
LENSER i-Plate

MEASUREMENT OF RELEVANT DATA IN REAL TIME



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MEASURE RESIDUAL MOISTURE & CONDUCTIVITY IN REAL TIME

The LENSER i-Plate gives you completely new insights into your individual filtration process. The reliable, digital real-time measurement provides you with new data directly from your filter press during operation. This gives you insights into your processes and allows you to optimize them.

Process monitoring is becoming increasingly important in the field of filter presses. Countless parameters have long been recorded and evaluated by using standard laboratory analysis in order to optimize the filtration results in a time-consuming, iterative way.

ANALYZE THE FILTRATION PROCESS

The LENSER i-Plate short-cuts these conventional procedures: The integrated sensor records the entire filtration process based on humidity, temperature and electrical conductivity in the filter cake allowing adjustments within the filtration cycle yielding potential increase of production capacity, savings in energy and/or material resources.

SPECIFIC OPTIMIZATION OF THE CYCLE

This means that the entire filtration cycle can be tracked to the second and optimally controlled. This means that the individual process steps can be tracked and analysed in detail in real time. This makes it possible, for example, to define the ideal switch-off point for filling for different suspension qualities or to recognise the optimum end of the re-pressing time at an early stage.

“Gain an insight into your process and gather online data to boost the filtration results in your application.”

Peter Ohorn, Head of Product Engineering

Your #FiltrationExperts at LENSER are convinced that the use of modern technology will increase performance in each process. We invite you to use this opportunity and take a fascinating look directly into the chambers of your filter press.



