



UMR-A-25000 to UMR-A-40000

0 to 40kV, 4 to 30W
Standard DC/DC Modules



Features

- Biasing High Voltage Power Supplies
- Regulated Output Voltage from V_{OUT} Max to True 0
- Low Ripple
- Output Short Circuit Protection
- Output Current and Voltage Monitors
- Fixed-Frequency, Low-Stored-Energy Design
- UL/cUL Recognized Components; CE Mark (LVD and RoHS)

Specifications

		Conditions			Value	Units
Input		4W	15W	30W		
Voltage	Nominal	+12	+24	+24		VDC
Voltage Range	Full Power	+11 to 16	+23 to 30	+23 to 30		VDC
Voltage Range	Derated Power Range	+10 to 32	+10 to 32	+10 to 32		VDC
Current	Standby/Disable	<80	<80	<80		mA
Current	No Load, Max V_{OUT}	<250	<350	<350		mA
Current	Max Load, Max V_{OUT}	<700	<1200	<1700		mA
AC Ripple Current	Nominal Input, Full Load	<100	<100	<100		mAp-p
Output						
Static Load Regulation	No Load to Full Load, Max V_{OUT}	<0.01	<0.01	<0.01		%VDC
Line Regulation	Nominal Input, Max V_{OUT} , Full Power	<0.08	<0.08	<0.08		%VDC
Stability	30-minute warmup, per 8h/per day	<0.01 / <0.02	<0.01 / <0.02	<0.01 / <0.02		%VDC
Programming & Controls						
Input Impedance	Nominal Input, Positive Models	1.0 to Signal Ground			MΩ	
	Nominal Input, Negative Models	1.1 to V_{REF}				
Adjust Reference	Typical Potentiometer Values	10K to 100K (Pot Across V_{REF} and Signal Ground, Wiper to Adjust)			Ω	
Adjust Logic	Positive Models	0 to +4.64 = 0 to 100% Rated Output			VDC	
	Negative Models	+5 to +0.36 = 0 to 100% Rated Output				
Reference Logic	Temperature +25°C	+5 ± 0.5%			VDC	
Enable/Disable HV_{OUT}	-	Unconnected = Enabled Ground to +0.5 = Disabled, +2.4 to 32 Enabled			VDC	
Environmental						
Operating	Full Load, Max E_{OUT} , Case Temperature	-40 to +65			°C	
Coefficient	Over the Specified Temperature	±50			PPM/°C	
Thermal Shock	Mil-Std-810, Method 503-4, Proc. II	-40 to +65			°C	
Storage	Non-Operating, Case Temperature	-55 to +105			°C	
Humidity	All Conditions, Standard Package	0 to 95% Non-Condensing			-	
Altitude	All Conditions, Standard Package	Sea Level through Vacuum			-	
Shock	Mil-Std-810, Method 516.5, Proc IV	20			G	
Vibration	Mil-Std-810, Method 514.5, Fig 514.5C-3	10			G	



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Part Number ¹	Output Voltage VDC	Output Power W	Output Current mA	High Freq. Ripple ² %Vp-p	Output Capacitance pF	I _{MON} Scaling ³ mA/V	V _{MON} Scaling ⁴ V
25kV Models							
UMR-A-25000•-4	0 to 25000	4	0.16	<0.020	1429	0.145	1000:1 ±2%
UMR-A-25000•-15	0 to 25000	15	0.6	<0.080	1429	0.175	1000:1 ±2%
UMR-A-25000•-30	0 to 25000	30	1.2	<0.052	1429	0.183	1000:1 ±2%
30kV Models							
UMR-A-30000•-4	0 to 30000	4	0.13	<0.025	1250	0.140	1000:1 ±2%
UMR-A-30000•-15	0 to 30000	15	0.5	<0.039	1250	0.173	1000:1 ±2%
UMR-A-30000•-30	0 to 30000	30	1.0	<0.058	1250	0.181	1000:1 ±2%
35kV Models							
UMR-A-35000•-4	0 to 35000	4	0.11	<0.025	1112	0.158	1000:1 ±2%
UMR-A-35000•-15	0 to 35000	15	0.43	<0.040	1112	0.179	1000:1 ±2%
UMR-A-35000•-30	0 to 35000	30	0.86	<0.075	1112	0.184	1000:1 ±2%
40kV Models							
UMR-A-40000•-4	0 to 40000	4	0.1	<0.030	1000	0.077	1000:1 ±2%
UMR-A-40000•-15	0 to 40000	15	0.375	<0.089	1000	0.089	1000:1 ±2%
UMR-A-40000•-30	0 to 40000	30	0.75	<0.064	1000	0.092	1000:1 ±2%

