P-DUKE POWER

UFED40W Series

Chassis-Mount DC-DC Converter
Up to 40 Watts

3 YEARS WARRANTY

RoHS COMPLIANT

REACH COMPLIANT

Railway | Automation | Datacom

IPC | Industry | Measurement

Telecom | Automobile | Boat

Charger | Medical | PV

CE UKCA

3000 VDC Isolation Voltage | 1600 VDC Isolation Voltage | 4 : 1 Wide Input Range | FUSE Installed | INRUSH CURRENT LIMIT | LOW Standby Power | NO Min. Load Required | REMOTE ON OFF | REVERSE POLARITY PROTECTION | OCP | OTP | OVP | SCP | UVP

PART NUMBER STRUCTURE

UFED40 - 48 S 05 W - N R EC

Series Name	Input Voltage (VDC)	Output Quantity	Output Voltage (VDC)	Input Range	Remote Control Options	Conformal Coating Options	Assembly Options
	24:9.5~36 **48:**18~75 **110:**43~160	**S:**Single	**3P3:**3.3 **05:**5 **12:**12 **15:**15 **24:**24	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 **24:**±24				

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

Model Number	Input Range	Output Voltage	Output Current @Full Load	Input Current @No Load	Efficiency	Maximum Capacitor Load
	VDC	VDC	mA	mA	%	μF
UFED40-24S3P3W	9.5 ~ 36	3.3	10000	19	89	26600
UFED40-24S05W	9.5 ~ 36	5	8000	19	90	20000
UFED40-24S12W	9.5 ~ 36	12	3333	19	91	3900
UFED40-24S15W	9.5 ~ 36	15	2666	19	91	2600
UFED40-24S24W	9.5 ~ 36	24	1666	19	90	1300
UFED40-24D12W	9.5 ~ 36	±12	±1666	19	89	±2600
UFED40-24D15W	9.5 ~ 36	±15	±1333	19	89	±1600
UFED40-24D24W	9.5 ~ 36	±24	±833	19	90	±650
UFED40-48S3P3W	18 ~ 75	3.3	10000	14	89	26600
UFED40-48S05W	18 ~ 75	5	8000	14	90	20000
UFED40-48S12W	18 ~ 75	12	3333	14	91	3900
UFED40-48S15W	18 ~ 75	15	2666	14	91	2600
UFED40-48S24W	18 ~ 75	24	1666	14	90	1300
UFED40-48D12W	18 ~ 75	±12	±1666	14	89	±2600
UFED40-48D15W	18 ~ 75	±15	±1333	14	89	±1600
UFED40-48D24W	18 ~ 75	±24	±833	14	90	±650
UFED40-110S3P3W	43 ~ 160	3.3	10000	10	87	26600
UFED40-110S05W	43 ~ 160	5	8000	10	88	20000
UFED40-110S12W	43 ~ 160	12	3333	10	89.5	3900
UFED40-110S15W	43 ~ 160	15	2666	10	90	2600
UFED40-110S24W	43 ~ 160	24	1666	10	89	1300
UFED40-110D12W	43 ~ 160	±12	±1666	10	88	±2600
UFED40-110D15W	43 ~ 160	±15	±1333	10	88	±1600
UFED40-110D24W	43 ~ 160	±24	±833	10	90	±650

INPUT SPECIFICATIONS

Parameter	Conditions		Min.	Typ.	Max.	Unit
Operating input voltage range		24Vin(nom)	9.5	24	36	
		48Vin(nom)	18	48	75	VDC
		110Vin(nom)	43	110	160	
Input fuse	slow blow	24Vin(nom)		8		
		48Vin(nom)		4		A
		110Vin(nom)		2		
In-rush current				15		A
Start up voltage		24Vin(nom)			9.5	
		48Vin(nom)			18	VDC
		110Vin(nom)			43	
Shutdown voltage		24Vin(nom)	7	8	9	
		48Vin(nom)	15	16	17.5	VDC
		110Vin(nom)	37	40	42	
Start up time	Constant resistive load	Power up		100		ms
		Remote ON/OFF		60		
Input surge voltage	1 second, max.	24Vin(nom)			50	
		48Vin(nom)			100	VDC
		110Vin(nom)			170	
Remote ON/OFF	Referred to –Vin pin	Positive logic (Standard) DC-DC ON		Open or 3 ~ 12VDC		
		Positive logic (Standard) DC-DC OFF		Short or 0 ~ 1.2VDC		
		Negative logic (Option) DC-DC ON		Short or 0 ~ 1.2VDC		
		Negative logic (Option) DC-DC OFF		Open or 3 ~ 12VDC		
		Input current of Ctrl pin	-0.5		1	mA
		Remote off input current		5		mA

