Features

Regulated Converter

- 15 Watt PCB mount package
- Universal input voltage range
- 3kVAC / 1 minute isolation
- Low output ripple and noise
- Short circuit protected
- UL certified, CE marked

RECOM
AC/DC Converter

RAC15-A

15 Watt Single, Dual, Double, Triple Output

3 YEAR Warranty

Description

UL certified switching AC/DC power module for PCB, screw terminal connection or DIN-rail mounting.

Consider RAC15-K series for new designs

Selection Guide

Part Number	Input Voltage Range [VAC]	Output Voltage [VDC]	Output Current [mA]	Efficiency typ (1) [%]	Max. Capacitive Load [µF]
RAC15-05SA (2,3)	90-264	5	3000	74	31000
RAC15-12SA (2,3)	90-264	12	1250	79	4500
RAC15-15SA (2,3)	90-264	15	1000	78	2700
RAC15-24SA (2,3)	90-264	24	625	80	900
RAC15-05DA (2,3)	90-264	±5	±1500	76	±13500
RAC15-12DA (2,3)	90-264	±12	±650	79	±2700
RAC15-15DA (2,3)	90-264	±15	±500	77	±1400
RAC15-0512TA (2,3)	90-264	5/±12	2000/±200	73	14000/±900
RAC15-0515TA (2,3)	90-264	5/±15	2000/±150	73	14000/±680

c UL us E196683

EAC CE

Notes:

Note1: Efficiency is tested at nominal input and full load at +25°C ambient

Model Numbering

RAC15- A-E-

- nom. Output Power
- Output Voltage
- Connection (3)
- Temperature (2)
- **S**ingle, **D**ual or **T**riple

Notes:

Note2: with suffix "-E" for -40°C to +70°C operating temperature range
without suffix standard operating temperature range (-25°C to +70°C)

Note3: no suffix for standard package (THT)
add suffix "ST" for screw terminal module

Ordering Examples:

RAC15-05SA	15 Watt	5Vout	Single Output	Standard Temperature	THT
RAC15-05DA-E	15 Watt	±5Vout	Dual Output	Extended Temperature	THT
RAC15-0512TA-ST	15 Watt	5/±12Vout	Triple Output	Standard Temperature	Screw Terminal
RAC15-15SA-E-ST	15 Watt	15Vout	Single Output	Extended Temperature	Screw Terminal

UL60950-1 certified
CSA C22.2 No. 60950-1-07 certified
EN60950-1 certified
EN55032 compliant
EN55024 compliant

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

BASIC CHARACTERISTICS

Parameter	Condition			Min.	Typ.	Max.
Input Voltage Range [4]	nom. Vin = 230VAC			90VAC 120VDC	230VAC	264VAC 370VDC
Input Current	115VAC 230VAC					310mA 170mA
Inrush Current	2ms max.	115VAC	standard with suffix "-E"			10A 23A
		230VAC	standard with suffix "-E"			20A 46A
No load Power Consumption	115VAC/230VAC					1.37W
Input Frequency Range	AC Input			47Hz		440Hz
Minimum Load	Single, Dual Triple			0%	 10%	
Hold-up Time	115VAC/230VAC			15ms		
Internal Operating Frequency					100kHz	
Output Ripple and Noise [5]	20MHz BW	Noise Ripple		<0.5% Vout + 50mVp-p max. <0.2% Vout + 40mVp-p max.		

Notes:

Note4: The products were submitted for safety files at AC-Input operation

Note5: Measurements are made with a 0.1µF and 47µF MLCC across output (low ESR)

REGULATIONS

Parameter	Condition		Value
Output Accuracy			±2.0% typ.
Line Regulation	low line to high line	Single, Dual Triple	±0.5% typ. ±1.0% typ. (+5Vout) /±5.0 typ. (±Vout)
Load Regulation [6]	5% to 100% load	Single Dual Triple	0.5% typ. 3.0% typ. 2.0% typ. (+5Vout) / 5.0 typ. (±Vout)

Notes:

Note6: Operation below 5% load will not harm the converter, but specifications may not be met

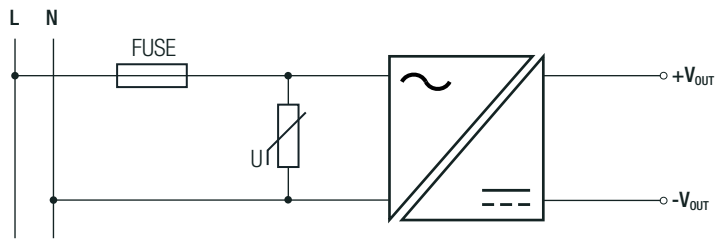
PROTECTIONS

Parameter	Type		Value
Short Circuit Protection (SCP)			Hiccup mode, auto recovery
Over Voltage Protection (OVP)			zener diode clamp
Isolation Voltage	I/P to O/P	tested for 1 minute	3kVAC
Isolation Resistance			100MΩ max.
Leakage Current			0.75mA max.

