

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 88%
- EMC Class A & B
- Single & Dual 20W Output Models
- OCP, OVP, SCP & UVP



Ideal Power's 43URED20-xyzW-EC 20W Series Metal 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

43URED20	-	48	S	05	W	-	N	R	EC
Series Name		Output Power (VDC)	Output Quantity	Output Voltage (VDC)	Input Range		Remote Control Options	Load Share Options	Assembly Options
		48: 18 ~ 75 110: 43 ~ 160	S: Single	12: 12 15: 15 24: 24 28: 28 48: 48	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

Models

Model Number	Input	Output	Output Current	Input Current	Efficiency	Maximum
URED20-24S3P3W	9 ~ 36	3.3	4500	8	84	7000
URED20-24S05W	9 ~ 36	5	4000	8	87	5000
URED20-24S12W	9 ~ 36	12	1670	8	88	850
URED20-24S15W	9 ~ 36	15	1330	8	87	700
URED20-24D12W	9 ~ 36	±12	±833	8	87	±500
URED20-24D15W	9 ~ 36	±15	±667	8	88	±350
URED20-48S3P3W	18 ~ 75	3.3	4500	6	84	7000
URED20-48S05W	18 ~ 75	5	4000	6	87	5000
URED20-48S12W	18 ~ 75	12	1670	6	88	850
URED20-48S15W	18 ~ 75	15	1330	6	88	700
URED20-48D12W	18 ~ 75	±12	±833	6	87	±500
URED20-48D15W	18 ~ 75	±15	±667	6	88	±350
URED20-110S3P3W	43 ~ 160	3.3	4500	5	84	7000
URED20-110S05W	43 ~ 160	5	4000	5	86	5000
URED20-110S12W	43 ~ 160	12	1670	5	87	850
URED20-110S15W	43 ~ 160	15	1330	5	87	700
URED20-110D12W	43 ~ 160	±12	±833	5	87	±500
URED20-110D15W	43 ~ 160	±15	±667	5	88	±350

Input Specifications

Parameter	Conditions	Min	Typ	Max	Unit
Operating input voltage range	24Vin(nom)	9	24	36	VDC
	48Vin(nom)	18	48	75	
	110Vin(nom)	43	110	160	
Input fuse	Slow Blow	24Vin(nom)	5		VDC
		48Vin(nom)	4		
		110Vin(nom)	2		
In-rush current		15		VDC	
Start-up voltage	24Vin(nom)	9		VDC	
	48Vin(nom)	18			
	110Vin(nom)	43			
Shutdown voltage	24Vin(nom)	7.5	8	8.8	VDC
	48Vin(nom)	15.5	16	17.5	
	110Vin(nom)	38.5	40	42	
Start-up time	Constant resistive load	Power up	100		ms
		Remote ON/OFF	30		
Input surge voltage	100 ms, max.	24Vin(nom)	50		VDC
		48Vin(nom)	100		
		110Vin(nom)	170		
Remote ON/OFF	Referred to -Vin pin	Positive Logic	DC-DC ON	Open or 3.0 ~ 15VDC	
		(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 ~ 15VDC	
		Input current of Ctrl pin	-0.5	1	
Remote off input current		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	% rowspan="4">
		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	
Ripple and Noise	Measured by 20MHz bandwidth	12Vout, 15Vout		75		mVp-p
Temperature coefficient			-0.02		+0.02	%/°C
Transient response recovery time	25% Load step change			250		µs
Over voltage protection	3.3Vout		3.7		5.4	% rowspan="4">
	5Vout		5.6		7.0	
	12Vout		13.5		19.6	
	15Vout		16.8		20.5	
Output indicator				Green LED		
Overload protection	% Of lout rated			150		
Short circuit protection				Continuous automatic recovery		

