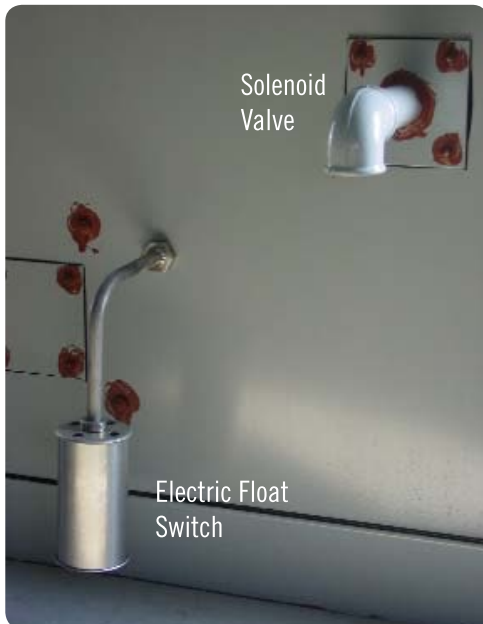




## PRODUCT SPOTLIGHT:

# Electric Water Level Controls



### Purpose

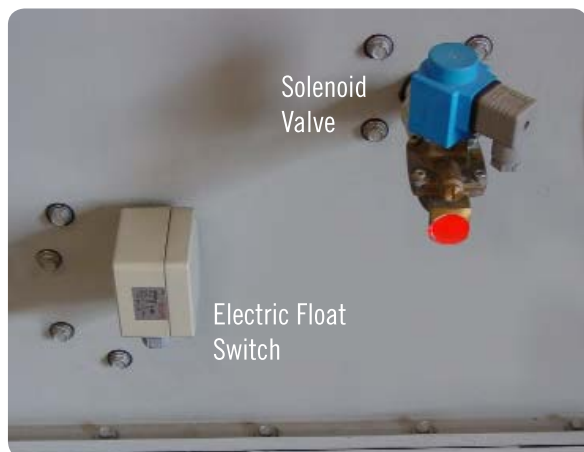
To maintain a constant water level in the cold water sump (with tolerance of  $\pm 20$  mm) independent of cooling load changes and water supply pressure variations

### Benefits

- ✓ Less maintenance: no adjustment needed year-round.
- ✓ Less sensitive to freezing than mechanical make-up systems.
- ✓ Faster water level adjustment than with mechanical make-up systems.

### Application

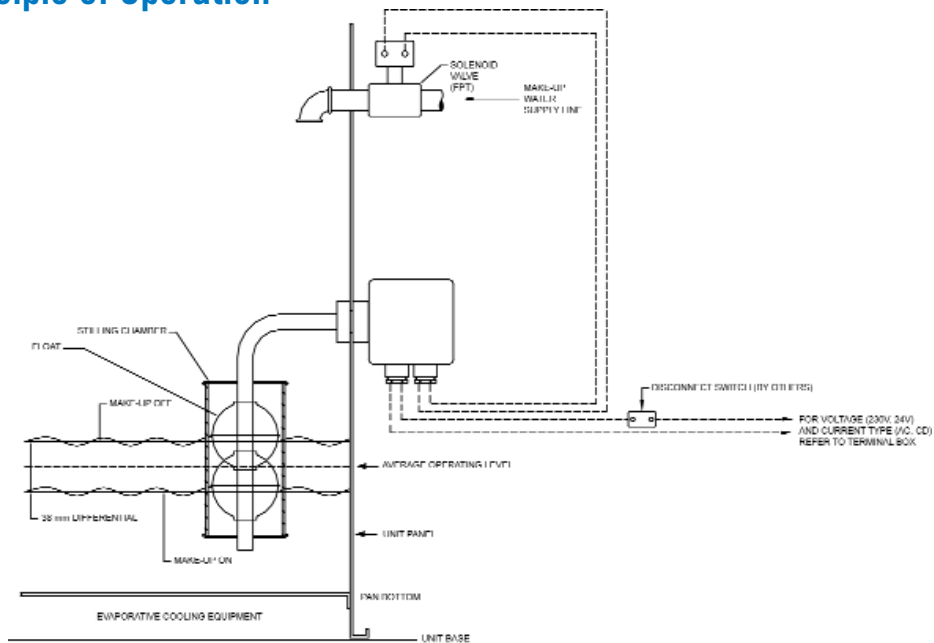
- ✓ For improved year-round operation of evaporative cooling equipment, in particular in a freezing climate.
- ✓ For variable load applications.
- ✓ For use in areas with wide variations of water supply pressure.



