

■ Features

- DIP 1"x1" package with industry standard pinout
- 8:1(9~75Vdc) ultra-wide input range
- Operating temperature range -40 ~ +90°C
- No minimum load required
- Comply to BS EN/EN55032 radiated Class A without additional components
- High efficiency up to 88%
- Protections: Short circuit (Continuous) / Overload / Over voltage / UVLO
- 3KVdc I/O isolation
- Remote ON/OFF control
- Trimming output (±10%)
- 3 years warranty

■ Applications

- Telecom/datacom system
- Wireless network
- Industrial control facility
- Instrument
- Analyzer
- Detector
- Data switch

■ GTIN CODE

MW Search: <https://www.meanwell.com/serviceGTIN.aspx>

■ Description

SKMW15W8 and DKMW15W8 series are 15W isolated and regulated module type DC-DC converter with DIP 1"x1" package. It features international standard pins, a high efficiency up to 88%, wide working temperature range -40~+90°C, 3KVdc I/P-O/P isolation voltage, compliance to BS EN/EN55032 radiated Class A without additional components, continuous-mode short circuit, overload, over voltage, input under voltage protection etc. The models account for 9~75Vdc 8:1 ultra-wide input range, and various output voltage, 3.3V/5V/12V/15V/24V for single output and ±5V/±12V/±15V for dual outputs, which are suitable for all kinds of systems, such as industrial control, telecommunication field, distributed power architecture, and so on.

■ Model Encoding

S **K** **M** **W** **15** **W** **8** - **12**

Output voltage (3.3/5/12/15/24Vdc · ±5/±12/±15Vdc)

8:1(9~75Vdc) Wide input voltage

Rated wattage

Series name { S:Single output
D:Dual output



15W 1"x1" Package 8:1 Ultra-Wide Input DC-DC Regulated Converter

SKMW15W8 & DKMW15W8 series

MODEL SELECTION TABLE							
ORDER NO.	INPUT			OUTPUT		EFFICIENCY (TYP.)	CAPACITOR LOAD (MAX.)
	INPUT VOLTAGE (RANGE)	INPUT CURRENT		OUTPUT VOLTAGE	OUTPUT CURRENT		
		NO LOAD	FULL LOAD				
SKMW15W8-03	Nominal 12V, 24V, 36V, 48V, 72V (9 ~ 75V)	5mA	485mA	3.3V	0~3000mA	85%	680μF
SKMW15W8-05		6mA	710mA	5V	0~3000mA	88%	680μF
SKMW15W8-12		7mA	718mA	12V	0~1250mA	87%	330μF
SKMW15W8-15		8mA	710mA	15V	0~1000mA	88%	220μF
SKMW15W8-24		13mA	718mA	24V	0~625mA	86%	100μF
DKMW15W8-05		7mA	744mA	±5V	±0~1500mA	84%	*330μF
DKMW15W8-12		13mA	718mA	±12V	±0~625mA	87%	*150μF
DKMW15W8-15		16mA	710mA	±15V	±0~500mA	87%	*100μF

