



P-DUKE POWER

XTBF500 Series

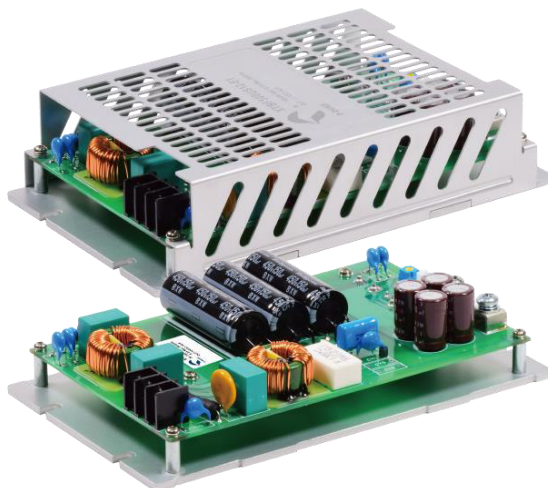
AC-DC Power Supplies
Up to 500 Watts

3

YEARS
WARRANTY

ROHS
COMPLIANT

REACH
COMPLIANT



Automation



Datacom



IPC



Industry



Measurement



Telecom



Automobile



Boat



Charger



Medical



PV



Railway



3000 VAC
Reinforced
Insulation

NO
Min. Load
Required

**POWER
GOOD**

**REMOTE
ON
OFF**

ActiveDroop
Current
Share

LOW
Standby
Power

OCP

OTP

OVP

SCP

OVCIII

PART NUMBER STRUCTURE

XTBF

Series
Name

500

Output
Power
(W)

U

Input
Voltage
(VAC)

S

Output
Quantity

12

Output
Voltage
(VDC)

-

E1

Package
Options

S

Load Share
Options

U: Universal
85 ~ 264

S: Single

12:12
15:15
24:24
28:28
48:48
54:54

☐: Open type
E1: Enclosed type

☐: None
S: Load Share

TECHNICAL SPECIFICATION All specifications are typical at 230VAC input, full load and 25°C unless otherwise noted

Model Number	Input Range	Output Voltage	Output Current @ 230VAC Conduction Cooling	Input Power @ No Load	Efficiency	Maximum Capacitor Load
	VAC	VDC	A	W	%	μF
XTBF500US12	85 ~ 264	12	42	0.8	91	16000
XTBF500US15	85 ~ 264	15	33.5	0.8	91	10000
XTBF500US24	85 ~ 264	24	21	0.8	93	2000
XTBF500US28	85 ~ 264	28	18	0.8	93	1000
XTBF500US48	85 ~ 264	48	10.5	0.8	93	470
XTBF500US54	85 ~ 264	54	9.4	0.8	93	470

INPUT SPECIFICATIONS

Parameter	Conditions	Min.	Typ.	Max.	Unit
Operating input voltage range	AC input	85		264	VAC
	DC input	88		370	VDC
Input frequency	AC input	47		63	Hz
Input current	100VAC and full load			6.3	A
	240VAC and full load			2.7	
No load input power	230VAC		0.8		Watts
Power factor	230VAC and full load	0.9			
Start up time				2000	ms
Rise time			20		ms
Hold up time	115VAC and full load		16		ms
Input inrush current	230VAC and full load		30		A
Input protection				T10A/250VAC	

