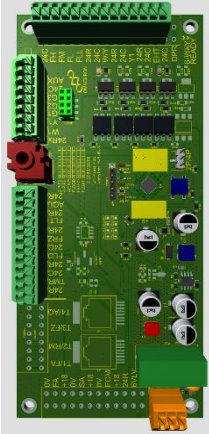


The Omachron FCU Control Board Generation 5 includes several design enhancements and changes that must be considered when installing and configuring for a fan coil. This generation of fan coil controller provides superior connectivity and configuration options from previous versions.



## Features



- The new board uses all 3.5mm connectors. These are more robust and accommodate a larger gauge wire than previous generations.
- A 5x20mm, 32V minimum, 500 milliamp glass fuse is used to limit board power. The board now operates at 12 watts as a low power appliance.
- The board can be configured at installation time to operate either in 2-pipe mode or 4-pipe mode (with 6-way valve support).
- There is a dedicated EMERGENCY (auxiliary) HEAT (EHT) connection rather than using the cold valve connections in previous generations. This output can be used in 2-pipe, 4-pipe, and 6-way valve systems equipped with an aquastat.

## Pipe Selection

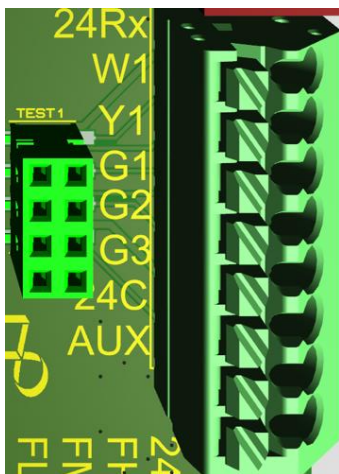
- At the bottom centre of the board is a jumper to choose between 2-pipe and 4-pipe/6-way valve operation.
- When the jumper is installed over the left two pins, the board operates in 4-pipe/6-way mode as indicated by the rapid green flash of the status LED.

## Power Input



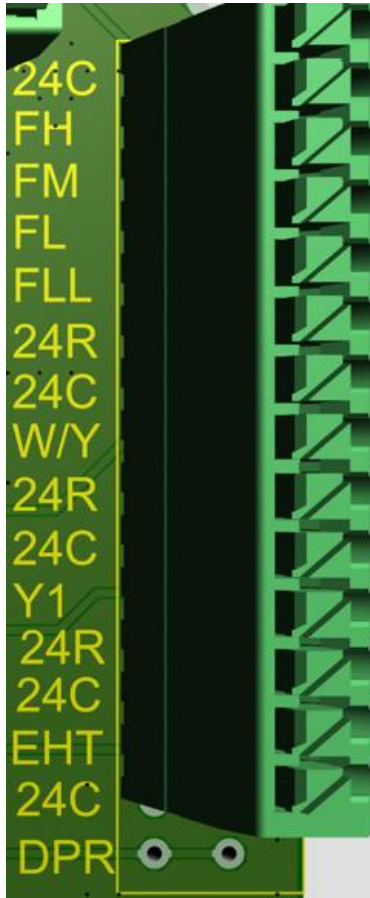
- The power connector is unchanged the 24VAC connector and protective earth in the bottom right-hand corner of the circuit board and is in a covered holder.

## Thermostat Connections



- The thermostat connector is in the top right-hand corner. It has eight connections.
  1. 24Rx – This provides power to the thermostat. If the control board finds a fault, the power to this connection is turned off as indicated by the small x.
  2. W1 – When powered by the thermostat, a call for heat is generated. A call for heat will override a call for cool.
  3. G1 - The thermostat is requesting low-speed main blower fan.
  4. G2 - The thermostat is requesting medium-speed main blower fan.
  5. G3 - The thermostat is requesting high-speed main blower fan.
  6. 24C – This is the common connection for the thermostat.
  7. AUX – This is not used in the Fan Coil only version of the board.

