

APPLICATION NOTE

BARCODE SCANNING AND PRINTING



BACKGROUND

Ranging far from its retail roots, barcode printing and scanning is integral to diverse industries nowadays. Workers scan five billion product codes each day. That's according to GS1, the organization responsible for maintaining UPCs. The market for scanners alone will grow 6% each year through 2022.

Where scanning technology was once the driving force behind the industry, applications have now taken hold. Specialized, industry-specific applications hinge on scanner design and form factor, enabling workers to execute the task at hand. To meet this challenge, designers of barcode printers and scanners need reliable, durable, and efficient components. Switches, in particular, are integral to the design process. Often an afterthought, switches have a profound impact on the performance and perceived quality of a barcode scanner or printer.

Most importantly, switches must support performance parameters in a variety of environments and usage scenarios. Factory 4.0 and the Industrial Internet of Things (IIoT) will continue to push the limits of those requirements.

SWITCHES HAVE A PROFOUND
IMPACT ON THE PERFORMANCE
AND PERCEIVED QUALITY OF A
BARCODE SCANNER OR PRINTER

**MENU
BUTTONS**



DOOR OPEN DETECTION

**SCAN
BUTTON**

**POWER
BUTTON**



SOLUTION

Since 1928, C&K has been a leading manufacturer of high-performance electromechanical switches. Its product portfolio includes a wide range of subminiature switches that perfectly accommodate the needs of barcode scanning and printing appliances. When it comes to combining form factor, reliability, durability and haptics, C&K tactile switches are the preferred interface solution for those applications. For instance, the KSC4 has a form factor specially made to accommodate small surface areas, a welcomed attribute when designing more compact scanners including OF (Overload Friendly) versions featuring an extended cage that can be used as mechanical stop to avoid over loading the switch.

Developing scanners that will operate in environments made harsh by dust, rain, or vibration requires additional considerations. C&K's KSA and KSC7 both incorporate options for mounting and actuation configurations, providing design flexibility, but both also have a sealed design making them impervious to the elements. Add to those features a cycle life that ranges between one million and ten million for a switch that's perfect for industrial, consumer, automotive and remote applications.

The KSE series low profile tact switch has been ruggedized and is ideal for applications that must endure vibration, moisture, humidity, dust, and other contaminants.

C&K components are also ideal for barcode printers. A complete line of magnetic proximity sensors, intrusion switches, snap-acting switches and detect switches can, for instance, signal when a printer door is ajar. C&K's ATS, KDS, KSU, and ZMA switches are perfect for this. Designers commonly use the company's D series rocker switches for power applications. The D series switches also feature both momentary and maintained models and have an available recessed bracket, helping to prevent accidental actuation.

C&K also produces a full line of switches to accommodate menu buttons on barcode printers. Innovative designers might look to the PTS530 series of ultra low profile SMT top actuated tactile switches because of its small footprint and reputation for lasting up to one million cycles.

To meet the experiential requirements for specific applications, designers can work with C&K to "tune" the haptics on most switches. This ensures that component features such as force, travel, dome shape, sealing film, and actuator size convey the appropriate quality and performance.