

## Features

- 2:1 Wide Input Range
- Operating Temperature Range: -40~100°C
- Approved to UKCA, CE, RoHS & REACH
- Approved to IEC/UL/EN62368-1
- Efficiency up to 88%
- EMC Class A
- Single & Dual 20W Output Models



Ideal Power's 43UFED20-xyW-EC 15W Series Terminal Block DC/DC Converters are certified to UKCA, CE, RoHS, REACH & IEC/UL/EN 62368-1 Standards and comply with the relevant Efficiency Regulations. These are primarily used in ITE, Video & Audio Industries and customised solutions are available upon request.

### Part Number Structure

UFED20	-	48	S	05	W	-	P	R	EC
Series Name		Input Voltage (VDC)	Output Quantity	Output Voltage (VDC)	Input Range		Remote Control Options	Conformal Coating Options	Assembly Options
		<b>12:</b> 9.5 ~ 18 <b>24:</b> 9.5 ~ 36 <b>48:</b> 18 ~ 75	<b>S:</b> Single  <b>D:</b> Dual	<b>3P3:</b> 3.3 <b>05:</b> 5 <b>12:</b> 12 <b>15:</b> 15 <b>12:</b> +12 <b>15:</b> +15	2 : 1		<input type="checkbox"/> : Positive logic <b>N:</b> Negative logic	<input type="checkbox"/> : None <b>R:</b> Conformal coating	<input type="checkbox"/> : None <b>EC:</b> Enclosed Mounting type <b>DR:</b> Din Rail Mounting type <b>ED:</b> Enclosed & Din Rail Mounting type

**Models**

Model Number	Input Range V DC	Output Voltage V DC	Output current @Full Load A	Input Current @ No Load A	Efficiency %	Maximum Capacitor Load μF
43UFED20-12S3P3	9.5 ~ 18	3.3	5000	117	84	13000
43UFED20-12S05	9.5 ~ 18	5	4000	78	86	6800
43UFED20-12S12	9.5 ~ 18	12	1670	96	85	2200
43UFED20-12S15	9.5 ~ 18	15	1330	43	85	755
43UFED20-12D12	9.5 ~ 18	±12	±833	51	85	±680
43UFED20-12D15	9.5 ~ 18	±15	±667	58	85	±450
43UFED20-24S3P3	18 ~ 36	3.3	5000	31	85	13000
43UFED20-24S05	18 ~ 36	5	4000	36	88	6800
43UFED20-24S12	18 ~ 36	12	1670	58	86	2200
43UFED20-24S15	18 ~ 36	15	1330	44	86	755
43UFED20-24D12	18 ~ 36	±12	±833	33	86	±680
43UFED20-24D15	18 ~ 36	±15	±667	34	87	±450
43UFED20-48S3P3	36 ~ 75	3.3	5000	16	86	13000
43UFED20-48S05	36 ~ 75	5	4000	21	88	6800
43UFED20-48S12	36 ~ 75	12	1670	37	87	2200
43UFED20-48S15	36 ~ 75	15	1330	52	86	755
43UFED20-48D12	36 ~ 75	±12	±833	22	87	±680
43UFED20-48D15	36 ~ 75	±15	±667	22	87	±450

