PHALCON72

HEAT RECOVERY CONTROL WITH SINGLE PHASE SUPPLY AND EXTRACT EC FANS

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Introduction

Heat recovery control panel mains powered, controls for two single phase ec type fans with Run/Stop and Low/High speed switch by remote switches (5vdc). Internally adjustable speed settings for high and low speed for each fan. Bypass damper control with selectable switching points between 0 to 50°C. Frost protection of the fans selectable between -6 to +8°C to shut fans down if temper drops below set temperature. Filter dirty alarm for two filters. Remote alarm outputs for common alarm and filter alarm. Programable 7 day time clock.

Specification

Supply Voltage: 230VAC 50Hz
Supply Current: 14Amps
Temperature Sensors: 10K3A1 Thermistor sensor 2M lead length
Common and Filter Alarm Outputs: 8amps 230V Max.
Bypass damper Output: 5Amps 230V Max.
Supply fan: 6.3Amps 230V Max.
Extract fan: 6.3Amps 230V Max.
Dimensions: 175 x 215 x 90mm
IP Rating: IP21

Installation

Installation must be done by a qualified personnel in accordance with local applicable standards.
The control panel must be earthed.
Access is limited to service personnel only. Live parts accessible when cover is removed.
Components may remain live even when power to the panel is removed.
EC fans use capacitors to store mains voltage. Contact with mains wiring must be avoided for at least 5 minutes following the supply being disconnected.
If in doubt ask.

Fan Connections

Connect fans to the control panel as per connection diagram.
If fan has 10V output wire cut back and insulate.
If fans are alarm relay type (not Tachometer), connect Fan N/C & Com between tachometer and 0V.
If fan monitoring not required, then link tachometer input to 0V to prevent alarms.

Temperature sensors

Connect the two Thermistors (supplied) as per the circuit diagram.
Normally both sensors should be installed in the supply airflow input the heat recovery unit.

Panel Functions

LCD Screen with controls status including:
Frost sensor actual temperature
Frost stat set point
Damper sensor actual temperature
Damper set point
System On and Off status
Boost On
Fan Run or Fault for Supply and Extract
Filter dirty indication (FD)
7 Day time clock with manual override button

PCB Functions

Supply fan speed setting for high and low speeds
Extract fan speed settings for high and low speeds
Temperature setting for damper control
Temperature setting for fan frost protection

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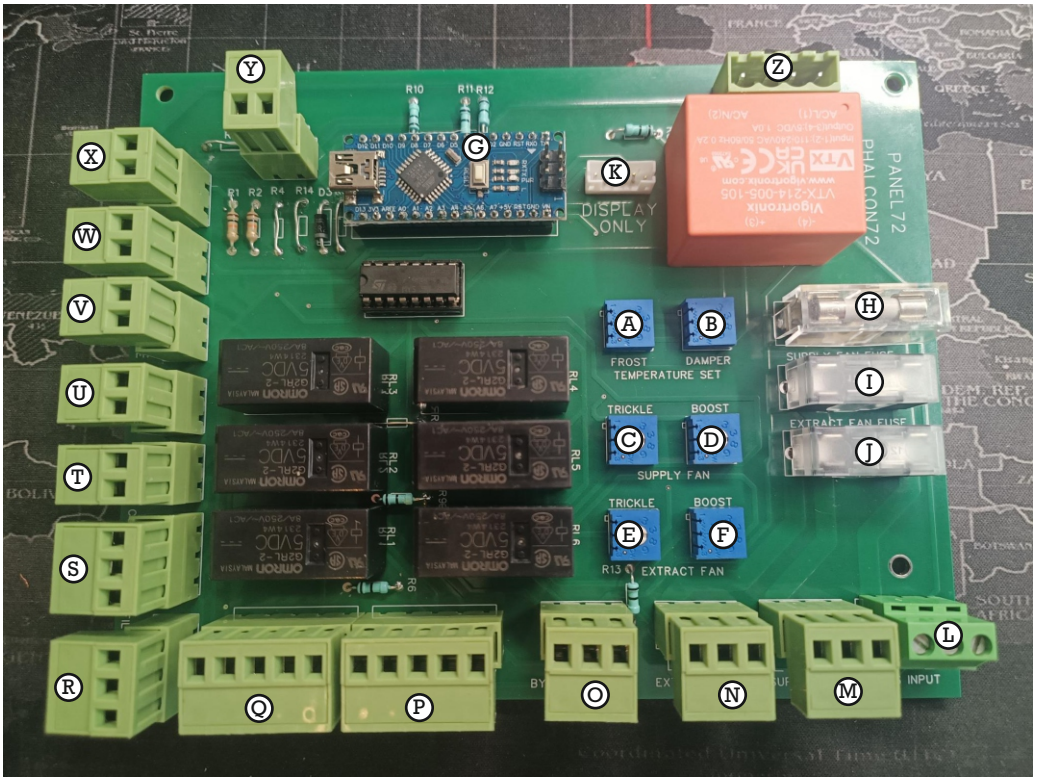
PCB

