

# DCR-B Series Specifications

## OUTPUT

### CONSTANT VOLTAGE MODE

#### Voltage Regulation:

Line and load combined

0-7 and 0-10 Vdc models

0.1% or 5 mV, whichever is greater.

0-20 to 0-80 Vdc models

0.05% or 10 mV, whichever is greater.

0-150 to 0-600 Vdc models

0.05% or 75 mV, whichever is greater.

#### Temperature Coefficient:

0.015%/°C of  $E_o$  max.

#### Resistance Programming:

See model specification chart.

#### Voltage Programming:

Consult instruction manual.

#### Stability:

0.1%  $E_o$  max for 8 hours after 30 minute warm-up.

#### Remote Sensing:

Maximum drop per load lead should not exceed 5% of  $E_o$  max. or 3 V, whichever is smaller.

#### Transient Response:

0-10 to 0-600 Vdc models

50 ms (typical) to return to  $\pm 1\%$  band for step load change of 50 to 100% of full load ( $\pm 2\%$  or 20 V model,  $\pm 3\%$  for 10 V model).

0-7 Vdc model

100 ms (typical) to return to  $\pm 3\%$  band for step load change of 67 to 100% of full load.

## CONSTANT CURRENT MODE

### Current Regulation:

0.25% of  $I_o$  max. line and load combined. (0.5% for 7 V model)

### Temperature Coefficient:

0.03%/°C. of  $I_o$  max.

### Current Programming:

See model specification chart.

### Stability:

0.15% of  $I_o$  max. for 8 hours after 30 minute warm-up.

## INPUT

### Voltage:

103-127 Vac single phase for 400 to 1800 watts models. 187-229 Vac single phase for 2100-2700 watt models.

Model	Output Power			Constant Voltage Regulation mV <sup>8</sup>	Constant Current Regulation mA <sup>9</sup>	Constant Voltage Ripple (PARD) rms/mV <sup>2</sup>	Constant Current Ripple (PARD) rms/mA <sup>2,3</sup>	Drift (Typ.) <sup>7</sup>		V. Prog. V/Full Scale	V. Prog. I/Full Scale	
	Voltage (Vdc)	Current (A dc)						% $E_o$ max	% $I_o$ max			
		40°C	50°C	70°C								
DCR7-300B	0-7	300	225	150	7	1500	65	2800	.1	.15	0-10 V	0-.4
DCR10-40B	0-10	40	30	20	10	100	65	260	.1	.15	0-10 V	0-.4
DCR10-80B	0-10	80	60	40	10	200	65	520	.1	.15	0-10 V	0-.4
DCR10-120B	0-10	120	90	60	10	300	65	785	.1	.15	0-10 V	0-.4
DCR20-25B	0-20	25	19.3	13	10	63	65	82	.1	.15	0-10 V	0-.4
DCR20-50B	0-20	50	37.5	25	10	125	65	125	.1	.15	0-10 V	0-.4
DCR20-80B	0-20	80	60	40	10	200	65	260	.1	.15	0-10 V	0-.4
DCR20-115B	0-20	115	86.5	58	10	288	65	375	.1	.15	0-10 V	0-.4
DCR40-13B	0-40	13	9.8	6.6	20	33	90	30	.1	.15	0-10 V	0-.4
DCR40-25B	0-40	25	19.3	13	20	63	90	56	.1	.15	0-10 V	0-.4
DCR40-40B	0-40	40	30	20	20	100	90	90	.1	.15	0-10 V	0-.4
DCR40-70B	0-40	70	55	40	20	175	90	157	.1	.15	0-10 V	0-.4
DCR60-9B	0-60	9	7	5	30	23	125	19	.1	.15	0-10 V	0-.4
DCR60-18B	0-60	18	13.3	8.6	30	45	125	38	.1	.15	0-10 V	0-.4
DCR60-30B	0-60	30	23.3	16.5	30	75	125	63	.1	.15	0-10 V	0-.4
DCR60-45B	0-60	45	35.8	26.5	30	113	125	93	.1	.15	0-10 V	0-.4
DCR80-6B	0-80	6	4.7	3.3	40	15	150	12	.1	.15	0-10 V	0-.4
DCR80-12B	0-80	12	9.3	6.6	40	30	150	23	.1	.15	0-10 V	0-.4
DCR80-33B	0-80	33	26.5	20	40	83	150	61	.1	.15	0-10 V	0-.4
DCR150-3B	0-150	3	2.4	1.7	75	8	300	6	.1	.15	0-10 V	0-.4
DCR150-6B	0-150	6	4.7	3.3	75	16	300	12	.1	.15	0-10 V	0-.4
DCR150-12B	0-150	12	9.3	6.6	75	32	300	24	.1	.15	0-10 V	0-.4
DCR150-18B	0-150	18	14	10	75	45	300	36	.1	.15	0-10 V	0-.4
DCR300-1.5B	0-300	1.5	1.2	.8	150	4	700	4	.1	.15	0-10 V	0-.4
DCR300-3B	0-300	3	2.3	1.65	150	8	700	7	.1	.15	0-10 V	0-.4
DCR300-6B	0-300	6	4.7	3.3	150	16	700	14	.1	.15	0-10 V	0-.4
DCR300-9B	0-300	9	7.3	5.5	150	23	700	21	.1	.15	0-10 V	0-.4
DCR600-.75B	0-600	.75	.6	.4	300	2	1200	2	.1	.15	0-10 V	0-.4
DCR600-1.5B	0-600	1.5	1.2	.83	300	4	1200	3	.1	.15	0-10 V	0-.4
DCR600-3B	0-600	3	2.3	1.65	300	8	1200	6	.1	.15	0-10 V	0-.4
DCR600-4.5B	0-600	4.5	3.5	2.5	300	12	1200	9	.1	.15	0-10 V	0-.4