## PRODUCT SPOTLIGHT:

# Electric Water Level Controls CONTINUED

## Principle of Operation



## Description of Components



### Electric Float Switch

- ✓ Electrical Float Switch with integrated stilling chamber and of complete stainless steel design.
- ✓ Standard connecting box suitable for 230V, 50Hz, single phase, AC.
- ✓ Single pole single throw switch.

### Solenoid Valve

- ✓ Waterhammer damped solenoid valve of slow closing type
- ✓ Material of construction:
  - › Brass Valve Body (Gunmetal for 2" valve)
  - › Other metal components in stainless steel
  - › EPDM gaskets
- ✓ Watertight enclosure IP65.
- ✓ Connections are BSP female thread.
- ✓ Suitable for 230V, 50Hz, 10W, single phase, AC (other voltages available on request)
- ✓ Suitable for water pressures ranging from 0,3 - 10 bar.



## PRODUCT SPOTLIGHT:

# Electric Water Level Controls CONTINUED

## TECHNICAL DATA SHEET: ELECTRIC FLOAT SWITCH

### TECHNICAL SPECIFICATION:

Maximum Pressure	40 bar
Maximum Temperature	PVC cable – 10°C to 90°C
Maximum Special Weight	0.73 kg/dm <sup>3</sup> for VA 52 float
Protection	IP 65
Weight Float Switch	400 gr
Special Execution	- Stilling chamber - Complete stainless steel execution - Distance from normal closed contact to normal open contact is 38 mm

### NOMENCLATURE:

UNS 2000-06-05	Float switch with differential
VA	Complete stainless steel execution (float, float arm, stilling chamber)
3/8"	Process connection cable 3/8"
KLK	<u>Function box</u>
V52	Stainless steel float Ø 52 mm
L2	Switchpoints 2
2.1	2.SP.ST. contacts (No & Nc), 250 VAC/3A/100VA
90°	Float arm is 90° bended
DR	Stilling chamber

### TECHNICAL DATA:

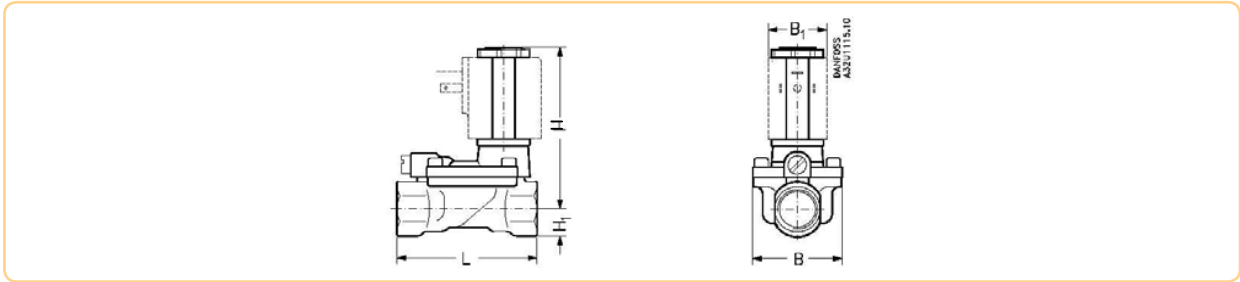
Material	All pieces in touch with the medium are made out of V4A (1.4571)
Installation	On side
Mounting	G 3/8 = 3/8" mounting thread
Electrical Connection	Potted leads, 10 mm. As loose item: box KLS with built-in printed circuit board and terminals. Mounting nut and seals.
Protective Mode	IP 65
Float Type	VA 52 = Ø 52 mm, ball
Density Minimum Medium	0.70 g /cm <sup>3</sup>
Pressure PMaximum / bar	40
Temperature Range / °C	-10°C - + 90°C
Total Length L0 / mm	253
Switch Point L1 / mm	188 (NC)
Switch Point L2 / mm	150 (NC)
Contact Rating Maximum	150 VAC, 0,2 A, 3 VA
Special Equipment	Stem 90° bended, Lc = 130 mm slosh tube

