

DCS Series

1000-3000 WATTS PROGRAMMABLE DC SUPPLY

Features

- High power density
- Remote voltage sense & remote programming
- Wide range of output voltages
- High programming resolution with ethernet interface
- Remote control



Specifications

INPUT

Input voltage	1KW: 200-250VAC, single phase; 100-132VAC single phase, internal jumper selectable (see M1 option) 1.2KW: 200-250VAC, single phase; 100-132VAC single phase, internal jumper selectable (see M1 option) 3KW: 190-250VAC, three phase; 200-250VAC, single phase (Note: Max.power output of 3KW supplies must be limited to 2.5KW for single phase input)
Frequency	47-63Hz for both single and three phase input
Current	1KW: 15A typ at 115VAC, 8A typ at 230VAC, 1.2KW: 18A typ at 115VAC, 9A typ at 230VAC, 3KW: 20A typ at 230VAC single phase, 14A typ at 230VAC three phase
Soft start	Line current is lower than full load peak value during turn-on or power application after restart

ENVIRONMENTAL

Operating temperature	0°C to 50° (No De-rating)
Storage temperature	-40°C to 85°C
Humidity range	0-80% RH, non condensing
Cooling	Internal fan with over-temperature protection

OUTPUT

Voltage adjustment	Zero to rated output
Current adjustment	Zero to rated output
Ripple & Noise	See table
Regulation (Line or Load)	Voltage: 0.1% Current: 0.1%
Transient response	Typically recovers in < 1ms to 1% of steady-state output voltage (within 1% of Vmax) for 70-100% or 100-70% load change. 500µs typical
Stability	+/-0.05% of maximum voltage or current over 8 hours after 30 minute warm-up time at fixed line, load and temperature
Temperature Coefficient	0.02%/°C of maximum output voltage 0.03%/°C of maximum output current

OPERATING

Efficiency	See table
Remote sense	The maximum allowed sense line drop is 4V per line (2V on the DCS 8 and 10V 1KW and 1.2KW models and 1V/ line for all 3KW models)
Remote programming	External jumper via rear panel connectors J3.
Overvoltage protection	Crowbar type adjustable from 5-110% Protection rated output using front panel control (local or remote program selectable via J3 jumper)
Remote analog programming	Linearity: +/-1% Accuracy: +/-5%
Software	LabVIEW® driver for M9C/M85 (Contact Powerbox)
Regulatory compliance	CE Mark on all models, FCC Part 15 Class A UL1012 and CSA 22.2 #220 (1 and 1.2 KW only)

Options and Accessories

INPUT VOLTAGE OPTIONS

M1	Factory configured for 115VAC input (1 and 1.2kW only)
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REMOTE INTERFACE OPTIONS

M9C	Internal IEEE-488/RS 232 interface
M13	Locking shafts (front panel potentiometers)
M32	Master/slave cable configured for two or more units
M33	Replace input connector with terminal block (3kW only)
M51A	Isolated analog programming control of V/I/OVP and isolated V/I monitor outputs up to 500V relative to the supply's return line
M85	Multichannel slave interface
M102	Front panel binding posts for 1kw or 1.2 kW, Models ≤30A, ≤100V. Not compatible with M9C, M85, M130, M131, M133, M135, M136
M130	LXI compliant 10/100 Base T Ethernet remote control master interface; includes web server for direct control of power supply via web browser (MS Internet Explorer 6.0 or later)
M131	16-bit slave interface option for use with a M130 master (3 ft. control cable included)
M133	Output disconnect and polarity reversal controlled via SCPI commands. Limited to 1k or 1.2 kW, ≤ 300V, ≤ 60A
M135	M130 & M133 combination
M136	M131 & M133 combination
105-330-26	Rack slide kit (3kW)

