!NOT RECOMMENDED FOR NEW DESIGNS!
(LAST TIME BUY: 26TH MARCH 2026)

Features

Regulated Converters

- 6-Side Shielding
- External ON/OFF control
- 1.6kVDC Isolation
- UL/CSA/EN-60950-1 Certified
- Wide 4:1 Input Voltage Range
- Continuous Short Circuit Protection
- Efficiency up to 91%
- Fixed Switching Frequency

RECOM
DC/DC Converter

REC20-Z

20 Watt 2“ x 1“ Single and Dual Output

3 YEAR warranty

Description

The REC20-xxxxS_DZ -series offer single and dual regulated outputs in a 2”x1” package with 1.6kVDC isolation and are suitable for higher power industrial applications. Remote on/off control is standard. The higher current outputs have raised output voltages to compensate for track losses as standard. The converter is fully certified to UL/EN/IEC safety standards.



Selection Guide

Part Number	Input Voltage Range [VDC]	Output Voltage [VDC]	Output Current [mA]	Efficiency typ. [%]	max. Capacitive Load [µF]
REC20-243.4SZ	9-36	3.4	5000	88	13000
REC20-245.1SZ	9-36	5.1	4000	90	9600
REC20-2412SZ	9-36	12	1667	89.5	1650
REC20-2415SZ	9-36	15	1333	90	1050
REC20-2405DZ	9-36	±5	±2000	87	±4800
REC20-2412DZ	9-36	±12	±834	89	±625
REC20-2415DZ	9-36	±15	±667	89	±525
REC20-483.4SZ	18-75	3.4	5000	88	13000
REC20-485.1SZ	18-75	5.1	4000	90	9600
REC20-4812SZ	18-75	12	1667	89.5	1650
REC20-4815SZ	18-75	15	1333	90.5	1050
REC20-4805DZ	18-75	±5	±2000	87	±4800
REC20-4812DZ	18-75	±12	±835	90	±625
REC20-4815DZ	18-75	±15	±667	91	±525

RoHS 2+ compliant 10 from 10 · REACH compliant · IECEE CB SCHEME

c UL us
E224736

IEC/EN60950-1 Certified
UL60950 Certified
CSA C22.2 NO. 60950 Certified
EN55022 Certified

PREFERRED ALTERNATIVES
Please consider these alternatives:
RP20-FW Series

Model Numbering

REC20-__ __ _Z

nom. Input Voltage
Output Voltage
Single or **D**ual

Ordering Examples:
REC20-4812SZ, Single Output, 18-75Vin (4:1) and 12Vout
REC20-2412DZ, Dual Output, 9-36Vin (4:1) and ±12Vout

YOU MAY ALSO LIKE
Please consider these alternatives:
REC20K-Z Series

RECOM

DC/DC Converter

REC20-Z Series

Specifications (measured @ ta= 25°C, nominal input voltage, full load and after warm up unless otherwise specified)

BASIC CHARACTERISTICS

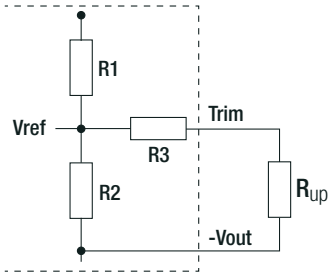
Parameter	Condition		Min.	Typ.	Max.
Input Voltage Range	nom. Vin= 24V nom. Vin= 48V		9VDC 18VDC		36VDC 75VDC
Start/up Time				10ms	
Under Voltage Lockout (UVLO)	nom. Vin= 24V	DC-DC ON DC-DC OFF		9VDC 7.5VDC	
	nom. Vin= 48V	DC-DC ON DC-DC OFF		18VDC 16VDC	
Output Voltage Trimming	see calculation below				±10%
CTRL ON/OFF	DC-DC ON DC-DC OFF				Open or 2.5V<Vr<12V Short or 0V<Vr<1.2V
Internal Operating Frequency				300kHz	
Minimum Load			0%		
Output Ripple and Noise (1)					100mVp-p

Notes:

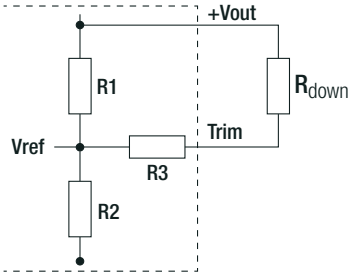
Note1: Ripple and Noise is measured with a 20MHz bandwidth and a 0.1µF ceramic capacitor.

