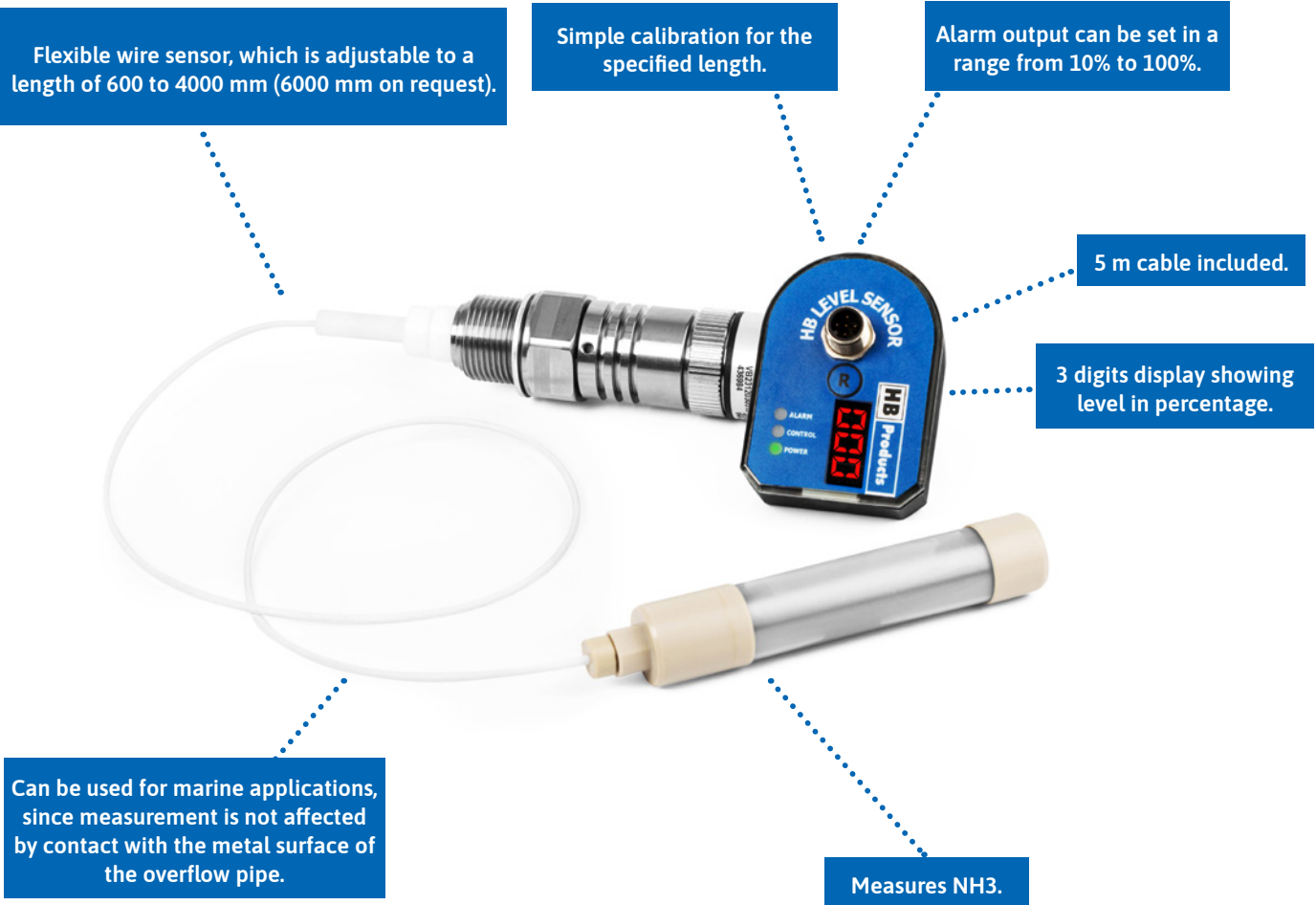


# NH<sub>3</sub> Liquid Level Sensor - Wire

## Category: HBLT-W-Wire & HBSLT-W-Wire



### Functional description:

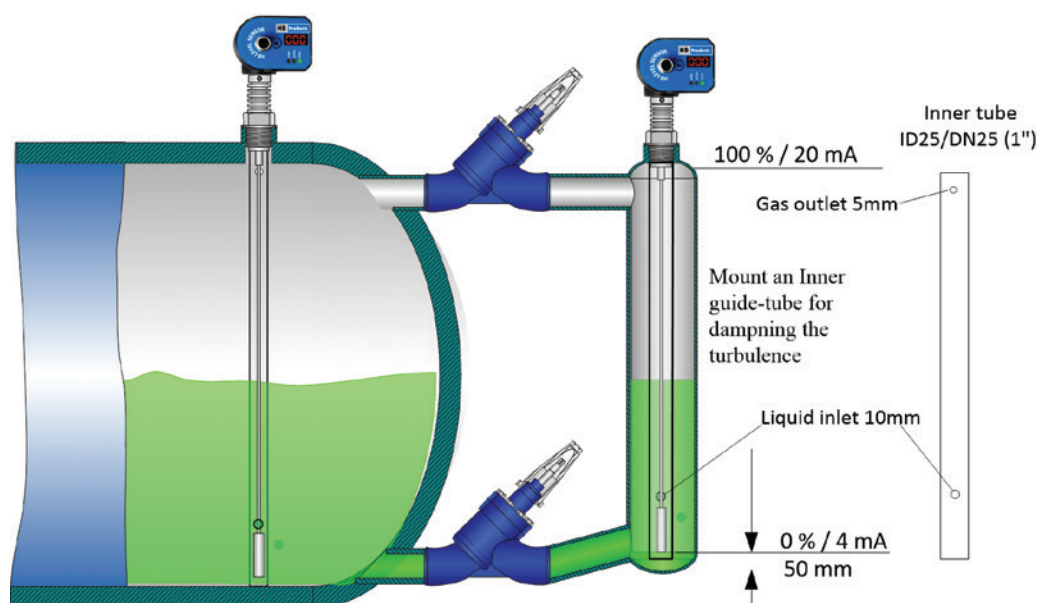
HBLT-W-WIRE is a capacitive sensor for level measurement of NH<sub>3</sub> refrigerant in industrial refrigeration systems. The sensor has an output signal of 4-20 mA, which is proportional with 0 to 100%. The output signal is 4 mA for an empty vessel and 20 mA for a full vessel. HBLT-W-WIRE can be adjusted in length to the current application. The sensor element consists of a 2 mm preisolated steel wire. Both parts are provided with a length of 4 m and can be shortened with diagonal cutters or other pliers. HBLT-wire can be used in connection with the HBLT-C1 controller for controlling pumps, etc., or it can be configured to directly control a valve without the need for another controller. Also available with integrated cable for direct control of any type of liquid valve.

The sensor is delivered in a version without integrated cable (named HBLT-WIRE) and a version with cable for direct control of valves (named HBSLT-WIRE).



- Available as 2-wire sensor
- Now with ATEX / IECEx certificate (This version is without LED display)

## Use of HBLT-Wire sensor



When using a level sensor for measuring Ammonia in a compact plate and shell heat exchanger or other systems with turbulent conditions, we have new recommendation based on recent experience:

