

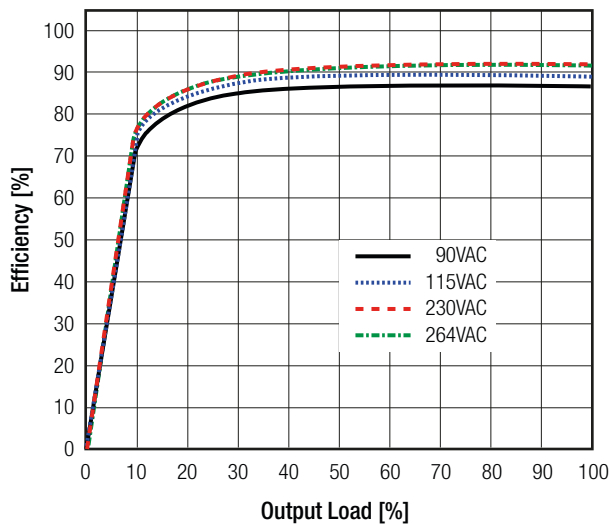
Specifications (measured @ Ta= 25°C, nom. Vin, full load and after warm-up unless otherwise stated)

BASIC CHARACTERISTICS

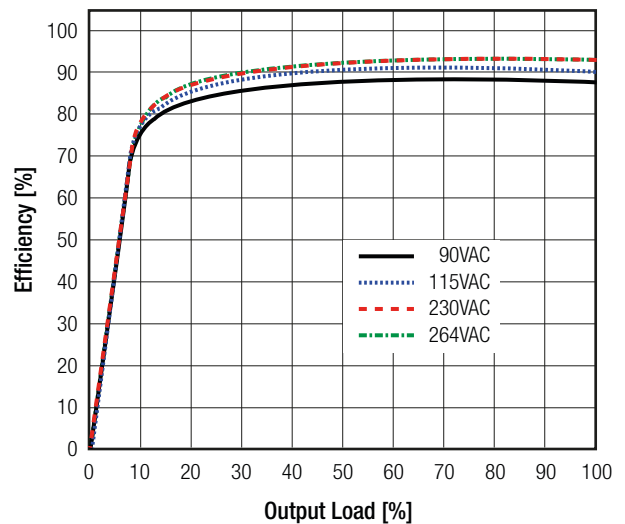
Parameter	Condition		Min.	Typ.	Max.
Input Frequency Range			47Hz		63Hz
Minimum Load			0%		
Power Factor	115VAC 230VAC		0.98 0.95		
Rise Time	115VAC/230VAC				50ms
Hold-up Time	115VAC 230VAC	100% load 50% load	6ms	20ms	
Internal Operating Frequency				132kHz	
Output Ripple and Noise	+70°C	12Vout 24Vout 48Vout			150mVp-p 240mVp-p 360mVp-p
	-30°C	12Vout 24Vout 48Vout			300mVp-p 480mVp-p 720mVp-p

