

# Factory Automation Innovations

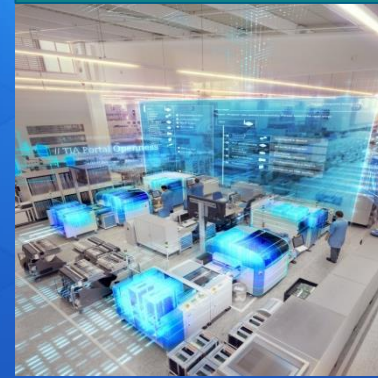
April 2019

### Future of Automation



- Closed loop analytics with SIMATIC Edge
- Autonomous AGV
- Grasping detection with AI
- Blockchain in the smart factory
- Cognitive assisted engineering

### TIA Portal V15.1



- Support for S7-1500 R/H
- Multiuser Commissioning and Engineering with Software Units
- TIA Portal Engineering in the Cloud (Software as a Service)
- Virtual Commissioning with SIMATIC Machine Simulator

### IoT and Mind Apps



- MindApps: Performance Insight, Notifier, Machine Monitor, Energy Manager, Machine Insight
- SIMATIC IPC127E  
New 0,3 liter between IOT and NanoBox

### Digitalization in Verticals



- Food & Beverage
- Batteries
- Automotive

# TIA Portal – More than an engineering framework

**SIEMENS**  
*Ingenuity for life*



Work open, virtual and connected!  
Digital workflow with TIA Portal



Reduce your time-to-market!  
Integrated engineering with TIA Portal



Increase your productivity!  
Transparent operation with TIA Portal

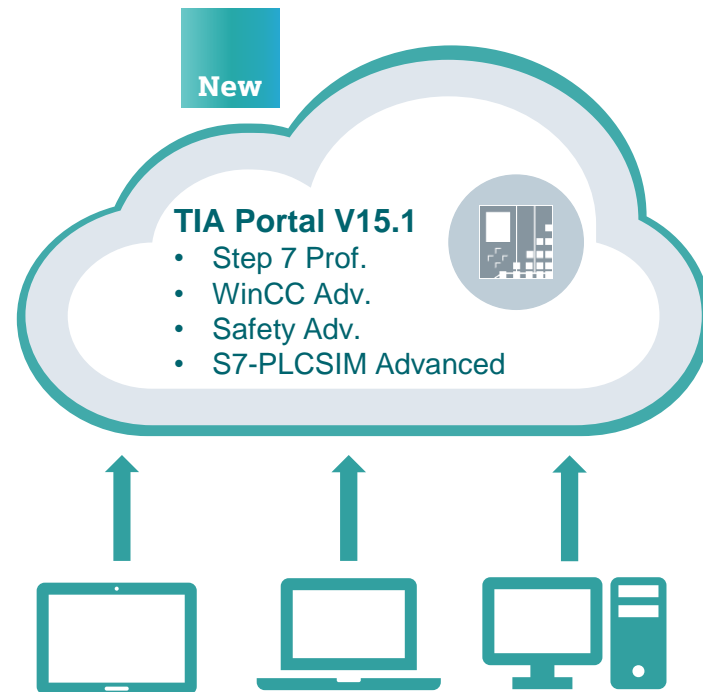
**Your gateway to automation in the Digital Enterprise**



# TIA Portal V15.1

Your gateway to automation in the Digital Enterprise

## TIA Portal in the Cloud as TRIAL



Feature / Function	Benefit
Simple <b>cloud environment</b> for TIA Portal Engineering	<ul style="list-style-type: none"><li>• fast ad-hoc use of TIA Portal</li><li>• Simplified trial use of TIA Portal and TIA Portal options</li></ul>
Simple <b>test environment</b> for TIA Portal usecases in the cloud	<ul style="list-style-type: none"><li>• Simplified test environment with high performance</li><li>• simulation capability with S7-PLCSIM Advanced</li></ul>
<b>web-based access</b> to TIA Portal engineering in the cloud	<ul style="list-style-type: none"><li>• No installation effort at all</li><li>• Flexible application possibilities on any PC and tablet hardware</li><li>• Very low hardware requirements</li></ul>
<b>Cloud-based FileShare</b> for TIA Portal projects	<ul style="list-style-type: none"><li>• easy management with centralized data storage of TIA Portal projects</li></ul>

# TIA Portal V15.1

Your gateway to automation in the Digital Enterprise



## Digital Workflow with TIA Portal



### Feature / Function

#### TIA Portal Openness

- Upload PLC
- Fault-tolerant software import
- enhanced drive integration
- Finger print support of blocks

NEW

#### TIA Portal Teamcenter Gateway

- Support of Multiuser Engineering

NEW

### Benefit

- Completion of Openness functions for Program generators as well as connection to project versioning tools
- Integration in SCM software (Teamcenter, Polarion, ...)
- Fast detection of block changes with SCM and TIA Portal

- Work in a team with projects managed in Teamcenter

# TIA Portal V15.1

Your gateway to automation in the Digital Enterprise

## Integrated Engineering with TIA Portal



### Feature / Function

#### Support of **S7-1500R/H CPUs**

- Redundant and high-availability applications

**NEW**

#### Support of kinematic functions with **S7-1500T**

- Graphical configuration of standard kinematics
- Commissioning with kinematic control panel
- Light trace to simplify the motion recording and visualization

#### Support of multifunctional platform

- Programming of CPU1518MFP

### Benefit

- Enhancement of S7-1500 portfolio for redundant applications
- Realization of applications like tunnels or logistics with S7-1500

- Perfect integration of motion control applications with SIMATIC HW
- Easy programming and commissioning of standard kinematics with TIA Portal
- Easy and traceable diagnosis of coordinated motion control axis and motion behavior with 3D-Viewer

- Realize different applications using one single SIMATIC HW
- Integration of C/C++ Runtime with high performance running on dedicated hardware-based SIMATIC PLC



# TIA Portal V15.1

Your gateway to automation in the Digital Enterprise



## Integrated Engineering with TIA Portal



### Feature / Function

#### Coordinated commissioning in a team with Software Units based on S7-1500

- Separation of controller program in logical consistent units
- Separate commissioning of units

NEW

#### Extension of drive integration with SINAMICS Startdrive

- Support of SINAMICS S210
- Wizard for safety acceptance test for SINAMICS S
- User-defined parameter lists for SINAMICS G

NEW

#### STEP 7 Safety

- CPU-CPU communication for S7-1200F/ S7-1500F
- Support of dynamic F-communication

NEW

### Benefit

- Fast and more flexible commissioning of S7-1500 applications
- Complete management and sharing of program units (inclusive UDT- / PLC- Tags) with TIA Portal libraries

- Possibility of using different SINAMICS converters for Motion Control applications
- Simplified acceptance test of safety function for SINAMICS converters
- More easy and application-specific commissioning phase for SINAMICS G

- Safe transport of huge F-data with Step7 standard communication protocols
- dynamic Controller-/Device-communication concepts with variable DP\_DP\_ID

# TIA Portal V15.1

Your gateway to automation in the Digital Enterprise

## Transparent Operation with TIA Portal



### Feature / Function

#### Open communication with OPC UA:

- SIMATIC OPC UA Modelling Editor (SiOME)
- Fulfillment of Companion Specifications
- S7-1500 as OPC UA Client as well as methods for OPC UA Client/Server

NEW

#### Diagnostic management with ProDiag

- Criteria analysis with ProDiag-Messages
- Enhancements of HMI Code Viewer, beneath the diagnostic of Safety blocks

### Benefit

- Perfect supplement to PROFINET
- Standardized horizontal and vertical communication as well as communication between machines or aggregates
- Fulfill requirements of industry-specific standards like OMAC PackML or Weihenstephan
- Simplified diagnostic of application errors by means of recording the error state
- perfect diagnosis of machine sequences without the need of an engineering tool
- Diagnostic of the safe PLC program directly on the HMI



# Virtual commissioning of automation solutions

Using the TIA and Digital Enterprise Suite to simulate, validate, and optimize controllers and machines

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## Feature/ Function

Simulation and validation of machines with **SIMATIC Machine Simulator V1.0**

- Simulation platform based on SIMATIC S7-PLCSIM Advanced V2.0 and SIMIT V10
- Virtual validation of machine based applications in combination with **NX Mechatronics Concept Designer**