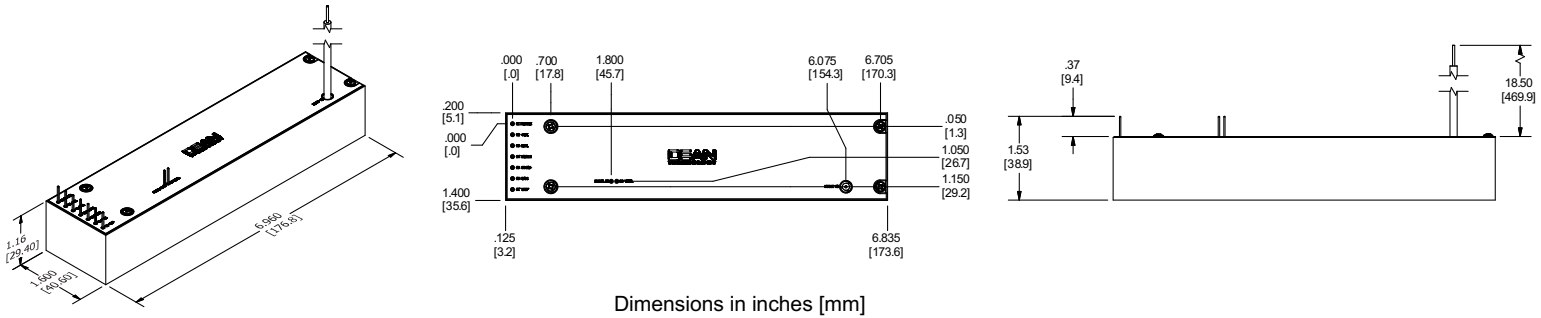
¹For “•”, substitute “P” for positive output or “N” for negative output

²1Hz to 1MHz, Full Load

³Full Scale Signal

⁴Into 10MΩ Meter

Drawings, Mechanical and Pin Definitions



Mechanical Specifications	
Volume	12.92in ³ [212.38cm ³]
Weight	14.2oz [403g]
Case	DAP case certified to ASTM-D-5948
Pins	<i>Size</i> 0.025" [0.635mm] square
	<i>Spacing</i> Pins 1-7 0.200in Pins 8-9 0.100in

Tolerances	
Overall	0.050in [±1.27mm]
Pin to Pin	0.015in [±0.38mm]
Mounting	0.025in [±0.64mm]

Pin Assignments & Connections		
Pin 1	-VIN	Input Power Ground Return
Pin 2	+VIN	Positive Power Input
Pin 3	IMON	Output Current Monitor
Pin 4	ENABLE	Enable/Disable
Pin 5	SIGGND	Signal Ground Return
Pin 6	VADJ	Voltage Adjust
Pin 7	VREF	Voltage Reference
Pin 8	HVRTN	High Voltage Ground Return
Pin 9	VMON	Output Voltage Monitor
Flying Lead	HVOUT	High Voltage Output

Options

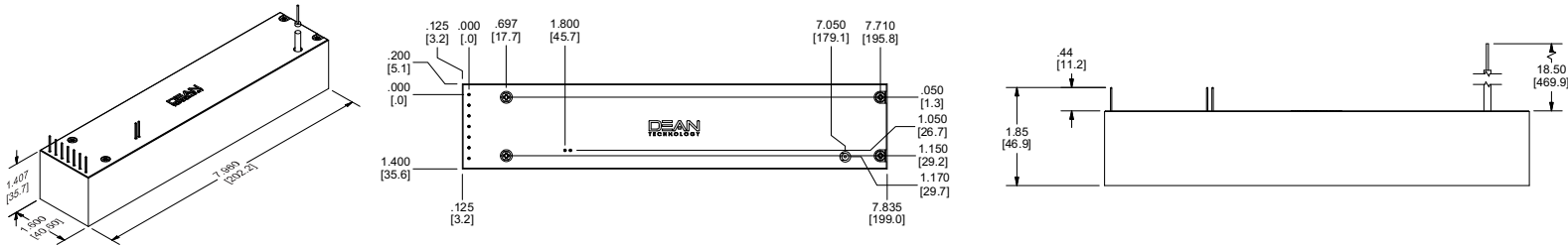
Append to Part #	Option Description	Not Compatible With
-V05	Enhanced Controls and Monitors, 0 to +5VDC	V10
-V10	Enhanced Controls and Monitors, 0 to +10VDC	V05, 4W models
-H	Aluminum Heat Sink	E, C
-F	Integral Output Filter	-
-T	±25PPM/°C Temperature Coefficient ⁵	-
-M	Mu-Metal Shielding Over Case	-
-E	Eared Mounting Plate	H
-L	Long Length Package Size	-

⁵Operating Temperature is +10 to +45°C.



