

3D Printing

INDUSTRY

Manufacturing

SOLUTION

LCM600

EQUIPMENT

3D Printing

CHALLENGE

A leading manufacturer of 3D printers was working on a new design for a Powder Bed Fusion printer to manufacture metal parts. The design was comprised of lasers, motors, heaters, chillers, actuators, optics, sensors and displays. Each of the components would need to operate with different DC voltages and power levels. Using separate conventional AC-DC power supplies for each component would take up too much space and not be cost effective.

SOLUTION

Advanced Energy's Artesyn uMP (microMP) Gen II series configurable power supply was able to provide the multiple DC output voltages and power levels in a compact footprint.

The uMP features a very wide 85 to 264 VAC input voltage range and active AC inrush control to automatically limit inrush current at turn-on to 40 A maximum. The unit is

housed in a 1U case with 4 or 6 slot card options and power ratings from 400 W to 1800 W. It offers 5 narrow range adjustable output modules which cover the range from 0.9 V up to 60 V, along with one wide range module which can be set from 3.3 V to 30 V. Active power factor correction is included to minimize input harmonic current distortion.

Additional features of the uMP Gen II series:

- Market-leading density and efficiency
- Digitally configurable using Artesyn's ConfigPro™ software
- Intelligent fan with speed control and fault status
- Full EN60950 ITE industrial and EN60601 medical safety approvals
- Meets Military STD shock and vibration and offer optional conformal coating



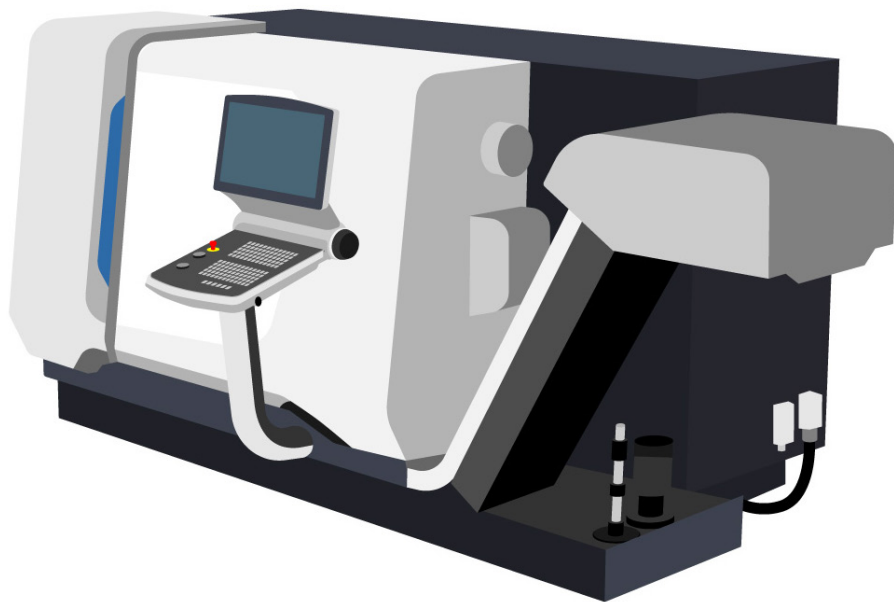
RESULT

The uMP Gen II series provided a complete power solution, while meeting the price point to make the design feasible. The ultra-high power density and compact size of the solution, coupled with the efficiency, high reliability and timely technical support were key factors in the customer's selection process. Using the ConfigPro software to easily and quickly configure the unit, the customer was able to meet their launch date.

CONCLUSION

The compact and flexible design of the uMP enabled designers to address their demanding and complex system requirements while providing high reliability and performance, while increasing overall efficiency in demanding environmental conditions and size constraints.

Additionally, Advanced Energy's historically high reliability solutions for multi-output voltage applications and software configurability enabled fast development and deployment of the customer's new 3D printer.



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