

APPLICATION GUIDE FOR LEVEL SWITCHES FOR

CO₂ + NH₃

+ Freon + brine



General Information

HB Products capacitive level switches developed specially to the refrigeration industry.

Designed to use for indication and on/off control of oil, NH₃, liquid CO₂, HFC and brine levels in refrigeration plants - including transcritical CO₂ applications.

Advantageous to optical sensors by being:

- free of maintenance
- uninfluenced by oil coating
- uninfluenced by foam and splashing.

Split design for easy test and replacing of electronics without depressurization.

Visual LED indication

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Products

POSITION & LEVEL SENSORS

HBS Application guide/10.04/MK

HB Products
your partner for
individual positioning
and sensing solutions

We Know how

Application guide HB Products level switches:

HBSO1: Oil Level Switch - Switches on when oil is present (detects all types of oil incl. mineral, PAO, PEO and PAG)

Will not react on refrigerant liquid (except liquid CO₂). Ideal for oil management and oil level control as well as for compressor protection.

HBSR: Refrigerant Switch - Switches on when conductive liquid is present (NH₃, brine and HFC Refrigerants)

The Switch distinguishes between oil and NH₃/brine/HFC and therefore ideal for automatic oil draining and emptying systems.

HBSC2: CO₂ Liquid Switch - Switches on when liquid CO₂ is present.

Ideal for high/low level indication, control and alarm on CO₂ applications with pressures up to 170 bar.



(1) HBSO1: Indication of oil level in compressors, for alarms, automatic oil return systems and oil equalizing between compressors. Adaptors for sight glass connections suitable for sight glasses on Sabroe, Gram, Grasso, Mycom, Vilter, Stal, Bitzer, etc. compressors

(2) HBSO1: Oil level indication in oil separators. The HBSO1 will allow the solenoid valve for oil return to be turned on only when oil is present. If condensed liquid refrigerant is present the HBSO1 will prevent the valve from opening until pure oil can be drained back to the compressor.

(3) HBSO1: Oil level alarm in last separation stage in oil separator for screw compressors. E.g. alarm if oil return system is blocked, or the oil separator is overloaded so oil is not returning fast enough. The HBSO1 will not react on condensed refrigerant liquid and give reason to false alarms.

(4) HBSR: Control of accumulated oil in oil pots, liquid separators, economizers and intermediate coolers, on the refrigerant side of refrigerant cooled oil coolers, high pressure receivers.

The HBSR/NC (Normal Closed) type indicates the presence of oil in such places and used for automatic oil return systems, alarms and automatic draining and emptying systems of oil pots as the switch will only react on the liquid refrigerant and not oil.

(5) HBSO1: Oil flow switch. When the HBSO1 is placed in a vertical oil line just before the screw compressor it will serve as an oil flow switch protection of the oil flow to the compressor bearings. As the HBSO1 will not react on refrigerant liquid it is also a safety against running on liquid refrigerant instead of oil.



(6) HBSR: Refrigerant liquid level indication for on/off liquid injection to pump separators, liquid separators, evaporators, economizers, etc. The advantage of the HBSR is it will not be influenced by oil in the refrigerant, as it will not react on oil.

(7) HBSR: Refrigerant liquid level indication for high and low level alarms on pump separators, liquid separators, evaporators, economizers, etc. The advantage of the HBSR is it will not be influenced by oil in the refrigerant, as it will not react on oil.



(8) HBSR: Indication of high/low water/brine level

Switches for oil, NH3, CO2 liquid, HFC and brine

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