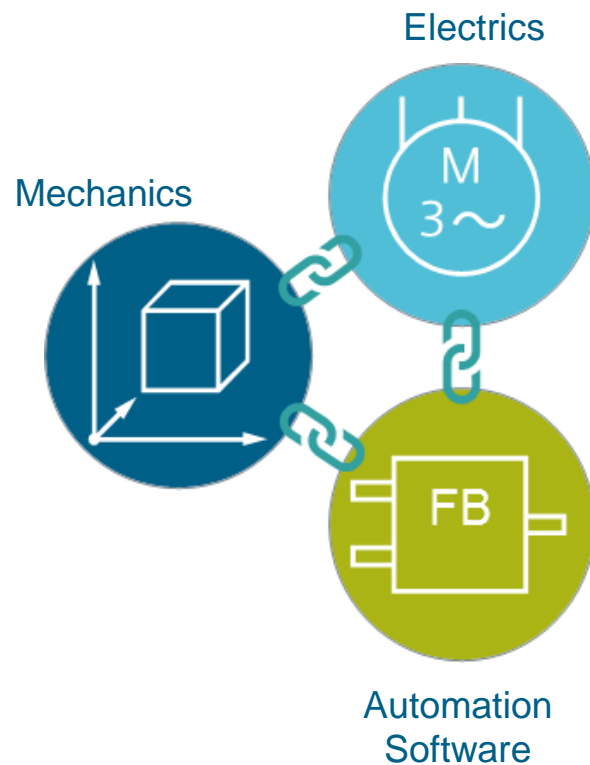
Simulation of robot cells with **TECNOMATIX Process Simulate** and **PLCSIM Advanced**

Simulation of material flows in production lines with **TECNOMATIX Plant Simulation** and **PLCSIM Advanced**

## Benefit

- Integrated synchronization of mechatronic, control and behavior model
- Realization of simple to complex behavior models
- Flexible switch to hardware-in-the-loop approaches for connecting 3rd party controllers
- Validation of robot and control code on one platform
- Validation of process and mechanical sequences & testing for collisions
- Validation of material flow, conveyor system or AGV prior to the construction of a line
- Optimization through experiments and scenarios
- Validation of control logic and monitoring systems prior to use at the head control level

# NX Automation Designer with integrated E-CAD system



Feature / Function	Benefit
<ul style="list-style-type: none"> <li>• Integrated industrial E-CAD-System: Complete electrical data model, 2D-schematics, 3D-cabinet design <span style="float: right; background-color: #008080; color: white; padding: 2px 5px; font-weight: bold;">NEW</span></li> </ul>	<ul style="list-style-type: none"> <li>• Consistent and integrated engineering from mechanics and electrics to automation software</li> </ul>
<ul style="list-style-type: none"> <li>▪ Mechatronic data consistency including electrical detail design <span style="float: right; background-color: #008080; color: white; padding: 2px 5px; font-weight: bold;">NEW</span></li> </ul>	<ul style="list-style-type: none"> <li>• Reduction of the risk of technical failures and increase of efficiency</li> </ul>
<ul style="list-style-type: none"> <li>• Rule-based engineering and mechatronic templates</li> </ul>	<ul style="list-style-type: none"> <li>• Increased quality by reducing the number of errors and the amount of work</li> </ul>
<ul style="list-style-type: none"> <li>• Consistent mechatronic collaboration</li> </ul>	<ul style="list-style-type: none"> <li>• Efficient implementation of projects through parallel engineering</li> </ul>

# Innovation SIMATIC Field PG M6 – future proof, lots of connections, more system performance

## SIMATIC Field PG M6, comfort and advanced configuration



Feature / Function	Benefit
<ul style="list-style-type: none"> <li>• 8th generation of Intel Core i5/i7 type H processors with UHD graphic 630</li> <li>• Performant memory technology: DDR4-RAM, 8 to 32 GB, 2666 MHz, up to 2 TB SSD</li> </ul>	<ul style="list-style-type: none"> <li>▶ Extremely performant engineering with reliable fast memory for plenty of data</li> <li>▶ Always enough power for the TIA Portal</li> </ul>
<ul style="list-style-type: none"> <li>• Robust body with rubber buffered corners, retractable handle</li> </ul>	<ul style="list-style-type: none"> <li>▶ Resistant to shock, works in harsh environments, easy to carry</li> </ul>
<ul style="list-style-type: none"> <li>• Viewing angle independant Full HD display with high sharpness and luminance</li> </ul>	<ul style="list-style-type: none"> <li>▶ Excellent readable display, even in difficult lighting conditions in an industrial environment</li> </ul>
<ul style="list-style-type: none"> <li>• Integrated industry and SIMATIC interfaces: WLAN 2.7GB/s, BT 5.0, 2x Gigabit Ethernet, 1x COM, 1x Profibus DP/MPI, SIMATIC Card Slot</li> </ul>	<ul style="list-style-type: none"> <li>▶ No additional adapter for automation interfaces required → always ready for operation</li> <li>▶ Direct programming of SIMATIC cards</li> </ul>
<ul style="list-style-type: none"> <li>• USB 3.0/3.1 gen.2 technology (3x Type A, 1 x Type C)</li> <li>• USB right side with charging function</li> </ul>	<ul style="list-style-type: none"> <li>▶ Charging function, data and video in one reversible-plug connector</li> <li>▶ SIMATIC Field PG as power bank</li> </ul>



# Industrial Security Protecting Productivity

## Holistic Security Concept based on products and services



### Feature / Function

#### Central user management in TIA Portal

UMC-Option for use of central User & User groups for TIA Portal-projects (e.g. Active Directory)

#### SCALANCE S

- High-performance generation of Industrial Security Appliances with embedded Bridge Firewall and User-specific Firewall

### Benefit

- Efficient, plant wide Administration of user/user groups and access control for multiple TIA Portal projects und products.
- Protection of flat networks through review and filtering of Layer 2 data – e.g. for usage with a service bridge.
- User-dependent filtering of data with user-specific firewall rules.

# Industrial Security Protecting Productivity

## Holistic Security Concept based on products and services



### Feature / Function

#### Industrial Anomaly Detection

- Detection of Anomalies in the network traffic via passive monitoring
- Transparency over the communication relations in the plants

#### Industrial Anomaly Detection Installation Services

#### White Paper Security in critical infrastructure

Information for user and supplier of critical infrastructure

#### Certified Security in Development and Production



- Development- and Production-Sites for Siemens Industrial products certified based on IEC 62443 by TÜV Süd

### Benefit

- Continuous & proactive protection through monitoring
- Enhance transparency in the shop floor
- Machine learning system, so the detection rate will be enhanced over time

- Implementation of Industrial Anomaly Detection by trained experts at a high quality globally

- Showing the relevance of the Industrial Security Norm IEC 62443 for IT Security laws.
- Possible implementation of the required security measures with Siemens Security Portfolio

- Siemens products are developed and produced according the leading security standard for the industry
- High product quality concerning cyber security by employing of high and certified standards



# Industrial Security Protecting Productivity

## Holistic Security Concept based on products and services



### Feature / Function

#### Scanning Services

- Option 1:  
Active Asset Inventory Scan
- Option 2:  
Automatic Vulnerability Detection

#### Industrial Vulnerability Manager on Premise

- Alternative to cloud based solution
- Industrial Vulnerability Manager is installed on a system on customer site

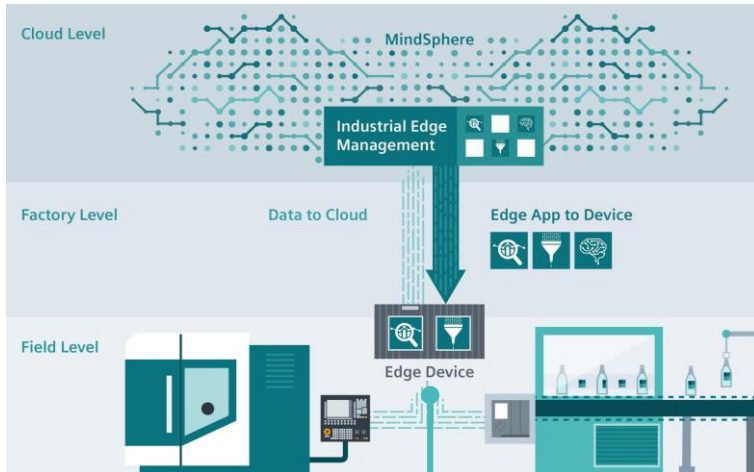
### Benefit

- Quick transparency about the existing computing devices with software details (e.g version) in the automation networks
- ▶ Comprehensive transparency about applicable vulnerabilities including mitigation proposals
- Transparency on increasing cyber threats
- ▶ All Information of the customer assets stays on customer site



# Siemens Industrial Edge

## The new freedom for automation



### Feature / Function

Edge system consisting out of

- Edge Management
- Edge Apps
- Edge Devices

Freedom to develop own apps based on high level programming languages

Possibility to easily integrate Siemens- or Partner apps

Cloud based management system to manage Edge devices and deploy Apps on devices worldwide

Edge integration into automation portfolio based on

- Dedicated Edge devices: IPC
- Edge enabled devices: HMI, CP, ...