Output Voltage Trimming

Trim UP



Trim DOWN



Vout	3.4V	5.1V	12V	15V
R1	4.71 kΩ	2.3 kΩ	19.43 kΩ	25.6 kΩ
R2	2.7 kΩ	2.2 kΩ	5.1 kΩ	
R3	15 kΩ	9.1 kΩ	36 kΩ	
Vref	1.24 V	2.5 V		

Trim Calculation

Vout = nom. output voltage

ΔVout = output voltage trim

R_{up} = trim up resistor

R_{down} = trim down resistor

a = trim up factor

b = trim down factor

$$\Delta Vout = Vout - Vout_{trimmed}$$

$$R_{up} = \left[\frac{a*R2}{R2 - a}\right] - R3 = k\Omega \qquad a = \left[\frac{Vref}{(Vout + \Delta Vout) - Vref}\right] * R1 = k\Omega$$

$$R_{down} = \left[\frac{b*R1}{R1 - b}\right] - R3 = k\Omega \qquad b = \left[\frac{(Vout + \Delta Vout) - Vref}{Vref}\right] * R2 = k\Omega$$

Trim Up:

Vout = 5.1V, ΔVout = 0.51V (10%), Vref= 2.5V

$$a = \left[\frac{2.5V}{(5.1V + 0.51V) - 2.5V}\right] * 2.3k\Omega = \mathbf{1.843k\Omega} \qquad R_{up} = \left[\frac{1.843k\Omega * 2.2k\Omega}{2.2k\Omega - 1.843k\Omega}\right] - 9.1k\Omega = \mathbf{2.255k\Omega}$$

Trim down:

Vout = 5.1V, ΔVout = -0.51V (-10%), Vref= 2.5V

$$b = \left[\frac{[5.1V + (-0.51V)] - 2.5V}{2.5V}\right] * 2.2k\Omega = \mathbf{1.839k\Omega} \qquad R_{down} = \left[\frac{1.839k\Omega * 2.3k\Omega}{2.3k\Omega - 1.839\Omega}\right] - 9.1k\Omega = \mathbf{0.080k\Omega}$$

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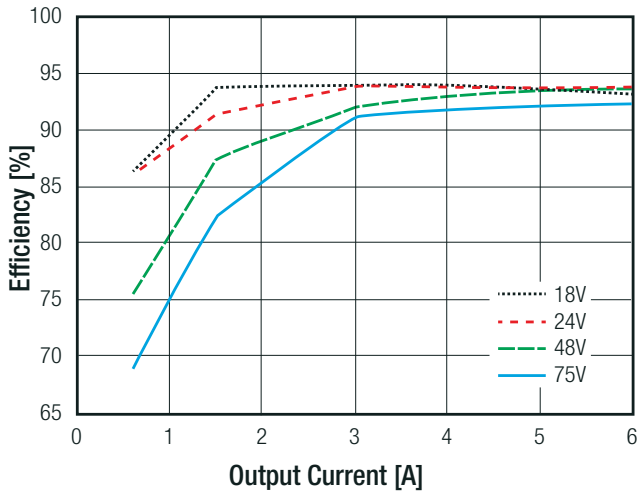
DC/DC Converter

