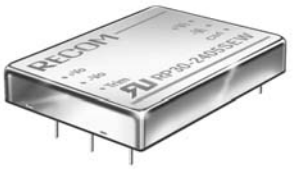
Features

- 4:1 Wide Input Voltage Range
- 30 Watts Output Power
- 1.6kVDC Isolation
- UL 1950 Component Recognized
- Fixed Operating Frequency
- Six-Sided Continuous Shield
- Standard 50.8 x40.6x10.2mm Package
- Efficiency to 88%

POWERLINE
DC/DC-Converter

RP30-S_DEW Series

30 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
RP30-241.5SEW	10-40	1.5	8000	658	80	65000
RP30-241.8SEW	10-40	1.8	8000	759	83	65000
RP30-242.5SEW	10-40	2.5	8000	1029	85	33000
RP30-243.3SEW	10-40	3.3	6000	994	87	19500
RP30-2405SEW	10-40	5	6000	1506	87	10200
RP30-2412SEW	10-40	12	2500	1506	87	3300
RP30-2415SEW	10-40	15	2000	1488	88	1100
RP30-481.5SEW	18-75	1.5	8000	329	80	65000
RP30-481.8SEW	18-75	1.8	8000	380	83	65000
RP30-482.5SEW	18-75	2.5	8000	508	86	33000
RP30-483.3SEW	18-75	3.3	6000	497	87	19500
RP30-4805SEW	18-75	5	6000	744	88	10200
RP30-4812SEW	18-75	12	2500	753	87	3300
RP30-4815SEW	18-75	15	2000	744	88	1100
RP30-2412DEW	10-40	±12	±1250	1543	85	±1000
RP30-2415DEW	10-40	±15	±1000	1524	86	±680
RP30-4812DEW	18-75	±12	±1250	762	86	±1000
RP30-4815DEW	18-75	±15	±1000	753	87	±680

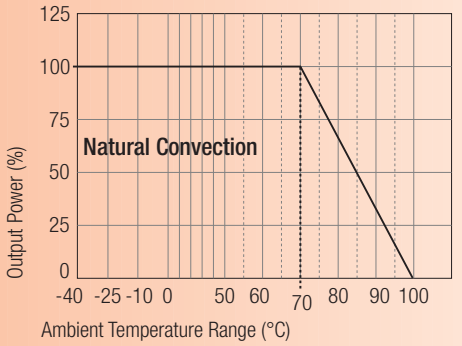
Description

The EW-Series of DC/DC Converters are fully certified to EN 60950: 2000.
This makes them ideal for all
Telecom and safety applications where approved isolation is required.

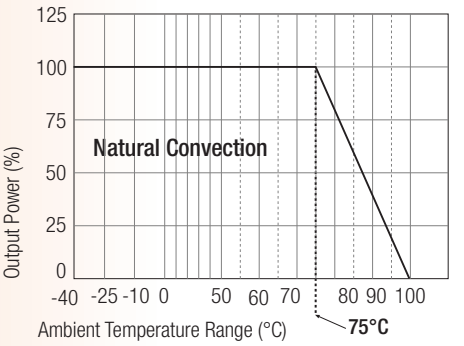
RP30-S_DEW Series

Derating-Graph (Ambient Temperature)

RP30-243.3SEW



RP30-243.3SEW With Heat Sink

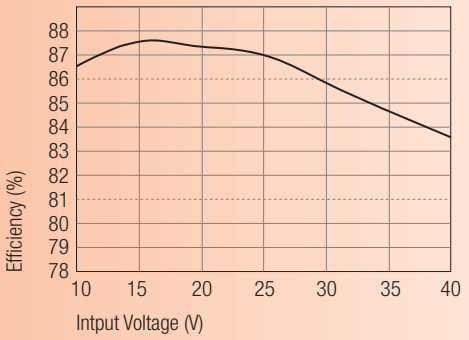


Derating graphs are valid only for the shown part numbers. If you need detailed derating-information about a part-number not shown here please contact our technical customer service at info@recom-development.at

