

P720091F

DUTY SHARE CONTROL FOR SINGLE PHASE FANS (EC Version)



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Introduction

The duty share control panel controls for two single phase fans. The change over time can be adjusted from 1 to 10 days. When in duty share mode the standby fan will start if the duty fan goes into fault causing the airflow switch contact to make. The unit has volt free fault contacts (8amp max) for fault condition. The unit includes enable contacts to start the duty fan running, this can be switched by closing the contacts (24v). The duty share can be overridden by pressing either the Fan 1 or Fan 2 pushbutton, this will only enable the corresponding fan, the fans will not change over in a fault condition but the fault contacts will be activated and the fault lamp illuminate. The fault lamp is also a fault reset, when the fault has been cleared the panel can be reset by pressing the Fault lamp. Internal speed control pot can be used set the speed of the fans.

Specification

Supply Voltage: 230VAC 50Hz
Supply Current: 10Amps
Fault Outputs: 8amps 230V Max.
Fan 1: 8.0Amps 230V Max.
Fan 2: 8.0Amps 230V Max.
Dimensions: 200 x 300 x 150mm
IP Rating: IP65

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.

If in doubt ask.



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P720091F

Fan Connections

Connect fans to the control panel as per connection diagram.

Fans have a three way terminal connection, Live, Neutral and Earth as indicated on the PCB.

Fan enable contacts and speed control contacts are to be wire to the EC fan control terminals.

Enable Connection

The enable connector can be linked to time clock contacts, bms enable, external switch, and many other devises. the switch contacts must be volt free and suitable for switching 24vac 2 amp circuit.

Airflow Connection

The airflow connector should be wired to terminals 1 and 3 of the airflow pressure switch, make on no airflow.

Panel Functions

Fan 1 Lamp and Enable push button

Fan 2 Lamp and Enable push button

Fault Lamp and Reset push button

Duty share timer (1 hour -10 days)

Fault delay timer (0-60 seconds)

Fan speed control pots

Fan lamp push buttons

These will illuminate when the corresponding fan is running, is neither lamp is illuminated the enable contacts have not been made. If a fan push button is pressed the corresponding fan will run at all times when the enable contact are made and the duty share is overridden as is the changeover on fault facility. If both fan push buttons are pressed fan one will run as it has priority over fan 2.



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Fault lamp pushbutton

The fault lamp will illuminate if the closed contacts of the airflow pressure switch are not open before the fault timer time elapses, once the fault lamp illuminates the volt free fault contacts will change over and the fault will be latched on until the fault has been cleared and reset or the enable signal has been reset. If the airflow switch contacts have opened and the fault lamp is pressed, the fault will clear and the panel will switch back to the duty fan.

Duty share timer

The duty share timer has 3 dials

Dial 1 has been set to D and has been covered and must not be changed.

Dial 2 has ten positions, 1s, 10s, 1m, 10m, 1h, 10h, 1day, 10days, ON, OFF. These are the maximum times that the fans will run on each cycle of duty. the lower settings can be used to check the system on commissioning.

Dial 3 has ten positions, 0.1 to 1.0, this is the scale setting for Dial 2, if you require the duty share time to be 30 minutes you set Dial 2 to 1h and Dial 3 to 0.5, this will give you half of 1 hour, if your require the maximum of 10 days the set Dial 2 to 10days and Dial 3 to 1.0.

Fault delay timer

The fault delay timer has 3 dials

Dial 1 has been set to A and has been covered and must not be changed.

Dial 2 has ten positions, 1s, 10s, 1m, 10m, 1h, 10h, 1day, 10days, ON, OFF. These are the maximum times that the fans fault will be overridden. The higher ranges should not be required.

Dial 3 has ten positions, 0.1 to 1.0, this is the scale setting for Dial 2.

The fault delay should be set to a time that allows the fan to get up to speed and stop faults occurring during start up.

