

# UFEC40W SERIES

DC/DC Converter Single & Dual Output: 40 Watts



## Features

- 4:1 wide Input range:  $J\ddot{E} \sim H\hat{V}$  & 18~75V
- High quality Panel mount assembly
- Single & Dual outputs
- High efficiency up to 87%
- Regulated output & Short circuit protection
- 1600V isolation
- High operating temperature up to +85°C
- Zero load operation
- Designed to EN60950, UL1950
- EMC Compliant
- Input In-rush current limit  $B\acute{A}/\grave{a} \cdot \grave{a} \} \acute{O}\grave{U} [ \acute{c} \& \grave{a} \} \}$
- $X [ | \acute{a} \acute{e} \wedge \acute{A} \sim \acute{q} \sim \acute{O}\acute{a} \acute{E} \acute{a} * | \wedge \cdot$
- Option. DIN Rail mounting - "DR" to model
- Option. Fully enclosed case - "EC" to model

Model Number	Input Range VDC	Output Voltage VDC	Output Current @Full Load A	Input Current @ No Load mA	Efficiency %	Maximum Capacitor Load uFd (1)
UFEC40-24S3P3W	9.5 ~ 36	3.3	10	81	86	25750
UFEC40-24S05W	9.5 ~ 36	5	8	101	87	13600
UFEC40-24S12W	9.5 ~ 36	12	3.333	54	86	2360
UFEC40-24S15W	9.5 ~ 36	15	2.666	54	86	1510
UFEC40-24S24W	9.5 ~ 36	24	1.667	74	85	600
UFEC40-24S28W	9.5 ~ 36	28	1.333	80	85	375
UFEC40-24D12W	9.5 ~ 36	±12	±1.667	63	85	±1200
UFEC40-24D15W	9.5 ~ 36	±15	±1.333	74	85	±750
UFEC40-48S3P3W	18 ~ 75	3.3	10	61	86	25750
UFEC40-48S05W	18 ~ 75	5	8	66	88	13600
UFEC40-48S12W	18 ~ 75	12	3.333	32	86	2360
UFEC40-48S15W	18 ~ 75	15	2.666	32	87	1510
UFEC40-48S24W	18 ~ 75	24	1.667	39	85	600
UFEC40-48S28W	18 ~ 75	28	1.333	39	85	375
UFEC40-48D12W	18 ~ 75	±12	±1.667	32	85	±1200
UFEC40-48D15W	18 ~ 75	±15	±1.333	32	85	±750

## PART NUMBER STRUCTURE

UFEC40 -	48	S	05	W -	N	EC
Series Name	Input Voltage (VDC)	Output Quantity	Output Voltage (VDC)	Input Range	Remote Control Option	Assembly Option
	24: 9.5-36 48: 18-75	S: Single  D: Dual	3P3: 3.3 05: 5 12: 12 15: 15 24: 24 28: 28 12: ±12 15: ±15	4:1	□: Positive logic N: Negative logic	□: No Assembly Option EC: Enclosed Mounting Type DR: Din Rail Mounting Type ED: Enclosed & Din Rail Mounting Type

# UFEC40W SERIES

DC/DC Converter Single & Dual Output: 40 Watts



## 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
Input reflected ripple current	Nominal input and Full load			15		mAp-p
Start up voltage	24Vin(nom) 48Vin(nom)				9.5 18	VDC
Shutdown voltage	24Vin(nom) 48Vin(nom)			8 16		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 DC-DC ON (Standard) DC-DC OFF Negative logic DC-DC ON (Option) DC-DC OFF Input current of Ctrl pin 24Vin(nom) 48Vin(nom)			Open or 3 ~ 12VDC Short or 0 ~ 1.2VDC Short or 0 ~ 1.2VDC Open or 3 ~ 12VDC	mA mA
	Remote off input current			10 5		mA

Parameter	Conditions		Min.	Typ.	Max.	Unit
Voltage accuracy		3.3Vout Others	-1.5 -1.0		+1.5 +1.0	%
Line regulation	Low Line to High Line at Full Load		-0.5		+0.5	%
Load regulation	No Load to Full Load					
		3.3Vout Others	-1.5 -1.0		+1.5 +1.0	%
Cross regulation	Asymmetrical load 25%/100% FL		-5.0		+5.0	%
Voltage adjustability	Single output	28Vout Others	-3 -10		+17 +10	%
Ripple and noise	Measured by 20MHz bandwidth	Single 3.3Vout, 5Vout, 12Vout, 15Vout 24Vout, 28Vout Dual All		50 75 100 100		mVp-p
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 5Vout 12Vout 15Vout 24Vout 28Vout		3.9 6.2 15 18 30 36		VDC
Output indicator				Green LED		
Over load protection	% of lout rated				150	%
Short circuit protection					Continuous, automatic recovery	

## GENERAL SPECIFICATIONS

Parameter	Conditions		Min.	Typ.	Max.	Unit
Isolation voltage	1 minute	Input to Output Input (Output) to Chassis	1600 1600			VDC
Isolation resistance	500VDC		1			GΩ
Isolation capacitance					4500	pF
Switching frequency			270	300	330	kHz
Safety meets						UL60950-1 EN60950-1 IEC60950-1
Chassis material						Aluminum
Weight					122g (4.29oz)	
MTBF	MIL-HDBK-217F, Full load				6.080 x 10 <sup>5</sup>	hrs

# UFEC40W SERIES

DC/DC Converter Single & Dual Output: 40 Watts

## ENVIRONMENTAL SPECIFICATIONS

Parameter	Conditions	Min.	Typ.	Max.	Unit
Operating ambient temperature	Without derating	-40		+55	°C
	With derating	+55		+85	
Over temperature protection	DC/DC Converter Case		110		°C
Storage temperature range		-40		+105	°C
Thermal shock					MIL-STD-810F
Vibration					MIL-STD-810F
Relative humidity					5% to 95% RH

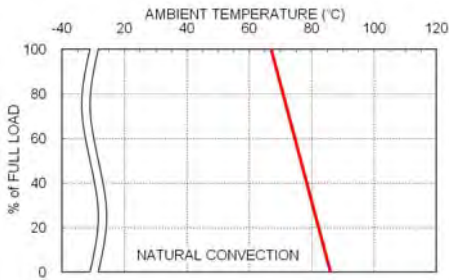
## EMC SPECIFICATIONS

Parameter	Conditions	Level
EMI	EN55022	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

### Note:

1. Test by minimum input and constant resistive load.

## CHARACTERISTIC CURVES



UFEC40-48S05W Derating Curve

UFEC40-48S05W Efficiency vs. Input Voltage

UFEC40-48S05W Efficiency vs. Output Load

# UFEC40W SERIES

DC/DC Converter Single & Dual Output: 40 Watts

## MECHANICAL DRAWING

### CHASSIS MOUNTING TYPE - STD

#### PIN CONNECTION

PIN	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

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)

### ENCLOSED MOUNTING TYPE – ( OPTION- EC )



### DIN RAIL MOUNTING TYPE – ( OPTION -DR )

