

**HB Products – dedicated to optimal solutions for level measurement and control of oil and refrigerants.**

HB Products is a development-oriented company, which specializes in the development and production of sensors for industrial refrigeration systems. Apart from expertise within oil and refrigerant control, we have great know-how in the design and optimization of industrial refrigeration systems. This knowledge enables us to develop and produce the best sensors!

Since its start more than 20 years ago, HB Products has attained a strong global position. This is the result of our ability to think in terms of new technological solutions, create trustworthy products, and provide a high level of service.

For further info and guidance please visit our homepage

[www.hbproducts.dk](http://www.hbproducts.dk)

**Quick guide**

HBLC – Level control sensor

**Functionality:**

The HBLC sensor is made to control refrigerant level in refrigeration systems. If the HBLC is to be used in a different way, prior approval must be obtained from HB Products.

**Download complete manual:**

For further information please download the instruction manual from our homepage:

[www.hbproducts.dk](http://www.hbproducts.dk).

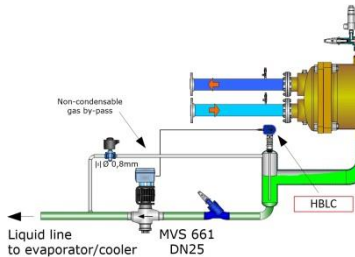
**Caution:**

Only qualified personnel should work with the product. The technician must be aware of the consequences of an improperly installed sensor, and must be committed to adhering to the applicable local legislation.

**Caution – grease on tip:**

Please note that the sensor electronic tip is protected with silver grease to ensure proper contact. Please use gloves to protect your skin. The type of grease is CW7100 from Chemtronics.

## Mechanical installation



### Mechanical specifications:

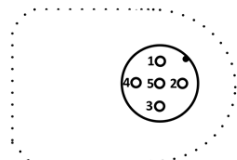
Ambient temperature: -30...+50°C  
Liquid temperature: -60...+80°C  
Max. pressure: 100/150 bar  
Material, mechanical: AISI304/PTFE  
Thread connection: see packaging.

### Installation guide:

It must be mounted vertically.  
HBLC can be mounted on an overflow pipe or a pipe segment where flow and turbulence are minimized.  
HBLC is designed for direct control of a modulating motor valve. It is supplied with a 5 pin connector cable with an M12 plug.

**Caution!** In case of welding work on the unit, please make sure that proper earthing is carried out to avoid damaging the electronics.

## Electrical installation



### Supply 24V AC/DC

- 1 = Brown +
- 2 = White -
- 3 = Blue, DO, Alarm, PNP, 1A
- 4 = Black, AO, Control output, 4-20mA
- 5 = Gray, DI, Run in signal (5 to 24 VDC)

### Electrical specifications:

Supply: 24 V AC/DC  
Power consumption: Minimum 30 VA (when MVS661 is connected)  
Plug: DIN 0627 – M12/5 pins  
Enclosure: IP65  
Material, electronics: Nylon 6 (PA).

The HBLC can be coupled to any 24 VDC 4-20 mA modulating valve

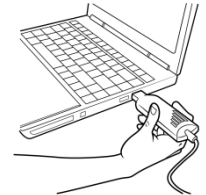
### For termination to Siemens MVS 661 valve:

- 1) White (GO) = sensor - signal
- 2) Brown (G) = sensor + signal
- 3) Grey (Y) = Analogue signal



**Note!** All terminals are protected against improper termination with a supply voltage up to 40 V. If the supply voltage is greater than 40 V the electronics will be damaged.

## Configuration of sensor



In order to set the control parameters the HB configuration tool is needed

### Download of software:

The tool can be downloaded from our homepage.

**NOTE!** To be able to change the control parameters, it is necessary to have a special USB/M12 configuration cable as well as the configuration tool installed on a PC.

### LED activation:

- 1) Green LED indicates 24 V DC supply; it blinks during operation. If "run-in" is not used, this function must be deactivated in the tool.
- 2) Yellow LED indicates control. The blink sequence indicates if the valve is closing or opening.
- 3) Red LED indicates high or low level alarm, depending on configurations.



**Caution!** Factory settings do not guarantee safe operation, since the configuration parameters depend on the system design.

**Note!** Fault detection on the electronic function can be carried out without releasing pressure from the system or disassembling the mechanical part of the sensor.