Efficiency vs. Load

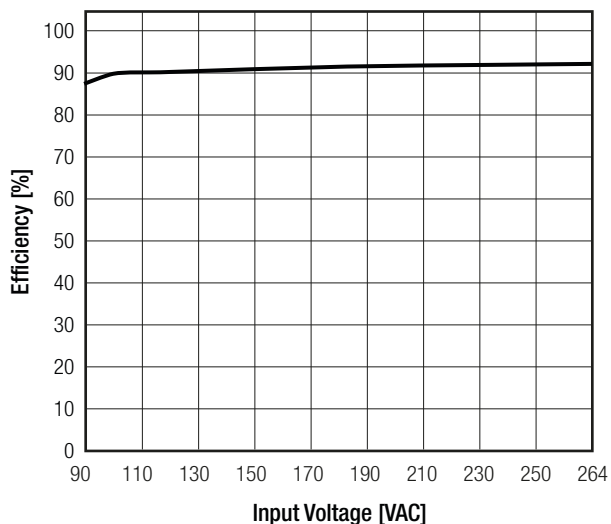
RAC150-12SG



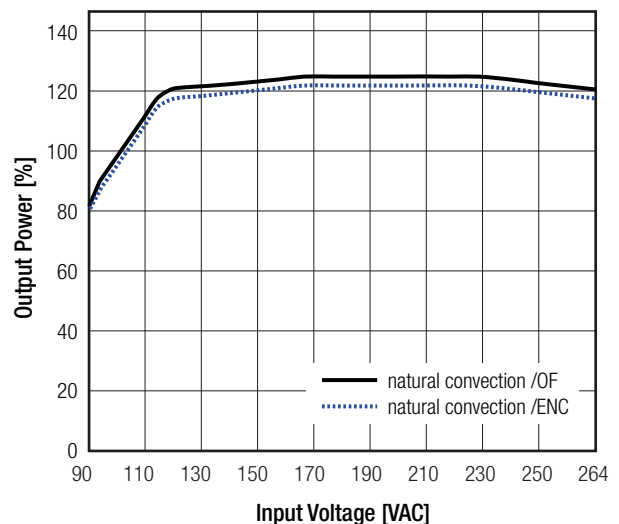
RAC150-24SG



Efficiency vs. Input Voltage
(@ full load)



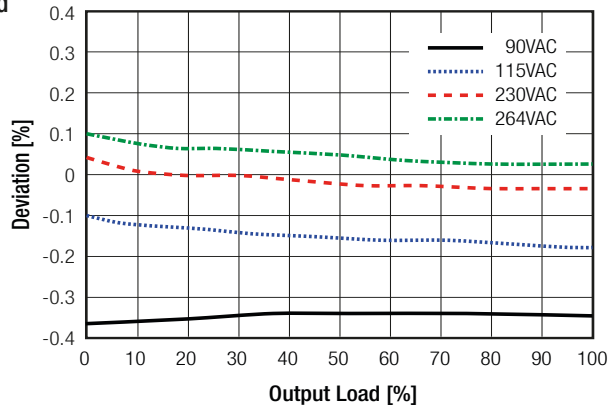
Output Power vs. Input Voltage



Specifications (measured @ Ta= 25°C, nom. Vin and full load unless otherwise stated)

REGULATIONS			
Parameter	Condition		Value
Output Accuracy	-30°C to +70°C		±2.0% max.
Line Regulation	-30°C to +70°C		±0.1% typ.
Load Regulation	-30°C to +70°C	0%-100% load	0.2 % typ.
Transient Response	-30°C to +70°C	25% load step change recovery time	±5.0% Vout max. 200µs max.

Normalized Output Deviation vs. Load



PROTECTIONS			
Parameter	Type		Value
Input fuse ⁽⁵⁾	internal		T3.15A
Short Circuit Protection (SCP)	below 100mΩ		continuous, Hiccup Mode, auto recovery
Over Voltage Protection (OVP)	105%-150% of Vout nominal		Latch OFF
Over Voltage Category			OVCII
Class of Equipment			Class I
Isolation Voltage ⁽⁶⁾	tested for 1 minute	I/P to O/P	3kVAC
		I/P to FG	1.5kVAC
		O/P to FG	0.5kVDC
Isolation Resistance	I/P to O/P; I/P to FG; O/P to FG		10MΩ min.
Isolation Capacitance			3300pF max.
Insulation Grade			reinforced
Leakage Current	240VAC, 63Hz		0.25mA max.

Notes:

Note5: Refer to local safety regulations if input over-current protection is also required

Note6: For repeat Hi-Pot testing, reduce the time and/or the test voltage

ENVIRONMENTAL			
Parameter	Condition		Value
Operating Temperature Range	refer to derating graph		-30°C to +70°C
Temperature Coefficient			0.02%/K
Operating Altitude ⁽⁷⁾			5000m
Operating Humidity	non-condensing		20% - 90% RH max.
Pollution Degree			PD2
Conformal Coating			conformal coated product
Shock			20G, 11ms, 3 times for X,Y,Z axis
Vibration			10-500Hz, 3G, 10min. for each, 6cycles for each X,Y,Z
MTBF	according to MIL-HDBK-217F, G.B.	natural convection (125W)	100 x 10 ³ hours
	+25°C	forced cooling (150W)	200 x 10 ³ hours