OUTPUT SPECIFICATIONS

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, 5Vout Others	-1.5 -1.0		+1.5 +1.0	%
Cross regulation	Asymmetrical load 25%/100% FL	Dual	-5.0		+5.0	%
Voltage adjustability	Single output	3.3Vout, 5Vout, 12Vout 15Vout, 24Vout	-10 -10		+10 +20	%
Ripple and noise	Measured by 20MHz bandwidth	3.3Vout, 5Vout, 12Vout, 15Vout 24Vout		75 100 150		mVp-p
Temperature coefficient			-0.02		+0.02	%/℃
Transient response recovery time	25% load step change			250		μs
Over voltage protection	Zener diode clamp	3.3Vout 5Vout 12Vout 15Vout 24Vout		3.9 6.2 15 20 30		VDC
Output indicator				Green LED		
Over load protection	% of Iout rated; Hiccup mode			150		%
Short circuit protection				Continuous, automatics recovery		

GENERAL SPECIFICATIONS

Parameter	Conditions			Min.	Typ.	Max.	Unit
Isolation voltage	1 minute	110Vin(nom)	Input to Output Input (Output) to Chassis	3000 1600			VDC
		Others	Input to Output Input (Output) to Chassis	1600 1600			VDC
Isolation resistance	500VDC			1			GΩ
Isolation capacitance					4000		pF
Switching frequency				225	250	275	kHz
Safety meets							IEC/ EN/ UL62368-1
Standard approvals							EN50155 EN45545-2
Chassis material							Aluminum
Conformal coating							Impregnating varnish
Weight							110g (3.88oz)
MTBF	MIL-HDBK-217F, Full load						1.944 x 10^6 hrs

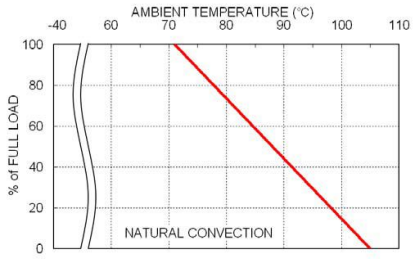
ENVIRONMENTAL SPECIFICATIONS

Parameter	Conditions		Min.	Typ.	Max.	Unit
Operating ambient temperature		with derating	-40		+105	℃
Over temperature protection	Case of DC/DC module			115		℃
Storage temperature range			-40		+105	℃
Thermal shock						MIL-STD-810F
Shock		□□S□□W -□				EN61373, MIL-STD-810F
		□□S□□W -□EC				EN61373, MIL-STD-810F
		□□S□□W -□DR				EN61373, IEC60068-2-27
		□□S□□W -□ED				EN61373, IEC60068-2-27
Vibration		□□S□□W -□				EN61373, MIL-STD-810F
		□□S□□W -□EC				EN61373, MIL-STD-810F
		□□S□□W -□DR				EN61373, IEC60068-2-6
		□□S□□W -□ED				EN61373, IEC60068-2-6
Relative humidity						5% to 95% RH