**PRODUCT SPOTLIGHT:**

# Electric Water Level Controls CONTINUED

## TECHNICAL DATA SHEET: DANFOSS SOLENOID VALVE

### DIMENSIONS AND WEIGHT VALVE



Valve size	L [mm]	B [mm]	B <sub>1</sub> [mm]	H <sub>1</sub> [mm]	H [mm]	Weight <sup>1)</sup> [kg]
½"	80	52	46	15	94	0.8
¾"	90	58	46	18	98	1.0
1"	109	70	46	22	108	1.4
1 ½"	130	95	46	27	124	3.2
2"	162	113	46	32	130	4.3

<sup>1)</sup> Weight without coil

### TECHNICAL DATA VALVE

	Valve size				
	½"	¾"	1"	1 ½"	2"
Installation	Vertical installation of coil is recommended				
Pressure range [bar]	0.3 – 10				
Test pressure [bar]	Max. 20				
Time to open <sup>1)</sup> [ms]	40	40	300	1500	5000
Time to close <sup>1)</sup> [ms]	350	1000	1000	4000	10000
Ambient temperature [°C]	Max. 80				
Medium temperature [°C]	-30 to 120				
Viscosity [cSt]	Max. 50				
K <sub>v</sub> -value [m <sup>3</sup> /h]	4	8	11	24	40
<b>Materials :</b>					
Valve body	Brass	Brass	Brass	Brass	Gunmetal
Armature/tube stop	Stainless steel				
Armature tube	Stainless steel				
Springs	Stainless steel				
O-rings	EPDM				
Valve plate	EPDM				
Diaphragm	EPDM				

<sup>1)</sup> The times are indicative and apply to water. The exact times will depend on the pressure conditions. Closing times can be changed by replacement of the equalizing orifice.

**PRODUCT SPOTLIGHT:**

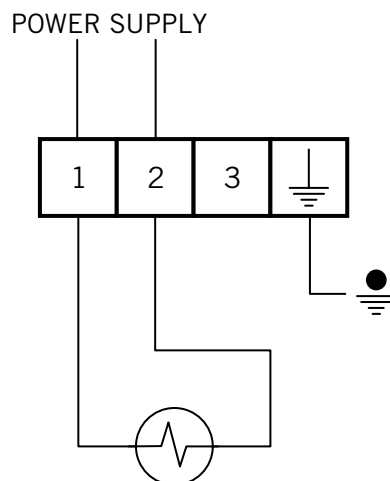
# Electric Water Level Controls CONTINUED

