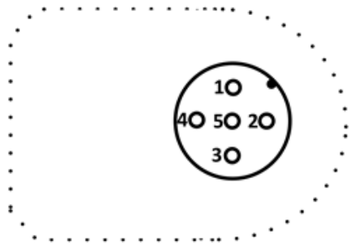
Electrical connection:

The sensor comes with a 5m connection cable as well as a programming cable. Supply and analog output are connected according to the diagram below:



Supply 24V AC/DC

1 = Brown +

2 = White -

3 = Blue, DO, Alarm, PNP, 1A

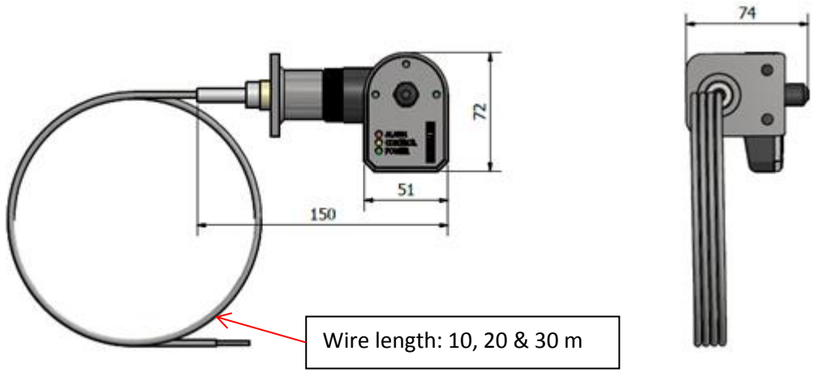
4 = Black, AO, Control output, 4-20mA

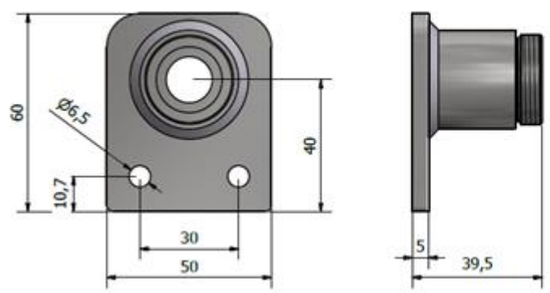
5 = Gray, DI, Run in signal (5 to 24 VDC)

Pin 1 (brown) & Pin 2 (white): 24 V supply

Pin 2 (brown) & Pin 4 (blue): 4-20 mA output

Mechanical dimensions:





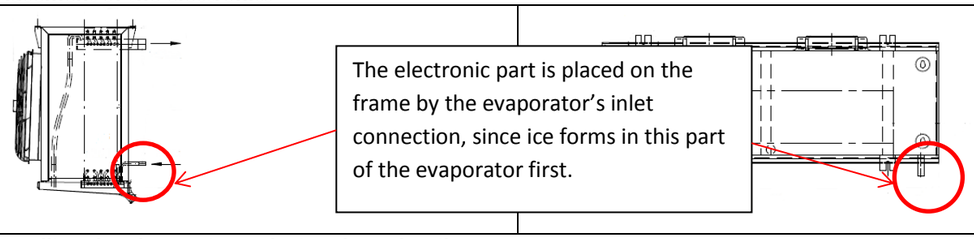
Quick Guide

HBDF Defrost Sensor

Defrost on demand

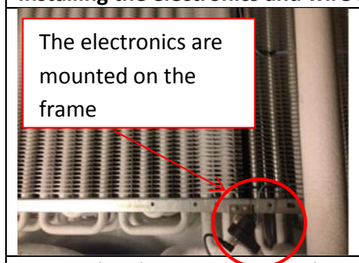
For installation on evaporators:

Placement of the electronics

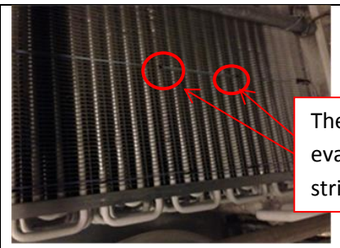


The electronic part is placed on the frame by the evaporator's inlet connection, since ice forms in this part of the evaporator first.

Installing the electronics and wire along the ribs



The electronics are mounted on the frame

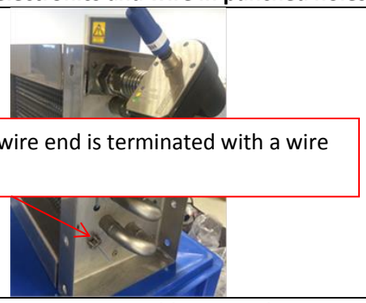


The wire is secured to the evaporator pipe with plastic strips

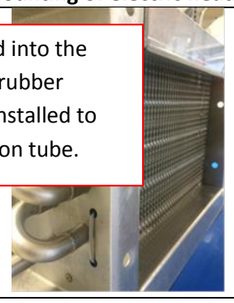
Mount the electronic part on the evaporator frame (by the evaporator's inlet connection) so the wire can be freely connected to the ribs, either lengthwise or diagonally, without any sharp bends.

