



HB PRODUCTS A/S

PRODUCT OVERVIEW

WHO ARE WE?

- HB Products is a Danish company that develops and produces sensors for industrial and commercial refrigeration and heat pump systems.
- We are known for being at the forefront of using new technologies and supplying products of tomorrow, even today.
- Since our start over 25 years ago, we have attained a solid global position with distributors in more than 60 countries.
- Our customers vary from world-leading OEMs to small contractors.

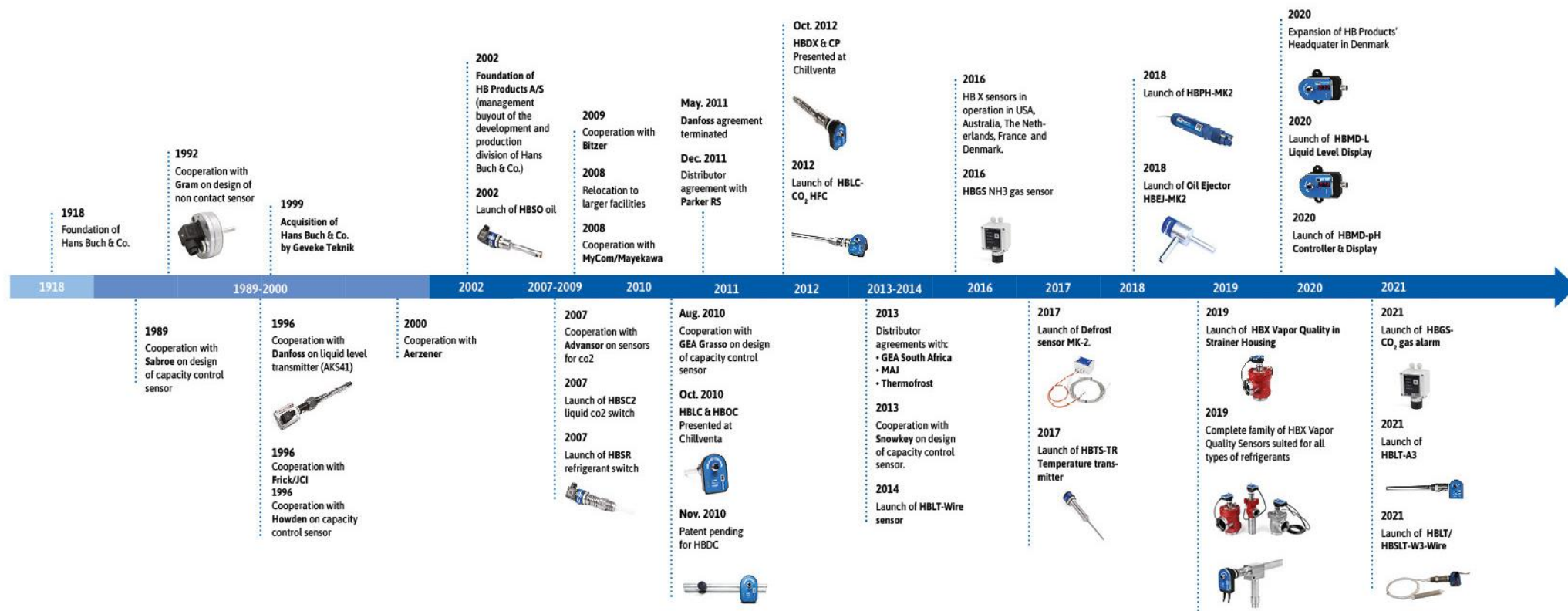
ENJOY OUR COMPANY VIDEO



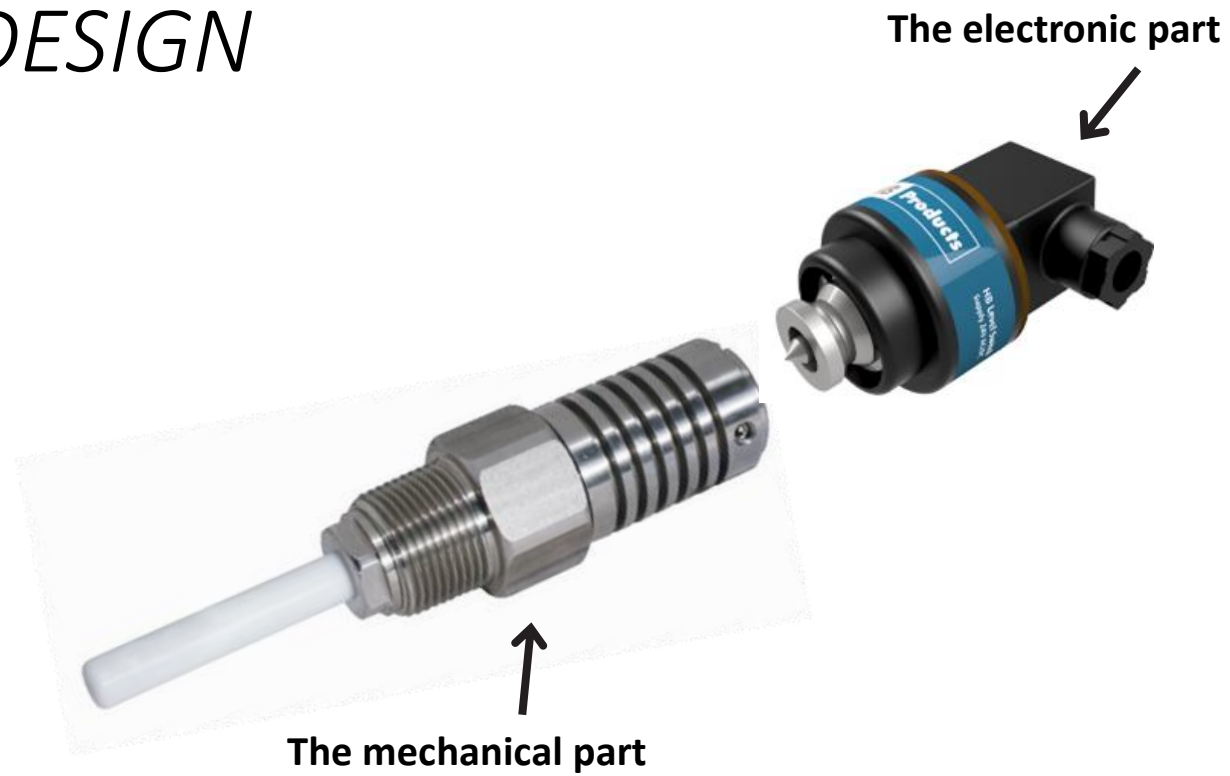


PRODUCT OVERVIEW

TIMELINE

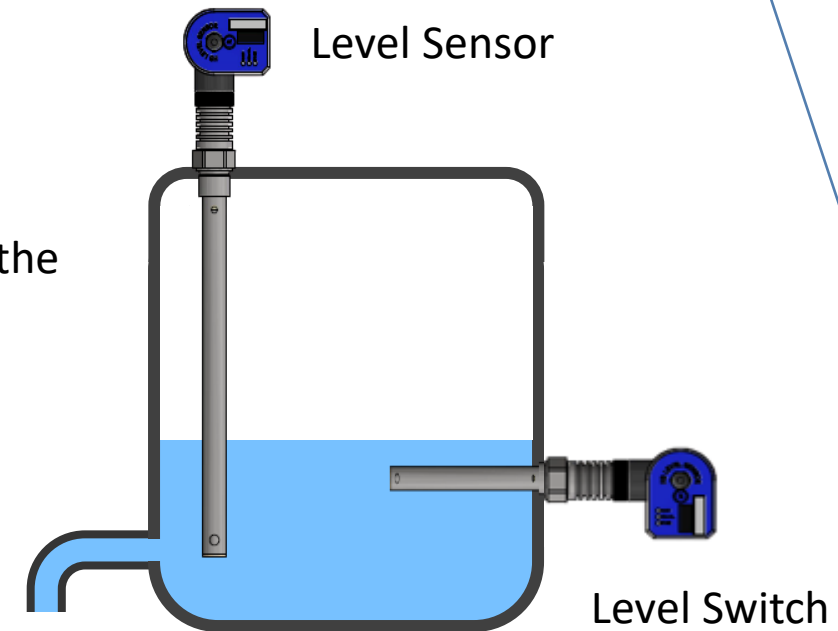


SPLIT DESIGN

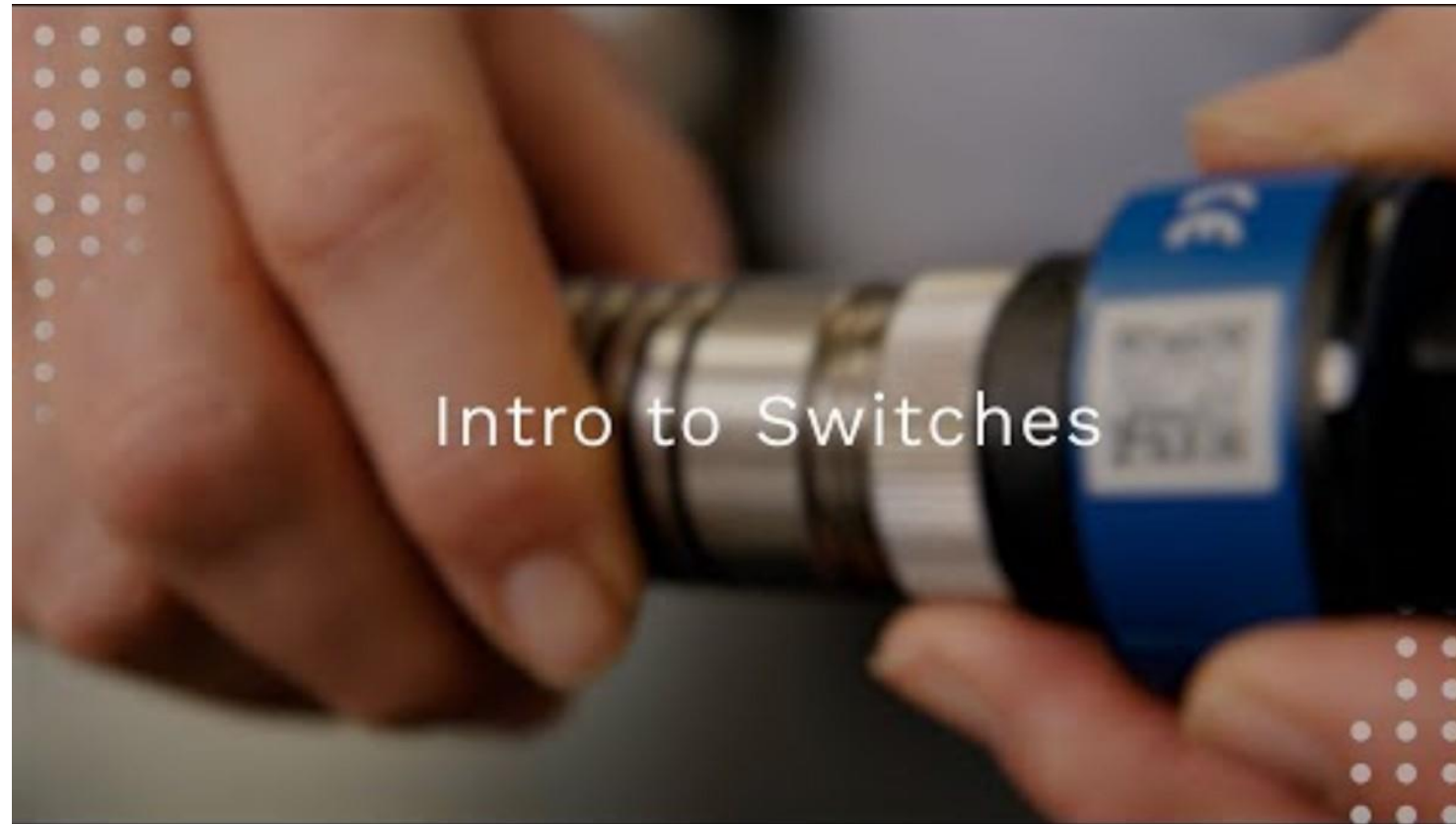


LIQUID LEVEL SWITCHES

- We have various capacitive-level switches for refrigeration and industrial use.
- Due to the capacitive principle, the switches are optimized and calibrated for different groups of liquids and working conditions.
- All the Level Switches can detect liquid in gas or detect one liquid in another liquid.
- Split design – the electronic head can be replaced without evacuating the system.



GET AN INTRODUCTION TO OUR LIQUID LEVEL SWITCHES.
























IN THIS VIDEO, WE WILL TAKE YOU THROUGH THE DIFFERENCES BETWEEN OUR THREE TYPES OF SWITCHES.