DCS Series

1000-3000 WATTS PROGRAMMABLE DC SUPPLY

MODEL	CONSTANT CURRENT MODE*		TEMP. COEFF. VOLTAGE %/°C (TYP)	VOLTAGE DRIFT % % I _O MAX (TYP)	PROGRAMMING CONSTANTS CURRENT MODE		INPUT CURRENT, A NORMAL		EFFICIENCY % (TYP)	CASE
	COMBINED REGULATION LINE AND LOAD %	RIPPLE (RMS)			OHMS/A	V/A	230V SINGLE PHASE	208V THREE PHASE		
DCS 8-140E	0.2	180	0.03	0.05	35.7		9	N/A	82	I
DCS 10-120E	0.2	153	0.03	0.05	41.7		9	N/A	82	I
DCS 20-60E	0.2	30	0.03	0.05	83.3		9	N/A	82	I
DCS 33-36E	0.2	11	0.03	0.05	138.9	0-10V= 0-100%	9	N/A	84	I
DCS 40-30E	0.2	9	0.03	0.05	166.7	I _O	9	N/A	84	I
DCS 50-24E	0.2	8.5	0.03	0.05	208.3	or	9	N/A	84	I
DCS 60-20E	0.2	6.6	0.03	0.05	250	0-5V= 0-100%	9	N/A	85	I
DCS 80-15E	0.2	6	0.03	0.05	333.3	I _O	9	N/A	85	I
DCS 100-12E	0.2	3.6	0.03	0.05	416.7		9	N/A	85	I
DCS 150-8E	0.2	2.3	0.03	0.05	625		9	N/A	85	I
DCS 300-4E	0.2	1.2	0.03	0.05	1250		9	N/A	85	I

* Typical resolution is 0.02% **RMS ripple from 20Hz to 300kHz ***Consult factory

Dimension: 1RU or 44mm (H) x 482mm (W) x 444mm (D) ; Weight: 8.6kg86

DSC 3kW Series

MODEL	OUTPUT POWER		COMBINED REGULATION LINE AND LOAD %	CONSTANT VOLTAGE MODE*			TEMP. COEFF. VOLTAGE %/°C (TYP)	VOLTAGE DRIFT % VMAX (TYP)	PROGRAMMING CONSTANTS VOLTAGE MODES	
	VOLTAGE VDC	CURRENT ADC @ 50°C		RIPPLE (RMS)** (TYP.)	NOISE (P-P) (TYP)	TRANSIENT RESPONSE TIME (TYP)			OHMS/V	V/V
DCS 8-350E	0-8	0-350	0.2	15mV	100mV	1000μs	0.02	0.05	625	
DCS 12-250E	0-12	0-250	0.2	10mV	100mV	1000μs	0.02	0.05	416.7	
DCS 20-150E	0-20	0-150	0.2	10mV	100mV	1000μs	0.02	0.05	250	
DCS 40-75E	0-40	0-75	0.2	20mV	100mV	1000μs	0.02	0.05	125	0-10V = 0-100% V _O
DCS 55-55E	0-55	0-55	0.2	20mV	100mV	1000μs	0.02	0.05	90.9	or
DCS 60-50E	0-60	0-50	0.2	20mV	100mV	1000μs	0.02	0.05	83	0-5V = 0-100% V _O
DCS 80-37E	0-80	0-37	0.2	20mV	100mV	1000μs	0.02	0.05	62.5	
DCS 150-20E	0-150	0-20	0.2	30mV	200mV	1000μs	0.02	0.05	33.3	

