Bulletin - next generation HBX-DX-SS VQ-Sensors mk2

New knowledge and wishes from the market for measuring Low Vapor Quality have resulted in a new design optimized for measuring both HI and LOW VQ, next generation VQ sensors from HB Products measure from ”X” wet 0.0 to dry 1.0. The sensor is also less influenced by Oil accumulation during low load.

Change:

1. The sensor tube material is now made in Stainless Steel AISI 304, code ”SS”.
2. The sensor rod is changed to a solid rod and a PEEK centering bush.
3. Electronic head is change from treaded to a Union connection for easy removal and mounting.
4. The sensor is designed for any Flow direction.
5. Union connection between mechanical and electrical part is now standard
6. Sensor size is now from 1/2” to maximum 2 1/8” (DN50)
7. Sensor size is now with over sized tubes, CO2 is designed with next size tubing.
   HFO / HFC / PROPAN is designed two pipe size up.

   CO2: Tube size 3/8” is change to 1/2”.....tube 1 1/8” is change to 1 3/8”

   HFO: Tube size 1/4” is change to 1/2”.....tube 1 1/8” is change to 1 5/8”

   Ordering:
   System piping size, type of refrigerant, only sensor mode or with direct PI-Control with cable out and type of expansion valve.
   Comes with reducer bushings that fit copper tube type K65, pressure rating 120bar.

Note:

- All sensors are with temperature/pressure compensation acc. to the operation range.
- The sensor is calibrated for HI-VQ measuring with PLUG & PLAY operation on all type DX evaporators (zero Super-Heat operation).
- Settings for LOW-VQ range is possible by the HB-TOOL.

Example:

