

# APS

## Advanced Power Solutions

### UNIVERSAL INPUT AC TO DC EXTERNAL WALLMOUNT & DESKTOP ADAPTORS SINGLE & DUAL OUTPUT 10-12 WATTS SWITCHING POWER SUPPLIES APS10ES & APS10ESB SERIES



#### FEATURES:

- UNIVERSAL INPUT
- WALLMOUNT OR DESKTOP ADAPTOR
- DIVERSE AC PLUG AVAILABLE
- TO MEET UNIVERSAL SAFETY STANDARDS
- EMI MEET EN55022/FCC CLASS B
- CE MARKING COMPLIANCE

#### SPECIFICATION

##### INPUT SPECIFICATION

**Input Voltage For APS10ES Series:** 90-264Vac typical.  
**Input Voltage For APS10ESB Series:** 90-132Vac typical.  
**Input Connector for APS10ES Series:**  
 Wallmount Format: WM0,1,2 (USA/Japan)/ WM3 (Euro-stecker)/  
 WM4 (Schuko-stecker)/ WM5(UK)/WM6, 6G(Australia)  
 Desktop Format: IEC320 Inlet Type DT7-3P or DT8-2P.  
 Mouse Power Pig-Tail: PT1/2/3/4/5/6/7.  
**Input Connector for APS10ESB Series:** WM1 (USA/Japan) only.  
**Input Frequency:** 47 ~ 63Hz.  
**Inrush Current:** Typical 48A @230Vac or 27.8A @230Vac  
 by adding thermister.  
**Input Current:** Typical 0.3A @ 115Vac / 0.10A @ 230Vac.  
**Dielectric Withstand:** Meet IEC950.  
**EMI:** Meet EN55022 / FCC Class B.  
**Hold-up Time:** 15mS @ 115Vac / 60mS @ 230Vac typical.

##### OUTPUT SPECIFICATION

**Output Voltage:** See Ratings Chart  
**Output Current:** See Ratings Chart  
**Output Wattage:** 10 ~ 12Watts typical  
**Output Connector:** Optional  
**Line Regulation:** 0.1% typical  
**Load Regulation for APS10ES and APS10ESB Single O/P:**  
 ±1.5 to 3.0% typical  
**Load Regulation for APS10ES Series Dual O/P:**  
 Main O/P VO1 ±1.5 to 3.0% typical  
 Aux. O/P VO2 ±3.0 to 5.0% typical  
**Noise & Ripple:** Typical 1.0 % peak to peak  
**OVP:** Built-in, Zener diode clamp  
**Overload Protection:** Typ.125-150% of max. power over-range  
 or short circuit, power foldback & self-recovering

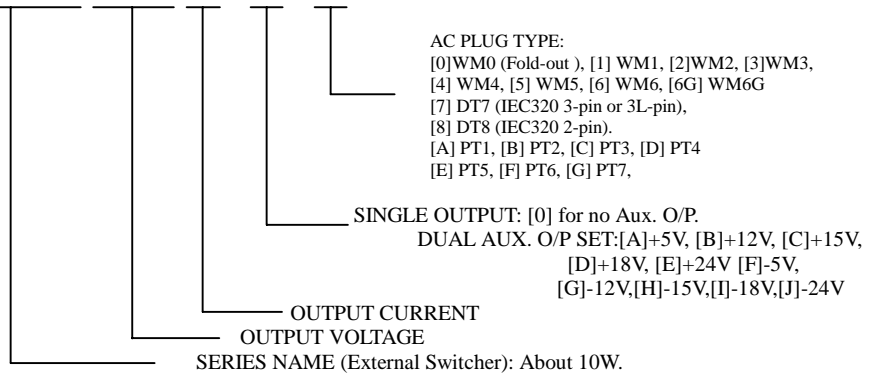
##### GENERAL SPECIFICATION

**Efficiency:** 70 to 75% typical  
**Switching Frequency:** APS10ES approximate 40 to 50KHz  
 APS10ESB approximate 50 to 200KHz  
**Circuit Topology:** Fixed Frequency Flyback for APS10ES series  
 Free Running Flyback for APS10ESB series  
**Transient Response:** Output voltage returns in less than 3mS  
 following a 25% load change  
**Power Density:** 1.3-1.56Watts / Inch<sup>3</sup>  
**Operating Temperature:** 0 to +40°C  
**Storage Temperature:** -20°C to +85°C  
**Temperature Coefficient:** 0.04% per °C  
**Cooling:** Free air convection  
**Construction:** Impact resistant thermo- plastic enclosure case  
**Construction:** Wallmount or Desktop Format  
**Safety Standard:** UL1950/EN60950, Class II  
 Class I available for WM2,5,6G /DT7/PT2,4,5,7  
**Medical Use:** APS10ESM-12004-G-7 UL2601/EN60601

Notes: (1) All measurements are at nominal input, full load, and +25°C unless otherwise specified.  
 (2) Load regulation is measured at 115Vac or 230Vac in percentage to indicate the change in output voltage as the load is varied from half load to full load (unit ±%). For the multi-output, the main output remains 50% load and other aux. output remains 20% load.  
 (3) The exact obtainable load regulation depends upon the output load current & cord selected. Upper data are for 6 ft.(2 meters)cord AWG#18/20 wires with PF or PD type connector.



