

## Features

### Regulated Converters

- 4:1 Wide Input Voltage Range
- 40 Watts Regulated Output Power
- 1.6kVDC Isolation
- Over Current and Over Voltage Protection
- Six-Sided Shield
- No Derating to 55°C
- Standard 2" x 2" Package and Pinning
- Efficiency to 86%

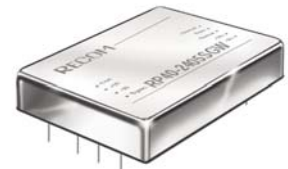
## POWERLINE DC/DC-Converter

# RP40- S\_DGW Series

40 Watt

2" x 2"

Single & Dual  
Output



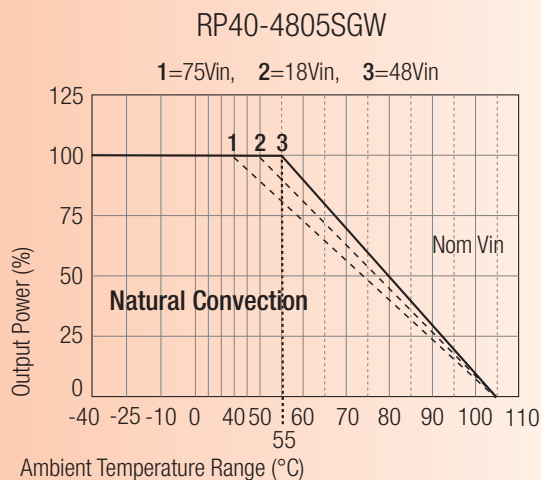
### Selection Guide 24V and 48V Wide Input Types

Part Number	Input Range VDC	Output Voltage VDC	Output Current mA	Input <sup>(4,5)</sup> Current mA	Efficiency <sup>(6)</sup> %	Capacitive <sup>(7)</sup> Load max. μF
RP40-243.3SGW	9-36	3.3	10000	80/1677	86	25750
RP40-2405SGW	9-36	5	8000	100/1984	88	13600
RP40-2412SGW	9-36	12	3333	100/1984	88	2360
RP40-2415SGW	9-36	15	2666	110/1984	88	1510
RP40-483.3SGW	18-75	3.3	10000	50/838	86	25750
RP40-4805SGW	18-75	5	8000	50/992	88	13600
RP40-4812SGW	18-75	12	3333	70/992	88	2360
RP40-4815SGW	18-75	15	2666	70/992	88	1510
RP40-2412DGW	9-36	±12	±1667	30/1984	88	±1200
RP40-2415DGW	9-36	±15	±1333	30/1984	88	±750
RP40-4812DGW	18-75	±12	±1667	20/992	88	±1200
RP40-4815DGW	18-75	±15	±1333	20/992	88	±750

\* no suffix for CTRL function with Positive Logic (1=ON, 0=OFF), this is standard

\* add /N for CTRL function with Negative Logic (0=ON, 1=OFF)

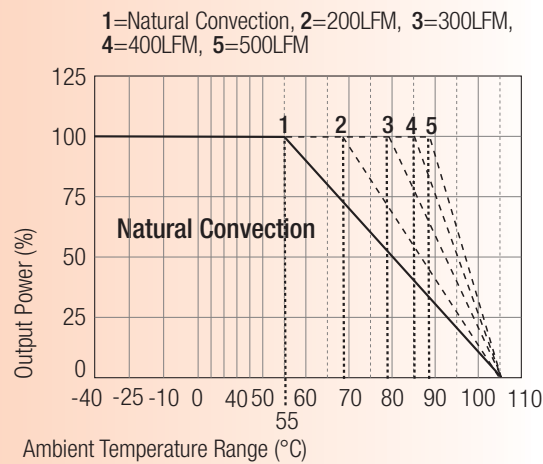
### Derating Graph (Ambient Temperature)



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](mailto:info@recom-development.at)

**Derating Graph (Ambient Temperature)**

RP40-4805SGW



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

Input Voltage Range	24V nominal input	9-36VDC	
	48V nominal input	18-75VDC	
Undervoltage Protection	24V Input	DC-DC ON = 9VDC, DC-DC OFF = 8VDC	
	48V Input	DC-DC ON = 18VDC, DC-DC OFF = 16VDC	
Input Filter		Pi 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)		20ms typ.	
Remote ON/OFF (see Note 7)	(Positiv logic)	DC-DC ON	Open or 3V < Vr < 12V
		DC-DC OFF	Short or 0V < Vr < 1.2V
	(Negativ logic)	DC-DC ON	Short or 0V < Vr < 1.2V
		DC-DC OFF	Open or 3V < Vr < 12V
Remote OFF input current	Nominal input	24Vin:	10mA
		48Vin:	5mA
Output Power		40W max.	
Output Voltage Accuracy (full Load and nominal Vin)		±1%	

