PRODUCTS FOR AMMONIA SYSTEMS

Sensors for safe and optimal operation of ammonia systems

HB Products

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25 years of experience

With over 25 years of experience, HB Products is at the forefront of developing and producing sensors for industrial and commercial refrigeration and heat-pump systems. Based in Aarhus, Denmark, we continuously push the technology to ensure better, more efficient, and durable products for the future.

With distributors in more than 60 countries, we can ensure technical expertise and optimal solutions worldwide for energy-efficient evaporator control, level control, and oil management.

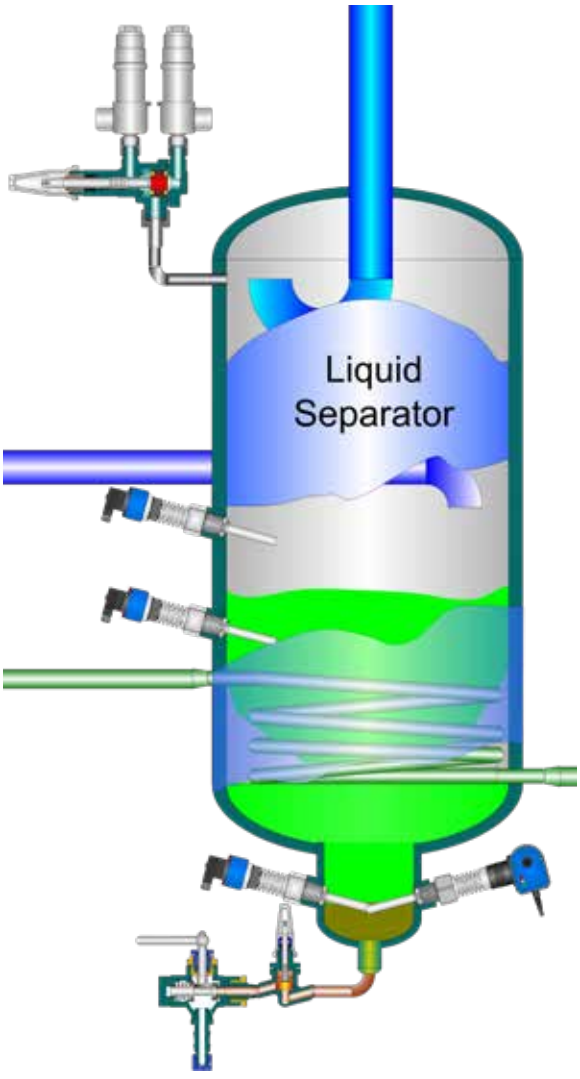
However, our strong global presence never compromises the close collaboration we are dedicated to maintain with our customers.

Standard Ammonia Switches

HBSR

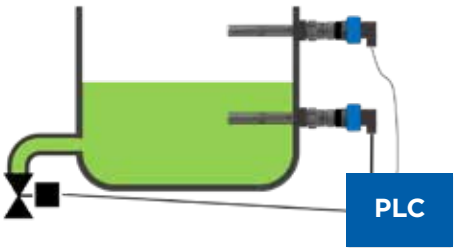
The HBSR switch is designed to detect liquid ammonia in gas. Commonly used in separators, it is available in a range of temperature ratings from -55°C to 80°C (-67°F to 176°F).

The conventional switches are available for both 24 V AC/DC and 90-240V AC supply. Outdoor versions are available for wet or condensing applications.

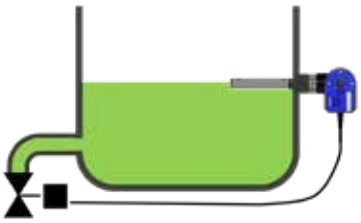


Special Switches

Dual switch application
High and low level



Single switch application
One smart automatic switch



The HBOR/C and HBOC/C switches are designed to maintain a consistent level in applications where refrigerant or oil is regularly added or removed, such as in receivers or oil separators. These switches come with a built-in controller to manage liquid levels, making them ideal for a range of applications.

The HBOR/C switch detects oil in liquid ammonia, while the HBOC/C switch detects oil in gas. Both switches feature a standard relay output and are also available with a cable output for direct valve control, eliminating the need for a PLC. This reduces wiring costs and simplifies the overall system.

Level Switches for ammonia systems

Standard Oil Switches

HBSO

The HBSO series is a range of oil switches designed to operate in temperatures from as low as -30°C to as high as 145°C (-22°F to 293°F), making them suitable for a wide variety of cold and warm applications.

