

ISO8200AQ

Leading innovation for industrial automation



New galvanic isolated 8-channel high-side switch with SPI interface in compact QFN package saves space and enhances noise immunity

Smaller, more robust and energy-efficient controllers are the current trend for innovative industrial automation equipment. As an integrated galvanic isolated switch, ST's ISO8200AQ in a compact QFN package fulfills the safety requirements and saves PC-board space occupied by conventional opto-electronic isolation circuitry. Developers benefit from additional channel status information thanks to the 8-bit SPI interface. The MCU sends over MOSI the control bits (on or off) of each output channel, while the IC sends back over MISO the status bits (fault or no-fault) of each output channel.

KEY FEATURES & BENEFITS

- Isolation rating up to 4 kV with CMTI > 50V/ns for extreme compactness and reliability
- Low $R_{DS(on)}$ power stage 110 mΩ at 25°C for very low power dissipation
- Short-circuit protection and channel over-temperature detection and protection for maximum reliability
- Fast load demagnetization for driving large inductive loads (> 1 H)
IEC 61000-4-2/4/5/8 compliant meets the EMC immunity standards for wide deployment and ultra-robust operation
- Speed SPI up to 20 MHz for a fast output drive. Daisy chaining is allowed
- New diagnostic pin Power Good (PGOOD) to monitor power supply voltage
- 32-lead QFN package for compact footprint (11 x 9 mm)

KEY APPLICATIONS

- Programmable logic control
- Industrial PC peripheral input/outputs
- Numerical control machines
- Drivers for all types of loads (resistive, capacitive, and inductive)



INDUSTRY 4.0 READY

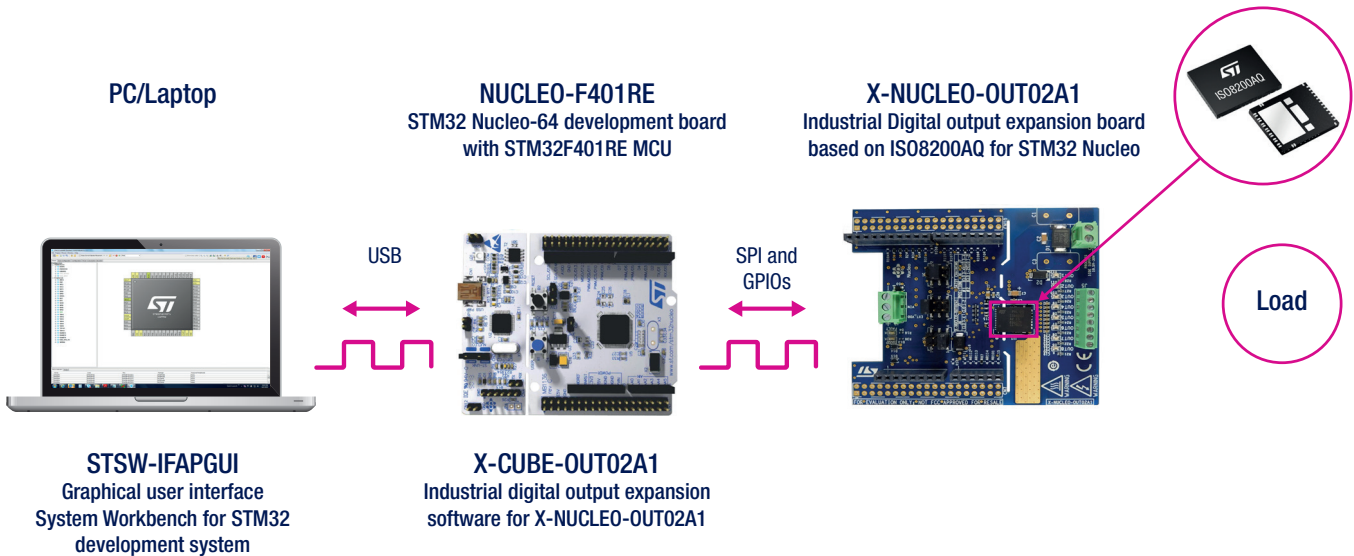
As an integrated galvanic isolated switch, ST's ISO8200AQ fulfills the mandatory safety requirements and saves the space normally occupied by conventional opto-electronic isolation circuitry and also enhances reliability, since those parts are subject to aging and temperature-related degradation driving up ownership costs.

The integrated SPI peripheral provides a fast communication interface between the external microcontroller and IC in order to drive the Power Stage outputs and verify the device's diagnostics. Daisy-chaining is possible. The design of the IC also ensures low quiescent operating current, reducing power dissipation and saving energy compared to a traditional, opto-coupler based solution. In addition, the ISO8200AQ has very low on-state resistance, which minimizes system energy losses and ensures superior thermal performance for enhanced reliability.

The ISO8200AQ integrates circuitry for fast demagnetization of inductive loads such as motors or heaters, which delivers further space and cost savings. Built-in protection features guard against over-temperature, short-circuit, under-voltage, over-voltage, loss-of-ground or loss-of-supply voltage. In addition, a fault output allows direct monitoring of correct operation.

Easily evaluate the ISO8200AQ

Users can evaluate the IC controlling the output channels and monitoring the status of the application by using the STSW-IFAPGUI: this GUI software can be installed on a PC connected by USB to the NUCLEO-F401RE Nucleo running the X-CUBE-OUT02A1 firmware. Also, developers can build a simple PLC device importing the source code of the X-CUBE-OUT02A1 in their development environment.



PRODUCT TABLE

Part number	V _{CC} (V)	R _{DS(on)} (ohm)	Output current (A)	Package	Ecosystem
ISO8200AQ	45	0.11	0.7	TFQFPN 11X9X1 32L	STSW-IFAPGUI graphical user interface X-CUBE-OUT02A1 Nucleo expansion software X-NUCLEO-OUT02A1 Nucleo expansion board