General Specifications

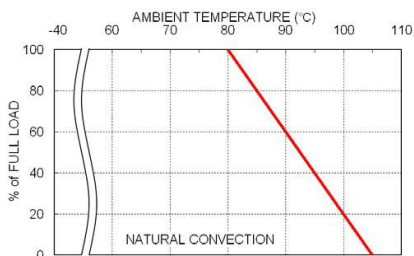
Parameter	Conditions		Min	Typ	Max	Unit
Isolation voltage	1 minute	Input to Output	3000			V DC
		Input (Output) to Case	2100			
Isolation resistance	500VDC		1			GΩ
Isolation capacitance				14000		
Switching frequency	48V DC Input		203	225	248	kHz
	110V DC Input		180	200	220	
Safety approvals					IEC/ EN/ UL62368-1	
Standard approvals					EN50155	
					EN45545-2	
Case material					Aluminum	
Conformal Coating					Impregnating Varnish	
Weight					105g (3.70oz.)	
MTBF	MIL-HDBK-217F, Full load				1.338 x 10 ⁸ hrs	

Environmental Specifications

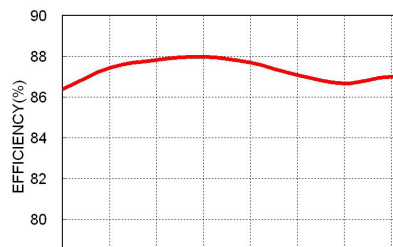
Parameter	Conditions	Min	Typ	Max	Unit
Operating ambient temperature		-40		+105	°C
Storage temperature range		-40		+105	
Thermal Shock					MIL-STD-810F
Shock	□□S□□W -□□				EN61373, MIL-STD-810F
	□□S□□W -□□EC				EN61373, MIL-STD-810F
	□□S□□W -□□DR				EN61373, IEC60068-2-27
	□□S□□W -□□ED				EN61373, IEC60068-2-27
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

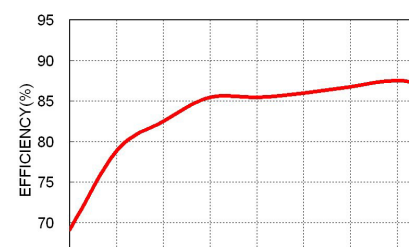
Parameter	Conditions	Level
EMI	EN55032, EN50121-3-2	Class B
EMS	EN55024, EN50121-3-2	
ESD	EN61000-4-2	Air ± 8kV and Contact ± 6kV
Radiated immunity	EN61000-4-3	20 V/m
Fast transient	EN61000-4-4	± 2kV
Surge	EN61000-4-5	EN55024 ±1kV and EN50121-3-2 ±2kV
Conducted immunity	EN61000-4-6	10 Vr.m.s
Power frequency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

Characteristic Curve


43URED20-48S05W Derating Curve

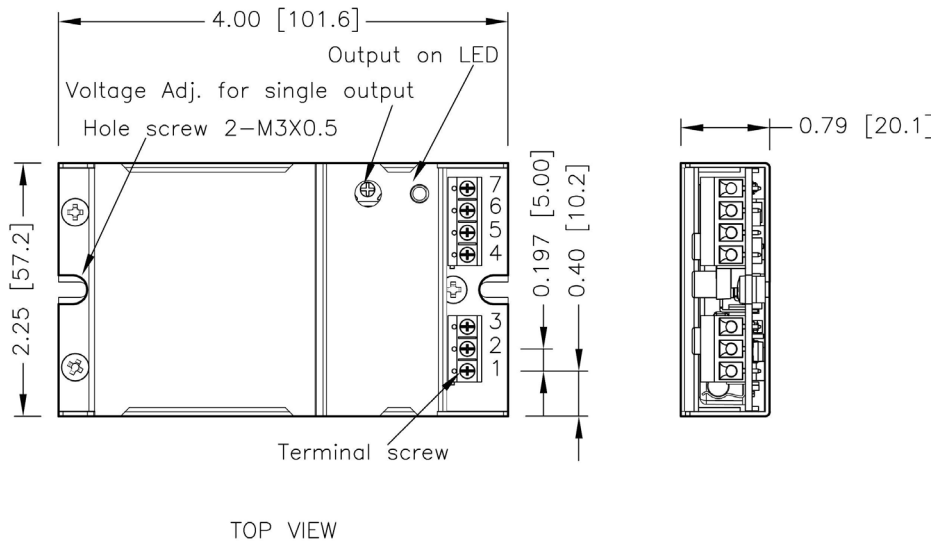


43URED20-48S05W Efficiency vs. Input Voltage



43URED20-48S05W Efficiency vs. Output Load

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

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