### Benefit

- ▶ Implementation of data oriented digitalization applications in automation

- ▶ Enabling various automation tasks on app basis (high level programming) e.g.
  - Real time data analytics with AI
  - Data processing
  - Data visualization

- ▶ Monitor status and health of worldwide distributed edge devices efficiently
- ▶ Deploy apps easily to distributed devices enabling new use cases

- ▶ Handle analytical as well as communication tasks
- ▶ Lower hardware invest with integrated Edge functionality

# SIMATIC Performance Insight MindSphere App

## Increasing machine transparency - worldwide



### Feature / Function

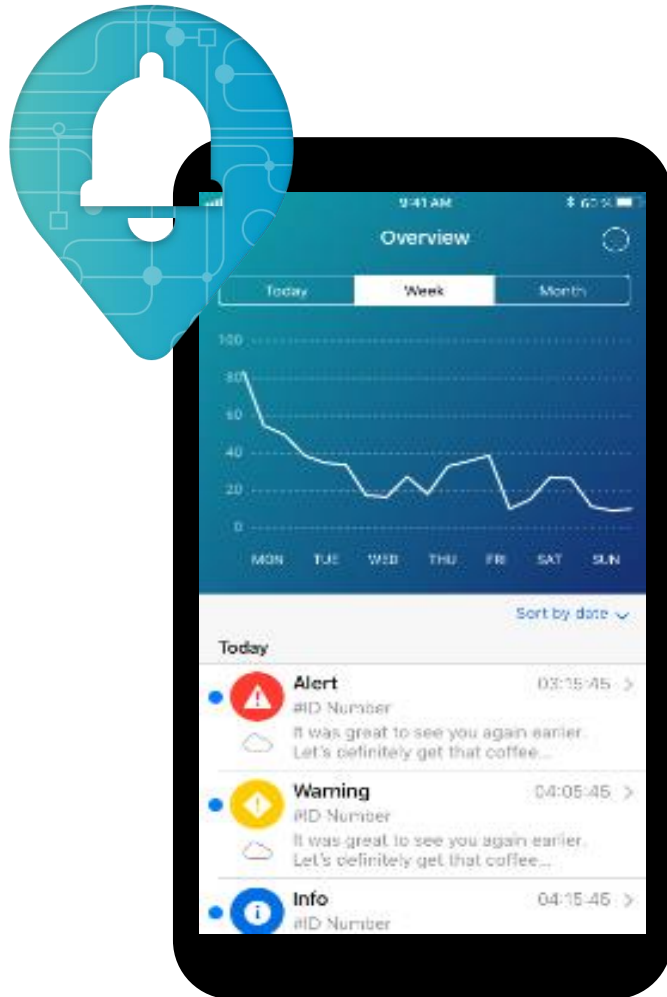
- Define, calculate, visualize KPIs
- Define alarm thresholds
- Analyze historical KPI data
- User personalized cockpit view – everything at one glance

### Benefit

- Worldwide access to machine data
- Increased machinery and plant transparency to detect optimization potential
- Fast and Solid Decision-making aid on optimization of machinery and plants

# SIMATIC Notifier MindSphere App

Receive alarm messages to react on machine downtimes



## Feature / Function

- Transfer of machine data to MindSphere with MindConnect
- Definition of alarm thresholds in MindSphere to create and distribute alarms
- Active notification to mobile terminals (App)
- Definitions of users with different cockpit views
- Filtering and the ability to search for all appeared alarms for various machines

## Benefit

- Central compilation of messages from different system/sources, worldwide
- Targeted alerting of users e.g. service technicians during machine downtime
- Location-independent access to alarms and messages (Web or mobile app)



# SIMATIC Energy Manager MindSphere App

## Analyze energy consumptions worldwide



### Feature / Function

- Define and visualize energy consumption with KPIs
- Compare energy consumers worldwide between each other
- Combine energy data with production related data & weather data
- Display energy costs based on energy data and electricity prices

### Benefit

- Worldwide location independent access to energy data of machines and plants
- Detect energy hungry devices locally inside the plant but also worldwide between sites
- Detect hidden cost optimization potential with additional data correlation analysis

# SIMATIC Machine Insight MindSphere App

Additional machine insights with global access to diagnostics data



## Feature / Function

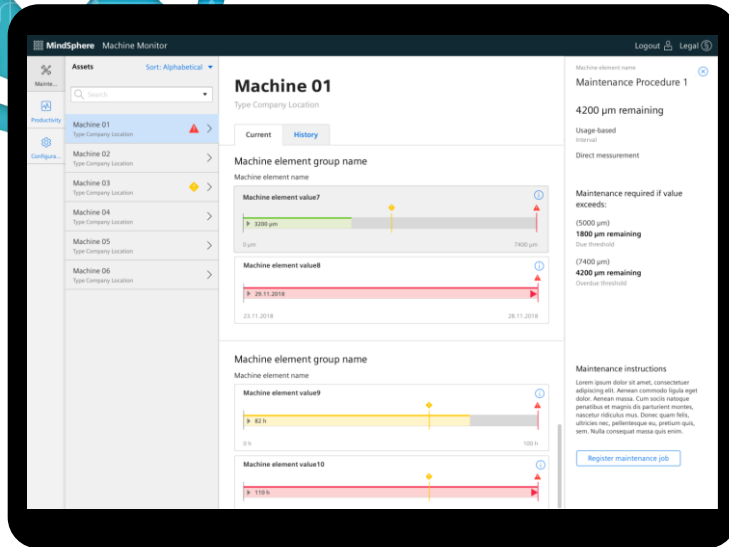
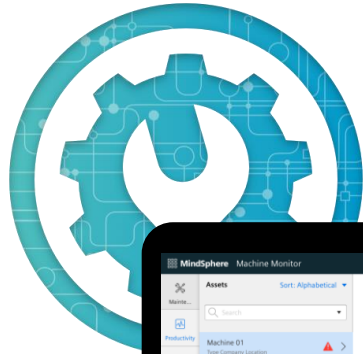
- Display of relevant machine parameters as KPIs
- Tracking of service history and changes to the machine program
- Integrated SIMATIC & SINAMICS diagnosis data in MindSphere
- Automatic calculation & display of the most frequent causes for machine stop

## Benefit

- ▶ Feedback of machine operation for optimized service and warranty management
- ▶ Easy trouble shooting for best in class machine performance
- ▶ Retrospective detection of sporadic faults by visualizing data in different ways

# SIMATIC Machine Monitor MindSphere App

## Optimize machine productivity and service business



### Feature / Function

- KPIs calculation (e.g. performance, availability) based on OMAC standard
- Graphical visualization of desired service intervals for machine components based on usage data
- Visualization of pre-specified alarms as:
  - Gantt-Chart (time series)
  - Pie-Chart (relative occurrence)
  - Table (absolute occurrence)

### Benefit

- Easy overview about the production state of the machine
- Base for a more efficient service by executing service dynamically for worldwide distributed machines based on the machine usage
- Entry into root-cause analysis for deviations in production behavior



# Innovation SIMATIC Multifunctional Platform

## Flexible high level language integration into the S7-1500 PLC

### SIMATIC CPU 1518(F)-4 PN/DP MFP



#### Feature / Function

- Integration of high level language application and PLC program into one hardware
- PLC integrated functions and PLC independent applications in C/C++ for any application (e.g. protocol converter, database, ...)
- Code generation with model based development tool, e.g. Matlab Simulink
- Regular firmware updates stand for highest security standards
- Closed embedded operating systems

#### Benefit

- Reduced space
- Robustness of a SIMATIC S7
- Secure Know-how of created blocks
- Simplified creation and reuse of customer specific application in high level language
- Direct integration of complex functions
- Users solely care about the implementation of the automation task
- Stability and long term availability

# SIMATIC S7-1500

Higher availability by new S7-1500R and S7-1500H

## S7-1500R: CPU 1513R/1515R



## S7-1500H: CPU 1517H



### Feature / Function

#### Redundant PLCs

- Switchover time 200 – 500ms
- Support of up to 50 devices in PROFINET-Ring
- System – IP Address
- Configuration in TIA-Portal like Standard CPU

