# PMV4

- Controlling Proportional Solenoids (4 channels) and Adjustable Pumps (2 channels)

- Controlled by Processor on the Module

- Communication with PLC via 2 KBytes Dual Port RAM

- Four Analog Inputs (0 - 10 V)

- Four Analog Inputs (0 - 20 mA)

- Two Digital Inputs (24 V)

- RS232/TTY Interface

## SLOTS

The proportional solenoid module PMV4 can be operated in the following slots on the MULTI, MIDI and M264 racks.

| Rack | Slot | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | A | B | C | D | E | F |
|------|------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MULTI Main Rack** | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| **MULTI Expansion Rack** | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| **MIDI** | | ○ | ● | ● | ● | ● | ● | ● | | | | | | | | | |
| **M264** | | ● | ● | ● | ● | ● | ○ | ○ | ○ | ○ | ○ | ○ | | | | | |

- ● the module can be operated in this slot
- ○ the module **cannot** be operated in this slot

## ORDER DATA

**ECPMV4-4**   Proportional Solenoid Module for controlling proportional solenoids (4 channels) and adjustable pumps (2 channels), 4 analog inputs 0 - 10 V, 4 analog inputs 0 - 20 mA, 2 digital inputs, 1 RS232/TTY interface

## GENERAL INFORMATION

The PMV4 Proportional Solenoid Module is used for controlling proportional solenoids (4 channels) and adjustable pumps (2 channels). It is controlled by a processor on the module which lightens the load on the CPU. The communication with the CPU takes place via 2 KBytes of dual port RAM.

The module is supplied with 9 - 36 VDC. The module provides four analog inputs 0 - 10 V, four analog inputs 0 - 20 mA and two digital inputs with period evaluation for measuring motor speed.

The module is equipped with am RS232/TTY interface. This interface is required for the development software. During operation, it can be used to control an operator panel.

| TECHNICAL DATA | PMV4 |
|----------------|------|
| Processor | MC68332 |
| Frequency | 16.78 MHz |
| PROM | 128 KByte |
| SRAM | 286 KByte |
| Flash PROM | - |
| Serial Interface | |
| Type | RS232 / TTY (MCOx - IF1 compatible) |
| Electrical Isolation | NO |
| PMV Outputs | |
| Function Principle | Pulse width modulation with software current control |
| Supply Voltage | |
| Nominal | 24 VDC |
| Minimum | 9 VDC |
| Maximum | 36 VDC |
| Amount | 4 |
| Output Current 4 Channel Operation | Max. 1.5 A |
| Output Current 2 Channel Operation | Max. 2 A |
| Short Circuit Protection | Automatic cutoff |
| Overload Protection | Software |
| Voltage Drop at 2 A | Max. 1 V at 100 % |
| Switching Frequency | 3 kHz |
| Switching State (off, control area, on) | 0 %, 5 - 95 %, 100 % |
| Idle Current | Max. 1 mA |
| Precision at 25 °C - | |
| for 2 A Maximum Current | ±0.5 % |
| Analog Inputs (voltage) | |
| Amount | 4 |
| Voltage Range | 0 - 10 V |
| Resolution | 10 Bit |
| Precision | |
| Precision at 25 °C | ±0.2 % |
| Offset Drift | ±12 ppm/°C |
| Gain Drift | ±75 ppm/°C |
| Compensation | Software controlled by correction value in the EEPROM |
| Analog Inputs (current) | |
| Amount | 4 |
| Current Range | 0 - 20 mA |
| Resolution | 10 Bit |
| Precision | |
| Precision at 25 °C | ±0.2 % |
| Offset Drift | ±60 ppm/°C |
| Gain Drift | ±155 ppm/°C |
| Compensation | Software controlled by correction value in the EEPROM |
| Digital Inputs | |
| Amount | 2 |
| Input Voltage | |
| Minimum | 15 VDC |
| Nominal | 24 VDC |
| Maximum | 36 VDC |
| Maximum Peak Voltage | ±500 V for 50 μsec, every 100 msec (IEC60-2) |
| Input Resistance | Approx. 10 kΩ |
| Input Current at 24 VDC | Approx. 2.4 mA |
| Switching Threshhold | Min. 4.2 VDC, typ. 6.6 VDC, Max. 9 VDC |
| Electrical Isolation | YES |
| Switching Delay | |
| log. 1 → log. 0 | Min. 20 μsec, typ. 55 μsec, Max. 90 μsec |
| log. 0 → log. 1 | Min. 18 μsec, typ. 54 μsec, Max. 90 μsec |
| Other Information | Inputs are controlled by the TPU Duration and frequency measurement are possible |