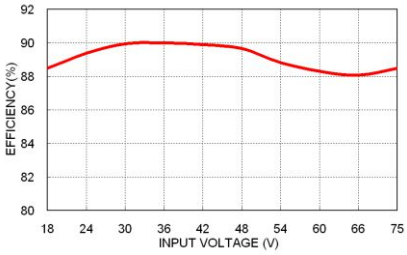
EMC SPECIFICATIONS

Parameter	Conditions		Level
EMI	EN55032, EN50121-3-2		Class B
EMS	EN55035, EN50121-3-2		
ESD	EN61000-4-2	Air ± 8kV and Contact ± 6kV	Perf. Criteria A
Radiated immunity	EN61000-4-3	20V/m	Perf. Criteria A
Fast transient	EN61000-4-4	± 2kV	Perf. Criteria A
Surge	EN61000-4-5	EN55035 ±1kV and EN50121-3-2 ±2kV	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

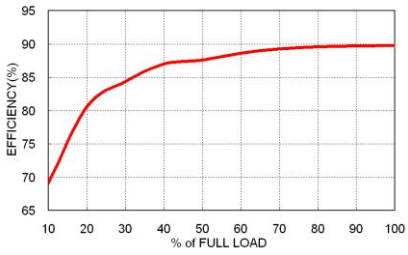
CHARACTERISTIC CURVE



UFED40-48S05W Derating Curve



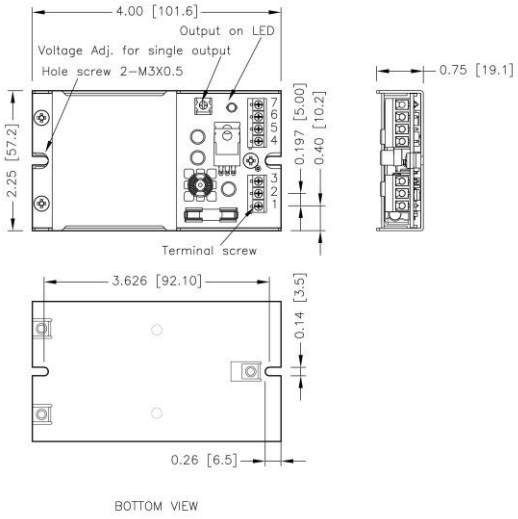
UFED40-48S05W Efficiency vs. Input Voltage



UFED40-48S05W Efficiency vs. Output Load

MECHANICAL DRAWING

CHASSIS MOUNTING TYPE



BOTTOM VIEW

TERMINAL CONNECTION

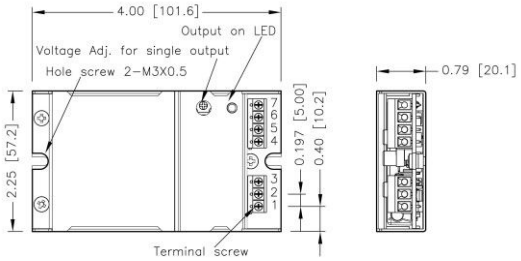
NO.	SINGLE	DUAL
1	+Vin	+Vin
2	-Vin	-Vin
3	Ctrl	Ctrl
4	NC	NC
5	-Vout	-Vout
6	+Vout	Common
7	NC	+Vout

※ NC：No Connection

※ Screw terminals – wire range from 14 to 18 AWG

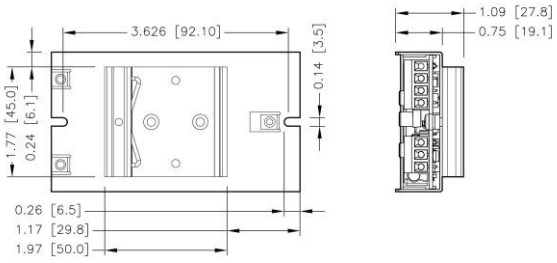
1. All dimensions in Inch [mm]
2. Tolerance : X.XX±0.02 [X.X±0.5]
   X.XXX±0.01 [X.XX±0.25]
3. Hole screw locked torque :
   MAX 5.0kgf-cm/ 0.49N-m
4. Terminal screw locked torque :
   MAX 2.5kgf-cm/ 0.25N-m

ENCLOSED MOUNTING TYPE



TOP VIEW

DIN RAIL MOUNTING TYPE



BOTTOM VIEW

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