The wire with Teflon is installed lengthwise along the ribs in 2-3 rows with a distance of 100-200 mm, closest to the evaporator inlet. It is secured with strips for each 500 mm when the wire runs lengthwise along the ribs. The wire is terminated with a wire clip in a pre-drilled hole so that the wire is kept under tension.

Installing the electronics and wire in punched holes (normally used for mounting of electric heating)



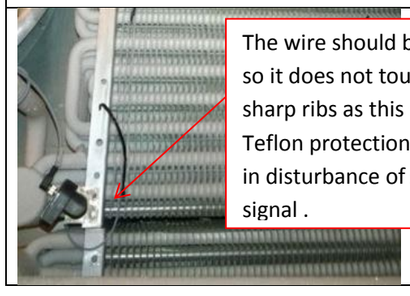
The wire end is terminated with a wire clip



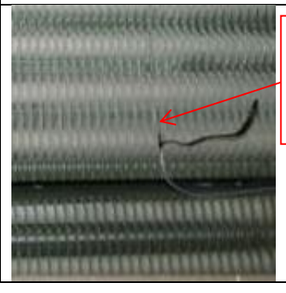
Holes are drilled into the frame (ø9) and rubber grommets are installed to protect the Teflon tube.

In some evaporators, it is possible to run the wire diagonally across the ribs using pre-drilled holes. In this case, the sensor console is installed using drilled holes so that the wire can reach the holes. The wire is terminated with a wire clip in the last row.

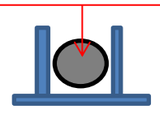
Holes (ø9) are drilled in the frame, which is mounted and delivered with rubber grommets. The wire is drawn through the drilled holes and the holes in the ribs.



The wire should be installed so it does not touch the sharp ribs as this can cut the Teflon protection and result in disturbance of sensor signal .

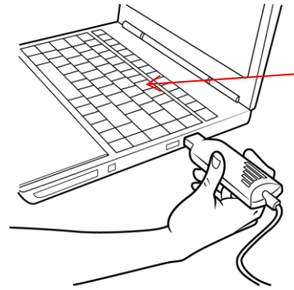


The wire must be placed between the ribs on the evaporator.



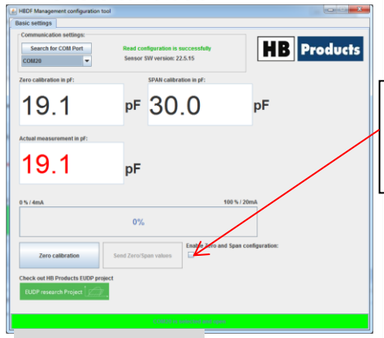
HB Products WE INCREASE UPTIME AND EFFICIENCY IN THE REFRIGERATION INDUSTRY

Calibration and setup of the defrost sensor



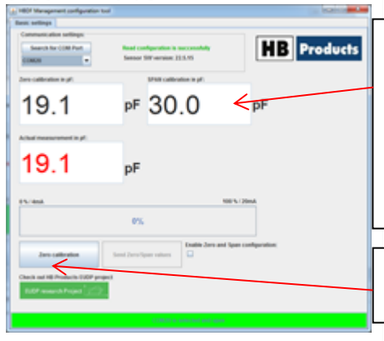
1) Install the HBLC-Tool software on the computer.
2) Connect the USB/M12 cable to a PC`s USB port.
3) Follow the Configuration Instruction above on the screen.

Make zero calibration



1) Enable the zero calibration function and push on the button "Send Zero/Span values" to file the entered values

Set SPAN value

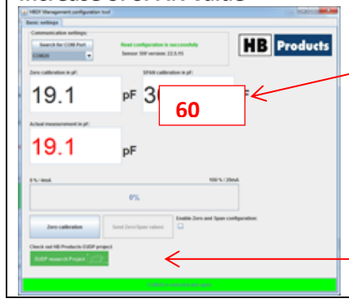


The SPAN should be set to 30-60 pF. The optimal SPAN setting will be greatly influenced by the length of the wire and how it is mounted. **Start with factory settings - a SPAN of 30**.

Sensor sensitivity depends on the SPAN setting. A lower SPAN setting will increase the output signal.

Push the button "Send Zero/Span values" to file the entered values. Disconnect the programming cable and install the sensor electronic.

Increase of SPAN value



If the output signal 4-20 mA shows 20 mA at limited ice thickness, the SPAN should be adjusted to a higher value (maximum 60).

The output signal from the sensor corresponds to the ice thickness build-up. 4 mA is equal to no ice build-up and 20 mA is equal to max ice build-up based on the programmed SPAN area.

Push the button "Send Zero/Span values" to file the entered values. Disconnect the programming cable and install the senor electronic.