

# iHP

Medical | LED Lighting | Chemical Processing | High Power Lasers | Lab Power | SPE | Electroplating & Etching

- Up to 24 kW
- 0 to 1000 V
- Up to 1600 A
- Up to eight (8) outputs
- Versatile input range from 180 to 528 Vac single- or three-phase
- Applicable to all high power applications
- User configurable input
- Programmable load optimization via GUI
- Active PFC typically >0.9 with full medical approval
- High efficiency (92% typical)

## Configurable Intelligent High Power System

Designed for a wide range of medical and industrial applications, Artesyn's iHP configurable intelligent power system provides accuracy, resolution and stability as either a programmable voltage or current source. It provides up to 24 kW in 3 kW increments and can be configured for up to eight (8) outputs using a wide variety of plug-in modules that address a large range of voltages and currents.

Safety approvals secured by Artesyn eliminate the need for an isolation transformer in medical equipment. The iHP power system also has

industrial safety approvals and meets the SEMI F47 voltage sag tolerance standard for semiconductor processing equipment.

The iHP power system offers developers either an analog or digital interface to their system supporting standard communications protocols, while a software graphical user interface (GUI) allows for easy configuration.



**iHP24**



**iHP12**



## Powerful Possibilities

The Artesyn iHP series is the only configurable high power system with medical and industrial safety approvals that offers ground-breaking control and flexibility. The iHP system consists of a power case and up to eight (8) output modules. It has been designed to meet the needs of a wide variety of applications, some of which are shown below:

### ■ **Medical**

Eliminates the need for an isolation transformer, and the multi-output modular structure provides all system power in a single unit.

### ■ **LED Lighting/Horticulture**

Bulk high voltage current sources eliminate the need for individual LED array drivers and reduce installation and operating costs.

### ■ **Chemical Processing/Water Treatment**

Compact size and multi-rack paralleling accommodate large installations up into the Megawatt range. GUI can be programmed to run sophisticated process flows.

### ■ **High Power Lasers**

Standard modules provide a wide range of bulk power as input to laser drivers.

### ■ **Lab Power**

Precision modules in development provide low noise and accurate control of voltage and current source with built-in wireless communication to remote control panel.

### ■ **Semiconductor Processing Equipment**

Meets the SEMI F47 standard and a provision for EtherCAT communication is planned.

### ■ **Electroplating and Etching**

Modules in development will provide enhanced programmable rise and fall times coupled with high-level GUI that can be tailored to exact process requirements.

# iHP

## Power Rack

The power rack houses EMC filtering and digital front-end power factor correction (PFC) circuits, input/output connectors and related hardware. The iHP power system offers efficient PFC and low total harmonic distortion (THD) over wide range of loads. It uses a multi-phase continuous mode boost PFC architecture, resulting in ripple current cancellation that offers lower EMI and extends the life of electrolytic capacitors. The user can configure the iHP system for single-phase or three-phase input. The rack also houses a communications board which provides various electrically isolated user interfaces and also handles internal communication between the intelligent PFC and the modules.





## Output Modules

The outputs can be configured as voltage or current sources and customized to the application's requirements from a range of standard modules provided by Artesyn. These modules can be connected in series or parallel, while achieving high accuracy voltage and current sharing. The voltage and current ramp time, as well as loop compensation, are also programmable.



iHP

### OUTPUT - General Specifications

Module Code	SL	SQ	SW	S8	S1	S2
<b>Nominal Output</b>	12.0 V	24.0 V	48.0 V	80.0 V	125.0 V	250.0 V
<b>Output Voltage Range</b>	0.12 V - 14.4 V	0.24 V - 28.8 V	0.48 V - 57.6 V	0.80 V - 96.0 V	1.25 V - 150.0 V	2.50 V - 300.0 V
<b>Maximum Power</b>	2400 W	2880 W	3000 W	3000 W	3000 W	3000 W
<b>Output Current Range</b>	0.048 A - 200 A	0.096 A - 120 A	0.192 A - 62.5 A	0.32 A - 37.5 A	0.5 A -24 A	1.0 A -12 A

