AVR® **AC Induction Motor Control** Evaluation Kit ATAVRMC200

EVALUATE AND DESIGN ASYNCHRONOUS AC MOTOR APPLICATIONS

The ATAVRMC200 is an evaluation kit dedicated to asynchronous AC motor control, using various sensors for regulation.

The kit includes an evaluation board and a demonstration firmware. It allows users to quickly evaluate the capability of the AVR® microcontroller AT90PWM3/3B to control asynchronous AC motor applications.

The kit can also serve as a development platform. Low cost AVR development tools make debugging easier, and source codes, written in C, can be easily re-used by developers for their own motor control applications.

Key Features

- Evaluation Board with AT90PWM3B Microcontroller
- Various Sensor Inputs
- Supports In-System Programming and Chip Emulation
- Complete Software and Schematics
- Asynchronous AC Motor
  (to be ordered separately)

Applications

- Air Conditioning (HVAC)
- Washing Machines, Dryers, Vacuum Cleaners
- Refrigerators, Fans, Pumps
- Traction Elevator
- Medical Equipment
- Industrial Applications

ATMEL®

The on-board AT90PWM3/3B drives the power bridges for Asynchronous AC motors and provide hardware detection for overcurrent and measure motor supply voltage. An on board isolated RS-232 transceiver allows to control the kit remotely. Code programming into the microcontroller's Flash memory can be performed with an AVRISP mkII or a JTAGICE mkII through the dedicated connectors.
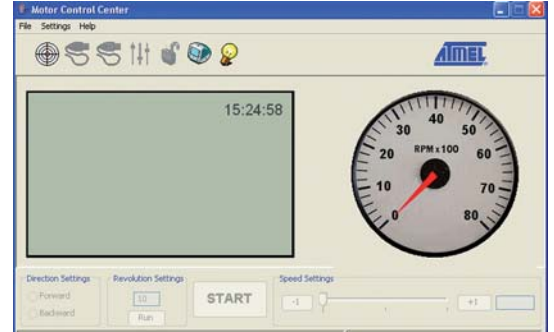
Product Features

- On board AT90PWM3/3B microcontroller in SO32 package (2.7-5.5V)
- Hardware overcurrent detection
- Isolated inputs for sensors
- 0-10V input
- Any commutation schemes are possible.
- Motor supply voltage, operating current and power stage temperature measurement
- System clock: internal RC oscillator
- On board isolated RS-232 transceivers
- Many access points for test and debug
- Dimension: 100 mm x 200 mm
- Recommended Voltage Operation from 110 to 230V – 1/2 HP (370 W)

Asynchronous AC Motor: ATAVRMC201 *(to be ordered separately)*

An asynchronous AC motor (ATAVRMC201) allows a comprehensive and ready-to-use evaluation.

- Manufacturer: Almo (RMA 56-G4)
- Phases: 3 – Poles: 4
- Power: 90V @ 230W
- Speed: 1280 RPM

Support

All design hints are described. Any new design can use these examples as a starting point. Dedicated motor control web resources: www.atmel.com/products/avr/mc/

- ATAVRMC200 User Manual
- Hardware schematics and layout
- Self tutorials
- Application notes and software examples

Development Tools

ATAVRMC200 supports standard AVR tools for application development and debug.

- AVR Studio® software interface
- ISP connector for on-chip In System Programming
- ISP connector for debug wire

Ordering Information

- ATAVRMC200: Evaluation Kit with AT90PWM3/3B AVR Microcontroller
- ATAVRMC201: Asynchronous AC Motor (ALMO – RMA 56-G4)

  The latest version of all softwares is available free of charge on Atmel web site: www.atmel.com/avr