



Newsletter January 2020

Dear Customer, Distributor and Partner,

Ready for a new year with continued focus on saving CO₂ and cost of operation



With increased focus on climate change, it is exciting to be a supplier for the refrigeration and heat pump industry. We can work with you to optimize and modify critical control of evaporators for a more safe and efficient operation that will save tons of CO₂.

Click to watch our new video:

[HBX Vapor Quality Sensor - A New Revolutionary Eco-friendly Technology](#)

Complete product series of Vapor Quality Sensors in Strainer Houses DN20 to DN300

The **HBX Vapor Quality Sensor** has now become a mature product - easier to install and use for all common refrigerants. The sensor family consists of three types:

- **HBX Vapor Quality Sensor** in strainer house in all standard sizes from DN20 to DN300.

- **HBX Angle Rod Sensor** size is now with oversized tubes. CO₂ is designed with next size tubing.
HFO / HFC / PROPAN is designed two pipe size up.

CO₂: Tube size 3/8" is changed to 1/2".....tube 1 1/8" is changed to 1 3/8"

HFO: Tube size 1/4" is changed to 1/2".....tube 1 1/8" is changed to 1 5/8"

The new HBX Angle Rod Sensor has got a new design optimized for measuring both High- and Low Vapor Quality and the sensor is less influenced by oil accumulation during low load than previous version.

- **HBX Inline Sensor** DN25 to DN50

The sensors can control an expansion valve directly in a DX system or control the circulation rate in an overfeed system - and of course provide the data for a PLC.

The sensors can also be used for detecting ammonia carbamate in a CO₂/NH₃ cascade system and be used for protecting compressors against liquid hammering.

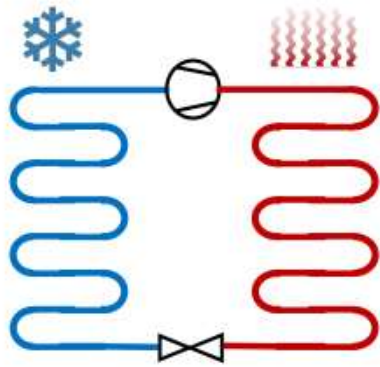
Under the download fan on our website you can find our new manual for all HBX sensor types [Click here](#)

Eye-catching savings - COP improvement with up to 52%



The German company Fischer KälteKlima has in cooperation with Hochschule Karlsruhe and a student, tested the efficiency of a NH₃ heat pump. In the test the heat pump is tested with two different control systems, one with a conventional superheat control and one using the **HBX Vapor Quality Sensor**. The improvement in COP at full load is 24% and at part load the increase is 52%. The system has a capacity of 100 kW, a charge of 4 kg NH₃ and is set up like a chiller with two plate heat exchangers.

Special sensors for heat pumps



Heat pumps are a growing business as fossil fuel fired stoves get banned to reduce global warming and replace the fuels by renewable energy. Heat pumps will grow for residential use and in central plants as well as for district heating. Large heat pumps using ammonia as refrigerant are very efficient but can become even more efficient by using some of the

products from HB Products like the **Vapor Quality Sensor** and the **Defrost on Demand Sensor**. Heat pumps operate at elevated temperatures and need at least sensors with different settings to operate reliable and safely. The sensors which are exposed to the elevated temperatures are now available in special heat pump versions.

Vapor Quality Sensors are being tested at Ghent University



HB Products has tested the **HBX Vapor Quality Sensor** on a transcritical CO₂ refrigeration system and compared with the results from a system controlled by a conventional super heat controller. With a system controlled by a Vapor Quality sensor it is possible to

raise the suction pressure with 8 K and save up to 20 % energy compared with a system with conventional super heat control. To get a third-party verification of the striking results HB Products has entered into collaboration with Ghent University in Belgium, who will perform several tests on the **Vapor Quality Sensor**.

