

FEATURES

- ▶ Fully Encapsulated Plastic Case for PCB Mounting
- ▶ Universal Input 85-264VAC, 47-440Hz
- ▶ Constant Power Mode, No Output Current Limit
- ▶ Operating Ambient Temp. Range -30°C to +70°C
- ▶ Short Circuit Protection
- ▶ I/O Isolation 3000VAC with Reinforced Insulation
- ▶ EMI Emission EN 55032/14-1 Class B Approved
- ▶ EMC Immunity EN 61000-4-2,3,4,5,6,8,11 Approved
- ▶ Eco Design, Low No Load Power Consumption < 150mW
- ▶ UL/cUL/IEC/EN 60950-1, TUV/IEC/EN 60335-1 Safety Approval & CE Marking



PRODUCT OVERVIEW

The ABW-02 series is a range of small, fully encapsulated AC-DC power supply modules. They are designed for direct PCB mounting with solder pins. They feature regulated output voltages which have a constant output power mode instead of a conventional current limit characteristics, which makes the power modules suitable to drive relays, solenoids, capacitive loads and LED's. To power logic circuits for standby functions models with an additional second, voltage regulated 3.3 or 5VDC output are available.

The ABW-02 power supply modules provide a superior solution for standby power applications in appliances and consumer electronics. equipment. Universal input voltage 85-264VAC and International safety approvals including IEC/EN 60335-1 qualifies the product for worldwide markets.

Model Selection Guide

Model Number	Output 1		Output 2		Input Current @Max. Load mA(typ.)	Efficiency (typ.) @Max. Load %
	Voltage	Current Max.	Voltage	Current Max.		
	VDC	mA	VDC	mA		
ABW-02S08	8	250	---	---	42	72
ABW-02S14	14	143	---	---	40	74
ABW-02S24	24	83	---	---	39	76
ABW-02D83 ***	8	*	3.3	160	43	69
ABW-02D85 ***	8	*	5	250	43	69
ABW-02D143 ***	14	**	3.3	70	43	70
ABW-02D145 ***	14	**	5	83	43	70

* $I_{o1} + I_{o2} \leq 250\text{mA}$

** $I_{o1} + I_{o2} \leq 143\text{mA}$

*** The definition of output power (Po) for dual-output modules : $P_o = V_{o1} \times (I_{o1} + I_{o2})$

Input Specifications

Parameter	Model	Min.	Typ.	Max.	Unit
Input Voltage Range	All Models	85	---	264	VAC
Input Frequency Range		47	---	440	Hz
Input Voltage Range		120	---	370	VDC
No-Load Power Consumption		---	30	---	mW
Input Surge Voltage		---	---	308	VAC

Output Specifications						
Parameter	Conditions		Min.	Typ.	Max.	Unit
Output Voltage Accuracy	Output 1	$V_{in}=115VAC$, Full Load	---	---	± 5.0	%
	Output 2		---	---	± 2.0	%
Line Regulation	Output 1	$V_{in}=85\sim 264VAC$	---	± 1.0	---	%
	Output 2		---	± 0.3	---	%
Load Regulation	Output 1	$I_o=10\%$ to 100%	---	± 1.0	---	%
	Output 2		---	± 0.5	---	%
Ripple & Noise	0-20 MHz Bandwidth	Output 1	---	1	---	V_{P-P}
		Output 2	---	0.1	---	V_{P-P}
Short Circuit Protection	Continuous, Automatic Recovery					

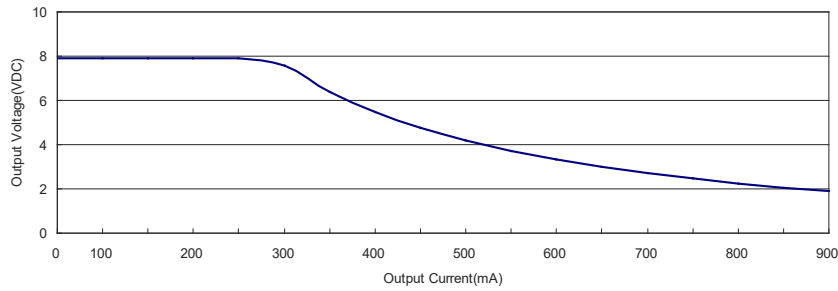
General Specifications						
Parameter	Conditions		Min.	Typ.	Max.	Unit
I/O Isolation Voltage	Input to Output, 60 Seconds		3000	---	---	VAC
Switching Frequency			---	45	---	kHz
MTBF (calculated)	MIL-HDBK-217F@25°C, Ground Benign		500,000			Hours
Safety Approvals	UL/cUL 60950-1 recognition(UL certificate)					
	IEC/EN 60950-1(CB-report)					
	IEC/EN 60335-1 recognition(TUV certificate,CB-report)					