* For each output

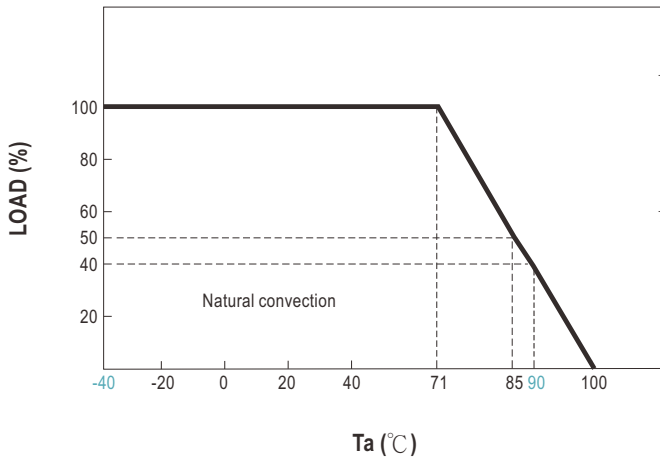
SPECIFICATION

INPUT			
VOLTAGE RANGE	9~75Vdc		
SURGE VOLTAGE (100ms max.)	100Vdc		
FILTER	Pi network		
PROTECTION	Fuse recommended 4A Slow-Blow Type		
OUTPUT			
VOLTAGE ACCURACY	±2%		
RATED POWER	15W		
RIPPLE & NOISE	Note.2	100mVp-p for 3.3 ~ 5Vo, 150mVp-p for 12 ~ 24Vo	
LINE REGULATION	Note.3	±0.5%	
LOAD REGULATION	Note.4	±1% for 3.3Vdc output, ±0.5% for other output	
CROSS REGULATION	±5% @ 25% ~ 100% load only dual output		
SWITCHING FREQUENCY (Typ.)	200KHz (PWM)		
EXTERNAL TRIM ADJ. RANGE (Typ.)	±10% (Single output model only)		
PROTECTION			
SHORT CIRCUIT	Continuous, automatic recovery		
OVERLOAD	110 ~ 200% rated output power		
	Protection type : Recovers automatically after fault condition is removed		
OVER VOLTAGE	Clamp by TVS diode		
UNDER VOLTAGE LOCKOUT (Typ.)	Start-up voltage: 8.8Vdc		
	Shutdown voltage: 8Vdc		
FUNCTION			
REMOTE CONTROL	Power ON: R.C. ~ -Vin >2.5~30Vdc or open circuit ; Power OFF: R.C. ~ -Vin <1Vdc or short		
ENVIRONMENT			
COOLING	Free-air convection		
WORKING TEMP.	-40 ~ +90°C (Refer to "Derating Curve")		
CASE TEMPERATURE	+110°C max.		
WORKING HUMIDITY	5% ~ 95% RH non-condensing		
STORAGE TEMP., HUMIDITY	-55 ~ +125°C, 10 ~ 95% RH non-condensing		
TEMP. COEFFICIENT	±0.03% / °C (0 ~ 71°C)		
SOLDERING TEMPERATURE	1.5mm from case of 3 ~ 5 sec./265°C max.		
VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes		
SAFETY & EMC (Note.5)			
SAFETY STANDARDS	EAC TP TC 020/2011 approved		
WITHSTAND VOLTAGE	I/P-O/P:3KVdc		
ISOLATION RESISTANCE	I/P-O/P:1000M Ohms / 500Vdc / 25°C / 70% RH		
ISOLATION CAPACITANCE (Typ.)	1200pF		
EMC EMISSION	Parameter	Standard	Test Level / Note
	Conducted	BS EN/EN55032(CISPR32)	N/A
	Radiated	BS EN/EN55032(CISPR32)	Class A without additional components Class B with additional components
EMC IMMUNITY	Parameter	Standard	Test Level / Note
	ESD	BS EN/EN61000-4-2	Level 2, ±4KV contact
	Radiated Susceptibility	BS EN/EN61000-4-3	Level 2, 3V/m
	EFT/Bursts	BS EN/EN61000-4-4	Level 1, ±0.5KV
	Surge	BS EN/EN61000-4-5	Level 2, Line-Line ±0.5KV
	Conducted	BS EN/EN61000-4-6	Level 2, 3Vrms
Magnetic Field	BS EN/EN61000-4-8	Level 1, 1A/m	
OTHERS			
MTBF	>570Khrs MIL-HDBK-217F(25°C)		
DIMENSION (L*W*H)	25.4*25.4*10.2mm (1*1*0.4 inch)		
CASE MATERIAL	Black coated metal with non-conductive base		
PACKING	18g; 10pcs/per tube, 600pcs/60 tube/per carton		

NOTE

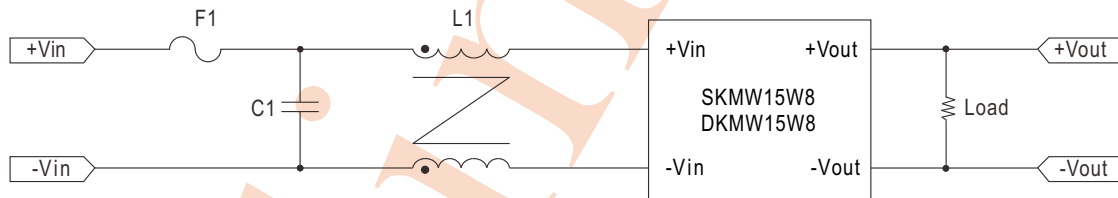
- All parameters are specified at normal input (24Vdc), rated load, 25°C 70% RH ambient.
 - Ripple & noise are measured at 20MHz by using a 12" twisted pair terminated with a 0.1µf & 47µf capacitor.
 - Line regulation is measured from low line to high line at rated load.
 - Load regulation is measured from 0% to 100% rated load.
 - The final equipment must be re-confirm that it still meet EMC directives. For guidance on how to perform these EMC tests, please refer to "EMI testing of component power supplies."(as available on <http://www.meanwell.com>)
- ※ Product Liability Disclaimer : For detailed information, please refer to <https://www.meanwell.com/serviceDisclaimer.aspx>