continued on next page

**Specifications, cont.** (typical at nominal input and 25°C unless otherwise noted)

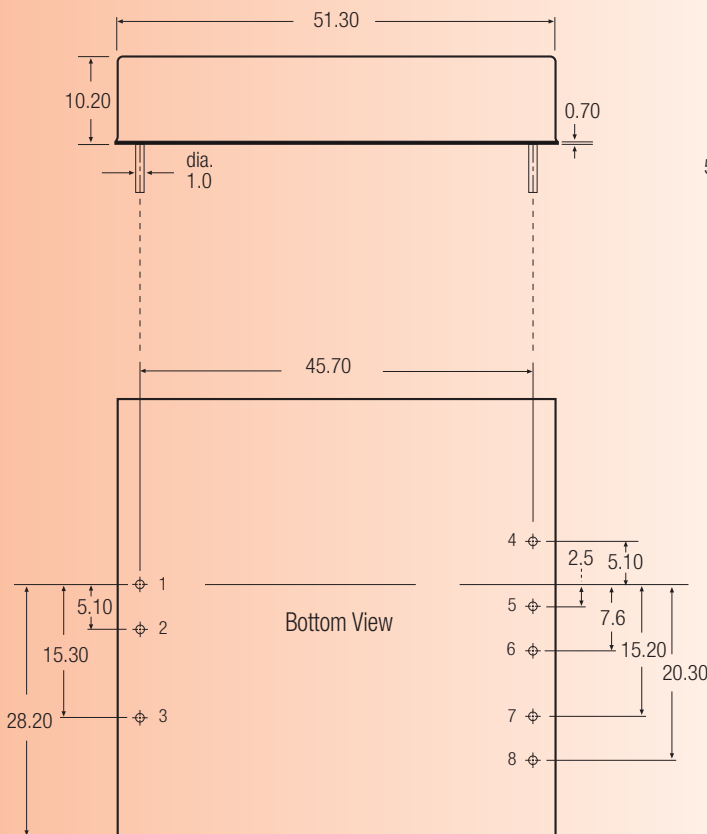
Voltage Adjustability (see Note 1)		±10%
Load Regulation (0% to 100% full load) (see Notes 9, 10)	Single	±0.5%
	Dual	±1%
Line Regulation (low line, high line at full load)		±0.2%
Cross Regulation (see Note 11)	Dual	±5%
Temperature Coefficient		±0.02%/°C max.
Ripple and Noise (20MHz bandwidth)	Single 3.3, 5V	50mVp-p
	Single 12, 15V	75mVp-p
	Dual 12V	120mVp-p
	Dual 15V	150mVp-p
Transient Response (25% load step change)		250µs
Over Voltage Protection	3.3 Vout	3.9V
Zener diode clamp (only single)	5 Vout	6.2V
	12 Vout / ±12 Vout	15V / ±15V
	15 Vout / ±15 Vout	18V / ±18V
Over Load Protection (% of full load at nominal Vin)		150% max.
Short Circuit Protection		Hiccup, automatic recovery
Efficiency		see „Selection Guide“ table
Isolation Voltage		1600VDC min.
Isolation Resistance		1 GΩ min.
Isolation Capacitance		1500pF max.
Operating Frequency		300kHz typ.
Operating Temperature Range		-40°C to +55°C(without derating)
		+55°C to +105°C(with derating)
Maximum Case Temperature		105°C
Storage Temperature Range		-55°C to +125°C
Over Temperature Protection		115°C typ.
Thermal Impedance (see Note 8)	Without Heat-Sink	9.2°C/Watt
	With Heat-Sink	7.6°C/Watt
Thermal Shock		MIL-STD-810D
Vibration		10-55Hz, 10G, 30 Min. along X, Y and Z
Relative Humidity		5% to 95% RH
Case Material		Nickel plated copper
Base Material		Non-conductive black plastic FR4
Potting Material		Epoxy (UL94-V0)
Conducted Emissions (see Notes 12, 14)	EN55022	Class A
Radiated Emissions	EN55022	Class A
ESD	EN61000-4-2	Perf. Criteria B
Radiated Immunity	EN61000-4-3	Perf. Criteria A
Fast Transient	EN61000-4-4	Perf. Criteria B
Surge	EN61000-4-5	Perf. Criteria B
Conducted Immunity	EN61000-4-6	Perf. Criteria A
Weight		60g
Dimensions		51.3 x 51.3 x 10.2mm
MTBF (see Note 2)	Bellcore TR-NWT-00332	1105 x 10 <sup>3</sup> hours
	MIL-STD-217F	151 x 10 <sup>3</sup> hours

**Notes :**

1. For the single output: Maximum output deviation is 10% inclusive of remote sense and trim. If remote sense is not being used, the +sense should be connected to its corresponding +OUTPUT and likewise the -sense should be connected to its corresponding -OUTPUT.
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.
5. Typical value at nominal input voltage and full load.
6. Test by minimum Vin and constant resistive load.
7. The ON/OFF control function. There are positive logic (standard) and negative logic (option). The pin voltage is referenced to negative input  
To order negative logic ON/OFF control add the suffix-N (Ex: RP40-4805SGW-N).
8. Heat sink is optional and P/N: 7G-0026A.
9. The dual output required a minimum 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. Load regulation for dual output : Min load to 100% load balanced on all outputs.
11. Cross regulation for dual output : asymmetrical load 25% / 100% FL.
12. The RP40-GW series required external filter to meets EN55022 class A.
13. Output ripple and noise measured with a 0.1μF/50V MLCC.
14. 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
3	CTRL	CTRL
4	-SENSE (Note 1)	+Vout
5	+SENSE (Note 2)	Com
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