SELECTION GUIDE FOR OUR LEVEL SWITCHES

24V AC/DC Level Switches

	24V AC/DC		LIQUID IN GAS			OIL IN AMMONIA OR WATER
Liquid temperature Recommended liquid temperature and IP class. Specified temperature range is typically wider	PAO oil Mineral oil POE oil High temperature	POE oil Low temperature PAG oil	R744 CO2 R600 Butane R600a Isobutane R290 Propane	R507, R410a, R407c R404a, R22, R32, R134a, R1234yf, R1234ze Other HFC/HFO/CFC	R717 NH3 Water Alcohols	Oil (All types)
Cold and cold ambient conditions IP66	HBSO1-LT  -30°C to 40°C (-22°F to 104°F)	HBSO2-LT  -30°C to 40°C (-22°F to 104°F)	HBSC2-SSR-1/IP -50°C to 30°C (-67°F to 86°F)	HBSR-HFC-SSR-1/IP -55°C to 30°C (-67°F to 86°F)	HBSR-SSR-1/IP -55°C to 30°C (-67°F to 86°F)	HBOR/C-U -60°C to 80°C (-76°F to 176°F)
Normal dry conditions IP54	HBSO1  0°C to 60°C (32°F to 140°F)	HBSO2  0°C to 60°C (32°F to 140°F)	HBSC2  -40°C to 50°C (-40°F to 122°F)	HBSR-HFC  -40°C to 50°C (-40°F to 122°F)	HBSR  -40°C to 50°C (-40°F to 122°F)	HBOR & HBOR/C -60°C to 80°C (-76°F to 176°F)
Normal but wet and condensing applications IP66 	On request	On request	HBSC2-U  -40°C to 50°C (-40°F to 122°F) 	HBSR-HFC-U  -40°C to 50°C (-40°F to 122°F) 	HBSR-U  -40°C to 50°C (-40°F to 122°F) 	HBOR/C-U  -60°C to 80°C (-76°F to 176°F) 
Warm IP54	HBSO1-MT  40°C to 100°C (104°F to 212°F)	HBSO2-MT  40°C to 100°C (104°F to 212°F)	HBSC2  50°C to 80°C (122°F to 176°F)	HBSR-HFC  50°C to 80°C (122°F to 176°F)	HBSR-HP  50°C to 80°C (122°F to 176°F)	On request
Hot IP54	HBSO1-SSR-1-HT 90°C to 145°C (194°F to 293°F)	HBSO2-SSR-1-HT 90°C to 145°C (194°F to 293°F)	On request	On request	On request	N.A.

90-240V AC Level Switches

	90-240V AC		LIQUID		
Liquid temperature Recommended liquid temperature and IP class. Specified temperature range is typically wider	PAO oil Mineral oil POE oil High temperature	POE oil Low temperature PAG oil	R744 CO2 R600 Butane R600a Isobutane R290 Propane	R507, R410a, R407c R404a, R22, R32, R134a, R1234yf, R1234ze Other HFC/HFO/CFC	R717 NH3, R718 Water Alcohols
Cold and cold ambient conditions IP66 	HBSO1-SSR-2-LT  -30°C to 40°C (-22°F to 104°F) 	HBSO2-SSR-2-LT  -30°C to 40°C (-22°F to 104°F) 	HBSC2-U-SSR2  -55°C to 80°C (-67°F to 176°F) 	HBSR2-U-SSR2  -55°C to 80°C (-67°F to 176°F) 	HBSR2-U-SSR2  -55°C to 80°C (-67°F to 176°F) 
Normal and warm dry conditions IP54	HBSO1-SSR-2 0°C to 60°C (32°F to 140°F)	HBSO2-SSR-2 0°C to 60°C (32°F to 140°F)	HBSC2-SSR-2 -30°C to 80°C (-22°F to 176°F)	HBSR-SSR-2 -30°C to 80°C (-22°F to 176°F)	HBSR-SSR-2 -30°C to 80°C (-22°F to 176°F)

IP class:

IP54 is suited for indoor use with limited condensation and no water jet cleaning.

IP66 is suited for outdoor use where condensation occur. If high-pressure water cleaning with aggressive cleaning agents is used the sensor need further protection.

