

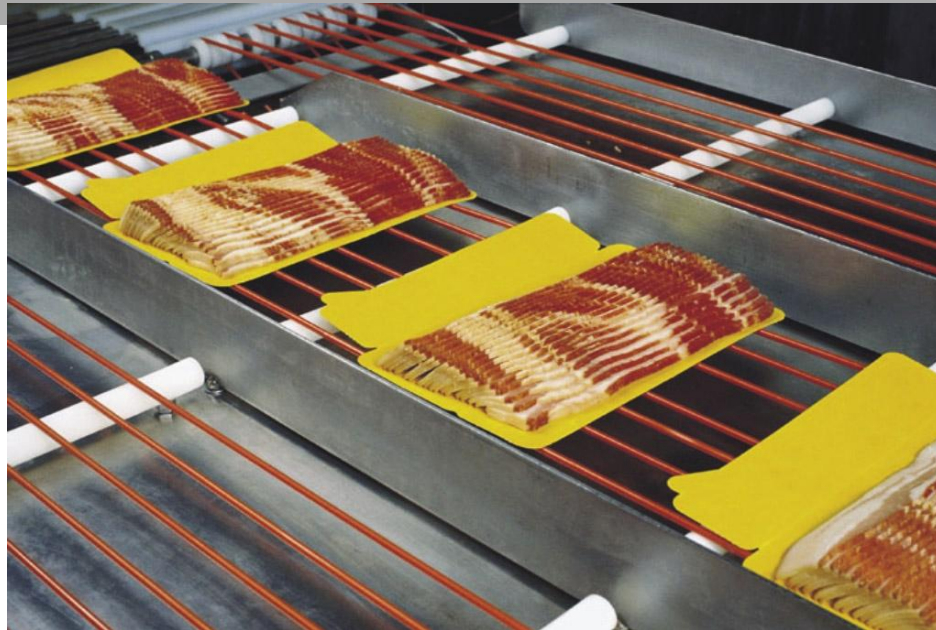
## Pressure and temperature measurement for meat pickling machines

### Application

Packling system for the meat-Process industry



COMPACT CE 6800 pressure and temperature transmitter



To ensure that meat keeps well longer and continues to look appetizing, it undergoes a curing process such as pickling. In an automatic pickling system, LABOM's COMPACT CE 6800 pressure and temperature transmitter ensures better hygiene within the machinery housing, thus lowering costs.

## Better hygiene means lower costs

### Easy cleaning of pickling systems is critical for production hygiene

For most people, a "proper" meal includes one thing in particular: a serving of meat. To ensure that meat keeps longer and continues to look appetizing, it is often necessary to treat it with preservatives. One such curing method, known as "pickling," accomplishes this by adding a salt solution (brine) to the meat. This process reduces the amount of liquid in the meat, thus inhibiting the growth of bacteria. The brine solution also contains nitrate. Once it has entered the meat tissue, the nitrate added in this process is transformed into nitrite. The nitrites combine with the muscle pigment myoglobin, becoming nitrosomyoglobin, which gives the cured meat its appealing red color. Machinery companies have developed curing systems for the meat-processing industry that run automatically. In this process, hygiene and productivity are equally important. LABOM's innovative solution: a pressure measuring device with integral temperature measurement. This dual-function unit helps to greatly increase cleanliness of these automated curing systems and, at the same time, to simplify their construction.

**The task:** In a pickling system, the meat first passes through the pickling-solution injector. There, a carrier plate on which numerous injection needles are mounted is lowered down toward the meat. The needles below the plate are inserted into the meat and inject a brine solution coming from a brine mixer and brine reservoir. After

this, the meat is first transferred to a suction tank and then to a massaging tank in which the meat chunks are subjected to mechanical treatment. The tank rotates, and the action of the meat chunks hitting each other and the walls of the tank promotes the even distribution of brine in the meat. The combination of injecting and

massaging produces a higher yield, improves taste, extends shelf life and ensures consistent product quality. However, problems concerning hygiene and the length of cleaning times arose through the use of separate monitoring devices which were mounted on an external pipe and took independent measurements of system pressure and temperature. These devices were not water-proof and thus could not be cleaned by simply spraying them down with water.

**The solution:** LABOM developed a pressure-measuring device with integral temperature measurement, the COMPACT CE 6800. The COMPACT CE 6800 pressure/temperature transmitter features a metal-to-metal hygienic joint without any corners and edges in which minute particles could become



**The customer benefits:** A pressure measuring device with an integral temperature sensor requires only one process connection instead of two. The easy-to-clean design means improved system hygiene since now the one measuring device can be quickly and effectively cleaned by simply spraying it down with water. The installation of the LABOM COMPACT CE 6800 combination pressure/temperature transmitter within the machinery housing renders the external device mounting pipe unnecessary, making system design and construction simpler and less expensive.

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caught, allowing residue to accumulate. Due to its high degree of protection (IP67 rated field housing) and good cleanability, the COMPACT CE 6800 was able to be installed within the housing covering the processing machinery. This relocation permitted the elimination of the external pipe on which the two separate monitoring devices had previously been mounted. The COMPACT CE 6800 features a threaded mounting collar that allows the device head to be rotated and correctly oriented before finally being tightened down in place. This design considerably simplifies device placement and wiring. What's more, compared to the previous solution from another supplier, LABOM made sure to develop a product free of hard-to-clean 'dead pockets' (inaccessible/restricted device areas such as nooks and crannies).

The external mounting pipe on the right side of the system is no longer needed, thanks to the new combination pressure/temperature transmitter from LABOM.



## DEVICE DESCRIPTION

### COMPACT CE 6800

#### ■ pressure/temperature transmitter

- Pressure transmitter model CE6
- Measuring range: 0 to 10 bar
- Output signal: 4 to 20 mA, 2 wire
- Temperature of the system contents: -20°C to +80°C
- Completely made of stainless steel
- type of protection: IP 67

#### ■ Process Connection : G 1 A, Hygienic, metal-to-metal joint

- Flush-mounted separating diaphragm of st. steel 1.4436, laser-welder
- Hygienic elastomer-free seal
- Quick and easy installation
- Threaded mounting collar allows device to be rotated into position as required
- Minimum mounting torque error/no torsion effect
- Hygienic version with improved, easy to clean exterior design

#### ■ Temperature Sensor 1 x PT100, 3-wire circuit, Class A flush-mounted



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