



## Lentner

Digitalised emergency vehicles



# Everything a firefighter's heart desires

Lentner digitalises emergency vehicles with robust sensor solutions from ifm

From vehicles with telescopic masts or for use on airfields to equipment vehicles or auxiliary fire engines: Lentner, a family-owned company headquartered in Hohenlinden near Munich, develops and manufactures firefighting vehicles for every requirement. Just as the vehicles themselves are built to be robust for their intended purpose, the digitalisation technology used must also be robust in order to ensure reliability even in the most demanding of emergencies. That is why the company has been relying on ifm solutions for many years.

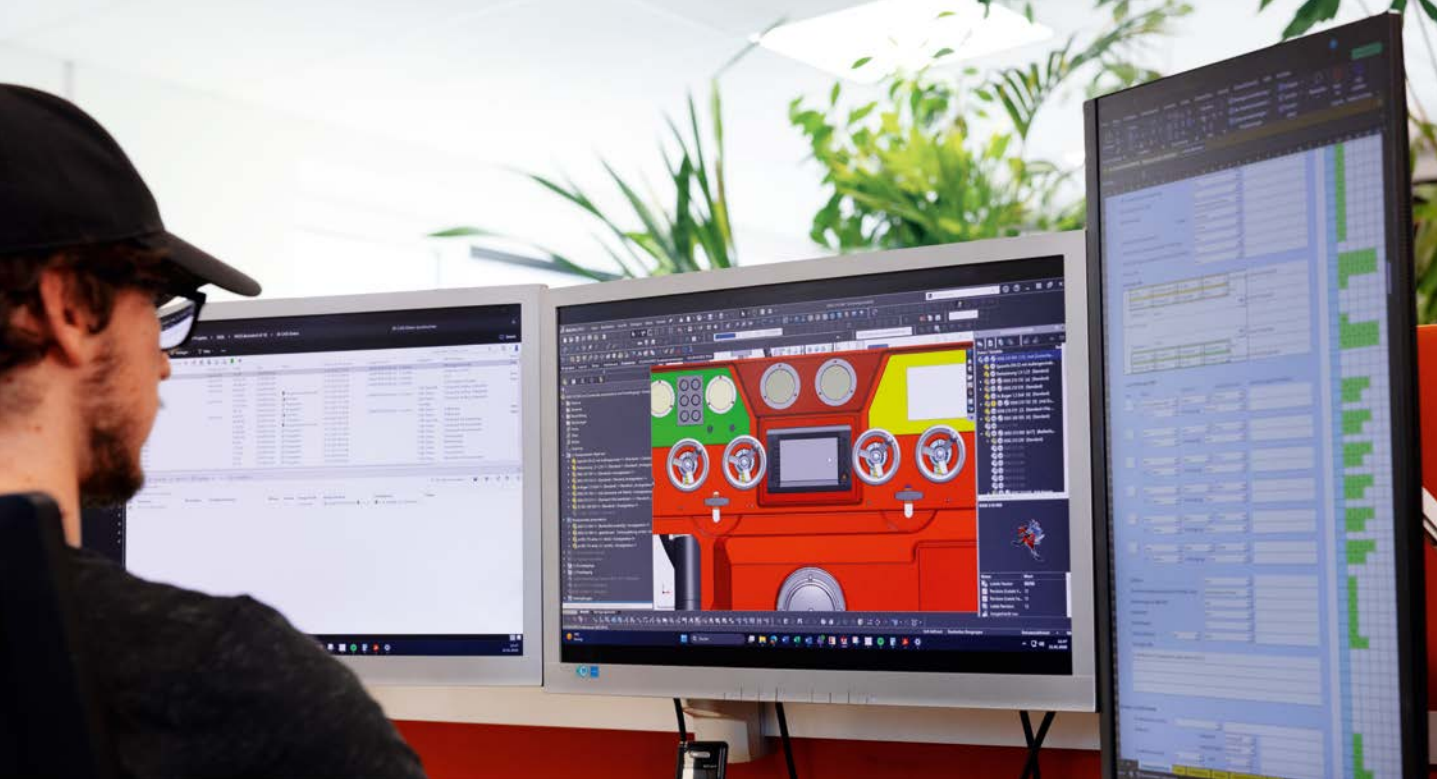
## Individuality and quality combined

Up to 150 firefighting vehicles leave Lentner's production facilities every year.