### Stand-pipe construction:

- It is essential to secure drainage of oil from the standpipe. The drainage outlet must be below the lowest sensor point and the outlet should have a slope towards the tank. A collection of oil in the standpipe will disturb the measurement.

### For Stand-pipes with stable conditions (smooth changes in the level):

- Use a HBLT-Wire, a HBLT-A1 rod style sensor or a HBLT-A2 rod style sensor.

### For Stand-pipes with turbulent conditions (a lot of turbulence, cooking, foaming, liquid from the top):

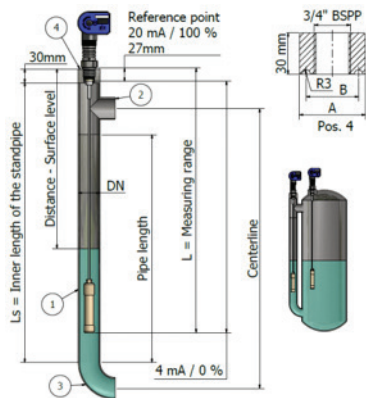
- Use a HBLT-A2 rod-style sensor, or
- Use only a HBLT-Wire sensor when you have it mounted in an inner guide-tube of e.g. DN25 as illustrated. The guide-tube will dampen the turbulence and the foaming and you will have a good measurement.
- If HBLT-Wire sensor is already mounted under these conditions WITHOUT a guide-tube, do eventually set the filter time function between 60-120 seconds to dampen the signal from the turbulent conditions.

### For tank/drum installation:

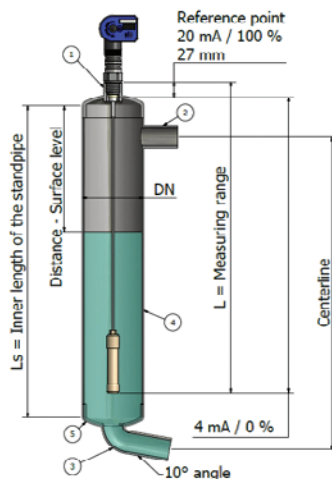
- Use a HBLT-A1 rod-style sensor, or
- Use only a HBLT-Wire sensor when you have it mounted in an inner guide-tube of e.g. DN25 as illustrated. The guide-tube will dampen the level and the foaming and you will have a good measurement.
- If HBLT-Wire sensor is already mounted under these conditions WITHOUT a guide-tube, do eventually set the filter time function between 60-120 seconds to dampen the signal from the turbulent conditions.