MODEL	CONSTANT CURRENT MODE*		TEMP. COEFF. VOLTAGE %/°C (TYP)	VOLTAGE DRIFT % % I _O MAX (TYP)	PROGRAMMING CONSTANTS CURRENT MODE		INPUT CURRENT, A NORMAL		EFFICIENCY % (TYP)	CASE
	COMBINED REGULATION LINE AND LOAD %	RIPPLE (RMS)			OHMS/A	V/A	230V SINGLE PHASE	208V THREE PHASE		
DCS 8-350E	0.2	870	0.03	0.05	14.7		24	13	82	II
DCS 12-250E	0.2	400	0.03	0.05	20		26	14	82	II
DCS 20-150E	0.2	100	0.03	0.05	33.3		26	14	82	II
DCS 40-75E	0.2	75	0.03	0.05	66.7	0-10V= 0-100% I _O	26	14	86	II
DCS 55-55E	0.2	40	0.03	0.05	90.9	or	26	14	82	II
DCS 60-50E	0.2	33	0.03	0.05	100	0-5V= 0-100% I _O	26	14	86	II
DCS 80-37E	0.2	20	0.03	0.05	135		26	14	86	II
DCS 150-20E	0.2	10	0.03	0.05	250		26	14	86	II

* Typical resolution is 0.02% **RMS ripple from 20Hz to 300kHz ***Consult factory

Dimension: 2RU or 88mm (H) x 482mm (W) x 444mm (D) ; Weight: 15kg

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DSC 1kW Series

MODEL	OUTPUT POWER		COMBINED REGULATION LINE AND LOAD %	CONSTANT VOLTAGE MODE*			TEMP. COEFF. VOLTAGE %/°C (TYP)	VOLTAGE DRIFT % VMAX (TYP)	PROGRAMMING CONSTANTS VOLTAGE MODES	
	VOLTAGE VDC	CURRENT ADC @ 50°C		RIPPLE (RMS)** (TYP.)	NOISE (P-P) (TYP)	TRANSIENT RESPONSE TIME (TYP)			OHMS/V	V/V
DCS 8-125E	0-8	0-125	0.2	4mV	60mV	500µs	0.02	0.05	625	0-10V = 0-100% V _O or 0-5V = 0-100% V _O
DCS 10-100E	0-10	0-100	0.2	4mV	60mV	500µs	0.02	0.05	500	
DCS 20-50E	0-20	0-50	0.2	4mV	60mV	500µs	0.02	0.05	250	
DCS 33-33E	0-33	0-33	0.2	4mV	60mV	500µs	0.02	0.05	151.5	
DCS 40-25E	0-40	0-25	0.2	4mV	60mV	500µs	0.02	0.05	125	
DCS 50-20E	0-50	0-20	0.2	4mV	60mV	500µs	0.02	0.05	100	
DCS 60-18E	0-60	0-18	0.2	4mV	60mV	500µs	0.02	0.05	83	
DCS 80-13E	0-80	0-13	0.2	4mV	60mV	500µs	0.02	0.05	62.5	
DCS 100-10E	0-100	0-10	0.2	6mV	60mV	500µs	0.02	0.05	50	
DCS 150-7E	0-150	0-7	0.2	12mV	160mV	500µs	0.02	0.05	33.3	
DCS 300-3.5E	0-300	0-3.5	0.2	20mV	200mV	500µs	0.02	0.05	16.67	
DCS 600-1.7E	0-600	0-1.7	0.2	50mV	300mV	500µs	0.02	0.05	8.33	

MODEL	CONSTANT CURRENT MODE*		TEMP. COEFF. VOLTAGE %/°C (TYP)	VOLTAGE DRIFT % I _O MAX (TYP)	PROGRAMMING CONSTANTS CURRENT MODE		INPUT CURRENT, A NORMAL		EFFICIENCY % (TYP)	CASE
	COMBINED REGULATION LINE AND LOAD %	RIPPLE (RMS)			OHMS/A	V/A	230V SINGLE PHASE	208V THREE PHASE		
DCS 8-125E	0.2	160	0.03	0.05	40		8	N/A	82	I
DCS 10-100E	0.2	128	0.03	0.05	50		8	N/A	82	I
DCS 20-50E	0.2	25	0.03	0.05	100		8	N/A	82	I
DCS 33-33E	0.2	10	0.03	0.05	151.5		8	N/A	84	I
DCS 40-25E	0.2	7	0.03	0.05	200		8	N/A	84	I
DCS 50-20E	0.2	7	0.03	0.05	250	0-10V = 0-100% I _O or 0-5V = 0-100% I _O	8	N/A	84	I
DCS 60-18E	0.2	6	0.03	0.05	277.8		8	N/A	86	I
DCS 80-13E	0.2	4	0.03	0.05	384.6		8	N/A	86	I
DCS 100-10E	0.2	3	0.03	0.05	500		8	N/A	86	I
DCS 150-7E	0.2	2	0.03	0.05	714.3		8	N/A	86	I
DCS 300-3.5E	0.2	1	0.03	0.05	1428.6		8	N/A	86	I
DCS 600-1.7E	0.2	1	0.03	0.05	2941.2		9.5	N/A	86	***

