



Healthcare **POWER Supplies**



Bio Life Sciences
Dental
Imaging
Laboratory
Medical



Healthcare Sub-Segments

At Artesyn, our engineers have been designing and developing power supply products for the healthcare industry, including Imaging, Analytical Laboratory, Clinical & Molecular Diagnostics, Dental, Ophthalmic and Surgical/Medical environments for over 40 years.



Bio Life Sciences

- Immunoassay Systems
- In-Vitro Diagnostics
- Microbiology
- Centrifuges
- Clinical Chemistry
- Osmometers
- PCRs



Dental

- Gamma Imaging Systems
- CAD/CAM Systems
- Oral Care Equipment
- Digital Radiography
- X-Ray Machines



Imaging

- Ultrasound Scanners
- Computed Tomography (CT) Scan
- Positron Emission Tomography (PET)
- Magnetic Resonance Imaging (MRI)
- Nuclear Medicine
- X-Ray Machines



Laboratory

- Chemical Analysis Equipment
- Mass Analyzers
- Lab Automation
- Sterilization
- Electron Microscopes



Medical

Ophthalmic Equipment

- Surgical Systems
- Ophthalmoscopes

Surgical/Medical Devices

- Surgical Equipment
- Patient Monitoring
- Patient Therapy

Healthcare equipment manufacturers trust Artesyn's commitment to the best quality, efficiency and reliability that can be achieved. With approved medical safeties, Artesyn's power supply products can help to pave the way for advancements in a variety of healthcare applications by optimizing or eliminating process steps which accelerate time to market and lower R&D costs.



Medical Imaging



Surgical Devices



Medical Devices



Dental Equipment



- Ultrasound Scanners
- MRI, CT, PET
- X-Ray



- Robotics
- Electro Surgery
- Laser Surgery



- Patient Therapy
- Patient Monitoring
- Patient Transport



- Oral Care Systems
- CAD/CAM Systems
- Digital Radiography

Standard Products

AC-DC and DC-DC Power Conversion Solutions

AC-DC Power Supplies



External Power Adapters*

- 10 - 60 W
- Single output
- 2- or 3-pin ac input receptacle
- Built-in EMI filtering



High Power*

- 1000 - 24,000 W
- 1 - 24 outputs
- 2 - 60 Vdc
- 3 phase available
- Intelligent control



Low Power*

- 25 - 650 W
- 1 - 4 outputs
- Standard form factors: 2x4; 3x5; 4x5 inch
- Industry leading power density and convection ratings



Micro Medium Power*

- Up to 1800 W peak
- 12 outputs
- Fully configurable
- High power density



Bulk Power*

- 300, 600, 1000, 1500 W
- Single output
- Low cost
- Optional 5.0 V standby



Medium Power*

- 400 - 1500 W
- 1 - 21 outputs
- Feature-rich configurable power system
- Intelligent control



DC-DC Converters

Low Power Industrial Converters

- 5 - 20 W product offering
- Industry form factors
- Wide selection of input and output voltages



* Note: Many of these products are IEC 60950-1 safety certified and applicable to in-vitro diagnostic applications.

