



UMR-A-15000 & UMR-A-20000

0 to 20kV, 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	
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	<200	<200	mA
Current	Max Load, Max V_{OUT}	<600	<1100	<1600	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

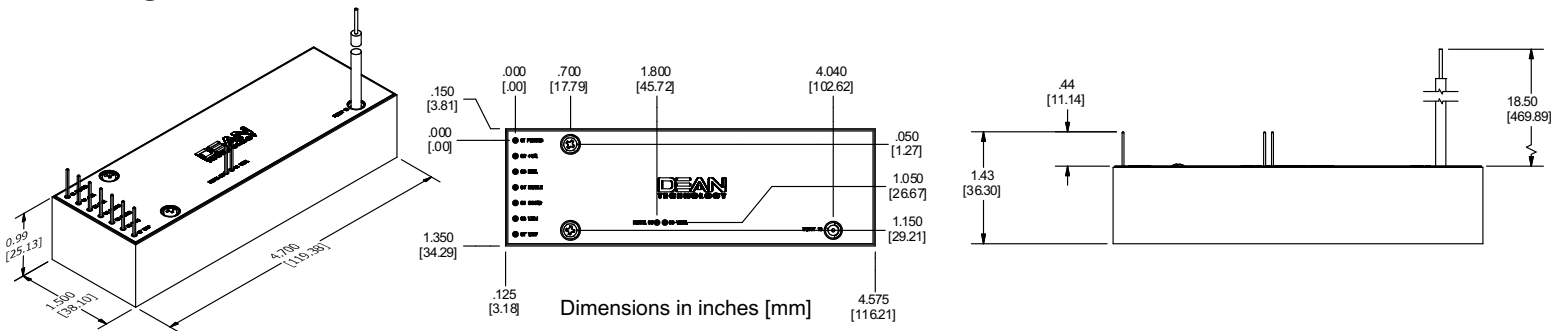


UMR-A-15000 & UMR-A-20000

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
15kV Models							
UMR-A-15000•-4	0 to 15000	4	0.27	<0.024	2500	0.158	1000:1 ±2%
UMR-A-15000•-15	0 to 15000	15	1.0	<0.043	2500	0.181	1000:1 ±2%
UMR-A-15000•-30	0 to 15000	30	2.0	<0.080	2500	0.378	1000:1 ±2%
20kV Models							
UMR-A-20000•-4	0 to 20000	4	0.2	<0.060	2000	0.116	1000:1 ±2%
UMR-A-20000•-15	0 to 20000	15	0.75	<0.070	2000	0.162	1000:1 ±2%
UMR-A-20000•-30	0 to 20000	30	1.5	<0.080	2000	0.172	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	6.98in ³ [114.38cm ³]
Weight	7.8oz [222g]
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

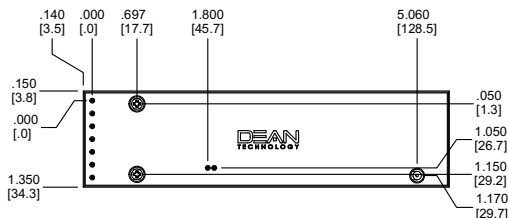
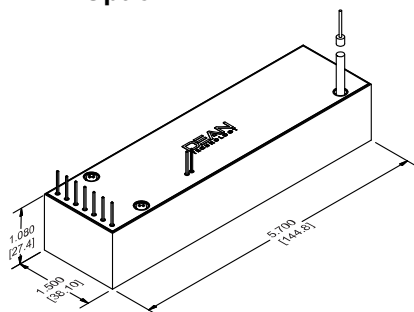
Options

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

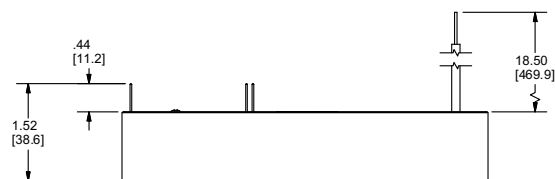


UMR-A-15000 & UMR-A-20000

L Option



Dimensions in inches [mm]