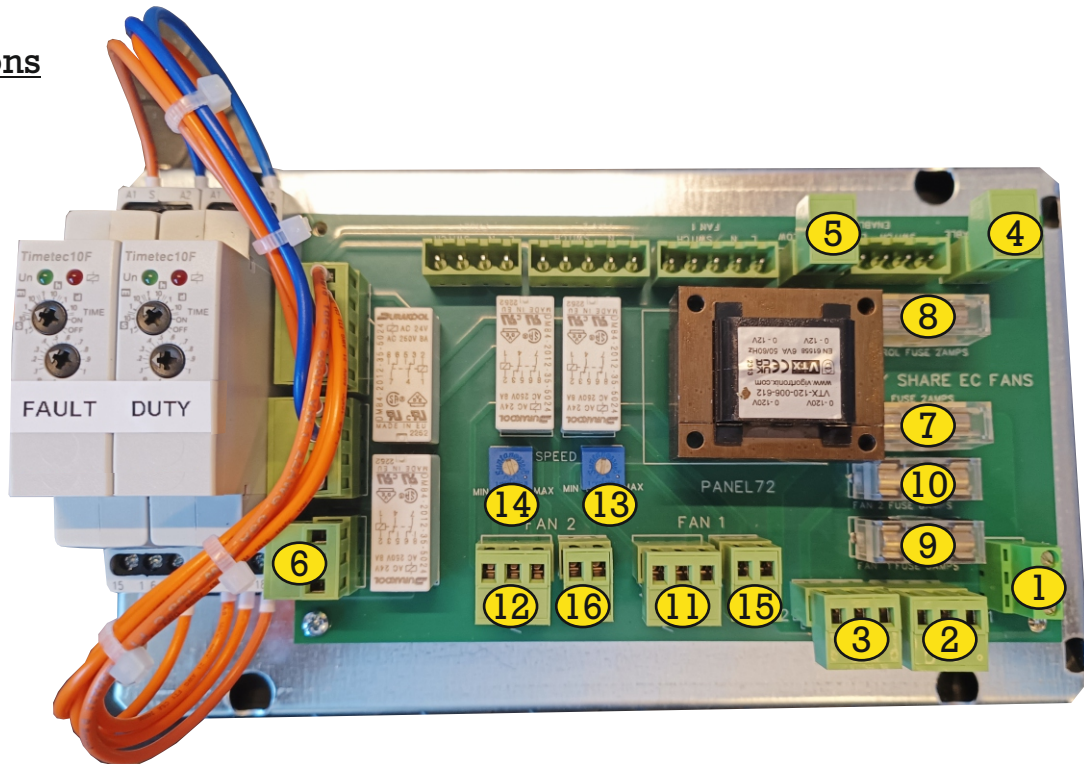


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Connections



- 1 - 230V Mains supply (L / N / E)
- 2 - Fan 1 output 230V 8.0Amps max (L / N / E)
- 3 - Fan 2 output 230V 8.0Amps max (L / N / E)
- 4 - Enable input (24VAC)
- 5 - Airflow switch input (24VAC)
- 6 - Volt free fault contacts (8Amps 230V max.)

Fuses

- 7 - Mains input, 2Amp
- 8 - 24V control, 2Amp
- 9 - Fan 1, 8.0Amp max
- 10 - Fan 2, 8.0Amp max.

EC Controls

- 11 - Fan 1 speed control connections
- 12 - Fan 2 speed control connections
- 13 - Fan 1 speed control pot
- 14 - Fan 2 speed control pot
- 15 - Fan 1 Enable connections
- 16 - Fan 2 Enable connections

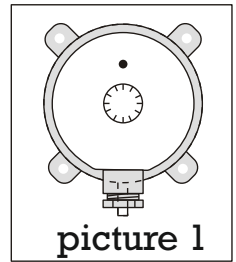


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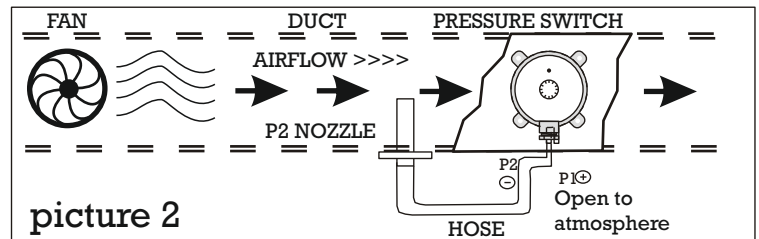
AIRFLOW PRESSURE SWITCH INSTALLATION INSTRUCTIONS

1) The pressure switch should be mounted on a vertical plane with the nozzles pointing down. The surface should be clean, dry and flat (see picture 1).



2) Remove the plastic cover from nozzle P2 of the pressure switch, both nozzles are now uncovered.

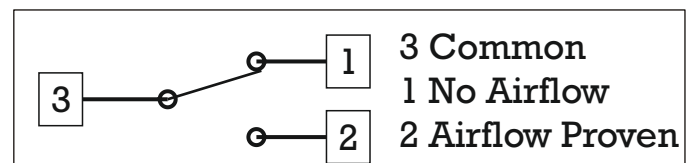
3) Mount the nozzle where the best positive air pressure can be monitored, keep away from the fan to prevent turbulence (see picture 2).



4) Connect the plastic tube between the fitted nozzle and P2 of the pressure switch, ensure tube is free from kinks and if tighten down this is not done too tightly so tube is not distorted.