Standard AC-DC Power Supplies

IEC 60601-1 Safety Certified

Product Series	Descriptions	Output Power Watts		Outputs	Available Output Voltages	Dimensions	Protection Class	EMI Class
		Free Air	Forced Air					
iHP	Configurable & intelligent	–	24000	8	12V, 24V, 48V, 80V, 125V, 250V	5.22" x 19.00" x 27.90"	I	B
DA10-M	External adapter (wall mount)	10	10	1	5 V	2.36" x 1.10" x 2.40"	II	B
NPS20-M	Open-frame	25	40	1	5 V, 12 V, 15 V, 24 V, 48 V	2.00" x 4.00" x 1.00"	I, II	B, A
DP40-M	External adapter	40	40	1	9 V, 12 V, 15 V, 18 V, 24 V, 48 V	4.88" x 2.40" x 1.55"	I	B
LPS40-M	Open-frame (opt. enclosure)	40	55	1	5 V, 12 V, 15 V, 24 V	5.00" x 3.00" x 1.20"	I	A
LPT40-M	Open-frame (opt. enclosure)	40	55	3	5 V, 12 V, -12 V, 15 V, -15 V, 24 V	5.00" x 3.00" x 1.20"	I	A
NPS40-M	Open-frame (opt. enclosure)	45	60	1	5 V, 12 V, 15 V, 24 V, 48 V	4.00" x 2.00" x 1.00"	I, II	B, A
NPT40-M	Open-frame (opt. enclosure)	45	55	3	5 V, 12 V, -12 V	4.00" x 2.00" x 1.00"	I, II	B
LPT50-M	Open-frame (opt. enclosure)	50	50	3	3.3 V, 5 V, 12 V, -12 V, 15 V, -15 V, 24 V	4.00" x 2.00" x 1.30"	I	B
DPS50-M	External adapter	60	60	1	5 V, 12 V, 15 V, 24 V, 48 V	5.24" x 2.39" x 1.62"	I	B
LPS50-M	Open-frame (opt. enclosure)	60	60	1	5 V, 12 V, 15 V, 24 V, 48 V	4.00" x 2.00" x 1.20"	I	B
NPS60-M	Open-frame	60	60	1	5 V, 12 V, 24 V	2.00" x 4.00" x 1.00"	I, II	B, A
LPS60-M	Open-frame (opt. enclosure)	60	80	1	12 V, 15 V, 24 V	5.00" x 3.00" x 1.65"	I	A
LPT60-M	Open-frame (opt. enclosure)	60	80	3	5 V, 12 V, -12 V, 15 V, -15 V	5.00" x 3.00" x 1.65"	I	A
NLP65 Medical	Open-frame	65	75	1	12 V, 15 V, 24 V	5.00" x 3.00" x 1.30"	I	A
NLP65 Medical (Dual)	Open-frame	65	75	2	5 V, 12 V, 24 V	5.00" x 3.00" x 1.30"	I	A
NLP65 Medical (Triple)	Open-frame	65	75	3	5 V, 12 V, -12 V, 15 V, -15 V	5.00" x 3.00" x 1.30"	I	A
LPT100-M	Open-frame (opt. enclosure)	80	130	3	3.3 V, 5 V, 12 V, -12 V, 15 V, -15 V, 24 V	4.00" x 2.00" x 1.28"	I	B
LPS100-M	Compact Open-frame (opt. enclosure)	100	150	1	5 V, 12 V, 15 V, 24 V, 48 V	4.00" x 2.00" x 1.29"	I	B
LPQ200-M	Open-frame	100	200	4	3.3 V, 5 V, 12 V, -12 V, 24 V	5.00" x 3.00" x 1.42"	I	B
LPS170-M	U-channel (optional cover)	110	175	1	3.3 V, 5 V, 12 V, 15 V, 24 V, 48 V	4.25" x 8.50" x 1.50"	I	B
LPS200-M	Compact open-frame (opt. enclosure)	125	250	1	5 V, 12 V, 15 V, 24 V, 48 V	5.00" x 3.00" x 1.29"	I	B
TLP150 Medical	Open-frame (opt. enclosure)	150	150	1	12 V, 24 V	5.00" x 3.00" x 1.25"	I	B
CPS250-M	Open-frame	155	250	1	12 V, 24 V, 48 V	2" x 4" x 1.3"	I, II	B
NLP250 Medical	U-channel (opt. cover)	175	250	1	12 V, 24 V	7.00" x 4.00" x 1.50"	I	B
LPS360-M	Open-frame (opt. enclosure)	200	360	1	12 V, 15 V, 24 V, 48 V	3.00" x 5.00" x 1.57"	I, II	B
LCC250	Convection/Conduction mounting	250	250	1	12 V, 24 V, 48 V	4.00" x 7.00" x 1.10"	I	B
LCM300	Bulk front end	300	300	1	12 V, 15 V, 24 V, 36 V, 48 V	1.61" x 4.00" x 7.00"	I	B
CNS650-MU	Open-frame	400	650	1	12 V, 24 V, 48 V	4" x 6" 1.5"	I, II	B
μMP04	Configurable	400	600	1 - 12	0.9-60 V/4-40 A	10.11" x 3.50" x 1.57"	I	B
LCC600	Conduction Cooled	600	600	1	12 V, 24 V, 28 V, 36 V, 48 V	4.00" x 9.00" x 1.57"	I	B
LCM600	Bulk front end	600	600	1	12 V, 15 V, 24 V, 36 V, 48 V	4.50" x 7.50" x 2.40"	I	B
iMP4	Configurable & intelligent	750	1100	1 - 21	2 - 60 V/2 - 150 A	10.00" x 5.00" x 2.50"	I	B
LCM1000	Bulk front end	1000	1000	1	12 V, 15 V, 24 V, 36 V, 48 V	2.50" x 5.20" x 10.00"	I	B
iMP8	Configurable & intelligent	1000	1200	1 - 21	2 - 60 V/2 - 150 A	10.00" x 7.00" x 2.50"	I	B
μMP10	Configurable	1000	1200	1 - 12	0.9 - 60 V/4 - 40 A	10.11" x 5.00" x 1.57"	I	B
μMP16	Configurable	1000	1800	1 - 12	0.9 - 60 V/4 - 40 A	10.11" x 5.00" x 1.57"	I	B
iMP1	Configurable & intelligent	1200	1500	1 - 21	2 - 60 V/2 - 150 A	11.00" x 8.00" x 2.50"	I	B
LCM1500	Bulk front end	1500	1500	1	12 V, 15 V, 24 V, 36 V, 48 V	2.50" x 5.20" x 10.00"	I	B
iVS1, iVS6	Configurable & intelligent	1500	3210	1 - 24	2 - 60 V/2 - 150 A	11.00" x 5.00" x 5.00"	I	B
iVS3, iVS8	Configurable & intelligent	1800	4920	1 - 24	2 - 60 V/2 - 150 A	11.00" x 8.00" x 5.00"	I	B

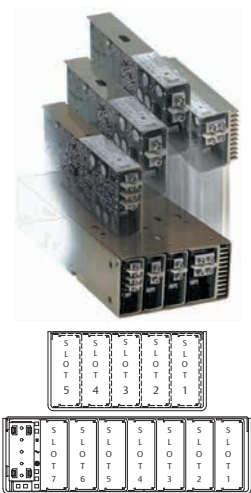
All products comply with the international standard IEC 60601-1 for medical devices, defined as Medical Electrical Equipment and Systems.

