

# POS Equipment Application Overview

## Problem/Solution

Credit card verification units transmit information over telephone lines and are subject to overcurrent and overvoltage threats, primarily from power cross, lightning surge, and low-frequency induction. A PolySwitch device, in conjunction with a SiBar device, helps to protect against these faults.

Telecommunication requirements, see Application Note entitled Customer Premise Equipment. For motors, voltage is typically less than 30V and currents are less than 1A.

## Typical Agency Approval Requirements

UL1950 and FCC Part 68 may apply in this application.



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Bar code scanners, fixed and portable, are driven by motors and ditherers, respectively. PolySwitch devices installed in series with the load can protect the scanners from stalls, jamming, and overheating of the motors and ditherers.

## Typical Protection Requirements

Telecommunication equipment typically requires overcurrent and overvoltage protection. For a more specific discussion of

## Technology Comparison

Bimetallic thermostatic switches, fuses, and ceramic positive temperature coefficient (CPTC) devices have been used to protect motors. The limitations of bimetallic switches include cycling and the potential for contacts to weld shut. The CPTC device has a relatively high resistance and power dissipation, which may be a concern in a portable system. In addition, CPTC devices are relatively large

and can exhibit thermal behavior where undesirable high temperatures can be reached. Moreover, being a ceramic material, they may be vulnerable to cracking as a result of shock or vibration. CPTCs also have a relatively slower time-to-trip compared to polymeric PTC devices. Fuses can fatigue as well, but most significantly they are one-use devices that must be replaced after a fault has occurred. PolySwitch resettable devices latch into a high-resistance state when a fault occurs. Once the fault and power to the circuit are removed, the device automatically resets and is ready for normal operation.

## Device Selection

For phone line protection see the SiBar, ROV, and Telecom Product sections of this Databook. For motor protection, small RXE devices, usually in the range of RXE017–RXE050, are typically used, as well as ROV devices.

Figure 1. Typical Circuits

