

Power Supply



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PS/2 Type Selection Guide



PS/2 Type Power Supply								
Model No.	ACE-920A	ACE-920AP	ACE-925A	ACE-925AP	ACE-932A	ACE-935AL	ACE-940AP	
AT or ATX Type	AT	AT	AT	AT	AT	AT	AT	
INPUT Type	AC Full Range	AC Full Range	AC Full Range	AC Full Range	AC Auto Range	AC Select Switch	AC Full Range	
Input Range	85~265V AC	85~265V AC	85~265V AC	85~265V AC	85~130 ; 180~265V AC	85~140 ; 170~270V AC	95~264V AC	
Power Wattage	150W	150W	200W	200W	300W	300W	390W	
PFC Circuit	-	Active PFC	-	Active PFC	-	-	Active PFC	
Efficiency	68%	68%	68%	68%	68%	68%	65%	
Hold-up Time	14ms	14ms	14ms	14ms	20ms	20ms	17ms	
Output Range (Min load)	+3.3V	-	-	-	-	-	-	-
	+5V	1A	1A	1A	1A	3A	3A	2A
	+12V	0.1A	0.1A	0.1A	0.1A	0.1A	0.1A	0.2A
	-5V	-	-	-	-	-	-	-
	-12V	-	-	-	-	-	-	-
	+5Vsb	-	-	-	-	-	-	-
Output Range (Rated load)	+3.3V	-	-	-	-	-	-	-
	+5V	20A	20A	22A	22A	33A	40A	40A
	+12V	4A	4A	7A	7A	8A	8A	15A
	-5V	0.5A	0.5A	0.5A	0.5A	0.5A	0.3A	0.3A
	-12V	0.5A	0.5A	0.7A	0.7A	3A	0.7A	0.8A
	+5Vsb	-	-	-	-	-	-	-
Output Range (Peak load)	+24V	-	-	-	-	-	-	-
	+3.3V	-	-	-	-	-	-	-
	+5V	-	-	24A	24A	40A	-	-
	+12V	7A	7A	10A	10A	12A	10A	18A
	-5V	-	-	-	-	-	-	-
	-12V	-	-	-	-	4A	-	-
Safety	+5Vsb	-	-	-	-	-	-	-
	+24V	-	-	-	-	-	-	-
	Remark	-	-	-	-	-	-	5V & 12V total 380W
	UL/cUL	V	V	V	V	V	V	V
	CSA	-	-	-	-	V	-	-
	TUV	-	V	-	V	-	-	-
EMI/EMC	CE	-	V	-	V	-	-	V
	CB	-	-	-	-	-	-	V
	Other	-	-	-	-	-	-	VDE / BSMI
	EMI/EMC	Meets FCC	Meets FCC	Meets FCC	Meets FCC	Meets FCC	Meets FCC	FCC
	Operating Temperature	0°C~40°C	0°C~40°C	0°C~40°C	0°C~40°C	-20°C~70°C	0°C~40°C	0°C~50°C
	Storage Temperature	-40°C~75°C	-40°C~75°C	-40°C~75°C	-40°C~75°C	-40°C~75°C	-40°C~75°C	-20°C~80°C
Other Function	Dimension	PS/2	PS/2	PS/2	PS/2	PS/2	PS/2	PS/2
	MTBF	167,834 hrs	155,963 hrs	133,043 hrs	149,275 hrs	124,165 hrs	250,246 hrs	100,000hrs
	Other Function							

PS/2 Type Selection Guide



PS/2 Type Power Supply									
Model No.	ACE-828A	ACE-830AP	ACE-832A	ACE-832AP	ACE-832AP-S	ACE-840A	ACE-841AP-S	ACE-850AP	
AT or ATX Type	ATX	ATX	ATX	ATX	ATX	ATX	ATX	ATX	
INPUT Type	AC Auto Range	AC Full Range	AC Auto Range	AC Full Range	AC Full Range	AC Auto Range	AC Full Range	AC Full Range	
Input Range	90~130 ; 180~260V AC	110~260V AC	90~132 ; 180~264V AC	90~264V AC	90~264V AC	95~132 ; 180~264V AC	90~264V AC	95~264V AC	
Power Wattage	280W	285W	300W	300W	300W	400W	400W	500W	
PFC Circuit	-	Active PFC	-	Active PFC	Active PFC	-	Active PFC	Active PFC	
Efficiency	65%	65%	65%	65%	65%	65%	65%	63%	
Hold-up Time	20ms	16ms	17ms	17ms	17ms	17ms	16ms	18ms	
Output Range (Min load)	+3.3V	-	-	0.3A	0.3A	0.3A	0.2A	0.2A	0.4A
	+5V	2A	2A	0.1A	0.1A	0.1A	2A	4A	3A
	+12V	0.1A	0.1A	-	-	-	0.2A	0.5A	1A
	-5V	-	-	-	-	-	-	-	-
	-12V	-	-	-	-	-	-	-	-
	+5Vsb	-	-	-	-	-	-	-	-
Output Range (Rated load)	+3.3V	8A	15A	28A	28A	28A	28A	28A	27A
	+5V	25A	30A	30A	30A	30A	40A	33A	29A
	+12V	10A	6A	15A	15A	15A	15A	20A	18A
	-5V	-	0.5A	0.3A	0.3A	0.3A	0.3A	0.5A	0.3A
	-12V	0.5A	0.5A	0.8A	0.8A	0.8A	0.8A	1A	0.8A
	+5Vsb	0.5A	1A	2A	2A	2A	2A	2A	2A
	+24V	0.72A	-	-	-	-	-	-	-
Output Range (Peak load)	+3.3V	15A	20A	-	-	-	-	-	-
	+5V	30A	35A	-	-	-	-	-	-
	+12V	15A	10A	-	18A	18A	-	-	-
	-5V	1A	1A	-	-	-	-	-	-
	-12V	1A	1A	-	-	-	-	-	-
	+5Vsb	1A	1.5A	-	2.5A	2.5A	-	-	-
	+24V	1.2A	-	-	-	-	-	-	-
Remark	3.3V & 5V total 150W	3.3V & 5V total 200W	3.3V & 5V total 180W 3.3V & 5V & 12V total 280W	3.3V & 5V total 180W 3.3V & 5V & 12V total 280W	3.3V & 5V total 180W 3.3V & 5V & 12V total 280W	3.3V & 5V total 235W 3.3V & 5V & 12V total 380W	3.3V & 5V total 200W 3.3V & 5V & 12V total 380W	3.3V & 5V total 150W 3.3V & 5V & 12V total 478W	
Safety	UL/ cUL	-	-	V	V	V	V	V	V
	CSA	V	-	V	V	V	-	-	-
	TUV	-	-	-	V	V	-	V	V
	CE	-	-	-	V	V	-	V	V
	CB	-	-	V	-	-	-	-	V
	Other	-	-	BSMI	CCC/BSMI	CCC/BSMI	BSMI	CCC	NEMKO
EMI/EMC	Meets FCC	Meets FCC	FCC	FCC	FCC	FCC	FCC	Meets FCC,CISPR	FCC
Operating Temperature	-20°C~70°C	-20°C~70°C	0°C~50°C	0°C~50°C	0°C~50°C	0°C~50°C	0°C~50°C	0°C~50°C	0°C~50°C
Storage Temperature	-40°C~75°C	-40°C~75°C	-20°C~65°C	-20°C~80°C	-20°C~80°C	-20°C~65°C	-20°C~80°C	-20°C~80°C	-20°C~80°C
Dimension	PS/2	PS/2	PS/2	PS/2	PS/2	PS/2	PS/2	PS/2	PS/2
MTBF	116,497hrs	96,926hrs	100,000hrs	100,000hrs	100,000hrs	100,000hrs	100,000hrs	100,000hrs	100,000hrs
Other Function					With On/Off power switch		With On/Off power switch		

Single
Board
Computer

LCD
Product
Series

Chassis

Power
supply

PS/2 type

Other Type

Medical

Redundant

Peripheral

PS/2 Type Selection Guide



PS/2 Type Power Supply									
Model No.	ACE-916V	ACE-828V	ACE-925C	ACE-828C	ACE-925T	ACE-932T	ACE-828T	ACE-925P	
AT or ATX Type	AT	ATX	AT	ATX	AT	AT	ATX	AT	
INPUT Type	DC 12V	DC 12V	DC 24V	DC 24V	DC 48V	DC 48V	DC 48V	DC 110V	
Input Range	8.5~16V DC	9~16V DC	19~30V DC	18~32V DC	-40~-65V DC	-40~-70V DC	-40~-72V DC	100~120V DC	
Power Wattage	155W	250W	250W	250W	250W	300W	250W	250W	
PFC Circuit	-	-	Active PFC	-	-	-	-	-	
Efficiency	65%	65%	65%	65%	70%	70%	65%	70%	
Hold-up Time	-	-	-	-	-	-	-	-	
Output Range (Min load)	+3.3V	-	-	-	0.1A	-	-	-	-
	+5V	4A	2A	4A	2A	1A	1A	2A	1A
	+12V		0.1A	-	-	-	-	0.1A	-
	-5V	-	-	-	-	-	-	-	-
	-12V	-	-	-	-	-	-	-	-
	+5Vsb	-	-	-	-	-	-	-	-
Output Range (Rated load)	+3.3V	-	8A	-	8A	-	-	8A	
	+5V	20A	25A	25A	25A	25A	33A	25A	25A
	+12V	4A	8A	6A	7A	8A	8A	7A	10A
	-5V	0.5A	0.5A	1A	0.5A	1A	0.5A	0.5A	1A
	-12V	0.5A	1	2A	1A	2A	3A	1A	1A
	+5Vsb	-	0.72A	-	0.72A	-	-	0.72A	-
Output Range (Peak load)	+24V	-	-	-	-	-	-	-	-
	+3.3V	-	22A	-	15A	-	-	15A	-
	+5V	-	30A	-	30A	30A	40A	30A	30A
	+12V	7A	-	12A	15A	12A	12A	15A	12A
	-5V	-	-	-	1A	-	-	1A	2A
	-12V	-	-	-	2A	-	4A	2A	2A
	+5Vsb	-	-	-	1.2A	-	-	1.2A	-
Other Function	+24V	-	-	-	-	-	-	-	-
	Remark	-	3.3V & 5V total 150W	-	3.3V & 5V total 150W	-	-	3.3V & 5V total 150W	-
Safety	UL/cUL	V	-	V	-	V	V	-	-
	CSA	-	-	-	V	-	V	V	-
	TUV	V	-	V	V	V	V	V	-
	CE	V	Meets	V	V	V	V	V	Meets
	CB	-	-	-	-	-	-	-	-
	Other	-	-	-	-	-	-	-	-
EMI/EMC	Meets FCC	Meets FCC	Meets FCC	Meets FCC	Meets FCC	Meets FCC	Meets FCC	Meets FCC	Meets FCC
Operating Temperature	0°C~50°C	-20°C~70°C	0°C~50°C	-20°C~40°C	0°C~50°C	-20°C~70°C	-20°C~40°C	0°C~50°C	
Storage Temperature	-40°C~75°C	-40°C~75°C	-40°C~75°C	-40°C~75°C	-40°C~75°C	-40°C~75°C	-40°C~75°C	-40°C~75°C	
Dimension	PS/2	PS/2	PS/2	PS/2	PS/2	PS/2	PS/2	PS/2	
MTBF	127,918 hrs	95,620 hrs	204,997 hrs	121,233hrs	192,010hrs	141,033hrs	112,112hrs	173,656hrs	
Other Function									

ACE-828/830

Industrial ATX Power Supply



ACE-830AP



ACE-828A



ACE-828T



ACE-828C



ACE-828V



Specifications

Input Table :

Model	Input Range	Input Current
ACE-830AP	100~260V AC	
ACE-828A	90 ~ 130V AC or 180 ~ 260V AC, 47 ~ 63Hz (Auto-Switch)	
ACE-828C	+18 ~ +32V DC	5A@24V DC
ACE-828T	-40 ~ -72V DC	10A@-48V DC
ACE-828V	+9~+16V DC	50A@+12V DC

Output Table : (at 40°C)

Model	Rated Load						Max Output					
	+5V	+12V	-12V	-5V	+3.3V	+5Vsb	+5V	+12V	-12V	-5V	+3.3V	+5Vsb
ACE-830AP	30A	6A	0.5A	0.5A	15A	1A	35A	10A	1A	1A	20A	1.5A
ACE-828A	25A	10A	0.5A	0.5A	8A	0.72A	30A	15A	1A	1A	15A	1.2A
ACE-828C	25A	7A	1A	0.5A	8A	0.72A	30A	15A	2A	1A	15A	1.2A
ACE-828T	25A	7A	1A	0.5A	8A	0.72A	30A	15A	2A	1A	15A	1.2A
ACE-828V	25A	8A	1A	0.5A	8A	0.72A	30A	-	-	-	22A	-

◆ Ripple and Noise : Less than 50mV@+5V and +3.3V; 100mV@Others

◆ Line Regulation :

The line regulation for each outputs are less than 1%

◆ Load Regulation :

Model	+5V	+12V	-12V	-5V	+3.3V	+5Vsb
ACE-830AP	<±5%	<±5%	<±5%	<±5%	<±5%	<±5%
ACE-828A	<±3%	<±5%	<±2%	<±2%	<±2%	<±3%
ACE-828C	<±3%	<±5%	<±2%	<±2%	<±2%	<±1%
ACE-828T	<±3%	<±5%	<±2%	<±2%	<±2%	<±1%
ACE-828V	<±5%	<±5%	<±2%	<±3%	<±3%	<±1%

◆ Output Power : Total combined output power on the +3.3V and +5V rails is 200W(ACE-830AP)

Total combined output power on the +3.3V and +5V rails is 150W(ACE-828 series)

◆ Efficiency : Higher than 65%

◆ Hold-up Time:16ms (typical)@115V AC (ACE-830AP)

20ms (typical)@115V AC (ACE-828A)

◆ Altitude : 0~10,000ft

◆ Protection :

- Over voltage protection : The trip point is around 5.7V ~ 7.0V output
- Short circuit protection

◆ Vibration :

- 10 ~ 55Hz at 2G 3min. period, 30 min. along X, Y and Z axis

◆ Impact : 10G for 20ms once on each X, Y and Z axis

◆ Built-in cooling fan

◆ MTBF :

- ACE-830AP :96,926 Hours
- ACE-828A : 116,497 Hours
- ACE-828C : 121,233 Hours
- ACE-828T : 112,112 Hours
- ACE-828V : 95,620 Hours

◆ Safety : CSA (ACE-828A/C/T)
TUV(ACE-828C/T) , meets CE
(ACE-828C/T)

◆ EMI :

- Meets FCC class "B", EN55022 class "B"

◆ EMS Standard (Designed to meet the following limits) :

- IEC 801-2 8KV (Air Discharge)
- IEC 801-3, 3V/M criteria A
- IEC 801-4, 2KV criteria B
- IEC 801-5, 2KV criteria B

◆ Operating temperature : -20° ~70°C
(Derating curve will occur 40°~70°C)