Configurable Power Supplies

Designed for Maximum Flexibility

Artesyn's μ MP, iMP™, iVS™ and iHP series are configurable standard AC-DC power supplies that can provide limitless combinations across 1 to 24 separate outputs with voltage ranges from 2 V to 60 V and power from 400 watts to 24,000 watts. Specifically, the iMP, iVS and iHP provide easy monitoring and control of the power supply via I²C communication. These standard platforms allow designers to customize their requirements and simulate performance quickly.

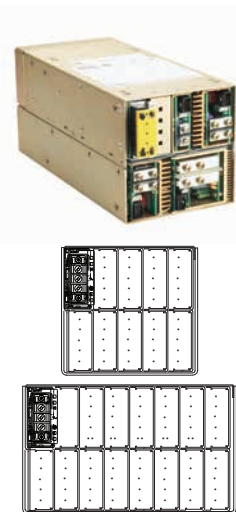
Intelligent MP Series



Module Code	1	2	3	4	
Module Type	Single	Single	Single	Dual	
Max output power	210 W	360 W	750 W	144 W	
Max output current	35 A	60 A	150 A	10 A	
Output voltages available*	2-60 V	2-60 V	2-60 V	6-15, 24-28; 6-15, 6-15; 6-15, 2-6; 2-6, 2-6; 24-28, 24-28; 24-28; 2-6	
Standard voltage increments	25	25	25	16	
Remote sense	Yes	Yes	Yes	Yes	Yes
Remote margin	Yes	Yes	Yes	No	No
V-Program – I ² C control	Yes	Yes	Yes	Yes	Yes
Active current share	Yes	Yes	Yes	Yes	No
Module inhibit – I ² C control	Yes	Yes	Yes	Yes	Yes
Module inhibit – analog	Yes	Yes	Yes	Yes	No
Overvoltage/overcurrent protection	Yes	Yes	Yes	Yes	Yes
Minimum load required	No	No	No	No	No
Slots occupied in any iMP case	1	2	3	1	

* Programmable

Intelligent VS Series



Module Code	1	2	3	5	4	
Module Type	Single	Single	Single	Single	Dual	
Max output power	210 W	360 W	750 W	1500 W	144 W	
Max output current	35 A	60 A	150 A	140 A	10 A	
Output voltages available*	2-60 V	2-60 V	2-60 V	6-60 V	6-15, 24-28; 6-15; 6-15; 6-15; 2-6; 2-6, 2-6; 24-28, 24-28; 24-28; 2-6	
Standard voltage increments	25	25	25	18	16	
Remote sense	Yes	Yes	Yes	Yes	Yes	Yes
Remote margin*	Yes	Yes	Yes	Yes	No	No
V-Program – I ² C control*	Yes	Yes	Yes	Yes	Yes	Yes
Active current share	Yes	Yes	Yes	Yes	Yes	No
Module Inhibit – I ² C control*	Yes	Yes	Yes	Yes	Yes	Yes
Module Inhibit – Analog	Yes	Yes	Yes	Yes	No	No
Overvoltage/overcurrent protection*	Yes	Yes	Yes	Yes	Yes	Yes
Minimum load required	No	No	No	No	No	No
Slots occupied in any iVS case	1	2	3	4	1	

* Note: Contact Factory for extended range down to 6V

Micro MP Series



Output Module Line-up		
Output Range (Vdc)	Max Output (Amps)	Max Power (Watts)
0.9 - 3.6	40	144
3.2 - 6.0	36	180
6.0 - 15.0	25	240
12.0 - 30.0	13	240
28.0 - 54.0	7	96
5.0 - 28.0	4	96

Configurable Power Supplies

Designed for Maximum Flexibility

Intelligent High Power Systems - Up to 24,000 Watts

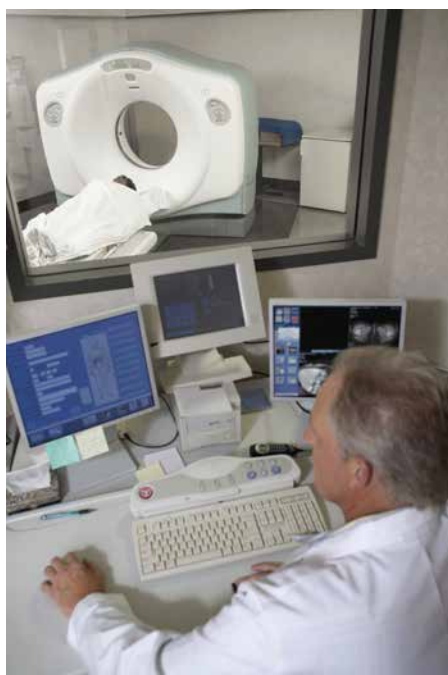


OUTPUT – General Spec

Parameter						
MODULE CODE	SL	SQ	SW	S8	S1	S2
# Outputs	1	1	1	1	1	1
Nominal O/P (V)	12.0 V	24.0 V	48.0 V	80.0 V	125.0 V	250.0 V
Max Power (W)	2400 W	2880 W	3000 W	3000 W	3000 W	3000 W
O/P Current Range (A)	0.0 A - 200 A	0.0 A - 120 A	0.0 A - 62.5 A	0.0 A - 37.5 A	0.0 A - 24 A	0.0 A - 12 A
Power Density (W/cu-in)	32.5	39.0	40.6	40.6	40.6	40.6
Efficiency (%)	93.5	93.5	93.5	93.5	93.5	93.5
Module Input Voltage	400 Vdc					
Module Operating Temp	-0 °C to +65 °C; Baseplate Temp TBD					
Series Operation	250 V modules can be connected in series up to 800 V for Medical and 1000 V above ground with no operation ON/OFF limitations					