## Control and Communication

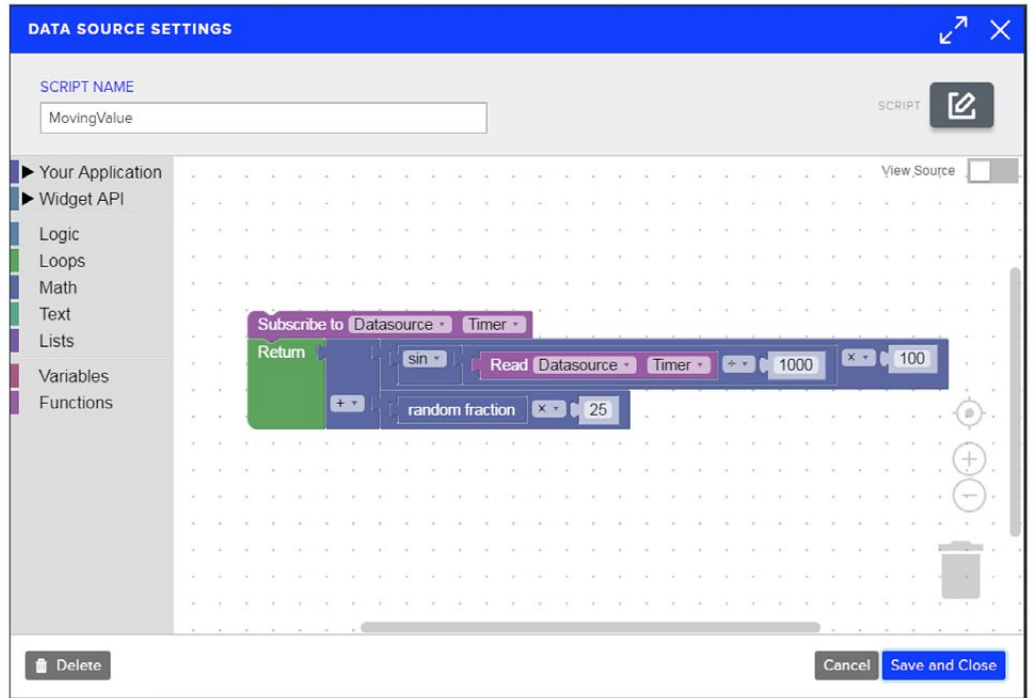
Artesyn offers various options for analog and digital interfaces, including CANbus, Ethernet and RS485.

Digital control enables the use of Artesyn's high level **PowerPro** configurable GUI to control and monitor all functions on one or multiple iHP systems. The PowerPro GUI resides in the cloud so it is not sensitive to any particular platform and can be operated on any device connected to the internet. The PowerPro GUI also incorporates graphical script creation that allows users to write their own process control routines.

The iHP series employs average current mode (ACM) control, which has distinct advantages over peak current mode control where fast transient response and tight regulation is required. ACM control offers excellent stability over a wide load range, even when the converter transitions from discontinuous mode in to continuous mode due to high current loop gain. It directly controls the output inductor current and provides excellent line and load regulation.

*Typical Dashboard. User configurable with drag and drop widgets assignable to any device, script timer or variable.*

*The PowerPro GUI incorporates a powerful script creator function that allows users to write their own process control routines.*



## About Artesyn Embedded Technologies

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.

Artesyn is one of the world's largest and most successful power supply companies, embracing the well-known Astec brand. The company's extensive standard AC-DC product portfolio covers a power range of 3 watts to 5 kilowatts and includes open-frame and enclosed models, highly configurable modular power supplies, rack-mounting bulk front end units, DIN rail power supplies, external power adapters and power supplies for LED lighting. Many of these products are available in medically approved versions and many of the higher power models feature extensive built-in intelligence.

As an industry leader in distributed power applications, Artesyn produces an exceptionally wide range of DC-DC power conversion products. These include isolated DC-DC converters, covering industry-standard sixteenth- to full-brick

form factors with power ratings from 3 watts to 800 watts. Artesyn also offers three application-optimized families of non-isolated DC-DC converters, non-isolated memory power, and processor voltage regulator modules (VRMs).

As a pioneer in low power switch mode adapters, Artesyn has designed and manufactured solutions for almost every major mobile phone supplier. With well over one billion chargers shipped from its best-cost facilities, Artesyn has aligned itself to meet the demands for the next billion chargers through new platforms, automated manufacturing methodology and unsurpassed quality and reliability.

For more than 40 years, customers have trusted Artesyn to help them accelerate time-to-market 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.

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