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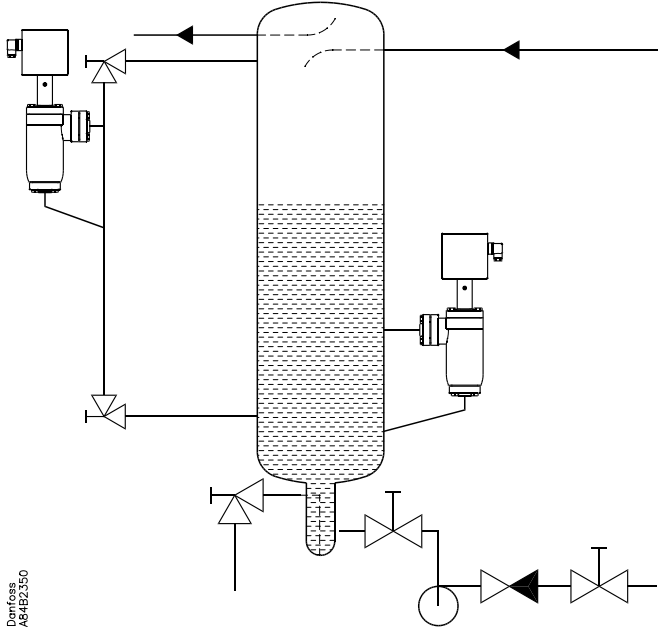


