

APPLICATION NOTE

TELECOM & DATA CENTERS



Today's digital networks are inundated with traffic and data storage requirements. The digitization of traditional data, from medical to financial records, has increased the need for larger and more sophisticated data centers. Add the growth of smart phone use, cloud computing, Internet of Things (IoT), and 5G data demands, and it is easy to see why more bandwidth from telecommunication and data center equipment is vital. As telecom hubs and data centers expand, more equipment is being packed into racks to meet the escalating infrastructure requirements. Ultimately, server, storage and network equipment must deliver reliability with increased functionality – all in smaller footprint. The same can be said for electromechanical components used in these applications.

BACKGROUND

Driven by the world's extensive use of data, including apps, social media platforms, online videos & music, cloud computing and emerging artificial intelligence & autonomous systems, telecom and datacom infrastructure is evolving to keep pace.

Data centers are the foundation for network and computing solutions that often enable emerging markets to advance. Industries of all types are driving increased demand for data centers as part of their efforts to gather more data.

Mega data centers, a single facility that includes at least 15,000 servers, are on the rise. Recent forecasts from most market analyst firms project massive growth for this sector. Research and Markets is forecasting the US data center market revenue alone to reach \$69 billion by 2024.

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SOLUTION

The cost, both financially and reputation, of a network or server going down can be catastrophic on business enterprises. Telecom and database equipment can be considered mission-critical in this age of information.

C&K high-performance electromechanical solutions are durable, reliable, customizable and cost-effective. C&K has a legacy of success in the telecom and data center industry, with a broad product portfolio that meet design needs including standard and miniature:

- Illuminated tactile switches  *K5V*  *K5AT*  *ITS*  *ILS*
- Pushbutton switches  *8020/8060*  *EP*  *TP*
- Detect switches  *ATS*
- Snap-acting switches  *MDS*  *ZMA*

ATCA & AMC SWITCHES

C&K's wide variety of detect switches can be used in ATCA (advanced Telecom Computing Architecture) applications. Designated the MDS Series, SDS Series and HDT Series, the detect switches are implemented on the server blade as a safety mechanism to guarantee the blade is powered down, while ensuring no data is lost. Our detect switches can be used to detect proper installation of hardware in Data Centers. C&K's detect switches products are available in surface-mount, micro-miniature & snap-acting versions to offer:

- Design flexibility
- Extended life cycles
- More robust assembly to the PC board
- Surface mount and through hole devices

The switches are also increasingly employed on advanced mezzanine cards (AMC) for improved data integrity in military, datacom and medical applications, including black boxes and high-end ultrasound equipment.



CUSTOMIZATION

By partnering with C&K, customers benefit from extensive industry and application knowledge base. Engage with C&K application engineers solve your most difficult electromechanical integration and processing design challenges. C&K's broad switch family enables telecom and data center OEMs to meet size constraints, while ensuring a long operation life with consistent performance. C&K's miniature and sub-miniature switches are available in pushbutton, toggle and tactile versions.

C&K's engineering teams can adapt many other switch characteristics to meet application demands, including customizing the haptics, or the feel of the switch. In addition to haptics, additional customization options include actuation travel and actuation point, sealing options, decoration/marketing, lighting with precise color LED matching, supplemental electronics and connections.

By collaborating with our customers' design teams, C&K's expertise can help reduce time to market, as well as BoM and other costs. With C&K taking care of the switches, customers can focus on their core telecom and data center products.

Applications

- Environmental control equipment
- Servers
- Backup battery systems / redundant power sources
- Computer & network equipment
- Security appliances / equipment

C&K Advantages

- State-of-the-art design centers in Europe, North America and Asia, with complete in-house testing facilities in each region
- Support team is global and available 24/7
- Supply chain network is worldwide and robust
- Wide range of value-added solutions, from wire leads and harnesses to complete front panel assemblies