#### High-Availability PLC

- Same features as Redundant PLC
- Dedicated High Performance synchronization modules
- Distance between CPUs up to 10 km
- Switchover time < 100ms

### Benefit

**Higher production**  
due to higher availability

**No data loss**  
due to automatic synchronization

**Simple handling**  
because no extra Know-How necessary  
for Redundancy configuration

# SIMATIC S7-1500R/H

## Focus applications (1. delivery step)

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**Airport-Logistics**



**Tunnel**



**HVAC**



**Water & Wastewater**



# Artificial Intelligence in SIMATIC S7-1500/ET 200MP

S7-1500 TM NPU (Neural Processing Unit)

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## Feature / Function

### Artificial Intelligence module New for S7-1500 and ET 200MP (S7-1500 TM NPU)

- Processing of input data (camera, sound, PLC, ...) via trained neural networks
- Connection of sensors via USB and Ethernet interface
- Engineering and handling via TIA Portal and AI Toolkit
- For use in central and distributed configurations (behind a S7-1500 or ET 200MP Interfacemodule)

## Benefit

- Optimization of manufacturing processes
- Saving of additional components (e.g. IPC)
- Saving of engineering effort through direct communication with the PLC
- Scalable AI solution: Several modules pluggable per station

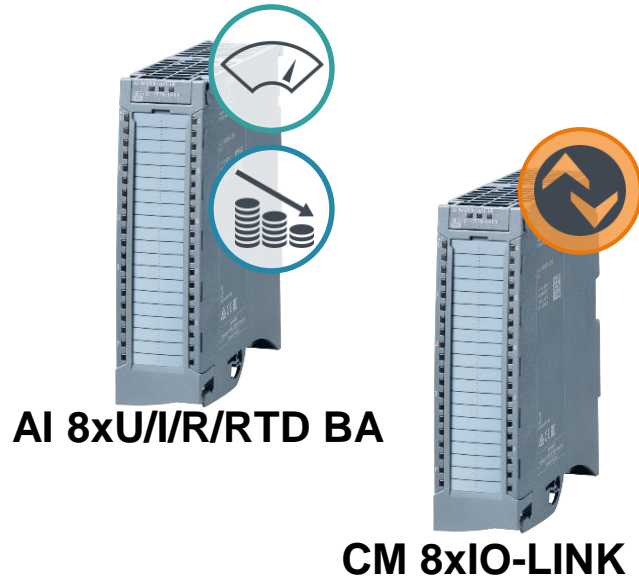
## Use Cases

- Robotics
- (Visual) Quality control
- Detection of process anomalies
- Condition monitoring (e.g. sound profiles)

# SIMATIC ET 200MP – Performance Updates and accessories

New Features and Upgrades for more flexibility and better scalability

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## Feature / Function

### AI 8xU/I/R/RTD BA

Cost-effective 8-channel analog input module for measuring current, voltage, resistance and temperature (25% less than for ST version)

- Connection of resistance thermometers via 3-wire connection
- Toolless mounting of the shielding

New

### CM 8xIO-LINK

8 Port IO-Link Master (V1.1) for S7-1500/ET 200MP

- Up to 32 Byte In-/Output data per port
- Engineering with the S7-Port Configuration Tool or directly in the TIA Portal („Autostart-function“)
- Master-Backup via TIA Portal function block

New

### S7-1500 Mounting adapter

Easy and quick installation of the S7-1500 mounting rail on standard 35mm DIN rails (flat and deep types)

## Benefit

- **Optimized price-performance solution** for price-sensitive measurement applications
- **Continuous scalability** of the ET 200MP in terms of cost, functionality and performance
- **Time saving** for mounting

- **Space saving in the control cabinet** due to the possibility to connect IO-Link devices directly and centrally to the S7-1500
- **Reduction** of engineering and wiring effort

**Cost savings** through the use of standardized, prefabricated control cabinet and terminal box systems

# Charging with ET 200SP Technology modules

## New DC Charging Modul: SIMATIC ET 200SP TM ECC PL ST

TM ECC 2xPWM  
(AC-Charging)



TM ECC PL ST  
(DC-Charging)



New

### Feature / Function

- Communication controller for conductive charging of eCars in accordance of IEC 61851 & DIN SPEC 70121
- Modular design in System of ET 200SP
- Integrated Powerline Communication in accordance GreenPhy
- Parameterizable contact for contactor
- Integrated DQ for safe shutdown of charging voltage

### Benefit

- Realization of norm conformal **DC** charging solutions with intelligent data communication
- Individual extension options for cooling the cable and status LEDs
- **Secure data exchange** between charging infrastructure and vehicle
- **Safe** evaluation of charging conditions
- Time sensitive **safe shutdown**



# SIMATIC MICRO-DRIVE

New servo drive system in extra low voltage

## SIMATIC MICRO-DRIVE for e. g. autonomous guided vehicles (AGV)



### Feature / Function

- New servo drive system in extra low voltage: 24-48 V: 0,05 – 1 kW
- Safety Integrated: STO, SS1, **SLT**, SLS, SBC, SSM via **PROFIsafe**
- TIA Portal Integration  
• “One Button Tuning”
- PROFINET IRT (1ms)

### Benefit

- With its flexibility and combinability of the system components universally applicable in different markets
- Maximal safety due to safety integrated. New in portfolio: Safely Limited Torque (SLT)
- Easy engineering and optimization as well as consistent diagnosis functionality in service case (e.g. Trace)
- Fast communication for high performant applications

# SIMATIC IPC127E

## Ultra compact industrial PC as high performance gateway

### SIMATIC IPC127E



New

#### Feature / Function

- Ultra compact housing (0,3l) with many mounting options (DIN Rail, wall, book mounting)
- Optimized performance-volume ratio: 4 Core Atom-processor, 4 GB RAM, 128 GB SSD)
- Up to 3 LAN- and 4 interfaces
- Preconfigured variants available from stock.

#### Benefit

- ▶ • Minimized footprint in cabinet or directly at the machine
- ▶ • Easy integration in new and existing systems
- ▶ • Perormant datacollection und preprocessing
- ▶ • Visualization with WinCC RT Advanced
- ▶ • Maximum connectivity for control level, field level and service
- ▶ • The right product in a short time available

# SIMATIC IPC527G

High-performance and expandability at an attractive price

## SIMATIC IPC527G



Desk mounting



Book mounting



Wall mounting

### Feature / Function

- High performance and expandability
- Support of existing systems
- Flexible and space-saving installation
- SIMATIC Quality & Support

### Benefit

- ▶ • Wide range of applications, even for high performance requirements
- ▶ • Easy extension of existing and new systems
- ▶ • Installation in all possible applications
- ▶ • Highest data and system availability in the control cabinet



# SIMATIC IPC6x7 and IPC8x7 – Next Generation „E“ Highest performance and flexibility in industrial environments

## High-End SIMATIC IPC6x7E and IPC8x7E as Rack-, Box- and Panel-PC



### Feature / Function

- Up to date technology mit maximum performance (8th Gen. Intel Prozessors, 64GB RAM, NVMe SSD, USB 3.1 Gen. 2, USB Type-C)
- Maximum expandability (3x graphic interfaces, 3x LAN, 6x USB and up to 11x PCI(e))
- Panel-PC with 19“, 22“ or 24“ multitouch glassfront
- Device concept for highest industrial demand with up to 10 years availability

### Benefit

- Highest productivity even for most demanding requirements
- Flexible integration in new and existing applications
- Control, visualization and Windows applications on one device
- Highest data and system availability in 19“ rack, in the control cabinet or directly at the machine

# SIMATIC IPC1047 – New device class

## Highest CPU and GPU Power in industrial environments

### High-End Dual Socket SIMATIC IPC1047 as Rack PC

New



Feature / Function
<ul style="list-style-type: none"> <li>• Server Mainboard with <b>Dual Socket XEON E5-CPU</b>s (2x 14 CPU cores) with up to <b>2TB RAM</b></li> </ul>
<ul style="list-style-type: none"> <li>• Up to <b>2x High End GPU</b>s with 2.560 cores each e.g. NVIDIA P5000</li> </ul>
<ul style="list-style-type: none"> <li>• <b>3x PCIe x8</b> and <b>3x PCIe x16</b></li> </ul>
<ul style="list-style-type: none"> <li>• <b>8x SSDs/ HDDs</b> with SW or HW Raid</li> </ul>
<ul style="list-style-type: none"> <li>• <b>860W</b> power supply</li> <li>• <b>700W redundant</b> power supply</li> </ul>

