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**EASYVEND Series 3**  
**CONTROL BOARD SPECIFICATION**  
**(P212)**

ISSUE A

File : EasyVend Series 3 VMC Specification A.doc

Changes:

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A	18 May 2009	Initial Release

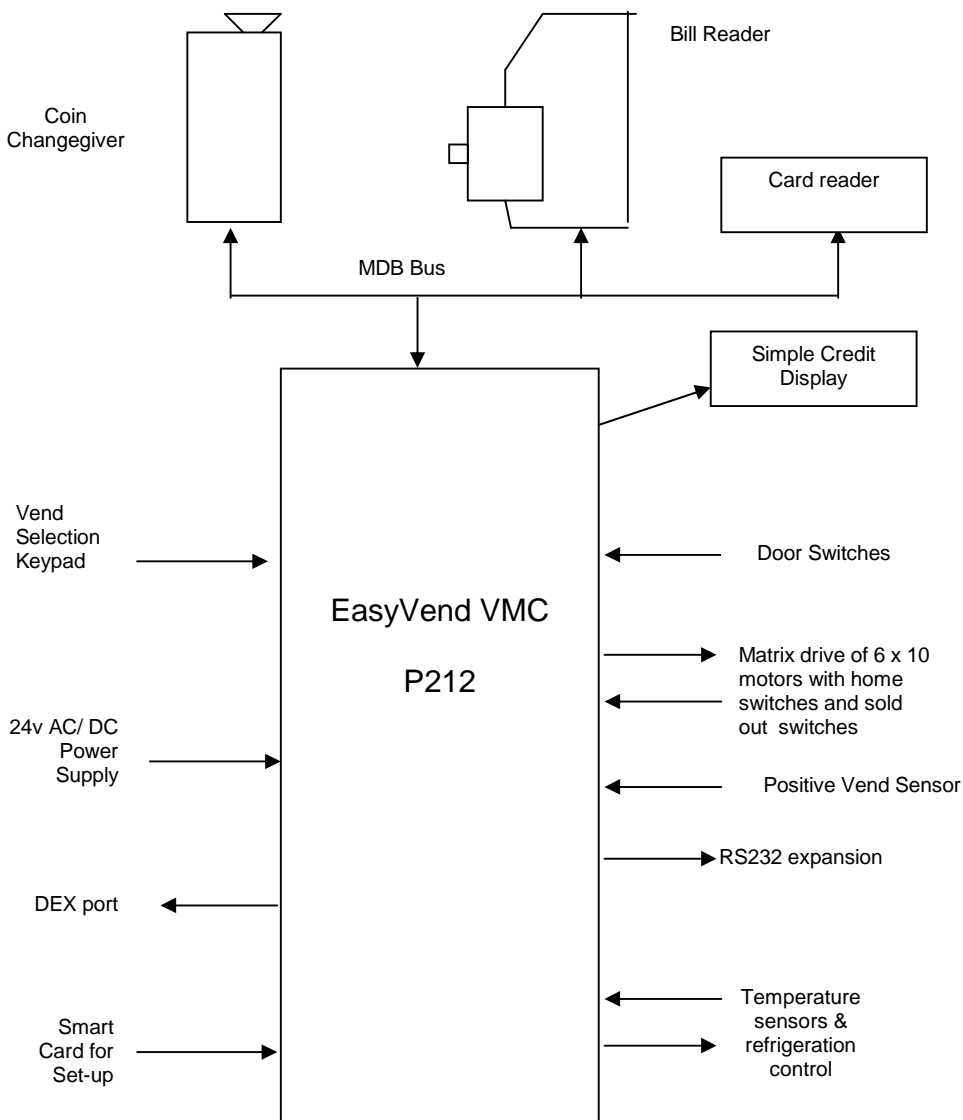
Associated Documents:

- EasyVend Series 5 Specification
- EasyVend Series 3 Storyboard / Menu Operation Guide
- EasyVend Series 3 Setup Utility Guide
- Updating EasyVend Series 3 Software

## 1. Introduction

This specification defines the EasyVend Series 3 VMC electronic circuit board (PCB) that provides the intelligent control, credit accumulation and vend sequencing for a range of vending machines. It is a restricted function version of the EasyVend Series 5 VMC with a simple credit display.

The Vending Machine Controller (VMC) connects as shown in the block diagram below:



## **2. VMC Detailed Specification**

### **2.1 Features and Functions**

#### **Payment**

- MDB control interface for standard Coin Change giver, Bill Reader and Card Reader
- Ability to accept Credit Card, Debit card, Tokens, Coupons, Chips etc. through the MDB devices

#### **Power Supply**

- 24V DC or AC Power input to the board - internally derived power for the motors. No other power supply required.

#### **Consumer Interface**

- Customer display – numeric LED (16 x 1 LCD option on request)
- Matrix keypad, up to 4 cols x 7 rows – standard configuration : 4 cols x 5 rows

#### **Vend Columns**

- Up to 60 motors in a 6 rows x 10 column matrix arrangement. Motors 24v DC at up to 500mA.
- Home switches and sold out switches for each column

#### **Audit**

- Standard on board tracking and display of cash, sales totals and individual vends.
- RS232/DEX serial port
- EVA-DTS compatibility

#### **Expansion**

- Field software upgradeable

#### **Machine Set-up**

- On board menus for standard items and diagnostics
- Smart card connection for full configuration (via a PC utility).
- Ability to set-up the price of all products at once, keeping the ability to set-up the individual selection price.
- EEPROM non-volatile memory for all soft options and Audit Data with a minimum lifetime of 1,000,000 write cycles.

#### **Refrigeration**

- One temperature zones – Dallas DS18S20 sensor + relay output
- Temperature setting and health lockout level.
- Timed operation of the chillers

#### **Energy saving**

- Auxiliary relay driver outputs for energy saving external control.

#### **General**

- 1 x Door switches
- Individual prices per motor selection
- Programmable exact change algorithm (applies when using Coin Change giver)
- Vend cycle authorisation and processing

**Diagnostic functions**

- Keypad test
- Motor test vend, current, home and stock switches.
- Positive vend sensor test
- Refrigeration Test
- On board log of machine error history – manually cleared.

**2.2 Major Electrical Interfaces**

Motors: 24v DC operation at a maximum current of 0.5 Amp.

Relay Driver Outputs 24v, 500mA sink current, diode protected.

MDB The VMC supports a Level 2 Coin Changer, a Level 1 Bill Validator, a level 1+ Card Reader and a Level 1 or 2 Audit device on the Multi-Drop-Bus in line with the NAMA published MDB Specification Version 2.0 or as subsequently amended. For maximum compatibility no use is made of the optional expansion features that may be available on specific manufacturer's coin changers. Level 3 changeover will be used where applicable if the attached Coin Changer supports this function.

At power up the VMC will check for the enabled MDB devices. Any that do not respond, or have an error will, in line with the MDB specification, be re-tested after 5 seconds and re-enabled if they respond.

**2.3 Power Supply**

Nominally 24v DC or AC for board and peripherals.

Operating Voltage Range 20.0v – 40v DC  
24v AC +/-10%

Current consumption  
- VMC board +display when active TBA

**2.4 Operating Environment & Standards**

**Operating Temperature** 0°C to +45°C  
**Storage Temperature** -10°C to +60°C

**EMC** The Control PCB is supplied as a component with no intrinsic function under the definition of the EU EMC Directive. The complete vending machine is subject to EMC conformance.

**Safety** The Control PCB is a low voltage device. It contains an electronic fuse (Polyswitch) for self protection on the main power line.