■ Derating Curve



■ EMC Suggest Circuit

※ Required external componets to meet BS EN/EN55032 radiated Class B emission as below:



Model No.	BS EN/EN55032 radiated Class B		
	F1	C1	L1
SKMW15W8 DKMW15W8	Suggest 4A Slow-Blow Type	2.2μF/100V MLCC	500μH Common Choke

External Output Trimming

In order to trim the voltage up or down one needs to connect the trim resistor either between the trim pin and -Vo for trim-up and between trim pin and +Vo for trim-down. This is shown in Figures 1 and 2:

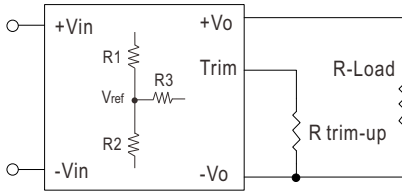


Figure 1. Trim-up Voltage Setup

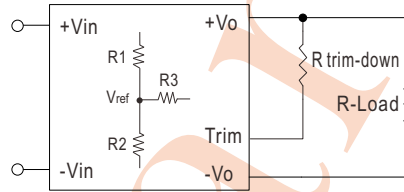


Figure 2. Trim-down Voltage Setup

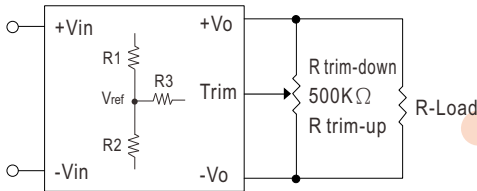


Figure 3. Trim-Connections

Table 1 – Trim up and Trim down Resistor Values

Model Number	Output Voltage(V)	R1 (KΩ)	R2 (KΩ)	R3 (KΩ)	Vref
SKMW15W8-03	3.3	2.43	1.47	7.5	1.24
SKMW15W8-05	5	1	1	4.3	2.5
SKMW15W8-12	12	3.83	1	7.5	2.5
SKMW15W8-15	15	7.5	1.5	11	2.5

1. The value of Rtrim-up defined as:

$$A = [V_{ref} / (V_o' - V_{ref})] * R1$$

$$R_{trim-up} = [(A * R2) / (R2 - A)] - R3$$

Where

R_{trim-up} is the external resistor in Kohm.

V_{o, nom} is the nominal output voltage.

V_{o'} is the desired output voltage.

R1, R2, R3 and V_{ref} are internal to the unit and defined in Table 1.

For example, to trim-up the output voltage of 12V model (SKMW15W8-12) by 10% to 13.2V, R_{trim-up} is calculated as follows:

$$V_o' - V_{o,nom} = 13.2V - 12V = 1.2V$$

$$R1 = 3.83 K\Omega$$

$$R2 = 1 K\Omega$$

$$R3 = 7.5 K\Omega$$

$$V_{ref} = 2.5V$$

$$A = [V_{ref} / (V_o' - V_{ref})] * R1$$

$$= [2.5 / (13.2 - 2.5)] * 3.83$$

$$= 0.894$$

$$R_{trim-up} = [(A * R2) / (R2 - A)] - R3$$

$$= [(0.894 * 1) / (1 - 0.894)] - 7.5$$

$$= (0.894 / 0.106) - 7.5$$

$$= 8.433 - 7.5$$

$$= 0.933 K\Omega$$

2. The value of R_{trim-down} defined as:

$$A = [(V_o' - V_{ref}) / V_{ref}] * R_2$$

$$R_{trim-down} = [(A * R_1) / (R_1 - A)] - R_3$$

Where

R_{trim-down} is the external resistor in Kohm.

V_{o, nom} is the nominal output voltage.

V_{o'} is the desired output voltage.

R₁, R₂, R₃ and V_{ref} are internal to the unit and defined in Table 1.