Benefit
<ul style="list-style-type: none"> <li>• <b>Highest performance</b> for <b>calculations</b> and <b>virtualization</b> e.g. Data analytics, VMWare</li> </ul>
<ul style="list-style-type: none"> <li>• High performance for <b>deep Learning</b> and vector calculations e.g. <b>optical quality assurance</b> or <b>package sorting</b></li> </ul>
<ul style="list-style-type: none"> <li>• <b>High flexibility</b> for your configuration with <b>fast CPU connection</b>. e.g. 10GBIT LAN card</li> </ul>
<ul style="list-style-type: none"> <li>• <b>Server configuration</b> with Raid e.g. 8x 1,9 TB SSD as RAID 5</li> </ul>
<ul style="list-style-type: none"> <li>• <b>Strong power supply</b> to meet your demand e.g. for POE or 10GBIT LAN cards</li> </ul>

# SIMATIC Basic IFP

## Industrial PC technology at an attractive price

### Price-sensitive visualization/HMI



New

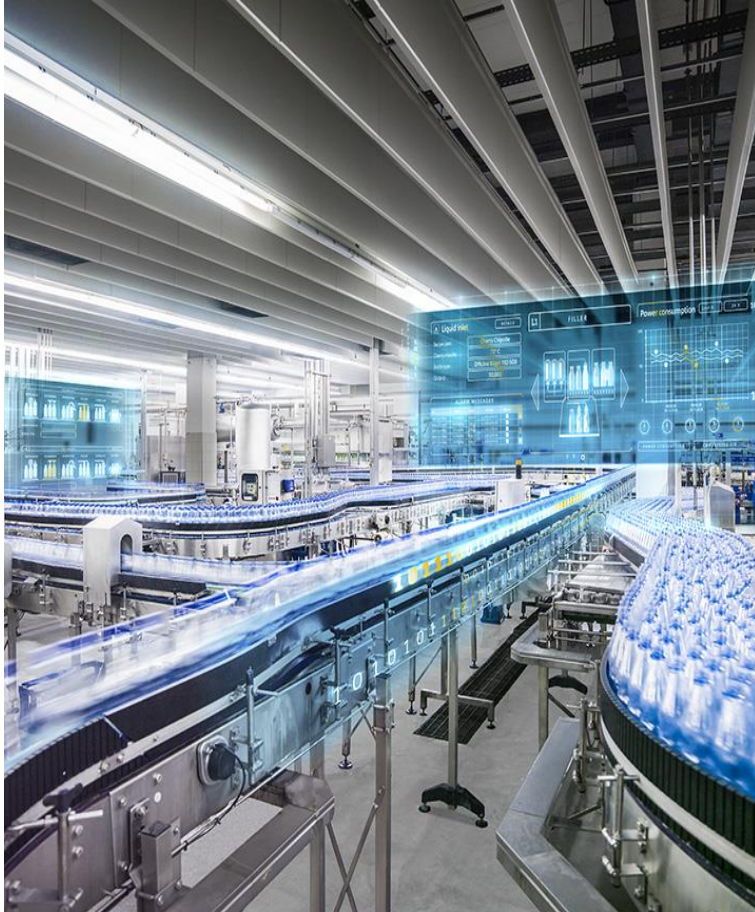
Feature / Function
<ul style="list-style-type: none"> <li>• Display: Sizes: 12" / 15" / 19" / 22"</li> <li>• Power supply: 24 V DC</li> <li>• DisplayPort + VGA</li> </ul>
<ul style="list-style-type: none"> <li>• Designed for 24/7 operation</li> <li>• Run in Test</li> <li>• Worldwide certifications</li> </ul>
<ul style="list-style-type: none"> <li>• Attractive price</li> </ul>
<ul style="list-style-type: none"> <li>• Available directly from stock</li> </ul>

Benefit
<ul style="list-style-type: none"> <li>• Easy integration in existing and new machine and plant concepts</li> </ul>
<ul style="list-style-type: none"> <li>• Industrial quality for reliable operation</li> </ul>
<ul style="list-style-type: none"> <li>• Price-sensitive implementation of applications in an industrial environment</li> </ul>
<ul style="list-style-type: none"> <li>• Fast delivery</li> </ul>

# SCADA System SIMATIC WinCC Professional

## Das SCADA System inside TIA Portal

### SIMATIC WinCC Professional V15.1



#### Feature / Function

- WinCC/WebUX now offers administration of user rights during runtime and automatic „Operate“-user login
- Energy transparency with SIMATIC Energy Suite and energy savings according to ISO 50001
- ProDiag with increased efficiency in process diagnostic due to complete visualization of the calling block
- Improved connectivity with software controller
- Support of WinCC OPC UA „Alarm and Condition“ Server

#### Benefit

- Right decisions quickly, at any time, anywhere also using any HTML 5 compatible device
- Low-cost and energy efficient production in accordance to legal stipulations
- Reduce production outages due to efficient process diagnostics
- Common installation at one operator station
- Forward WinCC alarms to 3rd Party applications



# SCADA System SIMATIC WinCC V7

## The scalable and open SCADA system

### SIMATIC WinCC V7.5



#### Feature / Function

- Integrated Cloud connectivity
- Dynamic properties for SVG symbols
- Structured data types including connection to Faceplates
- Improved configuration of texts and dynamic properties
- OPC UA Client for Alarm and Condition
- Audit with electronic signature and 4 – eye principle
- Industrial Data Bridge with OPC UA DA Server and Client

#### Benefit

- Standard gateway for Smart Data when working with a Cloud solution
- Modern **homogenous** GUI due to simple adjustment of the graphic objects
- Modern object-oriented approach of project implementation
- Efficient editing of all texts and their properties as well as dynamic sampling of object properties **without** scripting
- Flexible integration of 3rd Party alarms into WinCC
- Explicit confirmation and documentation of important operator actions within the Audit Trail
- Extension of the gateway functionality

# SCADA System SIMATIC WinCC Open Architecture

## The flexible SCADA system for enhanced IT security

### SIMATIC WinCC Open Architecture V3.16 FP1



Feature/ Function	Benefit
<ul style="list-style-type: none"> <li>• Test framework</li> <li>• TLS/SSL encryption for IEC60870-5-104</li> <li>• CommCenter available for Linux</li> <li>• Adaptability of encrypted Panels and Scripts</li> </ul>	<ul style="list-style-type: none"> <li>• Higher quality assurance and automation of unit tests</li> <li>• Protection of critical information due to encrypted communication</li> <li>• Quick reaction through personal alerting</li> <li>• Time saving for minor adjustments at customer side</li> </ul>
<ul style="list-style-type: none"> <li>• Windows 10 Enterprise LTSB</li> <li>• New PDF Widget</li> </ul>	<ul style="list-style-type: none"> <li>• Investment protection due to granted long time support of operating system</li> <li>• Displaying PDFs directly in WinCC OA increases efficiency of operator</li> </ul>
<ul style="list-style-type: none"> <li>• OPC UA certification</li> <li>• MindSphere connector</li> <li>• WinCC OA Video enhancements</li> </ul>	<ul style="list-style-type: none"> <li>• Open Standard to third party systems certified by OPC Foundation</li> <li>• Cost reduction due to simple, native connectivity to SIEMENS cloud</li> <li>• Increased danger prevention without additional investment</li> </ul>



# SIMATIC Energy Manager V7.2

## SIMATIC Energy Manager Mindsphere App



### Feature / Function Energy Manager V7.2

- Enhancement of Web Engineering
- Power Monitoring
- Detailed System Diagnostic
- Enhancement of connectivity interfaces:
  - OPC UA Server HA
  - Desigo CC

### Benefit

- Simple und intuitive Engineering reduces efforts, costs and time
- Detailed energy analysis based on 1 s data
- An overview of system status for quick root cause identification
- Using of energy data from different sources for further analysis and provisioning of results via OPC UA Server

### Feature / Function Energy Manager MindSphere app

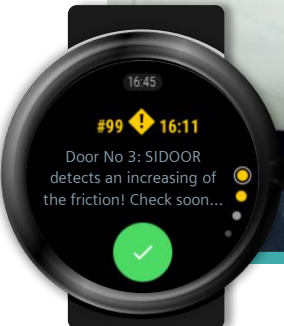
- Flexible KPI definition for energy data and custom dashboards
- Access to global MindSphere data

### Benefit

- A holistic view of energy consumption for the implementation of energy efficiency measures
- Transparency of energy costs from the machine level to worldwide locations

