



Introduction:

DRV-Series Solid-State Reversers are used to swap the direction of current for loads such as motors. An internal solid-state bridge provides a natural discharge path for back-EMF generated at motor's shut-OFF. This results in a switch that arc-free, wear-free, and noise-free.

Benefits:

- **NEW! Hermetically sealed.** •
- Default softer-stop lessens stress & BEMF transients •
- Mechanically assembled, safer & more rugged •
- Small form factor, rated up to 60 A continuous •

	Rated <100A				
Part#	DRVS004-60A3-SP DRVS01-60A3-SP		DRVS02-40A3-SP		
	Specifications				
Control Input	12-24 V	DC, ~25mA (Max: 9	VDC-30VDC)		
MAX PWM/Output ¹	1 Hz				
Rated Output Voltage	40 VDC	100 VDC	200 VDC		
Max Continuous Current @90°C Baseplate	60A	60A	40A		
Peak Current @90°C Baseplate ²	150A	200A	(Pending)		
Must Turn-OFF Voltage	<5 VDC (OFF)				
Recommended Operating Voltages	<30V (resistive)	<65V (resistive)	<100V (resistive)		
Neconimentaed Operating Voltages	<24V (motor)	<36V (motor)	<48V (motor)		
Typical ON Resistance	4 mΩ	6 mΩ	pending		
Leakage Current	<1 mA	<1 mA	<1 mA		
Typical ON & OFF Delay (Signal)	<25ms, <50ms				
Interlock Timer	~200 ms				
Isolation Voltage	Input/Output: 400V (default) or 3,000V (optional)				
isolution voltage	Baseplate/Input, Baseplate/Output: 2.5 kV (AC 1 min 50 hz)				
LED Indicators	Green (FWD L1+/L2-), Red (REV L1-/L2+)				
Ambient Operating/Storage Temp.	-40 to 80°C				
Max Junction & Baseplate Temp.	125°C (junction) & 90°C (baseplate)				
Thermal Impedance Junction to Heatsink ³	2°C/W	2.5°C/W	Pending		
Dimensions (LxWxH)	45x57x33.5 mm				
	Input: 14-22 AWG (strip length 5-6mm, max torque 0.4 Nm)				
Terminals	Output: M4 (max depth 10mm, max torque 2 Nm)				
	Panel Mount: M4 (max torque 1 Nm)				
Housing		ABS, hermetically se	aled		
Net Weight	130 g				
Options	(-SP): softer turn-off for reducing motor's peak BEMF transient				

Contact us for any questions or custom requirements:

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² Peak-current-withstanding-duration depends on active cooling provided, up to a maximum of 3 seconds.

³ Value assumes a thermal transfer layer of 1 W/mK and 0.2mm thick is applied between the baseplate and the heatsink.



Part# Reference:

	Model	Output		Output		Control			Other			
		Voltage			Current	Input			Features			
	DRVS	01		01		- 60A			3 -		SP	-
DRVS	Standard Model	004 =	1-40 VDC			N/A	3 - 32 VDC		P1/P2 =			
	(for DC polarity	0074	4.75.100				(CMOS/TTL)		Internal/	Other		
	reversing only)	007A =	1-75 VDC	-		1=	3.3 - 11 VDC		External RC	Other		
		01 =	1-100 VDC			2 =	12 - 32 VDC		Snubber	Custom		
DRV	Advanced Model	02 =	1-200 VDC			3 =	12 - 24 VDC			References		
	(for polarity				Rated	4 =	4 - 32 VDC		SP = Softer-			
	reversing and PWM				Continuous	5 =	36 - 75 VDC		Stop			
	up to 5kHz)				Current (A)				SS = Soft-start			
									& soft-stop			
									V = 3kV In/Out			
									Isolation			

Contact us for Other Options

Dimensional Drawing, mm [in]



Change Log R.MDRV2306I:

1) Max allowable baseplate temperature up to 90°C from 80°C. 2) DRVS01-60A3 parameter updated to reflect enhancements

Change Log R.MDRV23010J:

1) Input wire terminal sized up to 14-22 AWG up from 18-28 AWG. 2) Input/Output 3kV isolation is now an option.



Solid-state Reverser Workings Diagram:



Default 'Softer-Stop' Feature:

Each DRVS-series miniature reverser is equipped with a 'softer-stop' feature designed specifically for reducing instantaneous back EMF transients experienced during the turn-off phase of a DC motor. This feature not only eliminates harmful voltage spikes that can adversely affect semiconductors and power supplies over the long term, but also lessens physical stress on the system.

The 'softer-stop' occurs over a duration of approximately 100ms and does not rely on the more complex PWM method of gradual stop.





<drvs004-60a3></drvs004-60a3>				
Upper Heatsink Rth Limit @40°C T-Ambient				
(for ensuring baseplate is kept ≤90°C)				
Load Current (∆=Voltage	Heatsink			
10A (Δ 0.055V)	Not Needed			
20A (Δ 0.11V)	10 °C/W			
30A (Δ 0.165V)	3 °C/W			
40Α <mark>(</mark> Δ 0.22V)	1.5 °C/W			

<drvs01-60a3></drvs01-60a3>				
Recommended Heatsink Rth @40°C T-Ambient				
(for ensuring baseplate is kept ≤90°C)				
Load Current (∆=Voltage Drop)	Heatsink Rth			
10A (Δ 0.05V)	Not Needed			
20A (Δ 0.1V)	15 °C/W			
30A (Δ 0.15V)	8 °C/W			
40A (Δ 0.2V)	4 °C/W			
50A (Δ 0.25V)	2 °C/W			
60A (Δ 0.3V)	0.7 °C/W			

<DRVS02-60A3> pending!

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