REC20-Z Series

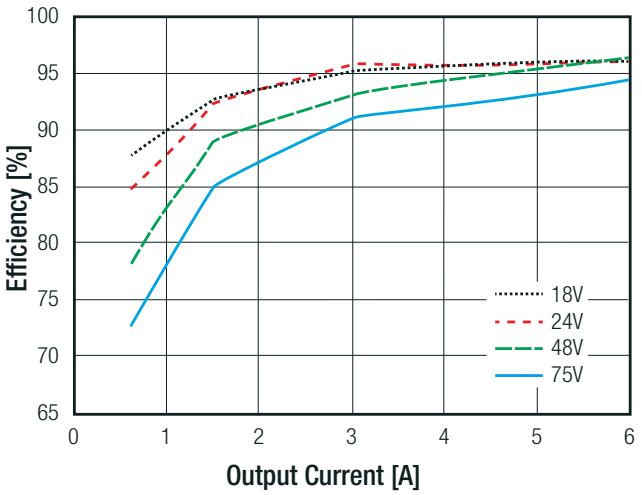
Specifications (measured @ ta= 25°C, nominal input voltage, full load and after warm up unless otherwise specified)

Efficiency vs. Load

REC20-485.1SZ



REC20-4815SZ

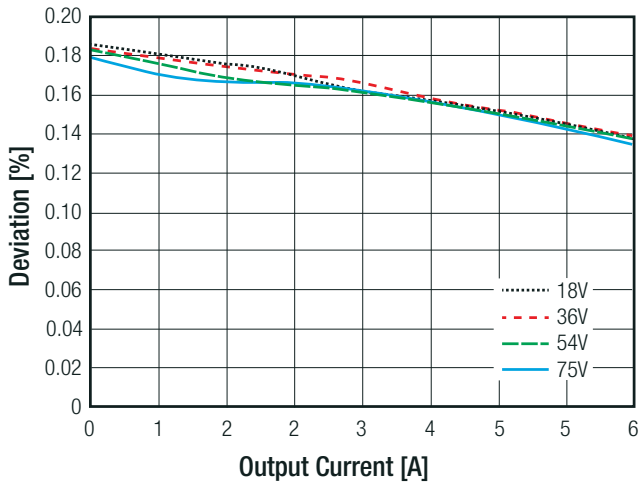


REGULATIONS

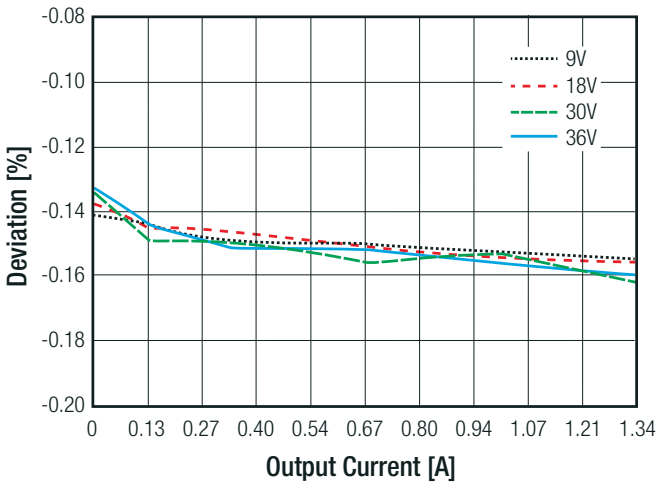
Parameter	Condition	Type	Values
Output Accuracy			±1.0% max.
Line Regulation	low line to high line, full load		±0.2% max.
Load Regulation	0% to 100% load	single output dual output	±0.5% max. ±1.0% max.
Cross Regulation	25% to 100% load	dual output	±5.0% max.
Transient Response Recovery Time	25% load step change		250µS typ.

