



CO2 READY



Semi Flooded Operation & Zero Superheat

With increased focus on the use of natural refrigerants, **HB Products** has developed a new system for controlling all types of evaporators on refrigeration / heat pump systems. The system is available in several variants, for example, where you can connect an expansion valve directly to the sensor which thus act as a closed loop control system.

A revolutionary new **patented technologies** are now ready to solved one of the main challenges when using CO2 refrigerant, **CO2 refrigerant is very dynamic** and reacts strongly on even small pressure / temperature changes. Now it is possible to measure the dryness of the vapor and achieving balanced dryness of the evaporated vapor in the evaporator outlet with minimum Super-heat, thereby controlling the evaporator capacity much faster and more accurate relative to the evaporator load with close to **zero Super-Heat** (range of 0.5 to 1.0° K).

The **semi flooded operation** ensures optimal efficiency as the entire evaporator area is wet enabling the **best possible heat transfer**. It also minimizes the volume of the vapor/gas and hence reduces compressor load and power consumption.

Current Super-Heat Evaporator Control is based on pressure and temperature measurements. Control based on temperature measurement are by experience unstable and should usually have a high superheat at 6 to 10° K to prevent the compressor from getting damaged by refrigerant fluid back (liquid hammering).

The **HBX-DX-CU-XXX** sensor is based on the Capacitive measurement principle, directly **measuring the phase and dryness of the refrigerant**. The sensor reacts instantaneously if the dryness of the gas is changed in the suction outlet. Experience has shown that the entire system is in much better balance with minimum variation in pressure. The new technology makes it possible to directly control the liquid injection to obtain zero superheat and at the same time minimize the risk of liquid fluid back into the compressor.

We are proud to launch an innovative technology that will revolutionize the way in which we design and control Refrigeration-, Cooling- and Heat Pump systems.

- ⇒ **Semi Flooded evaporator operation ensures optimal heat transfer at all loads**
- ⇒ **Increased evaporation temperature & suction pressure**
- ⇒ **Lower discharge temperature**
- ⇒ **Optimal performance in all climates**
- ⇒ **Compressor protection**

Available in **120 bar high pressure copper type K65** or **stainless steel**.

6 sensor sizes: 3/8" to 1 1/8" with or without integrated PI and stepper motor control.

Pre programmed with Settings for all commonly used refrigerants, incl. CO2.

