Features

- 4:1 Wide Input Voltage Range
- 20 Watts Output Power
- 1.6kVDC Isolation
- UL 60950 Pending
- Fixed Operating Frequency
- Six-Sided Continuous Shield
- Standard 50.8 x40.6x10.2mm Package
- Efficiency to 84%

POWERLINE
DC/DC-Converter

RP20-S_DEW Series

20 Watt Single & Dual Output



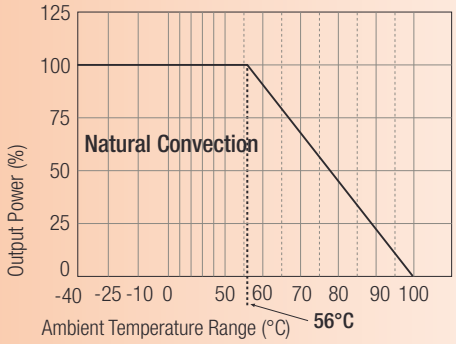
Selection Guide 24V and 48V Input Types

Part Number	Input Range	Output Voltage	Output Current	Input [4] Current	Efficiency[5]	Capacitive[6] Load max.
	VDC	VDC	mA	mA	%	µF
RP20-243.3SEW	9-36	3.3	4000	764	76	13000
RP20-2405SEW	9-36	5	4000	1111	79	6800
RP20-2412SEW	9-36	12	1670	1082	81	2200
RP20-2415SEW	9-36	15	1330	1082	81	755
RP20-483.3SEW	18-75	3.3	4000	377	77	13000
RP20-4805SEW	18-75	5	4000	548	80	6800
RP20-4812SEW	18-75	12	1670	541	81	2200
RP20-4815SEW	18-75	15	1330	541	81	755
RP20-2405DEW	9-36	±5	±2000	1111	79	±3400
RP20-2412DEW	9-36	±12	±833	1082	81	±680
RP20-2415DEW	9-36	±15	±666	1068	82	±450
RP20-4805DEW	18-75	±5	±2000	556	79	±3400
RP20-4812DEW	18-75	±12	±833	527	83	±680
RP20-4815DEW	18-75	±15	±666	521	84	±450

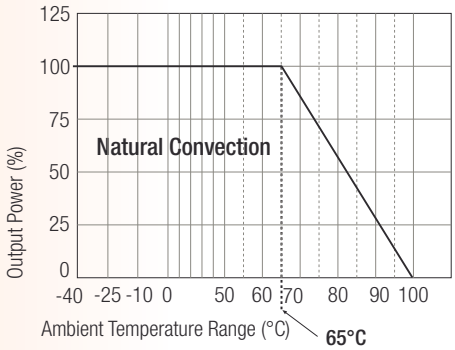
RECOM

Derating-Graph (Ambient Temperature)

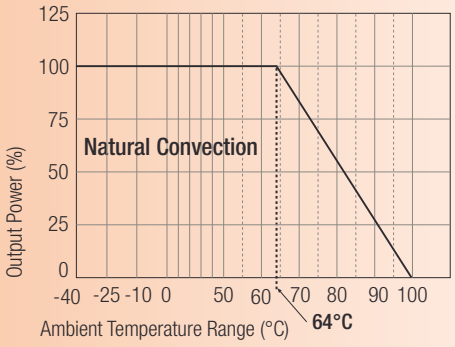
RP20-2412SEW



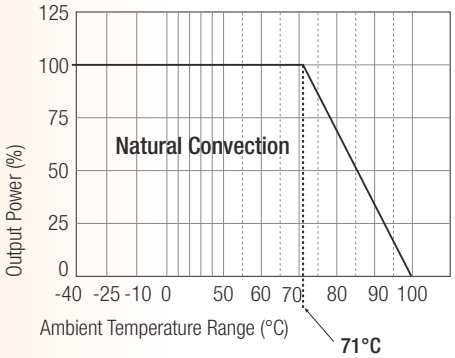
RP20-2412SEW With Heat Sink



RP20-2412DEW



RP20-2412DEW With Heat Sink



Derating graphs are valid only for the shown part numbers. If you need detailed derating-information about a part-number not shown here please contact our technical customer service at info@recom-development.at

Specifications (typical at nominal input and 25°C unless otherwise noted)

Input Voltage Range	24V nominal input	9-36VDC
	48V nominal input	18-75VDC
Input Filter		Pi Type
Input Surge Voltage (100 ms max.)	24V Input	50VDC
	48V Input	100VDC
Input Reflected Ripple (nominal Vin and full load) (see Note 3)		25mAp-p
Start Up Time (nominal Vin and constant resistor load)		20ms typ.
Remote ON/OFF (see Note 7)	DC-DC ON	Open or 3.5V < Vr < 12V
(Positive logic)	DC-DC OFF	Short or 0V < Vr < 1.2V
Remote OFF input current	Nominal input	20mA
Output Power		20W max.
Output Voltage Accuracy (full Load and nominal Vin)	Single & Dual	±2%
	Auxiliary	±5%
Voltage Adjustability		±10%
Line Regulation (low line, high line at full load)	Single (W)	±0.2%
	Dual (W)	±0.5%
	Auxiliary	±5%
Minimum Load (see Note 1)		10% of full load

continued on next page

RP20-S_DEW Series

Specifications (typical at nominal input and 25°C unless otherwise noted)

