



P-DUKE
POWER

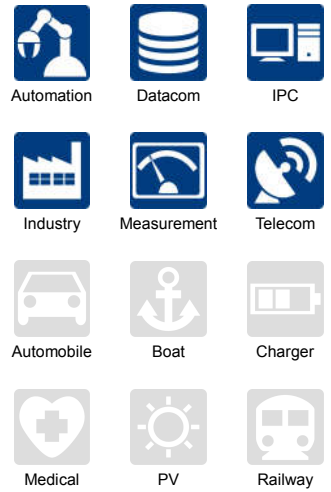
UFEC40W Series

Chassis-Mount DC-DC Converter
Up to 40 Watts

3
YEARS
WARRANTY

ROHS
COMPLIANT

REACH
COMPLIANT



- 1600 VDC Isolation Voltage
- 4 : 1 Wide Input Range
- FUSE Installed
- INRUSH CURRENT LIMIT
- Internal EN55032 Class B Filter
- REMOTE ON OFF
- REVERSE POLARITY PROTECTION
- OCP
- OTP
- OVP
- SCP
- UVP

PART NUMBER STRUCTURE

UFEC40 -	48	S	05	W -	N	R	EC
Series Name	Input Voltage (VDC)	Output Quantity	Output Voltage (VDC)	Input Range	Remote Control Option	Conformal Coating Option	Assembly Option
	24:9.5~36 48:18~75	S:Single	3P3:3.3 05:5 12:12 15:15 24:24 28:28	4:1	□:Positive logic N:Negative logic	□: None R: Conformal Coating	□: None EC: Enclosed Mounting Type DR: Din Rail Mounting Type ED: Enclosed & Din Rail Mounting Type
		D:Dual	12:±12 15:±15				

TECHNICAL SPECIFICATION All specifications are typical at nominal input, full load and 25°C unless otherwise noted

Model Number	Input Range	Output Voltage	Output Current @ Full Load		Input Current @ No Load	Efficiency	Maximum Capacitor Load
	VDC	VDC	Min. Load mA	Full Load A	mA	%	μF
UFEC40-24S3P3W	9.5 ~ 36	3.3	0	10	81	86	25750
UFEC40-24S05W	9.5 ~ 36	5	0	8	101	87	13600
UFEC40-24S12W	9.5 ~ 36	12	0	3.33	54	86	2360
UFEC40-24S15W	9.5 ~ 36	15	0	2.67	54	86	1510
UFEC40-24S24W	9.5 ~ 36	24	0	1.67	74	85	600
UFEC40-24S28W	9.5 ~ 36	28	0	1.33	80	85	375
UFEC40-24D12W	9.5 ~ 36	±12	±65	±1.67	63	85	±1200
UFEC40-24D15W	9.5 ~ 36	±15	±50	±1.33	74	85	±750
UFEC40-48S3P3W	18 ~ 75	3.3	0	10	61	86	25750
UFEC40-48S05W	18 ~ 75	5	0	8	66	88	13600
UFEC40-48S12W	18 ~ 75	12	0	3.33	32	86	2360
UFEC40-48S15W	18 ~ 75	15	0	2.67	32	87	1510
UFEC40-48S24W	18 ~ 75	24	0	1.67	39	86	600
UFEC40-48S28W	18 ~ 75	28	0	1.33	39	85	375
UFEC40-48D12W	18 ~ 75	±12	±65	±1.67	32	86	±1200
UFEC40-48D15W	18 ~ 75	±15	±60	±1.33	32	85	±750

INPUT SPECIFICATIONS						
Parameter	Conditions		Min.	Typ.	Max.	Unit
Operating input voltage range		24Vin(nom) 48Vin(nom)	9.5 18	24 48	36 75	VDC
Input fuse	slow blow	24Vin(nom) 48Vin(nom)		8 4		A
In-rush current				15		A
Start up voltage		24Vin(nom) 48Vin(nom)			9.5 18	VDC
Shutdown voltage		24Vin(nom) 48Vin(nom)	7 15	8 16	9 17.5	VDC
Start up time	Constant resistive load	Power up Remote ON/OFF		100 20		ms
Input surge voltage	100ms, max.	24Vin(nom) 48Vin(nom)			50 100	VDC
Remote ON/OFF	Referred to -Vin pin	Positive logic (Standard) DC-DC ON DC-DC OFF Negative logic (Option) DC-DC ON DC-DC OFF			Open or 3 ~ 12VDC Short or 0 ~ 1.2VDC Short or 0 ~ 1.2VDC Open or 3 ~ 12VDC	
	Remote off input current	Input current of Ctrl pin 24Vin(nom) 48Vin(nom)	-0.5	10 5	0.5	mA mA