Parallel Operation

Up to 8 modules can be paralleled in 1 rack, with up to 6 racks connected in parallel.
Single Wire Parallel connection will be provided as part of configuration



OUTPUT – Module in Constant Voltage Mode

Constant Voltage						
MODULE CODE	SL	SQ	SW	S8	S1	S2
Nominal Output (V)	12	24	48	80	125	250
Setting Range (V)	0.6 V - 14.4 V	1.2 V - 28.8 V	2.4 V - 57.6 V	4.0 V - 96.0 V	6.25 V - 150.0 V	12.5 V - 300.0 V
Low Frequency RMS Ripple (mV)	24	48	96	160	250	500
Line Regulation (mV)	12	24	48	80	125	250
Load Regulation (mV)	24	48	96	160	250	500
P-P Ripple (mV)	60	120	240	400	625	1250
Drift (Temp Stability)	±0.05% of I _{out} Rated over 8 hours, after 30 minute warm up, constant Line, Load and Temp					
Temp Coefficient (PPM/°C)	200					
Pgm Accuracy (mV)	Digital: 0.1% of Nominal Output Voltage; Analog: 1.0% of Nominal Output Voltage					
Pgm Resolution (mV)	SL=TBD; SQ=1; SW=2; S8=8; S1=6; S2=21					
Meas Accuracy (mV)	0.2% + 0.2% of Nominal Output Voltage					
Meas Resolution	SL=TBD; SQ=1; SW=2; S8=8; S1=6; S2=21					
Transient Response	Max 5.0% deviation from current set point must recover within 1mS for a 50% step load.					
Current Sense Method	Internal Shunt; External Shunt can be used for higher resolution and accuracy					

OUTPUT – Module in Constant Current Mode

Constant Voltage - Programmable load compensation available for resistive and inductive loads; capacitive load applications; and LED drive applications

MODULE CODE	SL	SQ	SW	S8	S1	S2
Nominal Output (V)	12	24	48	80	125	250
Setting Range (A)	0.0 A - 200 A	0.0 A - 120 A	0.0 A - 62.5 A	0.0 A - 37.5 A	0.0 A - 24 A	0.0 A - 12 A
RMS Ripple (mA)	200	120	62.5	37.5	24	12
Line Regulation (mA)	200	120	125	93.75	48	24
Load Regulation (mA)	800	480	250	150	96	48
P-P Ripple (mA)	N/A					
Drift (Temp Stability)	±0.05% of I _{out} Rated over 8 hours, after 30 minute warm up, constant Line, Load and Temp					
Temp Coefficient (PPM/°C)	SL, SQ = 300 PPM; All other modules are 200 PPM. Temp Coefficient at rack level is [Temp Coefficient (module level)] + [4500 PPM of I _{out} -max]					
Pgm Accuracy (A)	0.7% digital, 1.3% of rated output max analog					
Pgm Resolution (mA)	79.2	26.4	13.2	10	5.2	2.6
Meas Accuracy	0.7% + 0.7% of Rated Output Max					
Meas Resolution	79.2	26.4	13.2	10	5.2	2.6
Transient Response	0-63% output current change in 7.5 mSec, residual value 1%, settling time 35 mSec					
Current Sense Method	Internal Shunt					