◆ Storage temperature : -40° ~75°C

Ordering Information

◆ ACE-830AP

AC input PFC 300W industrial ATX power supply

◆ ACE-828A

AC input 280W industrial ATX power supply

◆ ACE-828C

24V DC input industrial ATX power supply

◆ ACE-828T

48V DC input industrial ATX power supply

◆ ACE-828V

12V DC input industrial ATX power supply

ACE-832A/AP

300W ATX Power Supply

ACE-840A

400W PS/2 Type ATX Power Supply

For P4 System



ACE-832A



ACE-832AP-S



ACE-840A



Specifications

- ◆ Input : 90V~264V AC (ACE-832AP/AP-S)
95V~132V AC, 180~264V AC auto-range (ACE-832A)
- ◆ ACE-832A/832AP Output Rating

Output	Nominal	Regulation	Ripple/Noise	Min.	Max.
1	+3.3V	±5%	50mV	0.3A	28A
2	+5V	±5%	50mV	0.1A	30A
3	+12V	±5%	120mV	0A	15A
4	-5V	±5%	100mV	0A	0.3A
5	-12V	±5%	120mV	0A	0.8A
6	+5Vsb	±5%	100mV	0A	2.0A

- Total Output of +3.3V and +5V shall not exceed 180W.
+3.3V, +5V, and +12V total output power max. is 280W.
- ◆ Hold-up time : 17ms min.
 - ◆ Efficiency : 65% typ.
 - ◆ Protection : Over Voltage/Load Protection and Short Circuit Protection
 - ◆ TTL signal compatible power good signal
 - ◆ Vibration : 10-55Hz at 2G 3min. period, 30 min. along X, Y and Z axis.
 - ◆ Shock : 10G for 11ms once on each X, Y and Z axis.
 - ◆ Built-in cooling fan
 - ◆ MTBF : min. 100,000hrs at 25°C (ACE-832A)
min. 50,000hrs at 25°C (ACE-832AP/AP-S)
 - ◆ Safety : UL 1950, CSA 22.2 Level 3, TUV, CCC(ACE-832AP/AP-S)
CE(ACE-832AP/AP-S).
 - ◆ EMI : Meets FCC class "B", EN55022 class "B"
Meets Harmonic EN61000-3-2 (ACE-832AP)
 - ◆ EMS Standard : meet
IEC 801-2 8KV(Air Discharge)
IEC 801-3 3V/M criteria A
IEC 801-4, 2KV criteria B
IEC 801-5, 2KV criteria B
 - ◆ Operating temperature: 0~50°C
 - ◆ Storage temperature: -20~80°C (ACE-832AP/AP-S)
-20~65°C (ACE-832A)

Ordering Information

- ACE-832A 300W ATX Power Supply
- ACE-832AP 300W ATX Power Supply with PFC function
- ACE-832AP-S 300W ATX Power Supply with PFC function & on/off switch

Specifications

- ◆ Input: 95V AC~132V AC, 180~264V AC Switch
- ◆ Output Rating:

	Regulation	Ripple/Noise	Min.	Max.
+3.3V	+/-5%	50mV	0.2A	28A
+5V	+/-5%	50mV	0.2A	40A
+12V	+/-5%	120mV	0.2A	15A
-5V	+/-5%	100mV	0A	0.3A
-12V	+/-5%	100mV	0A	0.8A
+5VSB	+/-5%	50mV	0A	2A

Total Output of +3.3V and +5V shall not exceed 235W. +3.3V, +5V, and +12V total output power max. is 380W

- ◆ Hold-up time : 20ms min.
- ◆ Efficiency : 65% typ.
- ◆ Protection : Over Voltage/Load Protection and short circuit protection.
- ◆ TTL signal compatible power good signal.
- ◆ Vibration : 10-55Hz at 2G 3min. period, 30min. along X, Y and Z axis.
- ◆ Shock : 10G for 11ms once on each X, Y and Z axis.
- ◆ Built-in cooling fan.
- ◆ MTBF : Minimum 100000 hours at 25 °C
- ◆ Safety : UL 1950,
- ◆ EMI : FCC parts 15 class "B" CISPR 22 level "B".
- ◆ EMS : EN 50082-1 (1997) IMMUNITY STANDARD.
- ◆ Operating temperature : 0~50°C
- ◆ Storage temperature : -20~65°C
- ◆ Power Connectors :
4pin ATX-12V x 1
Extra +5V (P10) x 1
HDD or CD-ROM x 8/5

Ordering Information

- ACE-840A 400W ATX Power Supply

ACE-841AP-S

400W PS/2 Type ATX Power Supply

For P4 System



ACE-841AP-S

ACE-850AP

500W PS/2 Type ATX Power Supply

For P4 System



ACE-850AP

Feature



- High efficiency
- Short circuit protection on all outputs
- Extra P10 (+5V) Connector for most high-power requirement
- Built-in ball bearing cooling fan

Feature



- High efficiency
- Short circuit protection on all outputs
- Extra P10 (+5V) Connector for most high-power requirement
- Built-in ball bearing cooling fan

Specifications

- ◆ Input : 90V AC~264V AC Full range (ACE-841AP-S)
- ◆ Output Rating:
ACE-841AP-S

Nominal	Regulation	Ripple/Noise	Min.	Max.
+3.3V	+/-5%	50mV	0.2A	28A
+5V	+/-5%	80mV	4A	33A
+12V	+/-6%	120mV	0.5A	20A
-5V	+/-5%	120mV	0A	0.5A
-12V	+/-5%	120mV	0A	1A
+5VSB	+/-5%	50mV	0A	2A

Total Output of +3.3V and +5V shall not exceed 200W. +3.3V, +5V, and +12V total output power max. is 380W

- ◆ Hold-up time : 16ms min.
- ◆ Efficiency : 75% typ.
- ◆ Protection : Over Voltage/Load Protection and short circuit protection .
- ◆ TTL signal compatible power good signal .
- ◆ Vibration : 10-55Hz at 2G 3min. period , 30min. along X ,Y and Z axis
- ◆ Shock : 10G for 11ms once on each X,Y and Z axis.
- ◆ Built-in cooling fan .
- ◆ MTBF :Minimum 100000 hours at 25°C
- ◆ Safety : UL 60950 , TUV EN 60950 , meets CE (ACE-841AP-S).
- ◆ EMI : FCC parts 15 class "B" CISPR 22 level "B" .Active PFC, complies with EN 61000-3-2
- ◆ EMS : EN 50082-1 (1997) IMMUNITY STANDARD .
- ◆ Operating temperature : 0~50°C
- ◆ Storage temperature : -20~80°C
- ◆ Power Connectors :
4pin ATX-12V x 1
Extra +5V (P10) x 1
HDD or CD-ROM x 8/5

Ordering Information

- **ACE-841AP-S**
400W ATX Power Supply with PFC function & on/off switch

Specifications

- ◆ Input : 95V AC~264V AC Full range
- ◆ Output Rating:
ACE-850AP

Nominal	Regulation	Ripple/Noise	Min.	Max.
+3.3V	-4% +5%	50mV	0.4A	27A
+5V	-4% +5%	50mV	3A	29A
+12V CPU	-4% +5%	120mV	1A	18A
+12V I/O	-4% +5%	120mV	1A	18A
-5V	-/+ 10%	120mV	0A	0.3A
-12V	-5% +9%	120mV	0A	0.8A
+5VSB	-4% +5%	50mV	0A	2A

The output of +3.3V and +5V shall not exceed 150W. +3.3V, +5V and +12V total output power maximum is 478W.

- ◆ Hold-up time : 18ms min.
- ◆ Efficiency : 63% typ.
- ◆ Protection : Over Voltage/Load Protection and short circuit protection .
- ◆ TTL signal compatible power good signal .
- ◆ Vibration : 10-55Hz at 2G 3min. period , 30min. along X ,Y and Z axis
- ◆ Shock : 10G for 11ms once on each X,Y and Z axis.
- ◆ Built-in cooling fan .
- ◆ MTBF :Minimum 100000 hours at 25°C
- ◆ Safety : UL 1950, CSA 22.2 level 3, TUV EN 60950 ,meets CE .
- ◆ EMI : FCC parts 15 class "B" CISPR 22 level "B" .Active PFC, complies with EN 61000-3-2
- ◆ EMS : EN 50082-1 (1997) IMMUNITY STANDARD .
- ◆ Operating temperature : 0~50°C
- ◆ Storage temperature : -20~80°C
- ◆ Power Connectors :
4pin ATX-12V x 1
Extra +5V (P10) x 1
HDD or CD-ROM x 11

Ordering Information

- **ACE-850AP**
500W ATX Power Supply with PFC function

Single Board Computer

LCD Product Series

Chassis

Power supply

PS/2 type

Other Type

Medical

Redundant

Peripheral

ACE-940AP ▶ 390W PS/2 Type AT Power Supply

ACE-935AL/932A/930AP/925A/920A

AC Input Industrial PS/2 Type Power Supply



ACE-940AP



ACE-93X Series



Specifications

Input Table :

Model	Input range
ACE-940AP	95~264V AC, 47~63Hz(Full-Range)
ACE-935AL	85~140V AC or 170~270V AC, 47~63Hz
ACE-932A	85~130V AC or 180~265V AC, 47~63Hz (Auto-Switch)
ACE-930AP(230V)	180 ~ 264V, AC, 47~53Hz
ACE-925A/925AP	85~265V AC, 47~63Hz (Full-Range)
ACE-920A/920AP	85~265V AC, 47~63Hz (Full-Range)

Output Table : (at 40%)

Model	Rated Load				Peak Output	
	+5V	+12V	-12V	-5V	+5V	+12V
ACE-940AP	40A	15A	0.8A	0.3A	0A	18A
ACE-935AL	40A	8A	0.7A	0.3A	0A	10A
ACE-932A	33A	8A	3A	0.5A	40A	12A
ACE-930AP(230V)	30A	12A	0.5A	0.5A	32A	15A
ACE-925A/925AP	22A	7A	0.7A	0.5A	24A	10A
ACE-920A/920AP	20A	4A	0.5A	0.5A	0A	7A

Inrush Current

- ACE-940AP: 80A(Peak) @115VAC or 120A(peak) @230VAC
- ACE-935A/932A: Not exceed 15A@115V AC or 30A@230V AC
- ACE-925A/925AP/920A/920AP: Not exceed 30A@115V AC or 60A@230V AC

Ripple and Noise :

- ACE-940AP: Less than 120mV @+12V and 3% of each output at rated load
- ACE-935A/932A: Less than 1% of each output at rated load
- ACE-925A/925AP/920A/920AP: Less than 140mV@+12V, and 1% of each other outputs at rated load

Line Regulation :

- ACE-940AP: The line regulation for each outputs are less than 5%
- ACE-935A/932A: The line regulation for each outputs are less than 1%
- ACE-925A/925AP/920A/920AP/930AP: Less than 2% @+12V and 1% @Others

Efficiency : Higher than 65% (ACE-930AP/940AP),

Higher than 68% (ACE-935AL/932A/925A/925AP/920A/920AP)

Hold-up Time: ACE-940AP: 17ms (typical) @115V AC

ACE-935L/932A: 20ms (typical)@115V AC

ACE-925A/925AP/920A/920AP: 14ms

(typical)@115V AC

ACE-930AP: 10ms(ypical)@230VAC

Altitude : 0~10,000ft

Protection : Over voltage protection. The trip point is around 5.7V ~ 7.0V output Short circuit and overload

Vibration : 10 ~ 55Hz at 2G 3min. period, 30 min. along X, Y and Z axis

Shock : 10G for 20ms once on each X, Y and Z axis

MTBF :

- ACE-940AP: 100,000 Hours
- ACE-935AL : 250,246 Hours
- ACE-930AP : 53,000 Hours
- ACE-932A : 124,165 Hours
- ACE-925AP : 149,275 Hours
- ACE-925A : 133,043 Hours
- ACE-920AP : 155,963 Hours

Safety : UL 1950; CSA 22.2 No. 234,(ACE-932A/935A) TUV EN 60950(ACE-920AP/925AP/930AP) meets CE (ACE-920AP/925AP/930AP/940AP)

EMI : Meets FCC docket 20780 curve "B", EN55022 class "B"

Harmonic EN 61000-3-2 for ACE-940AP/925AP/920AP, 930AP at 230VAC

EMS Standard (Design to meet the following limits) : EN 50082-2

Operating temperature : -20°~70°C (ACE-932A), 0°~40°C(ACE-935AL/930AP/920A/920AP/925A/925AP), 0°~50°C (ACE-940AP) (Derating curve will occur 50°~70°C)

Storage temperature : -20°C~80°C(ACE-940AP), -20°C~65°C(ACE-930AP), 40°~75°C(ACE-935AL/932A/925A/925AP/920A/920A/920AP)

Ordering Information

● ACE-940AP

390W AC input PS/2 type PFC power supply

● ACE-935AL

350W AC input PS/2 type power supply

● ACE-930AP(230V)

300W AC input PS/2 type PFC power supply(230V only)

● ACE-932A

300W AC input PS/2 type power supply

● ACE-925AP

250W AC input PS/2 type PFC power supply

● ACE-925A

250W AC input PS/2 type power supply

● ACE-920AP

200W AC input PS/2 type PFC power supply

● ACE-920A

200W AC input PS/2 type power supply

ACE-932T/925T/925P/925C/916V

DC Input Industrial PS/2 Type Power Supply



Feature

- Built-in ball bearing cooling fan
- Extra P10 (+5V) connector for most high-power requirement (ACE-932T)

Specifications

◆ Input Table :

Model	Input Range	Input Current
ACE-932T	-40 ~ -70V DC	9A@-48V DC
ACE-925P	+88 ~ +132V DC	3.5A@+110V DC
ACE-925T	-40 ~ -65V DC	8A@-48V DC
ACE-925C	+19 ~ +30V DC	16A@+24V DC
ACE-916V	+8.5 ~ +16V DC	25A@+12V

◆ Output Table : (at 50°C)

Model	Rated Load				Peak Output	
	+5V	+12V	-12V	-5V	+5V	+12V
ACE-932T	33A	8A	3A	0.5A	40A	12A
ACE-925P	25A	10A	1A	1A	30A	12A
ACE-925T	25A	8A	2A	1A	30A	12A
ACE-925C	25A	6A	2A	1A	-	12A
ACE-916V	20A	4A	0.5A	0.5A	-	7A

◆ Inrush Current

ACE-932T : Less than 5A@-48V DC
ACE-925T : Less than 5A@-48V DC
ACE-925C : Less than 5A@+24V DC
ACE-916V : Less than 10A@+12V DC

◆ Ripple and Noise : Less than 1% of each output at rated load

◆ Line Regulation : The line regulation for each outputs are less than 1%

◆ Load Regulation :

Model	+5V	+12V	-12V	-5V
ACE-932T	<+/-3%	<+/-5%	<+/-1%	<+/-1%
ACE-925P	<+/-3%	<+/-5%	<+/-3%	<+/-3%
ACE-925T	<+/-4%	<+/-5%	<+/-1%	<+/-1%
ACE-925C	<+/-4%	<+/-5%	<+/-3%	<+/-3%
ACE-916V	<+/-3%	<+/-5%	<+/-1%	<+/-1%

◆ Efficiency : Higher than 65% (ACE-925C/916V), 70%(ACE-932T/925P/925T)

◆ Altitude : 0 ~ 15,000ft

◆ Protection :

- Over voltage protection. The trip point is around 5.7V ~ 7.0V output
- Short circuit and overload
- Thermal Protection : Built-in 110±5°C thermal switch in HS1

◆ Vibration : 10 ~ 55Hz at 2G 3min. period, 30 min. along X, Y and Z axis

◆ Shock : 10G for 20ms once on each X, Y and Z axis

◆ MTBF :

ACE-932T : 141,033 Hours
ACE-925T : 192,010 Hours
ACE-925C : 204,997 Hours
ACE-916V : 127,918 Hours
ACE-925P : 173,656 Hours

◆ Safety : UL 1950; TUV EN 60950, CSA 22.2 No. 234, (ACE-932T) meets CE.