OUTPUT SPECIFICATIONS						
Parameter	Conditions		Min.	Typ.	Max.	Unit
Voltage accuracy	3.3Vout		-1.5		+1.5	%
	Others		-1.0		+1.0	
Line regulation	Low Line to High Line at Full Load		-0.5		+0.5	%
Load regulation	Min. Load to Full Load		3.3Vout		+1.5	%
			Others		-1.0	
Cross regulation	Asymmetrical load 25%/100% FL		-5.0		+5.0	%
Voltage adjustability	Single output		28Vout		+17	%
			Others		-3	
Ripple and noise	Measured by 20MHz bandwidth	Single	3.3Vout, 5Vout, 12Vout, 15Vout		50	mVp-p
			24Vout, 28Vout		75	
		Dual	All	100	100	
Temperature coefficient			-0.02		+0.02	%/°C
Transient response recovery time	25% load step change			250		µs
Over voltage protection	Zener diode clamp		3.3Vout		3.9	VDC
			5Vout		6.2	
			12Vout		15	
			15Vout		20	
			24Vout		30	
			28Vout		36	
Output indicator			Green LED			
Over load protection	% of Iout rated		150			%
Short circuit protection			Continuous, automatic recovery			

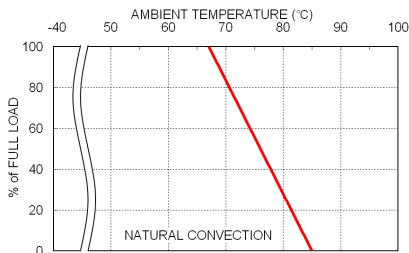
GENERAL SPECIFICATIONS						
Parameter	Conditions		Min.	Typ.	Max.	Unit
Isolation voltage	1 minute	Input to Output	1600			VDC
		Input (Output) to Chassis	1600			
Isolation resistance	500VDC		1			GΩ
Isolation capacitance					4500	pF
Switching frequency			270	300	330	kHz
Safety meets			IEC/ UL/ EN60950-1			
Chassis material			Aluminum			
Conformal coating			Impregnating varnish			
Weight			122g (4.29oz)			
MTBF	MIL-HDBK-217F, Full load		6.080 x 10 ⁵ hrs			

ENVIRONMENTAL SPECIFICATIONS						
Parameter	Conditions		Min.	Typ.	Max.	Unit
Operating ambient temperature	Without derating		-40		+55	°C
	With derating		+55		+92	
Over temperature protection	Case of DC/DC module			+110		°C
Storage temperature range			-40		+105	°C
Thermal shock			MIL-STD-810F			
Vibration	□□S□□W -□		MIL-STD-810F			
	□□S□□W -□EC		MIL-STD-810F			
	□□S□□W -□DR		IEC60068-2-6			
	□□S□□W -□ED		IEC60068-2-6			
Relative humidity			5% to 95% RH			

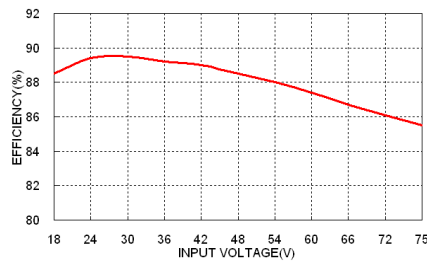
EMC SPECIFICATIONS

Parameter	Conditions	Level
EMI	EN55032	Class B
ESD	EN61000-4-2 Air ± 8kV and Contact ± 6kV	Perf. Criteria A
Radiated immunity	EN61000-4-3 10V/m	Perf. Criteria A
Fast transient	EN61000-4-4 ± 2kV	Perf. Criteria A
Surge	EN61000-4-5 ± 1kV	Perf. Criteria A
Conducted immunity	EN61000-4-6 10Vr.m.s	Perf. Criteria A
Power frequency magnetic field	EN61000-4-8 100A/m continuous; 1000A/m 1 second	Perf. Criteria A