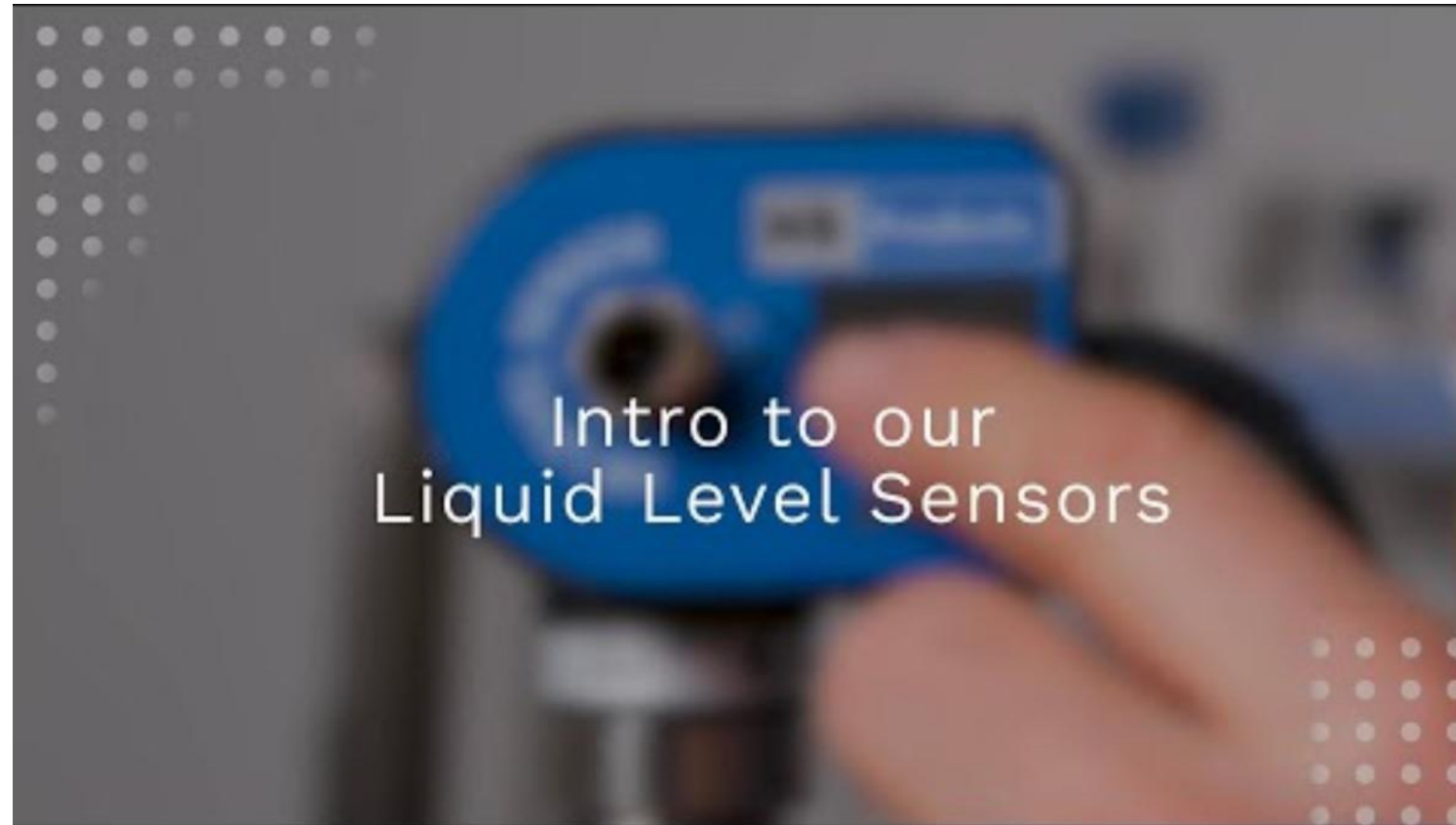
LIQUID LEVEL SENSORS

- All the level sensors can measure the liquid level in gas or two immiscible fluids.
- We have 2 different versions: Rigid probe and wire.
- The electronic unit has a built-in controller that can control a valve directly without needing a PLC and cabling between the valve and a PLC.
- The electronic head can be dismantled and replaced without affecting the mechanical part sitting in the pressurized system.

