVENT housing connection flange
- Parts making contact with the medium made from stainless steel no. 1.4435
- System filling: food industry oil FD1 - L23
- Application temperature: +10/+190°C