NEW PERSPECTIVES FOR YOUR FILTRATION PROCESS

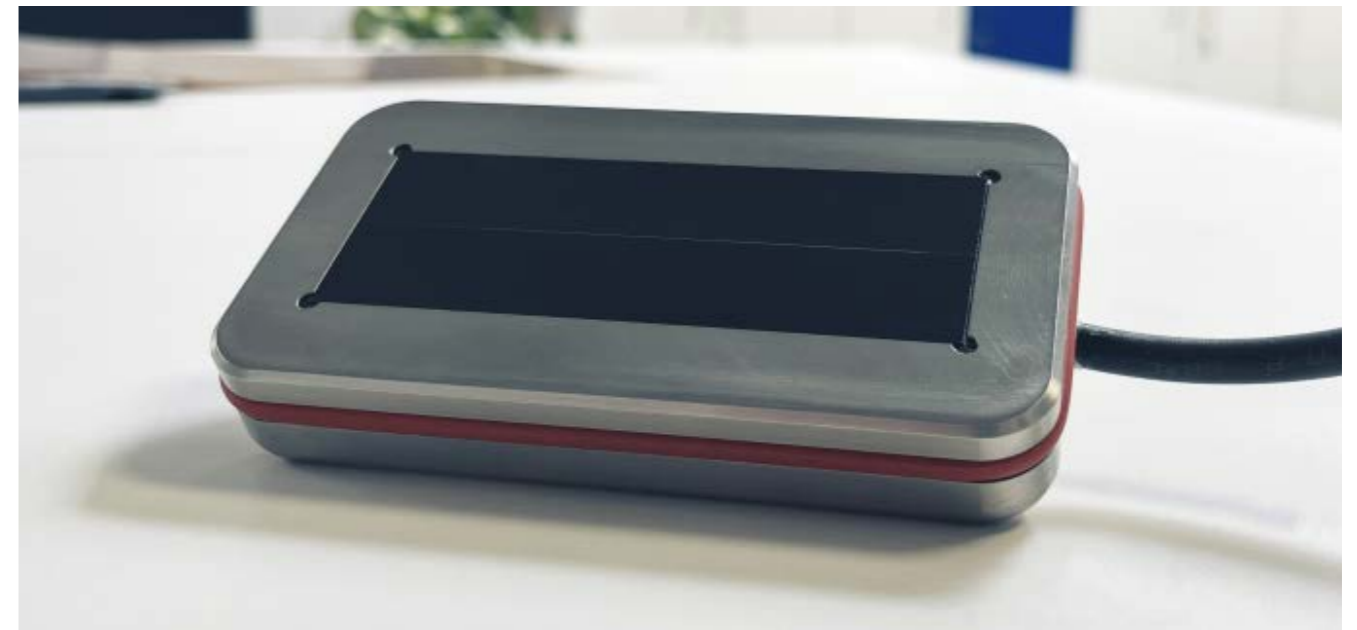
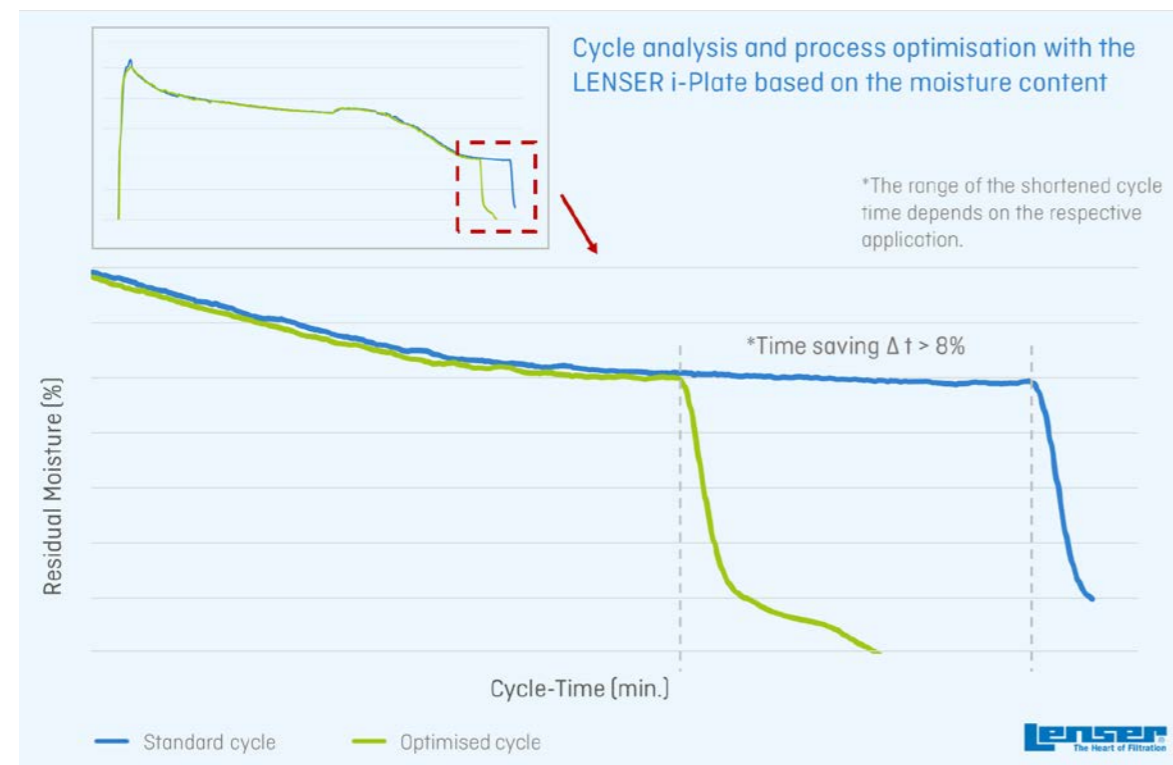
At LENSER, we think outside the box.

With the LENSER i-Plate, you receive new process data and can identify parameters to improve your processes. This will make your company more efficient.

The LENSER i-Plate measures the dynamic dipole interaction with the suspension, which is mainly determined by the water content, via the transit time of an electromagnetic pulse in the 500-1000 MHz range, thereby transmitting a 4-20 mA signal right into the programmable logic controller (PLC) of the filter press. In the case of a filter press without PLC, the signals can be visualized on a standard monitor by using the LENSER addIQ-Monitoring Box.

Programming the ideal shut-off point of the feeding or squeeze cycle can now be based on a real-time value, i.e. either a specific or lowest

cake moisture depending on the target set-out by the user. Alternatively the least economical operating cost can be achieved by cutting-off inefficient cycle time (see fig below). Once calibrated with the dewatered suspension, the measured values of the LENSER i-Plate have a high repeatability yielding an augmented automation level and increased product quality making downstream laboratory tests of the filter cake obsolete.



UNCOMPLICATED AND PROCESS-SAFE INTEGRATION

Filter press operators do not have to make any major modifications to their filter presses in order to benefit from the advantages of using the LENSER i-Plate.

This sensor technology is operated with a common voltage of 12 to 24 V. Of course, the cable is mounted in such a way that it is not damaged when the filter press is opened and closed.