System Pipe size

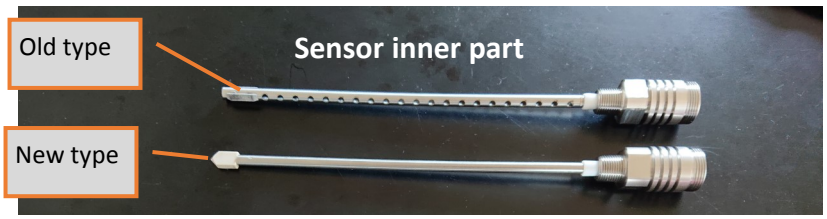
HBX-DX/S-SS-1/2

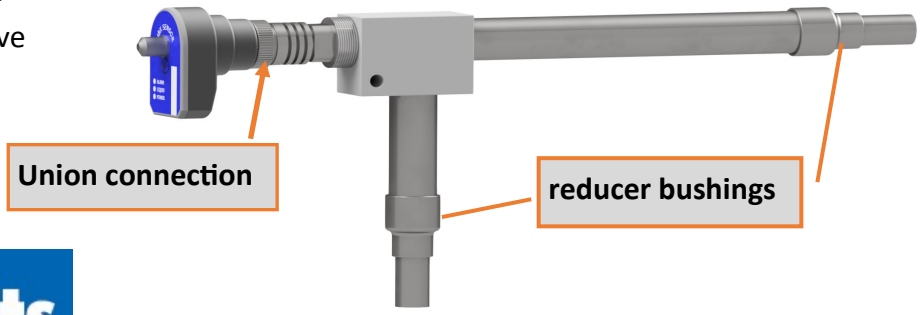
S = Stepper motor

C = 4-20mA modulating valve

PWM = Pulse modulating valve

None = Only Sensor mode





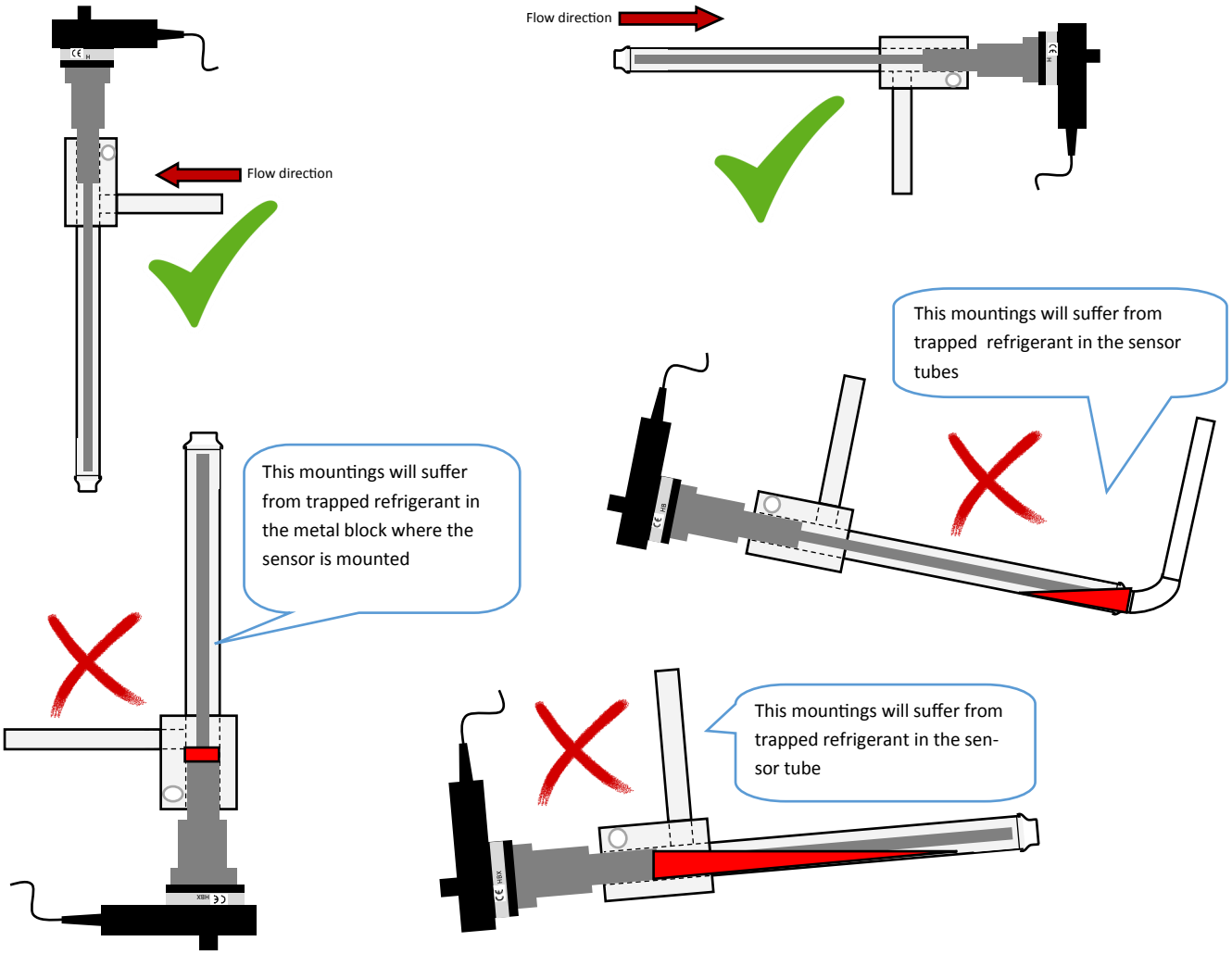
Next page shows how to install the sensor

A new manual for HBX-DX VQ-Sensors mk2 is coming soon

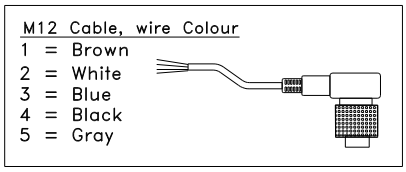
Here are two pages to give you a taste of what to expect