# SIDOOR Industry: FW Update & Consistent motor portfolio

## For safe and cycle time optimized machine safety doors



### SIDOOR ATD430W incl. SIDOOR MDG3, MDG4 und MDG5

Feature / Function	Benefit
Switching to a second drive profile according EN ISO 13849-1 Pl d	▶ Safe switch between robot and manual loading
Available* in TIA Selection Tool	▶ Guided configuration of a system <span style="float: right;">TIA ST</span>
PROFINET-compatible cold room door functions can be activated as a menu option (FW 1.12)	▶ Smart cold room door, analysis via MindSphere, reduction of interrupted cold chains
Cleaned motor portfolio of the flexible SIDOOR-MDG series. Free choice of output gear and cost-optimized connection cables. <span style="float: right; background-color: #008080; color: white; padding: 2px 5px; font-weight: bold;">New</span>	▶ Cost savings for small motor selection and connection cables. Customer-side drive solutions and cables are also possible.
Comprehensive application example for SINUMERK incl. segmented drive curve analysis	▶ Faster commissioning and preparation for predictive maintenance via MindSphere and SIMATIC Notifier

\*) from April 2019



# Hanover Fair 2019

PD PA CI Innovations April 2019

# SCALANCE XC-200G

Full Gigabit Switches for even more performance

**SIEMENS**  
*Ingenuity for Life*



[siemens.com/xc-200](https://www.siemens.com/xc-200)

## Feature / Function

**Full Gigabit with up to 24 x electrical and 4x optical SFP-Ports**

**NEW**

**H-Sync support**

**NEW**

**VLAN, RSTP, HRP, MRP, IGMP**

**Temperature range: -40 °C to +70 °C**

**It can be switched between PROFINET and EtherNet/IP in one device**

**Mounting on wall, DIN rail, SIMATIC SIMATIC S7-300 or S7-1500 mounting rail**

**Trackside railway approval (EN 50121-4)**

**ATEX Zone 2 / IECEx, cULus HazLoc, FM, Marine approvals**

## Benefit

▶ A broad spectrum for challenging applications (e.g. camera applications)

▶ Integration in high available applications together with SIMATIC S7-1500R

▶ Many FW functions allow flexible options for using the switches

▶ Use in areas with harsh environmental conditions

▶ Use in new markets/industries when manufacturer-neutral controllers are used

▶ Many mounting options for quick and convenient mounting

▶ Permitted for rail operations (trackside)

▶ Wide range of additional permits for worldwide operation in a variety of areas

# SCALANCE SC-600

## High-performant Industrial Security Appliances

**SIEMENS**  
Ingenuity for life



[siemens.com/scalance-s](https://www.siemens.com/scalance-s)

Feature / Function	Benefit
<b>Bridge Firewall</b> <span style="float: right;">NEW</span>	<p>▶ Check and filtering of Layer 2 data e.g. for a use in secured service bridges</p>
<b>Supported redundancy protocols:</b> <ul style="list-style-type: none"> <li>• MRP and HRP Client <sup>1)</sup></li> <li>• VRRP-coupling, STP/RSTP</li> </ul> <span style="float: right;">NEW</span>	<p>▶ Integration in redundant network structures. Additional switches / router at security-edges are no longer necessary</p>
<b>Firewall or encryption performance approx. 600 Mbps or 120 Mbps respectively</b>	<p>▶ High data throughput and the best possible data security in the network</p>
<b>Virtual Private Network: VPN (IPsec) <sup>1)</sup></b>	<p>▶ Eavesdropping and integrity protection:</p>
<ul style="list-style-type: none"> <li>• Up to 6 ports</li> <li>• 2 of them as a combo port</li> </ul>	<ul style="list-style-type: none"> <li>• Configurable ports – depending on requirements and quantity structure</li> <li>• Can be equipped with SFPs for FO topologies</li> </ul>
<ul style="list-style-type: none"> <li>• Stateful inspection firewall / user-specific firewall</li> <li>• NAT/NAPT</li> </ul> <span style="float: right;">NEW</span>	<ul style="list-style-type: none"> <li>• Protection against unauthorized network access</li> <li>• Integration of networks with identical IP addresses (e.g. serial machines)</li> </ul>
<b>Allows flexible security zone concepts</b>	<p>▶ Network separation, DMZ (e.g. for remote access)</p>
<ul style="list-style-type: none"> <li>• TIA Portal Integration</li> <li>• SINEC NMS Integration</li> </ul> <span style="float: right;">NEW</span>	<ul style="list-style-type: none"> <li>• End-to-end engineering in the TIA Portal</li> <li>• Diagnostics and central firmware management</li> </ul>
<b>Integration into SINEMA Remote Connect</b>	<p>▶ Secured remote access to machinery, plants</p>

<sup>1)</sup> Only for SCALANCE SC642-2C, SC646-2C

# SCALANCE W1748 Client Module

## IEEE 802.11ac standard with iPRP for industry

**SIEMENS**  
*Ingenuity for life*



[siemens.com/scalance-w1748](https://www.siemens.com/scalance-w1748)

### Feature / Function

**WLAN standard IEEE 802.11ac Wave 2**

**Gigabit data rates up to 1733 Mbps**

**Integrated switch with two managed Ethernet Gigabit ports**

**IP65 protection class with M12- and N-Connect**

**PRP over WLAN (iPRP iFeature)**

### Benefit

▶ Investment protection thanks to future-proof WLAN communication with the latest technology

▶ Particularly high bandwidths, e.g. for high user density and transmission of video data

▶ Various networking possibilities, e.g. segmentation of the network by different VLANs per port

▶ Control cabinet-free installation under demanding environmental conditions

▶ Reliable redundancy over WLAN



# SIMATIC CP 1545-1

An integral part of modern TIA installations

**SIEMENS**  
*Ingenuity for life*



[siemens.com/cloudconnect](https://www.siemens.com/cloudconnect)



## Feature / Function

**Data transmission to cloud-based solutions via an open cloud protocol (MQTT)**

**Trigger management for event-driven and cyclic communication**

**Full integration into the TIA Portal**

**SPI (stateful packet inspection) firewall**

**IPv6 support**

## Benefit

▶ Flexibility in the selection of the cloud solution (e.g., MindSphere, MS Azure, IBM Cloud, AWS)

▶ Event-driven communication reduces the network load and the data exchange costs

▶ Very easy configuration within the TIA Portal – with just a few mouse clicks into the cloud

▶ Protection of the S7-1500 station against unauthorized access

▶ Integration into an IPv6 infrastructure

# SIMATIC CloudConnect 7

## Smartly connecting existing plants

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[siemens.com/cloudconnect](https://www.siemens.com/cloudconnect)

### Feature / Function

**Data transmission to cloud-based solutions via an open cloud protocol (MQTT)**

**Trigger management for event-driven and cyclic communication**

**Device connection via S7 protocol, MPI or ModbusTCP**

**Supports the connection of the S7 CPU via PROFIBUS and PROFINET**

**Web-based engineering**

**Import of the tag tables from STEP 7 projects**

**Transfer of collected data via OPC UA server**

### Benefit

Flexibility in the selection of the cloud solution (e.g., MindSphere, MS Azure, IBM Cloud, AWS)

Event-driven communication reduces the network load and the data exchange costs

Expansion of existing installations to include cloud applications without modifications

Investment protection

Easy commissioning

Data management of existing S7 controllers can continue to be used without modifications for a quick and easy configuration

Open data exchange by existing SIMATIC S7 controllers with third-party systems via OPC UA

# SINEMA Remote Connect V2.0

## Management platform for Remote Networks



[siemens.com/sinema-remote-connect](https://www.siemens.com/sinema-remote-connect)

### Feature / Function

**Dedicated device access (DDA): User-specific access rights for the dedicated access to special IP addresses within a subnet**

**Optimization of the user interface on the server and client**

**Status overview of the available connections on the client**

### Benefit

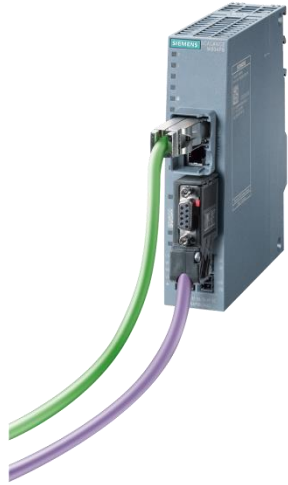
▶ More flexible assignment of rights, avoidance of operating errors during remote maintenance by unauthorized personnel through individual restriction of the access rights