WITH A NEW LOOK INTO THE FUTURE

For the first time, the LENSER i-Plate makes it possible to take a look inside the filter chamber and display the filtration process in real time based on moisture, temperature and electrical conductivity in the filter cake. This allows the process to be controlled and optimized even during the filtration cycle.

LENSER's intelligent filter plate represents a significant innovation in the marketplace, saving not only time and money, but also tremendous resources that were previously wasted. The plate equipped with the sensor is already in use in various applications and can be retrofitted in any LENSER plate package.

ALL FEATURES AT A GLANCE

PERFECT FIT

Form fitting in the milled groove with O-ring clamping, no screws required, hence best fit at all times.

DURABILITY

The sensor is made of high-grade steel and a durable ceramic compound that has been developed for high-pressure squeezing.

CUSTOMIZED SERVICE

Process optimization through online monitoring of the filtration process can be customized easily.

DIRECT SUSPENSION CONTACT

The LENSER moisture sensor is positioned directly at the filter cake. It's only covered by the filter cloth.

INSIGHT INTO DIGITAL REAL-TIME DATA

Precise measurement of the moisture in the filter cake for either online diagnostics or offline reviews. Insight either via a direct integration into the press control or through the addIQ-Monitoring Box for data visualisation.

LENSER i-PLATE SERVICE PACKAGES

LENSER offers you four different LENSER i-Plate service packages which build on each other, so that the customer can choose which service support fits best. For further questions please ask your #FiltrationExpert.

CHOOSE YOUR SERVICE PACKAGE

BASIC	VISUAL	AUTOMATION	PREMIUM
LENSER i-Plate incl. sensor	LENSER i-Plate incl. sensor addIQ-Monitoring Tool-Box	LENSER i-Plate incl. sensor incl. on-site analysis Automation Upgrade	LENSER i-Plate incl. sensor incl. on-site analysis Automation Upgrade Service-Level Agreement (24h - Hotline)

ALL CUSTOMER BENEFITS AT A GLANCE

- + PROCESS OPTIMISATION**
Adjustment of the individual filtration process in real time.
- + PROCESS SAFETY**
Guarantee of continuous moisture values during all filtration process steps.
- + QUALITY IMPROVEMENT**
Setting a defined residual filter cake moisture content
- + PLANNABLE MAINTENANCE**
Early signs of blocking, bending or impending disc fractures.
- + SUSTAINABLE USE OF RESOURCES**
Reduction in energy and water consumption with consistent process results.
- + INCREASE IN EFFICIENCY**
Shorter cycle times with constant filter cake moisture, e.g. correlation of the maintenance interval of the filter cloths with increased residual cake moisture