Notes:

Note7: Refer to local safety regulations if input over-current protection is also required. Recommended fuse: slow blow type

Note8: An external MOV is recommended. The varistor should comply with IEC-61051-2. e.g. 14S471K series

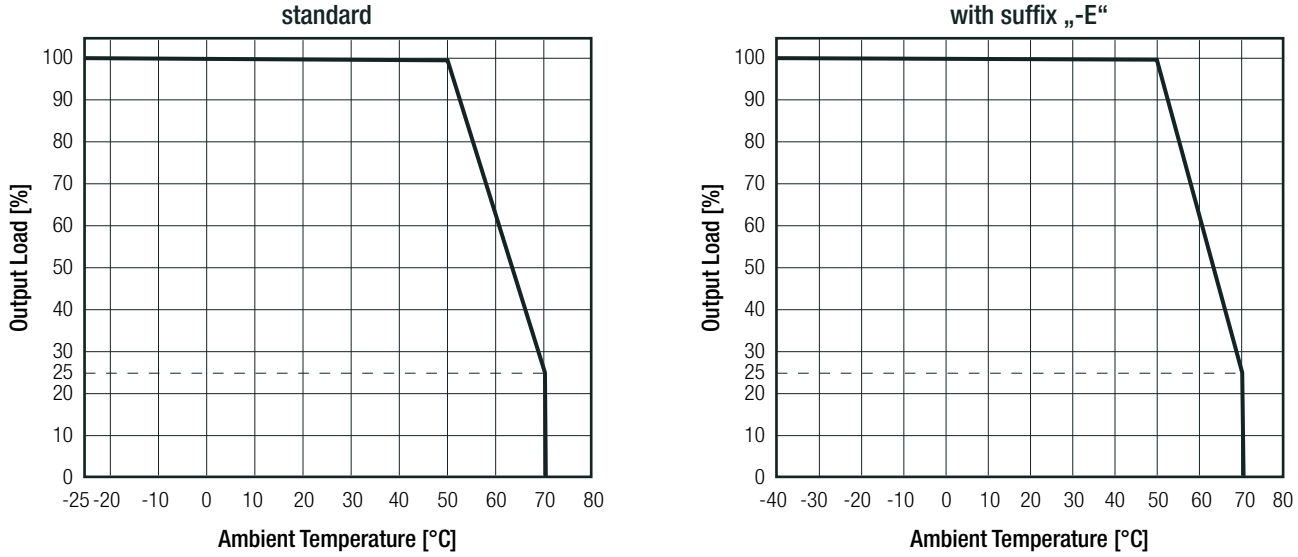


Specifications (measured @ Ta= 25°C, nom. Vin, full load and after warm-up unless otherwise stated)

ENVIRONMENTAL

Parameter	Condition			Value
Operating Temperature Range	@ natural convection 0.1m/s	full load	standard	-25°C to +50°C
			with suffix "-E"	-40°C to +50°C
Temperature Coefficient				±0.02%/K typ.
Operating Humidity	non-condensing			95% RH max.
MTBF	according to MIL-HDBK-217F, G.B.		+25°C	>200 x 10^3 hours

Derating Graph
(@ Chamber and natural convection 0.1m/s)



SAFETY AND CERTIFICATIONS

Certificate Type (Safety)	Report / File Number	Standard
Information Technology Equipment, General Requirements for Safety	E196683	UL60950-1, 2nd Edition, 2007 CAN/CSA-C22.2 No. 60950-1-07, 2nd Edition, 2007
Information Technology Equipment, General Requirements for Safety		EN60950-1:2006 + A2:2013
EAC Safety of Low Voltage Equipment	RU-AT.49.09571	TP TC 004/2011
RoHS2+		RoHS-2011/65/EU + AM-2015/863

EMC Compliance	Condition	Standard / Criterion
Electromagnetic compatibility of multimedia equipment – Emission Requirements		EN55032:2015, Class B
Information technology equipment - Immunity characteristics - Limits and methods of measurement		EN55024:2010 + A1:2015
Limits for harmonic current emissions		EN61000-3-2: 2014
Limitation of voltage fluctuations/flicker in low-voltage systems		EN61000-3-3: 2013

DIMENSION AND PHYSICAL CHARACTERISTICS

Parameter	Type	Value
Material	case	epoxy with fibreglas (UL94V-0)
Dimension (LxWxH)	standard with suffix "-ST"	74.0 x 54.0 x 22.0mm 111.9 x 64.6 x 27.6mm
Weight	standard with suffix "-ST"	133g typ. 208g typ.