Fig. 1

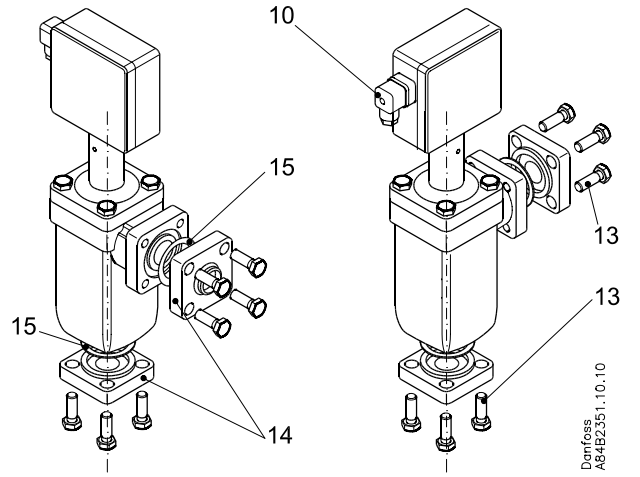


Fig. 2

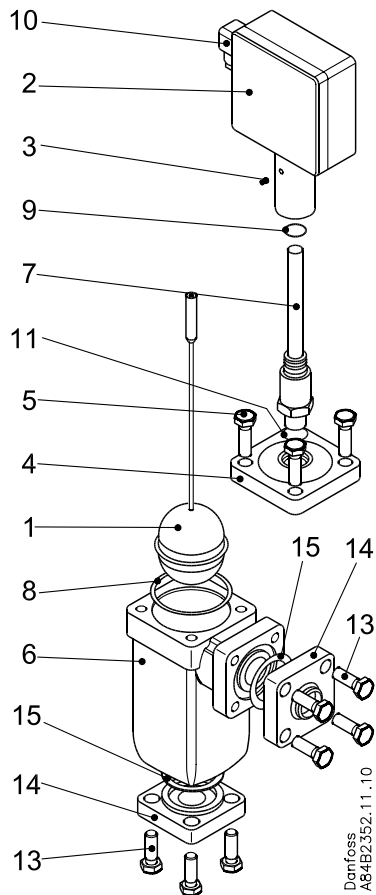


Fig. 3

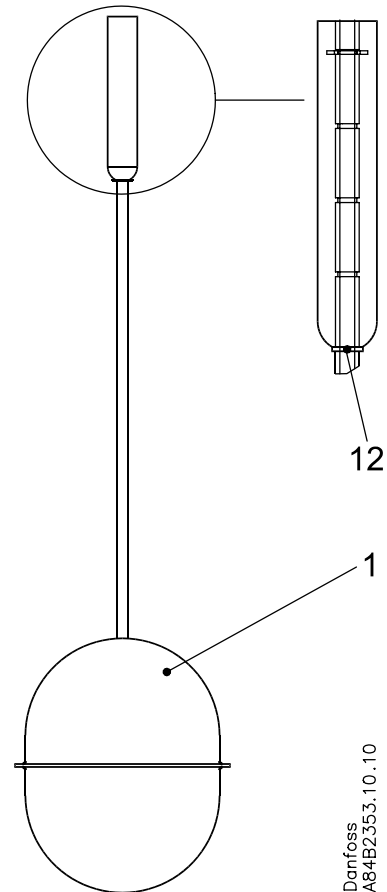


Fig. 4

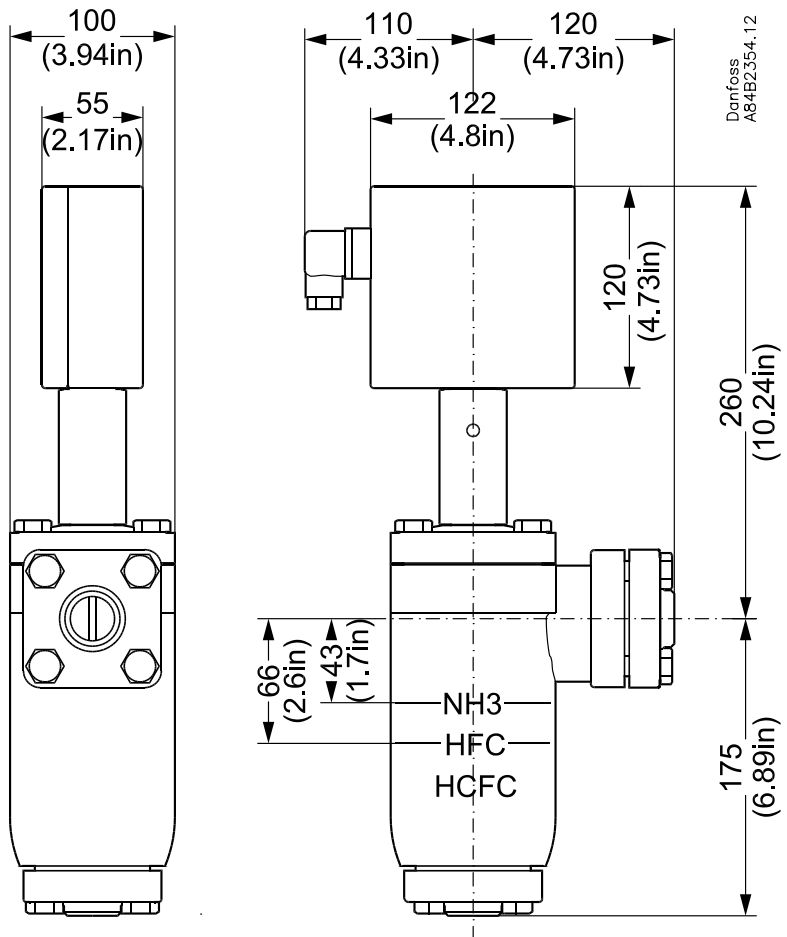


Fig. 5

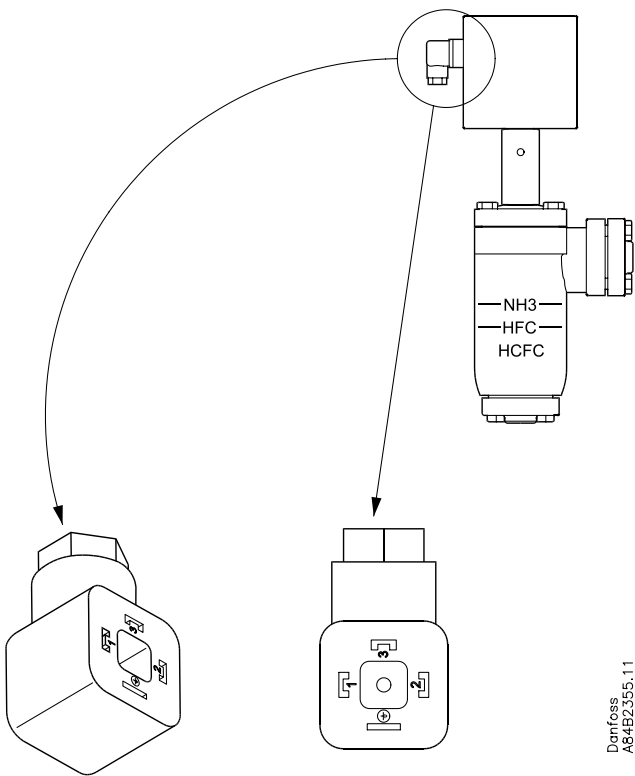


Fig. 6

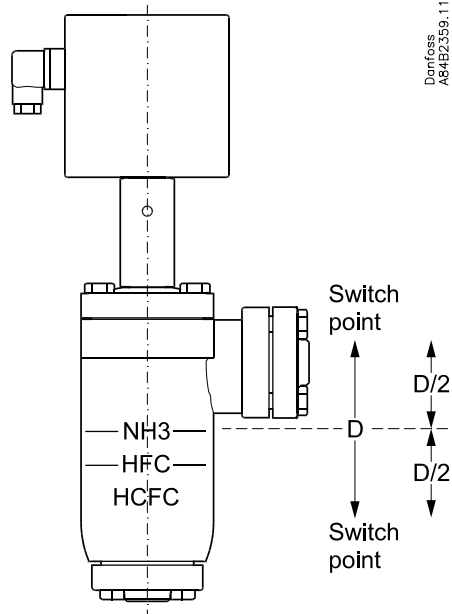