Mechanical Specifications	
Volume	9.23in ³ [151.25cm ³]
Weight	10.3oz [293g]
Case	DAP case certified to ASTM-D-5948
Pins	Size 0.025" [0.635mm] square
	Spacing Pins 1-7 0.200in Pins 8-9 0.100in

Tolerances	
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Pin Assignments & Connections		
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Flying Lead	HVOUT	High Voltage Output

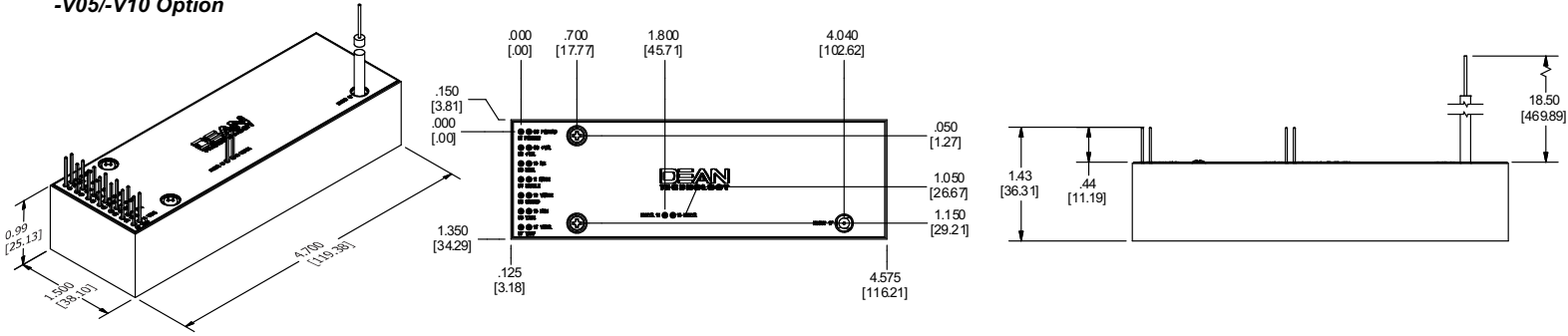
V05 and V10 Options

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	

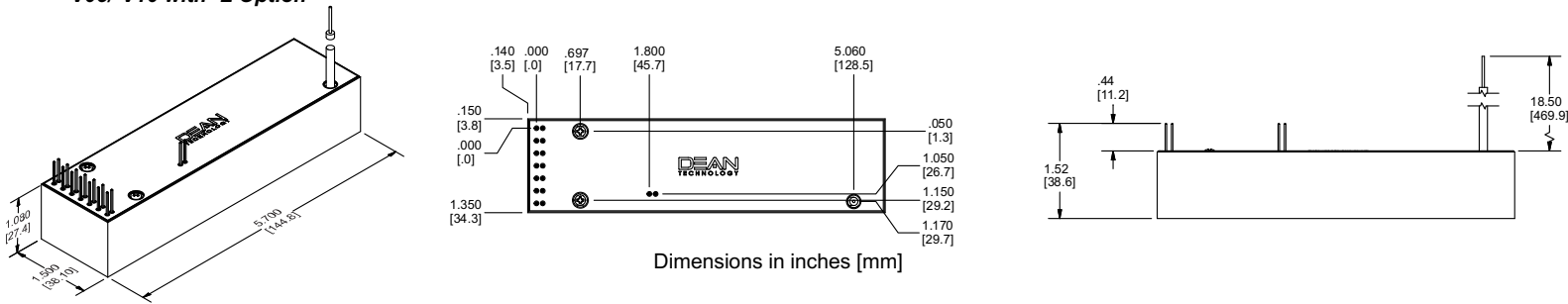


UMR-A-15000 & UMR-A-20000

-V05/-V10 Option



-V05/-V10 with -L Option



Mechanical Specifications	
Volume	6.98in ³ [114.38cm ³]
	9.23in ³ [151.25cm ³] <i>-L Option</i>
Weight	7.8oz [222g]
	10.3oz [293g] <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

