



# MVP-SVR

## Digital Power Saver Valve Controller Plug

The MVP-SVR is a compact, inline controller for use with solenoid valves. The MVP-SVR provides high starting current to a valve coil then reduces the current to a lower operating level. Operating power is reduced thereby saving energy, reducing heat build up and extending coil life. Bright LED indicators on the top of the unit provide an overview of the operating status. Setup is accomplished through a convenient hand held interface or portable computer. There is no cover to remove and no tiny pots to set. Once configured, the settings are stored in permanent memory within the unit. The MVP-SVR comes pre-wired with standard or custom lengths of industrial grade cable. The MVP-SVR is housed in a rugged, low-profile 18mm DIN connector body.

- Easily configured using WhiteOak Terminal software or our hand held interface
- LED indication of Status and Output Current
- Permanently sealed, standard DIN 43650 Form A connector body
- Adjustable current limited output with short circuit protection
- Start Current and Hold Current are independently adjustable
- Adjustable start time
- Pre-wired 18 AWG PVC cable
- Microprocessor controlled for consistent, reliable performance



### Operating Specifications:

Supply Voltage	9 to 28VDC
Supply Current	$I_{sol} + 20mA$
Output Current	-06A: 600mA MAX. -12A: 1.2A MAX. -25A: 2.5A MAX.
Solenoid Resistance	2Ω MIN.
Operating Temperature Range	-20° to 70° C
Enclosure	Glass filled Nylon

## WARRANTY INFORMATION, PERFORMANCE ASSURANCE, AND APPLICATION LIMITATIONS

### Limited Warranty

WhiteOak Controls, Inc. warrants its products free from defects in material, workmanship, and design for a period of one year after installation, provided the installation date is less than one year after manufacture. In no instance is there any warranty of fitness for a particular use and WhiteOak Controls, Inc. cannot and does not accept responsibility of any type for any of its products that have been subjected to improper installation, improper application, negligence, tampering, or abuse, or which have been repaired or altered outside of the WhiteOak Controls factory. WhiteOak Controls' liability under this warranty shall extend only to replacement or correction, f.o.b. our factory, of any defective part or product determined by inspection as not conforming to this warranty. We make no other warranties, expressed or implied, and are not responsible for any consequential damages resulting from use by any buyer or user; our liability being limited to the value of product sold or obligation to replace a defective part.

### Performance Assurance

All WhiteOak Controls products are individually tested at the factory to perform as indicated in all applicable sales and technical documentation. However, assurance of suitability of all WhiteOak Controls products in the buyer's application is the responsibility of the buyer. Such assurance would typically include the manufacture of a prototype followed by a test or qualification program on the part of the buyer.

### Application Limitations

WhiteOak Controls, Inc. designs and manufactures its products specifically for use in commercial, industrial and mobile control applications and WhiteOak Controls' products are only warranted for this type of use. WhiteOak Controls' distributors are not authorized to approve the use of any WhiteOak Controls product in any of the following applications:

- Any product that comes under the Federal Highway Safety Act, namely steering or braking systems for passenger-carrying vehicles or on-highway trucks.
- Aircraft or space vehicles.
- Ordnance equipment.
- Any end product that, when sold, comes under the U.S. Nuclear Regulatory Commission rules and regulations.

Specific written approval for any application of WhiteOak Controls products in any of the above named applications should be obtained from WhiteOak Controls, Inc. Consultation with WhiteOak Controls distributors or factory engineers is advised in unusual situations where applicability is questionable.



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### 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.

### User Interface

The MVP has several internal settings which allow each unit to be configured for the application in which it is used. These settings are accessed with a PC running Windows based WhiteOak software or with the WhiteOak Hand Held Interface

Both methods require the use of the Infrared Adapter which clips onto the MVP.

The WhiteOak software provides a convenient interface to the MVP. The program gives the user the ability to view and make changes to the configuration. It also allows the user to store complete configurations in files on the PC. These files can then be recalled to program new units or update existing ones.

The hand held interface is a stand-alone option. Because it is fully self contained, the programmer, cable and adapter are all that is required. This is a good alternative for field installations where a PC might not be convenient.

### Configuration

All interface operations are accomplished with the use of 4 buttons. The buttons are Lock, Unlock, Up, and Down. The hand held interface represents these in graphical form as padlocks and arrows. The same symbols are used on the buttons in the WhiteOak software and can be activated with the mouse. The program also recognizes menu commands and short-cut keys. The keys used are '/'(lock), '\*'(unlock), '+'(up), and '-'(down).

The data displays for both methods are very similar. The hand held interface has a two-line LCD display. The display is represented graphically in the software

The up and down arrows are used to navigate through the parameter list. When either button is pressed the display will be updated with the next parameter in the list. The parameter name will appear on the first line and the associated setting will appear

on the second line. The list is accessed in a circular fashion, stepping down from the last parameter to the first and vice-versa.

There are three types of parameters in the list: fixed; monitor; and variable. Fixed parameters are used to show things such as the module's firmware version number. Fixed parameters do not change. Monitor parameters display things such as output current or system voltage. These parameters are constantly updated when the module is functioning. Variable parameters are those which can be changed by the user in order to configure the module. Examples of this type are operating mode and maximum output current. For convenience, some parameters combine variable and monitor types on one line. This allows the user to set a variable according to the current monitor value.

To change the setting of a variable parameter, the user must press the unlock button to place the system in edit mode. While in edit mode the display will show an asterisk (\*) at the beginning of the second line. In edit mode, the up and down buttons are used to change the value of the parameter. For parameters which contain both variable and monitor data, the monitor data is shown surrounded by square brackets. Pressing the unlock button again while in edit mode will immediately load the current monitor value into the variable. Once the desired setting is displayed, pressing the lock button will save the parameter and end edit mode.

### Parameter List

The following table outlines the parameter list for the MVP. Along with the name of the parameter, the table lists the limits and units for each item.

Parameter	Limits	Units
MVP-SVR-xxx		Version #
START TIME	0.0 to 6.0	Seconds
START CURRENT	0 to 600**	mA
HOLD CURRENT	0 to 600**	mA
OUTPUT CURRENT		mA
SUPPLY VOLTAGE		Volts
FAULT STATUS		Fault

\*RP2 Only

\*\*0 to 1.2 A for **-12A** version, 0 to 2.5 A for **-25A** version

**MVP-SVR-xxx** - This is the title parameter. The model number of the unit and the firmware version are displayed. The title parameter is fixed.

**START TIME** - Start Time sets the amount of time the controller will operate at the Start Current after the controller is initially powered up. This time is typically very short, allowing only enough time for the valve spool to fully shift. The Start Time parameter is variable.

**START CURRENT** - The Start Current parameter represents the current to the valve during the Start Time after initial power up. This is generally set to match the maximum valve current. The value displayed represents the current in milliamps (amps for -12A,-25A). The Start Current parameter is variable.

**HOLD CURRENT** - The Hold Current parameter represents the current to the valve after the Start Time has expired. This is generally set to a percentage of the maximum valve current such as 50%. The Hold Current will vary for different types of valves.



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The Hold Current should always include a margin of error to ensure that the valve stays in its on position when activated. The value displayed represents the current in milliamps (amps for -12A,-25A). The Hold Current parameter is variable.

**OUTPUT CURRENT** - Output Current displays the nominal current being supplied to the valve. The Output Current parameter is a monitor type.

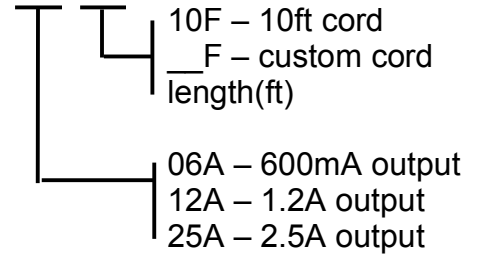
**SUPPLY VOLTAGE** - The Supply Voltage parameter displays the module's power supply voltage. This value is included as an aid to troubleshooting. The Supply Voltage parameter is a monitor type.

**FAULT STATUS** - The Fault Status parameter displays the current fault code when a fault exists. The three possible faults are 1-Over Current, 2-Open Output, and 3-Output Shorted. The Fault Status parameter is a monitor type. In addition to the on-screen fault status, the STATUS light will flash red indicating a problem. The light will flash a number of times periodically corresponding to the above fault codes.

### Ordering Information

The following is a break down of the MVP part numbering system:

MVP-SVR-06A-10F



### Wiring

Wire functions are listed in the table below.

**MVP-SVR-xxx:**

Terminal	Function
BROWN	+V Supply
BLUE	Supply Common
GRN/YEL	Connector ground