Potentiometers

A - Frost stat temperature set point adjuster
B - Damper temperature set point adjuster
C - Supply fan trickle speed set point adjuster
D - Supply fan boost speed set point adjuster
E - Extract fan trickle speed set point adjuster
F - Extract fan boost speed set point adjuster



G- Nano board reset

Fuses

H - Control circuit (2amps)
I - Supply fan (8amps)
J - Extract fan (8amps)

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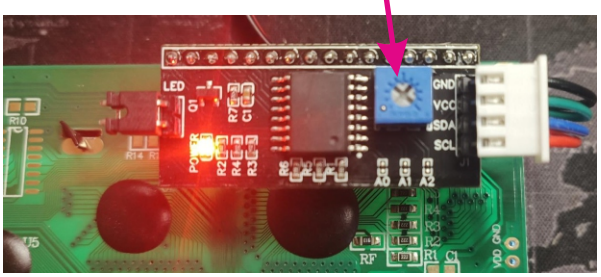
Connections

K - 6 way connector for screen
L - 230V Mains supply (L / N / E)
M - Supply fan output 230V 8.0Amps max (L / N / E)
N - Extract fan output 230V 8.0Amps max (L / N / E)
O - Damper actuator output 230V live supply (1 = N / 2 = L / 3 =SL)
P - Supply ec fan control signal terminals (0V / SIG / 10V / C / NC)
Q - Extract ec fan control signal terminals (0V / SIG / 10V / C / NC)
R - Filter alarm output common (NC / C / NO)
S - Common alarm output common (NC / C / NO)
T - Filter pressure switches (wired in parallel)
U - Remote boost switch (Close to Boost)
V - Remote On/Off switch 1 (Close to Enable)
W - Sensor 2 (Bypass damper)
X - Sensor 1 (Frost protection)
Y - Remote On/Off switch 2 (Close to Enable)
Z - Time clock link

SCREEN CONTRAST ADJUSTER



CONNECTOR CONFIGURATION:
BLACK
GREEN
BLUE
RED

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7 Day Time Clock

The time clock has a 24 hour format.
The timer is designed with up to 8 possible On/Off event programs per day.
The timer provides 15 combinations of daily programs (see figure 1).

1.	MO	TU	WE	TH	FR	SA	SU
2.	MO						
3.		TU					
4.			WE				
5.				TH			
6.					FR		
7.						SA	
8.							SU
9.	MO	TU	WE	TH	FR		
10.						SA	SU
11.	MO	TU	WE	TH	FR	SA	
12.	MO	TU	WE				
13.				TH	FR	SA	
14.	MO		WE		FR		
15.		TU		TH		SA	

FIG. 1

Programming The Timer

Functional description of the buttons.
Manual: To select On/Auto/Off
Clock: To adjust current day and time
Timer: To view and adjust programs
Day: To adjust day of the week
Hour: To adjust the hour
Min: To adjust the minute
Reset: Reset timer settings

Adjust The Clock

Press and hold Clock button and then press Day, Hour and Minute buttons to adjust the clock setting.

Programming The Timer

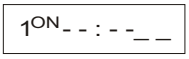


FIG. 2

Press Timer button, Screen will display as Figure 2.
Press Day button to select day timer is to enable system, combinations available in Figure 1.
Press Hour and Min buttons to set on time for program.
Press Timer button to set off time, Screen will display as Figure 3.

