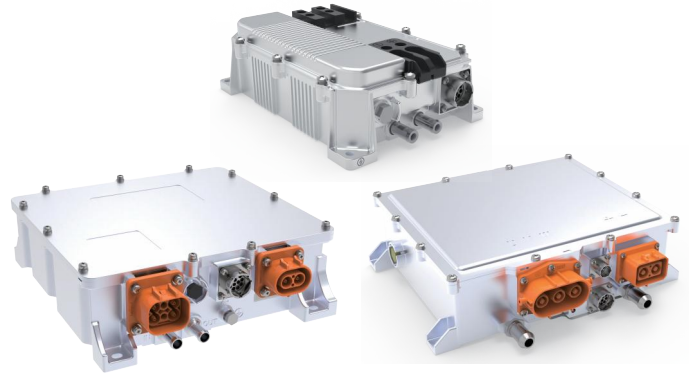




# POLARIS® AIR COMPRESSOR CONTROLLER FAMILY



## Excellent Performance

- Sine wave sensor-less FOC control enables smooth and seamless startup process, along with precise and fluid speed control;
- The high-performance 32-bit processor allows real-time setting of acceleration rate, and quick and precise response to speed instructions;
- Fast speed response and precise speed control.

## Smart Features

- Sensor-less FOC control;
- High-precision online parameter compensation algorithm;
- High-performance initial position detection algorithm that allows smooth startup of motor at full load;
- High-precision off-line parameter identification algorithm;
- High-precision rotor flux angle estimator to ensure reliable operation of the motor in a wider speed range.

## Protection & Performance

### • Great EMC Performance

GB/T 18655-2018 Class 3;

Motor current harmonic suppression technology curbs motor temperature rise effectively.

### • Reliable Protections

Startup protection, temperature protection, current protection, input voltage abnormality protection, overload protection, communication verification, and loss protection;

Abundant setting parameters and hierarchical fault handling strategies.



# Specifications

MODEL	LC50-D60-S11	LC50-D100-S00	HC30-D750-A	HC85-D750-N
<b>INPUT VOLTAGE</b>				
Rated Voltage	48VDC	80VDC	600VDC	550VDC
Operating Voltage Range	30-63VDC	60-100VDC	250-750VDC	200-750VDC
<b>OUTPUT POWER</b>				
Continuous Current	50Arms		36Arms	85Arms
Rated Power	2KW		18KW	50KW
Frequency Range	0-3500Hz		0-2000Hz	0-2500Hz
<b>AUXILIARY POWER INPUT</b>				
Input Voltage Range	Shared with bus voltage		9-32VDC	9-36VDC
<b>COMMUNICATION</b>				
Communication Method	CAN			
Protocol Customization	Yes			
<b>PROTECTION</b>				
Multiple Protections	Input undervoltage protection, input overvoltage protection, output overcurrent protection, controller overload protection, controller over temperature protection, low speed protection, motor over temperature protection, and CAN communication fault protection.			
<b>SYSTEM</b>				
Controller Maximum Efficiency	97%		≥ 98%	≥ 97%
Speed Control Accuracy	±0.2%		0.5%±5Hz	±0.2%
Speed Response Time	≤ 100ms		≤ 100ms	≤ 100ms
Pre-charge Function	Optional		Yes, charging time ≤ 500ms	Yes
Active Discharge	< 2s		< 1s, < 60V	< 1s, < 60V
Motor Temperature Sensor	PT1000		PT1000 (rec.)/ PT100/NTC	PT100/PT1000
Withstand Voltage	≥ 1000VDC, 1min, no breakdown		≥ 3500VDC, 1min, no breakdown	≥ 3500VDC, 1min, no breakdown
Operating Temperature Range	-40°C ~ 75°C		-40°C ~ 85°C	-40°C ~ 85°C
Storage Temperature Range	-40°C ~ 75°C		-40°C ~ 105°C	-40°C ~ 85°C
Altitude (above sea level)	13000ft		9800ft	11000ft
IP Level	IP67		IP67	IP67
Cooling Method	Liquid cooling		50-50 ethylene glycol-water mixture	
Dimensions (W*D*H, inch)	7.9*5.6*2.6		9.4*9.5*3.1	12*10.2*3.4
Design Standard	ISO 6469-3, ISO 16750-1, GB/T18488.1-2015, GB/T18488.2-2015, QC/T1069-2016, GB/T 18384.3-2015			

## SYSTEM BLOCK DIAGRAM