OUTPUT SPECIFICATIONS

Parameter	Conditions	Min.	Typ.	Max.	Unit
Output power	Conduction cooling @ 230VAC *Please refer to the derating curve for detailed rating.			500	Watts
Voltage accuracy	230VAC and full load	-1.0		+1.0	%
Line regulation	Low line to high line at full load	-0.2		+0.2	%
Load regulation	No load to full load 10% load to 90% load	-0.5 -0.4		+0.5 +0.4	%
Voltage adjustability	Maximum output deviation is inclusive of remote sense Only for load share models (-S suffix)	-10 -5		+10 +5	%
Remote sense	% of Vout(nom) If remote sense is not being used, sense pins should be connected to corresponding polarity OUTPUT pins.			10	%
Minimum load			0		%
Ripple and noise	Measured by 20MHz bandwidth With a 1 μ F/50V 1206 X7R MLCC 12Vout 15Vout 24Vout 28Vout With a 1 μ F/100V 1206 X7R MLCC 48Vout 54Vout		200 200 240 280 480 540		mVp-p
Temperature coefficient		-0.02		+0.02	%/°C
Transient response	Load step from 50 ~ 75% change at 2.5A/ μ s Recovery within 1% Vout		3 600		% Vout μ s
Over voltage protection	% of Vout(nom); Latch mode	115		135	%
Over load protection	% of maximum lout rated; Hiccup mode		140		%
Short circuit protection					Continuous, automatic recovery
Remote ON/OFF	External power supply is required Between +Ctrl and -Ctrl			0 ~ 0.8 VDC or Open 4.5 ~ 12.5 VDC	
				20	mA
Main output power good signal	Referenced to "-Vout"				Low Open collector
Load share (-S suffix)	The converter can parallel to increase output current. It has internal load share function in this converter.				Active droop current share models
Droop rate (-S suffix)	No load to full load		4		%
Load share accuracy (-S suffix)	Full load		20		%

GENERAL SPECIFICATIONS

Parameter	Conditions	Min.	Typ.	Max.	Unit
Isolation voltage	1 minute (Reinforced insulation) Input to Output Input (Output) to F.G.	3000 2000			VAC
Isolation resistance	500VDC	0.1			G Ω
Switching frequency	230VAC, full load		180		kHz
Safety meets					IEC/ EN/ UL 62368-1
Weight	Open type Enclosed type			580g (20.45oz) 640g (22.56oz)	
MTBF	MIL-HDBK-217F, full load			2.500 x 10 ⁵	hrs

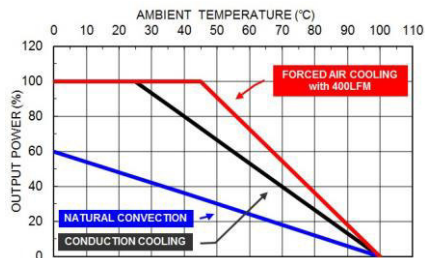
ENVIRONMENTAL SPECIFICATIONS

Parameter	Conditions	Min.	Typ.	Max.	Unit
Operating ambient temperature	With derating	-40		+100	°C
Storage temperature range		-55		+105	°C
Over temperature protection	Internal thermistor ; automatics recovery		115		°C
Operating altitude				5000	m
Shock				IEC60068-2-27	
Vibration				IEC60068-2-6	
Relative humidity				5% to 95% RH	

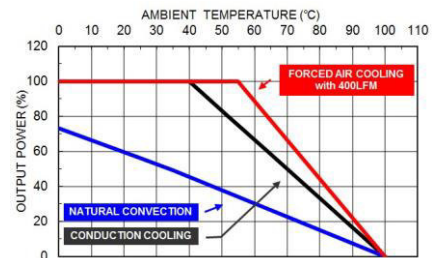
EMC SPECIFICATIONS

Parameter	Conditions	Level
EMI	EN55032 and FCC Part 15	Conducted Class B Radiated Class A
Harmonic currents	EN61000-3-2 Full Load	Class D
Voltage flicker	EN61000-3-3	
EMS	EN55035	
ESD	EN61000-4-2	Perf. Criteria A
Radiated immunity	EN61000-4-3 20 V/m	Perf. Criteria A
Fast transient	EN61000-4-4 ± 2 kV	Perf. Criteria A
Surge	EN61000-4-5 DM ± 1 kV and CM ± 2 kV	Perf. Criteria A
Conducted immunity	EN61000-4-6 10 Vr.m.s	Perf. Criteria A
Power frequency magnetic field	EN61000-4-8 30 A/m	Perf. Criteria A
Dip and interruptions	EN61000-4-11	