*"The vehicles range from 7.5 tonners to large airfield fire engines. In short: we produce everything a firefighter's heart desires",* says Chief Operating Officer **Mathias Hausmann**. And no two vehicles are alike. *"Nothing we produce is off-the-peg because we tailor each vehicle to meet our customers' demands and needs. Our aspiration to attain the most practicable solution in the highest quality always remains the same. Because when it comes to a call-out, the firefighters can only perform as well as the vehicle they have at their disposal."*



*From telescopic masts to Unimogs: the requirements and firefighting scenarios for the vehicles are varied.*



*Automation technology is becoming increasingly important in the development of modern fire engines.*

### **An increasingly important partnership**

ifm has been supporting Lentner as an automation partner for nearly 20 years now. *“We began with the development of our first CAN bus system in 2008, developing it together with ifm”, says Hausmann. “Since then, we have been consistently working with ifm and will continue to do so in the future.” The reason: “The vehicles are becoming increasingly more digital and are being equipped with more and more sensors. That’s why it’s good to have a reliable partner at your side. Today, ifm is one of our most important suppliers.”*

More sensors, more digitalisation. The development is clear: the performance of modern rescue vehicles is increasingly being measured in terms of the information that is available to the firefighters.

*“Digitalisation is becoming more and more important to us. The entire process is now digitally controlled. If the driver engineer has a clear overview of pump pressure, the mixing ratio in foam units and the amount of water in the tank, it helps him to optimally support his colleagues who are fighting the fire and to react in good time, if necessary”, says Julian Bauer, head of digitalisation at Lentner.*

### **Haptic feedback provides clarity during firefighting operations**

For example, the PIM pressure sensor with pump diagnosis function detects not only pressure but also any cavitation that might occur. *“Prolonged or severe cavitation can cause damage to the pump and lead to its failure, which must be avoided at all costs”, says Bauer.*

The driver engineer uses the Human Machine Interface (HMI), a robust type-CR1081 7-inch control display, to access the relevant information and control the pump and other vehicle functions. It is no coincidence that this is not done via touchscreen, but by means of six buttons and a rocker switch.

*The pressure sensor (in the background) transmits pressure and cavitation data to the control unit (in the foreground).*



*“When it comes to vehicle handling, we attach great importance to clarity and simplicity of operation. The ifm display, with its buttons and haptic feedback combined with a simply structured settings menu, ensures short response times during firefighting operations.”*

All of the vehicle's functions can be controlled and monitored from both the pumping unit and the driver's cabin. If the vehicle is fitted with a foam mixing unit, a separate display on the pumping unit shows the mix ratio of water and foaming agent. But not only the pumping unit is completely digitalised: the position of the roller shutters, steps, ladders and other access hatches is also monitored by sensors and shown on the HMI. The emergency lights, siren, vehicle perimeter lighting and work lamps are also operated by means of interaction between the HMI and the control unit.

*“This enables the driver to check at a glance before driving off whether all the equipment crates are closed and the steps retracted. This simplifies checking and protects the vehicle and equipment from damage.”*

#### **Space-saving, robust automation technology**

Because the vehicles are designed for optimum space utilisation, the sensors and data infrastructure must also be housed in the most space-saving way possible. Therefore, compact sensors such as those in the IS series and C-slot cylinder sensors from the MK series are used. The information is collected by I/O modules and transmitted via CAN bus to the control unit, where it is processed and forwarded to the HMI for visualisation.

*“The electronics must all be extremely robust”, continues Bauer “The vehicles face rough treatment on the job, and therefore each individual component must be built to last. In this respect, ifm's products have been impressive all round from the very beginning.”*

*The central control display enables simple operation of all vehicle functions including pump control.*



And Julian Bauer values the automation specialists as a partner in general: *“The collaboration is extremely good and very close. Not only do we get good support, but we can also contribute our expertise when it comes to developing new solutions for our sector. It's a true partnership.”*

#### **Conclusion**

Automation specialist ifm's mobile-compatible digitalisation solutions fulfil Lentner's requirements regarding sensors and data infrastructure. Thanks to its robust, durable and reliable products, ifm contributes to ensuring that fire brigades worldwide can rely on the quality of the Lentner brand.