UMR-A-25000 to UMR-A-40000

L Option



Dimensions in inches [mm]

Mechanical Specifications		
Volume	17.92in ³ [293.66cm ³]	
Weight	19.6oz [555g]	
Case	DAP case certified to ASTM-D-5948	
Pins	<i>Size</i>	0.025" [0.635mm] square
	<i>Spacing</i>	Pins 1-7 0.200in Pins 8-9 0.100in

Tolerances	
Overall	0.050in [±1.27mm]
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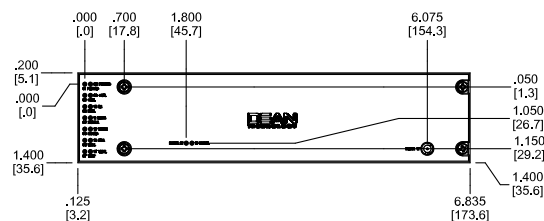
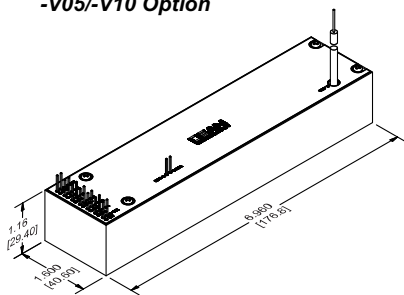
V05 and V10 Options

		Conditions	Value	Units
Output				
Current Scaling (I_{MON})	V05 Option, Buffered Signal		0 to +5 = 0 to 100% Rated Output	VDC
	V10 Option, Buffered Signal		0 to +10 = 0 to 100% Rated Output	
Voltage Scaling (V_{MON})	V05 Option, Buffered Signal		0 to +5 = 0 to 100% Rated Output	VDC
	V10 Option, Buffered Signal		0 to +10 = 0 to 100% Rated Output	
Programming & Controls				
Adjust Logic (I_{ADJ} & V_{ADJ})	V05 Option		0 to +5 = 0 to 100% Rated Output	VDC
	V10 Option		0 to +10 = 0 to 100% Rated Output	
Reference Voltage (V_{REF})	V05 Option		+5 ± 0.5%, 10mA Source	VDC
	V10 Option		+10 ± 0.5%, 30mA Source	
Enable/Disable HV_{OUT}	-		Unconnected = Disabled; Ground to +0.5 = Disabled; +2.4 to 32 = Enabled	VDC
Mode Indicator	IMODE		Open Drain, Pulled Low When Active, 0 to 60V and 100mA Max	-
	VMODE		Open Drain, Pulled Low When Active, 0 to 60V and 100mA Max	

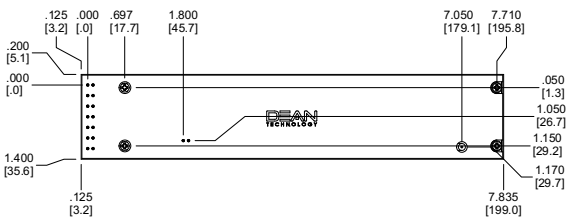
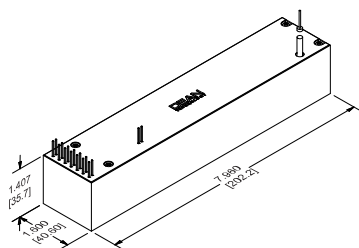


UMR-A-25000 to UMR-A-40000

-V05/-V10 Option



-V05/-V10 with -L Option



Dimensions in inches [mm]

Mechanical Specifications	
Volume	12.92in ³ [212.38cm ³]
	17.92in ³ [293.66cm ³] <i>-L Option</i>
Weight	14.2oz [403g]
	19.6oz [555g] <i>-L Option</i>
Case	DAP case certified to ASTM-D-5948
Pins	Size 0.025" [0.635mm] square
	Spacing Pins 1-7, 8-14 0.200in Pins 15-16 0.100in

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Pin to Pin	0.015in [±0.38mm]
Mounting	0.025in [±0.64mm]

Pin Assignments & Connections		
Pin 1, 8	PWRGND	Input Power Ground Return
Pin 2, 9	+VIN	Positive Power Input
Pin 3	IMON	Output Current Monitor
Pin 4	ENABLE	Enable/Disable
Pin 5	SIGGND	Signal Ground Return
Pin 6	VADJ	Voltage Adjust
Pin 7	VREF	Voltage Reference
Pin 10	N/C	N/C
Pin 11	IMODE	Current Mode Indicator
Pin 12	VMODE	Voltage Mode Indicator
Pin 13	IADJ	Current Adjust
Pin 14	VMON	Output Voltage Monitor
Pin 15, 16	HVRTN	High Voltage Ground Return
Flying Lead	HVOUT	High Voltage Output

Certifications and Compliances

