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Ingenuity for life

Engineered with TIA Portal

SIMATIC ET 200

The I/O system for both inside and outside the control cabinet

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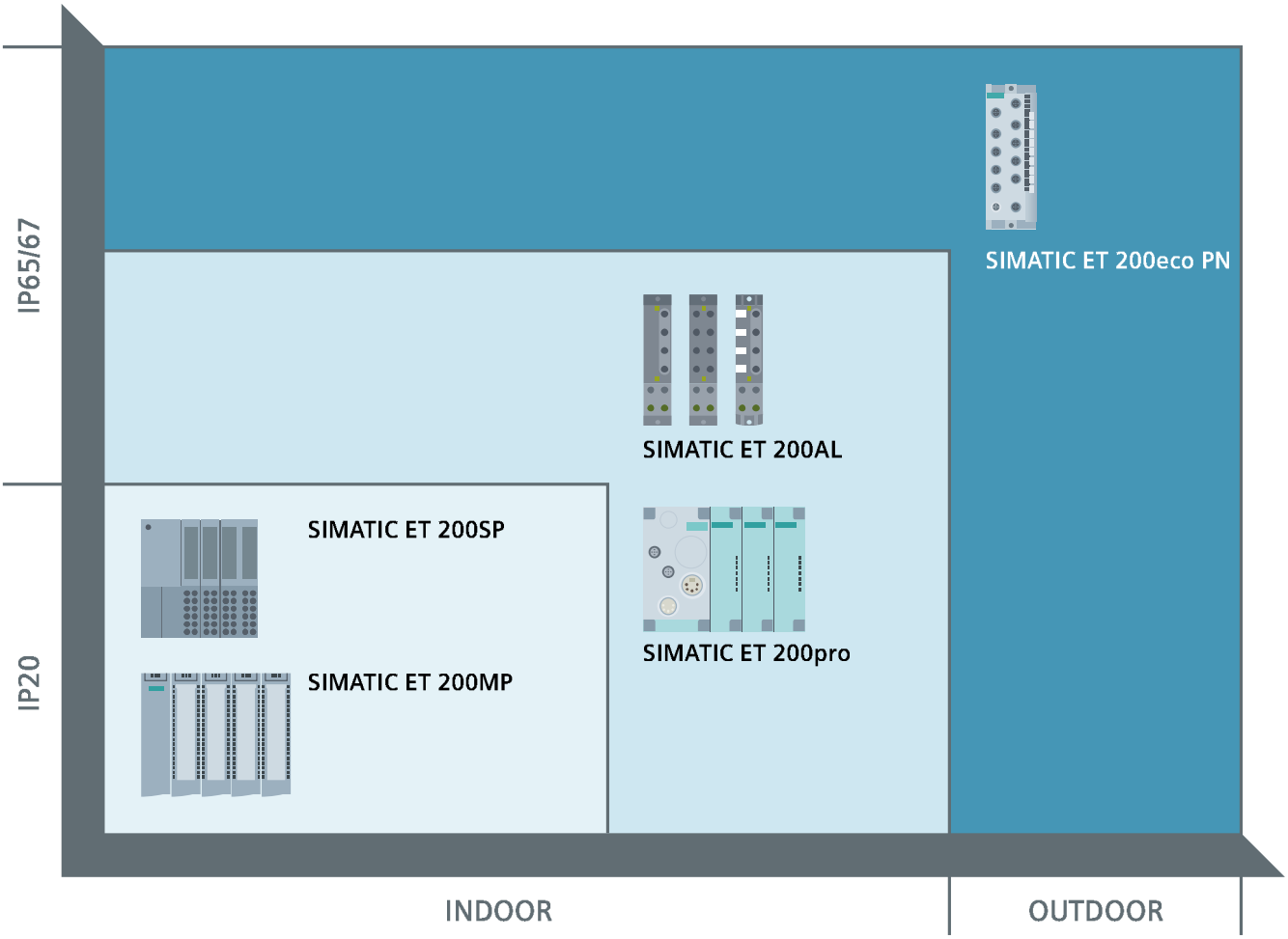
Overview of the SIMATIC ET 200 range

Flexible solutions with degree of protection IP20

With the SIMATIC ET 200, the widest range of I/O systems is available to you for solutions in the control cabinet. The modular design makes it possible to scale and expand the ET 200 systems easily and in small steps: digital and analog inputs/outputs, intelligent modules with CPU functionality, safety engineering, motor starters, frequency converters, and diverse technology modules.

Rugged and powerful with degree of protection IP65/67

The SIMATIC ET 200 systems with the high degree of protection IP65/67 are small, rugged, and powerful. They are ideal for use in harsh industrial environments, directly at the machine. The time-saving setup enables the most flexible implementation of automation solutions.