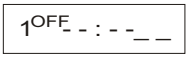


FIG. 3

Press Day button so off setting for program 1 is the same as on days.
Press Hour and Min buttons to set off time for program.
Press Timer button, Screen will display as Figure 4. repeat above actions for up to 8 on and off settings.

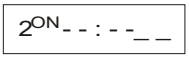
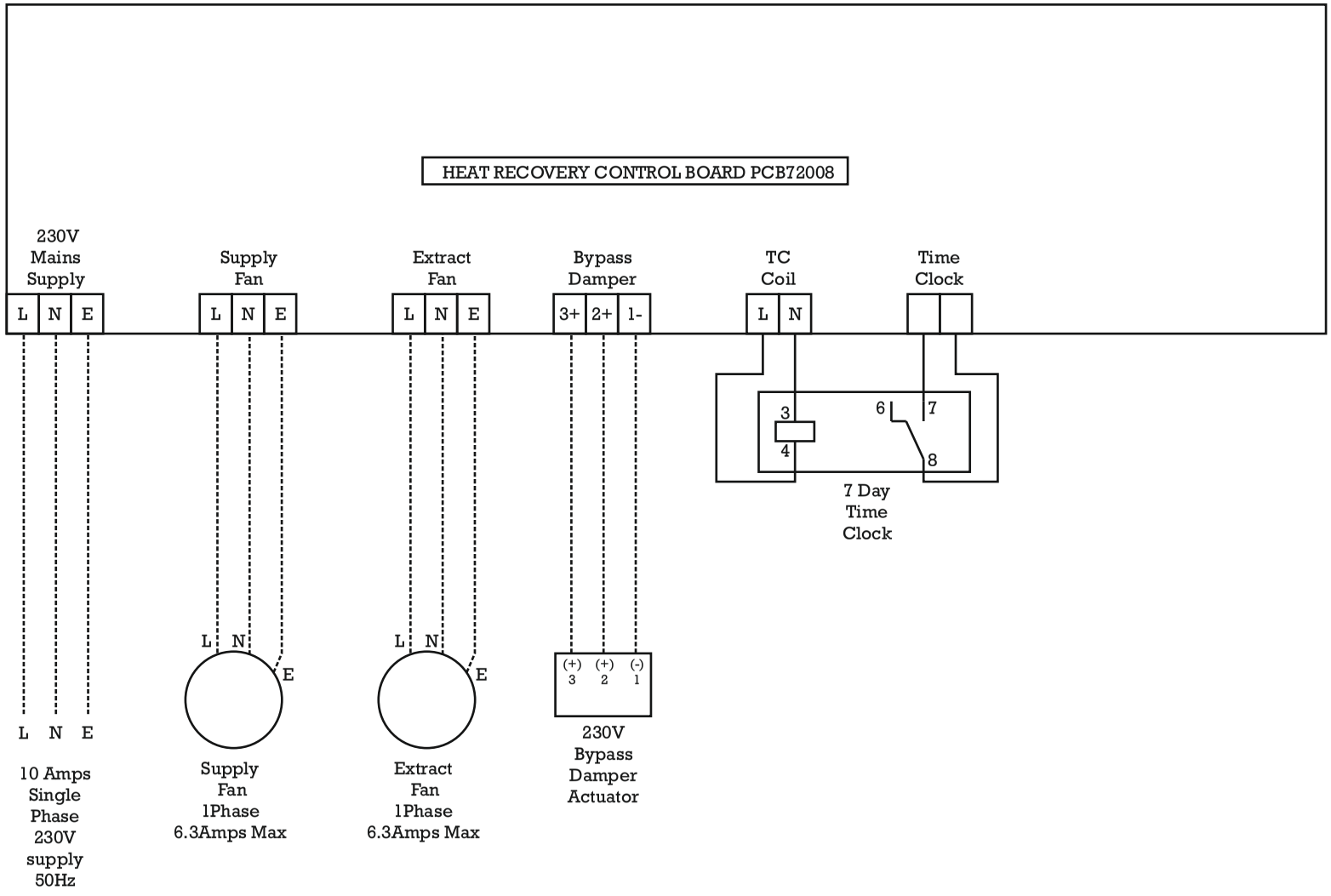