▶ Better overview and comfort as well as customizable views and settings

▶ Easy connection establishment through clear presentation of all available (active and inactive) connections

# SCALANCE M804PB

## Secure remote access to PROFIBUS/MPI plants



[siemens.com/scalance-m](https://www.siemens.com/scalance-m)

### Feature / Function

**PROFIBUS/MPI interface for connecting PROFIBUS to Ethernet networks in conjunction with SINEMA Remote Connect (management platform for remote networks)**

**User interface and firmware functions analogous to SCALANCE M-800/ S615 (e.g., VLAN support; one configurable internal subnet; digital input / output; WBM / CLI / SNMP)**

**TIA Portal Cloud Connector connection**

**Digital input / digital output**

**Supports remote access even to old plants with STEP 7 V5.6 or higher**

### Benefit

▶ Convenient and cost-effective direct connection of existing plants with PROFIBUS/MPI to SINEMA RC (without additional devices), for a secure remote access to remote machines and plants

▶ Familiar usability and functional scope from the SCALANCE M800 / S615 family thanks to a uniform firmware basis

▶ Easy central management of the engineering software (TIA Portal) on one server

▶ Enables on-site access control via key-operated switches

▶ Uniform remote maintenance concept for new and existing plants



# SIMATIC RTU3041C and firmware V3.1 for SIMATIC RTU3000C

## Compact energy-self-sufficient low-power remote terminal unit (RTU)

**SIEMENS**  
*Ingenuity for life*



[siemens.com/compact-rtu](https://www.siemens.com/compact-rtu)

### Feature / Function

**Low-power operation**  
Warning if battery voltage is low

**Integrated LTE-M/NB modem (4G)**

**NEW**

**GPS functionality**

**Integrated I/O for the direct data collection**

**Connection of additional sensors through the optional use of the extension board HART/RS485**

**Support of various telecontrol protocols including DNP3, IEC 60870-5-104, TeleControl Basic and SINAUT ST7**

**Data preprocessing with function blocks such as level monitoring of silos, calculation of overflow volumes for rainwater overflow basins, statistics (e.g., arithmetic mean), pulse sequence (precise control of periodic signals) and control of operating status.**

### Benefit

High flexibility with regard to deployment location thanks to operation without external power by means of battery/solar panel

Direct connection to mobile networks.  
Flexibility through connection via external routers.

Enables the deployment for mobile applications that require locating functions.

The compact SIMATIC RTU3000C enables the direct connection of the sensors on-site

Optional plug-in extension board provides additional application possibilities through the connection of additional sensors via Modbus RTU or HART Multidrop (from RTU3000C firmware V3.1)

Different application possibilities through the connection to different control centers via different telecontrol protocols

Easy determination and monitoring of the fill level of a container or silo.

Easy compliance with legal requirements.  
With technology blocks, functions such as pulse sequence can be easily implemented.

# SIMATIC TIM 1531 IRC V2.0

## Telecontrol solutions with SIMATIC S7-1500



[siemens.com/telecontrol](https://www.siemens.com/telecontrol)

Feature / Function	Benefit
<p>Use in telecontrol solutions as remote terminal unit (RTU) for SIMATIC S7-1500 or as node/master station</p>	<p>Expansion of existing telecontrol systems with S7-1500 stations</p>
<p>The new firmware V2.0 supports several telecontrol protocols – SINAUT ST7, DNP3 and IEC 60870-5-101/104 <span style="float: right; background-color: #800040; color: white; padding: 2px 5px;">NEW</span></p>	<p>Enables flexible use through free selection of the telecontrol protocol in a wide range of telecontrol applications.</p>
<p>Proxy function in SINAUT engineering software V5.5 + SP3 for connection configuration in STEP 7 V5.6 with import function for TIA Portal V15 <span style="float: right; background-color: #800040; color: white; padding: 2px 5px;">NEW</span></p>	<p>Simplifies the use of new RTUs based on the S7-1500 in existing telecontrol systems.</p>
<p>Route redundancy</p>	<p>Route redundancy offers higher availability even when the primary connection fails</p>
<p>Alerts sent via e-mail or SMS</p>	<p>Automatic and fast information for service personnel</p>
<p>Engineering with TIA Portal V15.1</p>	<p>Central and convenient engineering of the telecontrol network saves time and money</p>

# SINEC NMS V1.0

## New generation of network management



[siemens.com/sinec-nms](https://www.siemens.com/sinec-nms)

### Feature / Function

**Scalability thanks to the distributed approach**

**Policy-based network configuration**

**Bulk operations for configuration and firmware updates**

**Central user management**

**Central documentation of network information**

### Benefit

Thanks to the distributed approach of the network management system, up to 12,500 devices can be monitored and managed in a single control; extensions to the distributed approach are possible at any time as required by the network structures

Reduces the complexity of the network configuration: saves time during the configuration of network participants and during the troubleshooting of misconfigurations; reduces chance of faulty configuration by utilizing bulk configuration

Device-independent configuration function and firmware update function for single or multiple network components

Management and administration of users is performed centrally, use of existing users from RADIUS or active directory via UMC

Constantly updated documentation on the inventory and statistics of the entire network – at a glance



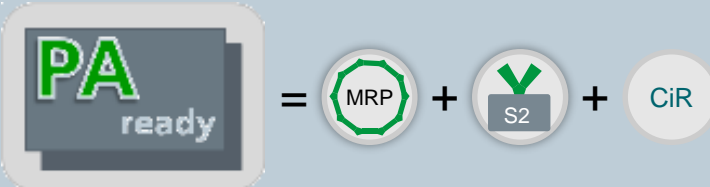
# Industrial Ethernet Switches for process automation

## SCALANCE XC-200EEC, XP-200EEC and XF-200BA



[siemens.com/switches-for-pa](https://www.siemens.com/switches-for-pa)

**SCALANCE XC-200EEC, XP-200EEC and XF-200BA Switches support all hardware- and firmware features of its product line representatives and in addition:**

Feature / Function	Benefit
NAMUR NE 21-compliant, conformal coating, mounting altitude up to 4000 m	▶ Suitable for use in all established process control systems e.g. PCS 7
S2-system redundancy 	▶ Full integration in SIMATIC PCS 7 and thereby consistent system diagnosis with PROFINET
CiR/H-CiR 	▶ Change of configuration and/or replacement during operation
<p>For unrestricted application in process automation IO-Devices have to support at least the following functionalities:</p> <ul style="list-style-type: none"> <li>- Basic S2-system redundancy</li> <li>- Media Redundancy Protocol (MRP)</li> <li>- Configuration in Run (CiR)</li> </ul> <p>▶ To tag those IO-Devices clearly, which fulfill PA's requirements of availability and configuration during operation, Siemens uses the symbol PA ready</p> <div style="text-align: center; margin-top: 20px;">  </div>	



# X-coded IE FC M12 Plug PRO plug connector

## M12 Gigabit plug – easy to assemble

**SIEMENS**  
*Ingenuity for life*



### Feature / Function

**Robust, X-coded M12-plugs with metal housing in IP65/67 protection class**

**Fast assembly directly at place by means of the FastConnect system**

**Comprehensive portfolio of FastConnect cabling system for an easy assembly**

### Benefit

▶ M12 gigabit plug, specially developed for industrial applications. Precision in the assembly provides the highest measure on reliability.

