Mechatronics Demonstration Kit

Part Number: DM163029

The PICDEM™ Mechatronics demonstration board is an easy-to-use mechatronics development and demonstration platform. Mechatronics refers to implementing intelligent control in a mechanical system. Learn how to use PIC® microcontrollers to enhance or replace a mechanical design.

The demonstration kit takes a hands-on approach to learning about mechatronics. Jumper wires are provided in the kit which allow the developer to experiment with connecting the PIC microcontroller to various components on the board. These components include sensors, LEDs, human input devices and motor drivers. The board comes with nine example projects which include firmware, connection diagrams (for the wire jumpers) and schematics.

Features

Package Contents

- PIC16F917 MCU with 8 MHz internal oscillator and on-board LCD module (in addition to other standard PIC MCU peripherals)
- Displays: 8 LEDs and LCD (pre-connected to the LCD module)
- Stepper motor and brushed DC motors
- Analog temperature sensor (Microchip TC1047A)
- Light sensor
- 32.768 kHz crystal for time generation
- Human inputs: 4 tactile switches, 2 potentiometers
- Over-current protection circuit
- ICSP™ programming capability and MPLAB® ICD 2 interface connector
- RS-232 interface
- 5V regulator
- Optical speed sensor for brushed DC motor
- 20-pin socket (compatible with all 8-, 14- and 20-pin Flash devices)
- Nine example projects with complete source code:

    - Switch debouncing and lighting an LED
    - How to read an analog sensor (temperature and light)
    - Brushed DC motor speed control
    - Speed feedback: Back EMF and optical
    - Stepper motor control: single-stepping, half-stepping and micro-stepping
    - How to use the USART for RS-232 communication
    - How to use the Capture, Compare and PWM module
    - How to use comparators

Required Hardware

- One of the following:
  - MPLAB ICD 2* OR
  - PICkit™ 2 Microcontroller Programmer
- 9-12 VDC power supply**
- Serial Cable

  *Microchip part # DV164007 includes the MPLAB ICD 2, 9V power supply and serial cable

  ** Microchip part # AC162039 recommended