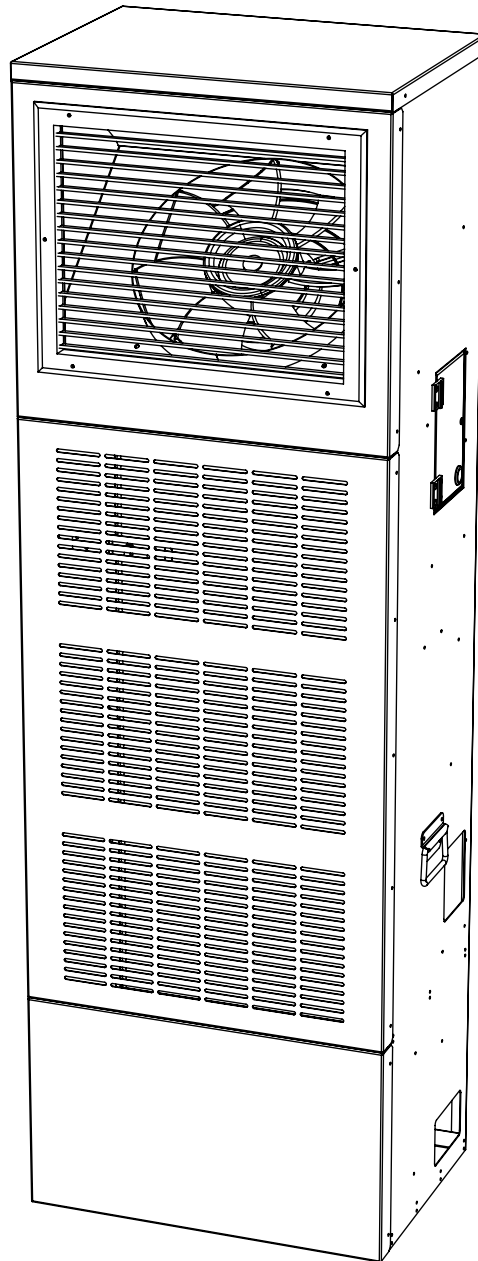


# AHU30

## 30Kw FAN COIL UNIT. PRODUCT MANUAL.



**AHU30-25**

## WARNINGS

**These instructions should be read by:**

**The specifying engineer.  
The installation engineer.  
The user.  
The service engineer.**









- **Failure to follow these instructions may result in risk of personal injury or damage to the equipment.**
- **Damage due to a failure to follow these instructions will invalidate the warranty.**
- **The appliance must be serviced by qualified engineers in compliance with local regulations.**
- **The appliance must be switched off and disconnected from the power supply before any maintenance is carried out.**
- **There are no user controls inside the appliance casing.**
- **Do not place anything on top of the appliance.**
- **An air gap of at least 400mm should be allowed at the front of the unit to ensure a clear airflow.**
- **Do not disconnect the appliance from the supply under load.**
- **For internal use only. Do not use out of doors.**
- **Extension cables should be correctly rated for the load, fully unwound and never run through water or over sharp edges.**
- **Always transport in an upright position.**
- **Maximum water temperature 80 °C.**
- **This appliance must be sited on a firm level surface.**
- **This is a class I appliance and requires an Earth connection.**
- **Do not move this appliance when operating or connected to the power supply.**
- **This appliance should not be operated by children or those who have not read and understood the instructions.**
- **Always drain the unit when not in use. Do not store the appliance in cold ambient temperatures with water still present in the machine.**
- **Due to the nature of EC fans, it takes a few seconds for the fan to start and reach full speed.**

## Specifications:

TECHNICAL SPECIFICATIONS. AHU30-25	
Cooling capacity.*	30 kw Total duty.
Power supply.	230v. 16A. 50Hz.
Rated current.	2.2A.
Airflow (At full speed)	3700 M3h.
Weight. (Dry).	79 kg.
Noise level at 3M. Slow - fast fan speed.	45 - 81.9 dB(A).
IP Rating.	IP2X.
Maximum water temperature.	80 °C.
Minimum water temperature.	5°C.
Maximum water pressure.	3 bar

\* Cooling duty quoted under the following conditions:

- 1: Ambient temperature. 30 °C.
- 2: RH. 60%.
- 3: Inlet water temperature. 6 °C.
- 4: Water flow rate. 4.4m<sup>3</sup>/h

MACHINE AND INSTRUCTION ICONS	
	Important information
	Fan on/off
	Heating on/off
	Cooling on/off.
	Appliance connected to power supply.
	Risk of electric shock. Isolate from power supply before removing cover.

The AHU30 is a 30Kw fan coil unit.

It is connected to a 16 Amp. 230Vac. 50Hz power supply and comes fitted with a 2P+E industrial plug to BS4343.

It is recommended that the supply to the machine should be protected by a 30mA RCD.

These units come with variable fan speeds, a quality EC axial fan and condensate pumps as standard.