* Typical resolution is 0.02% **RMS ripple from 20Hz to 300kHz ***Consult factory

Dimension: 1RU or 44mm (H) x 482mm (W) x 444mm (D) ; Weight: 8.6kg

DSC 1.2kW Series

MODEL	OUTPUT POWER		COMBINED REGULATION LINE AND LOAD %	CONSTANT VOLTAGE MODE*			TEMP. COEFF. VOLTAGE %/°C (TYP)	VOLTAGE DRIFT % VMAX (TYP)	PROGRAMMING CONSTANTS VOLTAGE MODES	
	VOLTAGE VDC	CURRENT ADC @ 50°C		RIPPLE (RMS)** (TYP.)	NOISE (P-P) (TYP)	TRANSIENT RESPONSE TIME (TYP)			OHMS/V	V/V
DCS 8-140E	0-8	0-140	0.2	5mV	60mV	500µs	0.02	0.05	625	0-10V = 0-100% V _O or 0-5V = 0-100% V _O
DCS 10-120E	0-10	0-120	0.2	5mV	60mV	500µs	0.02	0.05	500	
DCS 20-60E	0-20	0-60	0.2	5mV	60mV	500µs	0.02	0.05	250	
DCS 33-36E	0-33	0-36	0.2	5mV	60mV	500µs	0.02	0.05	151.5	
DCS 40-30E	0-40	0-30	0.2	5mV	60mV	500µs	0.02	0.05	125	
DCS 50-24E	0-50	0-24	0.2	5mV	60mV	500µs	0.02	0.05	100	
DCS 60-20E	0-60	0-20	0.2	5mV	60mV	500µs	0.02	0.05	83	
DCS 80-15E	0-80	0-15	0.2	5mV	60mV	500µs	0.02	0.05	62.5	
DCS 100-12E	0-100	0-12	0.2	10mV	60mV	500µs	0.02	0.05	50	
DCS 150-8E	0-150	0-8	0.2	15mV	160mV	500µs	0.02	0.05	33.3	
DCS 300-4E	0-300	0-4	0.2	25mV	200mV	500µs	0.02	0.05	16.67	

DCS Series

1000-3000 WATTS PROGRAMMABLE DC SUPPLY

Options & Accessories

INPUT VOLTAGE OPTIONS

M1	Factory configured for 115 VAC input (1 and 1.2 kW only)
REMOTE INTERFACE OPTIONS	
M9C	Internal IEEE-488/RS 232 interface (Supports only 12-bit slaves)
M13	Locking shafts (front panel potentiometers)
M32	Master/slave cable configured for two or more units
M33	Replace input connector with terminal block(3 kW only)
M51A	Isolated analog programming control
M102	Front Panel Binding Posts (1 kW and 1.2 kW only?30A)
M85	12-bit slave interface
M130	Ethernet/RS232 Interface (Supports both 12- & 16-bit slaves)
M131	16-bit slave interface
M133	Output disconnect and polarity reversal relays*
M135	Output disconnect and polarity reversal relays**
M136	Output disconnect and polarity reversal relays***
105-330-26	Rack slide kit (3 kW only)