SIMATIC ET 200MP

Maximum performance and extremely easy usability for use in the control cabinet

Safety Integrated

The SIMATIC ET 200MP permits safety-related communication. The functional safety of the safety modules and of the S7-1500 CPUs is certified according to EN 61508. They are designed for safety-related use up to SIL 3 according to EN 62061 and PL e according to ISO 13849.

Application area

The SIMATIC ET 200MP is a modular and scalable I/O system with high channel density, approved for degree of protection IP20, and designed for installation in a control cabinet. The I/O system is scalable and is used not only as a central I/O for S7-1500, but also in a distributed configuration connected to PROFINET or PROFIBUS.

Maximum performance in central configuration

In combination with the SIMATIC S7-1500 advanced controllers, the ET 200MP in the central setup sets new standards in terms of performance and productivity. This is a benefit both for small series machines and for complex plants with high demands on speed and deterministic response.

Easy station setup and fast, error-free wiring

Thanks to the push-in technology, setting up and wiring can also be realized quickly and easily, without the need for any special tools. The uniform front connectors feature a pre-engaged position in which they can be conveniently pre-wired.

SIMATIC TOP connect – preassembled system cabling for digital and analog signals – is available to ensure fast assembly and to prevent wiring errors.

Reliable diagnostics

Diagnostics for each individual channel via the familiar, standard SIMATIC LEDs permits fast and unequivocal identification of process errors.

SIMATIC ET 200SP

Highest flexibility and strongest performance in the field

Application area

SIMATIC ET 200SP is a multifunctional and scalable distributed I/O system with a wide range of products and effective footprint. SIMATIC ET 200SP is approved for the IP20 degree of protection and designed for installation in a control cabinet. The new arrangement and the push-in terminals makes wiring and disconnection of the cables simpler than ever.

Module replacement during runtime

With the SIMATIC ET 200SP, hot swapping is also possible with several modules (Multi Hot Swapping). This means that several modules can be simultaneously removed and replaced during operation. In this way, only the affected modules will fail and not the entire station.

Safety Integrated

The SIMATIC ET 200SP permits safety-related communication.
In addition to the standard safety modules (DI and DO), a fail-safe power module for fail-safe disconnection of standard modules and a relay module are also available for the ET 200SP.
Their functional safety is certified according to EN 61508. They are designed for safety-related use up to SIL 3 according to EN 62061 and PL e according to ISO 13849.

ET 200SP motor starters

The bit-modular ET 200SP Motor Starters in the SIMATIC ET 200SP I/O system are the solution for starting and protecting motors up to 5.5 kW in 4 setting ranges and are also available as fail-safe version.

Energy Meter

Energy and power consumption can be determined with the aid of the Energy Meter module. The Energy Meter module enables energy management with more than 200 measured energy values.

IO-Link Master – No loss of data when replacing the master

The SIMATIC ET 200SP IO-Link Master is based on the current IO-Link specification V1.1. As a special feature, in addition to the device parameters, the master parameters are also automatically saved. This makes it possible to exchange modules, whether master or device, without a programming device and without backup of the data.

ET 200SP Distributed Controller

The ET 200 CPU Distributed Controllers combine compact design with versatility. Especially in the mid-performance range for machines with distributed intelligence or series machines with little available space, the Distributed Controllers are the perfect solution for standard and failsafe applications.

SIMATIC ET 200pro

The multifunctional and modular I/O system with degree of protection IP67

ET 200pro
Distributed Controller

With the CPU 1516pro-2 PN Distributed Controller, standard and fail-safe automation tasks can be solved in one device – up to SIL 3 / PL e and distributed in the field. The shift of intelligence from the central control cabinet to Distributed Controllers at the individual stations has a positive effect on the availability of a plant.

Application area

The SIMATIC ET 200pro is a very rugged and powerful modular distributed I/O system with IP65/67 degree of protection, for installation outside the control cabinet, directly at the machine. Due to its comprehensive range of modules, it is especially useful where a fine-modular setup with different functions is required in harsh ambient conditions. With a wireless connection, the ET 200pro is primarily used with electric monorail systems, automated guided vehicle systems, in building management, and warehouse logistics.

Safety Integrated

Failsafe I/O modules permit the integration in safety-related plants with SIMATIC Safety Integrated. The fail-safe modules can be used for safety circuits up to SIL 3 / PL e. In addition to digital input/output modules, an F-Switch is also available for switching off standard I/O modules.

Module replacement during runtime

The separation of module and bus/power terminal technology makes it possible to exchange an electronic module during operation (hot swapping).

Integrated solutions for motor control – ET 200pro motor starters and frequency converters

The intelligent ET 200pro motor starters are used for starting and protecting motors and loads of up to 5.5 kW. To implement safety concepts (up to SIL 3 / PL e), the motor starters are also available as fail-safe version.

The SIMATIC ET 200pro frequency converter is suitable for the open-loop and closed-loop control of induction motors.

Connecting RFID components

In addition to the readers, optical readers and handheld readers, the SIMATIC RF170C can also be used to connect any device via a universal RS232 / RS422 interface.