EVEN MORE FLEXIBLE NOW: RENT-YOUR-SUCCESS

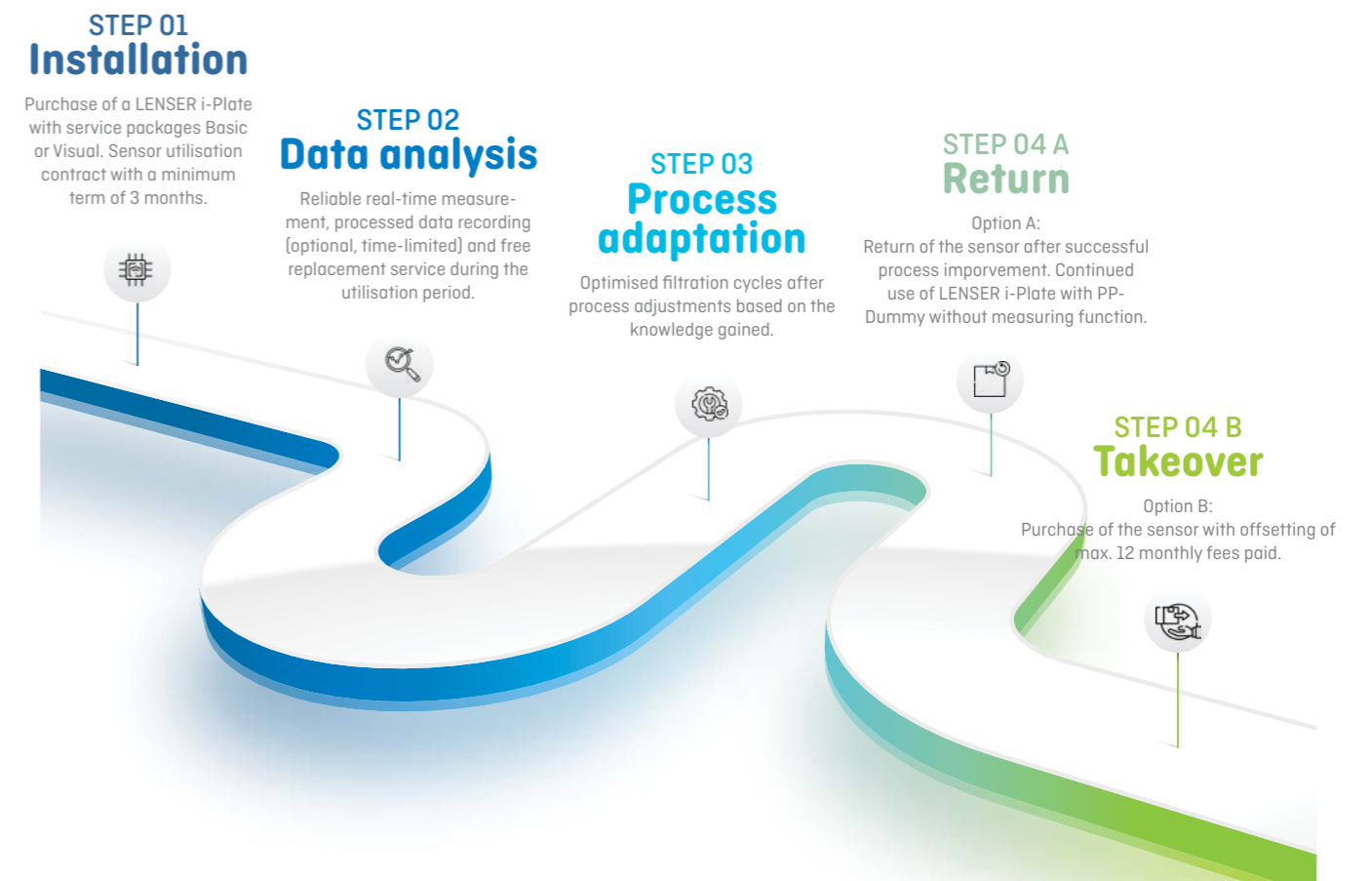
Now exclusively for those interested in the Basic and Visual service packages: Simply lease your digital sensor and optimise your filtration process effortlessly and without investment approval.

If you only want to gain knowledge about the dewatering behaviour of your filtration environment over a temporary period, we now also offer you the option of leasing our LENSER i-Plate with a monthly cancellable usage contract.

In order to be able to read out your filtration cycle with "Rent-Your-Success" and adapt it sustainably, you only need to purchase a LENSER filter element (LENSER i-Plate) customised to your needs. The sensor will be embedded in this.

The term of the licence agreement is between a minimum of three and a maximum of 24 months. After 24 months (or earlier), the user can purchase the sensor (offset against up to 12 monthly fees paid). This gives you even more flexibility to enjoy the smart benefits of our intelligent filter plate and get the most out of your filtration cycles.

Alternatively, the contract can be cancelled early. A special PP dummy is then placed in the position of the sensor, which will be sent back to LENSER.



LENSER i-PLATE: TECHNICAL DETAILS AT A GLANCE

LENSER i-PLATE – TECHNICAL DATA

Measurement range for moisture	0 to 100%
Measurement range for temperature	0 to 70°C
Measurement range for electrical conductivity	0 to 20 mS/m
Material	V4A High-grade steel and ceramics
Applications	Chemicals, Minerals, Mining and Environment
Sizes (filter elements)	From 470 mm to 2440 mm
Maximum filtration pressure	According to the specification of the recessed filter element
Maximum wash pressure	8 bar
Size (Sensor)	110 x 60 mm
Outputs	2 analog outputs and 1 digital output
Power supply	+12 to +24 V DC, 3 W

What are the challenges in your filtration process?

Even the smallest improvements in your filter elements can make a noticeable impact on your bottom line.

LENSER is the first port of call and a competent partner in choosing the right filter plate for your application. All our products are tailored according to our customers' requirements. Our application engineers analyze suspension and filtration parameters in order to achieve the desired filtration results with the right filter elements. Trust in our many years of expertise.



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