◆ EMI : Meets FCC docket 20780 curve "B", EN55022 class "B"

◆ Built-in cooling fan

◆ Operating temperature : -20° ~ 70°C (ACE-932T), 0° ~ 50°C (ACE-925P/925T/925C/916V) (Derating curve will occur 50° ~ 70°C)

◆ Storage temperature : -40° ~ 75°C

Ordering Information

- **ACE-932T**
300W -48V DC input PS/2 type power supply
- **ACE-925P**
250W 110V DC input PS/2 type power supply
- **ACE-925T**
250W 48V DC input PS/2 type power supply
- **ACE-925C**
250W 24V DC input PS/2 type power supply
- **ACE-916V**
160W 12V DC input PS/2 type power supply

Other Type Selection Guide



Other Type Power Supply									
Model No.	ACE-540A	ACE-855A	ACE-870A	ACE-870AP	ACE-890A	ACE-890AP	ACE-916A	ACE-916AP	ACE-716A
AT or ATX Type	AT	AT	AT	AT	AT	AT	AT	AT	AT
INPUT Type	AC Full Range	AC Full Range	AC Full Range	AC Full Range	AC Full Range	AC Full Range	AC Select Switch	AC Full Range	AC Auto Range
Input Range	85 ~ 264V AC	85~264V AC	85~264V AC	85~264V AC	85~264V AC	90~264V AC	90~132V AC 180~264V AC	90~264V AC	85~135 ;180~265V AC
Power Wattage	40W	55W	70W	70W	86W	86W	150W	150W	150W
PFC Circuit	-	-	-	Active PFC	-	Active PFC	-	Active PFC	-
Efficiency	70%	70%	70%	70%	70%	70%	70%	68%	75%
Hold-up Time	20ms	16ms	16ms	16ms	16ms	16ms	17ms	17ms	20ms
Output Range (Min load)	+3.3V	-	-	-	-	-	-	-	-
	+5V	-	-	-	-	1.5A	1A	1A	1A
	+12V	-	-	-	-	0.2A	0.2A	0.5A	-
	-5V	-	-	-	-	-	-	-	-
	-12V	-	-	-	-	0.05A	-	-	-
	+5Vsb	-	-	-	-	-	-	-	-
Output Range (Rated load)	+3.3V	-	-	-	-	-	-	-	-
	+5V	-	8A	7A	7A	10A	10A	15A	16A
	+12V	-	1.2A	2.5A	2.5A	2.5A	2.5A	10A	6A
	-5V	-	-	0.3A	0.3A	-	-	-	0.5A
	-12V	-	-	0.3A	0.3A	0.5A	0.5A	0.3A	0.3A
	+5Vsb	-	-	-	-	-	-	-	-
Output Range (Peak load)	+24V	1.7A	-	-	-	-	-	-	-
	+3.3V	-	-	-	-	-	-	-	-
	+5V	-	10A	-	-	12A	12A	-	-
	+12V	-	4A	4A	4A	4A	4A	13A	8A
	-5V	-	-	0.5A	0.5A	-	-	-	10A
	-12V	-	-	0.5A	0.5A	1A	1A	-	1A
Safety	+5Vsb	-	-	-	-	-	-	-	-
	+24V	2.5A	-	-	-	-	-	-	-
	Remark	-	-	-	-	-	-	-	-
	UL/cUL	-	V	V	V	V	V	V	V
	CSA	-	-	-	-	-	-	V	-
	TUV	-	-	-	V	-	V	V	-
Other	CE	Meets	Meets	-	Meets	-	Meets	-	Meets
	CB	-	-	-	-	-	-	V	-
	Other	-	-	-	-	-	-	BSMI	NEMKO/BSMI
	EMI/EMC	Meets FCC	Meets FCC	Meets FCC	Meets FCC	FCC	FCC	Meets FCC	Meets FCC
Operating Temperature	-20°C~70°C	0°C~60°C	0°C~50°C	0°C~50°C	-20°C~70°C	5°C~40°C	-0°C~50°C	-0°C~50°C	-20°C~70°C
Storage Temperature	-40°C~85°C	-20°C~85°C	-20°C~85°C	-20°C~85°C	-20°C~85°C	-30°C~70°C	-20°C~80°C	-20°C~80°C	-20°C~85°C
Dimension	100x40x174	50.5x37x177.5	81x50x127	81x50x127	89x39x152.4	89x39x152.4	81.5x40.6x150	81.5x40.6x150	97x40.5x198
MTBF	372,384hrs	335,874hrs	296,831hrs	238,865hrs	268,358hrs	50,000hrs	100,000hrs	100,000hrs	149,081hrs
Other Function	NO FAN	-	-	-	-	-	-	-	-

Other Type Selection Guide



Other Type Power Supply									
Model No.	ACE-716AP	ACE-723A	ACE-723B	ACE-816A	ACE-816AP	ACE-845V	ACE-865V	ACE-890V	ACE-709VX
AT or ATX Type	AT	AT	AT	ATX	ATX	AT	AT	AT	ATX
INPUT Type	AC Full Range	AC Auto Range	AC Auto Range	AC Select Switch	AC Full Range	DC 12V	DC 12V	DC 12V	DC 12V
Input Range	85~265V AC	85~135 ;180~265V AC	85~135 ;180~265V AC	90~132V AC 180~264V AC	90~264V AC	9.5~18V DC	8~16V DC	9~16V DC	9~16V DC
Power Wattage	150W	200W	200W	150W	150W	42W	60W	72W	78.5W
PFC Circuit	Active PFC	-	-	-	Active PFC	-	-	-	-
Efficiency	75%	75%	75%	72%	68%	70%	70%	70%	75%
Hold-up Time	20ms	20ms	20ms	17ms	17ms	-	-	-	-
Output Range (Min load)	+3.3V	-	-	0.2A	0.3A	-	-	-	-
	+5V	1A	3A	1A	10A	-	-	-	-
	+12V	-	-	0.2A	0.3A	-	-	-	-
	-5V	-	-	-	-	-	-	-	-
	-12V	-	-	-	-	-	-	-	-
	+5Vsb	-	-	-	-	-	-	-	-
Output Range (Rated load)	+3.3V	-	-	16A	10A	-	-	-	-
	+5V	18A	22A	15A	14A	6A	6A	9A	8A
	+12V	4A	6A	12A	4.2A	1.1A	2A	2A	2.5A
	-5V	0.5A	1A	-	-	-	0.3A	-	-
	-12V	1A	1A	0.3A	0.3A	-	0.5A	0.3A	0.5A
	+5Vsb	-	-	2A	2A	-	-	-	0.5A
Output Range (Peak load)	+3.3V	-	-	-	-	-	-	-	-
	+5V	25A	33A	-	-	8A	-	12A	12A
	+12V	10A	12A	13A	-	2A	4A	4A	4A
	-5V	1A	1.5A	-	-	-	-	-	-
	-12V	1A	1.5A	-	-	-	-	1A	1A
	+5Vsb	-	-	-	-	-	-	-	1A
Safety	+24V	-	-	1.5A	-	-	-	-	-
	Remark	-	-	-	-	-	-	-	-
	UL/cUL	V	V	V	V	V	-	-	V
	CSA	-	-	-	V	-	-	V	-
	TUV	V	-	-	-	V	-	V	V
	CE	V	-	-	-	V	V	V	V
Other Function	CB	-	-	-	-	-	-	-	-
	Other	-	-	-	BSMI	NEMKO/BSMI/CCC	-	-	-
EMI/EMC	Meets FCC	Meets FCC	Meets FCC	FCC	FCC	Meets FCC	Meets FCC	Meets FCC	Meets FCC
Operating Temperature	-20°C~70°C	-20°C~70°C	-20°C~70°C	-0°C~50°C	-0°C~50°C	-0°C~50°C	-0°C~50°C	-20°C~70°C	-20°C~70°C
Storage Temperature	-20°C~85°C	-20°C~85°C	-20°C~85°C	-20°C~80°C	-20°C~80°C	-20°C~85°C	-20°C~85°C	-20°C~85°C	-20°C~85°C
Dimension	97x40.5x198	112x51x203	112x51x203	81.5x40.6x150	81.5x40.6x150	50.5x37x177.5	50.5x37x177.5	89x39x152.4	89x39x152.4
MTBF	149,081hrs	154,736hrs	148,861hrs	100,000hrs	100,000hrs	364,806hrs	246,485hrs	245,424hrs	162,630hrs
Other Function	-	-	-	-	-	-	-	-	-

Single Board Computer

LCD Product Series

Chassis

Power supply

PS/2 Type
Other Type

Medical
Redundant

Peripheral

Other Type Selection Guide



Other Type Power Supply									
Model No.	ACE-810V	ACE-830VU1	ACE-855C	ACE-870C	ACE-890C	ACE-716C	ACE-723C	ACE-709CX	ACE-815C
AT or ATX Type	ATX	ATX	AT	AT	AT	AT	AT	ATX	ATX
INPUT Type	DC 12V	DC 12V	DC 24V	DC 24V	DC 24V	DC 24V	DC 24V	DC 24V	DC 24V
Input Range	9~16V DC	10~18V DC	16~32V DC	18~36V DC	18~36V DC	19~30V DC	19~30V DC	18~32V DC	18~32V DC
Power Wattage	100W	170W	55W	70W	86W	150W	200W	90W	100W
PFC Circuit	-	-	-	-	-	-	-	-	-
Efficiency	70%	70.00%	70%	70%	70%	70%	70%	75%	65%
Hold-up Time	-	28ms	-	-	-	-	-	-	-
Output Range (Min load)	+3.3V	-	-	-	-	-	-	-	-
	+5V	0.5A	1.5A	-	-	2A	3A	-	-
	+12V	0.2A	0.1A	-	-	-	-	-	-
	-5V	-	-	-	-	-	-	-	-
	-12V	-	-	-	-	-	-	-	-
	+5Vsb	-	-	-	-	-	-	-	-
Output Range (Rated load)	+3.3V	-	10A	-	-	-	-	-	4A
	+5V	8A	15A	8A	7A	10A	18A	22A	10A
	+12V	2A	10A	1.2A	2.5A	2.5A	4A	6A	2.5A
	-5V	-	0.5A	-	0.3A	0.5A	0.5A	1A	-
	-12V	0.5A	0.8A	-	0.5A	-	1A	1A	0.5A
	+5Vsb	1A	1.5A	-	-	-	-	0.5A	1.5A
	+24V	-	-	-	-	-	-	-	-
Output Range (Peak load)	+3.3V	-	-	-	-	-	-	15A	-
	+5V	12A	-	10A	-	12A	25A	33A	5A
	+12V	4A	-	4A	4A	4A	10A	12A	-
	-5V	-	-	-	-	-	1A	1.5A	1A
	-12V	-	-	-	-	1A	1.5A	1.5A	1A
	+5Vsb	1.5A	-	-	-	-	-	-	-
	+24V	-	-	-	-	-	-	-	-
Remark	-	-	-	-	-	-	-	-	-
Safety	UL/cUL	V	-	V	V	-	V	V	V
	CSA	-	-	-	-	V	-	-	V
	TUV	-	V	V	V	V	V	V	V
	CE	V	-	V	V	V	V	V	V
	CB	V	-	-	-	-	-	-	V
	Other	CQC	-	-	-	-	-	-	BSMI/NEMKO
EMI/EMC	Meets FCC	Meets FCC	Meets FCC	Meets FCC	Meets FCC	Meets FCC	Meets FCC	Meets FCC	FCC
Operating Temperature	-20°C~50°C	0°C~50°C	0°C~60°C	0°C~50°C	-20°C~70°C	-20°C~70°C	-20°C~70°C	-20°C~70°C	0°C~50°C
Storage Temperature	-20°C~85°C	-20°C~80°C	-20°C~85°C	-20°C~85°C	-20°C~85°C	-20°C~85°C	-20°C~85°C	-20°C~85°C	-20°C~80°C
Dimension	97x52x198	100x40.5x220	50.5x37x177.5	81x50x127	89x39x152.4	97x40.5x198	112x51x203	89x39x152.4	81.5x40.6x150
MTBF	112,388hrs	100,000hrs	358,793hrs	276,238hrs	251,383hrs	187,490hrs	138,435hrs	158,117hrs	100,000hrs
Other Function	Battery backup function	-	-	-	-	-	-	-	-

Other Type Selection Guide



Other Type Power Supply										
Model No.	ACE-818C	ACE-830CU1	ACE-870T	ACE-890T	ACE-716T	ACE-723T	ACE-709TX	ACE-815T	ACE-830TU1	ACE-890P
AT or ATX Type	ATX	ATX	AT	AT	AT	AT	ATX	ATX	ATX	AT
INPUT Type	DC 24V	DC 24V	DC 48V	DC 48V	DC 48V	DC 24V	DC 48V	DC 48V	DC 48V	DC 100V
Input Range	18~32V DC	19~36V DC	36~72V DC	36~72V DC	36~72V DC	36~72V DC	36~72V DC	36~72V DC	38~72V DC	70~132V DC
Power Wattage	140W	300W	70W	86W	150W	200W	90W	150W	300W	86W
PFC Circuit	-	-	-	-	-	-	-	-	-	-
Efficiency	70%	70%	70%	70%	70%	75%	70%	65%	70%	70%
Hold-up Time	-	26ms	-	-	-	-	-	5ms	6ms	-
Output Range (Min load)	+3.3V	-	-	-	-	-	-	-	-	-
	+5V	0.5A	3A	-	-	2A	3A	-	-	3A
	+12V	0.2A	1A	-	-	-	-	-	-	1A
	-5V	-	-	-	-	-	-	-	-	-
	-12V	-	-	-	-	-	-	-	-	-
	+5Vsb	-	-	-	-	-	-	-	-	-
Output Range (Rated load)	+3.3V	-	20A	-	-	-	-	10A	20A	-
	+5V	16A	25A	7A	10A	18A	22A	10A	14A	25A
	+12V	4A	22A	2.5A	2.5A	4A	6A	2.5A	4.2A	22A
	-5V	-	0.8A	0.3A	-	0.5A	1A	-	0.3A	0.8A
	-12V	0.5A	1A	0.5A	0.5A	1A	1A	0.5A	0.3A	1A
	+5Vsb	1A	1.5A	-	-	-	-	0.5A	2A	1.5A
	+24V	-	-	-	-	-	-	-	-	-
Output Range (Peak load)	+3.3V	-	-	-	-	-	-	-	-	12A
	+5V	20A	-	-	12A	25A	33A	15A	-	4A
	+12V	8A	-	4A	4A	10A	12A	5A	-	-
	-5V	-	-	-	-	1A	1.5A	-	-	1A
	-12V	-	-	-	1A	1.5A	1.5A	1A	-	-
	+5Vsb	1.5A	-	-	-	-	-	1A	-	-
	+24V	-	-	-	-	-	-	-	-	-
Remark	-	-	-	-	-	-	-	-	-	-
Safety	UL/cUL	V	-	V	-	V	V	-	V	V
	CSA	-	-	-	-	-	-	-	V	-
	TUV	-	-	V	-	V	V	-	V	V
	CE	V	Meets	V	Meets	V	V	Meets	V	V
	CB	V	-	-	-	-	-	-	V	-
	Other	CQC	-	-	-	-	-	-	BSMI/ NEMKO	-
EMI/EMC	Meets FCC	Meets FCC	Meets FCC	Meets FCC	Meets FCC	Meets FCC	Meets FCC	Meets FCC	FCC	Meets FCC
Operating Temperature	-20°C~50°C	0°C~50°C	0°C~50°C	-20°C~50°C	-20°C~70°C	-20°C~70°C	-20°C~70°C	0°C~50°C	0°C~50°C	-20°C~50°C
Storage Temperature	-20°C~85°C	-20°C~80°C	-20°C~85°C	-20°C~85°C	-40°C~85°C	-20°C~85°C	-20°C~85°C	-20°C~80°C	-20°C~80°C	-20°C~85°C
Dimension	97x52x198	100x40.5x220	81x50x127	89x39x152.4	97x40.5x198	112x51x203	89x39x152.4	81.5x40.6x150	100x40.5x220	89x39x152.4
MTBF(at 25°C)	109,696hrs	100,000hrs	277,126hrs	269,884hrs	273,913hrs	174,987hrs	170,121hrs	100,000hrs	100,000hrs	269,884hrs
Other Function	Battery backup function	-	-	-	-	-	-	-	-	-

Single Board Computer

LCD Product Series

Chassis

Power supply

PS/2 Type

Other Type

Medical

Redundant

Peripheral

ACE-816A/AP/916A/AP

150W Power Supply

ACE-815T/C

150/100W 48/24VDC Input ATX Power Supply

Designed for 1U Server Appliance Product !!



