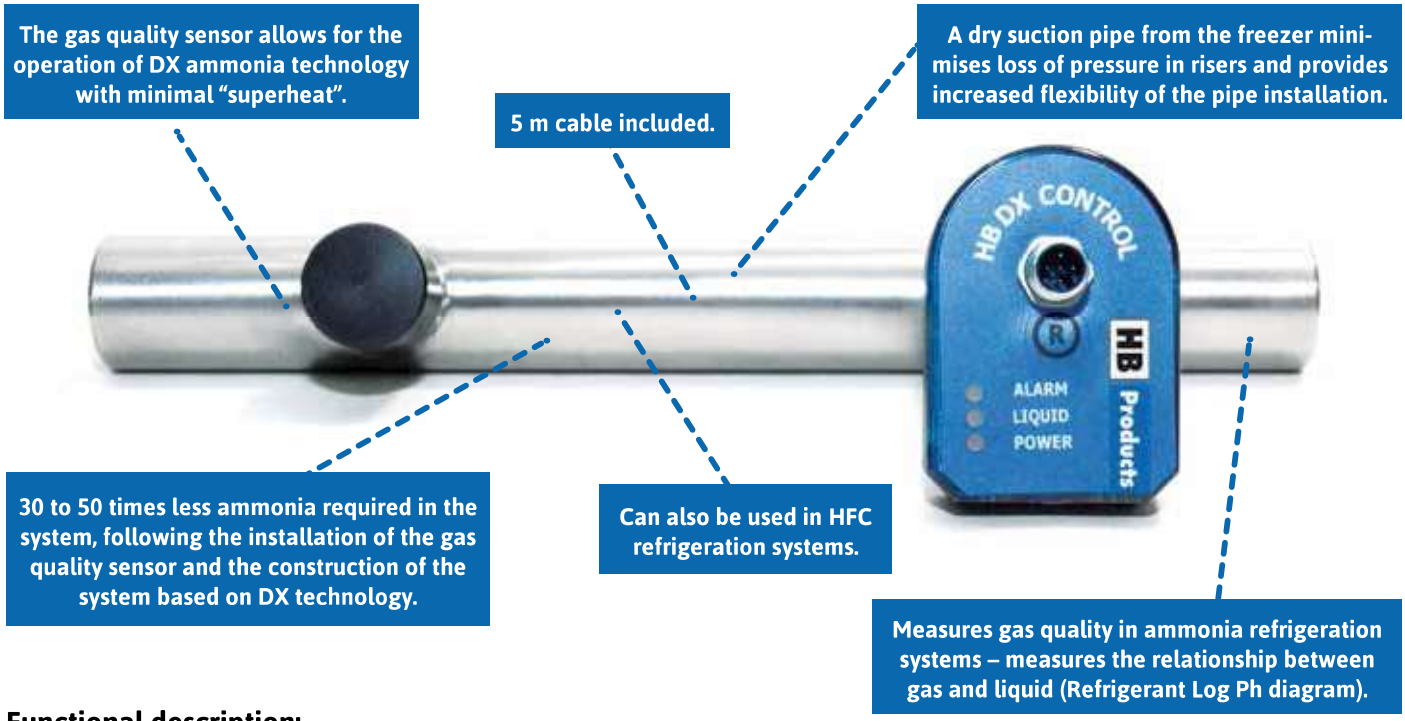
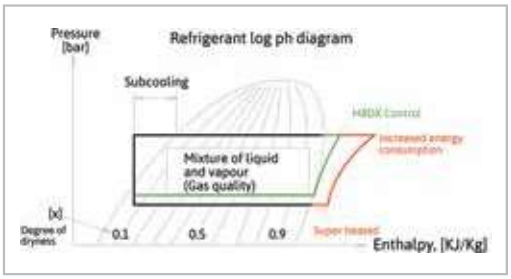
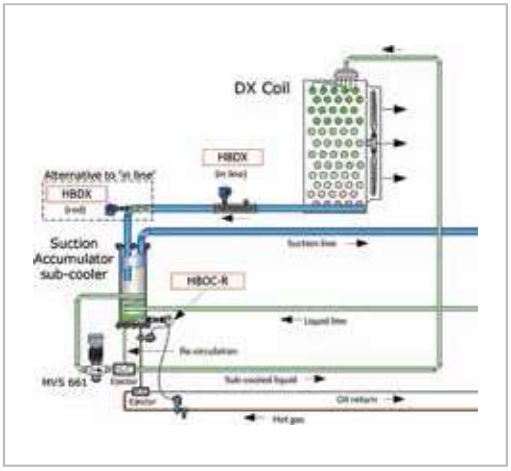
Gas quality sensor / DX controller



Functional description:
HBDX is a new revolutionary, patent-pending sensor technology, and it is thus the first sensor in the world capable of measuring the relationship between gas and liquid in a refrigeration system. The sensor measures the degree of dryness, "X", of the gas in the gas pipes, and the value is converted into a 4-20 mA analogue signal corresponding to "X".
The sensor is available in two variants, "Rod Style" for installation in a pipe elbow and "In-line" for welding into the suction pipe.



The sensor offers very precise measurements and provides instant read-outs of the gas quality, making it useable in most evaporators (plate, pipe, and air evaporators).
The sensor's microprocessor also functions as a controller, enabling the direct control of a modulating motor valve, thereby bypassing the external controller or the PLC. The controller can be set up with all the parameters that are necessary for regulating a modulating motor valve or a stepper motor valve. The sensor is available with a cable for direct supply to and control of the motor valve, or as a sensor where the signal is sent to the external controller/PLC.



The sensor cannot measure actual overheating, but with proper installation and system design, overheating can be reduced or eliminated, thus leading to substantial energy savings.

Technical data - sensor

Power supply		Mechanical specifications	
Voltage	24 V AC/DC + 10%	**Thread connection**	3/4" NPT/BSPP
Power consumption	400 mA	**Material – liquid parts**	AISI 304 / PTFE
Max power consumption	600 mA	**Material – electronic parts**	Nylon 6 (PA)
Plug connection	DIN 43650 - 4 pins	**Dimensions**	See drawing
Output		**Environmental conditions**	
Analogue output	4-20 mA	**Ambient temperature**	-30...+50°C
Alarm output	PNP, 1 A	**Refrigerant temperature**	-50...+80°C
LED indication	Alarm, control, power	**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 mm^2	**Accessories**	**(to be ordered separate)**
Cable glands	PG7 / M8	**Adapter - 3/4" NPT / 1" BSPP**	HBS/ADAP/8/2
Cable resistance	500 Ω/Km	**Splitterbox**	HBxC-splitbox
Approvals			
CE	EN 6100-2		
GOST-R	No 0903044		
Configuration			
Type of configuration	PC tool		
Tool to be used	HBDX software		

Technical data - valve regulation

Valve control (Modulating valve)		Valve control (Stepper motor)	
Signal to valve	4-20 mA	**Stepper motor steps**	25-5000 steps
Valve regulation	P-regulation	**Stepper motor speed**	2-40 m/s
Cable specification (valve control)		**Stepper motor phase current**	0-750 mA
Length	3 m (118")	**Stepper motor holding current**	0-250 mA
Cable size	3 x 0.75 mm2		
Cable glands	PG7 / M8		