

# SOLUTIONS FOR SAFE AUTOMATION



## For Safer and Smarter Factories



**Meet stringent SIL requirements and benefit from reduced installation time, less downtime and ease of maintenance**

A key differentiator in the smart industry era, safety infrastructures for operators are critical, in particular when it concerns electrical equipment, robots and heavy loads.

To facilitate and accelerate development and certification processes for safety-critical services and functions, ST offers a range of high-performance STM32 microcontrollers as well as fully protected current limited termination (CLT) ICs, intelligent power switches (IPS) and protection devices – many of which come with a 10-year longevity commitment.

### KEY PRODUCTS

- X-CUBE-STL, the functional safety design package for STM32 microcontrollers
- Voltage regulators for Safe Automation
- Digital current limiters
- Intelligent power switches
- Integrated galvanic isolated switches with SPI and parallel interfaces

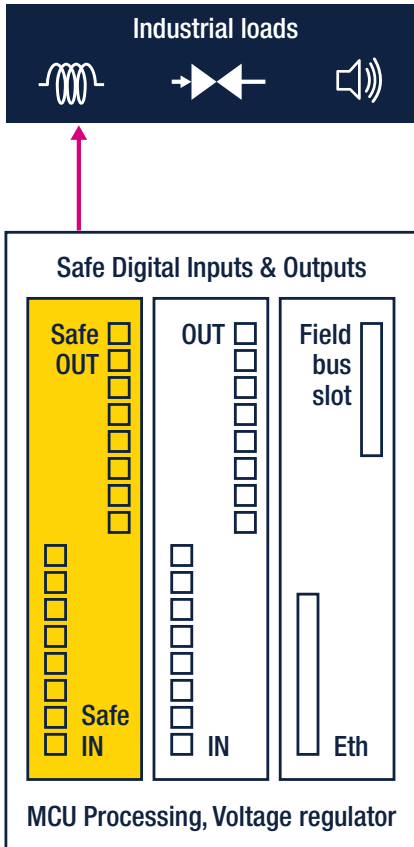


With ST, developers benefit from a large ecosystem of hardware and software evaluation and development tools and – together with partners – support services to help meet the reliability, safety and security challenges of Industry 4.0.



For more information about industrial safety, visit [st.com/industrial-safety](http://st.com/industrial-safety)

Functional safety solutions to meet the challenges of safety-critical designs



**Industrial inputs**  
Safety button or industrial sensors like proximity, optical, touch ultrasonic...

Yellow PLC

**VOLTAGE REGULATORS FOR SAFE AUTOMATION**

The first brick in building a safe-ready application, our power management ICs include L7987 61 V rated asynchronous step-down switching regulators with adjustable current limitation to match fail-safe requirements.

**SAFE DIGITAL INPUTS & OUTPUTS**

The CLT03-2Q3 digital input current limiter doesn't require any external power supply and includes a glitch filter for EMC robustness.

IPS160HF and IPS161HF are the latest high-side intelligent power switches designed with electrical features and diagnostics suitable for safe applications.

To improve flexibility and noise immunity, our ISO8200AQ, ISO8200B and ISO8200BQ galvanic isolated switches come with an SPI or parallel communication interface.

**FUNCTIONAL SAFETY DESIGN PACKAGE FOR STM32 MCUs**

ST provides a comprehensive set of certified software libraries and documentation (i.e. FMEA, FMEDA) for manufacturers to achieve functional safety standard certifications.

**Achieving SIL2/3 with STM32**



X-CUBE-STL is the design package conceived to achieve the IEC 61508 Safety Integrity Level (SIL2 / SIL3) certification with STM32.

**EVALUATION BOARDS AND TOOLS**



ST proposes a wide range of evaluation boards that may be used to perform a comprehensive evaluation of ST's safety products and solutions while reducing your development time.

**This includes boards for:**

- Isolated and non-isolated digital inputs
- 61V asynchronous step-down switching regulator
- High-side driver
- Low-side driver
- STM32 Nucleo development and expansion boards.