HBSO-LT is suited for cold oil and cold ambient conditions.

HBSO1 is suited for normal dry conditions.

HBSO1-MT is suited for heat pumps and elevated temperature applications.

HBSO-SSR-1-HT is suited for hot applications.

HBOR

The HBOR switch is capable of detecting both oil and gas in liquid ammonia, allowing it to drain oil from a vessel containing oil, liquid ammonia, and gas. If there's only gas without liquid ammonia, the HBOR can detect this too, helping to prevent the unintended return of gas.

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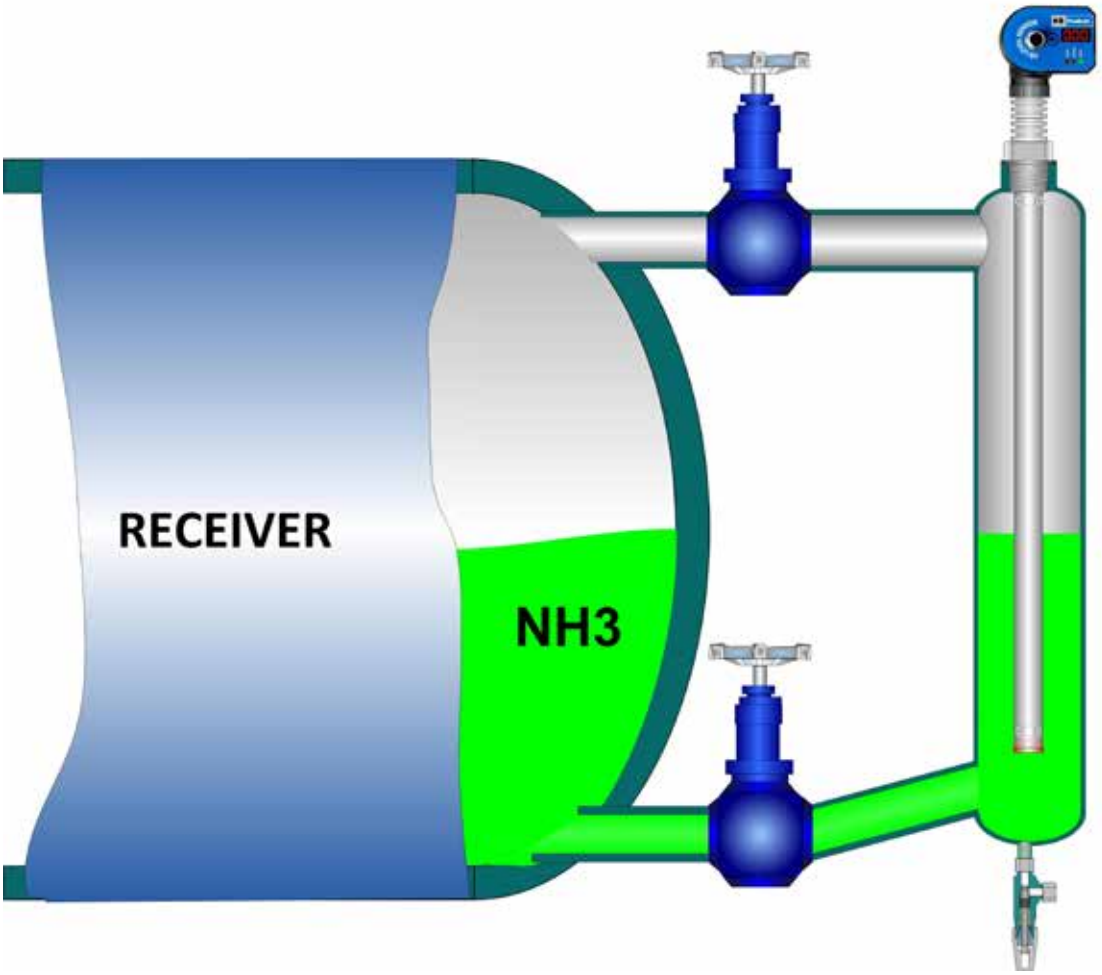
Liquid Level Sensors



HBLT-A3

HBLT-W-WIRE

Level Sensors

HB Products offer three types of Level Sensors designed for ammonia systems.