ACE-816AP



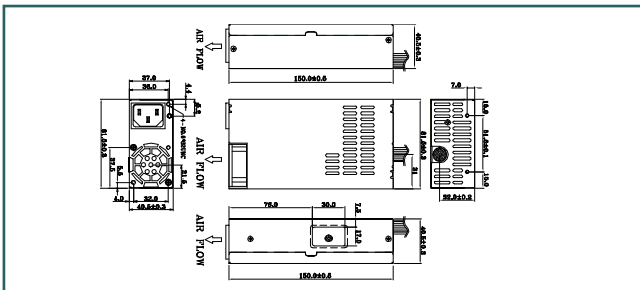
ACE-916AP



ACE-815T/C



• Dimensions:ACE-816A



• Specifications

- ◆ Input Range : 90V AC~264V AC full range Input(ACE-816AP/ACE-916AP)
95V AC~132V AC, 180V AC~264V AC manual switch Input(ACE-816A/ACE-916A)
- ◆ ACE-816A/AP ACE-916A/AP Output Rating

Output	Nominal	Regulation	Ripple/ Noise	ACE-916A Min.	ACE-916A Max.	ACE-816A Min.	ACE-816A Max.	ACE-916AP Min.	ACE-916AP Max.	ACE-816AP Min.	ACE-816AP Max.
1	+3.3V	±5%	50mV	-	-	0.2A	16A	-	-	0.3A	10A
2	+5V	±5%	50mV	1A	15A	1.0A	15A	1.0A	16A	1.0A	14A
3	+12V	±5%	120mV	0.2A	10A	0.2A	12A	0.5A	6A	0.3A	4.2A
4	-12V	±10%	120mV	0A	0.3A	0A	0.3A	0A	0.3A	0A	0.3A
5	+5Vsb	±5%	100mV	-	-	0A	2A	-	-	0A	2A

ACE-916A: The output of +5V and +12V total output shall not exceed 146.4W, Total output maximum 150W

ACE-816A: The output of +3.3V and +5V total output shall not exceed 61.5W, The +3.3V and +5V, +12V total output shall not exceed 136.4W, Total output maximum 150W

ACE-916AP: The output of +12V and +5V total output shall not exceed 145W, Total output maximum 150W

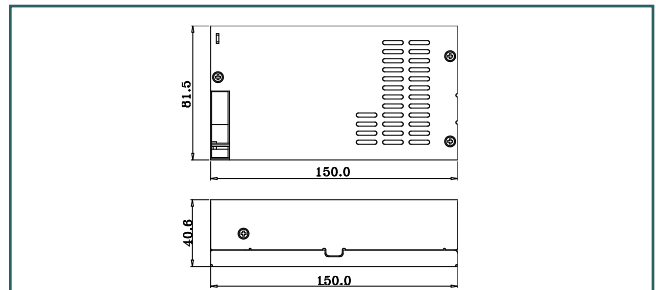
ACE-816AP: The output of +3.3V and +5V total output shall not exceed 85W, Total output maximum 150W

- ◆ Hold-up time : 17ms min. (AC Input Power Supply only)
- ◆ Efficiency : 68% typ. (ACE-816AP/916AP); 72% typ. (ACE-816A), 70% typ. (ACE-916A)
- ◆ Protection : Over Voltage/Load Protection and Short Circuit Protection
- ◆ TTL signal compatible power good signal
- ◆ Vibration : 10-55Hz at 2G 3min. period, 30 min. along X, Y and Z axis.
- ◆ Shock : 10G for 11ms once on each X, Y and Z axis.
- ◆ Built-in cooling fan
- ◆ Power Connector: P8/P9
- ◆ MTBF : 100,000hrs at 25°C
- ◆ Safety : TUV, CCC (ACE-816AP/916AP), UL 1950, CSA 22.2 Level 3, Meets CE. (ACE-816AP/916AP)
- ◆ EMI : Meets FCC class "B", EN55022 class "B"
Meets Harmonic EN61000-3-2 (ACE-816AP, ACE-916AP)
- ◆ EMS Standard : meet
 - IEC 801-2 8KV(Air Discharge)
 - IEC 801-3 3V/M criteria A
 - IEC 801-4, 2KV criteria B
 - IEC 801-5, 2KV criteria B
- ◆ Operating temperature : 0-50°C
- ◆ Storage temperature: -20°C ~ 80°C

• Ordering Information

- **ACE-816A** 150W ATX Power Supply
- **ACE-816AP** 150W ATX Power Supply full Range with PFC function
- **ACE-916A** 150W AT Power Supply
- **ACE-916AP** 150W AT Power Supply full Range with PFC function

• Dimensions:ACE-815T/815C



• Specifications

- ◆ Input Range : 18V DC~32V DC Input(ACE-815C), 36V DC~72V DC Input(ACE-815T)
- ◆ ACE-815T Output Rating

Output	Nominal	Regulation	Ripple/ Noise	Min.	Max.
1	+3.3V	+/-5%	50mV	0.0A	10.0A
2	+5V	+/-5%	50mV	0.0A	14.0A
3	+12V	+/-5%	120mV	0.0A	4.2A
4	-5V	+/-5%	100mV	0.0A	0.3A
5	-12V	+/-10%	120mV	0.0A	0.3A
6	+5Vsb	+/-5%	100mV	0.0A	2.0A

The +3.3V and +5V, +12V total output shall not exceed 136.4W,

- ◆ ACE-815C Output Rating

Output	Nominal	Regulation	Ripple/Noise	Min.	Max.
1	+3.3V	+/-5%	50mV	0.0A	4.0A
2	+5V	+/-5%	50mV	0.0A	13.0A
3	+12V	+/-5%	120mV	0.0A	2.5A
5	-12V	+/-10%	120mV	0.0A	0.3A
6	+5Vsb	+/-5%	100mV	0.0A	1.5A

The +3.3V and +5V, +12V total output shall not exceed 84W,

- ◆ Hold-up time : 5ms min
- ◆ Efficiency : 65% typ.
- ◆ Protection : Over Voltage/Load Protection and Short Circuit Protection
- ◆ TTL signal compatible power good signal
- ◆ Vibration : 10-55Hz at 2G 3min. period, 30 min. along X, Y and Z axis.
- ◆ Shock : 10G for 11ms once on each X, Y and Z axis.
- ◆ Built-in cooling fan
- ◆ Power Connector: ATX (ACE-816A/AP/815T/815C)
- ◆ MTBF : 100,000hrs at 25°C
- ◆ EMI : Meets FCC class "B", EN55022 class "B"
- ◆ EMS Standard : meet
 - IEC 801-2 8KV(Air Discharge)
 - IEC 801-3 3V/M criteria A
 - IEC 801-4, 2KV criteria B
 - IEC 801-5, 2KV criteria B
- ◆ Operating temperature : 0-50°C
- ◆ Storage temperature: -20°C ~ 80°C

• Ordering Information

- **ACE-815T** 150W 48VDC ATX Input Power Supply
- **ACE-815C** 100W 24VDC ATX Input Power Supply

ACE-830CU1/TU1/VU1

300/170W 24/48/12V DC Input ATX Power Supply



Specifications

Input Range:

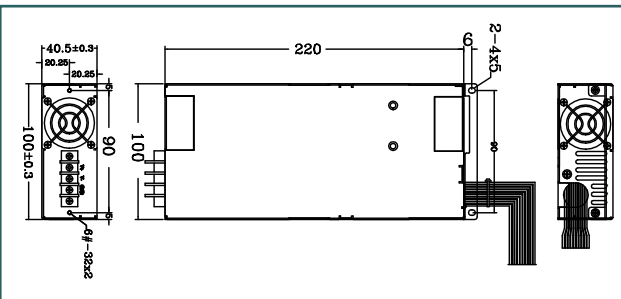
Model	Input Range	Input Current
ACE-830CU1	+18~+36V DC	30A @+24V DC
ACE-830TU1	-36~-72V DC	15A @-48V DC
ACE-830VU1	+10~+18V DC	30A @+12V DC

ACE-830CU1/TU1/VU1, ACE-840APU2

Nominal	Regulation	Ripple/ Noise	ACE-830CU1		ACE-830TU1		ACE-830VU1	
			Min.	Max.	Min.	Max.	Min.	Max.
+3.3V	±5%	50mV	-	20A	-	20A	-	10A
+5V	±5%	50mV	3A	25A	1.5A	25A	1.5A	15A
+12V	±5%	120mV	1A	22A	0.1A	22A	0.1A	10A
-5V	±5%	50mV	-	0.8A	-	0.8A	-	0.5A
-12V	±10%	120mV	-	1A	-	1A	-	0.8A
+5Vsb	±5%	100mV	-	1.5A	-	1.5A	-	1.5A

- ACE-830CU1: The output of +3.3V and +5V shall not exceed 180W.
+3.3V, +5V and +12V total output power maximum is 296W.
- ACE-830TU1: The output of +3.3V and +5V shall not exceed 180W.
+3.3V, +5V and +12V total output power maximum is 296W.
- ACE-830VU1: The output of +3.3V and +5V shall not exceed 100W.
+3.3V, +5V and +12V total output power maximum is 160W.
- Hold-up time: ACE-830VU1: 28ms min, ACE-830CU1: 26ms min
- Efficiency: 70%(ACE-830VU1,ACE-830CU1) 75%(ACE-830TU1)
- Protection: Over Voltage/Load Protection and short circuit protection .
- TTL signal compatible power good signal .

Dimensions



- Vibration: 10-55Hz at 2G 3min. period , 30min. along X ,Y and Z axis
- Shock: 20G for 11ms once on each X,Y and Z axis.
- Built-in cooling fan .
- MTBF : Minimum 100000 hours at 25°C
- Safety : UL 1950, TUV, meets CE
- EMI : FCC parts 15 class "A" , CISPR 22 level "A"
Active PFC, complies with EN 61000-3-2
- EMS :meet EN 61000-4-2, EN 61000-4-3, EN 61000-4-5, EN 61000-6-2 EN 61000-6-4
- Operating temperature : -0~50°C
- Storage temperature : -20~80°C
- Power connectors
20 PIN ATX x 1
4 PIN ATX-12V x 1
Extra +5V x 1
HDD or CD-ROM x 5
Floppy x 1

Ordering Information

- **ACE-830CU1** 300W 24VDC ATX Power Supply
- **ACE-830TU1** 300W 48VDC ATX Power Supply
- **ACE-830VU1** 170W 12VDC ATX Power Supply

ACE-540A

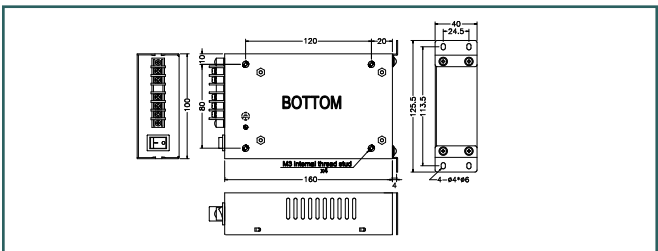
24V DC Output Industrial Power Supply



Specifications

- Input : Voltage : 85 ~ 264V AC
- Output : 2A@24V DC, 50oC with 20CFM air cooling
1.7A@24V DC, 50oC with free air cooling
- Load Regulation : Less than 1% by changing the output
- Efficiency : Higher than 70%
- Hold-up Time : 20ms (typical)@115V AC
- Protection : Over voltage protection.
The trip point is around 26.2V ~ 31V output
- Operating temperature : -20° ~ 70°C
(Will derate the output to 70% when operating at 70°C)
- Storage temperature : -40° ~ 85°C

Dimensions



- Altitude : 0 ~ 10,000ft
- MTBF : 372,384 Hours.
- Safety : UL 1950, meets CE
- EMI : FCC docket 20780 curve "B", EN55022
- EMS Standard :
- EN-50082-1 - IEC 801-2 8KV (Air Discharge) criteria B
- IEC 801-3, 3V/M criteria B - IEC 801-4, 2KV criteria B
- IEC 801-5, 2KV criteria B

Ordering Information

- **ACE-540A** 24V DC Output Industrial Power Supply

ACE-870/865

AC/DC Input Compact Size 70W Power Supply

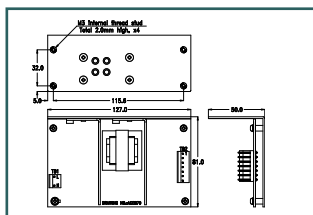


ACE-870

ACE-865V



Dimensions



CB-870A CB-870B

CB-870C CB-870D

Specifications

Input Table :

Model	Input Range	Input Current
ACE-870A/870AP	85~264V AC, 47~63Hz	1.5A@115V AC or 0.8A@230V AC
ACE-870T	+36 ~ +72V DC	4A@+48V DC
ACE-870C	+18 ~ +36V DC	6A@+24V DC
ACE-865V	+8 ~ +16V DC	12A@+12V DC

Output Table: (at 50°C)

Model	Rated Load				Max. Output			
	+5V	+12V	-5V	-12V	+5V	+12V	-5V	-12V
ACE-870A/870AP	7A	2.5A	0.3A	0.3A	-	4A	0.5A	0.5A
ACE-870T	7A	2.5A	0.3A	0.5A	4A	-	-	-
ACE-870C	7A	2.5A	0.3A	0.5A	4A	-	-	-
ACE-865V	6A	2A	0.3A	0.5A	4A	-	-	-