## TECHNICAL DATA SHEET (CONT.): DANFOSS SOLENOID VALVE

### TECHNICAL DATA COIL

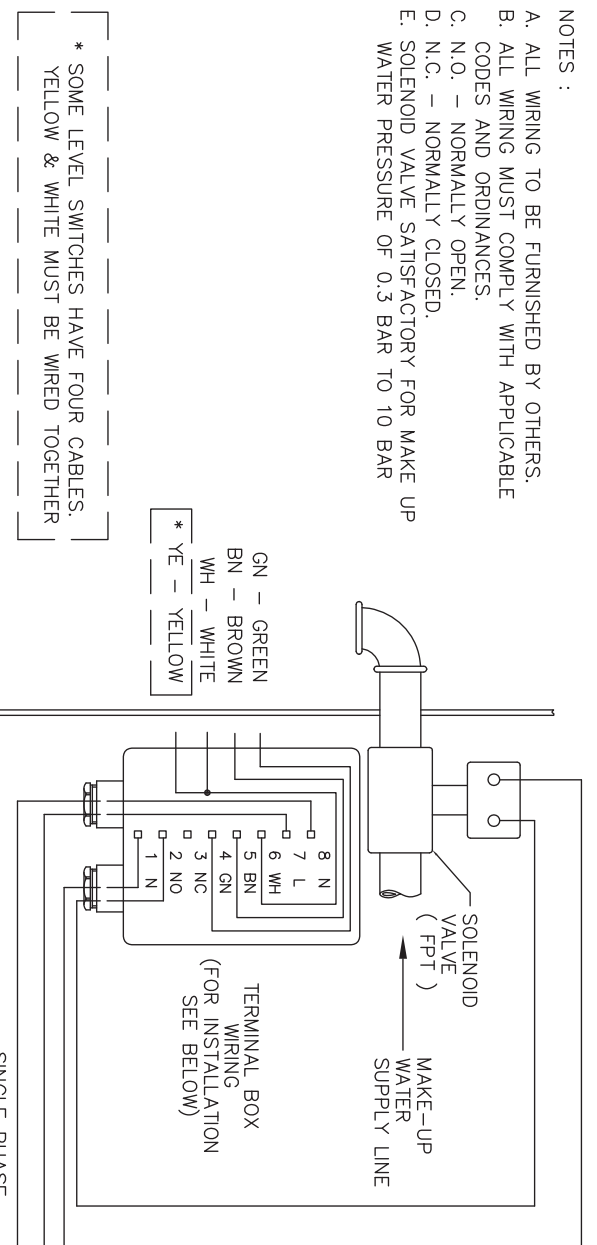
Design	According to VDE 0580
Voltage tolerance	230 V AC coil : +6%, -10% Other AC coils with NC valve : +10%, -15%
Power consumption : cut in	AC : 44 VA
Power consumption : holding	AC : 21 VA (10W)
Isolation of coil	Class H according to IEC 85
Connection	AMP-plug according to DIN 43650-A
Class	IP65 with AMP-plug
Ambient temperature	Max. 80°C
Duty rating	Continuous

### CONNECTION-POINTS COIL



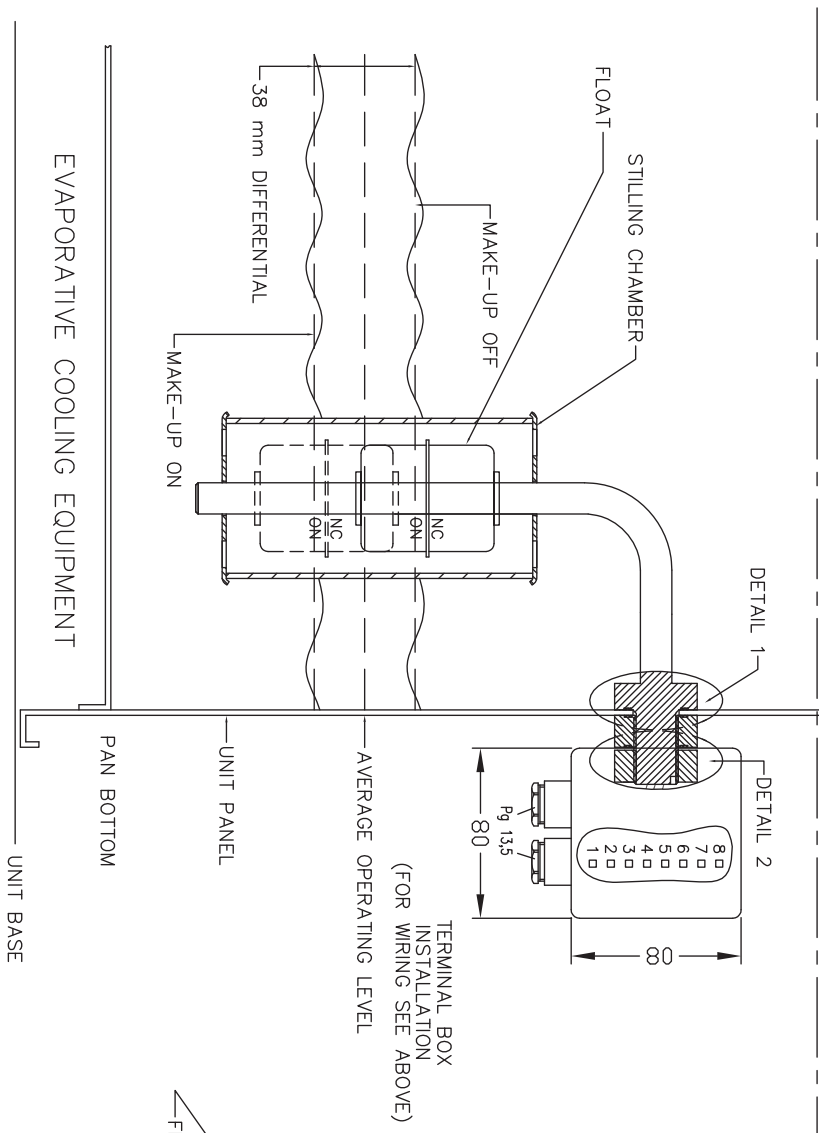
- NOTES :
- A. ALL WIRING TO BE FURNISHED BY OTHERS.
  - B. ALL WIRING MUST COMPLY WITH APPLICABLE CODES AND ORDINANCES.
  - C. N.O. - NORMALLY OPEN.
  - D. N.C. - NORMALLY CLOSED.
  - E. SOLENOID VALVE SATISFACTORY FOR MAKE UP WATER PRESSURE OF 0.3 BAR TO 10 BAR