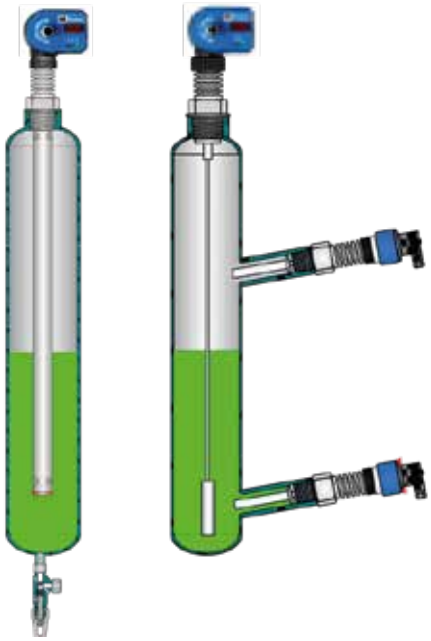
HBLT-A3

Our latest standard Level Sensor, the A3, has been used in heat pumps for years. It offers reliable accuracy across a wide range of applications.

HBLT-W-WIRE

This Wire Sensor is extremely lexible and can be cut to your desired length, making it ideal for spaces with low ceilings or other situations where installing a long rod is not possible.

All the sensors provide a 4-20 mA analog signal compatible with PLCs, and are available with an LCD display and a controller output for direct valve control.



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Vapor Quality Control

HBX

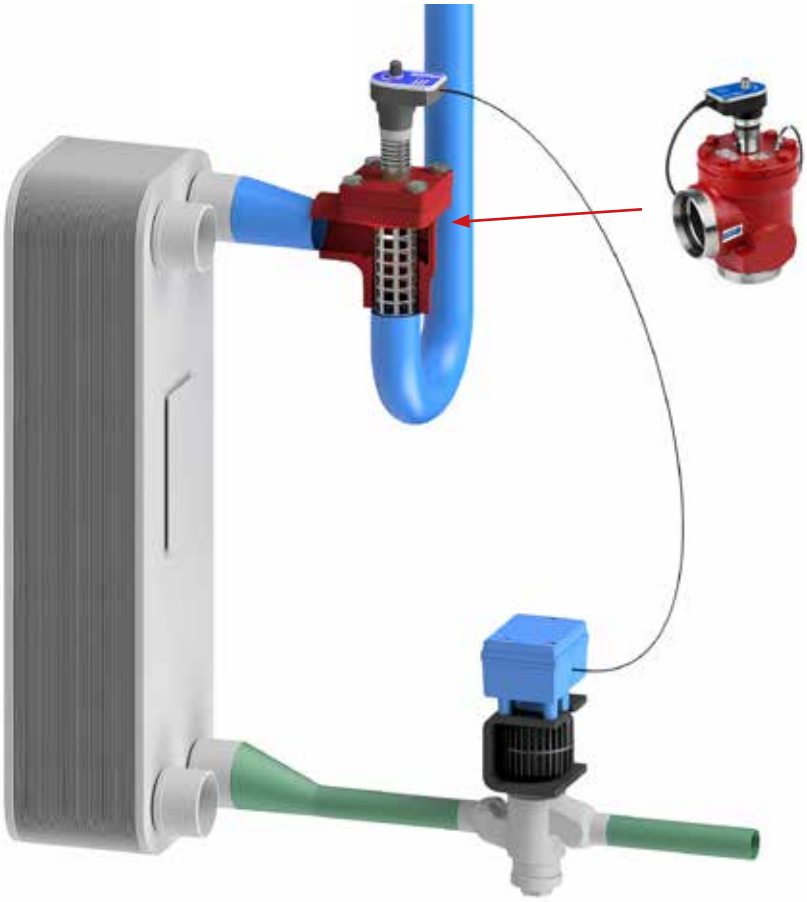
Vapor Quality Sensors are suitable for liquid overfeed systems and low-charge DX systems. They come in sizes ranging from DN25 to DN300 and can be configured as straight pipes or integrated into a strainer housing.

Liquid Overfeed and Circulating Pump Systems

The Vapor Quality Sensor measures the liquid content in the evaporator outlet. This signal is used for controlling the circulation ratio.

By controlling the circulation, the pressure loss can be reduced dramatically, and risers will also work in part load.

The reduced pressure loss leads to reduced power consumption and a larger capacity. Typical benefits are 10 - 80% reduction in power, but the evaporator and system design is very important. The largest benefit is obtained in part load operation and for systems with circulation ratios above 3.



