

## Features

- 4:1 Wide Input Range
- Operating Temperature Range: -40~105°C
- Approved to UKCA, CE, RoHS & REACH
- Approved to IEC/UL/EN62368-1 & EN50155
- Efficiency up to 91%
- EMC Class A & B
- Single & Dual 40W Output Models
- OCP, OTP, OVP, SCP & UVP



Ideal Power's 43UFED40-xyW-DR 40W Series DIN Rail DC/DC Converters are certified to UKCA, CE, RoHS, REACH & IEC/UL/EN 62368-1, EN 50155 Standards and comply with the relevant Efficiency Regulations. These are primarily used in ITE, Video & Audio, Railway Industries and customised solutions are available upon request.

### Part Number Structure

43UFED40 - 48		S	05	W - N	R	HC	
Series Name	Output Power (VDC)	Output Quantity	Output Voltage (VDC)	Input Range	Remote Control Options	Conformal Coating Options	Assembly Options
	<b>24:</b> 3 ~ 36 <b>48:</b> 18 ~ 75 <b>110:</b> 43 ~ 160	<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>24:</b> 24  <b>12:</b> ±12 <b>15:</b> ±15 <b>24:</b> ±24	4 : 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 VDC	Output Voltage VDC	Output Current @ Full Load mA	Input Current @ No Load %	Efficiency %	Maximum Capacitor Load %
43UFED40-24S3P3W	9.5 ~ 36	3.3	10000	19	89	26600
43UFED40-24S05W	9.5 ~ 36	5	8000	19	90	20000
43UFED40-24S12W	9.5 ~ 36	12	3333	19	91	3900
43UFED40-24S15W	9.5 ~ 36	15	2666	19	91	2600
43UFED40-24S24W	9.5 ~ 36	24	1666	19	90	1300
43UFED40-24D12W	9.5 ~ 36	±12	±1666	19	89	±2600
43UFED40-24D15W	9.5 ~ 36	±15	±1333	19	89	±1600
43UFED40-24D24W	9.5 ~ 36	±24	±833	19	90	±650
43UFED40-48S3P3W	18 ~ 75	3.3	10000	14	89	26600
43UFED40-48S05W	18 ~ 75	5	8000	14	90	20000
43UFED40-48S12W	18 ~ 75	12	3333	14	91	3900
43UFED40-48S15W	18 ~ 75	15	2666	14	91	2600
43UFED40-48S24W	18 ~ 75	24	1666	14	90	1300
43UFED40-48D12W	18 ~ 75	±12	±1666	14	89	±2600
43UFED40-48D15W	18 ~ 75	±15	±1333	14	89	±1600
43UFED40-48D24W	18 ~ 75	±24	±833	14	90	±650
43UFED40-110S3P3W	43 ~ 160	3.3	10000	10	87	26600
43UFED40-110S05W	43 ~ 160	5	8000	10	88	20000
43UFED40-110S12W	43 ~ 160	12	3333	10	89.5	3900
43UFED40-110S15W	43 ~ 160	15	2666	10	90	2600
43UFED40-110S24W	43 ~ 160	24	1666	10	89	1300
43UFED40-110D12W	43 ~ 160	±12	±1666	10	88	±2600
43UFED40-110D15W	43 ~ 160	±15	±1333	10	88	±1600
43UFED40-110D24W	43 ~ 160	±24	±833	10	90	±650

**Input Specifications**

Parameter	Conditions	Min	Typ	Max	Unit
Operating input voltage range	24Vin(nom)	9	24	36	
	48Vin(nom)	18	48	75	
	110Vin(nom)	43	110	160	
Input fuse	Slow Blow	24Vin(nom)	8		VDC
		48Vin(nom)	4		
		110Vin(nom)	2		
In-rush current			15		
Start-up voltage	24Vin(nom)			9.5	
	48Vin(nom)			18	
	110Vin(nom)			43	
Shutdown voltage	24Vin(nom)	7	8	9	
	48Vin(nom)	15	16	17.5	
	110Vin(nom)	37	40	42	
Start-up time	Constant resistive load	Power up	100		ms
		Remote ON/OFF	60		
Input surge voltage	100 ms, max.	24Vin(nom)		50	VDC
		48Vin(nom)		100	
		110Vin(nom)		170	

**Input Specifications (Continued)**

Remote ON/OFF	Referred to -Vin pin	Positive logic	DC-DC ON	Open or 3.0 ~ 12VDC	
		(Standard)	DC-DC OFF	Short or 0 ~ 1.2VDC	
		Negative Logic	DC-DC ON	Short or 0 ~ 1.2VDC	
		(Option)	DC-DC OFF	Open or 3.0 ~ 12VDC	
		Input current of Ctrl pin	-0.5	0.5	mA
Remote off input current		3			

**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	No Load to Full Load	3.3Vout, 5Vout	-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	3.3Vout, 5Vout, 12Vout	-10	+10	
		15Vout, 24Vout	-10	+10	
Ripple and Noise	Measured by 20MHz bandwidth With a 0.1µF/50V X7R MLCC	3.3Vout, 5Vout		75	mVp-p
		12Vout, 15Vout		100	
		24Vout		150	
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	%
		5Vout		6.2	
		12Vout		15	
		15Vout		20	
		24Vout		30	
Output indicator			Green LED		
Overload protection	% Of lout rated		150		
Short circuit protection		Continuous automatic recovery			