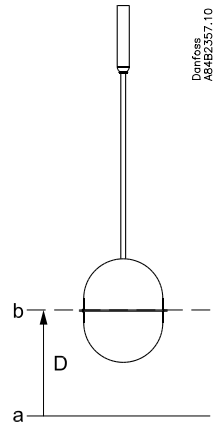
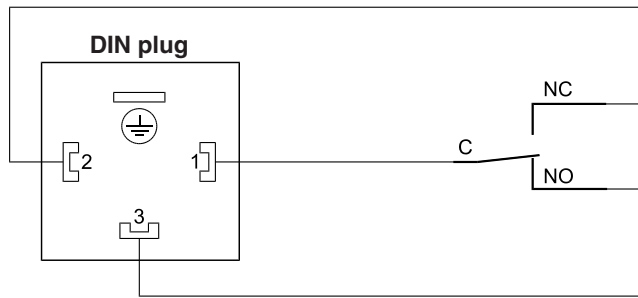
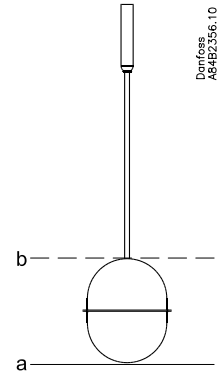
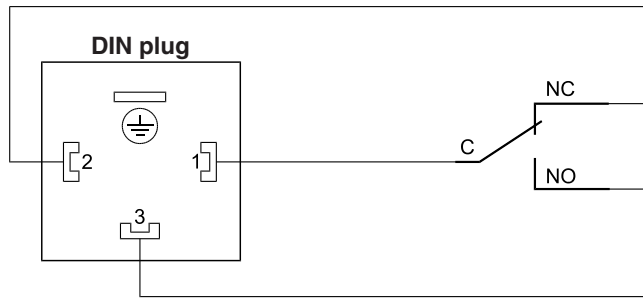


Fig. 7



Differential (D) = Variable between 12.5 mm (1/2") to 50 mm (2") in 12.5 mm (1/2") increments.