## **Set up and operation:**

### **Water & electrical connections:**

- The control panel for the AHU30 is located on the side of the machine beneath a hinged tamper-proof cover. The tamper-proof cover is secured with an M5 cross head bolt. (See P6).
- The unit comes with 1.25 inch cam and groove couplers as standard. The couplers are fitted to rotating joints to allow easy routing of the hoses through the sides or the rear of the unit. (See P5).
- Site the appliance on a firm level surface. The appliance has a small foot print and the stability of the machine must be verified.
- Connect the feed and return water hoses from the chiller or boiler to the cam and groove couplers. (See P5)
- Fit the clear 1/2 inch condensate hose to the push fit socket located inside the rear of the machine and run the hose to a suitable drain or receptacle. Ensure the hose is pushed fully home. (See P5)
- Connect the the unit to a 230v 16A 50Hz power supply. The amber power lamp on the control panel should illuminate.

### **Filling the machine:**

- It should be noted that the appliance is fitted with an automatic air bleed valve. Manual air bleeding is not required. The dust cap on the air bleed should be loosened for normal operation. (See P8).  
With the fan switch and cooling/ heating switch in the off position the diverter valve will be closed. This will prevent the heat exchanger coil from filling.
- Turn the fan switch to I and the cooling/ Heating switch to cooling, Set the digital controller set point to at least 2 degrees below the ambient room temperature. (See P7).  
(This will open the diverter valve and allow water to flow into the coil. The diverter valve can also be manually opened).
- Fully inspect all water connections for leaks.

### **Heating and cooling:**

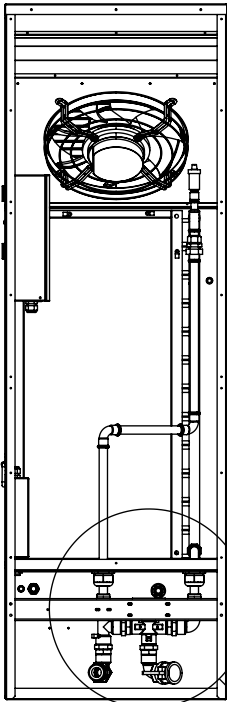
The AHU30 can be fitted to a boiler for heating or a chiller unit for cooling. It should be noted that the cooling/ heating switch will not operate without the fan switch being in the 'I' position. The cooling/ heating switch will need to be set to the appropriate function for the required application.

- Switch the fan rocker switch to I. Please note! Due to the nature of EC fans, it takes a few seconds for the fan to start.
- Switch the cooling/ heating switch to the desired function.
- Set the fan to the required speed using the variable speed controller. (See P6).
- Set the digital controller to the required temperature or 'Set point'. (See P7).
- Adjust the louvres on the outlet grill to alter the vertical airflow direction.

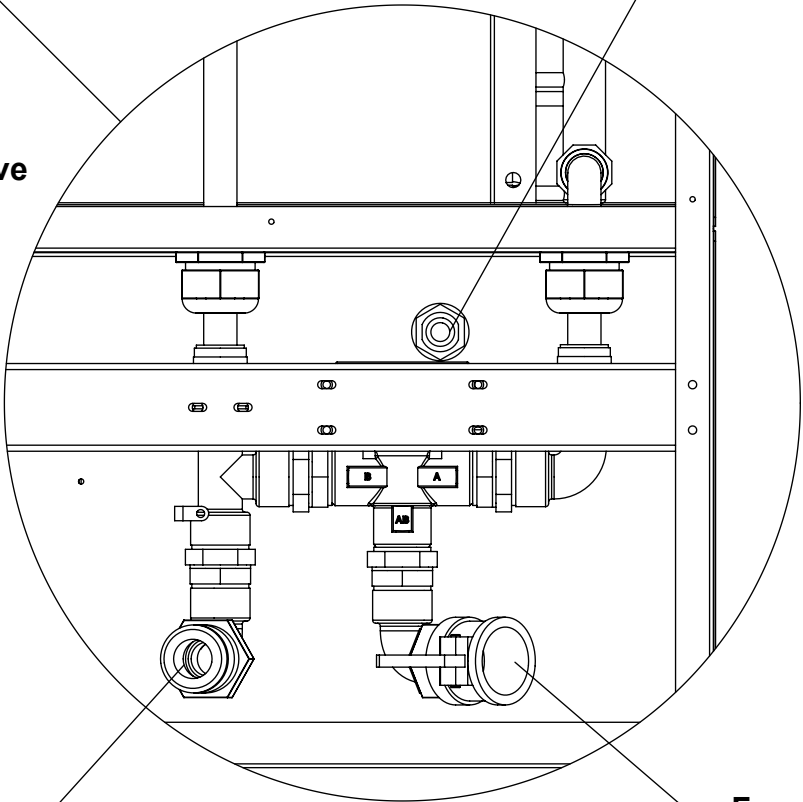
The digital controller has a factory set differential of 2 °C.