**Input Specifications**

Parameter	Conditions	Min	Typ	Max	Unit	
Operating input voltage range	12Vin(nom)	9.5	12	18	V DC	
	24Vin(nom)	18	24	36		
	48Vin(nom)	36	48	75		
Input fuse	slow blow					
	12Vin(nom)	--	6	--		
	24Vin(nom)	--	6	--		
	48Vin(nom)	--	4	--		
Inrush current		--	15	--		
Start-up time	Constant resistive load					
	Power up	--	100	--	ms	
Input surge voltage	100ms, max				V DC	
	12Vin(nom)	--	--	36		
	24Vin(nom)	--	--	50		
	48Vin(nom)	--	--	100		
Remote ON/OFF	Referred to -Vin pin	Positive logic	DC-DC ON	Open or 3 ~ 12VDC		
			DC-DC OFF	Short or 0 ~ 1.2VDC		
		Negative logic	DC-DC ON	Short or 0 ~ 1.2VDC		
			DC-DC OFF	Open or 3 ~ 12VDC		
		Input current of Ctrl pin	0.5	0.5	mA	
		Remote off input current		2.5	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	Single	-0.2		+0.2	%
		Dual	-0.5		-0.5	
Load regulation	No Load to Full Load	3.3Vout	-1.5		+1.5	%
		Others	-1.0		+1.0	
Cross regulation	Asymmetrical load 25%/100% FL	Dual	-5.0		+5.0	%
Voltage adjustability	Single output	-10	-10		+10	%
Ripple and noise	Measured by 20MHz bandwidth	Single 3.3Vout		60		mVp-p
		5Vout, 12Vout, 15Vout		75		
		Dual All		100		
Temperature coefficient			-0.02		+0.02	%/°C
Transient response recovery time	25% Load step change			250		µs
Over voltage protection	3.3Vout			3.9		V DC
	5Vout			6.2		
	12Vout			15		
	15Vout			18		
Output indicator						Green LED
Overload 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			V DC
		Input (Output) to Chassis	1600			
Isolation resistance	500V DC		1			GΩ
Isolation capacitance					4000	pF
Switching frequency			450	500	550	kHz
Safety approvals	IEC/ EN/ UL 62368-1					UL:E193009 CB:UL(Demko)
Chassis material						Aluminum
Conformal coating						Impregnating varnish
Weight						89g (3.13oz)
MTBF	MIL-HDBK-217F, Full load				2.073 x 106	hrs

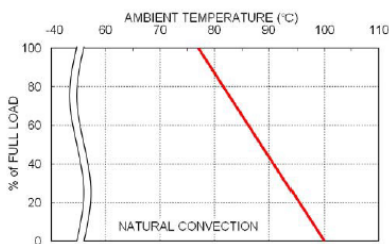
**Environmental Specifications**

Parameter	Conditions		Min	Typ	Max	Unit
Operating ambient temperature	With derating		-40		+105	°C
Storage temperature range			-40		+105	°C
Thermal Shock						MIL-STD-810F
Vibration	□□S□□W -□	□□S□□W -□EC				MIL-STD-810F
		□□S□□W -□DR				MIL-STD-810F
		□□S□□W -□ED				IEC60068-2-6
		□□S□□W -□ED				IEC60068-2-6
Relative humidity						5% to 95% RH

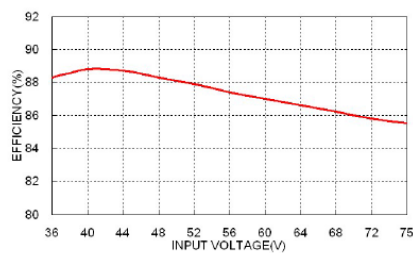
## EMC Specifications

Parameter	Conditions		Level
EMI	EN55032		Class B
EMS	EN55024		
ESD	EN61000-4-2	Air $\pm$ 8kV and Contact $\pm$ 6kV	Perf. Criteria A
Radiated immunity	EN61000-4-3	10V/m	Perf. Criteria A
Fast transient	EN61000-4-4	$\pm$ 2kV	Perf. Criteria A
Surge	EN61000-4-5	$\pm$ 0.5kV	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

