

ARTISAN®
TECHNOLOGY GROUP

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Shunt Regulators

The SRST Series shunt regulator assemblies are designed to work with ***ADVANCED* Motion Controls**' four quadrant regenerative servo drives. During braking most of the stored mechanical energy is fed back into the power supply, which charges the output capacitor to a higher voltage. If the charge reaches the drive's over-voltage shutdown point, motor control and braking will cease. To ensure smooth braking of large inertial loads the use of a shunt-regulator is recommended. Verify the need for a shunt regulator by operating the drive under the worst case braking condition. If the drive shuts off due to over-voltage (blinking red LED) a shunt regulator is necessary (typically during downward move or deceleration).

Model Number	Rated Dissipation Capability	Clamping Voltage
SRST50	95 W	50 VDC
SRST70	95 W	70 VDC
SRST80	95 W	80 VDC
SRST90	95 W	90 VDC
SRST175	95 W	175 VDC
SRST185	95 W	185 VDC
SRST380	190 W	380 VDC
SRST400	190 W	400 VDC



SRST50, 70, 80, 90, 175, 185



SRST380, 400

Operation

When the DC Bus reaches the shunt voltage of the shunt regulator assembly, the voltage comparator unit turns on the electronic switch, which connects the R1 power resistor across the DC Bus. This power resistor dissipates the energy from the DC Bus. After the bus voltage is reduced to less than the shunt voltage setting the resistor is disconnected from the bus. A small hysterisis loop allows time between switching. The SRST assemblies are available with standard shunt voltages of 50, 70, 80, 90, 175, 185, 380, and 400 volts.

Models SRST50, 70, 80, 90, 175, 185 are designed for use with servo drives up to 200 volts. These models have a 200 VDC, 1200 μF filter capacitor in them.

Models SRST380 and SRST400 are designed for use with servo drives up to 400 volts. These models have a 450 VDC, 330 μF filter capacitor in them.

Contact factory for custom trip voltages.

Features

- Dissipates Excess Kinetic or Potential Energy to Prevent Drive Over-Voltage Shut Down
- Small Size, Low Cost, Ease of Use

Agency Approvals

US and Canadian safety compliance with UL 508c, the industrial standard for power conversion electronics. UL registered under file number E140173. Note that machine components compliant with UL are considered UL registered as opposed to UL listed, as would be the case for commercial products.

Compliant with European EMC Directive 2004/108/EC on Electromagnetic Compatibility (specifically EN 61000-6-4:2007 for Emissions, Class A and EN 61000-6-2:2005 for Immunity, Performance Criteria A).LVD requirements of Directive 2006/95/EC (specifically, EN 60204-1:2004, a Low Voltage Directive to protect users from electrical shock).

The RoHS II Directive 2011/65/EU restricts the use of certain substances including lead, mercury, cadmium, hexavalent chromium and halogenated flame retardants PBB and PBDE in electronic equipment.

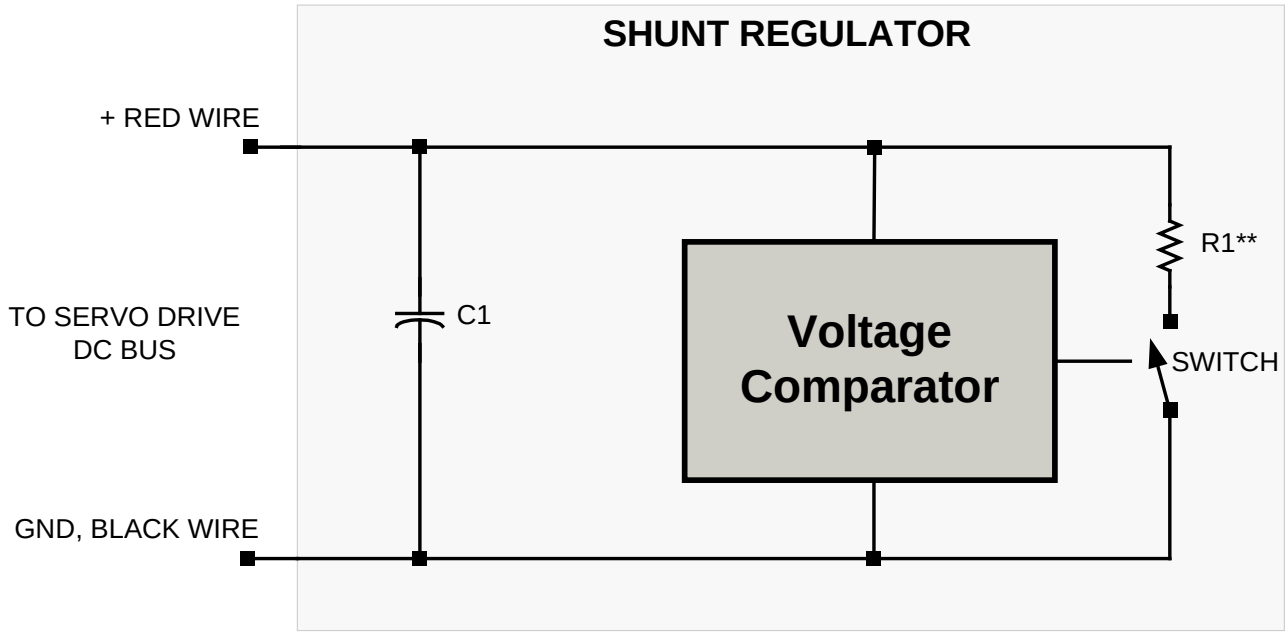
SPECIFICATIONS

Power Specifications			
Description	Units	For Shunt Voltages Under 200 V	For Shunt Voltages Over 200 V
Fuse	-	3 A Motor Delay rated @ 250 VAC	
Filter Capacitance (C1) [1]	µF	1200	330
Dissipation Capabilities	W	95	190
Resistance (R1)	Ω	5	20
Mechanical Specifications			
Description	Units	For Shunt Voltages Under 200 V	For Shunt Voltages Over 200 V
Size (H x W x D)[2]	mm (in)	203.2 x 108.0 x 66.70 (8.00 x 4.25 x 2.63)	203.2 x 108.0 x 54.0 (8.00 x 4.25 x 2.13)
Weight	g (lbs)	385.55 (0.85)	453.59 (1.00)

Notes

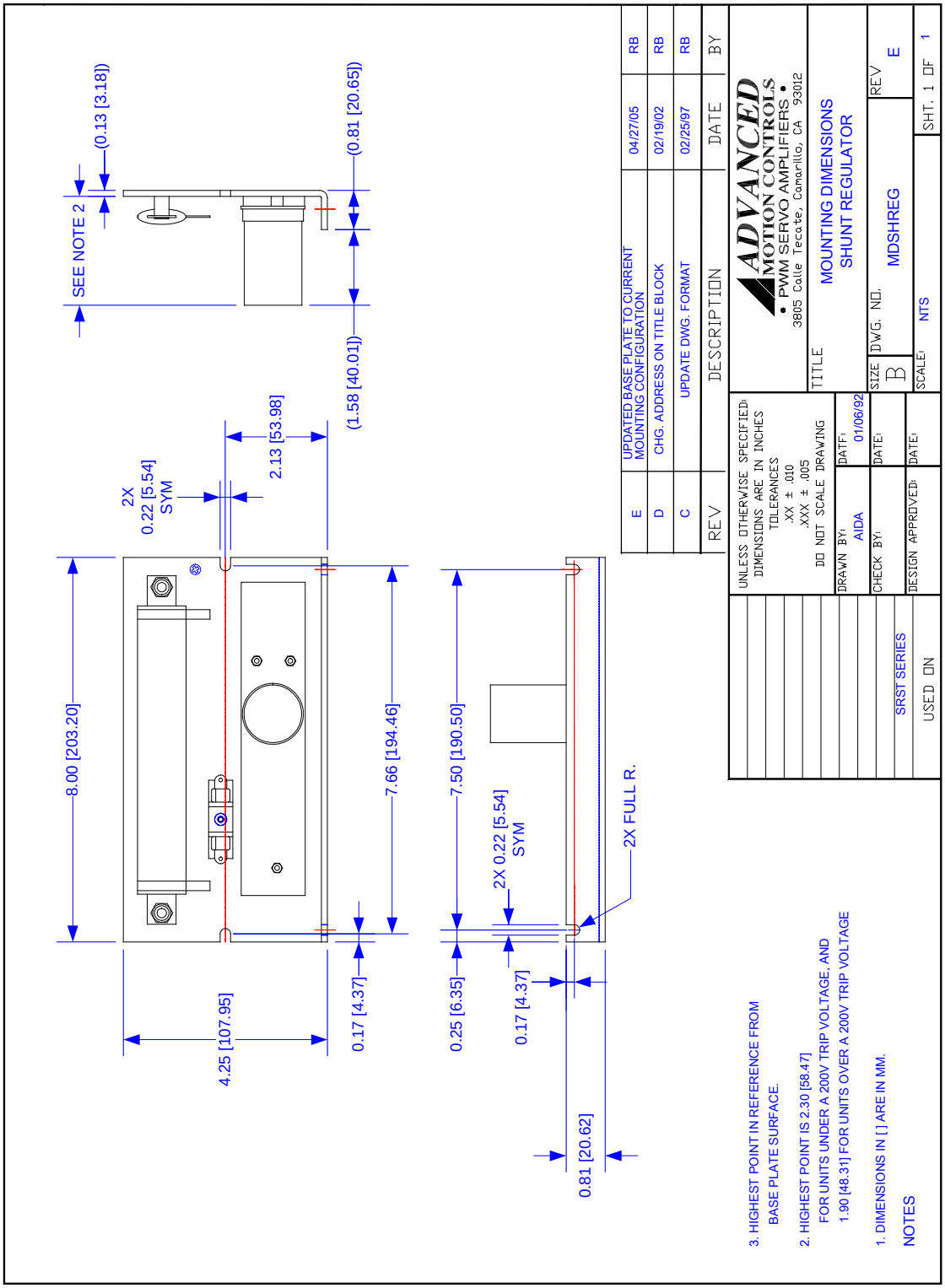
1. Filter capacitance will add to existing DC Bus capacitance. Increased inrush current may occur as a result.
2. Worst-case depth dimension. See mounting dimensions for additional details.

BLOCK DIAGRAM



**Resistor Value Depends on Model

MOUNTING DIMENSIONS



CUSTOMIZATION INFORMATION

ADVANCED Motion Controls' products are available in many configurations. All models listed in the selection tables of the website are readily available, standard product offerings.

ADVANCED Motion Controls also has the capability to promptly develop and deliver specified products for OEMs with volume requests. Our Applications and Engineering Departments will work closely with your design team through all stages of development in order to provide the best servo drive solution for your system. Equipped with on-site manufacturing for quick-turn customs capabilities, *ADVANCED* Motion Controls utilizes our years of engineering and manufacturing expertise to decrease your costs and time-to-market while increasing system quality and reliability. Feel free to contact Applications Engineering for further information and details.

Examples of Customized Products

- Optimized Footprint
- Private Label Software
- OEM Specified Connectors
- No Outer Case
- Increased Current Resolution
- Increased Temperature Range
- Custom Control Interface
- Integrated System I/O
- Tailored Project File
- Silkscreen Branding
- Optimized Base Plate
- Increased Current Limits
- Increased Voltage Range
- Conformal Coating
- Multi-Axis Configurations
- Reduced Profile Size and Weight

Available Accessories

ADVANCED Motion Controls offers a variety of accessories designed to facilitate drive integration into a servo system. Visit www.a-m-c.com to see which accessories will assist with your application design and implementation.



Power Supplies



Shunt Regulators



Drive(s)



Filter Cards

To Motor

All specifications in this document are subject to change without written notice. Actual product may differ from pictures provided in this document.

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