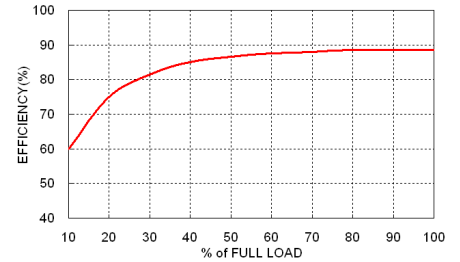
CHARACTERISTIC CURVE



UFEC40-48S05W Derating Curve



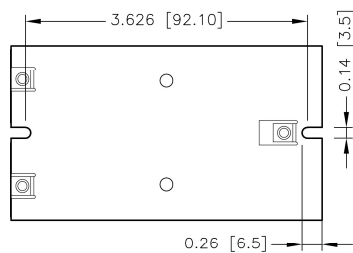
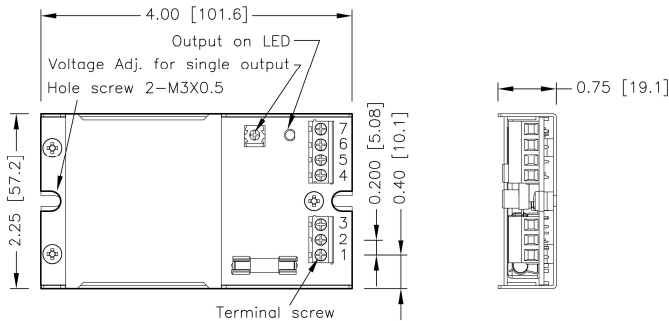
UFEC40-48S05W Efficiency vs. Input Voltage



UFEC40-48S05W Efficiency vs. Output Load

MECHANICAL DRAWING

CHASSIS MOUNTING TYPE



BOTTOM VIEW

TERMINAL CONNECTION

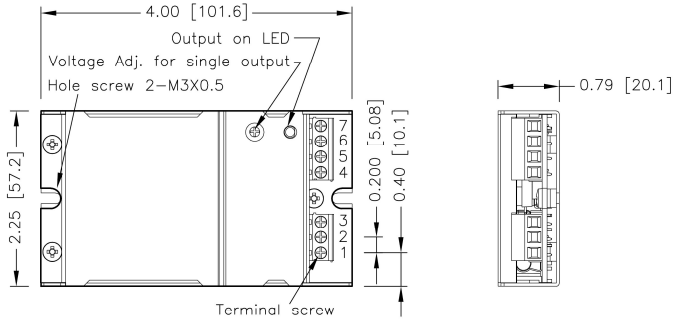
NO.	SINGLE	DUAL
1	+Vin	+Vin
2	-Vin	-Vin
3	Ctrl	Ctrl
4	NC	NC
5	-Vout	-Vout
6	+Vout	Common
7	NC	+Vout

※ NC : No Connection

※ Screw terminals – wire range from 14 to 18 AWG

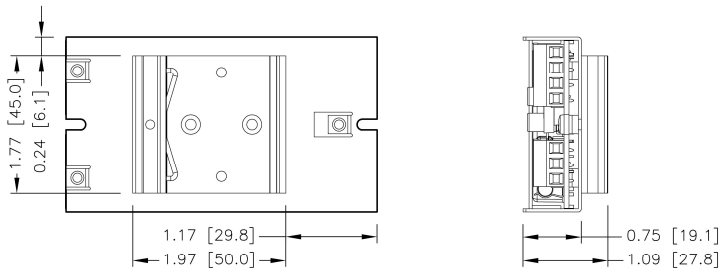
MECHANICAL DRAWING(CONTINUED)

ENCLOSED MOUNTING TYPE



TOP VIEW

DIN RAIL MOUNTING TYPE



BOTTOM VIEW

1. All dimensions in Inch [mm]
2. Tolerance : X.XX±0.02 [X.X±0.5]
X.XXX±0.01 [X.XX±0.25]
3. Hole screw locked torque :
MAX 5.0kgf-cm/0.49N-m
4. Terminal screw locked torque :
MAX 2.5kgf-cm/0.25N-m