Typical Characteristics

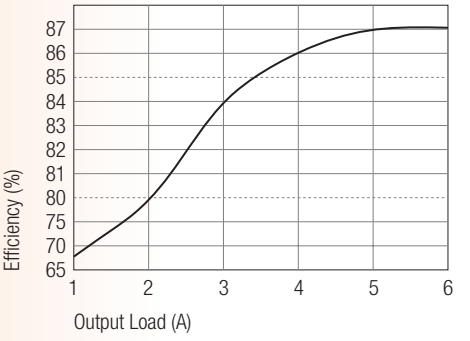
RP30-483.3SEW

Efficiency VS Input Voltage



RP30-483.3SEW

Efficiency VS Output Load



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

Input Voltage Range	24V nominal input		10-40VDC
	48V nominal input		18-75VDC
Under Voltage Lockout	24V input	DC-DC ON	10VDC
		DC-DC OFF	8VDC
	48V input	DC-DC ON	18VDC
		DC-DC OFF	16VDC
Input Filter (see Note 1)			L-C Type
Input Voltage Variation dv/dt	(Complies with ETS300 132 part 4.4)		5V/ms max
Input Surge Voltage (100 ms max.)	24V Input		50VDC
	48V Input		100VDC
Input Reflected Ripple (nominal Vin and full load) (see Note 3)			20mAp-p
Start Up Time (nominal Vin and constant resistor load)			10ms typ.
Remote ON/OFF (see Note 7)	DC-DC ON		Open or 3.5V < Vr < 12V
	DC-DC OFF		Short or 0V < Vr < 1.2V
Remote OFF input current	Nominal input		2.5mA
Output Power			30W max.

continued on next page

RP30-S_DEW Series

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

Output Voltage Accuracy (full Load and nominal Vin)		±1%
Voltage Adjustability		±10%
Minimum Load	Single	0%
	Dual	10% of full load
Line Regulation (low line, high line at full load)		±0.5%
Load Regulation (25% to 100% full load)	Single	±0.5%
	Dual	±1%
Cross Regulation (see Note 9)		±5%
Ripple and Noise (20MHz bandwith)	Single 1.5, 1.8, 2.5, 3.3V	60mVp-p
(Measured with a 1004pF/50V MLCC)	Single 5V	75mVp-p
	Single 12, 15V	100mVp-p
	Dual 5, 12, 15V	100mVp-p
Temperature Coefficient		±0.02%/°C max.
Transient Response (25% load step change)		300µs
Over Voltage Protection	1.5, 1.8, 2.5, 3.3V	3.9V
Zener diode clamp (only single)	5V	6.2V
	12V	15V
	15V	18V
Over Load Protection (% of full load at nominal Vin)		150% typ
Short Circuit Protection		Hiccup, automatic recovery
Efficiency		see „Selection Guide“ table
Isolation Voltage		1600VDC min.
Isolation Resistance		1 GΩ min.
Isolation Capacitance		1000pF 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
Over Temperature Protection		115°C typ.
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	Class A
Radiated Emissions	EN55022	Class 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

continued on next page

RP30-S_DEW Series

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

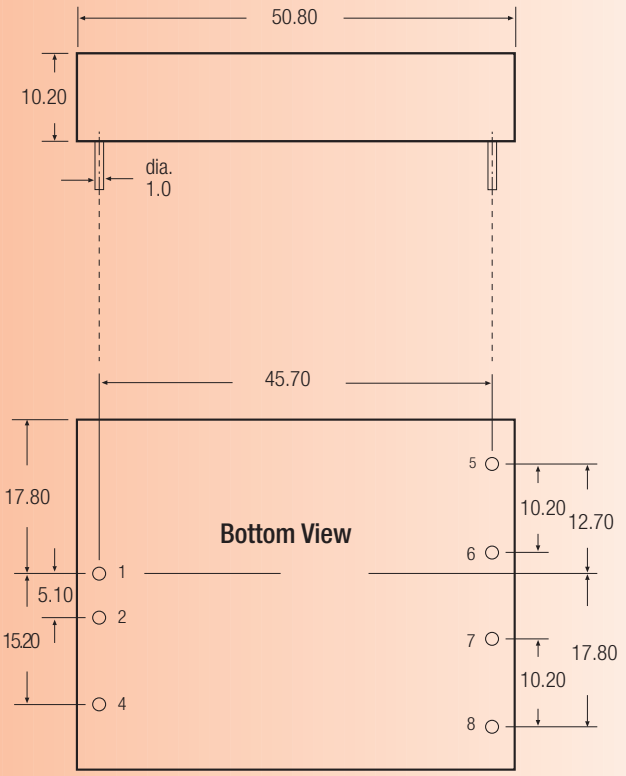
Weight	48g
Dimensions	50.8 x 40.6 x 10.2mm
MTBF (see Note 2)	1315 x 10^3 hours

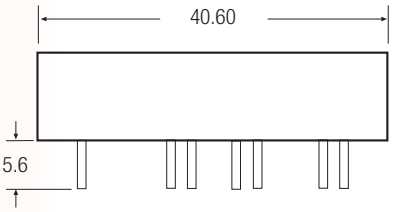
Notes :

1. An external filter capacitor is required for normal operation. The capacitor should be capable of handing 1A ripple current for 48V/24V models. RECOM suggest: Nippon chemi-con KMF series, 220µF/100V, ESR 90m Ω.
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 function can be positive or negative logic. The pin voltage is referenced to negative input.
   Positive logic ON/OFF is standard, no suffix (Ex. RP30-2405SEW)
   Negative logic ON/OFF is marked with suffix-N (Ex. RP30-2405SEW/N).
8. Heat sink is optional and P/N: 7G-0011A.
9. The dual output required a minimum 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.
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