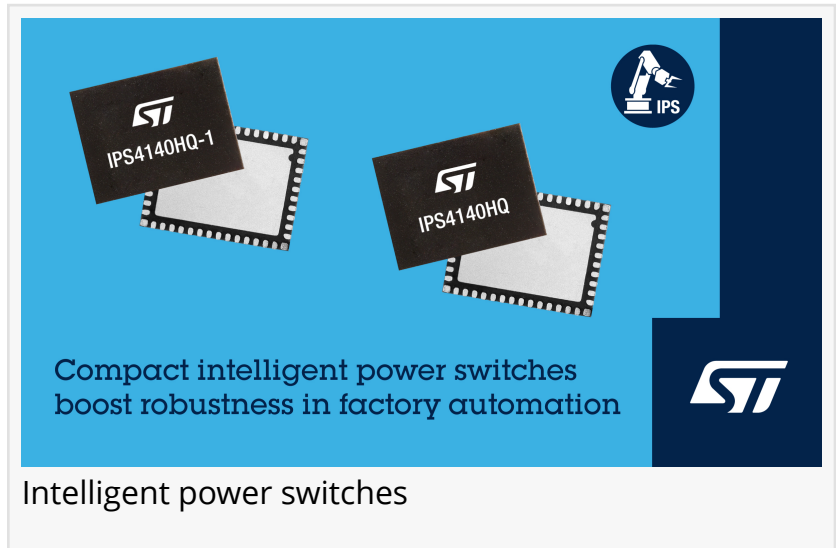


Intelligent power switches from STMicroelectronics are compact, efficient, and robust

Target programmable logic controllers, peripheral input/output ports of industrial PCs, and numerical control machines

GENEVA, SWITZERLAND, March 26, 2025 /EINPresswire.com/ --

STMicroelectronics' [IPS4140HQ](#) and [IPS4140HQ-1](#) are richly featured four-channel intelligent power switches, combining a compact 8mm x 6mm footprint, 80mΩ RDS(on) (max.) per channel, and 10.5V-36V operating range with extensive diagnostic and protection features.



Suited to driving any kind of resistive, capacitive, or inductive load with one side connected to ground, the switches are used in programmable logic controllers, peripheral input/output ports of industrial PCs, and numerical control machines.

With a preset current limit of 0.7A in the IPS4140HQ and 1.0A in the IPS4140HQ-1, the switches also tolerate 41V maximum applied voltage to enhance system safety and reliability.

Per-channel protection and diagnostics include short-circuit protection, as well as temperature monitoring that can turn off and restart overloaded channels independently to maximize system-level fault tolerance and simplify automated recovery. In addition, case-temperature monitoring that shuts down the entire device restarts channels sequentially to avoid excessive peak-current demand on the power supply. A dedicated open-drain output pin for each channel provides an external indication of overtemperature status.

Further protection and diagnostic features include short-circuit protection, output-current limiting, under-voltage lockout (UVLO), ground-disconnection protection, and input-overvoltage protection. In addition, an output voltage clamp provides fast demagnetization for inductive loads.

Made using ST's VIPower™ technology, these intelligent power switches can withstand single-pulse avalanche energy (EAS) up to 2.5J single channel and I/O pins are compatible with 5V and 3.3V logic. Transient robustness meets IEC 61000-4-2 (ESD), IEC 61000-4-4 (Burst), and IEC 61000-4-5 (Surge) IEC 61000-4, and electromagnetic compatibility is compliant with IEC 61131-2 for industrial equipment.

The IPS4140HQ and IPS4140HQ-1 are available now in the 8mm x 6mm QFN48 package, priced from \$2.59 for orders of 1000 pieces.

Two industrial digital-output expansion cards, X-NUCLEO-DO40A1 and X-NUCLEO-DO41A1, are also available and can be used with STM32 Nucleo microcontroller boards. They are priced \$41.65 each.

Please visit www.st.com/ips-compact-line for more information.

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