

MCP6L2 and PIC18F66J93 Energy Meter Reference Design

Part Number: ARD00370

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The MCP6L2 and PIC18F66J93 Energy Meter is a fully functional single-phase meter that uses the 12-bit successive approximation analog-to-digital converter (SAR ADC) integrated in the microcontroller. This low-cost design has a shunt as the current sensor. The signal from the shunt is amplified by two external operational amplifiers and applied to the input of the ADC. The PIC18F66J93 directly drives the LCD and communicates via UART with the MCP2200, offering an isolated USB connection for meter calibration and access to the device power calculations. The system calculates active and reactive energy; active, reactive and apparent power; power factor; RMS current; RMS voltage, and line frequency.



Devices Supported: MCP6L2

The Microchip energy meter software is used to calibrate and monitor the system. The calibration can be done in closed loop or open loop. When connected to a stable source of voltage and current, the meter can do an auto-calibration by including the open loop calibration routine and formulas in the firmware.

Features

Package Contents

- Energy meter software allows calibration and system monitoring
- Isolated USB connection
- Calculates active and reactive energy, active and apparent power, power factor, RMS current, RMS voltage, and line frequency

Documentation & Software

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Documents	Last Updated	Size	
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MCP6L2 and PIC18F66J93 Energy Meter Ref Design (ARD00370) Schematics	2/4/2013 4:38:44 PM	476KB	
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MCP6L2 and PIC18F66J93 Energy Meter Ref Design (ARD00370) Software	2/4/2013 8:16:35 AM	5MB	

MCP6L2 and PIC18F66J93 Energy Meter Ref Design (ARD00370) Firmware	2/4/2013 8:12:11 AM	394KB	



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