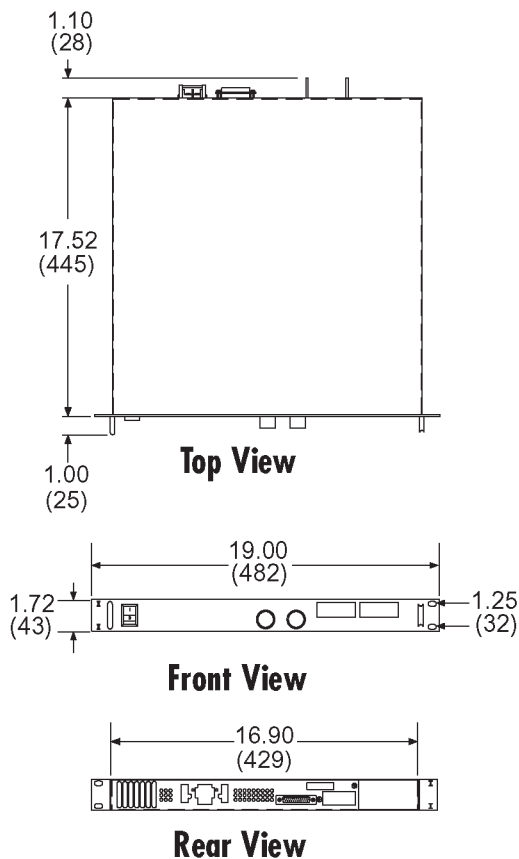
* Requires M9C ** Includes option M130 ***Includes option M131

J3 PROGRAM AND SENSE

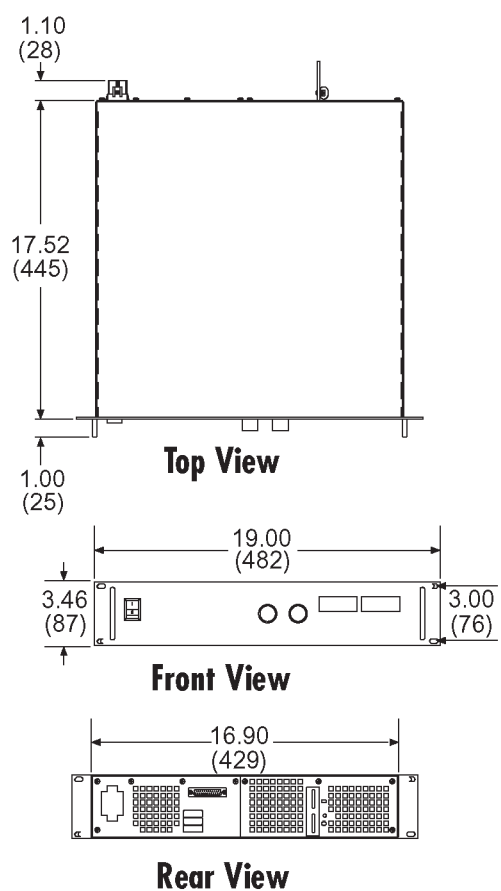
1	90-250 VAC Remote Shutdown	14	TTL Shutdown
2	Shutdown Return	15	+12 VDC
3	OVP Program	16	1 mA Current Source (OVP)
4	Remote/Local Status Indicator	17	OVP Indicator
5	Mode Status Indicator	18	Thermal S/DN Status
6	Ground	19	0-5V Voltage Monitor
7	0-5V Current Monitor	20	Remote Voltage Select
8	Voltage Control	21	1 mA Current Source (V)
9	Voltage Program Input	22	1 mA Current Source (I)
10	Current Program Unit	23	Remote Current Select
11	Current Control	24	Return
12	Return Sense	25	POS Output (8-100V Models Only)
13	POS Sense (8-100V Models Only)		

Technical Illustrations

1KW AND 1.2KW



3KW



Dimensions in inches (millimeters)