

Robust measuring technology for the dairy industry: The new V-Line

It's not just hygiene that plays a major role in the milk-processing industry: the systems - and hence also the measuring devices used - are faced with major temperature fluctuations in milk processing. Labom, the Hude-based manufacturer of measuring devices, has taken up the challenge and is now gradually equipping a large dairy with new devices.



One of the large dairies approached Labom in 2016 in search of an expert partner for its operation's measuring technology. The reason for contacting Labom: some of the measuring points in the operation had turned out to be extremely problematic, as the severe temperature fluctuations to which they are exposed when cooling and ultra-high heating the milk regularly overwhelmed the measuring technology. The devices generally had to be replaced after only a few weeks, as either welding seams or diaphragms failed. The extreme temperature fluctuations quickly led to material fatigue and all the components used were severely tested.

The device quickly proved itself: weeks, months and finally over a year passed without the devices having to be replaced. This success quickly opened the door for a more extensive collaboration. There were 1,000 flow measuring points in total in one of the factories, all meticulously monitored by additional temperature and pressure gauges. After all, only strict monitoring and compliance with all process data can guarantee a consistently high quality with large production volumes. This factory has an average capacity of 100,000 litres of milk per hour – a terrific volume that needs to be closely and continuously monitored. Following the dairy's positive experiences with LABOM devices fitted at its critical measuring points, the pressure gauges and temperature measuring devices at the flow measuring points were now to be gradually replaced by Labom devices.

Test device quickly proved itself

As an expert for individual customer solutions and hygienic measuring technology, LABOM took up the problem and initially supplied the PASCAL Ci4 pressure transmitter with a clamp diaphragm seal for testing: the hygienic design and robust construction of this combination was impressive, as was its extremely intuitive 4-button operation. The diaphragms and weld seams are designed for the unique conditions in the dairy and also withstand severe temperature differences with ease.

The new V-Line

Compact design - maximum display

Labom then also had the opportunity to use its brand-new V-Line in addition to the proven PASCAL Ci4: the new device range is distinguished by the same benefits and performance as the PASCAL Ci4 range - but has a considerably more compact design. Whereas the Ci4 weighs approx. 1.4 kg (with a threaded connection) with a case diameter of approx. 74 mm, the PASCAL CV4 pressure transmitter and the PASCAL GV4 temperature transmitter are distinguished by a weight of only 0.7 kg and a diameter of only 59 mm. The V-Line devices combine an extremely compact design with a maximum display area. Their intuitive 4-button operation assists the user with a dialogue field displayed in various languages on the high-resolution and well-lit dot matrix display. A special quick set-up simplifies the set-up and parametrisation of the devices. The temperature and pressure transmitters also have an identical design: from the out-

side, the devices initially look identical, a factor that was as important to the operator of the factory as the devices' technical properties. This ensures a uniform appearance.

However there was no standard connection for the flow measuring points, unlike the critical measurement points that Labom had previously equipped. Labom therefore first had to design a new process connection adapted to this application. Once this obstacle had been overcome, there followed continuous replacement of the existing devices by the Labom devices – a process that has continued up to now: whenever a previous transmitter fails, it is now replaced by a Labom instrument. Thanks to its previously excellent experiences with the PASCAL Ci4, the dairy is relying fully on Labom devices – so much so that the newly developed V-Line devices were ordered even before there was a finished prototype.



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Continuous product optimization

Today there are around 1,000 Labom devices installed in the dairy's various factories and more are being added by the day. The devices are fitted at the critical measuring points and the flow measuring points, as well as at the lactose filter systems where also the conditions and degree of contamination of the filters needs to be continuously monitored by means of pressure measurements.

The hygienic design, high-quality and hygienic surfaces, and ease of cleaning of all the measuring devices used simply cannot fail to impress. In spite of the great satisfaction on

the part of the customer, Labom is constantly striving to optimise the devices and customise them to the production conditions on site. The use of ventilation filters means that the PASCAL CV4 pressure transmitter can be supplied with the improved IP 69K case degree of protection, among other things. This option is currently being discussed: The filters built into the measuring device, which compensate for the pressure differences from the environment and hence prevent measuring errors, would then also be protected from spray water, as can be the case, for instance, when high-pressure cleaning the systems.

Florian Simpson, Head of international Sales

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Labom Mess- und Regeltechnik GmbH
Im Gewerbepark 13 · 27798 Hude · Germany

Tel.: +49 4408 804-0 info@labom.com
Fax: +49 4408 804-100 www.labom.com