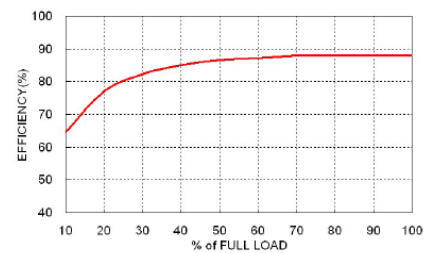
## Characteristic Curve



43UFED20-48S05W Derating Curve



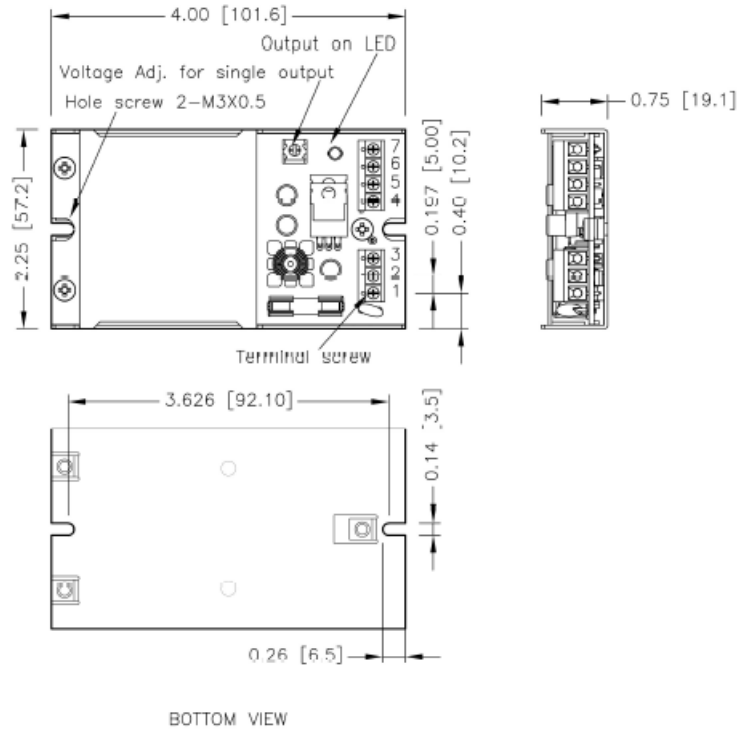
43UFED20-48S05W Efficiency vs. Input Voltage



43UFED20-48S05W Efficiency vs. Output Load

Mechanical Drawing

CHASSIS MOUNTING TYPE

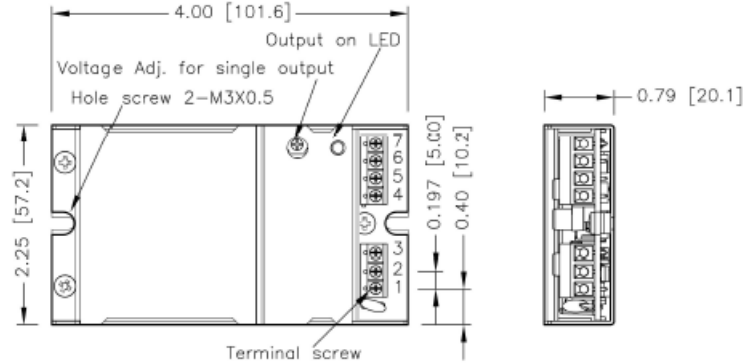


Terminal Connection

No.	Single	Dual
1	+Vin	+Vin
2	-Vin	-Vin
3	Ctrl	Ctrl
4	NC	NC
5	-Vout	-Vout
6	+Vout	Common
7	NC	+Vout

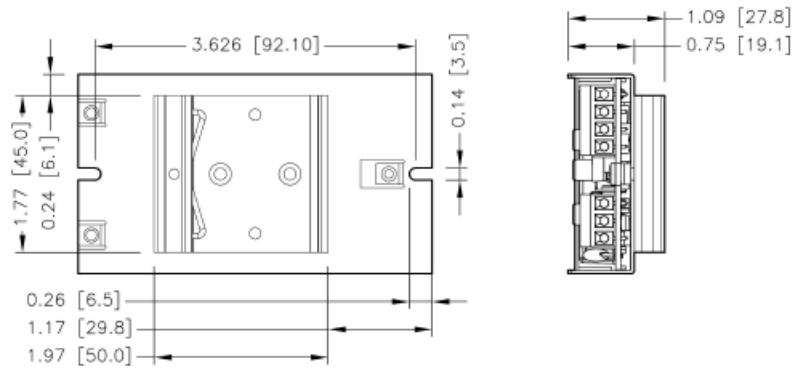
Mechanical Drawing (Continued)

**ENCLOSED MOUNTING TYPE**



TOP VIEW

**DIN RAIL MOUNTING TYPE**



BOTTOM VIEW