



# **DRC & MVP Series**

Power Amplifiers



MVP



DRC

**GENERAL FEATURES**

**STANDARD FEATURES**

- Easily configured using software or hand held interface
- LED indication of power, output current and fault status
- Compact DIN-rail mount housing
- Multiple modes for single and dual coil applications
- Input options include -10V to 10V, 0 to 20mA
- Programmable enable input
- All input and output limits are independently adjustable
- Adjustable current limited output with short circuit protection
- +10 and -10 volt references for potentiometer/ joystick controls
- Adjustable ramp up and ramp down rates
- Selectable dither frequency up to 1000 Hz
- Microprocessor controlled for consistent, reliable performance



Shown: DRC4-V-12

**GENERAL SPECIFICATIONS**

**STANDARD WORKING CONDITIONS**

- Supply Voltage.....9 to 32 VDC
- Supply Current..... $I_{sol} + 50 \text{ mA}$
- Output Current.....DRC\*-V-12 = 1.2A max.  
DRC\*-V-25 = 2.5A max.
- Solenoid Resistance..... $2 \Omega \text{ min.}$
- Reference Voltages.....+10V, -10V @ 20 mA
- Dither Settings.....30, 50, 75, 100, 125, 150, 175, 200,  
225, 250, 275, 300, 1000 Hz
- Analog Input Range.....DRC\*-V-\* = -10V to 10V
- Analog Input Impedance.....DRC\*-V-\* =  $38k\Omega$
- Operating Temperature Range..... $-4^{\circ}\text{F}$  to  $158^{\circ}\text{F}$  ( $-20^{\circ}$  to  $70^{\circ}\text{C}$ )
- Enclosure.....Polyamide
- Dimensions.....mm = 17.5 W x 114.5 H x 109.4 D  
inches = 0.69 W x 4.50 H x 4.30 D

**PHYSICAL DESCRIPTION**

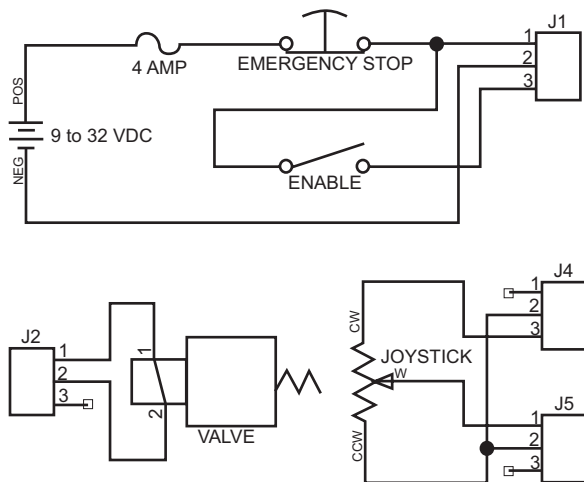
The DRC is shown at the right. There are five indicator lamps labeled PWR and OUT1 through OUT4 (for the four channel controller). The PWR lamp will light green whenever power is applied to the unit and is within the specified voltage range. Under normal operation the OUTx lights will provide an indication of the current being supplied to the solenoid output for a given channel. The lights will be yellow and the brightness will vary with the output current. In the case of a fault the light will flash red with a flash code corresponding to the type of fault for that channel.

Communication with the DRC takes place through the USB port. The port allows for configuration and monitoring of the operating parameters.

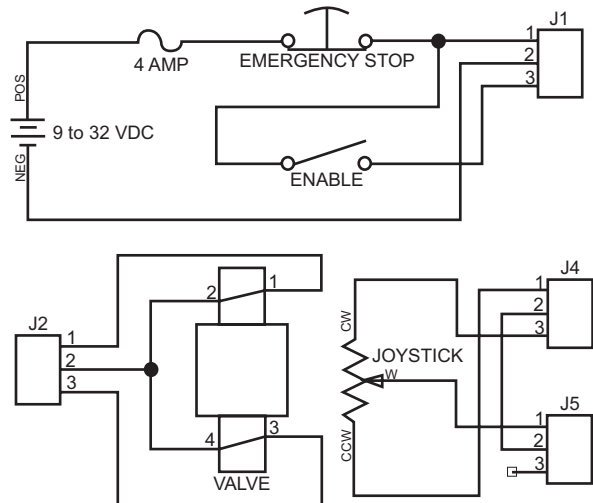
Note: When connected to a PC, the DR controller will be recognized as a USB device with or without power applied to the controller. However, to configure the controller it must be powered.