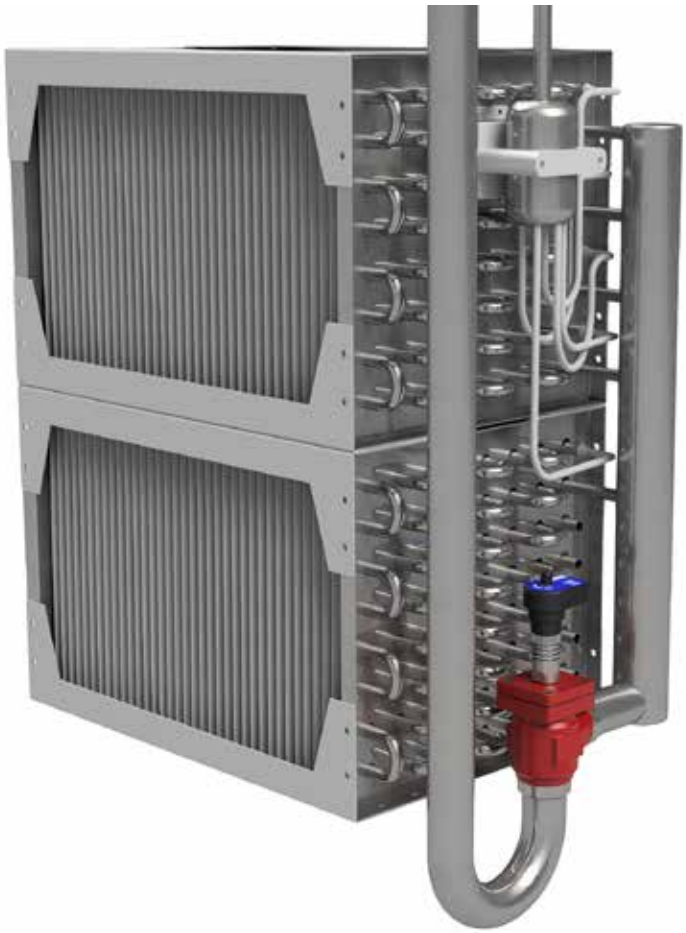
DX Systems

DX systems reduce pressure loss. The benefits are reduced power consumption and a larger capacity. Typical benefits are 20-50% reduction in power consumption and 10% increase in capacity.

The largest saving is obtained in part load operation.

The Vapor Quality Sensor measures the liquid content in the evaporator outlet. This signal is used for controlling the expansion valve and secures that the suction line is dry.

This control system replaces the conventional superheat control and can reduce the superheat to less than 1K.



The Vapor Quality Sensor must be installed right after the evaporator to avoid liquid build-up between the evaporator and the sensor.

PRODUCTS FOR AMMONIA SYSTEMS

Sensors for leakage detection

HBGS - Ammonia Gas Detector

The HBGS sensor is designed to detect ammonia gas leaks, providing safety for employees and protecting stored goods. It comes with various detection ranges, from 0-100 ppm to 15% ammonia concentration.

HBCP - Compressor Protection Sensor

The HBCP Compressor Protection Sensors safeguard compressors from liquid slugging by detecting liquid at the compressor's suction inlet. They help prevent serious compressor damage by providing early warning and allowing for corrective action

HBPH - pH Sensor

The HBPH-MK2 is a durable pH sensor designed for industrial refrigeration, primarily used to measure the pH of brine for detecting ammonia leaks in heat exchangers.

HBAC - For Ammonia CO2 cascade systems

The HBAC sensor detects CO2 leaks in ammonia circuits, which cause the formation of corrosive salt crystals (ammonia carbamate). These crystals can clog systems and lead to severe damage if not caught early. The sensor provides a quick alert for even small leaks, helping prevent costly repairs.

Proven by the Industry

HB Products has made reliable and efficient sensors and switches for the cooling industry for over 25 years.

We know that refrigeration systems must remain up and running, and we make all our products with that requirement in mind. Therefore, we test new products in refrigeration systems or industrial applications before we add them to our product line. That way we can guarantee that your installation will run safely and efficiently.

All our products are developed and made in Denmark to ensure the highest standards of quality. We use local components widely in the production and have our own in-house QA to ensure that every item lives up to the highest standards.

HB Products

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We are dedicated to supplying switches and sensors for industrial applications. We focus on refrigeration, but our sensors can be used in other industrial applications where robust and reliable sensors are called for.
Our sensors are developed and manufactured in Denmark. We mainly use local sourced parts to increase flexibility and reduce lead times.
All sensors and switches comply with EU directives and have earned the CE marking.