The Olching brewery currently produces four own types of beer for catering establishments and markets in the vicinity.

The Olching brewery

World-class beer produced by the Olching brewery. Co-founder and brewing engineer Julius Langosch explains in an interview how the company, still in its infancy, came into being, how the traditional amber fluid is brewed and what role ifm sensors play in this.

**The Olching brewery:
the local brewery north-west of Munich can currently produce up to 2,500 hectolitres of its own four types of beer.**

Mr Langosch, what gave you the idea to start your own brewery?

The idea for the Olching Brewery was born during a ski trip in 2016. We came up with it because there had been no local brewery here in Olching, Bavaria, a town which now has 30,000 inhabitants.

To find out whether an Olching beer would be well received, we started by marketing our lager through licence brewing. This means that we rented a brewery where we brewed according to our own recipes. The result was our "Olchinger Naturhell" pale lager, a naturally cloudy, untreated and unfiltered beer. Shortly afterwards, we started producing wheat beer, too, due to the high demand. These two brands were well received. We now also offer two other types of beer, the "Olchinger Dunkel" ale, served for the first time at the Olching folk festival, and our "Hopfn Bua" hop beer. This is a special type of lager to which hops have been added again for a particularly fresh and fruity note.

Modern art of brewing meets *tradition*

These are the four varieties we currently have on offer. Since April, we now also have our own brewing facility planned in parallel over the past few years. We purchased it from the brewery equipment manufacturer JBT (Joh. Albrecht Brautechnik in Munich, editor's note), where I had previously worked for 8 years. I had the chance to take charge of the equipment planning and incorporate my own experiences. It goes without saying that some special requests could be fulfilled, too, in the process. Among other things, there are a lot of ifm sensors, as I already knew ifm from my work at JBT and have always been very satisfied with them.

How big is your brewery?

There are currently four of us. My business partner and co-founder Dr. Guido Amendt takes care of marketing and sales, whereas I am responsible for all brewery-related technological questions. Then we have somebody for the office work and a trainee because we are also a training company for brewers and maltsters recognised by Chamber of Commerce and Industry.

Our medium-term target is 1,000 hectolitres per year. The equipment, as it is now, allows us to produce up to 2,500 hectolitres, and even up to 4,500 hectolitres per year with a tank extension.

Where can I buy your beer?

The beer can be purchased in local retail outlets or beverage stores here in the district. Moreover, you can get it at the brewery or order it online. Since Corona times, we have also introduced a delivery service, which has made a promising start in the vicinity and with which we also supply people at home. We also supply various restaurants in Olching and Munich.

Julius Langosch,
co-founder and brewing engineer
at Olching brewery.

„ Can you roughly describe the brewing process?

Producing beer starts traditionally with malt and water, which is mashed in the brewhouse on brew day. Lautering is the next step, i.e. the liquid that we call wort is separated from the grains and afterwards boiled in the brew kettle. This is also where the hops come in. At the end of the boil, the solid particles in the hopped wort are separated out in the whirlpool. For the separation of the solids a tangential inflow is used. Then the wort is cooled before yeast is added in the tank. At this point, we start calling the liquid beer. Depending on the type of beer and yeast, fermentation takes 2 to 12 days. After the fermentation, the beers are conditioned for 10 to 80 days in cold storage.

„ Temperatures play an essential role in the brewing process. How much leeway is there in this?

During mashing, precision to the degree is required, because the enzymes have a narrow temperature optimum. While deviations do not make the beer undrinkable, they nevertheless affect its taste, changing it for example from light and fine to rather malty or bread-like.

And I also have to keep a close eye on the temperature during fermentation. If the temperature is too high, the yeast ferments too quickly and produces too many fermentation by-products. If the temperature is too low, fermentation can come to a complete halt.

Therefore we monitor the temperatures very closely in the different process steps. For this purpose, we use TA and TN temperature sensors from ifm.

ifm pressure sensor for hydrostatic
level measurement in tanks.

" Which other important points in the brewing process are monitored by sensors?

We use the SM8100 flow meter to measure water quantities, for example at the mash tun. The meter counts the amount of water supplied to the exact litre. This is important, because too much water dilutes the brew, while an insufficient water supply would lead to an overly thick mash.

Another application for the SM8100 is the cleaning process, i.e. the cleaning lye preparation. I need a defined amount of water for this to make sure the lye concentration is as required. The flow meter ensures control of the inflow.

The second flow meter is the SM6050. It is also of essential importance because it measures the flow during lautering and controls the coupled drain valve to ensure that the liquids neither drain too quickly nor too slowly.

That is why, besides temperature measurement, these two flow controllers are certainly the most important sensors in the brewing process.

" Do you also use the integrated temperature measurement in the flow sensors?

Yes, exactly. I can query the flow rate and also the temperature values via IO-Link. Although the temperature is not necessarily relevant to the process at this point, it is a very good indicator of the speed and quality of lautering. For example, the information that the wort runs through at only 50 degrees tells me that the lauter tun is already much too cold. If it runs through at 70 to 75 degrees, however, the process is supposed to go well and fast. The additional temperature value I get with the SM6500 is therefore a good extra reference point provided via IO-Link.

" Are there any other sensors integrated in the brewing process?

We also use the LMT100 point level sensor. You can find it in three places, in the kettle, in the lauter tun and in the tube. It informs the controller whether a vessel is empty and initiates the subsequent process step, for example in the plant control system.

We also have pressure sensors for level measurement in the brew kettle and lauter tun. They give me information about the quantities in the vessels.

" What about the digitalisation of the equipment?

Our method of choice in this respect is IO-Link. We use it to connect all sensors and actuators directly to the control system. A CODESYS V3 controller application ensures that our brewhouse can operate fully automatically.

There is a 24-volt power supply for various parts of the equipment and we use electronic circuit breakers from ifm here. The latter can be monitored and switched via IO-Link.

" Where do you see the advantages of IO-Link?

With IO-Link, I can get additional information from the sensors. One example is the SM6050 flow meter. In addition to the flow rates, it also provides me with a temperature value via IO-Link. This saves me the effort of installing another temperature sensor at this point.

Another advantage of IO-Link becomes apparent when a sensor breaks down and I have to replace it. The parameters of the broken-down device are automatically transmitted to the new sensor. I do not have to set its parameters manually and it works immediately.

" What parameter settings do you make via IO-Link?

For example the LMT100 settings for transmission of the "empty signal". Using IO-Link, we have set the switching point such that it provides empty or full signals reliably even in case of deposits or soiling.

Or take the SM8100. We have set its parameters so that it provides both flow and temperature information. What is more, the sensor now emits a switching pulse for a defined quantity of litres.

As for the temperature sensors, there was no need to set their parameters. We access the process values directly via IO-Link.

" One final question: How do you see the cooperation with ifm?

ifm's sales specialists on site have always been very motivating and proved incredible expertise in advising me.

What I have noticed, too, is that suggestions are often taken up. Three years ago, for example, we repeatedly asked for a flush mount temperature sensor. Eventually, ifm provided one. I am of course well aware that we had not been the only customer with this requirement. But still, suggestions have been taken into account.

And the same goes for the new SM8120, which has an extended temperature range. We asked for it, the idea has been taken up and is now reflected in the sensor. In brief: ifm sensors are developed on the basis of practical requirements and also improved over time.

Moreover, the price-performance ratio at ifm is good. You may buy sensors that are three times more expensive, but also break down three times as often. Or find sensors that are five to eight times more expensive than their ifm counterparts, but not suitable for our application. Hence we get on well with ifm.

Mr Langosch, thank you very much for this interview!

Temperature transmitters of the TD series monitor the various process steps.