FIG. 4

230V INPUTS / OUTPUTS

---------- Field wiring



Drawing Number
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Title
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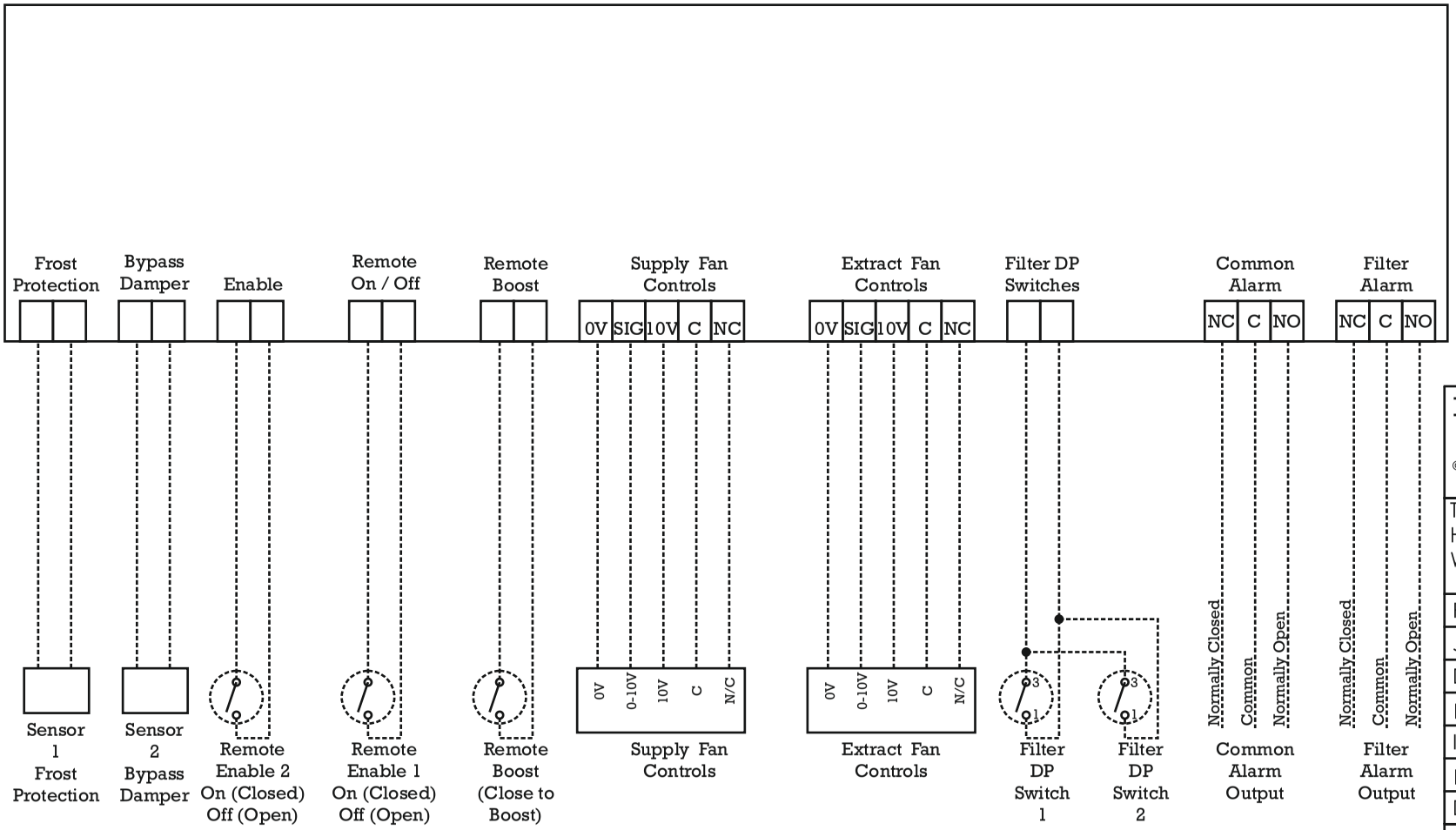
Reference	
Job Number	
Drawn By	Young
Date	01/01/2025
Issue	
Date	
Details	

Notes

LOW VOLTAGE INPUTS / OUTPUTS

Field wiring



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Test and Inspection

Serial Number:	7200
Date:	01/01/2025
Tested by:	N. Young

NOTES