For the details of safety, please consult the factory

**APS10ES SERIES****MODEL NO. DESCRIPTION: APS10ES XXX YY - N - S****OUTPUT VOLTAGE/CURRENT RATINGS CHART**

DEFINED OUTPUT VOLTAGE (Vdc)	OUTPUT VOLTAGE (Vdc) / CURRENT (A)
3.3 Vdc < Any Voltage > 12.0Vdc	3.3V/2.5A, 3.4-5.0V/2.0A, 5.1-5.9V/1.9-1.7A, 6.0-6.3V/1.6A, 6.4-6.7V/1.6-1.5A, 6.8-7.2V/1.4A, 7.4-7.7V/1.3A, 7.8-8.4V/1.2A, 8.5-8.9V/1.1A, 9.0-12V/1.0A Special: 6.0-6.5V/2.0A
12.0Vdc < Any Voltage > 24.0Vdc	12.1-13.3V/0.9A, 13.4-15.0V/0.8A, 15.1-17.1V/0.7A, 17.2-20.0V /0.6A, 20.1-24.0V/0.5A. Max. Output: 12.0 W.

Note: Refer to the upper Chart or specify the V/A ratings and consult factory for the exact Model No.

**SINGLE OUTPUT (Model No. for examples.)**

MODEL NO.	AC INPUT	AC PLUG	O/P VOLTAGE (Vdc)	O/P CURRENT(A)	FORMAT
APS10ES-03325-0-1	90-264Vac	WM1	3.3V	2.5A	Wallmount
APS10ES-03420-0-3	90-264Vac	WM3	3.4V	2.0A	Wallmount
APS10ES-05020-0-5	90-264Vac	WM5	5.0V	2.0A	Wallmount
APS10ES-60016-0-6	90-264Vac	WM6	6.0V	1.6A	Wallmount
APS10ES-12010-0-0	90-264Vac	WM0	12.0V	1.0A	Wallmount
APS10ES-07014-0-7	90-264Vac	DT7	7.0V	1.4A	Desktop
APS10ES-08511-0-8	90-264Vac	DT8	8.5V	1.1A	Desktop
APS10ES-09010-0-A	90-264Vac	PT1	9.0V	1.0A	Mouse-PT
APS10ES-10010-0-B	90-264Vac	PT2	10.0V	1.0A	Mouse-PT
APS10ES-12010-0-C	90-264Vac	PT3	12.0V	1.0A	Mouse-PT
APS10ES-13808-0-D	90-264Vac	PT4	13.8V	0.8A	Mouse-PT
APS10ES-15008-0-E	90-264Vac	PT5	15.0V	0.8A	Mouse-PT
APS10ES-16007-0-F	90-264Vac	PT6	16.0V	0.7A	Mouse-PT
APS10ES-18006-0-G	90-264Vac	PT7	18.0V	0.6A	Mouse-PT
APS10ES-06020-0-0	90-264Vac	WM0	6.0V	0.2A	Wallmount
APS10ES-06020-0-1	90-264Vac	WM1	6.0V	0.2A	Wallmount
APS10ES-24005-0-2	90-264Vac	WM2	24.0V	0.5A	Wallmount

**DUAL OUTPUT V/A CHART**

OUTPUT RAIL	OUTPUT VOLTAGE (Vdc) / CURRENT (A)
Main O/P VO1★	5.0V/1.0A, 5.1-5.9V/0.9A, 6.0-7.5V/0.8A, 7.6-9.0V/0.7A, 9.1-12.0V/0.6A, 12.1-14.0V/0.5A, 14.1-20.0V/0.4A.
Aux. O/P ±VO2 †	5V/0.6A, 12V/0.3A, 15V/0.2A, 18V/0.2A, 24V/0.1A.