5) Check continuity between terminals 3 and 1 of the pressure switch using a multi meter when there is no airflow in the system.

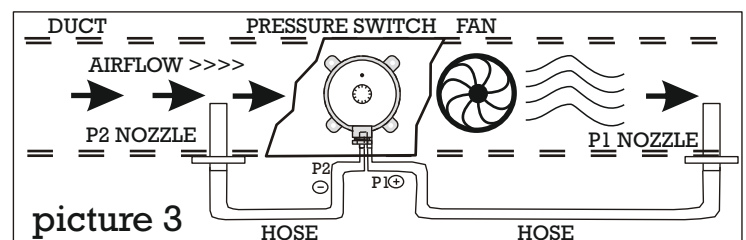
6) Start the fan and check terminals 3 and 1 again, adjust set point of the pressure switch until switch contacts break. If contacts don't break during adjustment reposition nozzle to monitor a greater pressure.



7) With the fan still running and continuity broken between terminals 3 and 1, check for continuity between 3 and 2, these contacts should be made.

8) Switch the fan off and check continuity between terminals 3 and 2, there should be no continuity.

9) In some cases where a proper switch operation can not be obtained it is necessary to fit a nozzle to the negative side of the duct as well as the positive side.



Connect an additional hose to P1 of the pressure switch and fit a second nozzle as shown in picture 3. P2 connected to inlet of the fan and P1 connected to the outlet of the fan.

10) Wiring for airflow proving switch use terminals 3 and 2.
Wiring for filter dirty or airflow fail use terminals 3 and 1.

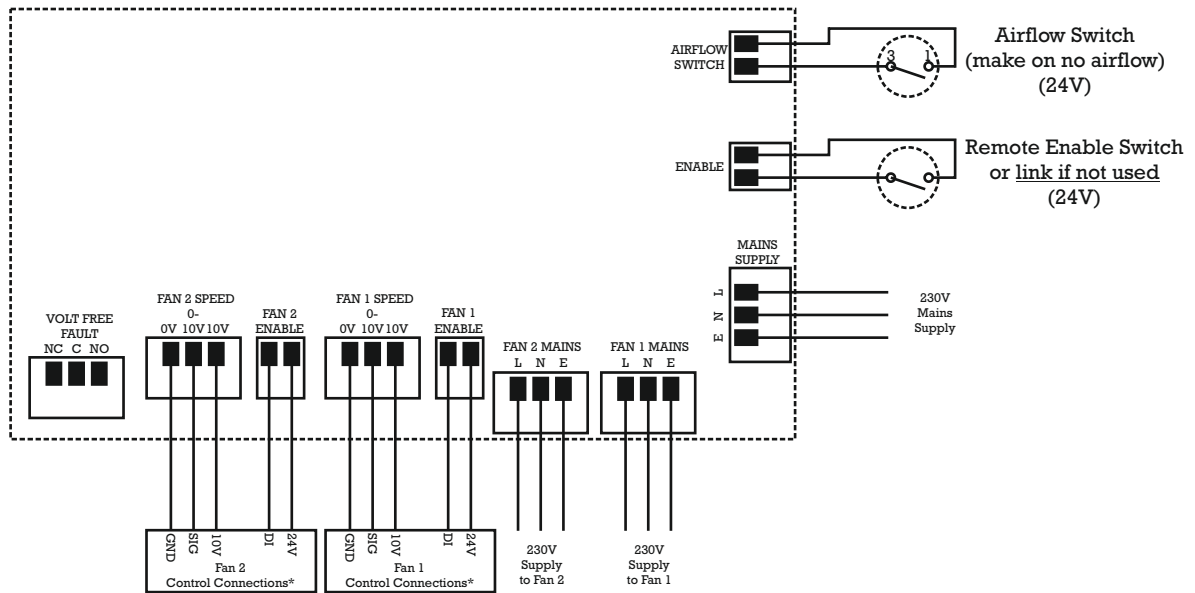
11) Replace cover to the pressure switch and fitted voltage labels if mains voltage is being switched.

WARNING : SWITCH OFF POWER BEFORE REMOVING PLASTIC COVER

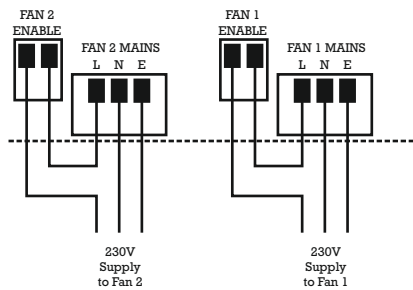


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Panel Wiring (EC Fans)



Standard Fan Wiring



Test and Inspection

Serial Number:	72
Date:	
Tested by:	N. Young



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