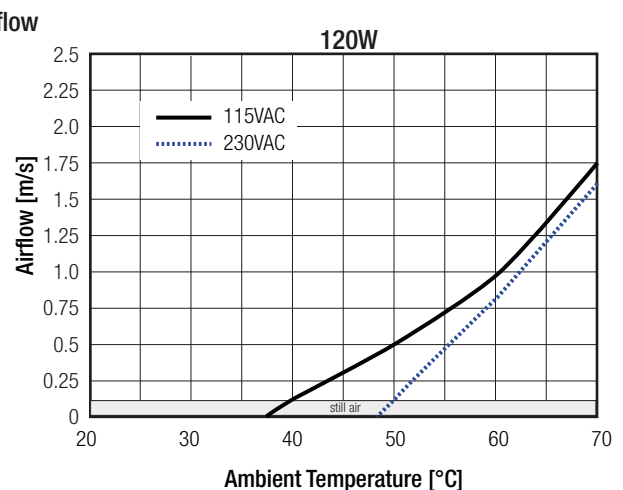
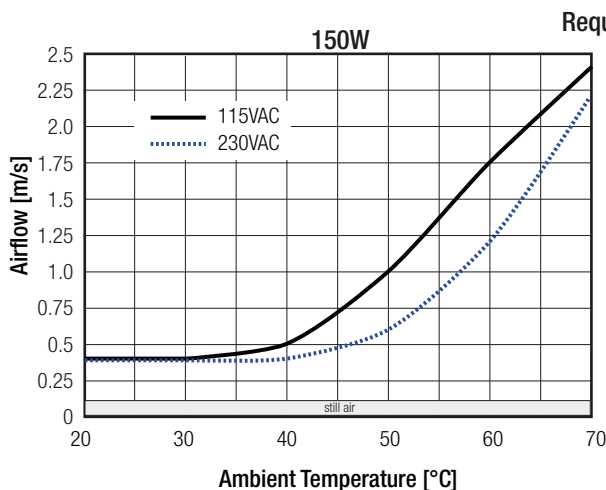
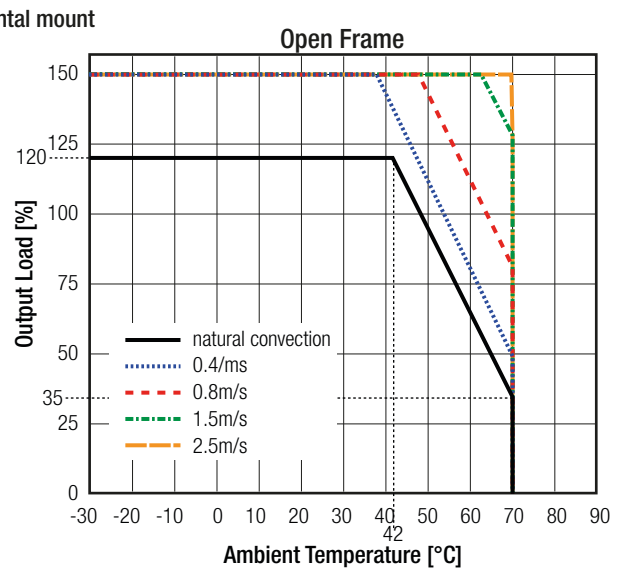
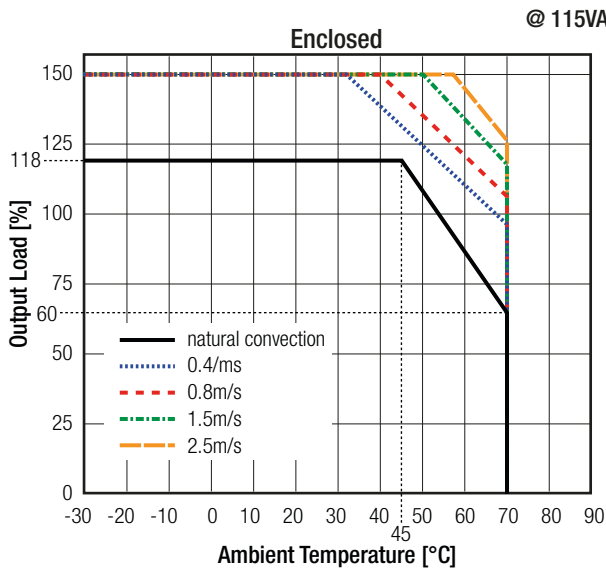
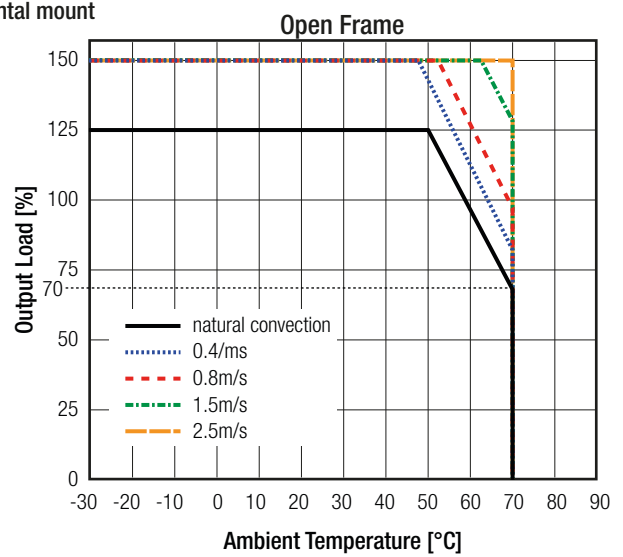
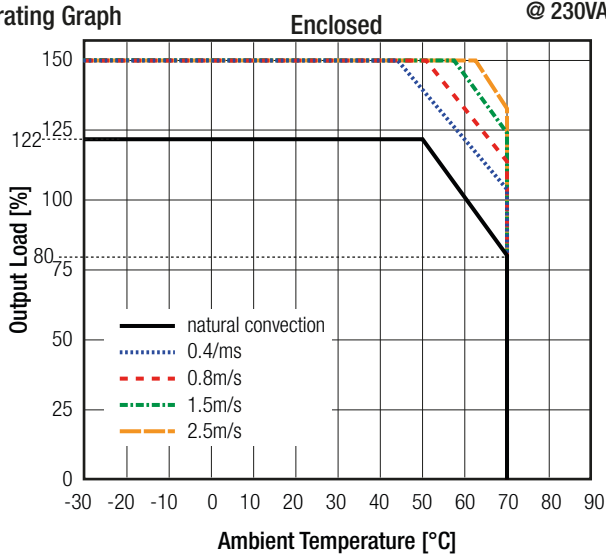
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Specifications (measured @ $T_a = 25^\circ\text{C}$, nom. V_{in} and full load unless otherwise stated)