This January 2020 edition of the HB Products newsletter includes numerous product news:

Product news and updates

HBOW Oil- and Water Separator unit:

For safe operation of an ammonia cooling / heat pump system with minimum maintenance and optimal energy consumption, it is important to have control of oil and water content on the



evaporator side.

The separation of oil, water and ammonia working fluid can now be established in a combi unit, wherein special capacitive sensors can measure whether it is oil, water or refrigerant surrounding the sensor.

The **HBOW Separator** consists of a tube with integrated separator plates

and sensors which are calibrated to measure the difference between oil and water. The upper part of the **HBOW Separator** is heated to ensure that the ammonia evaporates. The liquid remaining is only oil and water and using non-miscible oil types ensures that water and oil are separated by gravity. The water will automatically be drained which is controlled by the HBLC-W sensor. Oil return can also be established automatically as the pressure in the separator is higher than on the suction side of the compressor.

New HB Connect will enter the market in 2020



With the new **HB Connect** interface box the installation and configuration of your HB Sensors now gets much easier. The HB Connect makes it possible to connect several sensors, both HB and others, to your PLC or PC with only one cable to the control room. By using MODBUS-protocol the sensors can communicate

with the PLC making it possible to setup, configure and control the sensors remotely. We are currently working on a more advanced version, the **HB Connect & Control**, which can operate as a local controller instead of a PLC.

Improved HBPH-MK2 sensor – Now ready for Low Temperature Applications



Based on customer needs we can from 1st of March 2020 proudly present a new improved **HBPH-MK2-LT** sensor specified for low temperature applications. The new improved version can be used in liquid temperatures -15...+95°C (+5...+203°F).

The new sensor can now be used to an even greater extent as NH3 / Brine leak sensor as well as in applications with glycol etc.

Ice bank sensor - Ice Thickness Gauge



Based on the Defrost Sensor a new sensor for ice banks is now launched. The sensor can be mounted on evaporator pipes or brine tubes and measure the ice thickness between 1 and 100 mm.

Ice banks can reduce the environmental impact by using renewable energy for cooling purpose. Ice banks are used for storing cooling capacity for HVAC or process cooling. Ice banks do time shifting and is charged when there is a power surplus or when power cost is low, typically together with solar power. Ice banks for process purpose makes it possible to reduce refrigeration system size significantly.

New CO2 Gas Alarm HBGS-CO2 & upgraded NH3 Gas Alarm introduced in 2020



We are upgrading the **HBGS-NH3** gas alarm sensor. The new version will be introduced with electrochemical design. It has a faster response time than the previous version and has improved stability. The sensor comes with an upgraded measurement

range 0 ppm...1000 ppm and can be used in operating temperatures within the range of -30...+50°C (-22...+122°F).

In addition to upgrading the NH3 sensors we are also introducing a CO2 Gas Alarm **HBGS-CO2**.

The key features are IR technology and a fast response time. The measurement range will be 0 ppm...10000 ppm (0..1%) and the operating temperature is within the range of -40...+60°C (-40...+140°F).

Both sensors will be available for purchase primo 2020.

Level sensors with ATEX approval for Zone 0



ATEX Zone 0 is one of the two most dangerous zoning classifications and HB level sensors can now be supplied with ATEX approval for Zone 0.

The more dangerous the environment the more strict legislation.

Thereby it is possible to use HB Level Sensors in some of

the most dangerous environments which opens up for the use of HB sensors in a lot of new applications within the refrigeration industry as well as in applications within the marine & offshore sector and petrochemical industry etc.

See You in the New Year 2020 !

Finally we wish you all a Happy New Year!

With best regards
The HB Products Team

[Edit your subscription](#) | [Unsubscribe instantly](#)

HB Products A/S
Bøgekildevej 21
DK-8361 Hasselager
Denmark
Phone +45 8747 6200
Fax. +45 8747 6209
info@hbproducts.dk
www.hbproducts.dk