Line Regulation (low line, high line at full load)	Single (W)	±0.2%
	Dual (W)	±0.5%
	Auxiliary	±5%
Load Regulation (25% to 100% full load)	Single	±0.5%
	Dual	±3%
	Auxiliary	±5%
Cross Regulation (see Note 9)	Dual	±5%
	Auxiliary	±5%
Ripple and Noise (20MHz bandwith)	Single	75mVp-p
	Dual	100mVp-p
	Auxiliary	1% of Vout
Temperature Coefficient		±0.02%/°C max.
Transient Response (25% load step change)		500µs
Over Voltage Protection	3.3V	3.9V
Zener diode clamp (only single)	5V	6.2V
	12V	15V
	15V	18V
Short Circuit Protection		Hiccup, automatic recovery
Efficiency		see „Selection Guide“ table
Isolation Voltage		1600VDC min.
Isolation Resistance		1 GΩ min.
Isolation Capacitance		300pF max.
Operating Frequency		300kHz typ.
Approved to Safety Standards		EN60950
Operating Temperature Range		-40°C to +85°C(with derating)
Maximum Case Temperature		+100°C
Storage Temperature Range		-55°C to +105°C
Thermal Impedance	Natural convection	10°C/Watt
(see Note 8)	Natural convection with Heat Sink	8.24°C/Watt
Thermal Shock		MIL-STD-810D
Vibration		10-55Hz, 2G, 30 Min. along X, Y and Z
Relative Humidity		5% to 95% RH
Case Material		Nickel plated copper
Base Material		Non-conductive black plastic
Potting Material		Epoxy (UL94-V0)
Conducted Emissions (see Note 10)	EN55022	Level A
Radiated Emissions	EN55022	Level A
ESD	EN61000-4-2	Perf. Criteria 2
Radiated Immunity	EN61000-4-3	Perf. Criteria 2
Fast Transient	EN61000-4-4	Perf. Criteria 2
Surge	EN61000-4-5	Perf. Criteria 2
Conducted Immunity	EN61000-4-6	Perf. Criteria 2
Weight		48g
Dimensions		50.8 x 40.6 x 10.2mm
MTBF (see note 2)		1928 x 10^3 hours

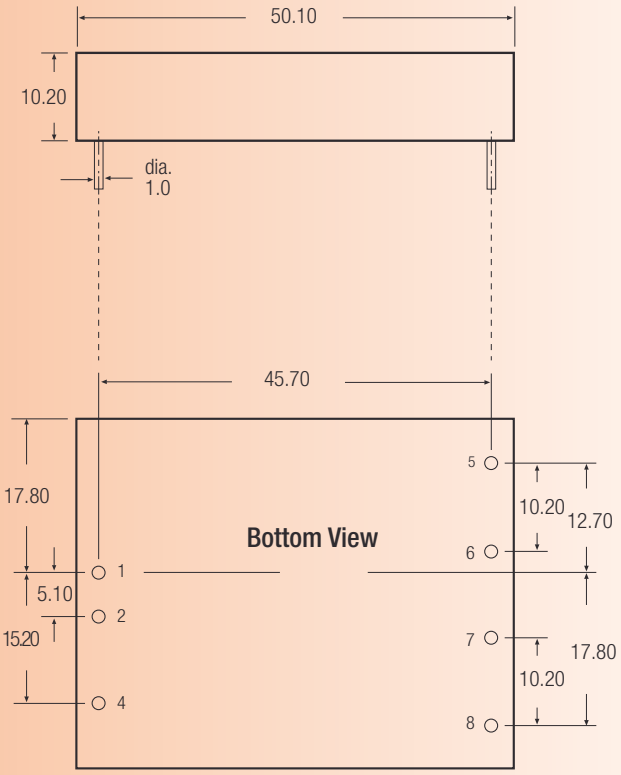
RP20-S_DEW Series

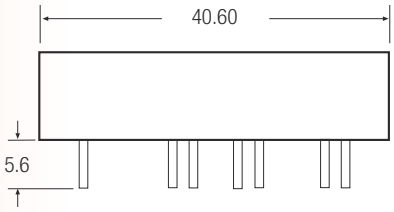
Notes :

1. The RP20 series requires a minimum of 10% loading on the output to maintain specified regulation. Operation under no-load condition will not damage these devices, however they may not meet all listed specification.
2. BELLCORE TR-NWT-000332. Case I: 50% Stress, Temperature at 40°C (Ground fixed and controlled environment).
3. Simulated source impedance of 12µH. 12µH inductor in series with +Vin.
4. Maximum value at nominal input voltage and full load of standard type.
5. Typical value at nominal input voltage and full load.
6. Test by minimum Vin and constant resistor load.
7. The ON/OFF control voltage is reference to negative input.
8. Heat sink is optional and P/N: 7G-0011A. Operation temperature range please see curve.
9. Cross regulation: Dual output—Asymmetrical load 25% to 100% full load
   Triple output – 3.3V / 5V 100% load and one of auxiliary 100% load, other auxiliary load change from 25% to 100% load
10. See application notes for EMI-filtering.

Package Style and Pinning (mm)

3rd angle projection





Pin Connections

Pin #	Single	Dual
1	+Vin	+Vin
2	-Vin	-Vin
4	CTRL	CTRL
5	No Pin	+Vout
6	+Vout	Com
7	-Vout	-Vout
8	Trim	Trim

Pin Pitch Tolerance ±0.35 mm

External Output Trimming

Output can be externally trimmed by using the method shown below.
( ) for dual output trim