Notes:

Note7: Recognized by UL for safe operation up to 5000m. High altitude operation may impact the performance and lifetime.
Contact TechsupportAT@RECOM-POWER.com for advice

Derating Graph



<0.1m/s = still air
0.1 - 0.2m/s = natural convection

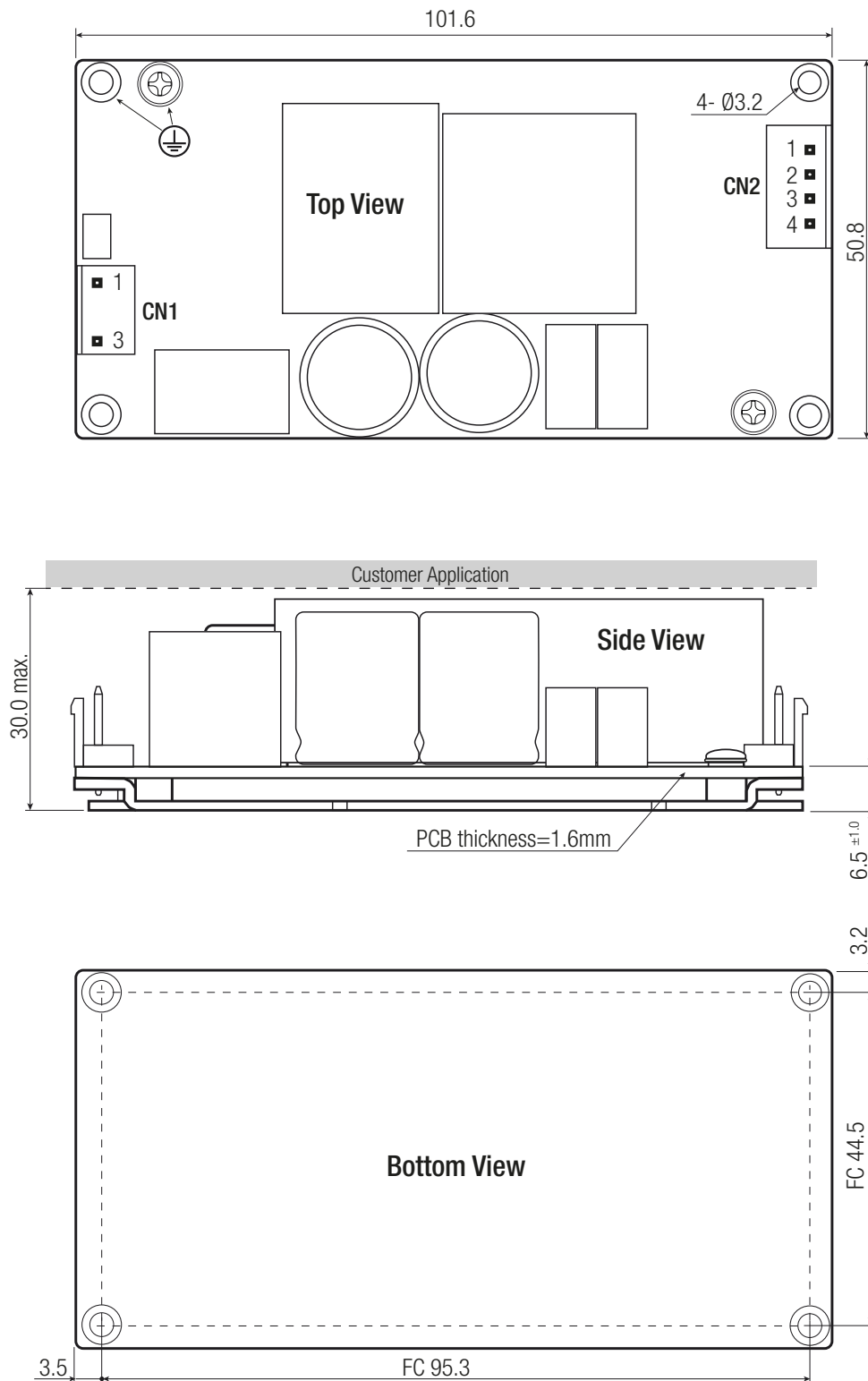
Specifications (measured @ Ta= 25°C, nom. Vin and full load unless otherwise stated)