- ◆ Ripple and Noise : Less than 50mV@+5V; 100mV@Others
- ◆ Line Regulation : The line regulation for each outputs are less than 1% @+5V; 2% @+12V; 3% @-5V & -12V
- ◆ Load Regulation : Less than 3% @+5V & +12V, 5% @-5V & -12V
- ◆ Efficiency : Higher than 70%
- ◆ Hold-up Time : 16ms (typical) @115V AC (ACE-870A/870AP)
- ◆ Altitude : 0 ~ 10,000ft
- ◆ Protection : Over voltage protection. The trip point is around 5.7V ~ 7.0V output
- ◆ MTBF :
 - ACE-870AP : 238,865 Hours
 - ACE-870A : 296,831 Hours
 - ACE-870T : 277,126 Hours
 - ACE-870C : 276,238 Hours
 - ACE-865V : 246,485 Hours
- ◆ Safety : UL 1950 (ACE-870A/AP); TUV EN 60950 (ACE-870AP/865V/870C/870T) meets CE(ACE-870AP/865V/870C/870T)
- ◆ EMI : ACE-870A/870AP : Meets FCC docket 20780 curve "B"
ACE-870AP : Harmonic EN 61000-3-2
- ◆ Operating Temperature : 0° ~ 50°C
- ◆ Storage Temperature : -20° ~ 85°C
- ◆ Dimensions : 81(W) x 50(H) x 127(D)mm; (3.2" x 2" x 5")

Ordering Information

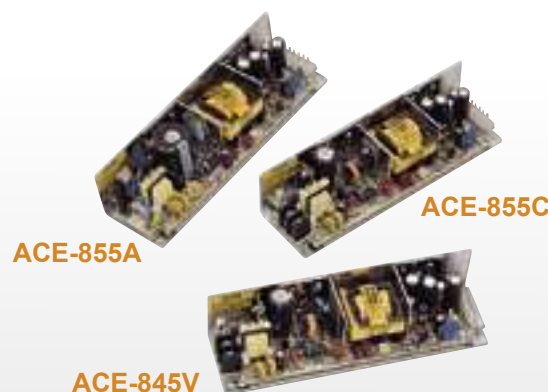
- **ACE-870AP** AC input compact size PFC power supply
- **ACE-870A** AC input compact size power supply
- **ACE-870T** +48V DC input compact size power supply
- **ACE-870C** +24V DC input compact size power supply
- **ACE-865V** +12V DC input compact size power supply

IEI Optional

- **CB-870A** DC Cable set for ACE-870 power to backplane with P8/P9 connector, 40cm
- **CB-870B** DC Cable set for ACE-870 power to CPU card with 8-pin connector, 40cm
- **CB-870C** DC Cable set for ACE-870 power to CPU card with 8-pin & P8/P9 connector, 40cm
- **CB-870D** ACE-870A/870AP AC input cable kit, 60cm

ACE-855/845

AC/DC Input LCD Panel PC 55W Power Supply



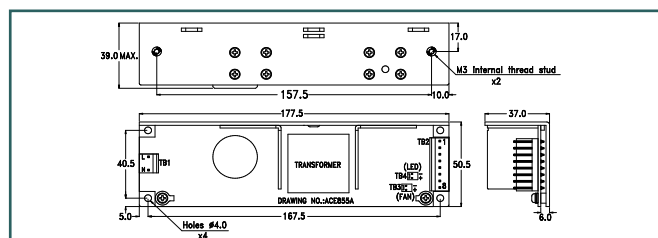
ACE-855A

ACE-855C

ACE-845V



Dimensions



Specifications

Input Table :

Model	Input Range	Input Current
ACE-855A	85 ~ 264V AC, 47 ~ 63Hz	2A@115V AC or 1A@230V AC
ACE-855C	+16 ~ +32V DC	9A@+16V DC
ACE-845V	+9.5 ~ +18V DC	10A@+9.5V DC

Output Table: (at 50°C):

Model	Rated Load		Max. Output	
	+5V	+12V	+5V	+12V
ACE-855A	8A	1.2A	10A	4A
ACE-855C	8A	1.2A	10A	4A
ACE-845V	6A	1.1A	8A	2A

- ◆ Inrush Current (ACE-855A) : Not exceed 115V@30A AC or 230V AC@60A
- ◆ Ripple and Noise : Less than 1% of output voltage
- ◆ Line Regulation : The line regulation for each outputs are less than 1%, while measuring at rated loading and 10% of input voltage changing
- ◆ Load Regulation : Less than 3% @+5V, 5% @+12V
- ◆ Efficiency : Higher than 70%
- ◆ Hold-up Time : 16ms (typical) @115V AC (ACE-855A)
- ◆ Altitude : 0 ~ 10,000ft
- ◆ Protection : Over voltage protection. The trip point is around 5.7V ~ 7.0V output
- ◆ Vibration : 10 ~ 55Hz at 2G 3min. period, 30 min. along X, Y and Z axis
- ◆ Impact : 10G for 20ms once on each X, Y and Z axis
- ◆ MTBF : ACE-855A : 335,874 Hours
ACE-855C : 358,793 Hours
ACE-845V : 364,806 Hours
- ◆ Safety : UL 1950; TUV EN 60950 meets CE
- ◆ EMI : Meets FCC docket 20780 curve "B", EN50081-2 : CISPR curve "B"
- ◆ EMS Standard (Designed to meet the following limits) : EN 50082-2
IEC 801-2 8KV (Air Discharge) criteria B
IEC 801-3, 10V/M criteria B
IEC 801-4, 2KV criteria B
IEC 801-5, 2KV criteria B
- ◆ Operating Temperature : -20° ~ 60° C (Derating curve will occur 50° ~ 60° C)
- ◆ Storage Temperature : -20° ~ 85° C
- ◆ Dimensions : 50.5(W) x 37(H) x 177.5(D)mm; (2" x 1.5" x 7")

Ordering Information

- **ACE-855A** 55W AC Input AT power supply
- **ACE-855C** 55W 24V DC Input AT power supply
- **ACE-845V** 42W 12V DC Input AT power supply

ACE-890

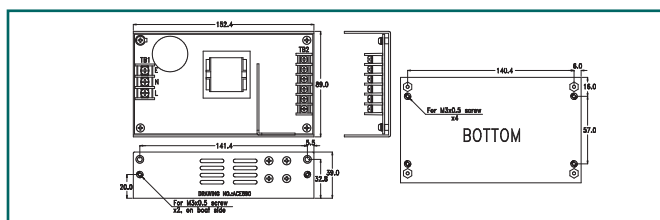
Industrial 1U Power Supply



CB-8901 CB-8902 CB-8903



• Dimensions



• Specifications

◆ Input / Output Table : (at 50°C)

Model	Input Voltage	Rated Load			Max Output		
		+5V	+12V	-12V	+5V	+12V	-12V
ACE-890A	85V~264V AC	10A	2.5A	0.5A	12A	4A	1A
ACE-890AP	90V~264V AC	10A	2.5A	0.5A	12A	4A	1A
ACE-890C	18V~36V DC	10A	2.5A	0.5A	12A	4A	1A
ACE-890P	70V~132V DC	10A	2.5A	0.5A	12A	4A	1A
ACE-890T	36V~72V DC	10A	2.5A	0.5A	12A	4A	1A
ACE-890V	9V~16V DC	9A	2A	0.3A	12A	4A	1A

ACE-890AP: min load + 5VDC/ 1.5A, + 12VDC, -12VDC/ 0.05A

- ◆ Ripple and Noise : Less than +5V@50mV, 12V@100mV
Less than +5V@100mV, -12V@150mV, -12V@200mV (ACE-890AP)
- ◆ Line Regulation : The line regulation for each output is less than 1%, while measuring at rated loading and 10% of input voltage changing
- ◆ Load Regulation : Less than 1%@+5V and 5%@ 12V
- ◆ Efficiency : Higher than 70%
- ◆ Hold-up Time (ACE-890A/890AP) : 16ms (typical)@115V AC
- ◆ Protection : Over voltage protection. The trip point is around 5.7V~7.0V output
- ◆ Operating temperature : -5°C ~ 40°C (ACE-890AP), -20°C ~ 50°C (ACE-890T/840P)
- ◆ Storage temperature : -20°C~85°C, -20°C~70°C(ACE-890A/ACE-890C/ACE-890V)
- ◆ Altitude : 0~10,000ft
- ◆ MTBF : - ACE-890A : 268,358 Hours - ACE-890P : 269,884 Hours
- ACE-890T : 269,884 Hours - ACE-890C : 251,383 Hours
- ACE-890V : 245,424 Hours - ACE-890AP : 50,000Hours
- ◆ Safety : CSA 22.2 No. 234(ACE-890A/C/T/V), TUV(ACE-890AP/V/C/T)
meets CE(ACE-890AP/V/C/T/P)
- ◆ EMI : Meets FCC docket 20780 curve "B", EN55022 "B"
Harmonic EN 61000-3-2 for ACE-890AP
- ◆ EMS Standard (Designed to meet the following limits) :
- IEC 801-2 15KV (Air Discharge) - IEC 801-3, 10V/M
- IEC 801-4, 2KV - IEC 801-5, 2KV
- ◆ Dimensions : 89(W) x 39(H) x 152.4(D)mm; (3.5" x 1.5" x 6")

• Ordering Information

- **ACE-890AP** AC input 86W industrial PFC power supply
- **ACE-890A** AC input 86W industrial power supply
- **ACE-890C** 24V DC input 86W industrial power supply
- **ACE-890P** 100V DC input 86W industrial power supply
- **ACE-890T** 48V DC input 86W industrial power supply
- **ACE-890V** 12V DC input 72W industrial power supply

• IEI Optional

- **CB-8901** DC output cable for backplane (P8/P9 type) and HDD/FDD, 40cm
- **CB-8902** DC output cable for CPU card (271-08TS) and HDD/FDD, 40cm
- **CB-8903** DC output cable for NOVA series SBC (Molex 26-60-4080) and HDD/FDD, 40cm

ACE-709

Industrial 1U 12V/24V/48VDC Input ATX Power Supply

ATX Function!!



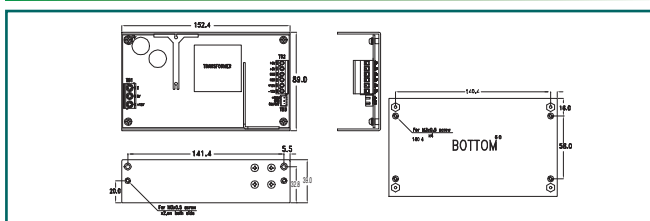
+5Vsb & PS On cable



Feature

- High efficiency
- Low Ripple and Noise
- Short circuit, Overload, Over voltage Protected

• Dimensions



• Specifications

◆ Input Voltage / Input Current:

Model	Input Range	Input Current	MAX Current
ACE-709CX	18VDC~32VDC	6A@+24VDC	8A@+18VDC
ACE-709TX	36VDC~72VDC	3A@-48VDC	4A@-6VDC
ACE-709VX	9VDC~16VDC	10A@+12VDC	13A@+9VDC

◆ Output Rating (at 50°C)

Nominal	Regulation	ACE-709CX		ACE-709TX		ACE-709VX	
		Rated	Max	Rated	Max	Rated	Max
+5V	+/-1%	10A	15A	10A	15A	8A	12A
+12V	+/-5%	2.5A	5A	2.5A	5A	2.5A	4A
-12V	+/-5%	0.5A	1A	0.5A	1A	0.5A	1A
+5Vsb	+/-5%	0.5A	1A	0.5A	1A	0.5A	1A

- ◆ Ripple and Noise: Less than 1% of each output at rated load
- ◆ Efficiency: Higher than 75%(ACE-709CX/ACE-709VX)
Higher than 70%(ACE-709TX)
- ◆ Protection: Over voltage/Load protection and short circuit protection
- ◆ Altitude: 0~10,000 ft
- ◆ TTL signal compatible power good signal
- ◆ MTBF:
ACE-709CX: 158,117 hours
ACE-709TX: 170,121 hours
ACE-709VX: 162,630 hours
- ◆ Vibration: 10-55Hz at 2G 3min period 30min along X,Y and axis
- ◆ Shock: 10G for 11ms once on each X,Y and Z axis
- ◆ Safety: UL 1950, TUV EN 60950:2000, CCC, meets CE
- ◆ EMI: FCC docket 20780 curve, EN 55022 class "B"
- ◆ EMC: EN 61000-4-2 4KV contact air discharge criterion B
EN 61000-4-3 10V/M with 80% AM criterion A
EN 61000-4-4 2KV criterion B
EN-61000-4-5 0.5KV criterion B
- ◆ Operating Temperature: -20~70°C
- ◆ Storage temperature: -20~85°C
- ◆ Dimensions: 89(W)x39(H)x152.4(D)mm

• Ordering Information

- **ACE-709CX** 90W 24V DC input ATX Power Supply
- **ACE-709TX** 90W 48V DC input ATX Power Supply
- **ACE-709VX** 80W 12V DC input ATX Power Supply

ACE-717CX

ACE-715VX

Industrial 24V DC Input ATX Power Supply

Industrial 12V DC Input ATX Power Supply

ATX Function DC PSU!!