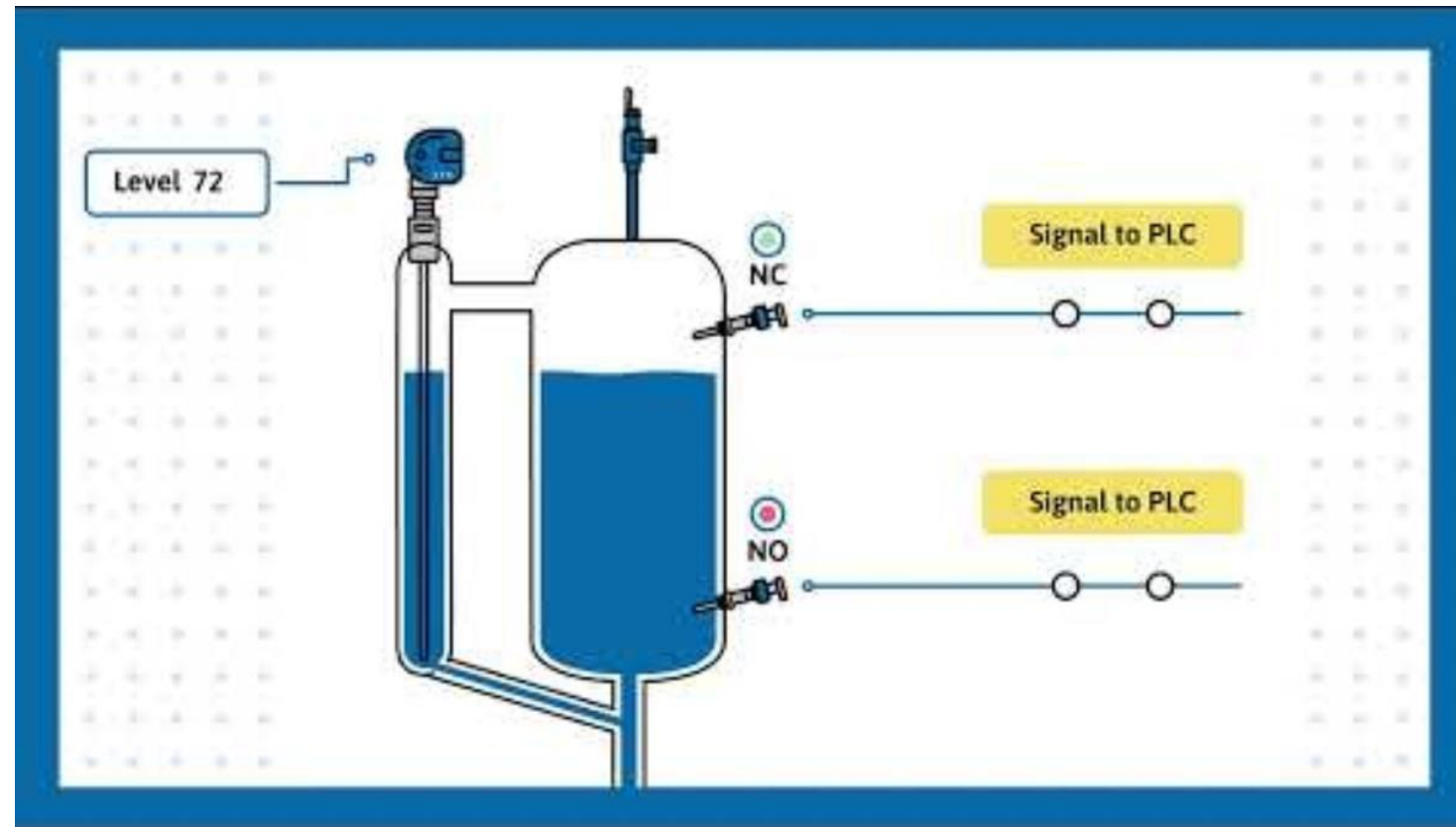
	Wire Sensor	Rigid Probe
Suited for Ammonia, HFC, HFO, CFC and Water	Yes	Yes
Suited for CO2, Propane, Butane, Isobutane	No	Yes
Suited for oil and fuels	No	Yes
Suited for not mixed fluids (Ammonia and oil in gas)	No	No
Available with direct valve controller	Yes	Yes
Accuracy	High	Very high
Split design (replaceable electronic unit)	Yes	Yes
Adjustable length	Yes	No
















THIS VIDEO SHOWCASES FOUR TYPES OF OUR LIQUID LEVEL SENSORS



IN THIS VIDEO, WE'LL SHOWCASE THE FUNCTIONALITY OF OUR LIQUID LEVEL SWITCHES AND LIQUID LEVEL SENSORS.