**AHU30 hose connections:**

**Rear of machine.**



**1.25 inch cam and groove couplers.**

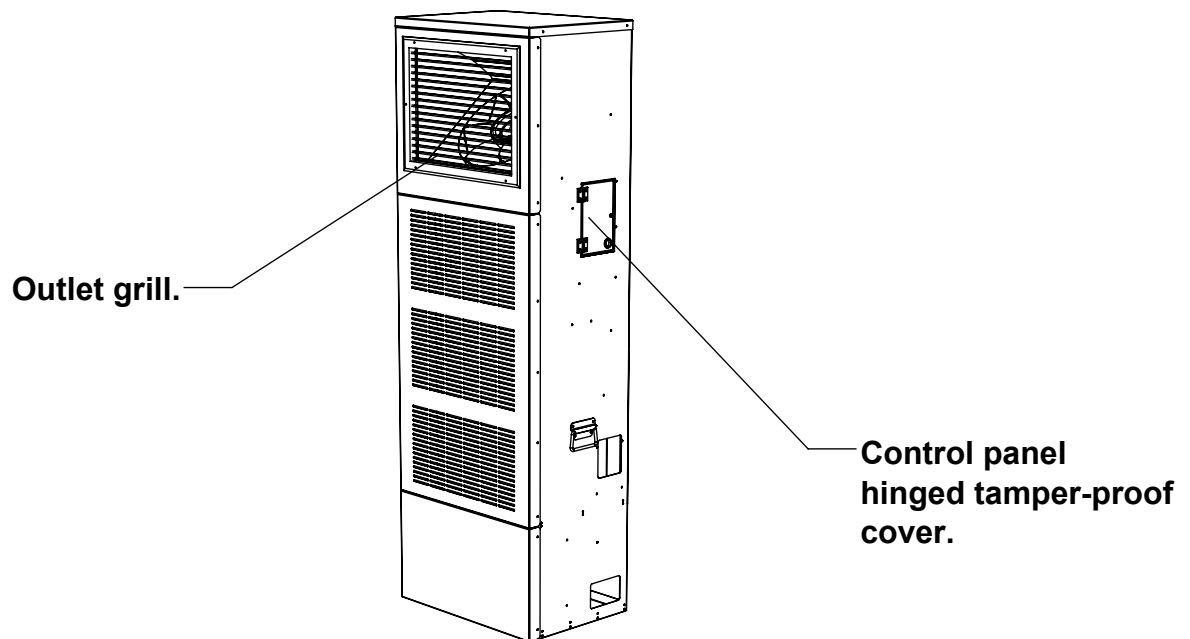


**Push-fit socket for condensate hose.**

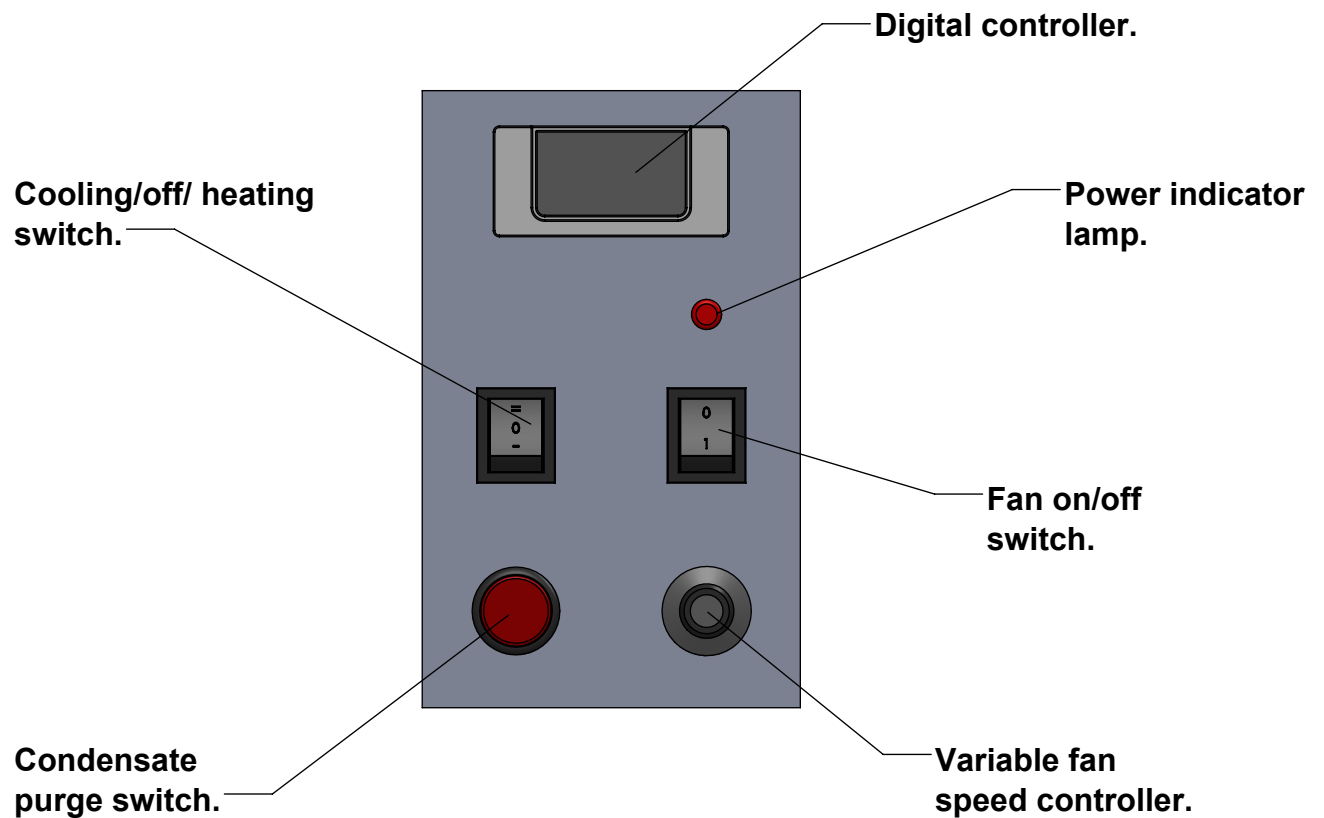
**Male connector  
Water out.**

**Female connector  
Water in.**

## Control panel location:



## AHU30 Control panel:



## Setting the digital controller:

### How to see the set point:

During normal operation the digital controller displays the ambient room temperature.

- The set point is the minimum temperature the fan coil will operate down to (or the maximum it will operate up to in heating mode).
- To see the set point push and immediately release the SET key: the display will show the current set point value.
- Push and immediately release the SET key or wait for 5 seconds to display the ambient room temperature.



### How to change the set point:

- The appliance comes factory set at 5 °C.
- Push and hold the SET key for more than 2 seconds to change the set point value.
- The value of the set point will be displayed and the "°C" LED starts blinking.
- To change the set point value push the up or down arrows within 10 seconds. The minimum set point is -50 °C. The maximum set point is 110 °C.
- To memorise the new set point value push SET key or wait for 10 seconds.