SAFETY AND CERTIFICATIONS		
Certificate Type (Safety)	Report / File Number	Standard
Information Technology Equipment, General Requirements for Safety	E196683 A2	CAN/CSA-C22.2 No. 62368-1-14 UL62368-1, 2nd Edition, 2014
Audio/Video, information and communication technology equipment - Part1: Safety requirements		CAN/CSA-C22.2 No. 60950-1-07, 2nd Edition, 2014 UL60950-1, 2nd Edition, 2014
Audio/Video, information and communication technology equipment - Part1: Safety requirements (CB Scheme)	16BAS07018 11	IEC60950-1:2005 2nd Edition + Am2:2013 EN60950-1:2006 + A2:2013
	16BCS07018 21	IEC62368-1:2014 2nd Edition EN62368-1:2014
EAC Safety of Low Voltage Equipment	RU-AT.49.09571	TP TC 004/2011
RoHs 2		RoHS 2011/65/EU + AM2015/863
EMC Compliance		
	Condition	Standard / Criterion
Electromagnetic compatibility of multimedia equipment – Emission Requirements	16EAS07018 11	EN55032:2010 + AC:2011, Class B
Information technology equipment - Immunity characteristics - Limits and methods of measurement		EN55024:2010+A1:2015
Limitations on the amount of electromagnetic interference allowed from digital and electronic devices		47 CFR FCC Part 15 Subpart B: 2016
ESD Electrostatic Discharge Immunity Test	air ±8.0kV, contact ±4.0kV	EN61000-4-2:2009, Criteria B
Radiated, Radio-Frequency, Electromagnetic Field Immunity Test	3.0V/m	EN61000-4-3:2006 + A2:2010, Criteria A
Fast Transient and Burst Immunity	AC Power Port: ±1.0kV	EN61000-4-4:2012, Criteria B
Surge Immunity	AC Power Port: L-N ±1.0kV, L-PE+N-PE ±2.0kV	EN61000-4-5:2014, Criteria B
Immunity to Conducted Disturbances, Induced by Radio-Frequency Fields	AC Power Port 3.0V	EN61000-4-6:2014, Criteria A
Voltage Dips and Interruption	Voltage Dips >95% Voltage Dips 30% Voltage Interruptions > 95%	EN61000-4-11:2004, Criteria B
		EN61000-4-11:2004, Criteria C
		EN61000-4-11:2004, Criteria C
Limits of Harmonic Current Emissions		EN61000-3-2:2014, Criteria A
Limits of Voltage Fluctuations & Flicker		EN61000-3-3:2013

DIMENSIONS and PHYSICAL CHARACTERISTICS		
Parameter	Type	Value
Material	PCB	FR4 (UL94-V0)
	case/baseplate	aluminium
Dimension (LxWxH)	OF -version	101.6 x 50.8 x 30.0mm
	ENC-version	105.0 x 62.0 x 35.0mm
Weight	OF -version	200.0g
	ENC-version	265.0g
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Specifications (measured @ Ta= 25°C, nom. Vin and full load unless otherwise stated)

Dimension Drawing Open Frame (mm)



Connections

AC Input (CN1)

Pin #	Terminal
1 AC/L	3 Pins (Pin2 removed) with 3 AC/N
	3.96mm pitch

DC Output Connector (CN2)

Pin #	Terminal
1,2 V-	4 Pins with 3,4 V+
	3.96mm pitch

FC= fixing centers
Crimp Terminal AWG Range: 18-22AWG
Tolerance: xx.x= ±1.0mm
 xx.xx= ±0.5mm