SELECTION GUIDE FOR OUR LEVEL SENSORS

24V AC or DC Liquid temp. max 80°C (176°F) Ambient temp. -30°C to 50°C (-22°F to 122°F)	Oil		R744 CO2 R600 Butane R600a Isobutane R290 Propane		Synthetic refrigerants HFC/HFO/CFC		R717 NH3 R718 Water Alcohols	
Rigid probe analog output only	HBLC-OIL 200-3000 mm	 	HBLC-CO2 200-3000 mm	 	HBLC-HFC 200-3000 mm	 	HBLT-A3 200-3000 mm	 
Rigid probe analog and direct control output	HBSLC-OIL/C HBSLC-OIL/S HBSLC-OIL/PWM 200-3000 mm		HBSLC-CO2/C HBSLC-CO2/S HBSLC-CO2/PWM 200-3000 mm		HBSLC-HFC/C HBSLC-HFC/S HBSLC-HFC/PWM 200-3000 mm		HBSLT-A3/C HBSLT-A3/S HBSLT-A3/PWM 200-3000 mm	
Wire/Flex probe analog output only	HBLT-FLEX 300-2000 mm	 	HBLT-FLEX 300-2000 mm	 	HBLT-W-Wire 600-6000 mm	 	HBLT-W-Wire 600-6000 mm	 
Wire/Flex probe analog and direct control output	HBSLT-FLEX/C HBSLT-FLEX/S HBSLT-FLEX/PVM 300-2000 mm		HBSLT-FLEX/C HBSLT-FLEX/S HBSLT-FLEX/PVM 300-2000 mm		HBSLT-W-Wire/C HBSLT-W-Wire/S HBSLT-W-Wire/PWM 600-6000 mm		HBSLT-W-Wire/C HBSLT-W-Wire/S HBSLT-W-Wire/PWM 600-6000 mm	

 Indicate if the sensor is available in a special ATEX/IECEx version.

  Connection diameter available

VAPOR QUALITY SENSORS

- The sensor can directly measure the liquid content in the evaporator output.
- The sensor works in pump circulated and DX systems and can optimize the efficiency and capacity to a new level.
- We have different versions of the sensors suited for different pipe sizes - both straight and elbow versions.
- Split design – the electronic head can be replaced without evacuating the system.



GET AN INTRODUCTION TO OUR HBX VAPOR QUALITY SENSOR, THE FIRST SENSOR IN THE WORLD CAPABLE OF MEASURING THE RELATIONSHIP BETWEEN VAPOR AND LIQUID IN A REFRIGERATION SYSTEM.

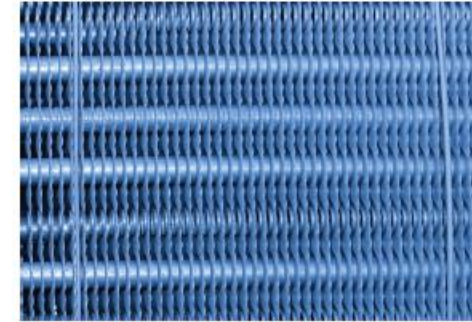


IN THIS VIDEO, OUR PRODUCT MANAGER, HENRIK KUDSK, WILL EXPLAIN THE DESIGN AND ESSENTIAL FUNCTIONS OF THE VAPOR QUALITY SENSOR TYPES: THE ROD STYLE AND STRAINER HOUSE.

