CARLO GAVAZZI
Automation Components

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Application notes

Application Note : August 2015

Market involved : HVAC

Product : RGC1P23V12ED

Customer : OEM

Subject : Speed control of AC fans in air handling units

CUSTOMER ISSUE :

In order to control air capacity and hence maximise efficiency, the fan speed in air handling units or fan coil units should be adjusted to provide the desired output.

EC fans are today commonly used. With such fans it is not necessary to have an external speed control unit since the fan itself integrates the required circuitry to perform speed control with a 0-10V signal.

In the case of AC fans, speed regulation is still possible but this requires an external AC drive which is bulky and expensive.

A low-cost solution for speed control of AC fans is thus required.

OUR SOLUTION :

Speed control can be carried out by using the phase angle control. The multifunction RGC1P integrates a phase angle switching mode (Mode 1) that can be used for AC fan speed control.

The analog signal (0-10V) from pressure transducers can be sent directly to the RGC1P, which will regulate the speed of the fan in accordance with the analog signal received.

A tamper proof cover is available as an accessory in case the end user wants to prohibit access to the mode selector switch on the front interface of the RGC1P.

BENEFITS :

- **Energy savings;** the speed of the fan is adjusted according to the desired output
- **Cost savings;** a cost effective solution for speed control
- **Reduction of inventory;** such HVAC systems are equipped with both electric heaters and AC fans. The RGC1P is a multifunction device where the switching mode can be selected via a front selector switch depending on the application
- **Easy to use;** simple and easy to wire up, quick installation