Compatible Connectors

Connector Set available: **20900009**

Housing

Landwin 3960S Series
JST VHR
Molex 51144 Series

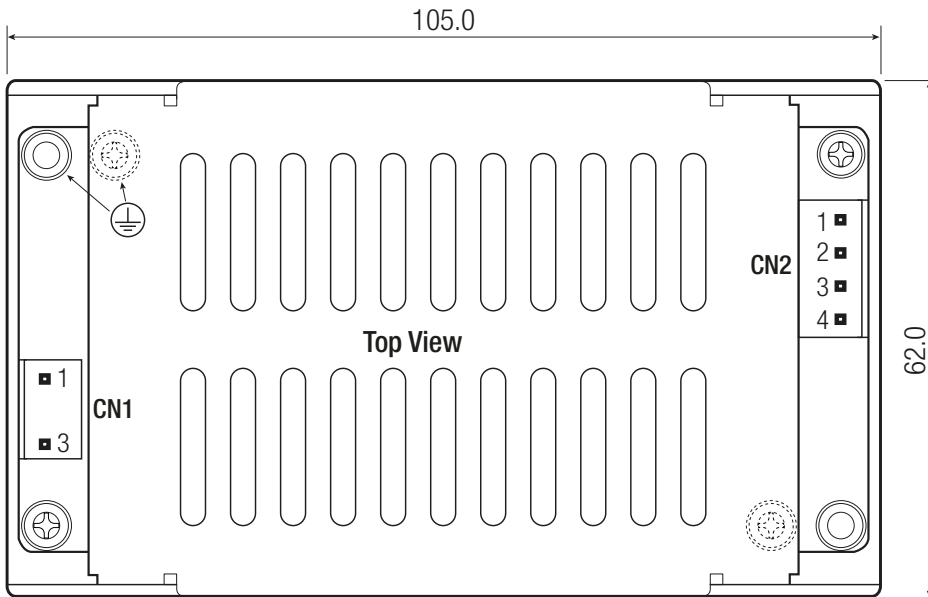
Crimp Terminal

Landwin 3963T011R
JST SVH-21T-P1.1
Molex 50539

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Specifications (measured @ Ta= 25°C, nom. Vin and full load unless otherwise stated)

Dimension Drawing Enclosed Case (mm)



Connections

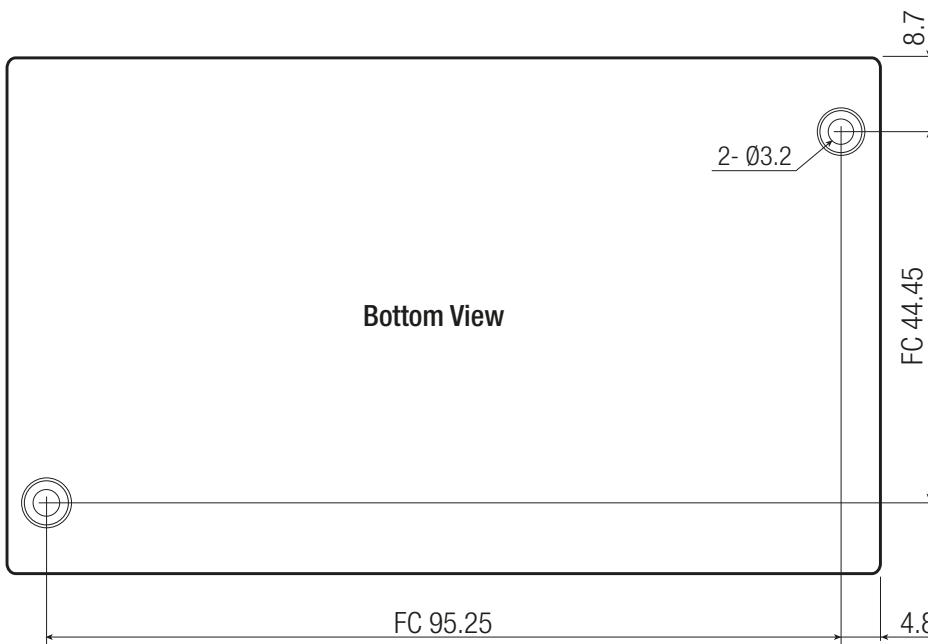
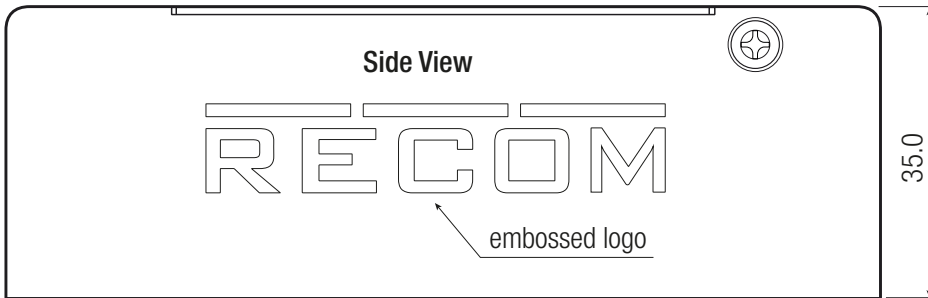
AC Input (CN1)

Pin #	Terminal
1 AC/L	3 Pins (Pin2 removed) with 3.96mm pitch
3 AC/N	

DC Output Connector (CN2)

Pin #	Terminal
1,2 V-	4 Pins with 3.96mm pitch
3,4 V+	

FC= fixing centers
Crimp Terminal AWG Range: 18-22AWG
Tolerance: xx.x= ±1.0mm
 xx.xx= ±0.5mm