SIMATIC ET 200eco PN

Block I/O for extremely challenging environments

Application area – maximum ruggedness for extremely challenging ambient conditions

SIMATIC ET 200eco PN is a compact block I/O with PROFINET connection with IP65/IP67 degree of protection for cabinet-free installation directly at the machine.

Due to its fully-sealed zinc die-cast housing, the ET 200eco PN is mechanically very rugged and resistant to vibrations, dust, oil or humidity, and thus also suitable for use outdoors. Due to the ATEX approval, the ET 200eco PN can also be used in hazardous areas up to zone 2.

IO-Link Master

With the IO-Link specification V1.1, the current device and master parameters can be automatically transferred to the IO-Link device in the event of a device replacement – without additional application effort. Using the "Autostart function", devices can be directly put into operation without any previous configuration.

SIMATIC ET 200AL

The rugged I/O system for effortless mounting anywhere

Maximum flexibility - IO-Link, freely parameterizable hybrid modules & counting function

With the IO-Link specification V1.1, the current device and master parameters can be automatically transferred to the IO-Link device in the event of a device replacement – without additional application effort. Thanks to freely parameterizable hybrid modules with integrated counting function, the ET 200AL thus offers maximum flexibility in many areas of application.

Application area

The SIMATIC ET 200AL has a high IP65/67 degree of protection, a particularly compact design, a small space requirement and low weight. It has been specially designed for distributed control electronics in confined spaces and applications involving motion. This makes SIMATIC ET 200AL modules very robust and the perfect choice for moving applications with 5 g (continuously) and a maximum of 10 g.

Safety

Via the outputs of the SIMATIC ET 200AL modules, actuators can be switched off in groups in a safety-related manner according to PL d.

System characteristics

Do you need your I/O system to be as individual as your requirements? With SIMATIC ET 200, we offer you a multifunctional, modular, finely scalable system for distributed automation: for solutions in the control cabinet or without a control cabinet directly at the machine, as well as for applications in hazardous areas. All products can be integrated in the automation system via PROFIBUS or PROFINET.

Standard and safety technology in one system

The TIA Portal makes the integration of safety technology into your automation solution easier and more efficient than ever before. Shared controllers, shared engineering, and the shared use of existing communication structures for standard and safety functions ensure an excellent cost-benefit ratio.

High-speed parameter assignment for motion functionalities – for both standard and high-end motion applications

With the aid of technology objects, typical motion processes can be programmed and tested just once, then reused as often as required. In addition to control tasks, the technology objects also include communication with the converter and its parameter assignment. In this way, motion control makes a considerable contribution to shorter engineering and maintenance times.

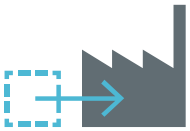
Maximum industrial suitability – due to extremely rugged design

Each standard product from the SIMATIC range is characterized by the highest quality and ruggedness and is perfect for use in industrial environments.

SIPLUS extreme or the product families ET 200pro, ET 200AL and ET 200eco PN are available for more challenging and extreme operating conditions. These include an increased degree of protection (IP67), extended temperature ranges, and exceptional environmental stress.

Fast and easy commissioning

Quick commissioning saves time, money, and effort – and speeds up the time-to-market. With the aid of the free PC-based software tool PRONETA, we offer you support when commissioning the PROFINET network of machines. The tool automatically reads the topology of the network and indicates all connected PROFINET devices so that their configuration can be performed promptly.



Fast troubleshooting by means of integrated system diagnosis

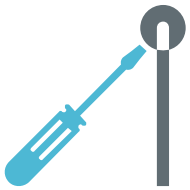
Configuration of the diagnosis is a user-friendly procedure, integrated in the system and activated with a single click. The new, uniform display concept enables plain text error messages to be displayed identically in the TIA Portal, on the HMI, in the web server, and on the SIMATIC S7-1500 display. The efficient fault analysis and the fast troubleshooting speed up commissioning and minimize production downtimes.

Wide range of functions

The ET 200 system enables a multitude of functions to the covered. Both digital and analog input and output modules are available. With this system, communication can also be connected via an IO Link. Modules are also available for special applications such as weighing or energy management. With "option handling", customer-specific versions of a previously configured maximum setup can be easily created, without any necessary project adaptations, which increases flexibility and saves costs.

Simple cabling in all circumstances

Due to the separation of mechanical and electronic components, permanent wiring is possible, i.e. the station can be pre-wired before installation or start-up. Thanks to push-in technology, both processes can be realized very quickly and easily, without the need for any special tools. This means that rewiring and fault repair are possible during operation.



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Discover the SIMATIC ET 200

- **Space-optimized setup inside and outside the control cabinet with optimum usability**
- **Modules for the solution of the most precise measurement tasks and integrated technological functions**
- **IO-Link master for all relevant ET 200 families**

Find out more:
siemens.com/io-system