### For Alfa Laval U-turn evaporator:

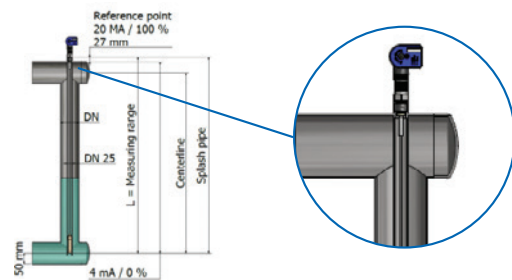
- Use an HBLT-A2 rod-style sensor.



Stand pipe: DN32.....DN65.  
Recommended pipe standard: DIN 10220  
Recommended bending: DIN 2615-1/Type 3  
Recommended TEE: DIN 2615-1



Standpipe: DN65...DN100.  
Recommended pipe standard: DIN 10220  
Recommended bending: DIN 2615-1/  
Type 3  
Site pipe can be designed in smaller pipe  
e.g. 0.5 x DN.



If the sensor is installed in standpipe on front of plate heat exchanger with return liquid flow the wire must be protected against splashing with a protection tube size DN25..DN32.

If a splashing pipe is not installed, the filter time can be changed to 120 sec. See separate manual for sensor configuration.

## Technical data

Power supply		Mechanical specifications	
Voltage	24 V AC/DC + 10%	Thread connection	3/4" NPT/BSPP
Current consumption - sensor only*	Max 50 mA	Material - mechanical parts	AISI 304 / PTFE
		Material - electronic parts	Nylon 6 (PA)
Plug connection	M12, 5 pins - DIN 0627	Dimensions	See drawing
Output		Environmental conditions	
Analog output	4-20 mA	Ambient temperature	-30...+50°C (IP version: -60...+50°C)
Alarm output	1A (24V DC)	Refrigerant temperature*	-60...+80°C
LED indication	Green, yellow, and red	Max pressure	100 bar
Max. possible resistance	500 ohm	Protection degree	IP65
Cable specification (power supply)		Vibrations	IEC 68-2-6 (4g)
Cable size	5 m - 3 x 0.25 mm2	Accessories	(To be ordered separately)
Cable glands	PG7 / M8	Adapter - 3/4" NPT / 1" BSPP	HBS/ADAP/8/2
Cable resistance	500 Ω/Km	Adapter - 3/4" BSPP / 1" BSPP	HBS/ADAP/8/6
Approvals		Configuration tool	HBxC-Splitbox
CE	EN 61000-2	Plug converter	HBxC-M12/DIN
EAC Regulation of Conformity			
Configuration			
Type of configuration	HB Tool/HMI		
Tool to be used	HBLT-Wire software		

\* Total consumption is sensor consumption plus output and it depends on ambient temperature.

### Ordering codes

Length	Thread type	Without integrated cable	Modulating valve*	Stepper motor valve**	Pulse width modulation***
600 – 4000 mm	3/4" NPT	HBLT-W-WIRE-2	HBSLT-W-WIRE/C-2	HBSLT-W-WIRE/S-2	HBSLT-W-WIRE/PWM-2
600 – 4000 mm	3/4" BSPP	HBLT-W-WIRE-6	HBSLT-W-WIRE/C-6	HBSLT-W-WIRE/S-6	HBSLT-W-WIRE/PWM-6
600 - 6000 mm	3/4" NPT	HBLT-W-WIRE-6-2	HBSLT-W-WIRE/C-6-2	HBSLT-W-WIRE/S-6-2	HBSLT-W-WIRE/PWM-6-2
600 - 6000 mm	3/4" BSPP	HBLT-W-WIRE-6-6	HBSLT-W-WIRE/C-6-6	HBSLT-W-WIRE/S-6-6	HBSLT-W-WIRE/PWM-6-6
600 – 4000 mm	3/4" NPT	HBLT-W-WIRE-2-IP****			
600 – 4000 mm	3/4 BSPP	HBLT-W-WIRE-6-IP			

\*For direct control of a modulating valve such as Siemens MVS661.

\*\*For direct control of a stepper motor valve such as Carel.

\*\*\*For direct control of a pulse width modulation valve such as Danfoss AKVA.

\*\*\*\*HBLT-WIRE-IP is a low temperature version.

### Mechanical dimensions