Standard DC-DC Power Supplies

Medical Safety to UL / CSA / IEC / EN
60601-1 3rd Edition



	Input Voltage	Output 1 Voltage	Output 2 Voltage	Package L x W x H (mm)	I/O Isolation	Efficiency	Model Number
5 W	Enclosed						
	9-18 V	5 V @ 1 A		1.25" x 0.8" x 0.41" (31.8 x 20.3 x 10.5)	4200 VACrms	75%	ASA01A12-M
	18-36 V	5 V @ 1 A		1.25" x 0.8" x 0.41" (31.8 x 20.3 x 10.5)	4200 VACrms	77%	ASA01A24-M
	36-75 V	5 V @ 1 A		1.25" x 0.8" x 0.41" (31.8 x 20.3 x 10.5)	4200 VACrms	77%	ASA01A48-M
6 W	Enclosed						
	9-18 V	12 V @ 0.5 A		1.25" x 0.8" x 0.41" (31.8 x 20.3 x 10.5)	4200 VACrms	78%	ASA01B12-M
	9-18 V	12 V @ 0.25 A		1.25" x 0.8" x 0.41" (31.8 x 20.3 x 10.5)	4200 VACrms	78%	ASA01BB12-M
	9-18 V	15 V @ 0.2 A		1.25" x 0.8" x 0.41" (31.8 x 20.3 x 10.5)	4200 VACrms	78%	ASA01CC12-M
	18-36 V	12 V @ 0.5 A		1.25" x 0.8" x 0.41" (31.8 x 20.3 x 10.5)	4200 VACrms	80%	ASA01B24-M
	18-36 V	12 V @ 0.25 A		1.25" x 0.8" x 0.41" (31.8 x 20.3 x 10.5)	4200 VACrms	80%	ASA01BB24-M
	18-36 V	15 V @ 0.2 A		1.25" x 0.8" x 0.41" (31.8 x 20.3 x 10.5)	4200 VACrms	80%	ASA01CC24-M
	36-75 V	12 V @ 0.5 A		1.25" x 0.8" x 0.41" (31.8 x 20.3 x 10.5)	4200 VACrms	80%	ASA01B48-M
	36-75 V	12 V @ 0.25 A		1.25" x 0.8" x 0.41" (31.8 x 20.3 x 10.5)	4200 VACrms	80%	ASA01BB48-M
	36-75 V	15 V @ 0.2 A		1.25" x 0.8" x 0.41" (31.8 x 20.3 x 10.5)	4200 VACrms	80%	ASA01CC48-M
8 W 10 W	9-18 V	5 V @ 1.6 A		2" x 1" x 0.4" (50.8 x 25.4 x 10.2)	4200 VACrms	76%	AEE01A12-M
	9-18 V	12 V @ 0.835 A		2" x 1" x 0.4" (50.8 x 25.4 x 10.2)	4200 VACrms	80%	AEE00B12-M
	9-18 V	12 V @ 0.417 A	-12 V @ 0.417 A	2" x 1" x 0.4" (50.8 x 25.4 x 10.2)	4200 VACrms	80%	AEE00BB12-M
	9-18 V	15 V @ 0.333 A	-15 V @ 0.333 A	2" x 1" x 0.4" (50.8 x 25.4 x 10.2)	4200 VACrms	81%	AEE00CC12-M
	18-36 V	5 V @ 2 A		2" x 1" x 0.4" (50.8 x 25.4 x 10.2)	4200 VACrms	77%	AEE02A24-M
	18-36 V	12 V @ 0.835 A		2" x 1" x 0.4" (50.8 x 25.4 x 10.2)	4200 VACrms	81%	AEE00B24-M
	18-36 V	12 V @ 0.417 A	-12 V @ 0.417 A	2" x 1" x 0.4" (50.8 x 25.4 x 10.2)	4200 VACrms	81%	AEE00BB24-M
	18-36 V	15 V @ 0.333 A	-15 V @ 0.333 A	2" x 1" x 0.4" (50.8 x 25.4 x 10.2)	4200 VACrms	82%	AEE00CC24-M
	36-75 V	5 V @ 2 A		2" x 1" x 0.4" (50.8 x 25.4 x 10.2)	4200 VACrms	77%	AEE02A48-M
	36-75 V	12 V @ 0.835 A		2" x 1" x 0.4" (50.8 x 25.4 x 10.2)	4200 VACrms	81%	AEE00B48-M
	36-75 V	12 V @ 0.417 A	-12 V @ 0.417 A	2" x 1" x 0.4" (50.8 x 25.4 x 10.2)	4200 VACrms	81%	AEE00BB48-M
	36-75 V	15 V @ 0.333 A	-15 V @ 0.333 A	2" x 1" x 0.4" (50.8 x 25.4 x 10.2)	4200 VACrms	82%	AEE00CC48-M



