



# 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 Pending Components; CE Mark (LVD and RoHS)

## Specifications

		Conditions			Value	Units
Input		4W	15W	30W		
<b>Voltage</b>	Nominal	+12	+24	+24		VDC
<b>Voltage Range</b>	Full Power	+11 to 16	+23 to 30	+23 to 30		VDC
<b>Voltage Range</b>	Derated Power Range	+10 to 32	+10 to 32	+10 to 32		VDC
<b>Current</b>	Standby/Disable	<80	<80	<80		mA
<b>Current</b>	No Load, Max $V_{OUT}$	<250	<350	<350		mA
<b>Current</b>	Max Load, Max $V_{OUT}$	<600	<1100	<1600		mA
<b>AC Ripple Current</b>	Nominal Input, Full Load	<100	<100	<100		mAp-p
<b>Output</b>						
<b>Static Load Regulation</b>	No Load to Full Load, Max $V_{OUT}$	<0.01	<0.01	<0.01		%VDC
<b>Line Regulation</b>	Nominal Input, Max $V_{OUT}$ , Full Power	<0.08	<0.08	<0.08		%VDC
<b>Stability</b>	30-minute warmup, per 8h/per day	<0.01 / <0.02	<0.01 / <0.02	<0.01 / <0.02		%VDC
<b>Programming &amp; Controls</b>						
<b>Input Impedance</b>	Nominal Input, Positive Models	1.0 to Signal Ground			MΩ	
	Nominal Input, Negative Models	1.1 to $V_{REF}$				
<b>Adjust Reference</b>	Typical Potentiometer Values	10K to 100K (Pot Across $V_{REF}$ and Signal Ground, Wiper to Adjust)			Ω	
<b>Adjust Logic</b>	Positive Models	0 to +4.64 = 0 to 100% Rated Output			VDC	
	Negative Models	+5 to +0.36 = 0 to 100% Rated Output				
<b>Reference Logic</b>	Temperature +25°C	+5 ± 0.5%			VDC	
<b>Enable/Disable <math>HV_{OUT}</math></b>	-	Unconnected = Enabled Ground to +0.5 = Disabled, +2.4 to 32 Enabled			VDC	
<b>Environmental</b>						
<b>Operating</b>	Full Load, Max $E_{OUT}$ , Case Temperature	-40 to +65			°C	
<b>Coefficient</b>	Over the Specified Temperature	±50			PPM/°C	
<b>Thermal Shock</b>	Mil-Std-810, Method 503-4, Proc. II	-40 to +65			°C	
<b>Storage</b>	Non-Operating, Case Temperature	-55 to +105			°C	
<b>Humidity</b>	All Conditions, Standard Package	0 to 95% Non-Condensing			-	
<b>Altitude</b>	All Conditions, Standard Package	Sea Level through Vacuum			-	
<b>Shock</b>	Mil-Std-810, Method 516.5, Proc IV	20			G	
<b>Vibration</b>	Mil-Std-810, Method 514.5, Fig 514.5C-3	10			G	



# UMR-A-25000 to UMR-A-40000

Part Number <sup>1</sup>	Output Voltage VDC	Output Power W	Output Current mA	High Freq. Ripple <sup>2</sup> %Vp-p	Output Capacitance pF	I <sub>MON</sub> Scaling <sup>3</sup> mA/V	V <sub>MON</sub> Scaling <sup>4</sup> V
<b>25kV Models</b>							
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%
<b>30kV Models</b>							
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%
<b>35kV Models</b>							
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%
<b>40kV Models</b>							
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%

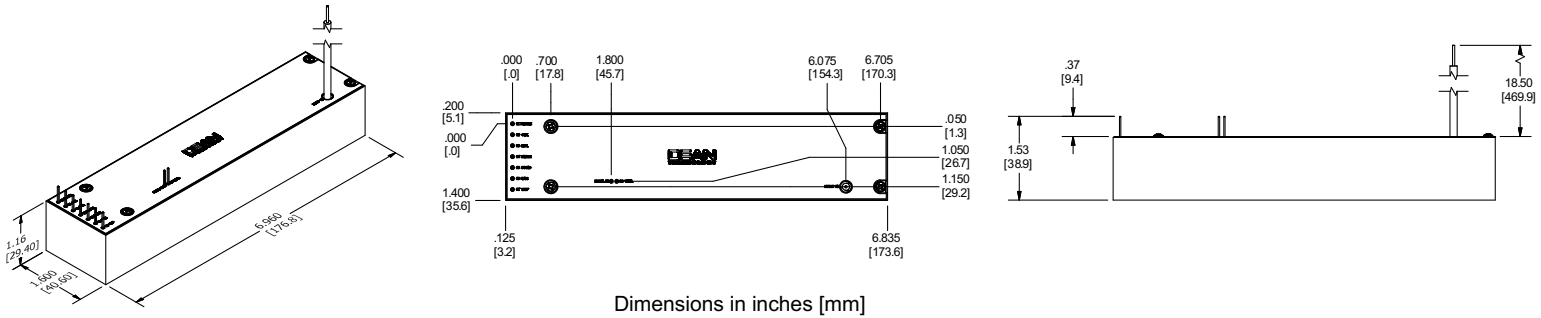
<sup>1</sup>For “•”, substitute “P” for positive output or “N” for negative output