Fig. 8

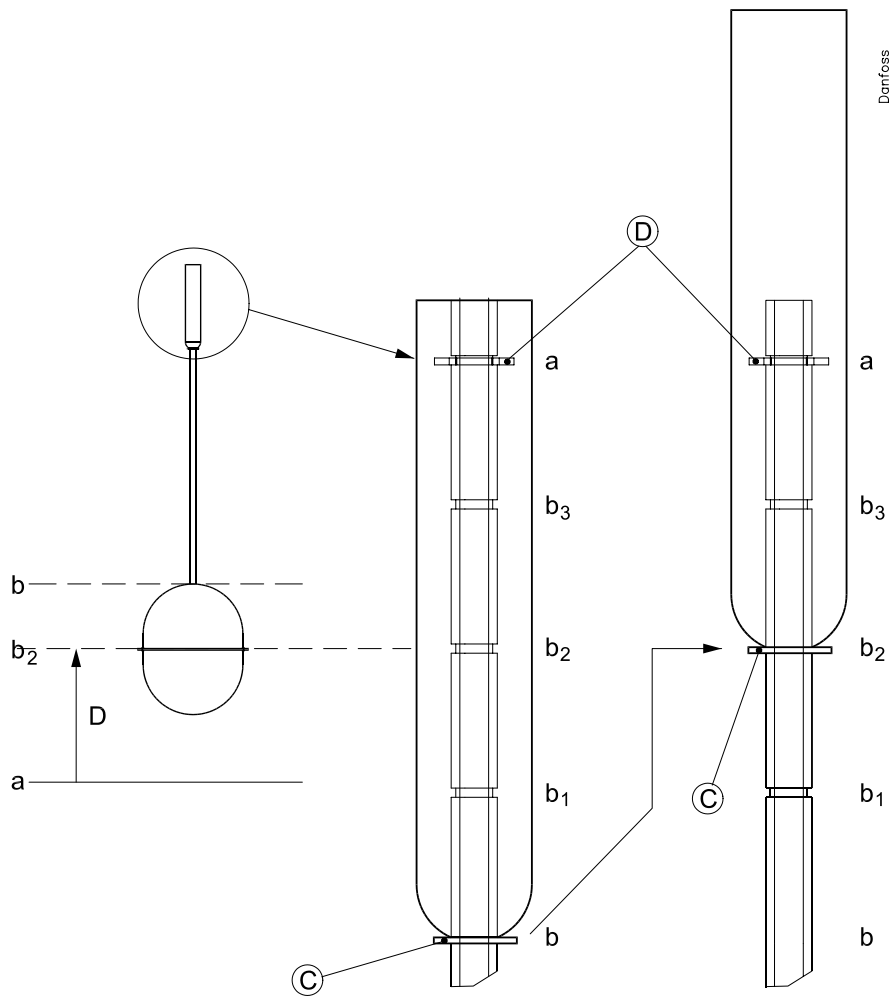


Fig. 9

Refrigerants

The AKS 38 can be used for all common non-flammable refrigerants, including R717 and non-corrosive gases/liquids dependent on sealing material compatibility. Flammable hydrocarbons are not recommended.


Temperature range

-50°C/+65°C (-58°F/149°F)

Pressure range

AKS 38 is designed for a max. working pressure of 28 bar g (406 psi g)

IMPORTANT

 **Should pressure testing in excess of 28 bar g (406 psi g) be necessary then the internal float assembly must be removed, thus allowing a maximum test pressure of 42 bar g (609 psi g)**

Electrical data

- **Change-over Micro (SPDT) switch**
- 250 V a.c / 10 A
- 30 V d.c / 5 A
- **DIN Plug**
- DIN 43650 connection
- PG 11, 8-10 mm (0.3" - 0.39")
- Screw terminal 1.5 mm² (16 AWG)
- 3+PE

Liquid level differential

Variable between 12.5 mm to 50 mm (½" to 2") in 12.5 mm (½") increments. Required differential setting should be made prior to installation. Factory set at 50 mm (2").

Enclosure

IP 65

Installation

AKS 38 must always be installed in a vertical position (fig. 1 and 2).

AKS 38 is supplied complete with flanges (fig 2, pos. 14).

To avoid an oil seal forming which would affect the movement of the internal float the bottom connecting pipe must have an incline towards the liquid separator. Shut-off valves should be mounted as close as possible to the float for service (fig. 1).

Switch point

The switch point is relative to the actual liquid level marking on the AKS 38 housing. See fig 7.

The upper switch point is actual (D : 2) higher than the actual liquid level marking.

The lower switch point is actual (D : 2) lower than the actual liquid level marking. Where D = differential.

Adjusting the liquid level differential switch point (see fig. 9)

The float comes factory set with a differential setting of 50 mm (2") with the lower locking ring (C) in position b. To achieve smaller differential settings reposition the lower locking ring (C) at b₁ = 37.5 mm (1½"); (b₂ = 25 mm (1"); b₃ = 12.5 mm (½"). The upper locking ring (D) in position a should not be adjusted or repositioned.



IMPORTANT

The adjustment must be made before AKS 38 is installed in the refrigeration system.

Remove the AKS 38 switch box (fig. 3, pos. 2).

- Unfasten the M4x8 (fig. 3, pos. 3) pinol tailstock screw with a Allen key.
- Remove the switch box by slowly easing upwards.

Remove the AKS 38 housing top cover (fig. 3, pos. 4).

- Unfasten the 4 × M12x35 stainless steel bolts (fig. 3, pos. 5).
- Remove the complete top cover including installed pressure tube (fig. 3, pos. 7).

Remove the complete float assembly (fig.3, pos. 1 and fig. 4, pos. 1) from the AKS 38 housing (fig. 3, pos. 6).

- Reposition the lower locking ring at the required differential setting.
- See fig. 8 and fig. 9.

Reassembly

- Refit the float assembly back into the AKS 38 housing (fig. 3, pos. 6).
- Reinstall the complete top cover (fig. 3, pos. 4) and fasten the 4 × M12x35 bolts (fig. 3, pos. 5). Max. tightening torque: 74 Nm (100 ft-lb).

- Reinstall the switch box (fig. 3, pos. 2) by slowly forcing it down over the pressure tube (fig. 3, pos. 7).
- Position the switch box (fig. 3, pos. 2) as required and fasten the M4x8 pinol tailstock screw (fig. 3, pos. 3) with a Allen key.