EMC Specifications				
Parameter	Standards & Level			Performance
EMI	Conduction	EN 55014-1, EN 55032	Without external components	Class B
	Radiation			
EMS	EN 55014-2, EN 55024			
	ESD	EN 61000-4-2 Air $\pm 8kV$, Contact $\pm 4kV$		A
	Radiated immunity	EN 61000-4-3 10V/m		A
	Fast transient	EN 61000-4-4 $\pm 2kV$		A
	Surge	EN 61000-4-5 $\pm 1kV$		A
	Conducted immunity	EN 61000-4-6 10Vrms		A
	PFMF	EN 61000-4-8 30A/M		A
	Dips	EN 61000-4-11 30% 10ms		A
	Interruptions	EN 61000-4-11 >95% 5000ms		B

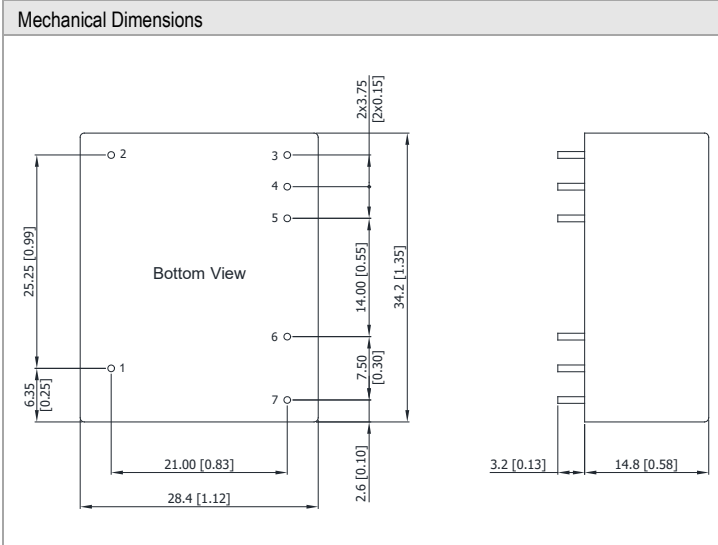
Environmental Specifications				
Parameter	Min.	Max.	Unit	
Operating Ambient Temperature Range	-30	+70	°C	
Storage Temperature Range	-40	+85	°C	
Humidity (non condensing)	---	95	% rel. H	
Lead Temperature (1.5mm from case for 10Sec.)	---	260	°C	

Notes	
1	All specifications typical at $T_a=+25^\circ C$, resistive load, 115VAC, 60Hz input voltage and after warm-up time rated output current unless otherwise noted.
2	These power modules require a minimum output loading to maintain specified regulation, operation under no-load conditions will not damage the power supplies however they may not meet all listed specifications.
3	We recommend to protect the converter by a slow blow fuse in the input supply line.
4	Other input and output voltage may be available, please contact MINMAX.
5	Specifications are subject to change without notice.

Typical Constant Power V/I Curve



Package Specifications



Pin Connections

Pin	Single Output	Dual Output	Diameter mm (inches)
1	NC	NC	∅ 0.8 [0.03]
2	NC	NC	∅ 0.8 [0.03]
3	+Vout	+Vout1	∅ 0.8 [0.03]
4	-Vout	Common	∅ 0.8 [0.03]
5	NP	+Vout2	∅ 0.8 [0.03]
6	AC(N)	AC(N)	∅ 0.8 [0.03]
7	AC(L)	AC(L)	∅ 0.8 [0.03]

- ▶ All dimensions in mm (inches)
- ▶ Tolerance: ±0.5 (±0.01)
- ▶ Pin pitch tolerance: ±0.25 (±0.01)
- ▶ Pin diameter tolerance: X.X±0.1 (X.XX±0.004)

Physical Characteristics

Case Size	: 34.2x28.4x14.8mm (1.35x1.12x0.58 inches)
Case Material	: Plastic resin (flammability to UL 94V-0 rated)
Pin Material	: Copper Alloy
Weight	: 24g