**General Specifications**

Parameter	Conditions	Min	Typ	Max	Unit	
Isolation voltage	1 minute	110Vin(nom)	Input to Output	3000	V DC	
			Input (Output) to Case	1600		
	Others	Input to Output	2100			
		Input (Output) to Case	1600			
Isolation resistance	500VDC	1			Ω	
Isolation capacitance			4000			
Switching frequency		225	250	275	kHz	
Safety approvals		IEC/ EN/ UL62368-1				
Standard approvals					EN50155	
					EN45545-2	
Chassis material	Aluminum					
Conformal coating	Impregnating varnish					
Weight					32g (1.13oz)	
MTBF	MIL-HDBK-217F, Full load					1.944 x 10 <sup>6</sup> hrs

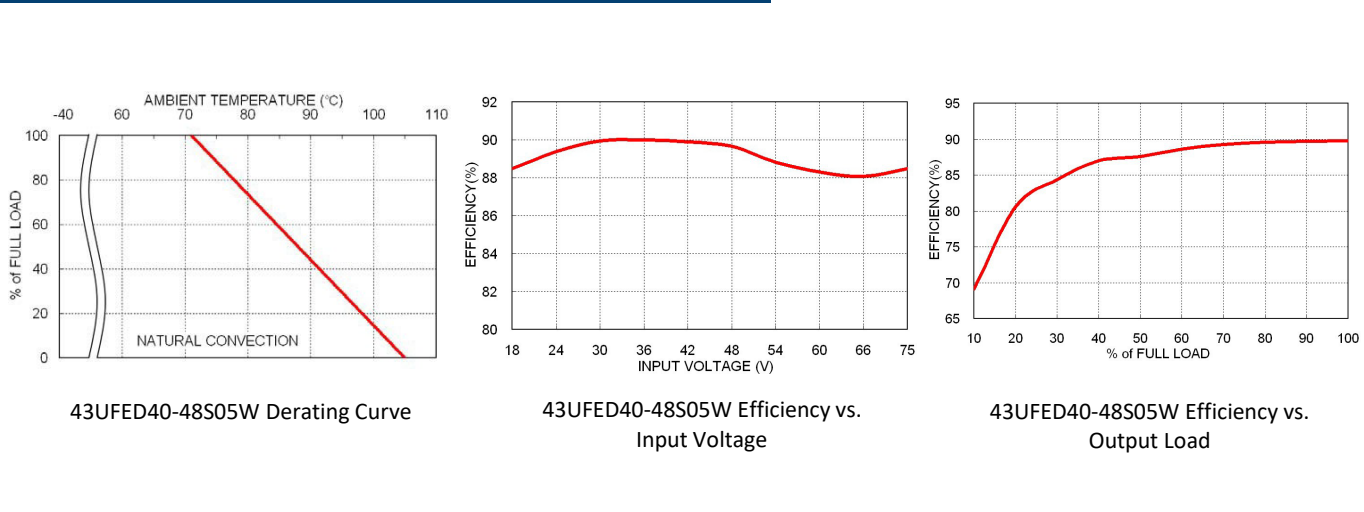
## Environmental Specifications

Parameter	Conditions	Min	Typ	Max	Unit
Operating ambient temperature	With derating	-40		+105	°C
Over temperature protection	Case of DC/DC module		115		
Storage temperature range		-55		+125	
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

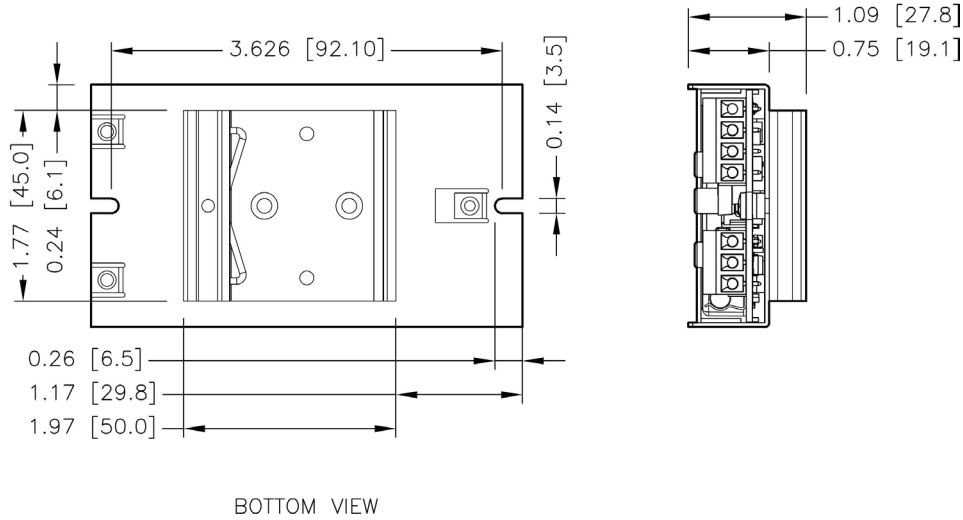
## EMC Specifications

Parameter	Conditions	Level
EMI	EN55032, EN50121-3-2	Class B
EMS	EN55024, EN50121-3-2	
ESD	EN61000-4-2 Air ± 8kV and Contact ± 6kV	Perf. Criteria A
Radiated immunity	EN61000-4-3 20 V/m	Perf. Criteria A
Fast transient	EN61000-4-4 ± 2kV	Perf. Criteria A
Surge	EN61000-4-5 EN55024 ±1kV and EN50121-3-2 ±2kV	Perf. Criteria A
Conducted immunity	EN61000-4-6 10 Vr.m.s	Perf. Criteria A
Power frequency magnetic field	EN61000-4-8 100A/m continuous; 1000A/m 1 second	Perf. Criteria A

## Characteristic Curve



## Mechanical Drawing



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

- ※ NC : No Connection
- ※ Screw terminals - wire range from 14 to 18 AWG

## 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