Electrical installation

Make electrical connection to DIN plug using cable with maximum 4 cores and wire in accordance with wiring diagram (fig. 8).

1. Common
 2. Normally Closed
 3. Normally Open
- ⊖ Earth terminal

Maintenance



IMPORTANT

The AKS 38 must be evacuated before opening to air.

Replacing the internal float assembly (fig. 3, pos. 1)

- Unscrew the stainless steel bolts 4 × M12x35 (fig. 3, pos. 5).
- Remove the top cover (fig. 3, pos. 4) including installed pressure tube (fig. 3, pos. 7) and switch box (fig. 3, pos. 2).
- Remove the internal float assembly (fig 3, pos. 1).
- Install the new float assembly.

Replacing the flange gaskets (fig. 2, pos. 15)

- Unscrew the 4 × M12x35 stainless steel bolts on the side flange (fig. 2, pos. 13).
- Unscrew the 4 × M12x35 stainless steel bolts on the bottom flange (fig. 2, pos. 13).
- Remove both gaskets (fig. 2, pos. 14).
- Install the new gaskets.
- Fasten 4 × M12x35 stainless steel bolts in each flange. Max. tightening torque: 74 Nm (100 ft-lb).

Replacing the top cover gasket (fig. 3, pos. 8)

- Unscrew the 4 × M12x35 stainless steel bolts (fig. 3, pos. 5).
- Remove the top cover (fig. 3, pos. 4) including installed pressure tube (fig. 3, pos. 7) and switch box (fig. 3, pos. 2).
- Remove the gasket (fig. 3, pos. 8).
- Install the new gasket.
- Fasten 4 × M12x35 stainless steel bolts (fig. 3, pos. 5). Max. tightening torque: 74 Nm (100 ft-lb).

Replacing the aluminium gasket (fig. 3, pos. 11)

- Unscrew the M4x8 pinol tailstock screw (fig. 3, pos. 3) with a Allen key.
- Remove the switch box (fig. 3, pos. 2) by slowly easing upwards.
- Unscrew the pressure tube (fig. 3, pos. 7) with a 32 mm wrench.
- Remove the aluminium gasket (fig. 3, pos. 11).
- Install the new gasket.
- Reinstall the pressure tube.
- Reinstall the switch box.

Replacing the switchbox (fig. 3, pos 2)

- Remove the DIN-plug (fig. 6).
- Unscrew the M4x8 pinol tailstock screw (fig. 3, pos. 3) with a Allen key.
- Remove the switch box (fig. 3, pos. 2) by slowly easing upwards.
- Install the new switch box.

Replacing the O-ring at the pressure tube (fig. 3, pos. 9)

- Unscrew the M4x8 pinol tailstock screw (fig. 3, pos. 3) with a Allen key.
- Remove the switch box (fig. 3, pos. 2) by slowly easing upwards.
- Remove the O-ring.
- Install the new O-ring.
- Reinstall the switch box.

DECLARATION OF CONFORMITY
The Pressure Equipment Directive 97/23/EC



Name and Address of Manufacturer within the European Community

Danfoss Industrial Refrigeration A/S
Stormosevej 10
PO Box 60
DK-8361 Hasselager
Denmark

Description of Pressure Equipment

Refrigerant Float Switch
Type AKS 38

Nominal bore	DN32 (1 ¹ / ₄ in.)	
Classified for	Fluid Group I (all refrigerants (toxic, non-toxic, flammable and non-flammable)) For further details / restrictions - see Installation Instruction	
Temperature range	AKS 38	-50°C/+100°C (-58°F/+212°F)
Maximum allowable working pressure	AKS 38	28 bar (406 psi) -50°C/+65°C (-58°F/+149°F)

Conformity and Assessment Procedure Followed

Category	I	
Module	A	
Nominal bore	Standard applications	DN32 mm. (1 1/4 in.)

Name and Address of the Notified Body which carried out the Inspection

TÜV-Nord e.V.
Grosse Bahnstrasse 31
22525 Hamburg, Germany



Name and Address of the Notified Body monitoring the Manufacturer's Quality Assurance System

TÜV-Nord e.V.
Grosse Bahnstrasse 31
22525 Hamburg, Germany

References of Harmonised Standards used

EN 10028-3 EN 10213-3 EN 10222-4

LVD 73/23/EEC

References of other Technical Standards and Specifications used

DIN 3840 EN/IEC 60730-2-16

AD-Merkblätter

Authorised Person for the Manufacturer within the European Community

Name: Morten Steen Hansen Title: Production Manager

Signature: Morten Steen Hansen Date: 10/01/2003

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