



## ROBUST AND POWERFUL PROCESS I/O

# SIMATIC ET 200SP HA

The future-proof solution for the process industry

The versatile SIMATIC ET 200SP HA perfectly meets the requirements of the process industry, offering clear advantages for applications demanding robustness and maximum availability – both today and in the plants of the future. Redundantly designed components, online module replacement and system modifications during operation using CiR (Configuration in Run)\* as well as online firmware updates significantly increase system availability. In addition, the innovative backplane bus concept without active components reduces the system failure rate.

The compact and modular setup of the system, which includes field cables with integrated tool-free push-in terminals, ensures efficient installation and ideal maintainability, allowing for online module replacement without coming into contact with the cabling.

\* supported for SIMATIC PCS 7 and SIMATIC PCS neo

### Advantages at a glance

#### Maximum availability and easy maintenance during operation

- Redundant PROFINET interface (R1)
- I/O redundancy
- Hot swapping
- Channel-specific diagnostic functions
- Module replacement during operation

#### Maximum robustness under extreme environmental conditions

- Extended temperature range:  $-40\text{ °C}$  to  $+70\text{ °C}$
- Installation up to Class 1 Division 2
- Conformal coating of all components
- Enhanced interference immunity according to NAMUR recommendation NE21

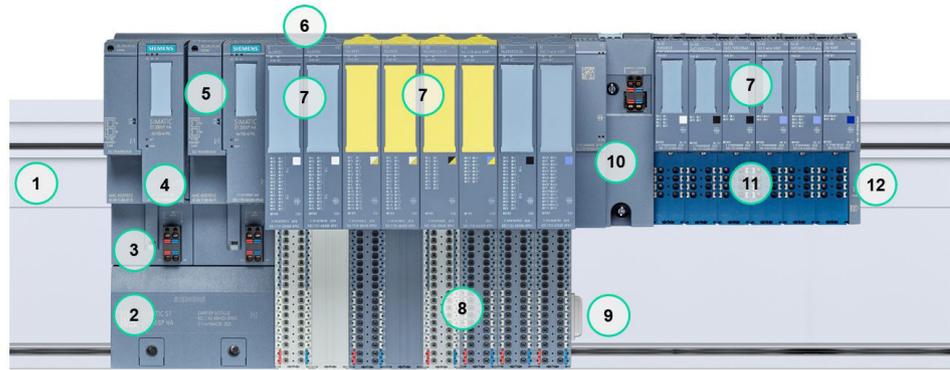
#### Flexibility and scalability

- One I/O system for every application
- Standard, failsafe (SIL 3 certified) and Ex modules in a single station
- Expansion during operation – CiR
- Compact, space-saving design
- Quick and easy wiring reduces installation time and project costs: flexible sensor connection using push-in terminals or D-SUB connectors
- Up to 32 channels per module and 56 channels per station

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# SIEMENS

- 1 Profile rail
- 2 Carrier module for interface modules
- 3 Interface module power supply
- 4 Interface module
- 5 Bus adapter
- 6 Carrier module for I/O modules
- 7 I/O module (Fail Safe & Ex(i))
- 8 Terminal block
- 9 Powerbus cover
- 10 Ex Power module
- 11 Ex Base unit
- 12 Server module



Perfectly scalable for any application

The broad **portfolio of the SIMATIC ET 200SP HA** enables users to take advantage of the powerful I/O system in a wide range of high-value applications, including leveraging a 16-channel AI and 16- or 32-channel 24VDC DI and DO.

Intrinsically safe I/O modules for use in hazardous areas and applications consist of 2-channel HART analog inputs and outputs, as well as 4-channel TC/2xRTD 2-/3-/4-wire and 4-channel digital inputs and outputs. Separate Ex barriers with a corresponding demand for wiring and space are no longer necessary with the new Ex modules. The modules can be installed in environments up to Class 1 Division 2 and connected to field devices up to Class 1 Division 1 via intrinsically safe circuits.

**Failsafe I/O modules** facilitate safety-related monitoring and safe system shutdown should the need arise. The proven SIMATIC Safety Integrated technology facilitates communication and integration into the distributed control system. The safety modules offer 16 channels for digital inputs, 10 for digital outputs and eight for analog HART inputs. They are certified up to SIL 3 per channel and support I/O redundancy.

**The galvanically isolated HART AI/AQ modules** provide parallel A/D and D/A conversions for high-speed signal processing and robustness, ensuring the availability and accuracy of measurements. The new modules for SIMATIC ET 200SP HA are equipped with four channels for

analog inputs and four channels for analog outputs. They also feature a transmitter power supply with short-circuit protection and diagnostics that eliminate the need for external disconnectors and additional wiring, while allowing voltages of up to 125 V AC/150 V DC between channels.

**The Fast I/O and Counter Technology Module** is particularly suitable for high-speed processes such as manufacturing, filling, sorting and packaging systems. The technology module has a total of 22 analog and digital inputs and outputs, four of which are specifically parameterizable for speed measurements and counter functionalities in a selectable measuring range of 0.1 Hz up to 70 kHz.

**The Vibration Protection Technology Module** is used on assets with turbines, pumps, rotating rollers, motors and compressors to protect plant units and the production process from irreparable damage. This version of the technology module has an additional parameterization option for four vibration sensors, with a sampling frequency ranging from 1.6 kHz to 102.4 kHz as well as 24-bit resolution and pre-fabricated software modules for vibration protection, which can be interconnected by the user.

Overall, this combination of standard, failsafe or Ex I/O modules in the SIMATIC ET 200SP HA peripheral system offers maximum flexibility for any application.