NOTES: 1. 7" units offer convection cooling or fan (F) cooling. 2. Below 60 Hz, ripple and transient response characteristics will deteriorate by a factor of  $(\frac{60}{f})^2$  where f is the input frequency. 3. At full compliance voltage. 4. At 115 Vac. 5. At 208 Vac. (7-inch Fan). 6. With load change (NL-to-FL or FL-to-NL) and a full line-voltage change combined. 7. For 8 hours (after 30-min. warmup) with constant line, load and ambient temperature.

8. To return to  $\pm 1\%$  band on all models except 10 volt ( $\pm 3\%$ ) and 20 volt ( $\pm 2\%$ ) for a step-load change of half load-to-full load or full load-to-half load. 9. With 0 to 95% compliance-voltage change and  $\pm 10\%$  line-voltage change combined. 10. Optional input voltage available 208 Vac  $\pm 10\%$  (except 7-inch fan) (option M1) 220 Vac  $\pm 10\%$  (option M2) 230 Vac  $\pm 10\%$  (option M3)

**Voltage Options:**

Optional inputs available. Consult local sales office or factory for modification price.

**Frequency:**

49-63 Hz single phase.  
(Ripple and transient response specs apply only at 60 Hz).

**OPERATING DATA****Ambient Operating****Temperature Range:**

0 to + 70°C

**Storage Temperature Range:**

- 40°C to + 85°C

**Efficiency:**

61-86% depending on model.

**Series Operation:**

200 Vdc max. output (150 and 300 V models, two in series).

**Parallel Operation:**

Master-slave or straight parallel; four units maximum in master-slave.

**Overshoot:**

No overshoot at turn-on, turn-off or power failure.

**Overvoltage Protection:**

Now factory installed on all DCR-B models.

**Remote Shutdown:**

Remote relay, transistor or logic switching can be connected to

shutdown terminals on back of supply.

**Cooling:**

Convection cooled on 400 to 1800 watt models. Built-in fan on 2100-2700 watt models.

**DCRB ACCESSORIES****Digital Programmer:**

Available for all models in DCRB series. IEEE-488 interface to GPIB Bus. Order Model 488 DAP.