Standard DC-DC Power Supplies

Medical Safety to UL / CSA / IEC / EN
60601-1 3rd Edition



	Input Voltage	Output 1 Voltage	Output 2 Voltage	Package L x W x H (mm)	I/O Isolation	Efficiency	Model Number
15 W	9-18 V	5 V @ 3 A		2" x 1" x 0.47" (50.8 x 25.4 x 12)	4200 VACrms	85%	AEE03A12-M
	9-18 V	12 V @ 1.25 A		2" x 1" x 0.47" (50.8 x 25.4 x 12)	4200 VACrms	89%	AEE01B12-M
	9-18 V	15 V @ 1 A		2" x 1" x 0.47" (50.8 x 25.4 x 12)	4200 VACrms	88%	AEE01C12-M
	9-18 V	24 V @ 0.625 A		2" x 1" x 0.47" (50.8 x 25.4 x 12)	4200 VACrms	88%	AEE01H12-M
	9-18 V	12 V @ 0.625 A	-12 V @ 0.625 A	2" x 1" x 0.47" (50.8 x 25.4 x 12)	4200 VACrms	88%	AEE01BB12-M
	9-18 V	15 V @ 0.5 A	-15 V @ 0.5 A	2" x 1" x 0.47" (50.8 x 25.4 x 12)	4200 VACrms	89%	AEE01CC12-M
	18-36 V	5 V @ 3 A		2" x 1" x 0.47" (50.8 x 25.4 x 12)	4200 VACrms	87%	AEE03A24-M
	18-36 V	12 V @ 1.25 A		2" x 1" x 0.47" (50.8 x 25.4 x 12)	4200 VACrms	89%	AEE01B24-M
	18-36 V	15 V @ 1 A		2" x 1" x 0.47" (50.8 x 25.4 x 12)	4200 VACrms	88%	AEE01C24-M
	18-36 V	24 V @ 0.625 A		2" x 1" x 0.47" (50.8 x 25.4 x 12)	4200 VACrms	90%	AEE01H24-M
	18-36 V	12 V @ 0.625 A	-12 V @ 0.625 A	2" x 1" x 0.47" (50.8 x 25.4 x 12)	4200 VACrms	90%	AEE01BB24-M
	18-36 V	15 V @ 0.5 A	-15 V @ 0.5 A	2" x 1" x 0.47" (50.8 x 25.4 x 12)	4200 VACrms	89%	AEE01CC24-M
	36-75 V	5 V @ 3 A		2" x 1" x 0.47" (50.8 x 25.4 x 12)	4200 VACrms	88%	AEE03A48-M
	36-75 V	12 V @ 1.25 A		2" x 1" x 0.47" (50.8 x 25.4 x 12)	4200 VACrms	88%	AEE01B48-M
	36-75 V	15 V @ 1 A		2" x 1" x 0.47" (50.8 x 25.4 x 12)	4200 VACrms	87%	AEE01C48-M
	36-75 V	24 V @ 0.625 A		2" x 1" x 0.47" (50.8 x 25.4 x 12)	4200 VACrms	88%	AEE01H48-M
	36-75 V	12 V @ 0.625 A	-12 V @ 0.625 A	2" x 1" x 0.47" (50.8 x 25.4 x 12)	4200 VACrms	88%	AEE01BB48-M
	36-75 V	15 V @ 0.5 A	-15 V @ 0.5 A	2" x 1" x 0.47" (50.8 x 25.4 x 12)	4200 VACrms	88%	AEE01CC48-M
20 W	9-18 V	5 V @ 4 A		2" x 1" x 0.47" (50.8 x 25.4 x 12)	4200 VACrms	85%	AEE04A12-M
	9-18 V	12 V @ 1.67 A		2" x 1" x 0.47" (50.8 x 25.4 x 12)	4200 VACrms	89%	AEE02B12-M
	9-18 V	15 V @ 1.33 A		2" x 1" x 0.47" (50.8 x 25.4 x 12)	4200 VACrms	88%	AEE02C12-M
	9-18 V	24 V @ 0.84 A		2" x 1" x 0.47" (50.8 x 25.4 x 12)	4200 VACrms	89%	AEE02H12-M
	9-18 V	12 V @ 0.84 A	-12 V @ 0.84 A	2" x 1" x 0.47" (50.8 x 25.4 x 12)	4200 VACrms	89%	AEE02BB12-M
	9-18 V	15 V @ 0.67 A	-15 V @ 0.67 A	2" x 1" x 0.47" (50.8 x 25.4 x 12)	4200 VACrms	89%	AEE02CC12-M
	18-36 V	5 V @ 4 A		2" x 1" x 0.47" (50.8 x 25.4 x 12)	4200 VACrms	87%	AEE04A24-M
	18-36 V	12 V @ 1.67 A		2" x 1" x 0.47" (50.8 x 25.4 x 12)	4200 VACrms	89%	AEE02B24-M
	18-36 V	15 V @ 1.33 A		2" x 1" x 0.47" (50.8 x 25.4 x 12)	4200 VACrms	88%	AEE02C24-M
	18-36 V	24 V @ 0.84 A		2" x 1" x 0.47" (50.8 x 25.4 x 12)	4200 VACrms	90%	AEE02H24-M
	18-36 V	12 V @ 0.84 A	-12 V @ 0.84 A	2" x 1" x 0.47" (50.8 x 25.4 x 12)	4200 VACrms	90%	AEE02BB24-M
	18-36 V	15 V @ 0.67 A	-15 V @ 0.67 A	2" x 1" x 0.47" (50.8 x 25.4 x 12)	4200 VACrms	89%	AEE02CC24-M
	36-75 V	5 V @ 4 A		2" x 1" x 0.47" (50.8 x 25.4 x 12)	4200 VACrms	88%	AEE04A48-M
	36-75 V	12 V @ 1.67 A		2" x 1" x 0.47" (50.8 x 25.4 x 12)	4200 VACrms	89%	AEE02B48-M
	36-75 V	15 V @ 1.33 A		2" x 1" x 0.47" (50.8 x 25.4 x 12)	4200 VACrms	88%	AEE02C48-M
	36-75 V	24 V @ 0.84 A		2" x 1" x 0.47" (50.8 x 25.4 x 12)	4200 VACrms	88%	AEE02H48-M
	36-75 V	12 V @ 0.84 A	-12 V @ 0.84 A	2" x 1" x 0.47" (50.8 x 25.4 x 12)	4200 VACrms	88%	AEE02BB48-M
	36-75 V	15 V @ 0.67 A	-15 V @ 0.67 A	2" x 1" x 0.47" (50.8 x 25.4 x 12)	4200 VACrms	89%	AEE02CC48-M



Is it worth the risk?

Are you at risk of product recall because of your power supply selection?