**APPLICATIONS**
**DRC1- V-\* (Single Solenoid Joystick Control)**

The DRC can be controlled with a joystick or potentiometer as shown. The recommended potentiometer value is 10kΩ. Mode 1 may be used rather than Mode 2 if the enable is not used. Dither and Output settings will vary depending on the valve and application.


**DRC2- V-\* (Double Solenoid Joystick)**

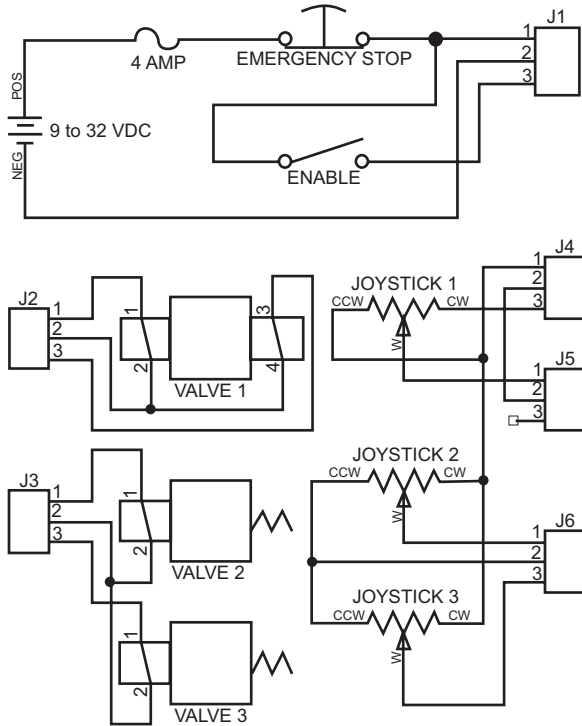
The DRC can be setup to drive a double solenoid valve using one command as shown in the following diagram. If enable is not used, C1 Mode should be set to 1 and C2 Mode to 3. The minimum and maximum input parameters for the two channels must be set such that both outputs will not be active with the same input signal. The settings do not have to be the same or mirrored between the two channels as shown in the example though in many cases they will be. Dither and Output settings will vary depending on the valve and application.



**APPLICATIONS** continued

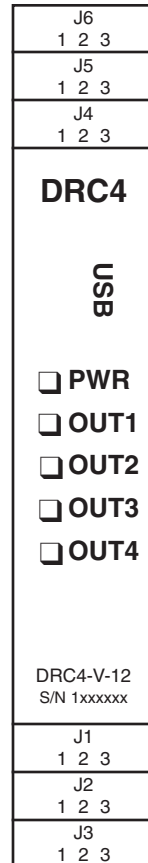
**DRC4- V-\* (Double/ Single/ Single Solenoid)**

The following example shows a DRC setup to drive a double solenoid valve and 2 single solenoid valves using three joysticks for command inputs. Dither and Output settings will vary depending on the valves and the application.



