

ORENSEN (AMETEK)

DCR300

The Sorensen DCR300 series (part of the DCRA/B family from Ametek) consists of heavy-duty, highly regulated, SCR phase-controlled DC power supplies. Engineered for either bench or rackmount applications, these supplies (including the DCR 300-1.5B, DCR 300-3B, and DCR 300-9B) combine the high efficiency of SCR phase control with a passive LC filter to deliver up to 300V of precise DC output. They feature automatic crossover between constant-voltage and constant-current modes, analog programming, remote sensing, and comprehensive protection systems.

SPECIFICATIONS

General

Interfaces	Analog programming (resistance, voltage), remote sensing, series/parallel master-slave
Display	Dual analog meters (voltage and current)

Physical

Power Supply	115 Vac (103-127 Vac) or 208 Vac (187-229 Vac) single-phase (model dependent), 50-63 Hz
Operating Temperature	0 to +70 °C °C
Dimensions (W×H×D)	482.6 mm (W) x 133.3 to 311.0 mm (H) x 457.0 to 559.0 mm (D) (model dependent) mm
Weight	18.1 / 30.3 / 63.5 kg (model dependent) kg

Output Specifications

Rated Output Voltage Range	0 to 300 Vdc
Rated Output Current (DCR 300-1.5B)	0 to 1.5 Adc
Rated Output Current (DCR 300-3B)	0 to 3.0 Adc
Rated Output Current (DCR 300-9B)	0 to 9.0 Adc
Maximum Output Power (DCR 300-1.5B)	450 W
Maximum Output Power (DCR 300-3B)	900 W
Maximum Output Power (DCR 300-9B)	2700 W
Line Regulation (Voltage)	0.05% of maximum output voltage (150 mV)
Load Regulation (Voltage)	0.05% of maximum output voltage (150 mV)
Line Regulation (Current)	0.15% of maximum output current
Load Regulation (Current)	0.15% of maximum output current
Output Ripple and Noise (RMS)	450 mV RMS
Transient Recovery Time	50 ms typical (recovery to within 1% of regulation for a 50-100% or 100-50% step load change)
Temperature Coefficient (Voltage)	0.015% of max output voltage per °C (45 mV/°C)
Temperature Coefficient (Current)	0.03% of max output current per °C
Voltage Programming Resolution	Infinite (continuous potentiometer control)
Current Programming Resolution	Infinite (continuous potentiometer control)
Operating Modes	Constant Voltage (CV) and Constant Current (CC) with automatic crossover

Protection and Diagnostics

Over Voltage Protection (OVP) Range	Adjustable from 30 to 330 Vdc (10% to 110% of maximum output voltage)
Over Voltage Protection Type	SCR Crowbar
Output Isolation Voltage to Chassis	1000 Vdc maximum

Control and Interface

Front Panel Controls	Power circuit breaker, fine and coarse voltage adjust, fine and coarse current adjust, OVP adjust
Analog Programming Options	Resistance programming (200 ohms/volt standard) or voltage programming
Remote Shutdown Input	Unit shutdown circuit via rear terminal contact closure
Series Operation Capacity	Up to 2 identical units connected in series (requires external protection diodes)
Parallel Operation Capacity	Master/slave parallel configuration up to 3 identical units
Panel Meter Accuracy	2% of full scale

Environmental and Safety

Storage Temperature Range	-40 to +85 °C
Temperature Derating	Linearly derate output above 40 °C to 50% capacity at 70 °C
Cooling System (DCR 300-1.5B)	Convection cooled
Cooling System (DCR 300-3B, 9B)	Internal fan cooled

Physical Characteristics

Form Factor	Benchtop or Rackmount (model dependent)
Chassis Width	19 inches (482.6 mm)
Chassis Height (DCR 300-1.5B)	3U (5.25 inches / 133.3 mm)
Chassis Height (DCR 300-3B)	3U (5.25 inches / 133.3 mm)
Chassis Height (DCR 300-9B)	7U (12.25 inches / 311.0 mm)
Chassis Depth (DCR 300-1.5B)	18.0 inches (457.0 mm)
Chassis Depth (DCR 300-3B)	18.0 inches (457.0 mm)
Chassis Depth (DCR 300-9B)	22.0 inches (559.0 mm)
Unit Weight (DCR 300-1.5B)	40 lbs (18.1 kg)
Unit Weight (DCR 300-3B)	65 lbs (29.5 kg)
Unit Weight (DCR 300-9B)	190 lbs (86.2 kg)
DC Output Connection	Rear terminal strip only

AC Input Specifications

Nominal AC Input (DCR 300-1.5B, 3B)	115 Vac single-phase (103-127 Vac range)
Nominal AC Input (DCR 300-9B)	208 Vac single-phase (187-229 Vac range)
AC Input Frequency Range	57 to 63 Hz
AC Input Connection	Rear-mounted barrier strip

Remote Programming

Voltage Programming Resistance	1000 Ω/V
--------------------------------	-----------------

Front Panel Controls

Voltage Control Type	10-turn potentiometer
Current Control Type	1-turn potentiometer

Performance & Stability

Output Drift (Voltage)	0.15% of maximum rated voltage over 8 hours
Output Drift (Current)	0.5% of maximum rated current over 8 hours
Warm-Up Time	30 minutes

AC Input

AC Input Current (DCR 300-1.5B)	6.5 A @ 115 VAC
AC Input Current (DCR 300-3B)	11 A @ 115 VAC

Environmental

Operating Altitude	Up to 10,000 ft (3,000 m)
Storage Altitude	Up to 40,000 ft (12,000 m)
Operating Humidity	Up to 95% RH, non-condensing

Power Supply

AC Input Phase (DCR 300-1.5B, 3B)	Single-phase
AC Input Phase (DCR 300-9B)	Single-phase

Performance

Remote Voltage Programming Accuracy	±1% of maximum output voltage
Remote Current Programming Accuracy	±1% of maximum output current

TECHNOLOGY

SCR Phase Control with Passive LC Filter

APPLICATIONS

Benchtop or Rackmount Programmable DC Power Supply

Generated by SpecAtlasHub (specatlashub.com). Specifications are compiled from available sources and are subject to change — verify critical values against the manufacturer before purchase.