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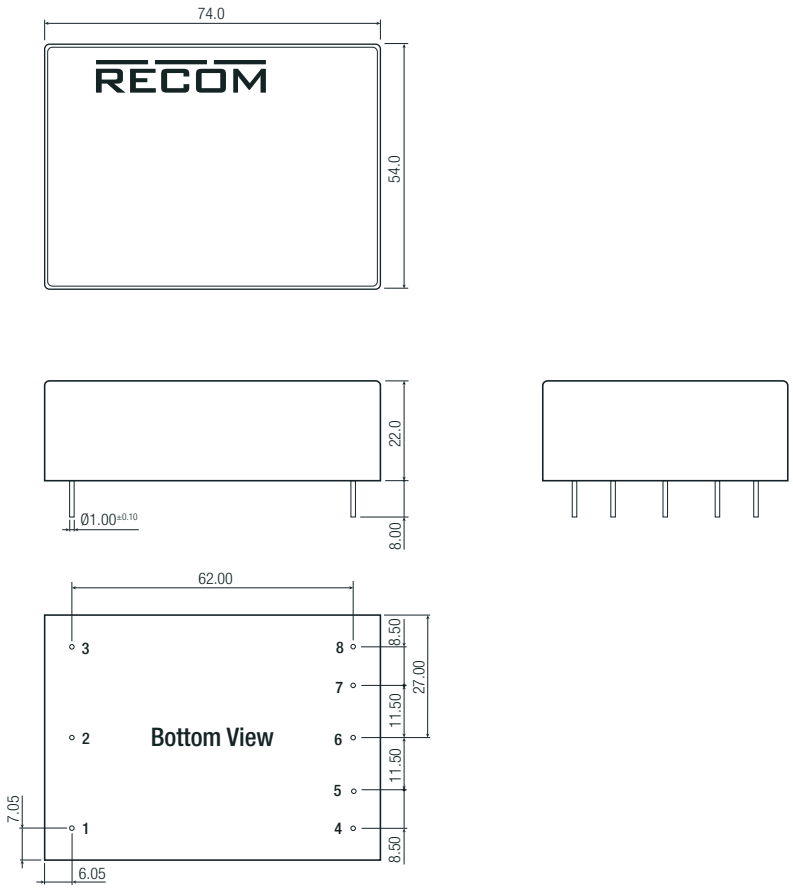
Specifications (measured @ Ta= 25°C, nom. Vin, full load and after warm-up unless otherwise stated)

Dimension Drawing (mm)

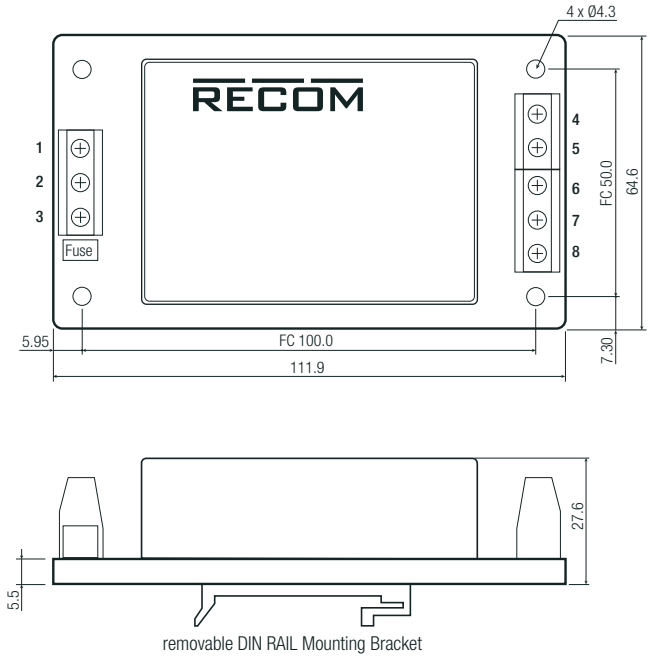


Pin Connections

Pin #	Single	Dual	Triple
1	FG	FG	FG
2	VAC in (N)	VAC in (N)	VAC in (N)
3	VAC in (L)	VAC in (L)	VAC in (L)
4	no Pin	no Pin	-Vout
5	-Vout	-Vout	Com
6	no Pin	Com	+Vout
7	+Vout	+Vout	+5V Rtn
8	no Pin	no Pin	+5Vout

Tolerance: xx.x= ±0.5mm
xx.xx= ±0.25mm

Screw Terminal Module "ST" version



removable DIN RAIL Mounting Bracket

Screw terminal information

#	Single	Dual	Triple
1	FG	FG	FG
2	VAC in (N)	VAC in (N)	VAC in (N)
3	VAC in (L)	VAC in (L)	VAC in (L)
4	NC	NC	-Vout
5	-Vout	-Vout	Com
6	NC	Com	+Vout
7	+Vout	+Vout	+5V Rtn
8	NC	NC	+5Vout

7.5mm Pitch
suitable wire: 24-12AWG (0.5-2.5mm²)
wire stripping length: 7mm typ.
recommended tightening torque: 0.5Nm
NC = No Connection
FC = Fixing Centers
Tolerance: xx.x= ±0.5mm
xx.xx= ±0.25mm

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

PACKAGING INFORMATION			
Parameter	**Type**		**Value**
Packaging Dimension (LxWxH)	cardboard box	standard	260.0 x 70.0 x 42.0mm
		with suffix "-ST"	119.0 x 64.0 x 54.0mm
Packaging Quantity	standard		3pcs
	with suffix "-ST"		1pcs
Storage Temperature Range			-40°C to +85°C
Storage Humidity	non-condensing		95% RH