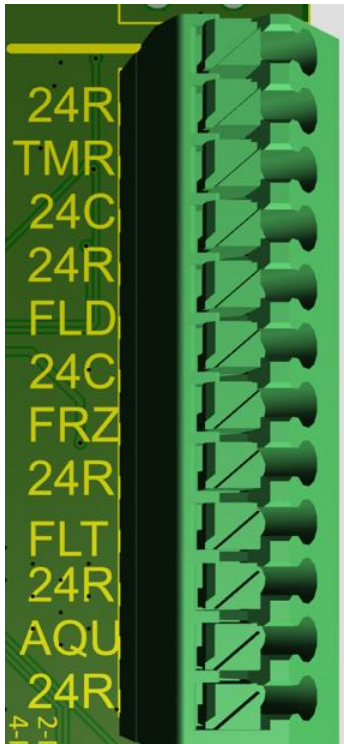
## Output Connections



- Immediately below the standard thermostat connections is an 8-position quick connection for board testing labeled TEST1. Starting in the top-left corner and progressing clockwise, the pins correspond to W1, G1, G3, AUX, 24C, G2, Y1, 24Rx.

1. 24C – This is the 24VAC common connector for the main blower.
2. FH – Energized with 24VAC when the control board is requesting high-speed on the blower. Corresponds to G3.
3. FM – Energized with 24VAC when the control board is requesting medium- speed on the blower. Corresponds to G2.
4. FL - Energized with 24VAC when the control board is requesting low-speed on the blower. Corresponds to G1.
5. FLL – Energized with 24VAC when the control board is requesting low-low or ultra-low speed on the blower. Corresponds to no input on G1 to G3. Can be configured to not be used.
6. 24R – Provides 24VAC to the main blower if required to energize its control circuitry.
7. 24C – Common. On a Belimo 2-way valve actuator, or a 6-way valve, the black wire is connected here.
8. W/Y – In a 2-pipe, or 4-pipe system, the W represents supplying 24VAC to actuate the hot valve when there is a call for heat on W1. In a 2-pipe system, the Y represents supplying 24VAC to actuate the hot valve when there is a call for cool of Y1. In this way one valve and a check valve can be used. On a Belimo 2-way valve actuator, or 6-way valve, the white wire is connected here.
9. 24R - This connection provides 24VAC to operate the valve. On a Belimo valve actuator, this wire will be red.
10. 24C – Common. On a Belimo 2-way valve actuator, the black wire is connected here. With a 6-Way valve, the connection is not used.
11. Y1 – In a 4-pipe system, the connection controls the cold supply valve. Priority is given to W. In a 2-pipe system, the W/Y and Y1 outputs operate simultaneously. With a 6-way valve, the connection is made using the pink wire.
12. 24R This connection provides 24VAC to operate the valve. On a Belimo valve actuator, this wire will be red. On a 6-way valve, the connection is not used.
13. 24C - Common. This is the common connection for a relay or a solid-state relay that will operate emergency heat.
14. EHT – Energized with 24VAC when the control board is requesting emergency or auxiliary heat to operate. This happens when there is a call for heat and an aquastat is closed indicating the hot water supply is cold.
15. 24C and DPR (damper) connections are not provided on FCU only boards.

Input Connections



- Input Connections are at the top, centre area of the board.
1. 24R – This supplies 24VAC to a bathroom timer in a HRV system. Not applicable to an FCU-only system.
  2. TMR – When 24VAC is detected at this point, a HRV fan will go into exhaust mode. Not applicable to an FCU-only system.
  3. 24C - This is the 24VAC common connector for a bathroom timer. Not applicable to an FCU-only system.
  4. 24R – This supplies 24VAC to a flood detection device.
  5. FLD – When 24VAC is detected on this connection, the board will enter flood protection mode. If not used, there must be a jumper between 24R and FLD.
  6. 24C - This is the 24VAC common connector for the flood detector.
  7. FRZ – When 24VAC is detected on this connection, the board will enter freeze protection mode. The flood detector is normally a simple open/closed switch. When not configured, no connection is required.
  8. 24R – this is the 24VAC supply for the freeze detector.
  9. FLT – When 24VAC is detected on this connection, the board will enter float protection mode. The float detector is normally a simple open/closed switch to indicate the drain pan is filling with liquid. If not used, there must be a jumper between 24R and FLT.
  10. 24R – This is the 24VAC supply for the float detector.
  11. AQU – When 24VAC is detected on this connection, the board recognizes the supply line is cold. In a 4-pipe system an aquastat is not required and it is assumed that the hot supply is hot.
  12. 24R – This is the 24VAC supply for the aquastat.