+5Vsb & PS On cable

Specifications

Input Voltage

Model	Input Range
ACE-717CX	19VDC~32VDC
ACE-715VX	9VDC~18VDC

Output Rating

Nominal	Regulation	ACE-717CX			ACE-715VX		
		Min	Max	Peak	Min	Max	Peak
+5V	+/- 1%	1A	8A	12A	1A	8A	16A
+12V	+/- 5%	1A	8A	10A	1A	7A	10A
+3.3V	+/- 5%	0A	6A	10A	0A	6A	
-12V	+/- 5%	0A	0.5A	1A	0A	0.5A	1A
+5Vsb	+/- 1%	0A	1A	1.5A	0A	1A	1.5A

ACE-717CX: The Output of +5V and +12V shall not exceed 140W, the Output of +5V and +3.3V shall not exceed 60W

ACE-715VX: The Output of +5V and +12V shall not exceed 130W, the Output of +5V and +3.3V shall not exceed 60W

- ◆ Ripple and Noise: Less than 1% of each output at rated load
- ◆ Efficiency: Higher than 70%
- ◆ Protection: Over voltage/Load protection and short circuit protection
- ◆ Altitude: 0~10,000 ft
- ◆ TTL signal compatible power good signal
- ◆ MTBF: 100,000hrs at 25°C
- ◆ Vibration: 10-55Hz at 2G 3min period 30min along X,Y and Z axis
- ◆ Shock: 10G for 11ms once on each X,Y and Z axis
- ◆ Safety: Meets UL 60950, CSA C22.2 NO.234, VDE EN 60950
- ◆ EMI: Meets FCC docket 20780 curve "B", EN 55022 class "B"
- ◆ EMC : EN 61000-4-2 4KV contact; 8KV(air discharge) criterion B
EN 61000-4-3 3V/M with 80% AM criterion A
EN 61000-4-4 2KV criterion B
EN-61000-4-5 0.5KV criterion B
- ◆ Operating Temperature : 0~70°C (-20°C can be start up)
- ◆ Storage Temperature : -40~75°C
- ◆ Dimensions: 97 (W) x39(H)x198(D)mm

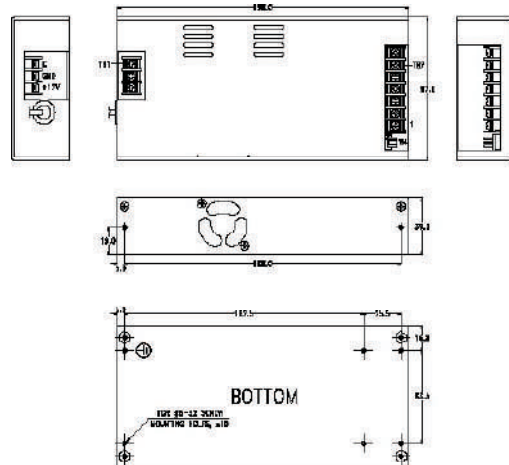
Ordering Information

- **ACE-717CX**
170W 24V DC input ATX Power Supply
- **ACE-715VX**
157W 12V DC input ATX Power Supply

Feature

- High efficiency
- Low Ripple and Noise
- Short circuit, Overload, Over voltage Protected

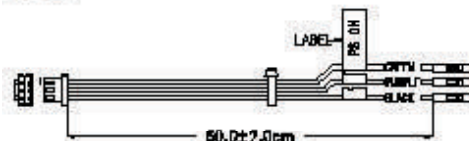
Dimensions



TB1- DC input: Terminal blocks.
TB2- DC output: Terminal blocks.
TB3- for +12V FAN use; Molex 5045-02A or equivalent
TB4- for Power ON: JST B 3B-XH-A or equivalent
TB5- for Switch: JST B 2B-XH-A or equivalent

TB2 Position 1. +5Vsb 4. GND 7. -12V
2. +3.3V 5. GND
3. +12V 6. +5V

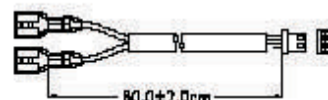
To TB4



Wire color vs. Voltage and lable

VOLTAGE	WIRE COLOR	ABEL TEXT
Power on	GREEN	PS ON
PG/PF	PURPLE	PG/PF
GND	BLACK	GND

To TB5



ACE-716

Rugged AC/DC Input 150W Power Supply



Specifications

Input Table :

Model	Input Range	Input Current
ACE-716A/716AP	85~135V AC or 180~265V AC, 47~440Hz	4A@115V AC or 2A@230V AC
ACE-716T	-36 ~ -72V DC	6A@-48V DC
ACE-716C	+19 ~ +30V DC	12A@+24V DC

Output Table (at 50°C) :

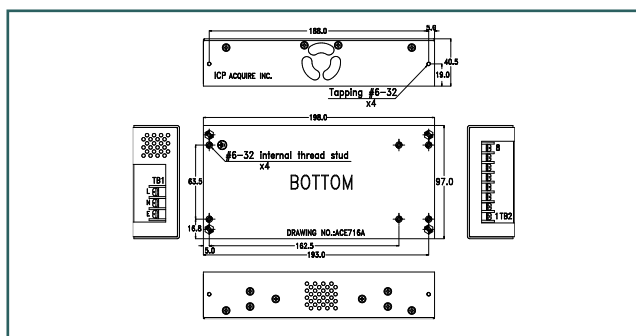
Model	Rated Load				Max. Output			
	+5V	+12V	-5V	-12V	+5V	+12V	-5V	-12V
ACE-716A/716AP	18A	4A	0.5A	1A	25A	10A	1A	1A
ACE-716T	18A	4A	0.5A	1A	25A	10A	0.5A	1.5A
ACE-716C	18A	4A	0.5A	1A	25A	10A	1A	1.5A

- ◆ Inrush Current (ACE-716A/716AP) : Not exceed 15A@115V AC or 30A@230V AC
- ◆ Ripple and Noise : Less than 100mV
- ◆ Line Regulation : The line regulation for each outputs are less than 1%, while measuring at rated loading and 10% of input voltage changing
- ◆ Load Regulation :
ACE-716A/716AP : Less than 3%@ 5V and -12V, 6%@+12V
ACE-716T/C : Less than 1%@ 5V and -12V, 4%@+12V
- ◆ Efficiency : ACE-716A/716AP : Higher than 75%
ACE-716T/C : Higher than 30%
- ◆ Hold-up Time (ACE-716A/716AP) : 20ms (typical)@115V AC
- ◆ Altitude : 0 ~ 10,000ft
- ◆ Protection : Over voltage protection. The trip point is around 5.9V ~ 7.0V output
- ◆ Thermal Protection : Built in 110 50C thermal switch in HS1
- ◆ Vibration : 10 ~ 55Hz at 2G 3min. period, 30 min. along X, Y and Z axis
- ◆ Shock : 10G for 20ms once on each X, Y and Z axis
- ◆ Hi-pot isolation :
– 4300V DC, input to output for one minute
– 2200V DC, input to ground for one minute
- ◆ MTBF :
– ACE-716AP: 149,081 hours
– ACE-716T: 273,913 hours
– ACE-716C: 187,490 hours
- ◆ Safety : UL 478, 1012, 1950;(ACE-716A/C/T)
TUV EN 60950(ACE-716AP/C/T),
meets CE(ACE-716AP/C/T)
- ◆ EMI :Meets FCC docket 20780 curve "A",
EN50081-2 : CISPR22 "A"
Harmonic EN 61000-3-2 for ACE-716AP

EMS Standard (Designed to meet the following limits) :

- EN 50082-2
- IEC 801-1 8KV (Air Discharge) criteria B (ACE-716A/716AP)
- IEC 801-3, 10V/M criteria A
- IEC 801-4, 2KV criteria B (ACE-716A/716AP)
- IEC 801-5, 2KV criteria B (ACE-716A/716AP)
- ◆ Built-in cooling fan
- ◆ Operating temperature : -20° ~ 70°C
(Derating curve will occur 50° ~ 70°C)
- ◆ Storage temperature : -20° ~ 85°C
- ◆ Dimensions : 97(W) x 40.5(H) x 198(D)mm;
(3.8" x 1.6" x 7.8")

Dimensions



Ordering Information

- ◆ **ACE-716AP**
Rugged AC input 150W PFC power supply
- ◆ **ACE-716A**
Rugged AC input 150W power supply
- ◆ **ACE-716T**
Rugged 48V DC input 150W power supply
- ◆ **ACE-716C**
Rugged 24V DC input 150W power supply

ACE-810V ACE-818C

DC Input 100W Power Supply with
Battery Backup Function

DC Input 140W Power Supply with
Battery Backup Function



Specifications

Input:

Model	Input Range	Input Current
ACE-810V	+9V~+16V DC	10A@+24V DC
ACE-818C	+18V~+32V DC	14A@+12V DC

Output Rating: (at 50°C)

Model	Rated Load				Max. Load			
	+5V	+12V	-12V	+5Vsb	+5V	+12V	-12V	+5Vsb
ACE-810V	8A	2A	0.5A	1A	12A	4A	-	1.5A
ACE-818C	16A	4A	0.5A	1A	20A	8A	-	1.5A

Note: The total output continuous power shall be kept under 140W at 24VDC input (ACE-818C)

The total output continuous power shall be kept under 100W at 12VDC input and forced air-cooling. Without fan cooling is only 80W. (ACE-810V)

- Min. Load: +5V/0.5A +12V/0.2A
- Efficiency: Higher than 70% at 12V or 24VDC input
- Protection: over voltage, short circuit, and over load protection.
- Input polarity operation: When wrong polarity is connected to input terminal, should not cause any damage on the power supply.
- Power On Signal: This TTL compatible signal (active low) is use to switch ON the main output. When "Power ON" is disconnected from secondary common, all outputs except +5Vsb shall turn off.
- Battery Backup and Hold up time: Upon loss of DC input, the unit must operate from the battery. Hold up time is around 2 minute on the battery capacity.
- Built-in cooling fan
- MTBF: 112,388 hrs (ACE-810V), 109,696 (ACE-818C)
- Vibration: 10Hz~55Hz at 2G, 3minutes period, 30 minutes along X, Y, and Z axis.
- Shock: 10G for 11ms half sine wave, one time for each of $\pm X$, $\pm Y$, $\pm Z$ axis.
- Safety: UL 1950, TUV EN 60950: 2000 meets CE
- EMI: Designed to meet the following radiation limited: FCC docket 20780 curve "B" EN55022 class "B"
- EMS: Designed to meet the following limits EN61000-4-2 4KV contact; 8KV air discharge Criterion B EN61000-4-3 10V/M with 80% AM Criterion A EN61000-4-4 2KV Criterion B EN61000-4-5 0.5KV Criterion B
- Operating temperature: -20 ~ 50°C
- Storage temperature: -20 ~ 85°C
- Connectors: TB1- primary DC input: 3-position Terminal blocks
TB2-DC output: 6-position Terminal blocks
TB3-auxiliary 8-pin connector:
TB4-Battery input: 2-position Terminal blocks

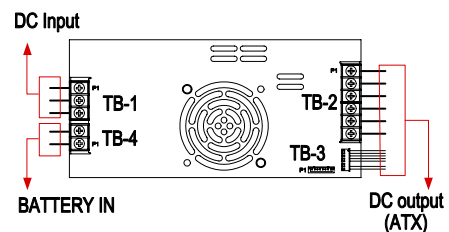
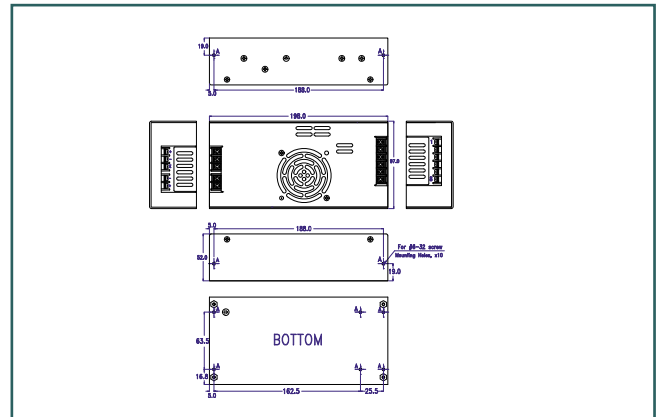
Pin Define

PIN	TB1	TB2	TB3	TB4
1	+	+5V	Vin signal 1 (Hi, Lo)	Battery (-)
2	-	+5V	Vin signal 2 (Hi pulse)	Battery (+)
3	E	GND	+5Vsb	
4		GND	GND	
5		+12V	Power on	
6		-12V	NC	
7			I/P Battery monitor (+)	
8			I/P Battery monitor (-)	

When Vin Signal 1 change state, Vin signal 2 will Provide one shot pulse between 0.2 sec and 0.6 sec

The ACE-810V/818C is designed for mobile PC applications. The most valuable feature is that it has a secondary battery input that keeps the power supply running when the primary 12V DC or 24V DC is lost. Then the power supply switches to battery backup mode. ACE-810V/818C two kinds of signals VS1 and VS2. After the primary lost message is displayed, the PC may do a system shutdown that is controlled by the software program

Dimensions



TB-3 Connector Application explain

- PIN1: Power Good
- PIN2: Pulse signal indication of DC input status
- PIN3: +5Vsb
- PIN4: Ground
- PIN5: Power on
- PIN7/PIN8: Measure battery capacity

*Notes: It can be used as an identifier by PIN2 signal while there are interrupt of DC power and recovery.

For ACE-810V/818C are not only applied as a power supply. It can be treated as a UPS (uninterruptible power supply) while combined with battery module. This series of power supply provide stable electronic and send signal from TB-3 of PIN2 for doing system control and configuration depending on user's demands. Moreover, it is easy to connect within voltmeter for doing voltage monitoring.

Ordering Information

ACE-818C

+24V DC Input 140W ATX / Battery Backup Function Power Supply

ACE-810V

+12V DC Input 100W ATX / Battery Backup Function Power Supply

ACE-723

Rugged AC/DC Input 200W Power Supply



Specifications

Input Table :

Model	Input Range	Input Current
ACE-723A	85~135V AC or 180~265V AC, 47 ~ 440Hz	5A@115V AC or 3A@230V AC
ACE-723B	85~135V AC or 180~265V AC, 47 ~ 440Hz	5A@115V AC or 3A@230V AC
ACE-723T	-36 ~ -72V DC	8A@-48V DC
ACE-723C	+19 ~ +30V DC	16A@+24V DC

Output Table (at 40°C) :

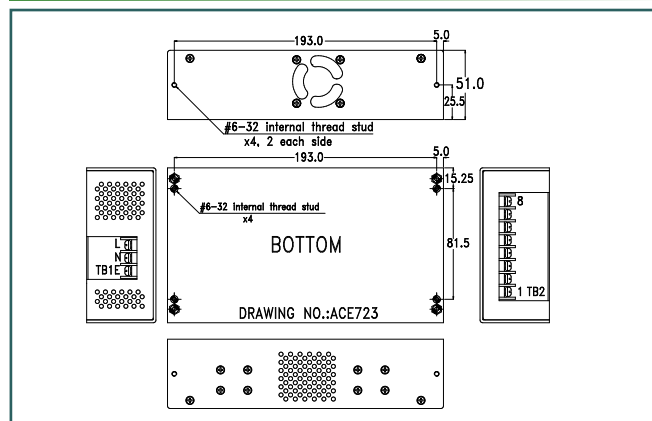
Model	Rated Load					Max. Output				
	+5V	+12V	-5V	-12V	+24V	+5V	+12V	-5V	-12V	+24V
ACE-723A	20A	6A	1A	1A		33A	12A	1.5A	1.5A	
ACE-723B	21A	5A		1A	1A	33A	12A	1.5A	1.5A	1.5A
ACE-723T	22A	6A	1A	1A		33A	12A	1.5A	1.5A	
ACE-723C	22A	6A	1A	1A		33A	12A	1.5A	1.5A	

- ◆ Inrush Current (ACE-723A/B) : Not exceed 15A@115V AC or 30A@230V AC
- ◆ Ripple and Noise : Less than 100mV
- ◆ Line Regulation : The line regulation for each outputs are less than 1%, while measuring at rated loading and 10% of input voltage changing
- ◆ Load Regulation : Less than 1%@ 5V and -12V, 4%@+12V and +24V (ACE-723B)
- ◆ Efficiency : Higher than 75%
- ◆ Hold-up Time (ACE-723A/B) : 20ms (typical)@115V AC
- ◆ Protection : Over voltage protection. The trip point is around 5.9V ~ 7.0V output
- ◆ Thermal Protection : Built in 110 50C thermal switch in HS1
- ◆ Altitude : 0 ~ 10,000ft
- ◆ Vibration : 10 ~ 55Hz at 2G 3min. period, 30 min. along X, Y and Z axis
- ◆ Shock : 10G for 20ms once on each X, Y and Z axis
- ◆ Hi-pot isolation :
 - 4300V DC, input to output for one minute
 - 2200V DC, input to ground for one minute
- ◆ MTBF :
 - ACE-723A : 154,376 Hours
 - ACE-723B : 148,861 Hours
 - ACE-723T : 174,987 Hours
 - ACE-723C : 138,435 Hours
- ◆ Safety : UL 478, 1012, 1950; TUV EN 60950 (ACE-723C/T) meets CE(ACE-723C/T)
- ◆ EMI : Meets FCC docket 20780 curve "A", EN50081-2 : CISPR22 "A"