GN - GREEN  
 BN - BROWN  
 WH - WHITE  
 \* YE - YELLOW

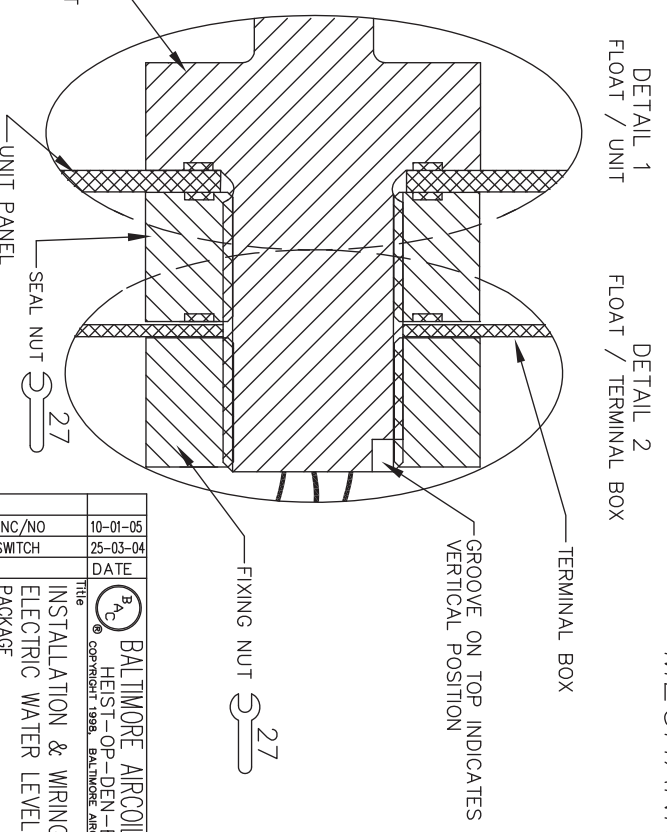


DISCONNECT SWITCH (BY OTHERS).  
 FOR VOLTAGE (230V, 24V)  
 AND CURRENT TYPE (AC, DC)  
 REFER TO TERMINAL BOX.

**ELECTRICALLY**



**MECHANICALLY**



B	CYL. FLOAT W NC/NO	10-01-05
A	EXTRA LEVEL SWITCH	25-03-04
NO	REVISIONS	
1	Swg GUVL	06-11-01
2	Dr. di	
3	Scale	
Title: BALTIMORE AIRCOL INTERNATIONAL HEIST-OP-DEN-BERG, BELGIUM © COPYRIGHT 1998, BALTIMORE AIRCOL INTERNATIONAL		Model: ALL
Package: INSTALLATION & WIRING DIAGRAM ELECTRICAL WATER LEVEL CONTROL		Protodate: 08-11-01
BAC Serno.: Dwg. No.: EL-MUP-1-E		File: