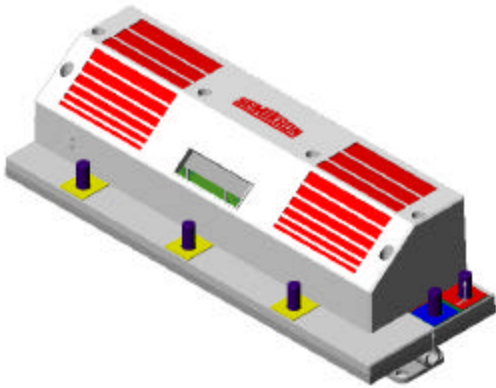


Semikron Automotive Drive System

SKADS - General Overview



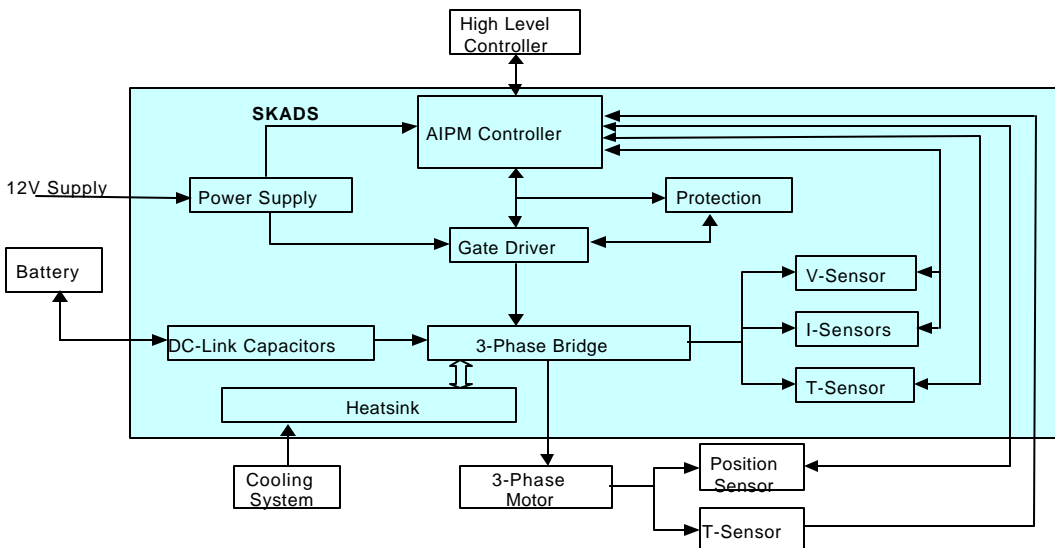
The **Semikron Automotive Drive System** was built to be the drive system of choice for the DC to AC drive market. It was developed and designed to the stringent automotive standards with an emphasis on innovation, technology, reliability, and compactness. Applications for the **Semikron Automotive Drive System** include, but are not limited to:

- Forklift
- Hybrid Electric Vehicles
- Golf Carts / Neighborhood Vehicles
- Air Conditioning – Freight and Recreational Vehicles
- Airport Ground Support Vehicles
- Power Conditioning Systems

Features

- Pressure Contact Technology.
- DC Battery Voltages from 12 to 100 volts.
- Extremely Compact Design.
- Up to 650 amp Three Phase Output (Depending on Cooling).
- Serial Communication via CAN Bus or RS 485.
- Thermal Management with Integrated Water, Air, or Aluminum Plate Heatsink.
- Fully Integrated Protection (Temperature, Current, and Short Circuit).
- Isolated Power Supply with Under-Voltage Protection.
- Integrated Three Phase Output Current Sensors.
- Interface to Accept External Temperature & Position Sensor.
- Available in 75V, 100V, or 150V Trench Mosfets.

Block Diagram



Specifications

Mosfet Voltage	75 volt Mosfet ⁴			100 volt Mosfet ⁵			150 volt Mosfet ⁶		
	Water ¹	Air ²	Al Block ³	Water ¹	Air ²	Al Block ³	Water ¹	Air ²	Al Block ³
Heatsink									
Output AC Current (Continuous)	500A	350A	450A	400A	300A	350A	250A	150A	200A
Output AC Voltage (3 phase)	27V _{L-L} @ 40V DC			40V _{L-L} @ 60V DC			67V _{L-L} @ 100V DC		
Input DC Voltage	12 to 60 volts DC			12 to 80 volts DC			12 to 100 volts DC		
Efficiency	>95%								
Output Frequency	0 to 1000 Hz								
Switching Frequency	0 to 20kHz (de-rating may apply)								
Short Circuit Protection	700 amps _{peak} AC								
Degree of Protection	IP 64 (IP00 at AC and DC Terminals)								
Aux. Power Supply Voltage	7 to 17 volts DC, 12 volts DC Nominal								
Ambient Temperature	-40°C to +105°C (de-rating may apply)								
Cooling Water Temperature	-40°C to +70°C								
Storage Temperature	-40°C to +125°C								
Semikron Plant	Semikron, Inc., Hudson, NH								

¹10liter/min, 70°C Water, Rtheta_{hs}=0.016K/W, T_j=140°Cmax

²T=50°C, Rtheta_{hs}=0.06K/W

³10mm Thick Plate, Rtheta_{hs}=0.02K/W, T_{hs}=70°C Max

⁴36VDC, 10kHz Switching, 22VAC, PF=0.8

⁵60VDC, 10kHz Switching, 36VAC, PF=0.8

⁶100VDC, 10kHz Switching, 60VAC, PF=0.8

Dimensions 13.5" (343.1mm) L x 4.13" (105mm) W x 4" (100mm) H 5lbs/2.3kg