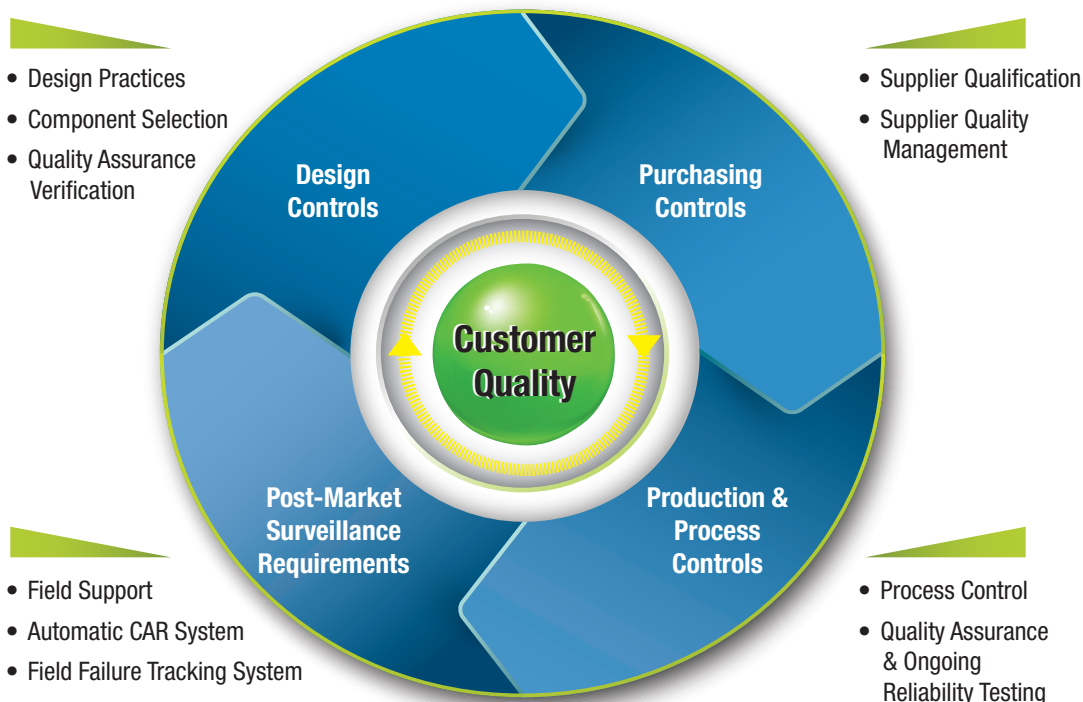
The FDA reports medical device recalls every year. A large part of the recalls were due to supplied components. Many of these incidents are related to power supplies.

The reasons more and more medical device manufacturers are selecting Artesyn Embedded Technologies as their trusted power supply partner include:

1. *Experience in the medical industry and expertise in power supplies*
2. *Highly developed quality systems focused on the customer*
3. *Processes that are developed to conform to the requirements of international standards and Current Good Manufacturing Practices (cGMP)*

Healthcare equipment manufacturers ensure that their healthcare devices are integrated with the power supply and other components that comply with the FDA's cGMP/Quality System Regulation (QSR). Though they retain this responsibility independently of their suppliers, Artesyn's focus on manufacturing its components to QSR and other applicable international standards, such as ISO 13485, helps facilitate manufacturers' compliance with QSR requirements.

Quality System Requirements



Power Supply Design Controls

For Greater Quality & Reliability

Reliability Models and Predictions

- A prediction of design reliability in terms of Mean Time Between Failures (MTBF) using Telecordia, Bellcore or MIL-HDBK-217F
- Not intended as a measure of expected field performance, but for design trade-off analysis and review of part stress derating performance

Failure Modes and Effect Analysis

- An analytical technique to identify and review failure modes, their causes, mechanisms and effects
- Provides a formal risk assessment to reduce field failures at the customer site

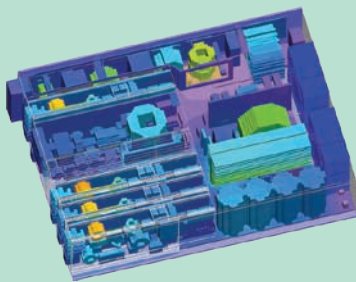
Component Selection

- Database warehouse of all component information
- Design engineers can only select components that are rigorously approved from suppliers that have undergone a strict qualification and auditing process

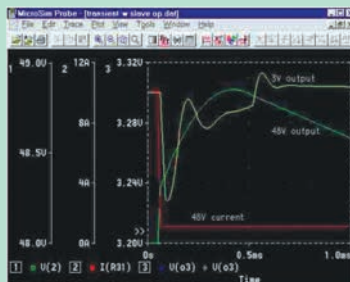
Derating Analysis

- Intended to reduce the failure rate of components Design for Manufacturability
- Design rules regarding manufacturability

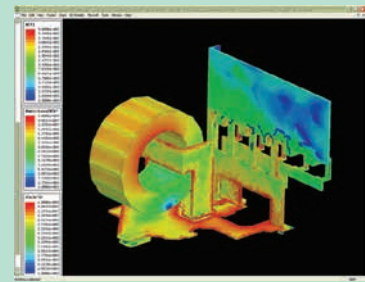
Simulation Analysis – Computer Aided Engineering Tools



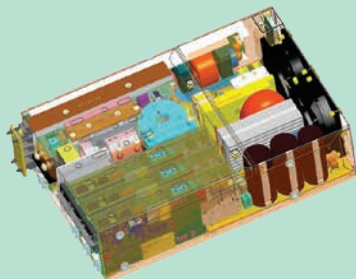
Thermal Simulation



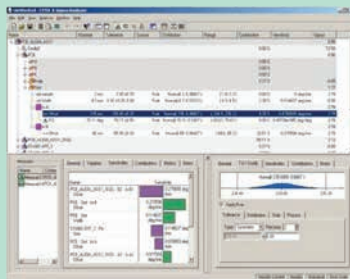
Circuit Simulation



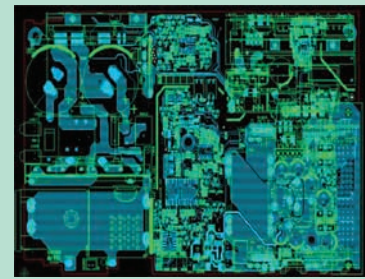
EMI Field Simulation



Detailed Mechanical Design



PCB Layout and Tracking



Structural Simulation

Powered By Artesyn



Mass Spectrometer

A supplier to the medical field required a power supply for a mass spectrometer. As a leading supplier of products for use in medical laboratories, Artesyn had the perfect solution. The iMP4 series carries full medical safety approvals and is an extremely flexible and versatile multi-output power solution, meeting the customer's need for eight output voltages and the ability to tweak some outputs by 10% during development. These highly configurable AC-DC power supplies feature a PMBus® compliant I²C serial interface that includes remote monitoring of voltage, current and temperature.