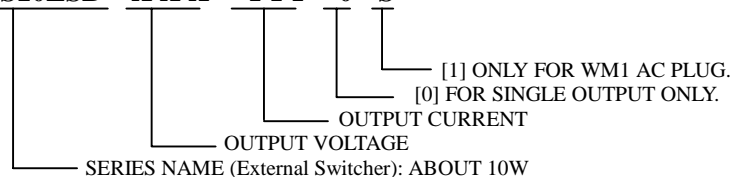
Note: Refer to the upper Chart or specify the V/A ratings and consult factory for the exact Model Number.

**DUAL OUTPUT** (Model No. for examples.)

MODEL NO.	AC INPUT	AC PLUG	MAIN O/P VO1 ★ (Vdc) (A)		AUX. O/P VO2† (Vdc) (A)		FORMAT
APS10ES-03310-A-1	90-264Vac	WM1	+3.3V	1.0A	+ 5.0V	0.6A	Wallmount
APS10ES-05010-B-3	90-264Vac	WM3	+5.0V	1.0A	+12.0V	0.3A	Wallmount
APS10ES-05209-C-5	90-264Vac	WM5	+5.2V	0.9A	+15.0V	0.2A	Wallmount
APS10ES-06008-D-6	90-264Vac	WM6	+6.0V	0.8A	+18.0V	0.2A	Wallmount
APS10ES-09007-E-7	90-264Vac	DT7	+9.0V	0.7A	+24.0V	0.1A	Desktop
APS10ES-12006-F-A	90-264Vac	PT1	+12.0V	0.6A	-5.0V	0.6A	Mouse PT
APS10ES-13505-G-B	90-264Vac	PT2	+13.5V	0.5A	-12.0V	0.3A	Mouse PT
APS10ES-15004-H-C	90-264Vac	PT3	+15.0V	0.4A	-15.0V	0.2A	Mouse PT
APS10ES-18004-I-E	90-264Vac	PT5	+18.0V	0.4A	-18.0V	0.2A	Mouse PT
APS10ES-20004-J-G	90-264Vac	PT7	+20.0V	0.4A	-24.0V	0.1A	Mouse PT

**APS10ESB SERIES**

**MODEL NO. DESCRIPTION:** APS10ESB – X X X YYY – 0 – S

**OUTPUT VOLTAGE/CURRENT RATINGS CHART**

DEFINED OUTPUT VOLTAGE (Vdc)	OUTPUT VOLTAGE (Vdc) / CURRENT (A)
3.0 Vdc < Any voltage > 9.0 Vdc	3.0-5.0V/2.0A, 5.1-5.3V/1.9A, 5.4-5.6V/1.8A, 5.7-5.9V/1.7A, 6.0-6.3V/1.6A, 6.4V-6.7V/1.5A, 6.8-7.2V/1.4A, 7.3-7.7V/1.3A 7.8-8.4V/1.2A, 8.5-8.9V/1.1A
9.0Vdc < Any voltage > 30.0 Vdc	9.0-12.0V/1.0A, 12.1-13.3V/0.9A, 13.4-15.0V/0.8A, 15.1-17.1V /0.7A, 17.2-20.0V/0.6A, 20.1-24.0V/0.5A,4.1-30.0V/0.4A

Note: Refer to the upper Chart or specify the V/A ratings and consult factory for the exact Model Number..

**SINGLE OUTPUT** (Model No. for examples)

MODEL NO.	AC INPUT	AC PLUG	O/P VOLTAGE (Vdc)	O/P CURRENT(A)	Format
APS10ESB-03320-0-1	90-132Vac	WM1	3.3V	2.0A	Wallmount
APS10ESB-05020-0-1	90-132Vac	WM1	5.0V	2.0A	Wallmount
APS10ESB-06316-0-1	90-132Vac	WM1	6.3V	1.6A	Wallmount
APS10ESB-07014-0-1	90-132Vac	WM1	7.0V	1.4A	Wallmount
APS10ESB-09510-0-1	90-132Vac	WM1	9.5V	1.0A	Wallmount
APS10ESB-12010-0-1	90-132Vac	WM1	12.0V	1.0A	Wallmount
APS10ESB-15008-0-1	90-132Vac	WM1	15.0V	0.8A	Wallmount
APS10ESB-18006-0-1	90-132Vac	WM1	18.0V	0.6A	Wallmount
APS10ESB-24005-0-1	90-132Vac	WM1	24.0V	0.5A	Wallmount
APS10ESB-30004-0-1	90-132Vac	WM1	30.0V	0.4A	Wallmount

**MECHANICAL DIMENSIONS: MM [INCHES]**

**APS10ES/WM: 168.0g (5.93Oz.)**

**APS10ES/DT: 232.0g (8.18Oz.)**

**APS10ES/PT: 210.0g (7.41Oz.)**