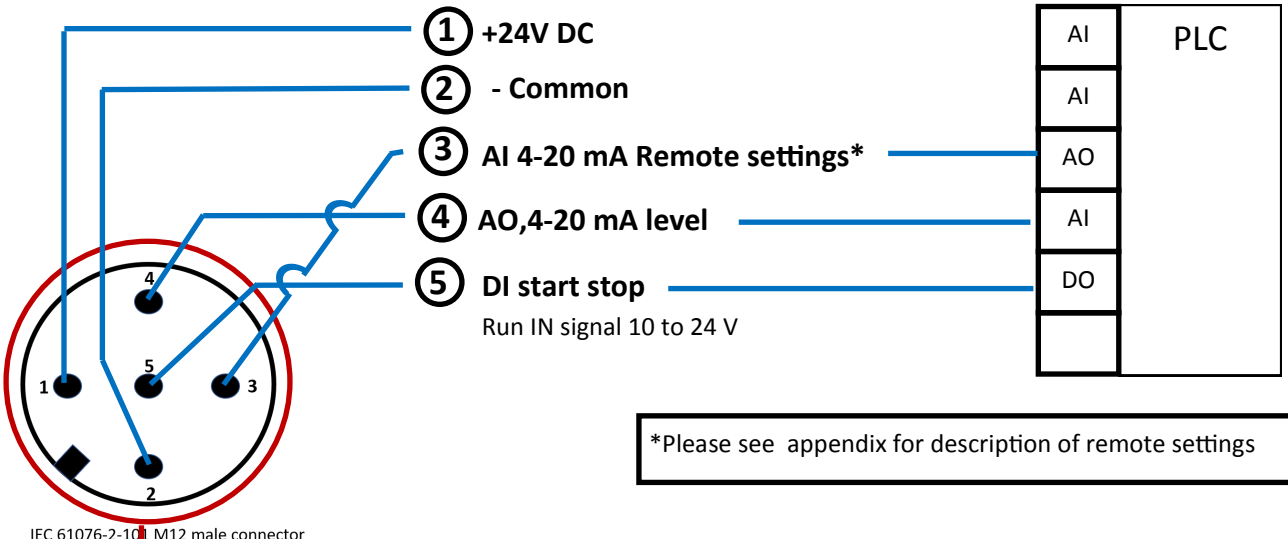
Application and mounting instruction

The HBX-DX sensor is mounted after the evaporator and is able to measure the Vapor Quality (dryness) from 0.2 to 1. The output can be used as input to a PLC or it can control the expansion valve directly or both. The sensor accept flow **in both directions**, but have to be mounted in downward sloping pipes to ensure drainage of refrigerant, and oil. The sensor can be mounted in different positions. But some will be sensitive to oil contamination and trapped refrigerant during startup. Make sure that the sensor rod inside the long pipe is free from trapped oil at any time.



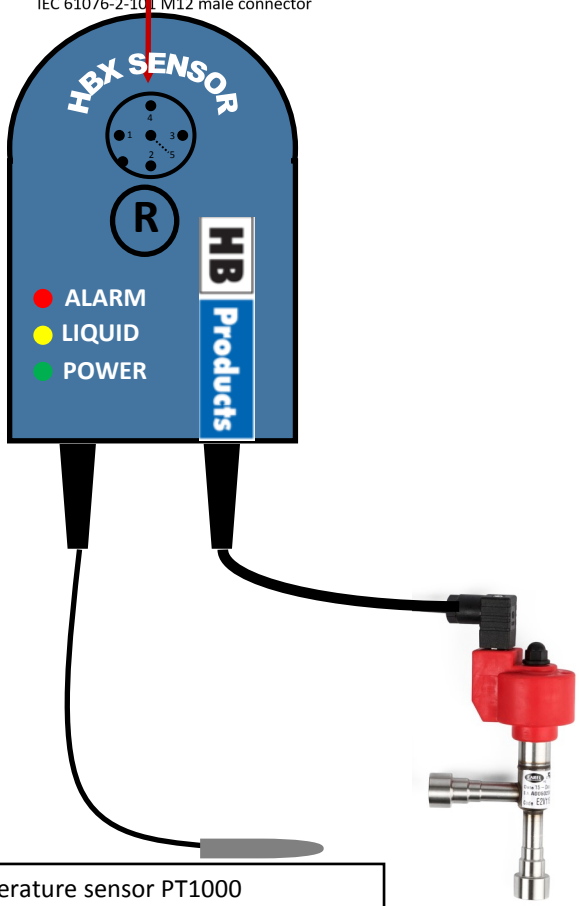
Connection diagram for HBX/S (stepper motor) with pressure/temp. compensation here shown with Carel E2V



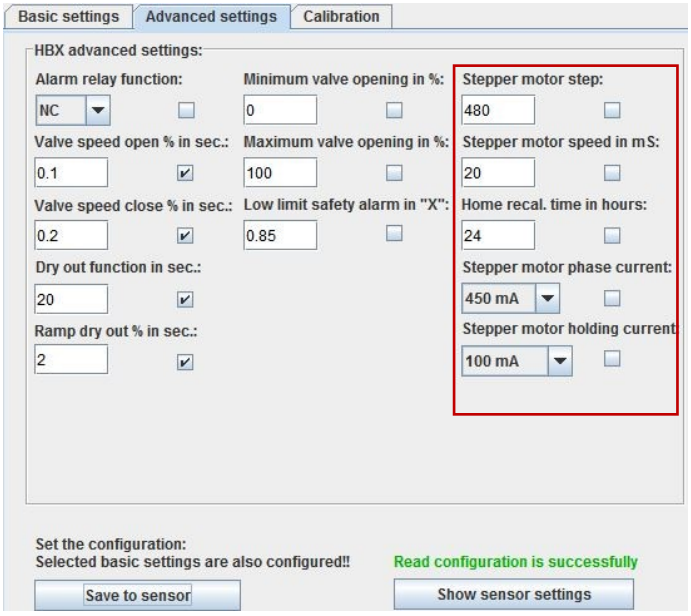


IEC 61076-2-101 M12 male connector

*Please see appendix for description of remote settings



In the "advanced settings" the stepper motor settings for the valve should be specified



Temperature sensor PT1000

Should be mounted on the outside of the tube in position 3 or 9 o´clock with strips

Color coding

A+ = yellow(2)

A- = white (4)

B+ = green (1)

B- = brown (3)