Medical & Cosmetic Ultrasound

A leading supplier of high intensity focused ultrasound (HIFU) devices used in medical and cosmetic applications required a multi-output power supply with international medical approvals. Demonstrating the diverse fields Artesyn's products can be used in, the MicroMP (µMP) series of digitally-configurable AC-DC power supplies provided the ideal solution. Having a range of medical safety approvals that are recognized worldwide, this compact series with a power range of 400-1,800 watts is perfect for the client's product which is used in medical and cosmetic procedures, such as face-lifts. Artesyn engineers were also able to modify the µMP series units to meet the client's request that the power supply meet a particular leakage current specification of less than 300 mA.



Immune Detection

A customer approached Artesyn with a requirement for a cost-effective AC-DC power supply for their new immune detection and diagnostic device. This product needed to offer reliable and stable performance. Artesyn's sales engineers recommended the LCM600Q-T-N enclosed unit, part of the LCM series of distributed power, front-end AC-DC power supplies, which ranges from 300 to 1,500 watts output power. With industrial and medical safety approvals, these digitally-controlled power supplies can deliver up to 600 watts and offer versatile bulk power for a wide variety of industrial, medical, military and process automation applications. The customer was impressed with the efficiency of the device (typically 89%) and its reliability, considering how cost-effective it is in the market. Thanks to excellent technical advice from Artesyn's field sales engineers, and local support from Artesyn's channel partner, the customer is now considering Artesyn as it develops new instruments for laboratories, food testing and gene detection.



Medical Compression Pump

A renowned healthcare equipment supplier was looking for a reliable medical power supply to provide 60 watts at 12 volts for their new compression pump, which is used for the treatment of a wide variety of vascular or lymphatic conditions. The product would be sealed, so an open frame power supply would fit the bill. Artesyn recommended the NPS60-M series AC-DC power supply as it met all the customer's requirements and has built a reputation for reliable operation in medical equipment.



Surgical Operating Table

A manufacturer of advanced surgical operating tables approached Artesyn with a specific set of requirements for their next generation medical product. Providing a 24 volts output and the ability to drive the motor in the bed were relatively common and straightforward needs. More challenging was the need for no audible noise for patient comfort, support for constant current mode operation and medical safety approvals. Artesyn's LCC250 series conduction-cooled AC-DC power supplies fit the bill with a minor modification to support the motor drive specification. The customer was also looking for DC-DC modules and appreciated the benefits of sourcing all these power requirements from a single trusted supplier.

Artesyn Embedded Technologies is a global leader in the design and manufacture of highly reliable power conversion solutions for a wide range of industries including communications, computing, medical, aerospace and industrial automation.

Artesyn Embedded Technologies is a global leader in the design and manufacture of highly reliable power conversion solutions for a wide range of industries including communications, computing, consumer electronics, medical, aerospace and industrial automation.

Embracing the well-known Astec brand, Artesyn's extensive AC-DC standard product portfolio covers a power range of 3 watts to 24 kilowatts and a wide selection of form factors and packaging, with many models offering medical approval and built-in intelligence.

As an industry leader in distributed power applications, Artesyn produces an exceptionally wide range of DC-DC power conversion products.

For more than 40 years, customers have trusted Artesyn to help them accelerate time-to-market, reduce risk and shift development efforts to the deployment of new, value-add features and services.

Headquartered in Tempe, Arizona, Artesyn has over 16,000 employees worldwide across ten engineering centers of excellence, four wholly-owned world-class manufacturing facilities, and global sales and support offices.



Stay Connected.

The latest happenings are being posted on LinkedIn, Twitter, Facebook, Weibo and WeChat! Sign up for one or all of the sites below and stay connected with Artesyn Embedded Technologies!

www.linkedin.com/company/artesyn
www.facebook.com/artesynembedded
www.twitter.com/artesynembedded
www.youtube.com/user/artesynembedded
www.weibo.com/artesynchina

Artesyn Embedded Technologies, Artesyn and the Artesyn Embedded Technologies logo are trademarks and service marks of Artesyn Embedded Technologies, Inc. All other names and logos referred to are trade names, trademarks, or registered trademarks of their respective owners. Specifications are subject to change without notice. © 2017 Artesyn Embedded Technologies, Inc. All rights reserved. For full legal terms and conditions, please visit <http://www.artesyn.com/legal>.

WORLDWIDE OFFICES

Americas

2900 S.Diablo Way
Tempe, AZ 85282
USA
+1 888 412 7832

Europe (UK)

Waterfront Business Park
Merry Hill, Dudley
West Midlands, DY5 1LX
United Kingdom
+44 (0) 1384 842 211

Asia (HK)

14/F, Lu Plaza
2 Wing Yip Street
Kwun Tong, Kowloon
Hong Kong
+852 2176 3333

ARTESYN[™]
EMBEDDED TECHNOLOGIES

www.artesyn.com

For more information: www.artesyn.com/power
For support: productsupport.ep@artesyn.com

Issue HC_AP1 9-11-2017