Deviation vs. Load

REC20-485.1SZ



REC20-2415SZ



Specifications (measured @ ta= 25°C, nominal input voltage, full load and after warm up unless otherwise specified)

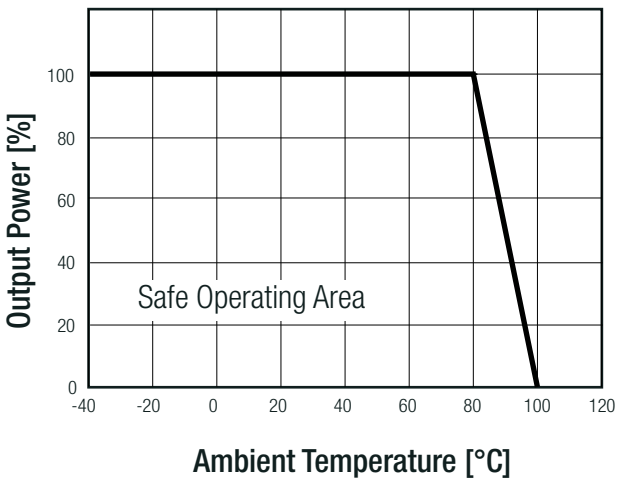
PROTECTIONS			
Parameter	**Condition**		**Value**
Short Circuit Protection (SCP)	below 100mΩ		continuous, automatic recovery
Over Voltage Protection (OVP)	Zerner Diode Clamp	3.4Vout 5.1Vout 12Vout 15Vout	4.5VDC typ. 7VDC typ. 16VDC typ. 20VDC typ.
Over Load Protection (OLP)			180% typ.
Isolation Voltage	I/P to O/P	tested for 1 minute	1.6kVDC
Isolation Capacitance			1200pF typ.
Isolation Resistance			1GΩ min.

ENVIRONMENTAL		
Parameter	**Condition**	**Value**
Operating Temperature Range	with derating (see graph)	-40°C to +100°C
Maximum Case Temperature		+105°C
Temperatur Coefficient		0.02%/°C typ.
Thermal Impedance	natural convection (0.1m/s)	12°C/W
Operating Altitude		5000m
Operating Humidity	non-condensing	5% - 95% RH max.
Vibration		MIL-STD-202G
MTBF	according to MIL-HDBK-217F G.B., +25°C, referring to REC20-485.1SZ	1098 x 10^3 hours

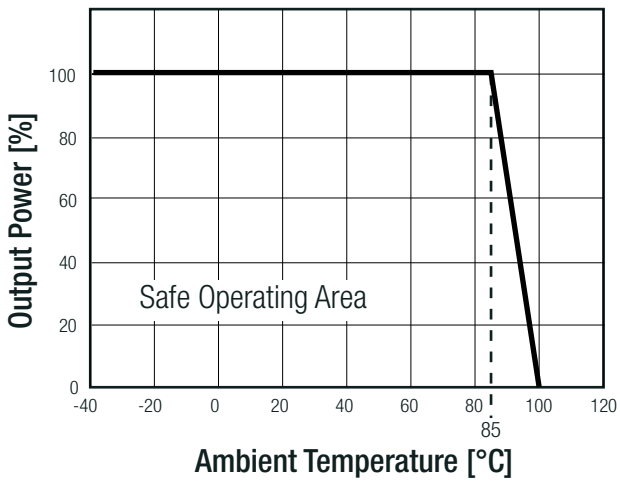
Derating Graph

@ nominal input voltage, full load and natural convection (0.1m/s)

REC20-485.1SZ



REC20-2415SZ



Notes:

Note2: For more details, please contact our technical support service at techsupporemea@recom-power.com

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DC/DC Converter

REC20-Z Series

Specifications (measured @ ta= 25°C, nominal input voltage, full load and after warm up unless otherwise specified)