## Condensate pump:

The unit is fitted with a condensate pump. When a preset level is reached in the pump reservoir the pump will operate and discharge through the small clear hose. This hose needs to be run to a suitable drain or receptacle.

The pump is fully automatic and requires no user maintenance.

## Purge Button:

The condensate pump reservoir will hold a small amount of water during normal operation. When transporting the unit this water can be drained by pressing and holding this button.

## Low temperatures:

When operating the unit in low ambient temperatures it is recommended that a glycol solution is added to the water to prevent freezing. Ensure this is in compliance with local regulations

If the unit is not used for prolonged periods of time it is recommended that the system is drained.

Consideration must be given to storing units in low ambient temperatures. All water must be drained from the machine before storage. Failure to follow this procedure can result in damaged heat exchangers.

Even a small amount of water left in the heat exchanger coil can cause damage at low temperatures.

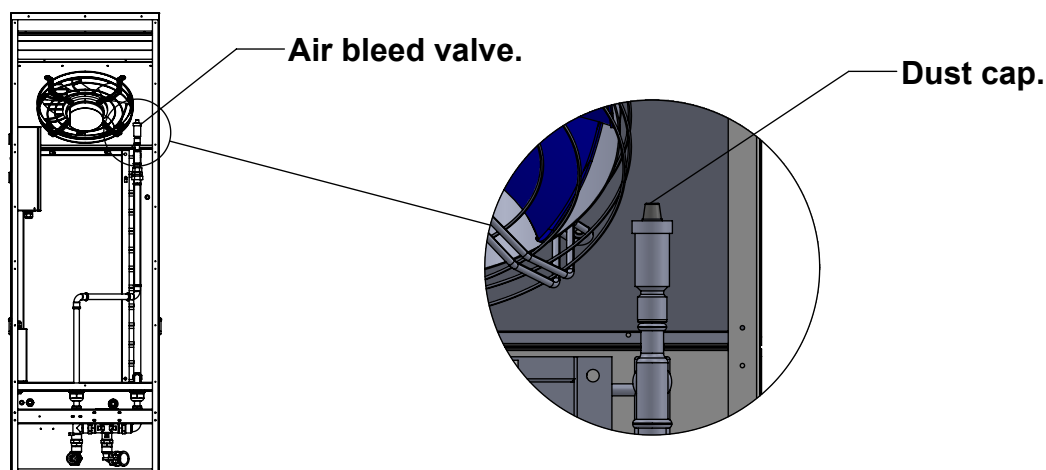
## Automatic air-bleed valve:

The automatic air-bleed valve is located behind the top rear panel.

It is important that the dust cap is loosened during operation. This allows air to automatically bleed from the system. The appliance is supplied with the dust cap loose.