**WIRING**

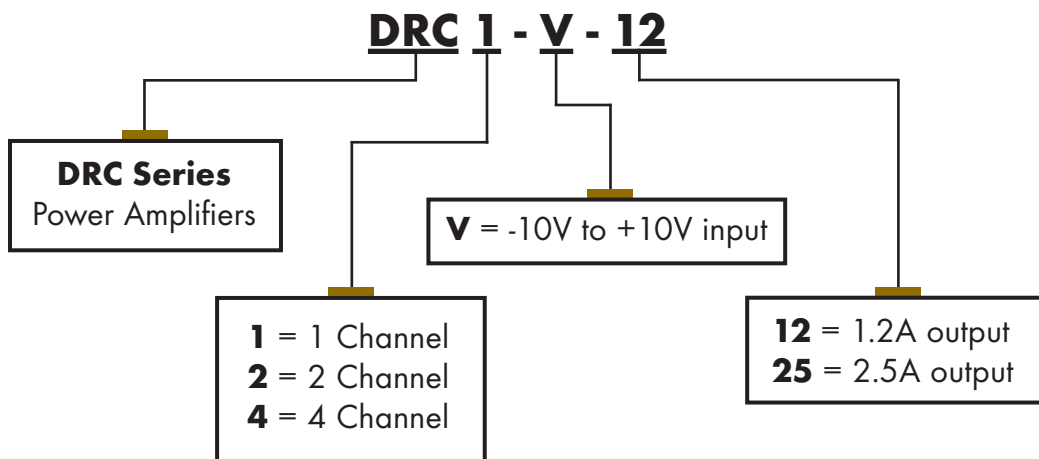
Terminal functions are listed in the table below.



Terminal	Function
J1-1	+V Supply
J1-2	Supply Common
J1-3	Enable Input
J2-1	Output Ch. 1
J2-2	Common
J2-3	Output Ch. 2
J3-1	Output Ch. 3
J3-2	Common
J3-3	Output Ch. 4
J4-1	-10V Reference
J4-2	Common
J4-3	+10V Reference
J5-1	Command Input Ch. 1
J5-2	Common
J5-3	Command Input Ch. 2
J6-1	Command Input Ch. 3
J6-2	Common
J6-3	Command Input Ch.4

**ORDERING INFORMATION**

**ORDERING EXAMPLE**



**GENERAL FEATURES**

**STANDARD FEATURES**

- Easily configured using software or hand held interface
- LED indication of status and output current
- Permanently sealed, standard DIN 43650 Form A connector body
- Selectable dither frequency up to 300 Hz
- Adjustable current limited output with short circuit protection
- 5 volt reference for potentiometer/ joystick controls
- Multiple modes for analog or 2-speed control
- Programmable enable input
- All input and output limits are independently adjustable
- Adjustable ramp up and ramp down times
- Pre-wired 18 AWG PVC cable
- Microprocessor controlled for consistent, reliable performance



Shown: MVP-C1V-12A-15F



**GENERAL SPECIFICATIONS**

**STANDARD WORKING CONDITIONS**

- Supply Voltage.....9 to 28 VDC
- Supply Current..... $I_{sol} + 20 \text{ mA}$
- Output Current.....MVP-C1V-12A = 1.2A max.  
MVP-C1V-25A = 2.5A max.
- Solenoid Resistance..... $2\Omega$ min.
- Reference Voltages.....+5V @ 2 mA
- Dither Settings.....Off, 30, 33, 38, 43, 50, 60, 75, 100,  
150, 300 Hz
- Analog Input Range.....MVP-C1V = 0 to 10V
- Analog Input Impedance..... $20k\Omega$
- Operating Temperature Range.....-4°F to 158°F (-20° to 70°C)
- Enclosure.....Glass filled Nylon

**PHYSICAL DESCRIPTION**

The MVP is shown at the right. There are two indicator lamps labeled STATUS and OUTPUT. The STATUS lamp will light green whenever power is applied to the unit and is within the specified voltage range. The STATUS light will flash red when a fault has occurred. The type of fault is indicated by the number of successive flashes. It will continue to flash until the command signal has been removed to clear the fault. The yellow lamp labeled OUTPUT provides an indication of the current being supplied to the solenoid outputs.



Communication with the MVP takes place through an infrared interface port. The port allows for configuration and monitoring of the operating parameters. The infrared adapter clips onto the MVP aligning with the notches in the sides.

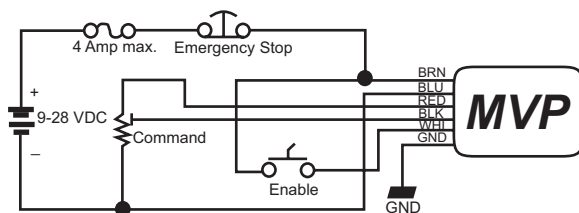
**WIRING**

Wire functions are listed in the table below. Following the table are wiring examples for various modes of operation.