**Chassis Slide (Kit):**

Available for all convection cooled models and fan cooled DCR 7-300B only. Consult factory.

Model	Temperature Coeff. (Typ.)		Transient Response Time ms(Typ.) <sup>a</sup>	Remote Prog. (Typ.)		Efficiency % (Typ.)	Input Power				Power Factor (Typ.)	Case Size <sup>1</sup>
	(mV/°C)	(mA/°C)		Ohms/V	Ohms/A		Voltage (Vac) <sup>10</sup>	Current <sup>4,5</sup> Max (Aac)	Phase	Frequency (Hz)		
DCR7-300B	1.1	90	100	1710	0.33	65	187-229	27.5	1φ	50/60	.62	V
DCR10-40B	1.5	12	50	1200	10	61	103-127	8.7	1φ	50/60	.65	I
DCR10-80B	1.5	24	50	1200	5	62	103-127	16	1φ	50/60	.69	II
DCR10-120B	1.5	36	50	1200	3.3	62	103-127	24.5	1φ	50/60	.67	III
DCR20-25B	3.0	7.5	50	600	16	71	103-127	9.4	1φ	50/60	.65	I
DCR20-50B	3.0	15	50	600	8	69	103-127	20	1φ	50/60	.62	II
DCR20-80B	3.0	24	50	600	5	70	103-127	30	1φ	50/60	.66	III
DCR20-115B	3.0	35	50	600	3.5	70	187-229	26.5	1φ	50/60	.60	IV
DCR40-13B	6.0	3.9	50	300	30	71	103-127	9.8	1φ	50/60	.65	I
DCR40-25B	6.0	7.5	50	300	16	79	103-127	16	1φ	50/60	.68	II
DCR40-40B	6.0	12	50	300	10	78	103-127	26.8	1φ	50/60	.66	III
DCR40-70B	6.0	21	50	300	6	77	187-229	29.6	1φ	50/60	.58	IV
DCR60-9B	9.0	2.7	50	200	46	75	103-127	9.7	1φ	50/60	.65	I
DCR60-18B	9.0	5.4	50	200	22	81	103-127	19	1φ	50/60	.60	II
DCR60-30B	9.0	0.9	50	200	16	84	103-127	27	1φ	50/60	.68	III
DCR60-45B	9.0	13.5	50	200	9	80	187-229	29.0	1φ	50/60	.56	IV
DCR80-6B	12.0	1.8	50	150	68	77	103-127	8.3	1φ	50/60	.65	I
DCR80-12B	12.0	3.6	50	150	33	83	103-127	15	1φ	50/60	.65	II
DCR80-33B	12.0	9.9	50	150	12	81	187-229	27.2	1φ	50/60	.57	IV
DCR150-3B	22.5	0.9	50	80	134	74	103-127	8.2	1φ	50/60	.65	I
DCR150-6B	22.5	1.8	50	80	66	84	103-127	15.5	1φ	50/60	.60	II
DCR150-12B	22.5	3.6	50	80	33	84	103-127	27	1φ	50/60	.69	III
DCR150-18B	22.5	5.4	50	80	22	83	187-229	27	1φ	50/60	.58	IV
DCR300-1.5B	45.0	0.45	50	40	270	74	103-127	8.9	1φ	50/60	.60	I
DCR300-3B	45.0	0.9	50	40	133	82	103-127	15.7	1φ	50/60	.60	II
DCR300-6B	45.0	1.8	50	40	66	84	103-127	27	1φ	50/60	.69	III
DCR300-9B	45.0	2.7	50	40	44	83	187-229	27.4	1φ	50/60	.57	IV
DCR600-.75B	90.0	0.225	50	20	530	74	103-127	8.9	1φ	50/60	.60	I
DCR600-1.5B	90.0	0.45	50	20	266	86	103-127	15.2	1φ	50/60	.60	II
DCR600-3B	90.0	0.9	50	20	133	86	103-127	27.4	1φ	50/60	.66	III
DCR600-4.5B	90.0	1.35	50	20	89	85	187-229	26.8	1φ	50/60	.57	IV