

The HB logo consists of the letters 'H' and 'B' in a bold, white, sans-serif font, enclosed within a black rectangular border.**Products**

# ARE YOU WASTING ENERGY AND MONEY ON UNNECESSARY DEFROSTING?

” Reduce the  
number of  
defrosting cycles  
by 50-70% on a  
yearly basis. “

## REDUCE ENERGY CONSUMPTION AND SAVE MONEY

Cold storage facilities have high energy demands, but in many cases, they are much higher than they need to be due to inefficient defrost management of the evaporators.

Defrosting has traditionally been scheduled on a timer, often resulting in unnecessary defrost cycles. This is costly on the energy budget, leading to significant reductions of profit. Superfluous defrost cycles can also result in reduced operational stability and poorer equipment performance.

### WHY IS DEFROST NECESSARY?

Over time, frost builds up on the evaporator fins, blocking the airflow and reducing the system's efficiency. Defrosting eliminates this ice buildup, ensuring efficient heat transfer while maintaining the capacity of the system and ensuring operational stability.

Uncontrolled defrosting can cause water drips, creating slippery and hazardous floors with an increased risk of workplace accidents.

### THE SOLUTION

The solution is to defrost when necessary, and only when necessary. This can be done by installing the DEFROST HBDF, a sensor using advanced technology to accurately measure the thickness of the frost buildup in the evaporators.

This sensor enables precise control over defrost cycles, allowing owners to freeze or cool larger quantities of products, maximizing facility utilization and productivity. Installing the DEFROST HBDF also eliminates the need for unnecessary service calls.

Facility owners can therefore save time and reduce expenses by avoiding excessive defrost cycles, resulting in improved equipment performance and minimized maintenance.

In cold stores, the HBDF can reduce the number of defrost cycles by 50-70% on a yearly basis, when compared to a traditional timer-based approach. Such a significant reduction can lead to significant energy savings. This means that owners and operators can see a return of investment for the HBDF in as little as 30 days.

Try the calculator now to see your potential savings → → →

**LINK**



# ABOUT DEFROST ON DEMAND

Demand-driven defrost systems directly measure ice accumulation on the evaporator's surface and initiate defrost only when required.

Defrosting at the same ice thickness each time will reduce the frequency and duration of the defrost cycles, compared to time-initiated methods. Expect significant energy cost savings compared to time-initiated methods.

## HOW DOES IT WORK

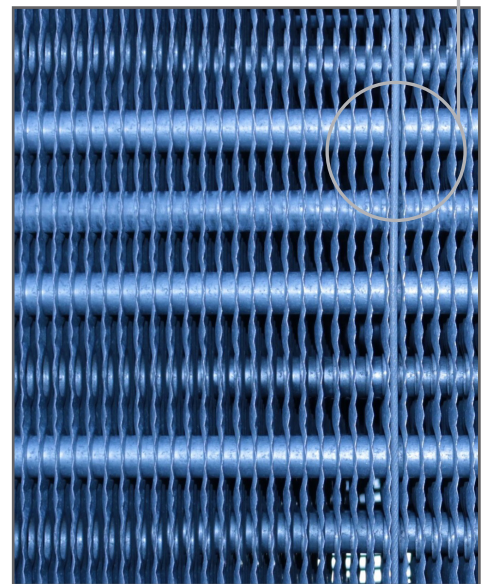
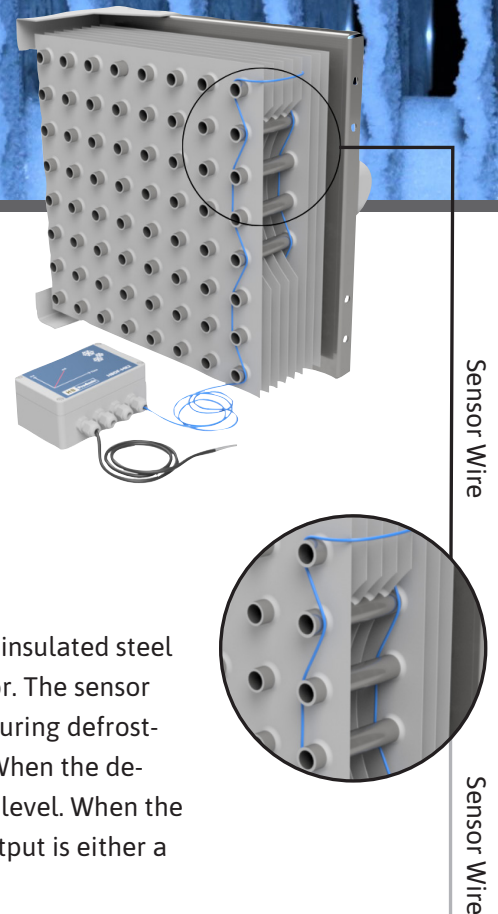
The defrost sensor is based on the capacitive measuring principle, in which an insulated steel wire acts as one conductor and the evaporator fins act as the second conductor. The sensor measures the ice thickness when the air is displaced by ice between the fins. During defrosting, the pF value is measured, which can be used to start and stop defrosting. When the defrosting has started, the ice becomes wet, whereby the pF value rises to a high level. When the ice has melted, the pF measurement drops again and stops the defrost. The output is either a 4-20mA analog output or/and a digital output sent to a master control system.

## HOW TO INSTALL

The defrost sensor can be installed both on existing as well as new evaporators, but it needs to be installed where the frost layer builds up. This will typically be on the air inlet side except on superheated evaporators where the frost builds in the middle of the evaporator – because the first pipes are superheated.

For existing systems, you simply watch where the frost layer is built up first and install the wire in that area.

For new evaporators, the wire must be installed where you expect frost to build up. The installation is made by fitting 5-10 m wire between the fins kept in place by the cooling pipes. The installation should be where you like to measure the frost build-up.



If you have any questions regarding the defrost sensor or wish to get a more detailed calculation of your exact savings, you are more than welcome to reach out – we are happy to help. Contact: [info@hbproducts.dk](mailto:info@hbproducts.dk)

FIND OUT MORE AT

[www.hbtransducer.com](http://www.hbtransducer.com)