Compatible Connectors

Connector Set available: 20900009

Housing

Landwin 3960S Series
JST VHR
Molex 51144 Series

Crimp Terminal

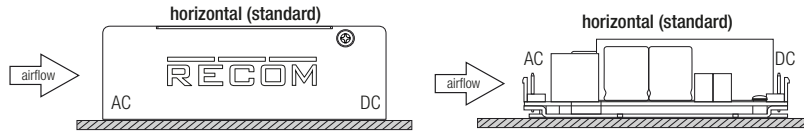
Landwin 3963T011R
JST SVH-21T-P1.1
Molex 50539

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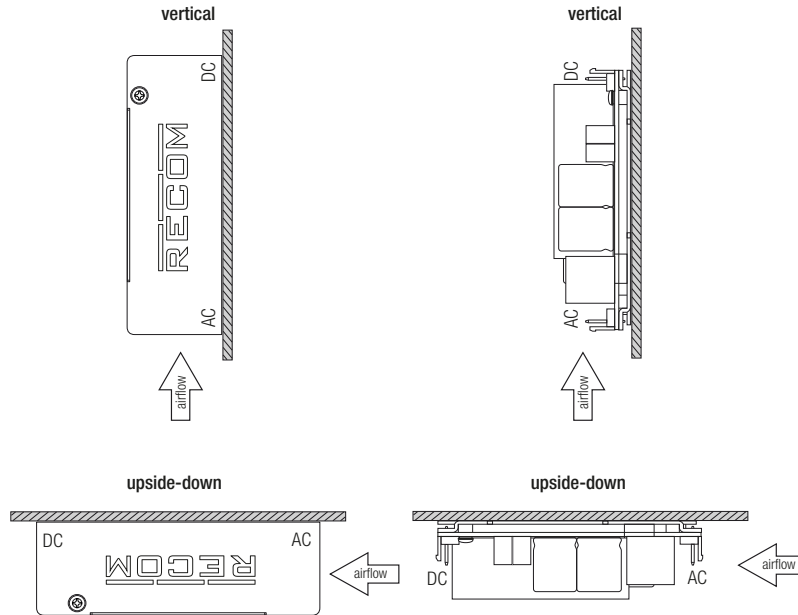
Specifications (measured @ Ta= 25°C, nom. Vin and full load unless otherwise stated)

APPLICATION and INSTALLATION

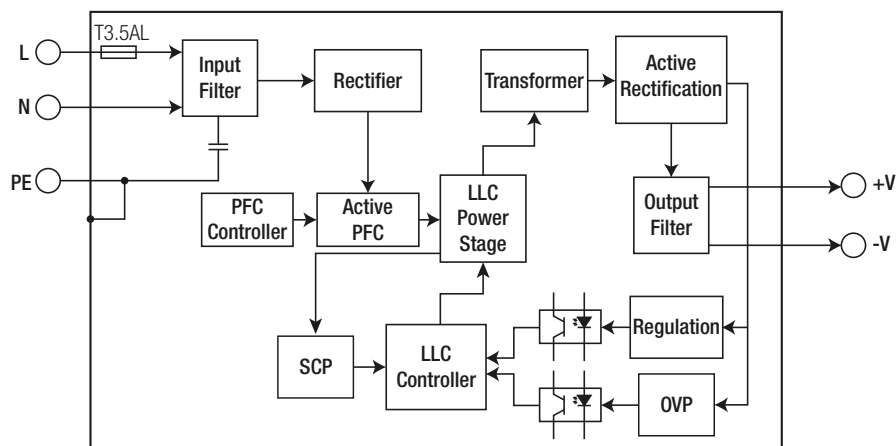
Mounting



If module is mounted vertical or upside-down with natural convection cooling, the power must be derated $\geq 10\%$.



Block Diagram



PACKAGING INFORMATION

Parameter	Type	Value
Packaging Dimension (LxWxH)	cardboard box	112.0 x 80.0 x 50.0mm
Packaging Quantity		1pcs
Storage Temperature Range		-40°C to +85°C
Storage Humidity	non-condensing	10% - 95% RH

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