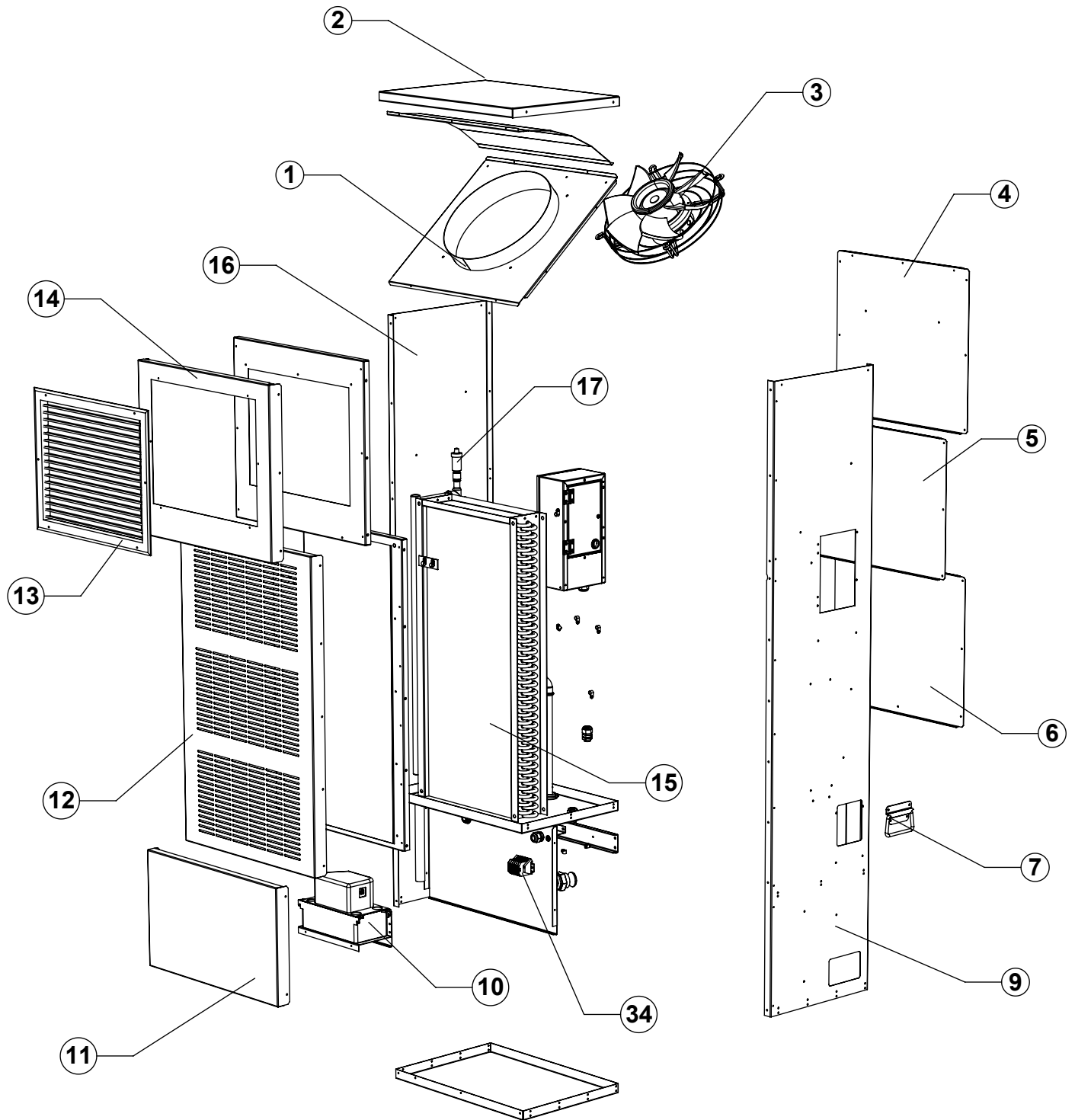


If the dust cap is left loose and the appliance is full of water it should not be laid down. This will allow water to leak into the machine casing.