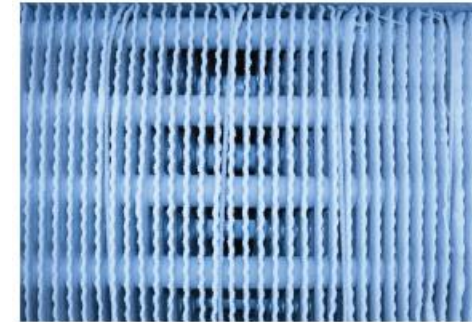


DEFROST SENSORS

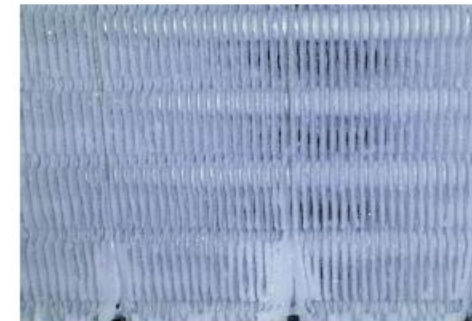
- The Defrost Sensor measures the frost layer on the fins and provides a 4-20 mA signal for the PLC or controller.
- The measurement is used to start and stop defrosting only when needed.
- Traditionally, evaporator defrosts are based on a fixed schedule; by basing the defrosting on an actual measurement, defrost can be done only when needed.
 - This can typically reduce the number of defrosting cycles by 50%.



1. Clean evaporator



2. Recommended ice formation



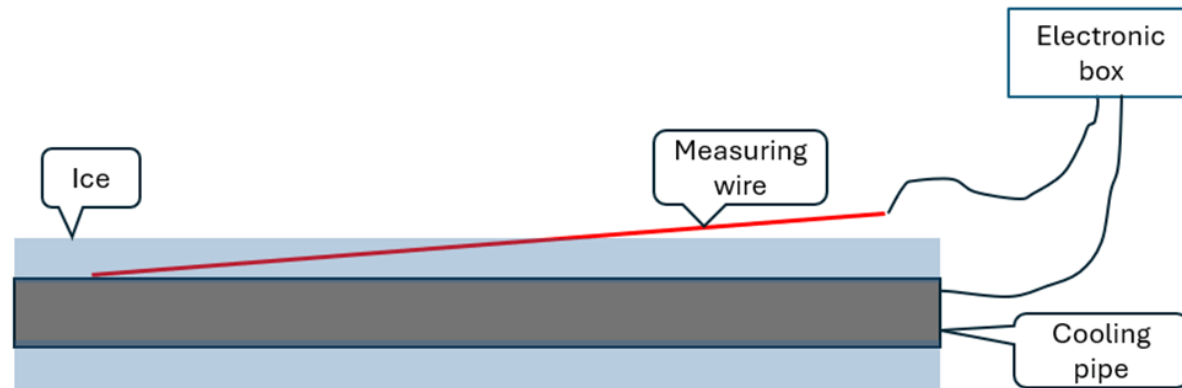
3. Too much ice formation

IN THIS VIDEO, OUR PRODUCT MANAGER, HENRIK KUDSK, EXPLAINS THE FUNCTIONALITY OF THE DEFROST SENSOR THAT IS USED FOR MEASURING THE FROST LAYERS ON AN EVAPORATOR.



ICE BANK SENSOR

- The sensor can measure the thickness of the ice layer on a cooling pipe in a grounded metal water tank.
- The latest version has been in operation in dairies from Q4-2023, controlling the refrigeration system and securing the desired ice thickness on the cooling pipes.



SAFETY AND LEAKAGE DETECTION

- We have a range of sensors able to detect leaking refrigerant in different applications and sensors that protect the compressor against liquid slugging.
- Leaking refrigerant can be a threat to people, to the environment, and to goods.

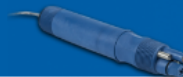
Gas Alarms

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pH sensors - Brine Leakage

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Leakage Detection - Cascade Systems

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Compression Protection

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Alarms & Leakage Accessories

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PRESSURE AND TEMPERATURE SENSORS

Temperature Sensor - PT100/PT1000

Output: PT100/PT1000
Product code: HBTS



Pressure Sensor

Output: 4..20 mA
Product code: HBPS



Temperature Sensor - Wall Mount

Output: 4-20 mA
Product Code: HBTS-TR-W



Temperature Sensor - Cable

Output: PT100/PT1000
Product Code: HBTS-Cable



Temperature Sensor - 1/4" NPT/BSPP

Output: 4..20 mA
Product Code: HBTS-TR



MOTORIZED CONTROL VALVES

Modulating Valve - MVS661

Size: DN 25 - 0,10 to 6,3 m³/h
Product Code: MVS661



Modulating Pilot Valve

For: Pilot Valves
Product Code: M2FP03GX



MISCELLANEOUS

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OEM Products

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Oil Ejector

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ADDITIONAL INFO

Contact information

E-mail: info@hbproducts.dk

Phone number: +45 87 47 62 00

Additional information