Terminal	Function
BROWN	+V Supply
BLUE	Supply Common
BLACK	Command Input
WHITE	Enable Input
RED	+5V Reference*
GRN/YEL	Connector Ground

**Single Solenoid Joystick Control**

The MVP can be controlled with a joystick or potentiometer as shown. This configuration uses Mode 3 with the Enable signal or Mode 1 with no Enable line.

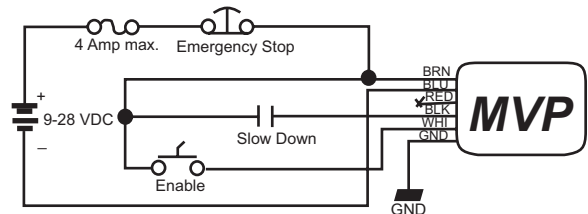


**Single Solenoid 2-Speed Control**

The MVP can be configured for 2-speed mode as shown. In this arrangement the Enable signal allows minimum output and the Command signal allows maximum output. This configuration corresponds to Mode 5.

**Single Solenoid 2-Speed Control**

The MVP can be configured for 2-speed mode as shown. In this arrangement the Enable signal allows maximum output and the Command signal limits output to the minimum setting. This configuration corresponds to Mode 6.

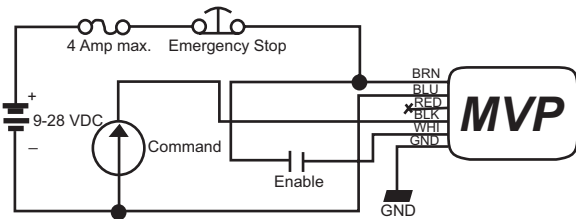


**\* NOTE:** If the +5V Reference is not used it must be isolated to prevent shorting to other wires. Failure to do so can result in damage to the controller.

**WIRING** continued

**Single Solenoid PLC Control**

The MVP can be controlled with PLC as shown. This configuration uses Mode 3 with the Enable signal or Mode 1 with no Enable line.

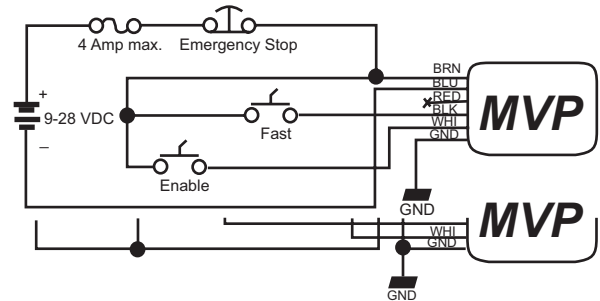
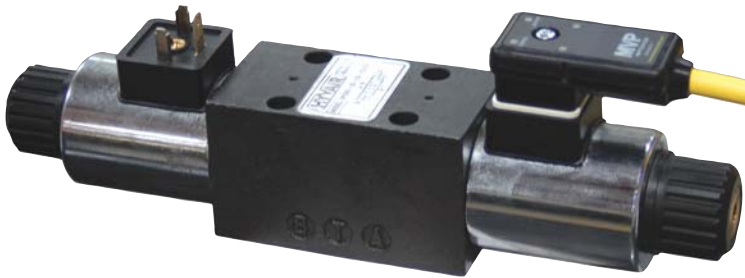


**Double Solenoid**

Two MVPs can be driven by one signal for double solenoid operation as shown in the following diagram. One should be set to Mode 1 or 3 while the other is set Mode 2 or 4. The minimum input parameters for the two should be set such that both units will not be active with the same input signal.

**\*NOTE: Loss of Command signal in his configuration will result in maximum output to one solenoid. Care must be taken to avoid injury or damage in the event of a signal failure!**

Two MVPs can be driven by one signal for double solenoid operation as shown in the following diagram. This configuration uses a selector switch to determine which solenoid is activate and a single potentiometer to determine output level. This configuration corresponds to Mode 1 or Mode 3.



**ORDERING INFORMATION**

**ORDERING EXAMPLE**

