

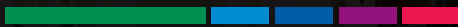
RITTAL



PARTNER PROGRAM

SOUTH COAST CONTROLS PARTNERS WITH RITTAL TO INSTALL INNOVATIVE 3D PRINTER

SNAPSHOT



A leading control panel engineering firm partnered with Rittal to provide power distribution and control infrastructure to install a one-of-a-kind 3D printer for the University of California-San Diego.

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INTRODUCTION

Overcoming complex engineering challenges is the key to unlocking new possibilities and driving progress across diverse industries, including scientific research and development. South Coast Controls (SCC), a leading control panel engineering firm, rose to the challenge presented by the University of California-San Diego (UCSD) and Hewlett-Packard (HP) to help install a one-of-a-kind 3D printer on campus. Tasked with customizing the printer's infrastructure to accommodate UCSD's unique power distribution and control panel requirements, SCC faced a myriad of site-specific challenges. By leveraging their expertise and partnering with Rittal, SCC successfully engineered a tailored solution within the versatile TS 8 modular enclosure to overcome obstacles and delivering a cutting-edge printing facility.

ABOUT SOUTH COAST CONTROLS

With a commitment to precision engineering and customer satisfaction, South Coast Controls (SCC) has solidified its position as a premier provider of control panel solutions for over three decades. Founded as a family business, SCC has crafted expertly designed systems tailored to meet the diverse needs of its clientele. SCC's dedication to innovation and personalized service has garnered the trust of clients who continually entrust them with new and challenging projects. As a result, SCC stands as a beacon of reliability and expertise, driving forward with a mission to exceed expectations and deliver cutting-edge solutions that redefine industry standards.



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THE CHALLENGE

SCC encountered a significant challenge when approached to integrate a massive 3D printer into the UCSD campus infrastructure. This undertaking posed several hurdles and demanded innovative technical solutions. Once the engineers began to work on site, it became clear that power management would be a major challenge. They realized that the UCSD campus did not have the electrical infrastructure to provide the required power for this enormous printer. Additionally, enclosure modifications to fit specific requirements were requested, making the project more complex. SCC faced the task of orchestrating a solution that seamlessly harmonized with UCSD's unique environment and HP's cutting-edge technology requirements.

THE RITTAL SOLUTION

Recognizing the intricate demands of the project, SCC turned to Rittal for a comprehensive solution. Rittal's TS 8 modular enclosure emerged as a fundamental enclosure solution for integrating the large 3D printer at the UCSD. Leveraging Rittal's expertise, SCC was able to engineer a flexible enclosure design that seamlessly accommodated the unique requirements of the project. Moreover, Rittal's TS 8 enclosure provided SCC with the adaptability necessary for on-site modifications. This strong partnership enabled SCC to overcome formidable challenges during implementation and achieve success for themselves and their customer.



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SOLUTION DETAILS

HP asked SCC to create an electrical control panel and to modify the TS 8 enclosure to accommodate three, 3-phase transformers. To run the printer, the transformers would be required to provide 120/208V AC of single-phase current and 7.5kVA of 3-phase current.

Once the control panel was delivered, the HP engineers asked for a number of modifications. SCC removed the left- and right-side panels to add 10-inch vents. They also removed the bottom tray of the enclosure and welded studs in place to secure a large, 3-phase motor. In addition, they removed the right front door and wired a start/stop button in place.

Cutting and machining of the required components was performed off-site at the nearby SCC facilities. The project was completed in late 2016 and, after extensive testing, the 3D printing facility was opened to the school's faculty and students.



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RESULTS

Rittal's solution proved instrumental in not only addressing the challenges faced by SCC but also in delivering successful outcomes for all stakeholders involved in the project. By leveraging Rittal's TS 8 modular enclosure, SCC engineered a solution that seamlessly integrated HP's large 3D printer into the UCSD campus infrastructure.

The UCSD teams have used 3D printing to produce a number of newsworthy and potentially life-saving creations:

- The research team led by Shaochen Chen, PhD, head of the Nanobiomaterials, Bioprinting, and Tissue Engineering Lab at UCSD, have used 3D printing to create advanced bioprinted liver tissue, which would minimize tissue rejection.
- Dr. Chen's team has also built a 3D-printed, nanoscale, fish-like robot that is designed for a variety of drug delivery and removal applications.
- Finally, researchers in Dr. Chen's lab have created functional capillary-like vascular networks using the 3D printing. The team summarized the process in a peer-reviewed publication in 2017 in *Biomaterials*. These tissues would also eliminate concerns about tissue rejection when used in vivo.

CONCLUSION

The partnership between SCC and Rittal demonstrates the effectiveness of collaboration in overcoming complex engineering challenges. By utilizing Rittal's expertise and solutions, SCC successfully installed the 3D printer and equipped UCSD researchers with cutting-edge technology to enable significant scientific advancements. Through its partnership with Rittal, SCC exceeded customer requirements and bolstered its relationships with both Rittal and its customers.



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CONTACT RITTAL FOR POWER MANAGEMENT AND ENCLOSURE SOLUTIONS

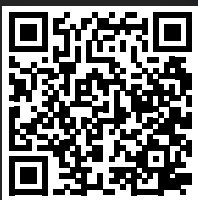
Are you seeking a powerful power management or enclosure solution for your business or project? Simply contact Rittal today to get started. Our team of experts will listen carefully to your requirements and applications to devise the optimal solution. Whether you require industrial automation support, unique switchgear solutions, or more, Rittal stands as a partner to help your business be successful.

ABOUT RITTAL LLC

Rittal LLC is a global manufacturer of industrial and IT enclosures, racks, and accessories, including cooling solutions and power management systems for industrial, data center, outdoor, and hybrid applications. As the largest manufacturer of enclosures in the world, Rittal provides innovative, high-quality solutions for practically any industrial or IT infrastructure application, from single enclosures to comprehensive, mission critical systems. Products are tested and certified to the appropriate standards that apply, including UL, CSA, ATEX, NEMA, and more.

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