<sup>2</sup>1Hz to 1MHz, Full Load

<sup>3</sup>Full Scale Signal

<sup>4</sup>Into 10MΩ Meter

## Drawings, Mechanical and Pin Definitions



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

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

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

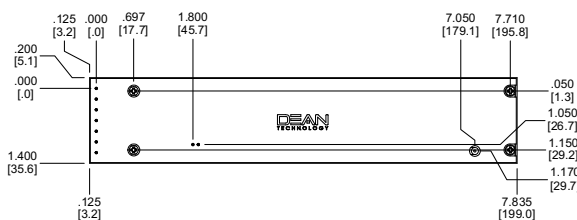
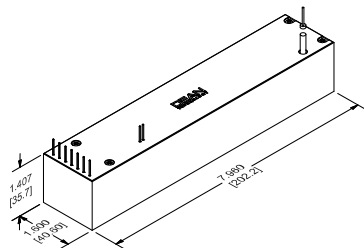
## Options

Append to Part #	Option Description	Not Compatible With
<b>-V05</b>	Enhanced Controls and Monitors, 0 to +5VDC	-
<b>-V10</b>	Enhanced Controls and Monitors, 0 to +10VDC	4W models
<b>-L</b>	Long Length Package Size	-



# UMR-A-25000 to UMR-A-40000

## L Option



Dimensions in inches [mm]

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

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

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

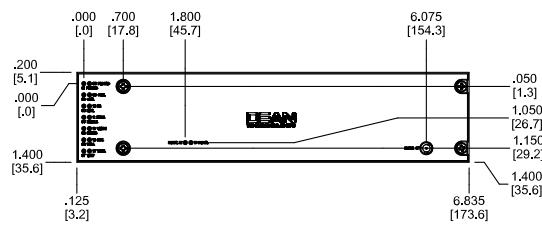
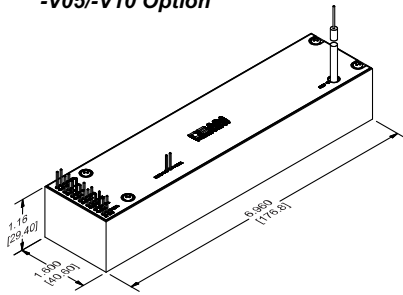
## V05 and V10 Options

		Conditions	Value	Units
<b>Output</b>				
<b>Current Scaling (I<sub>MON</sub>)</b>	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	
<b>Voltage Scaling (V<sub>MON</sub>)</b>	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	
<b>Programming &amp; Controls</b>				
<b>Adjust Logic (I<sub>ADJ</sub> &amp; V<sub>ADJ</sub>)</b>	V05 Option		0 to +5 = 0 to 100% Rated Output	VDC
	V10 Option		0 to +10 = 0 to 100% Rated Output	
<b>Reference Voltage (V<sub>REF</sub>)</b>	V05 Option		+5 ± 0.5%, 10mA Source	VDC
	V10 Option		+10 ± 0.5%, 30mA Source	
<b>Enable/Disable HV<sub>OUT</sub></b>	-		Unconnected = Disabled; Ground to +0.5 = Disabled; +2.4 to 32 = Enabled	VDC
<b>Mode Indicator</b>	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	

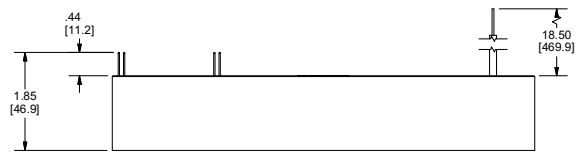
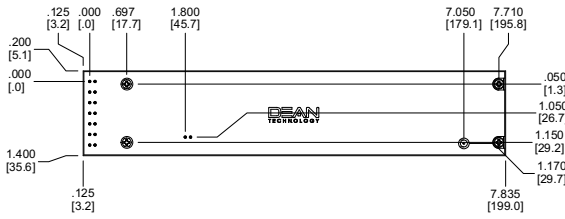
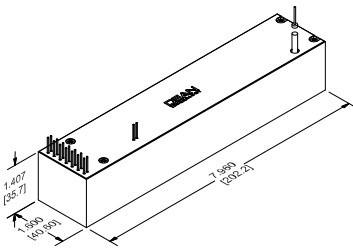


# UMR-A-25000 to UMR-A-40000

## -V05/-V10 Option



## -V05/-V10 with -L Option



Dimensions in inches [mm]

Mechanical Specifications	
Volume	12.92in <sup>3</sup> [212.38cm <sup>3</sup> ]
	17.92in <sup>3</sup> [293.66cm <sup>3</sup> ] <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

Tolerances	
Overall	0.050in [±1.27mm]
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