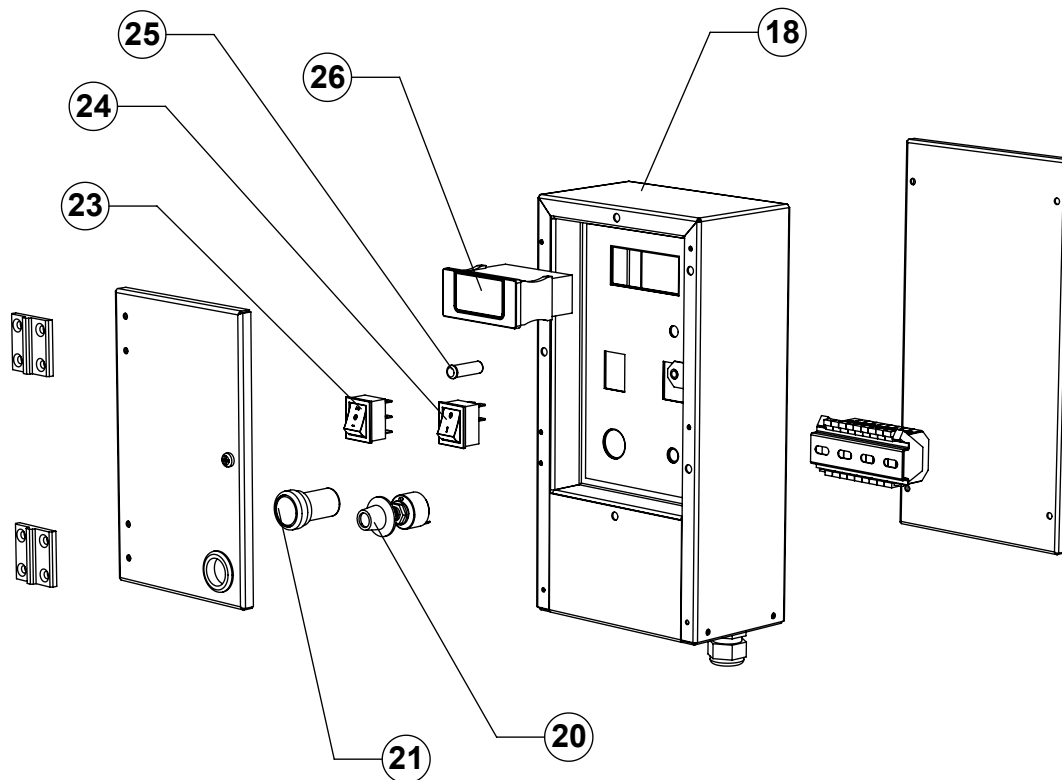




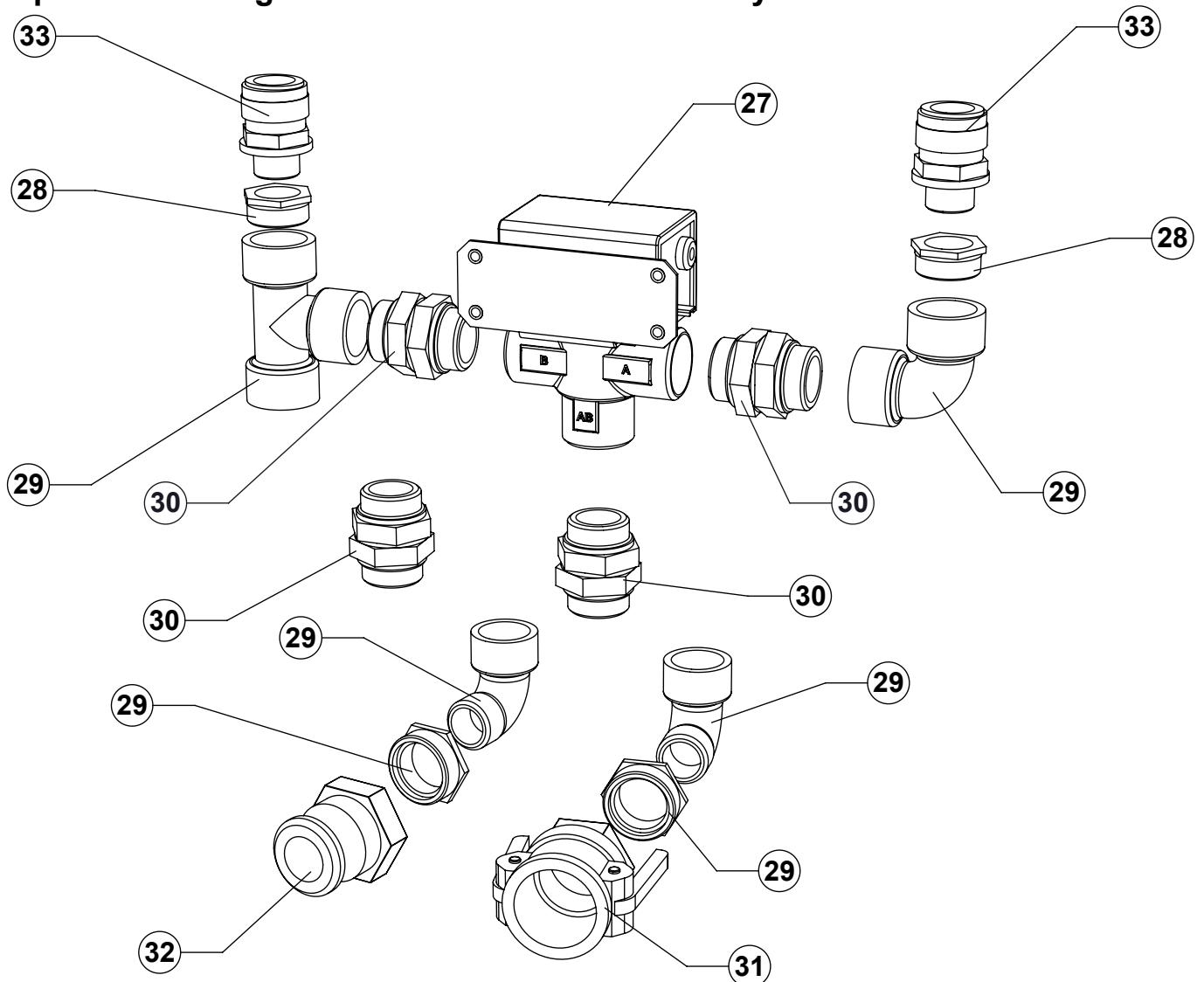
## AHU30-20 exploded drawing. Main unit:



## Exploded drawing cont'd. Control panel:



## Exploded drawing cont'd. Diverter valve assembly:



## AHU30-20 SPARE PARTS:

ITEM No	DESCRIPTION	PART No	PRICE
1	GALVANISED METALWORK SET	BW0201282	POA
2	TOP PANEL	BW0201283	POA
3	350mm EC AXIAL FAN MOTOR	FA010125	POA
4	TOP REAR PANEL	BW0201284	POA
5	MIDDLE REAR PANEL	BW0201285	POA
6	BOTTOM REAR PANEL	BW0201286	POA
7	TRUNK HANDLE	ME040305	POA
8	16A MAINS CABLE ASSEMBLY. (Not shown)	EL020132	POA
9	RIGHT SIDE PANEL	BW0201287	POA
10	CONDENSATE PUMP	ME040105	POA
11	FRONT BOTTOM PANEL	BW0201288	POA
12	FRONT MIDDLE PANEL	BW0201289	POA
13	LOUVRE	BW010919	POA
14	FRONT TOP PANEL	BW0201290	POA
15	HEAT EXCHANGER COIL	FR030401	POA
16	LEFT SIDE PANEL	BW0201291	POA
17	AUTOMATIC AIR BLEED VALVE	ME040198	POA
18	CONTROL PANEL ENCLOSURE ASSEMBLY. METALWORK.	BW0201292	POA
19	6mm TERMINAL ASSEMBLY. 9 WAY.	EL020430	POA
20	SPEED CONTROLLER. C/W KNOB	EL030151	POA
21	PUSH BUTTON SWITCH. NON-LATCHING.	EL030137	POA
22	POLYIMIDE HINGE.	ME040332	POA
23	I/O/II ROCKER SWITCH.	EL030144	POA
24	O/I ROCKER SWITCH	EL030109	POA
25	9mm LAMP.	EL030709	POA
26	DIGITAL CONTROLLER.XR10. C/W PROBE.	EL030403	POA
27	DIVERTER VALVE.	ME0401144	POA
28	BRASS REDUCING BUSH. 1" TO ¾ "	ME0401145	POA
29	BRASS FITTINGS KIT.	ME0401185	POA
30	BRASS SWIVEL UNION. 1".	ME0401147	POA
31	CAM AND GROOVE COUPLER. FEMALE. 1.25 INCH.	ME0401148	POA
32	CAM AND GROOVE COUPLER. MALE. 1.25 INCH	ME0401149	POA
33	PLASTIC PUSH-FIT COUPLER.	ME0401186	POA
34	6mm TERMINAL ASSEMBLY. 6 WAY.	EL020431	POA
35	CABLE GLAND AND LOCKNUT. (NOT SHOWN).	ME040201	POA
36	FASCIA LABEL. (NOT SHOWN).	BW030440	POA

### Maintenance:

Always isolate the machine from the power supply before carrying out any maintenance.  
DO NOT OPERATE THE APPLIANCE WITH GRILLS MISSING.

Fan motors and switch gear are not customer serviceable components.  
General maintenance should include regular inspection of:

- 1: Power supply cable. Check for signs of damage or heat build up. Replace if necessary.
- 2: Air intake, outlet grills & heat exchanger coil: ensure grills are free from accumulated debris. Blow out with compressed air if required.
- 3: Regularly inspect all joints for signs of leaks. Remake joints or replace as necessary.
- 4: Fixings: Check all fixings are present and secure.

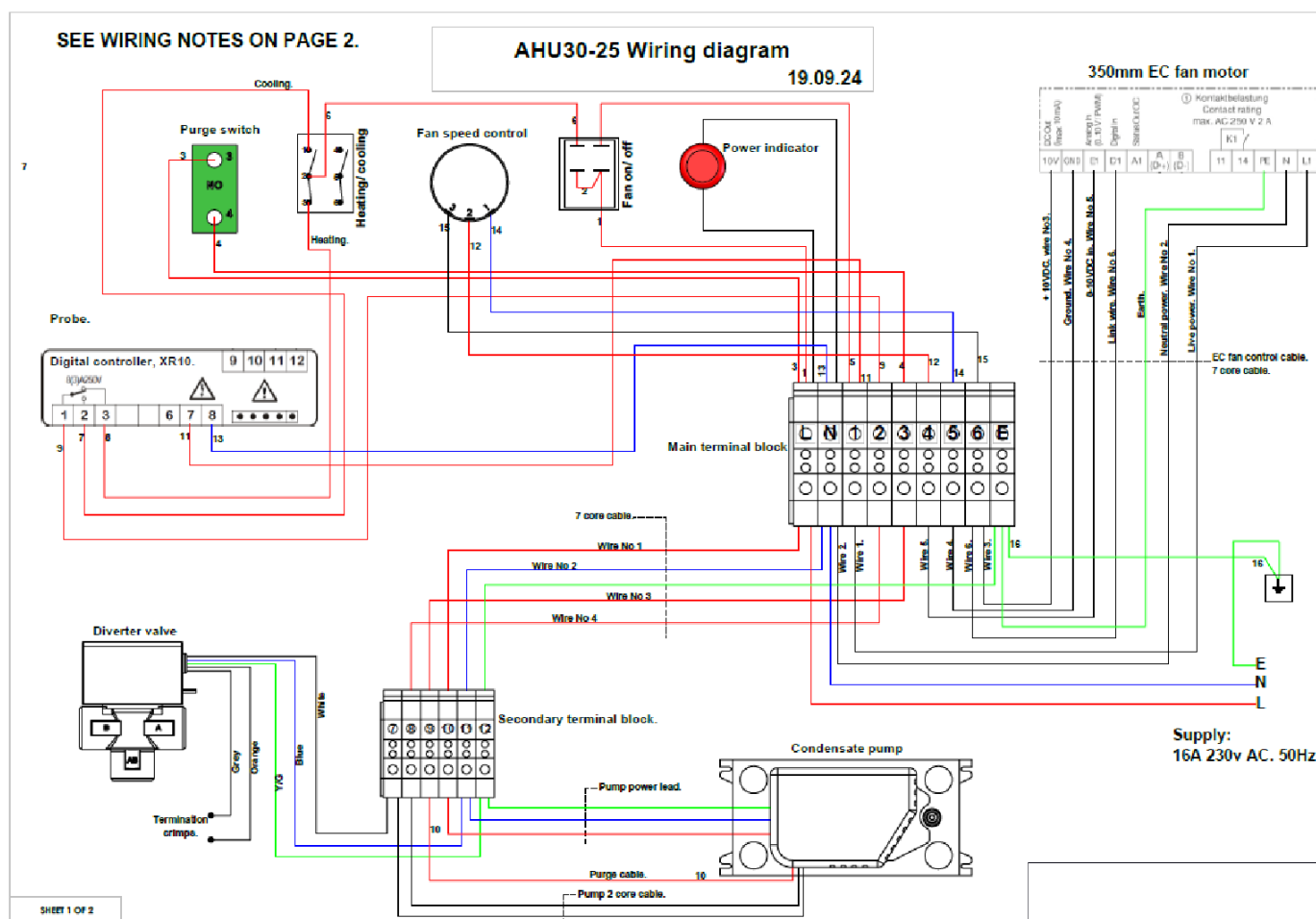
Maintenance carried out by a competent person:

- 1: Internal cables should be inspected for signs of heat damage and replaced when necessary.
- 2: All cable connections should be regularly checked and tightened. Particular attention should be paid to the connections at the terminal blocks.
- 3: Regularly check the security of the fan motor fixings. Tighten if necessary.

## Fault finding:

FAULT	POSSIBLE CAUSE	SOLUTION
NO HEAT OUTPUT.	FANS AND OR HEATING NOT SWITCHED ON.	CHECK ALL SWITCHES ARE ON AND IN THE CORRECT POSITION. (See P4).
	DIGITAL CONTROLLER INCORRECTLY SET.	CHECK THAT THE CONTROLLER IS SET ABOVE THE AMBIENT TEMPERATURE DISPLAYED ON THE SCREEN. (See P7).
	POWER SUPPLY INTERRUPTED.	CHECK POWER INDICATOR LAMP IS ILLUMINATED. CHECK POWER SUPPLY.
	FAULTY ROCKER SWITCH.	CHECK SWITCHES AND REPLACE IF NECESSARY.
	FAULTY DIVERTER VALVE.	CHECK OPERATION OF VALVE AND REPLACE IF NECESSARY.
	CONDENSATE PUMP FAIL.	CHECK THE CONDENSATE PUMP FAIL SAFE FLOAT HAS NOT ACTIVATED. REPLACE PUMP.
NO COOLING OUTPUT	FANS AND OR HEATING NOT SWITCHED ON.	CHECK ALL SWITCHES ARE ON AND IN THE CORRECT POSITION. (See P4).
	DIGITAL CONTROLLER INCORRECTLY SET.	CHECK THAT THE CONTROLLER IS SET BELOW THE AMBIENT TEMPERATURE DISPLAYED ON THE SCREEN. (See P7).
	POWER SUPPLY INTERRUPTED.	CHECK POWER INDICATOR LAMP IS ILLUMINATED. CHECK POWER SUPPLY.
	FAULTY ROCKER SWITCH.	CHECK SWITCHES AND REPLACE IF NECESSARY.
	FAULTY DIVERTER VALVE.	CHECK OPERATION OF VALVE AND REPLACE IF NECESSARY.
	CONDENSATE PUMP FAIL.	CHECK THE CONDENSATE PUMP FAIL SAFE FLOAT HAS NOT ACTIVATED. REPLACE PUMP.
FAN MOTOR NOT OPERATING	FAN SWITCH NOT ON	CHECK SWITCH.
	POWER SUPPLY INTERRUPTED.	CHECK POWER INDICATOR LAMP IS ILLUMINATED. CHECK POWER SUPPLY AT FAN MOTOR.
	FAULTY FAN MOTOR.	REPLACE FAN MOTOR.
POOR COOLING OR HEATING PERFORMANCE.	BLOCKED OR DIRTY INLET OR OUTLET GRILLS. DIRTY HEAT EXCHANGER COIL	BLOW THE GRILLS AND COIL OUT WITH COMPRESSED AIR.
	FAULTY DIVERTER VALVE	CHECK OPERATION OF DIVERTER VALVE. REPLACE IF NECESSARY.
	INCORRECTLY SET DIGITAL CONTROLLER.	SEE ABOVE.
CONDENSATE PUMP FAILS TO OPERATE.	POWER FAILURE TO CONDENSATE PUMP.	CHECK FOR POWER AT THE PUMP TERMINALS BEHIND THE FRONT BOTTOM PANEL.
	FAULTY PUMP	REPLACE PUMP.
	PUMP FAIL SAFE FLOAT OPERATED.	CHECK PUMP OPERATION.

### WIRING DIAGRAM:



### FAN PERFORMANCE CURVE:

### Characteristic curve