SAFETY AND CERTIFICATIONS

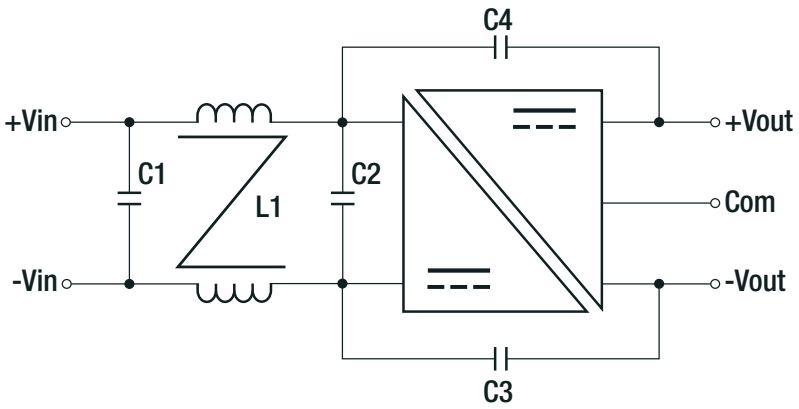
Certificate Type	Report / File Number	Standard
CB General Safety	E224736	IEC60950-1, 2nd Edition, 2013
UL General Safety		UL60950-1, 2nd Edition, 2014
EN General Safety		EN60950-1, 2nd Edition, 2013
CAN/CSA General Safety		C22.2 No. 60950-1-07, 2014

EMC Compliance	Condition	Standard / Criterion
EMI	without external filter with external filter (see filter suggestions)	EN55022, Class A EN55022, Class B
ESD	Air: ±8kV; Contact: ±4kV	EN61000-4-2, Criteria B
Radiated Immunity	10V/m	EN61000-4-3, Criteria A
Fast Transient	±1kV	EN61000-4-4, Criteria B
Surge (3)	±1kV	EN61000-4-5, Criteria A
Conducted Immunity	10Vr.m.s	EN61000-4-6, Criteria A
Power Magnetic Field	50Hz 1A/m (r.m.s)	EN61000-4-8, Criteria A

Notes:

Note3: An external MOV is required if the module has to meet EN61000-4-5. The MOV suggest: NichTek SVI32-380

EMC Filtering - Suggestions for Class B



MODEL	C1	C2	L1	C3	C4
REC20-24xxS(D)Z	4.7µF/50V	4.7µF/50V	1.5mH CMC	1000pF/2kV	1000pF/2kV
REC20-48xxS(D)Z	2.2µF/100V	2.2µF/100V	2.0mH CMC	1000pF/2kV	1000pF/2kV

DIMENSION and PHYSICAL CHARACTERISTICS

Parameter	Type	Value
Material	Case	nickel plated copper
	Base	non conductive black plastic
	PCB	FR4
	Potting	silicone (UL94 V-0)
Package Dimension (LxWxH)		50.8 x 25.4 x 10.2mm
Package Weight		27g typ.