◆ EMS Standard (Designed to meet the following limits) :

- EN 50082-2
- IEC 801-1 8KV (Air Discharge) criteria B
- IEC 801-3, 10V/M criteria A
- IEC 801-4, 2KV criteria B
- IEC 801-5, 2KV criteria B
- ◆ Built-in cooling fan
- ◆ Operating temperature : -20°~ 70°C (Derating curve will occur 50° ~ 70°C)
- ◆ Storage temperature : -20°~ 85°C
- ◆ Dimensions : 112(W) x 51(H) x 203(D)mm; (4.4" x 2" x 8")

Dimensions



Ordering Information

- ◆ **ACE-723A**
Rugged AC input 200W power supply
- ◆ **ACE-723B**
Rugged AC input 200W PC and +24V power supply
- ◆ **ACE-723T**
Rugged 48V DC input 200W power supply
- ◆ **ACE-723C**
Rugged 24V DC input 200W power supply

Medical Selection Guide



Medical Power supply								
Model No.	ACE-710APM	ACE-713APM	ACE-818APM	ACE-720APM	ACE-925M	ACE-728APM	ACE-828M	
AT or ATX Type	ATX	ATX	ATX	ATX	AT	ATX	ATX	
INPUT Type	AC Full Range	AC Full Range	AC Full Range	AC Full Range	AC Full Range	AC Full Range	AC Full Range	AC Auto Range
Input Range	85~264V DC	85~264V AC	90~264V AC	85~264V AC	90~264V AC	85~264V AC	85~264V AC	90~130V AC ; 180~260V AC
Power Wattage	100W	130W	180W	200W	200W	280W	280W	
PFC Circuit	Active PFC	Active PFC	Active PFC	Active PFC	-	Active PFC	-	
Efficiency	80%	80%	68%	82%	65%	82%	65%	
Hold-up Time	20ms	20ms	17ms	20ms	14ms	20ms	20ms	
Output Range (Min load)	+3.3V	-	-	0.3A	-	-	-	-
	+5V	0.2A	0.2A	0.5A	2A	4A	2A	2A
	+12V	-	-	1.5A	-	1A	0.5A	0.1A
	-5V	-	-	-	-	-	-	-
	-12V	-	-	-	-	-	-	-
	+5Vsb	-	-	-	-	-	-	-
Output Range (Rated load)	+3.3V	-	-	16.8A	-	-	-	8A
	+5V	10A	10A	12A	20A	22A	28A	25A
	+12V	3.5A	6A	12A	9A	7A	10A	10A
	-5V	-	-	-	-	0.5A	-	0.5A
	-12V	0.3A	0.5A	0.8A	0.5A	0.5A	1A	0.5A
	+5Vsb	0.5A	0.5A	2A	0.5A	-	1A	0.72A
Output Range (Peak load)	+24V	-	-	-	-	-	-	-
	+3.3V	-	-	-	-	-	-	15A
	+5V	15A	16A	-	25A	28A	40A	30A
	+12V	5A	8A	-	12A	10A	15A	15A
	-5V	-	-	-	-	1A	-	1A
	-12V	0.5A	1A	-	1A	1A	-	1A
Remark	+5Vsb	1A	1A	-	1A	-	-	1.2A
	+24V	-	-	-	-	-	-	-
Remark		5V & 12V total 95W	5V & 12V total 120W	3.3V & 5V total 61W 3.3V & 5V & 12V total 165W	5V & 12V total 185W	-	5V & 12V total 265W	3.3V & 5V total 150W
Safety	UL/cUL	-	V	V	V	V	-	V
	CSA	-	-	-	-	-	-	-
	TUV	-	V	-	V	-	-	V
	CE	-	V	V	V	-	Meets	-
	CB	-	V	-	-	-	-	-
	Other	-	CCC	BSMI/VDE	CCC	-	-	-
EMI/EMC		Meets FCC	Meets FCC	FCC	Meets FCC	Meets FCC	Meets FCC	Meets EN 55011
Operating Temperature		0°C~70°C	0°C~70°C	0°C~50°C	0°C~70°C	0°C~70°C	0°C~70°C	-20°C~70°C
Storage Temperature		-40°C~75°C	-40°C~75°C	-20°C~80°C	-20°C~85°C	-40°C~75°C	-20°C~85°C	-40°C~75°C
Dimension		81x50x127	89x39x152.4	81.5x40.6x190	97x40.5x198	PS/2	112x51x203	PS/2
MTBF		100,000hrs	143,781hrs	100,000hrs	975,721hrs	160,700hrs	97,254hrs	177,287hrs
Other Function								

ACE-710APM

100W Medical ATX Power Supply

Designed for Medical Application Power Supply!!



CB-710A



CB-870D

Feature

- High efficiency over 80%
- EN 61000-3-2 Compliance
- Low leakage current
- Low Ripple and Noise
- Short circuit , Overload , Over voltage Protected

Specifications

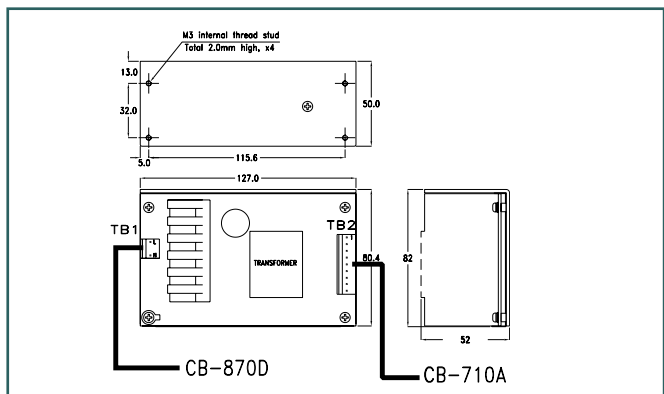
- ◆ Input Voltage : 85V~264V AC
- ◆ Output Rating :

Nominal	Regulation	ACE-710APM		
		Min	Rated	Max
+5V	+/- 1%	0.2A	10A	15A
+12V	+/- 5%	0A	3.5A	5A
-12V	+/- 5%	0A	0.3A	0.5A
+5Vsb	+/- 1%	0A	0.5A	1A

+5V and +12V combine power max 95W , Total output power max is 100W

- ◆ Ripple and Noise: Less than 1% of each output at rated load
- ◆ Hold-up time: 20ms min
- ◆ Efficiency: Higher than 80%
- ◆ Leakage current: Less than 300μA at 264VAC
- ◆ Protection: Over voltage/Load protection and short circuit protection
- ◆ Altitude: 0~10,000 ft
- ◆ TTL signal compatible power good signal
- ◆ MTBF: 100,000hrs at 25°C
- ◆ Vibration : 10-55Hz at 2G , 3min period , 30min along X,Y and Z axis
- ◆ Shock: 10G for 11ms once on each X,Y and Z axis
- ◆ Operating temperature: 0~70°C (Derating curve will occur 50°C~70°C)
- ◆ Storage temperature: -40~75°C
- ◆ Dimensions : 82(W)x50(H)x127(D)mm

Dimensions



Ordering Information

- ◆ **ACE-710APM**
100W Medical ATX Power Supply with PFC function

IEI Optional

- ◆ **CB-710A**
ACE-710APM Power Supply DC Output cable set
- ◆ **CB-870D**
ACE-710/870 Power Supply AC Input cable set

page 5-6

ACE-713APM

130W Medical ATX
Power Supply

ACE-720APM

200W Medical ATX
Power Supply

ACE-728APM

280W Medical ATX
Power Supply

Designed for Medical Appliance Product!!



ACE-713APM

ACE-720APM

ACE-728APM

Specifications

- ◆ Input Voltage : 85VAC~265VAC
- ◆ Output Rating (at 50°C)



	ACE-713APM			ACE-720APM			ACE-728APM		
Nominal	Min	Rated	Max	Min	Rated	Max	Min	Rated	Max
+5V	0.2A	10A	16A	2A	20A	25A	2A	28A	40A
+12V	0A	6A	8A	0A	9A	12A	0A	10A	15A
-12V	0A	0.5A	1A	0A	0.5A	1A	0A	1A	1A
+5Vsb	0A	0.5A	1A	0A	0.5A	1A	0A	1A	1A

+5V and +12V combine power max 120W , Total output power max is 130W (ACE-713APM)
+5V and +12V combine power max 185W , Total output power max is 200W (ACE-720APM)
+5V and +12V combine power max 265W , Total output power max is 280W (ACE-728APM)

- ◆ Ripple and Noise : Less than 1% of each output at rated load
- ◆ Load Regulation :

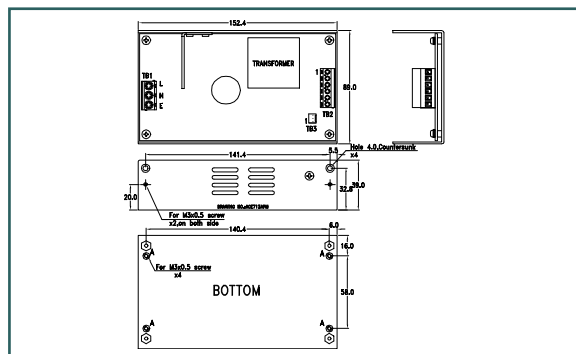
ITEM	+5V	+12V	-12V	+5Vsb
ACE-713APM	+/- 1%	+/- 3%	+/- 3%	+/- 3%
ACE-720APM	+/- 1%	+/- 3%	+/- 5%	+/- 1%
ACE-728APM	+/- 1%	+/- 5%	+/- 5%	+/- 1%

- ◆ Hold-up time : 20ms min
- ◆ Efficiency: Higher than 82%
- ◆ Protection: Over voltage/Load protection and short circuit protection
- ◆ Altitude: 0~10,000 ft
- ◆ TTL signal compatible power good signal
- ◆ MTBF: ACE-713APM: 143,781 hours
ACE-720APM: 97,572 hours
ACE-728APM: 97,254 hours
- ◆ Vibration: 10-55Hz at 2G , 3min period , 30min along X,Y and Z axis
- ◆ Leakage current: Less than 300μA at 240V AC
- ◆ Shock: 10G for 11ms once on each X,Y and Z axis
- ◆ Safety: UL 2601-1 , EN 60601-1, CCC, meets CE
- ◆ EMI: FCC docket 20780 curve "B" , EN 55011 class "B" ,
EN 61000-3-2 class "D"
- ◆ EMC: EN 61000-4-2 4KV contact 8KV air discharge criterion B
EN 61000-4-3 10V/M with 80% AM criterion A
EN 61000-4-4 2KV criterion B
EN 61000-4-5 Line to Line 1KV ; Line to ground 2KV criterion B
EN 61000-4-6 10V with 80% AM criterion A
EN 61000-4-8 30A/m criterion A
EN 61000-4-11 30% dips 10ms , criterion B
60% dips 100ms , criterion C
>95% dips 5000ms , criterion C
- ◆ Operating temperature : 0~70°C
- ◆ Storage temperature : -20~85°C(ACE-720APM/ACE-728APM)
-40~75°C(ACE-713APM)
- ◆ Dimensions : 89(W)x39(H)x152.4(D)mm(ACE-713APM)
97(W)x40.5(H)x198(D)mm(ACE-720APM)
112(W)x51(H)x203(D)mm(ACE-728APM)

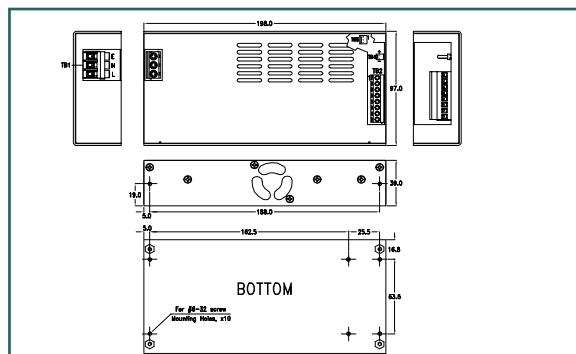
Feature

- High efficiency over 82%
- EN 61000-3-2 Compliance
- Low leakage current
- Low Ripple and Noise
- Short circuit , Overload , Over voltage Protected

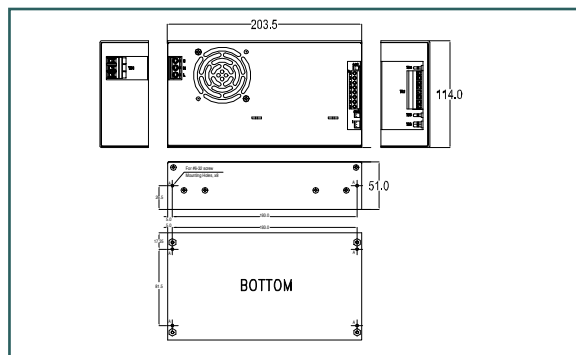
Dimensions: ACE-713APM



Dimensions: ACE-720APM



Dimensions: ACE-728APM



Ordering Information

- **ACE-713APM**
130W Medical ATX Power Supply with PFC function
- **ACE-720APM**
200W Medical ATX Power Supply with PFC function
- **ACE-728APM**
280W Medical ATX Power Supply with PFC function

ACE-818APM

180W Medical ATX Power Supply

Designed for Medical Appliance Product!!



