



STEVAL-IHT002V1

Basic thermostat control board for cooling applications based on ST7LITEUS5

Data Brief

Features

- Capacitive power supply providing approximately 30 mA at 220 VAC 50 Hz
- Temperature level regulation (potentiometer)
- Temperature measurement input (external NTC 5k)
- Zero voltage switching (ZVS) to synchronize the gate pulses with the mains
- Stall rotor detection via AC switch temperature monitoring
- ST7Ultralite 8-bit, 8-pin MCU running at 1 MHz (internal clock)
- ICC programming connector

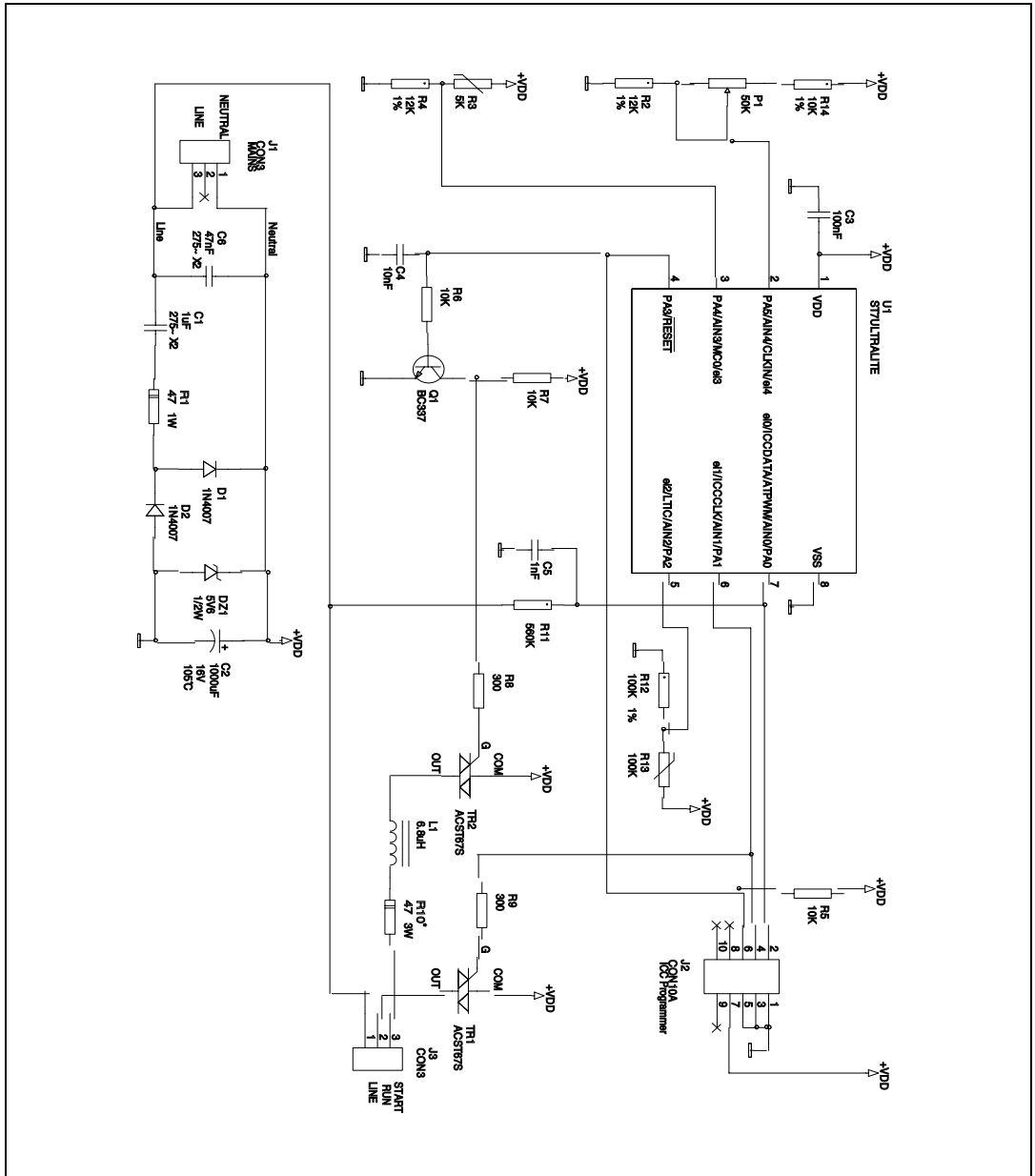


Description

The STEVAL-IHT002V1 is a low-cost evaluation board designed to replace existing mechanical thermostats. While driving a compressor, the evaluation board is also capable of driving the RUN winding, replacing the PTC and directly driving the START winding. Stall rotor detection is also implemented. These functions are oriented towards reducing total power consumption. The evaluation board is based on the new low-cost, 8-pin, 8-bit ST7Ultralite microcontroller (MCU), which controls the entire process. The MCU is equipped with programmable Flash memory, a 1 MHz internal clock source and runs 1 KB C-based software. Although the evaluation board is specially designed to drive small to mid-size compressors, it is fully customizable and adaptable to any other application where thermostat or temperature control is required.

1 Board schematic

Figure 1. Schematic



2 Revision history

Table 1. Document revision history

Date	Revision	Changes
26-Oct-2007	1	Initial release

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