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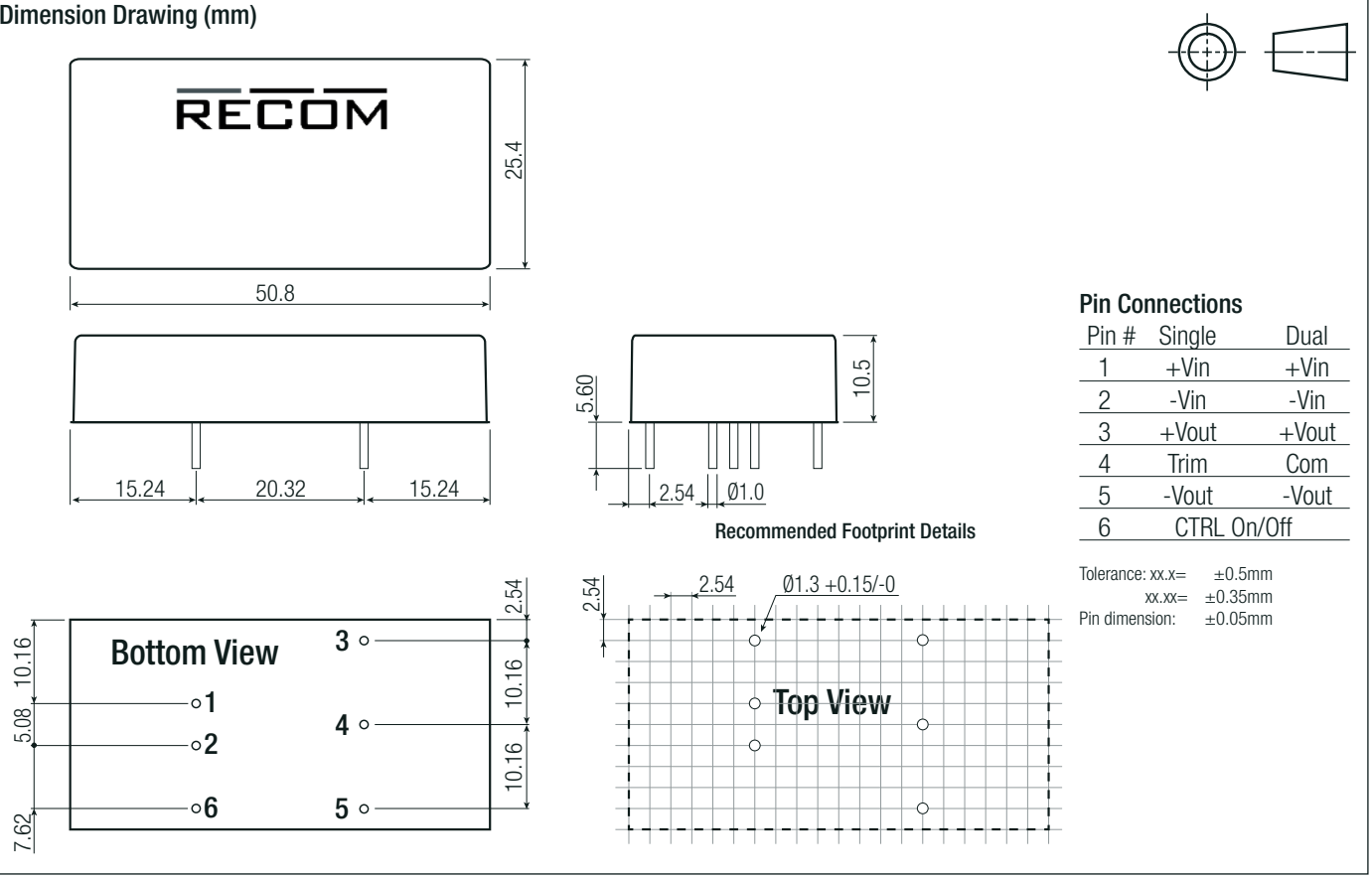
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REC20-Z Series

Specifications (measured @ ta= 25°C, nominal input voltage, full load and after warm up unless otherwise specified)

Dimension Drawing (mm)



Pin Connections

Pin #	Single	Dual
1	+Vin	+Vin
2	-Vin	-Vin
3	+Vout	+Vout
4	Trim	Com
5	-Vout	-Vout
6	CTRL On/Off	

Tolerance: xx.x= ±0.5mm
xx.xx= ±0.35mm
Pin dimension: ±0.05mm

PACKAGING INFORMATION		
Packaging Dimension (LxWxH)	Tube	520.0 x 54.5 x 21.0mm
Packaging Quantity		18pcs
Storage Temperature Range		-55°C to +125°C

The product information and specifications may be subject to changes even without prior written notice.The product has been designed for various applications; its suitability lies in the responsibility of each customer. The products are not authorized for use in safety-critical applications without RECOM's explicit written consent. A safety-critical application is an application where a failure may reasonably be expected to endanger or cause loss of life, inflict bodily harm or damage property. The applicant shall indemnify and hold harmless RECOM, its affiliated companies and its representatives against any damage claims in connection with the unauthorized use of RECOM products in such safety-critical applications.