For example, to trim-down the output voltage of 12V model (SKMW15W8-12) by 10% to 10.8V, R_{trim-down} is calculated as follows:

$$V_{o, nom} - V_o' = 12V - 10.8V = 1.2V$$

$$R_1 = 3.83 \text{ K}\Omega$$

$$R_2 = 1 \text{ K}\Omega$$

$$R_3 = 7.5 \text{ K}\Omega$$

$$V_{ref} = 2.5V$$

$$A = [(V_o' - V_{ref}) / V_{ref}] * R_2$$

$$= [(10.8 - 2.5) / 2.5] * 1$$

$$= 3.32$$

$$R_{trim-down} = [(A * R_1) / (R_1 - A)] - R_3$$

$$= [(3.32 * 3.83) / (3.83 - 3.32)] - 7.5$$

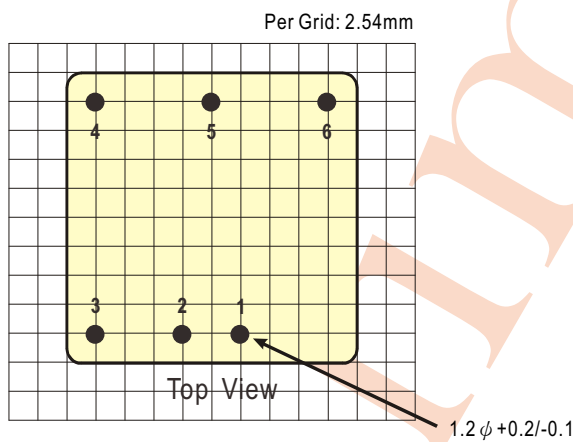
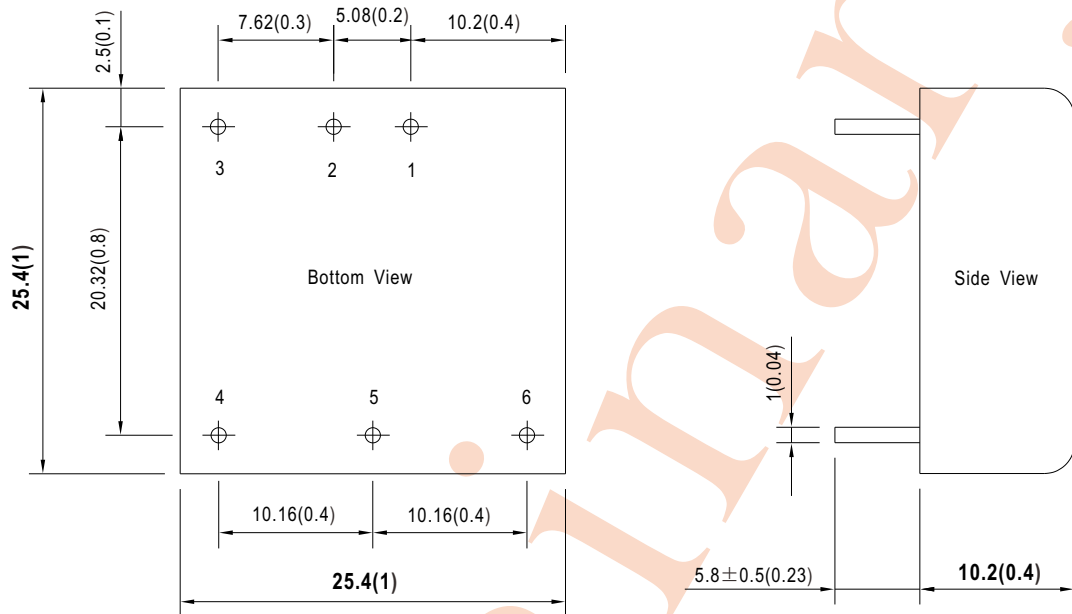
$$= (12.715 / 0.51) - 7.5$$

$$= 24.931 - 7.5$$

$$= 17.431 \text{ K}\Omega$$

Mechanical Specification

- All dimensions in mm (inch)
- Tolerance: x.x or x.xx ± 0.5mm (± 0.02")
- Pin size is 1 ± 0.1mm (0.04" ± 0.004")



Pin Assignment

Pin-Out		
Pin No.	SKMW15W8 (Single output)	DKMW15W8 (Dual output)
1	+Vin	+Vin
2	-Vin	-Vin
3	R.C.	R.C.
4	-Vout	-Vout
5	Trim/N.P.	Common
6	+Vout	+Vout

*N.P.: No pin (For 24V output only)

■ Packing

Standard Tube Packing	MPQ Per Tube (PCS)	One Tube G.W.	Max. Q'TY/ Carton(PCS)	One Carton G.W.
<p>Unit : mm</p>	10	230g	600	14.6Kg

■ Installation Manual

Please refer to : <http://www.meanwell.com/manual.html>