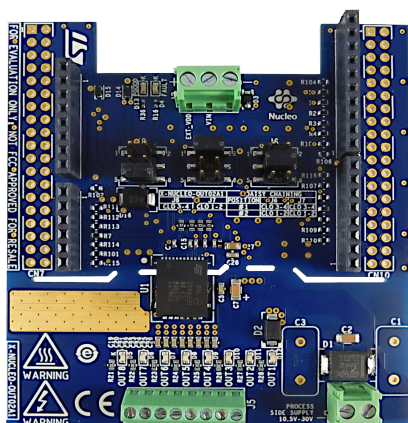


Industrial digital output expansion board based on ISO8200AQ for STM32 Nucleo



Features

- Based on the [ISO8200AQ](#) whose main characteristics are:
 - Embedded 4 kV galvanic isolation
 - Radio frequency communication between the logic and process sides for maximum noise immunity
 - Very low power dissipation ($R_{ON(MAX)} = 220\text{ m}\Omega$)
 - Fast decay for inductive loads
 - 20 MHz SPI I/F on logic side
 - V_{CC} power good diagnostics
 - Overload and overheating protections with thermal shutdown and diagnostics
 - QFN-32L (9x11x1 mm) package
- 10.5 to 33 V operating voltage range
- Green LED (x8) for output on/off status
- Red LED for process supply power good fault
- Red LED for overload and overheating
- Supply reverse polarity protection
- EMC compliance according to IEC61000-4-2, IEC61000-4-3, IEC61000-4-5
- Compatible with [STM32 Nucleo](#) boards
- Equipped with Arduino® UNO R3 connectors
- CE certified
- RoHS and China RoHS compliant

Description

The [X-NUCLEO-OUT02A1](#) is an industrial digital output expansion board for [STM32 Nucleo](#). It provides a powerful and flexible environment for the evaluation of the driving and diagnostic capabilities of the [ISO8200AQ](#) octal high-side smart power solid state-relay, with embedded galvanic isolation and 20 MHz SPI control interface, in a digital output module connected to 0.7 A industrial loads.

The [X-NUCLEO-OUT02A1](#) directly interfaces with the microcontroller on the [STM32 Nucleo](#) driven by GPIO pins and Arduino® R3 connectors.

The galvanic isolation between the microcontroller and the process stage is guaranteed by the [ISO8200AQ](#).

The expansion board can be connected to either a [NUCLEO-F401RE](#) or a [NUCLEO-G431RB](#) development board.

It is also possible to evaluate a 16-channel digital output system enabling the daisy chaining feature on two [X-NUCLEO-OUT02A1](#) stacked expansion boards.

Product summary	
Industrial digital output expansion board based on ISO8200AQ for STM32 Nucleo	X-NUCLEO-OUT02A1
Software expansion for STM32Cube driving industrial digital output based on intelligent power switch (IPS)	X-CUBE-IPS
Galvanic isolated octal high-side smart power solid state relay with SPI input interface	ISO8200AQ
Applications	Programmable Logic Controllers



2 Board versions

Table 1. X-NUCLEO-OUT02A1 versions

Finished good	Schematic diagrams	Bill of materials
X\$NUCLEO-OUT02A1 ⁽¹⁾	X\$NUCLEO-OUT02A1 schematic diagrams	X\$NUCLEO-OUT02A1 bill of materials

1. This code identifies the X-NUCLEO-OUT02A1 evaluation board first version.

Revision history

Table 2. Document revision history

Date	Version	Changes
06-Nov-2018	1	Initial release.
20-Nov-2018	2	Updated cover page description.
03-Dec-2024	3	Added reference to X-CUBE-IPS.

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