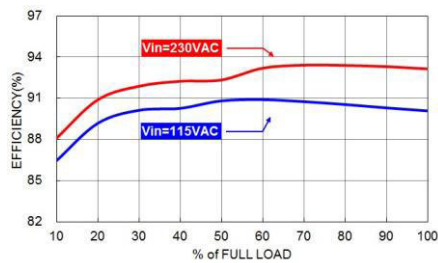
CHARACTERISTIC CURVE



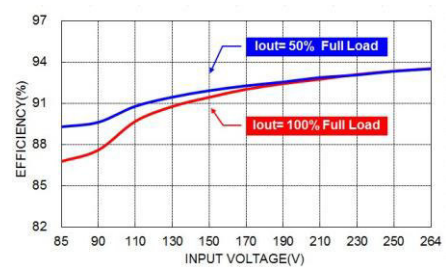
Derating Curve vs. Ambient Temperature
Vin=115VAC Open type / Enclosed type
conduction cooling tested by 482.6x222.2x2mm plate



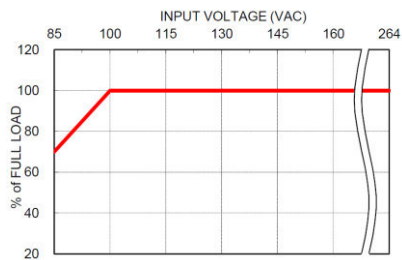
Derating Curve vs. Ambient Temperature
Vin=230VAC Open type / Enclosed type
conduction cooling tested by 482.6x222.2x2mm plate



XTBF500US24 Efficiency vs. Output Load



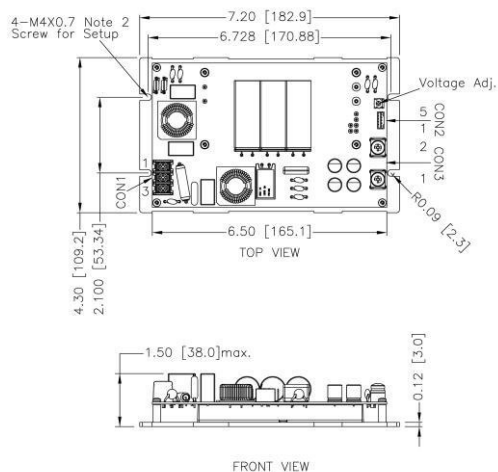
XTBF500US24 Efficiency vs. Input Voltage



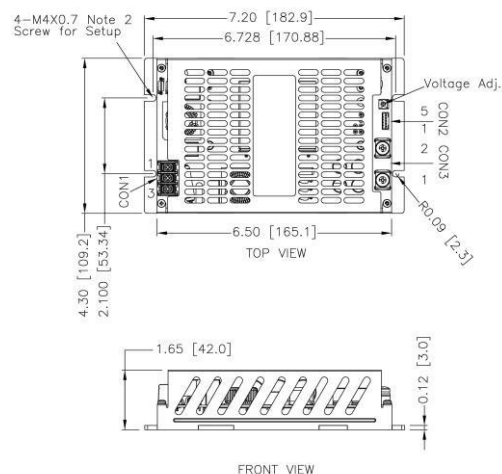
Derating Curve vs. Input Voltage

MECHANICAL DRAWING

Open type



Enclosed type



- 1.All dimensions in inch [mm]
Tolerance: $x.xx \pm 0.02$ [$x.x \pm 0.5$]
 $x.xxx \pm 0.01$ [$x.xx \pm 0.25$]
2.The screw locked torque: MAX 10.4Kgf.cm/1.02N.m

- 1.All dimensions in inch [mm]
Tolerance: $x.xx \pm 0.02$ [$x.x \pm 0.5$]
 $x.xxx \pm 0.01$ [$x.xx \pm 0.25$]
2.The screw locked torque: MAX 10.4Kgf.cm/1.02N.m

CONNECTORS CONNECTIONS

CON1 – Input Connector

Pin 1	Line
Pin 2	Neutral
Pin 3	FG

Mates with
KST ring terminal: **RV1-3.2**
Screw locked torque: MAX 8.1Kgf.cm/0.8N.m

CON2 –Aux Connector

Pin 1	+PG
Pin 2	+V Sense
Pin 3	-V Sense
Pin 4	+Control
Pin 5	-Control

Mates with
Landwin housing: **2001S**
Landwin crimp terminals: **2005T**

CON3 – Output Connector

Pin 1	+Vout
Pin 2	-Vout

Mates with
KST ring terminal: **RV5-5**
Screw locked torque: MAX 16.8Kgf.cm/1.65N.m