Feature

- Short circuit, overload, over voltage protected
- Built-in ball bearing cooling fan
- Low leakage current
- Low ripple and noise
- Active PFC, complies with EN-61000-3-2



Specifications

- ◆ Input : 90V~264V AC Full Range
- ◆ Output Rating

Output	Nominal	Regulation	Ripple/Noise	MIN	MAX
1	+3.3V	-5% to +5%	50mV	0.3A	16.8A
2	+5V	-5% to +5%	80mV	0.5A	12A
3	+12V	-5% to +5%	120mV	1.5A	12A
4	-12V	-10% to +10%	120mV	-	0.8A
5	+5Vsb	-5% to +5%	50mV	-	2A

The output of +3.3V and +5V shall not exceed 61W
+3.3V, +5V and +12V total output power maximum is 165W

- ◆ Efficiency: 68%
- ◆ Hold-up Time: 17ms
- ◆ Protection: Over Voltage/Load Protection and Short Circuit Protection
- ◆ TTL signal compatible power good signal
- ◆ Leakage current: Less than 300μA at 264V AC
- ◆ Built-in cooling fan
- ◆ MTBF: 100,000 hrs at 25°C
- ◆ Safety: UL 2601-1, VDE EN 60601-1, meets CE
- ◆ EMC:
 - EN 61000-4-2 4KV contact ; 8KV air discharge criterion B
 - EN 61000-4-3 10V/M with 80% AM criterion A
 - EN 61000-4-4 2KV criterion B
 - EN 61000-4-5 Line to Line 1KV ; Line to ground 2KV criterion B
 - EN 61000-4-6 10V with 80% AM criterion A
 - EN 61000-4-8 30A/m criterion A
 - EN 61000-4-11 30% dips 10ms, criterion B
60% dips 100ms, criterion C
>95% dips 5000ms, criterion C
- ◆ EMI: FCC parts 18 class "C" 120Vac operation
EN 60601-1-2, EN 55011, 230Vac operation
Active PFC, complies with EN-61000-3-2
- ◆ Operating temperature: 0~50°C
- ◆ Storage temperature: -20~80°C
- ◆ Vibration: 10~55Hz at 2G 3min. period 30min. along X, Y, Z axis.
- ◆ Shock: 10G for 11ms once on each x, y, and z axis
- ◆ Dimension: 81(W) x 41(H) x 190(D)mm

Ordering Information

- **ACE-818APM**
180W ATX Medical Power Supply with PFC Function

ACE-828M/925M

Medical Power Supply



ACE-925M

ACE-828M



Specifications

- ◆ Input Voltage :
ACE-828M: 90~130VAC or 180~260VAC(Auto Switch)
ACE-925M: 90~264VAC (Full-Range)
- ◆ Output Table : (at 40°C)

Model	Rated Load						Max Output					
	+5V	+12V	-12V	-5V	+3.3V	+5Vsb	+5V	+12V	-12V	-5V	+3.3V	+5Vsb
ACE-828M	25A	10A	0.5A	0.5A	8A	0.72A	30A	15A	1A	1A	15A	1.2A
ACE-925M	22A	7A	0.5A	0.5A			28A	10A	1A	1A		

- ◆ Leakage Current : Primary to safety ground less 500uA at 253V AC input, secondary ground to safety ground less than 100uA at 235V AC input
- ◆ Ripple and Noise :
ACE-828M : Less than 50mV@+5V and +3.3V; 100mV@Others
ACE-925M : The line regulation for each outputs are less than 1%
- ◆ Line Regulation :
ACE-828M : Less than 2%@+12V, 1%@Others
ACE-925M : Less than 1 for each output
- ◆ Load Regulation :

model	+5V	+12V	-12V	-5V	+3.3V	+5Vsb
ACE-828M	<±3%	<±5%	<±2%	<±2%	<±2%	<±3%
ACE-925M	<±3%	<±5%	<±5%	<±5%		

- ◆ Total combined output power on the +3.3V and +5V rails is 150W for ACE-828M
- ◆ Hold-up Time: 20ms (ACE-828M), 14ms(ACE-925M)
- ◆ Efficiency : Higher than 65%
- ◆ Altitude : 0 ~ 10,000ft
- ◆ Over voltage protection
- ◆ Vibration :
10~55Hz at 2G 3min. period, 30 min. along X, Y and Z axis
- ◆ Shock : 10G for 20ms once on each X, Y and Z axis
- ◆ Built-in cooling fan
- ◆ MTBF : ACE-828M : 177,287 hours
ACE-925M : 160,700 hours
- ◆ Safety : UL 2601
- ◆ EMI : Meets EN55011 class "B"
- ◆ EMS Standard (Designed to meet the following limits) :
IEC 801-2 4KV contact, 8KV Air Discharge
IEC 801-3, 3V/M, 26MHz to 1GHz
IEC 801-4, 2KV power mains
IEC 801-5, 2KV criteria B
- ◆ Operating temperature :
ACE-828M : -20° ~ 70°C
ACE-925M : 0° ~ 70°C
- ◆ Storage temperature : -40° ~ 75°C

Ordering Information

- **ACE-828M** Medical ATX 280W power supply
- **ACE-925M** Medical PS/2 type 250W power supply

Redundant Selection Guide



Redundant Power Supply						
	ACE-R20A	ACE-R20C	ACE-R20T	ACE-C232	ACE-R30A	ACE-R30AP230V
AT or ATX Type	AT	AT	AT	AT	ATX	ATX
INPUT Type	AC Full Range	DC 24V	DC 48V	AC Auto Range	AC Auto Range	AC Full Range
Input Range	85~265V AC	19~30V DC	36~ 72V DC	90~130 ; 180~260V AC	90~132 ; 180~264V AC	180~264V AC
Power Wattage	150W	150W	150W	230W	300W	300W
PFC Circuit	-	-	-	-	-	Passive PFC
Efficiency	65%	65%	65%	70%	70%	72%
Hold-up Time	14ms	-	-	16ms	16ms	16ms
Output Range (Min load)	+3.3V	-	-	-	0.5A	0.5A
	+5V	1A	1A	4A	2.5A	2.5A
	+12V	0.1A	0.1A	1A	0.5A	0.5A
	-5V	-	-	0.1A	-	-
	-12V	-	-	0.1A	-	-
	+5Vsb	-	-	-	-	-
Output Range (Rated load)	+3.3V	-	-	-	15A	16A
	+5V	20A	20A	20A	35A	35A
	+12V	4A	4A	4A	15A	15A
	-5V	0.5A	0.5A	0.5A	0.5A	0.5A
	-12V	0.5A	0.5A	0.5A	0.8A	0.8A
	+5Vsb	-	-	-	1.5A	1.5A
	+24V	-	-	-	-	-
Output Range (Peak load)	+3.3V	-	-	-	-	-
	+5V	25A	25A	25A	-	-
	+12V	6A	6A	6A	-	-
	-5V	1A	1A	1A	-	-
	-12V	1A	1A	1A	-	-
	+5Vsb	-	-	-	-	-
	+24V	-	-	-	-	-
Remark	-	-	-	-	3.3V & 5V total 175W 3.3V & 5V & 12V total 160W	3.3V & 5V total 175W 3.3V & 5V & 12V total 160W
Safety	UL/cUL	-	-	-	V	-
	CSA	V	V	V	-	-
	TUV	-	V	V	-	V
	CE	-	V	V	-	V
	CB	-	-	-	V	-
	Other	-	-	-	-	-
EMI/EMC	Meets FCC	Meets FCC	Meets FCC	Meets FCC	Meets FCC	Meets FCC
Operating Temperature	-20°C~70°C	-20°C~70°C	-20°C~70°C	0°C~40°C	0°C~50°C	0°C~50°C
Storage Temperature	-40°C~75°C	-40°C~75°C	-40°C~75°C	-40°C~75°C	-20°C~70°C	-20°C~70°C
Dimension	Power module	Power module	Power module	PS/2	150x86x175	150x86x175
MTBF	131,547hrs	146,383hrs	141,323hrs	122,347hrs	50,000hrs	50,000hrs
Other Function	ACE-RC02/03/04/12 Power module	ACE-RC02/03/04/12 Power module	ACE-RC02/03/04/12 Power module	1+1 Redundant	1+1 Redundant	1+1 Redundant

ACE-R20 Series

AC/DC Input Redundant Power Supply Module



ACE-R20A



ACE-R20T/C



Back View



Specifications

Input Table :

Model	Input Range	Input Current
ACE-R20A	85~265V AC, 47~63Hz	4A@115V AC or 2A@230V AC
ACE-R20T	-36~-72V DC	8A@-48V DC
ACE-R20C	+19~+30V DC	16A@+24V DC

Output Table : (at 40°C)

Model	Output Range				Peak Output			
	+5V	+12V	-12V	-5V	+5V	+12V	-12V	-5V
ACE-R20A	20A	4A	0.5A	0.5A	25A	6A	1A	1A
ACE-R20T	20A	4A	0.5A	0.5A	25A	6A	1A	1A
ACE-R20C	20A	4A	0.5A	0.5A	25A	6A	1A	1A

◆ Ripple and Noise : Less than 140mV@+12V and 1%@Others

◆ Line Regulation : Less than 2%@+12V, 1%@Others

Load Regulation

Model	+5V	+12V	-12V	-5V
ACE-R20A	<±3%	<±5%	<±2%	<±2%
ACE-R20T	<±3%	<±5%	<±2%	<±2%
ACE-R20C	<±3%	<±5%	<±2%	<±2%

◆ Efficiency : Higher than 65%

◆ Hold-up Time (ACE-R20A): 14ms (typical)@115V AC

◆ Altitude : 0 ~ 10,000ft

◆ Protection :

- Over voltage protection : The trip point is around 5.7V ~ 7.0V output
- Short circuit protection
- Thermal protection with built-in 110±5°C thermal switch in HS1

- ◆ Power Fail Signal : The power fail signal will go low at least 0.5ms before any of the output voltages fall below the regulation limits
- ◆ Power Fail Alarm : It will turn the red LED and beeper when power fail
- ◆ Power Sharing & Redundancy : These power have power sharing and redundancy capability. When doing that the power share line (Pin 32) must connect with each other
- ◆ Vibration : 10 ~ 55Hz at 2G 3min. period, 30 min. along X, Y and Z axis
- ◆ Impact : 10G for 20ms once on each X, Y and Z axis
- ◆ Built-in cooling fan
- ◆ MTBF :
 - ACE-R20A : 131,547 Hours
 - ACE-R20T : 141,323 Hours
 - ACE-R20C : 146,383 Hours
- ◆ Safety : CSA 22.2 No. 234, TUV EN 60950 (ACE-R20C, ACE-R20T) meets CE(ACE-R20C, ACE-R20T)
- ◆ EMI : Meets FCC docket 20780 curve "B", EN55022 class "B"
- ◆ EMS Standard (Designed to meet the following limits) :
 - IEC 801-2 8KV (Air Discharge) criteria B
 - IEC 801-3, 10V/M criteria A
 - IEC 801-4, 2KV criteria B
 - IEC 801-5, 2KV criteria B (ACE-R20A)
- ◆ Operating temperature : -20° ~ 70°C (Derating curve will occur 45° ~ 70°C)
- ◆ Storage temperature : -40° ~ 75°C

Ordering Information

- **ACE-R20A**
150W AC input redundant power supply module
- **ACE-R20C**
24V DC input redundant power supply module
- **ACE-R20T**
48V DC input redundant power supply module

ACE-RC02/03/04/12

Redundant Power Supply Case for ACE-R20 Series



ACE-RC02



ACE-RC03



ACE-RC04



ACE-RC12

Ordering Information

- **ACE-RC02**
Vertical dual redundant power supply case
- **ACE-RC03**
Vertical triple redundant power supply case
- **ACE-RC04**
Vertical quad redundant power supply case
- **ACE-RC12**
Horizontal dual redundant power supply case

ACE-R30A/R30AP230V

300W ATX Redundant Power Supply

**PFC Version
available**



• Specifications

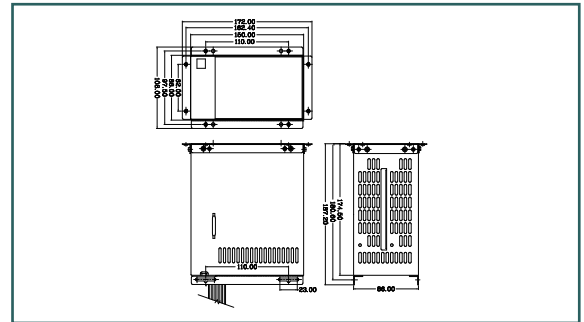
- ◆ Input: 90~132V or 180~264V AC switch select (ACE-R30A)
180~264 VAC (ACE-R30AP230V)
- ◆ Output Rating :

Output	Nominal	Regulation	Ripple/Noise	Min.	Max.
1	+3.3V	±5%	100mV	0.5A	15A
2	+5V	±5%	100mV	2.5A	35A
3	+12V	±5%	200mV	0.5A	15A
4	-5V	±5%	200mV	0A	0.5A
5	-12V	±10%	240mV	0A	0.8A
6	+5Vsb	±5%	100mV	0A	1.5A

Total Output of +3.3V and +5V shall not exceed 175W, the power supply's max. output power is 300W.

- ◆ Hold-up time : 16ms min.
- ◆ Efficiency : 70% typ. (ACE-R30A), 72% typ. (ACE-R30AP230V)
- ◆ Protection : Over Voltage/Temp. Protection and Short Circuit Protection
- ◆ TTL signal compatible power good signal
- ◆ Vibration : 10-55Hz at 2G 3min. period, 30 min. along X, Y and Z axis.
- ◆ Shock : 10G for 11ms once on each X, Y and Z axis.
- ◆ Built-in cooling fan

• Dimensions



- ◆ MTBF : min. 50,000hrs
- ◆ Safety : UL 1950, TUV(ACE-R30AP230V) meets CE(ACE-R30AP230V)
- ◆ EMI : Meets FCC class "B", EN55022 class "B"
- ◆ Operating temperature. : 0~50°C

• Ordering Information

- ◆ **ACE-R30A**
300W ATX Redundant Power Supply Includes two ACE-R30A-1
- ◆ **ACE-R30A-1**
300W ATX Redundant Power Module
- ◆ **ACE-R30AP230V**
300W/230VAC input ATX Redundant Power with PFC function
Includes two ACE-R30AP230V-1
- ◆ **ACE-R30AP230V-1**
300W/230VAC input ATX Redundant Power Module with PFC function

ACE-C232

PS/2 Size 230W Redundant Power Supply



• Specifications

Power Fault Warning:

In case one power module failed, the buzzer and LED will act. After pushing reset button, the buzzer stops and the LED still light until the failed power module is fixed.

ACE-R23A 230W Redundant Power Module

- ◆ Input : 90V to 130V AC or 180V to 260V AC selectable,
- ◆ Output (Max. Output Power 230W at 30°C)

Output	Min. Load	Rated Load	Max. Load	Voltage Accessory
+5V	4.0A	20A	25A	4.80V to 5.20V
+12V	1.0A	10A	12A	11.4V to 12.9V
-12V	0.1A	0.5A	1A	-11.30V to -12.60V
-5V	0.1A	0.5A	1A	-4.65V to -5.25V

- ◆ Ripple and Noise: The peak to peak ripple and noise for +5V output is less than 50mV, for +12V and -5V output is less than 100mV.
- ◆ Line Regulation: The line regulation for each output is less +/-1% while measuring at rated load and +/-10% or 115VAC or 230VAC input voltage changing.
- ◆ Load Regulation: The output voltage load regulation is less than the following value by changing each output and +/-40% from 60% rated load, and keep all other outputs at 60% rated load.
+5V: +/-4% +12V: +/-5% -12V: +/-2% -5V: +/-2%

- ◆ Hold Up Time: >16ms
- ◆ Power Good Signal: Go high 100ms to 500ms after all output DC Voltages are within regulation limits.
- ◆ Efficiency: 70% typical
- ◆ Output protection: Over Voltage Protection and Short Protection
- ◆ Operating temperature : 0 ~ 40°C (derating about 20% from 30°C to 50°C)
- ◆ Storage temperature : -40 ~ 75°C
- ◆ Cooling: Cooling with a 42CFM forced air
- ◆ MTBF: 122,347 Hrs
- ◆ Safety Standards: CSA22.2 No. 234;
- ◆ EMI Standard: ECC docket 20780 curve "B" ; EN55022 class "B"
- ◆ Connectors: DIN 41612 C96
- ◆ Pin Assignment:

Pin 1	AC L	Pin 11, 12, 13	+12V
4	AC N	11~25	GND
9	-5V	26~31	+5V
10	-12V	32	Power Good

• Ordering Information

- ◆ **ACE-C232**
PS/2 size 230W redundant power supply includes two ACE-R23A
- ◆ **ACE-R23A**
230W redundant power module, For ACE-C232