▶ Easy handling and a fault-free assembly allows a fast fabricating directly at place

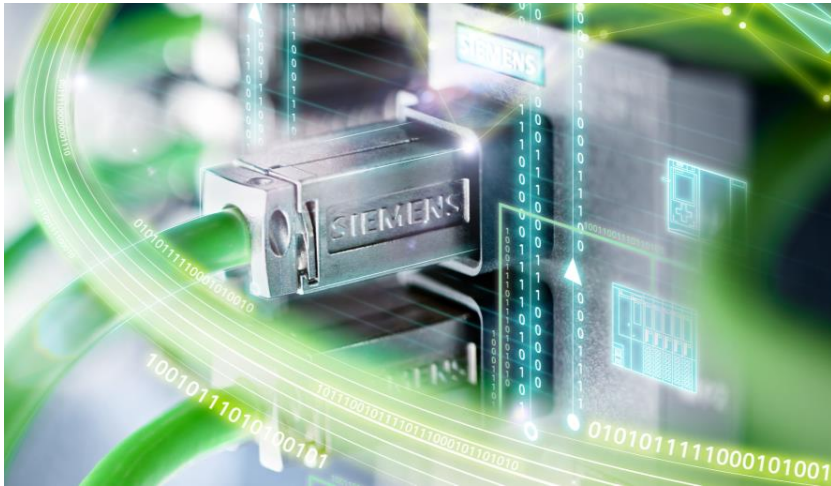
▶ Individual fabricating of lots of robust cables with different plug connectors thanks to the FastConnect system

[siemens.com/fastconnect](https://www.siemens.com/fastconnect)

# Communication for the Digital Enterprise

## PROFINET / OPC UA

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### Seamless, open communication with PROFINET & OPC UA

- **Time-Sensitive Networking (TSN)**
  - Performant communication based on open standards
- **Open communication with OPC UA:**
  - S7-1500 as OPC UA Client as well as methods for OPC UA Client/Server; SIMATIC OPC UA Modelling Editor (SiOME); Fulfillment of Companion Specifications
    - Perfect supplement to PROFINET
    - Standardized horizontal and vertical communication as well as communication between machines or aggregates
    - Fulfill requirements of industry-specific standards like OMAC PackML or Weihenstephan
- **PROFINET Tools:**
  - SINETPLAN V2 – Planning & Simulation; PRONETA – Commissioning & diagnostics; SAT – mass operations, SINEC NMS – network diagnosis, SiOME – OPC UA Modelling Editor
    - Support during planning & simulation, engineering, commissioning and diagnostics with powerful tools
- **PROFINET-LINKs:**
  - PN/CAN LINK; PN/BACnet LINK; PN/J1939 LINK; PN/MBus LINK
    - Simple connectivity of the SIMATIC to CAN, BACnet and MBus infrastructures

[siemens.com/profinet](https://www.siemens.com/profinet)

# SIMATIC RTLS

## Real Time Locating System – Portfolio

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### **SIMATIC RTLS, the locating platform for your digital enterprise**

To make sure that we can provide a scalable and flexible locating infrastructure solution that perfectly meets the requirements of the respective application, the SIMATIC RTLS portfolio includes all the elements necessary to realize a comprehensive solution:

- 1) Hardware infrastructure
  - Active transponders, which are mounted on the objects to be located and transmit signals at user-defined intervals
  - Anchors and Gateways collect the signal and transmit it via Gateway to the locating server
- 2) Locating server
  - SIMATIC Locating Manager, which calculates the real-time position of the transponder based on the incoming information
- 3) IT integration
  - The locating information and events are flexibly transmitted to higher-level systems via defined interfaces

To enable the optimal adaptation to different applications, there are several product families, which have been optimized for the respective applications – the SIMATIC RTLS4000, for example, was especially developed for automation tasks in the production, and meets the highest requirements with regard to accuracy and reliability of the system solution.

[siemens.com/simatic-rtls](https://www.siemens.com/simatic-rtls)

# SIMATIC RTLS

## Scalable infrastructure components



[siemens.com/simatic-rtls](https://www.siemens.com/simatic-rtls)

### Feature / Function

**Hybrid technology (UWB / 2.4GHz – Seamless Ranging)**

**High protection degree**

**Optimized antenna performance**

**Integrated antenna – no angle measurement required**

**PoE power supply, communication via MESH network**

### Benefit

Flexible locating infrastructure

Optimized for harsh industrial environments

Maximum performance with high accuracy

Ease of installation- simple device exchange possible

Reduces cabling effort



# SIMATIC RTLS

## Flexible transponder

**SIEMENS**  
*Ingenuity for life*



[siemens.com/simatic-rtls](https://www.siemens.com/simatic-rtls)

### Feature / Function

**Transponder with integrated e-ink display**

**Bi-directional communication**

**TDOA (Time Difference of Arrival) and TWR (Two Way Ranging) possible**

**Various models with large protection degree**

**External power supply or exchangeable battery available**

### Benefit

Visualization of information depending on location

Data communication from and to the transponder

Large transponder populations and battery saving operation

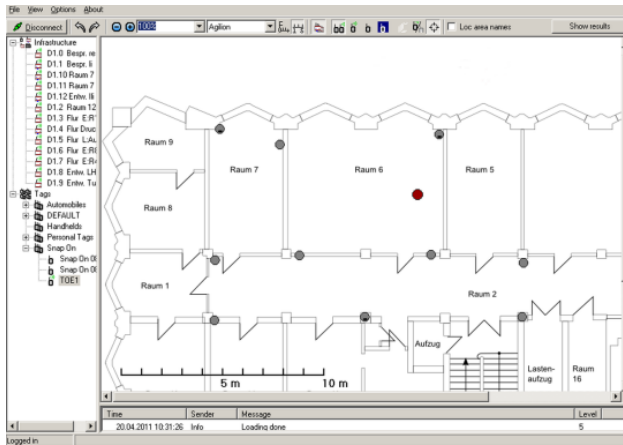
Flexibility when choosing transponders

Perfect portfolio fit for each application

# SIMATIC RTLS

## User friendly software

**SIEMENS**  
*Ingenuity for life*



[siemens.com/simatic-rtls](http://siemens.com/simatic-rtls)

### Feature / Function

**Flexible license management**

**Additional features can be bought individually**

**ISO standard Interface**

**Integrated 2D visualization**

**Comprehensive commissioning tools**

### Benefit

▶ Optimal cost-benefit ratio

▶ Scope of performance can be adapted to customer requirements

▶ Flexible integration with higher-level IT systems

▶ Stand-alone visualization for simplified commissioning

▶ Individual parameterization of the application

# SIMATIC MV500

## Optical reader SIMATIC MV550



[siemens.com/optical-identification](https://www.siemens.com/optical-identification)

Feature / Function	Benefit
<b>Sensor resolution of 0.5 and 1.3 MP</b>	<ul style="list-style-type: none"> <li>Wide range of applications – very fast image capture</li> <li>Reduced training times and increased process reliability through uniform handling / user interface throughout the entire plant</li> </ul>
<b>Gigabit Ethernet interface for diagnostic and service purposes</b>	<ul style="list-style-type: none"> <li>Perfect troubleshooting in high-speed production plants</li> <li>Service and maintenance work directly on the PC via a web browser</li> <li>Possibility of network separation for the failure-free communication from the camera to the controller and from the camera to the server</li> </ul>
<b>Separately running CPU cores (performance increase)</b>	<ul style="list-style-type: none"> <li>Extended application possibilities – from plants with a very high clock rate to applications with very complex algorithms</li> </ul>
<b>1 GB of main memory</b>	<ul style="list-style-type: none"> <li>Large main memory enables the use of the autotrigger function, which saves costs in the construction of high-precision plant mechanics</li> <li>Sophisticated diagnostic possibilities reduce downtimes</li> </ul>
<b>E-focus lenses in different focal lengths</b>	<ul style="list-style-type: none"> <li>Fewer setup errors and increased process reliability thanks to electronic focusing</li> </ul>
<b>Powerful and flexibly controllable built-in ring light in different light colors and variants</b>	<ul style="list-style-type: none"> <li>Extended application possibilities thanks to increased working distance and flexible settings (e.g., separately adjustable ring light segments)</li> <li>Reduces costs, since no additional lighting is necessary</li> </ul>
<b>One-button configuration for network and reading parameters</b>	<ul style="list-style-type: none"> <li>Ease of use</li> </ul>
<b>Device configuration via web-based management</b>	<ul style="list-style-type: none"> <li>Through HTML5, can be used with any current browser (&gt;= IE10)</li> <li>Can be used on any current field PG without any installation effort</li> </ul>

# SIMATIC RF600

## Readers SIMATIC RF615R and SIMATIC RF610R



[siemens.com/rf600](https://www.siemens.com/rf600)

### Feature / Function

**Particularly compact design  
(133 x 133 x 45 mm)**

**1 internal, circular polarized antenna  
1 external antenna connection\***

**One digital input and output each\***

**Access to proven configuration, commissioning and  
diagnostics tools via a web browser  
Diagnostics during operation and diagnostics history  
in the logbook**

**Companion Specification OPC UA for AutoID V1.0**

**Established “UHF for industry” algorithms**

### Benefit

Installation in tight spaces  
For the use in mechanical and plant engineering as well  
as in conveyor technology

Reader can be mounted directly on-site and operated  
without additional accessories  
Installation position of the reader can be adjusted to the  
situation at the installation site  
The use of both antennas enables a cost-efficient small-  
gate setup

Simple trigger option for decentralized reading points  
Local reaction to reading events

Fast commissioning and diagnostics reduce project  
efforts  
Extensive functions for quick and easy diagnostics  
increase the plant availability

Reduced integration effort  
Easy interchangeability (interoperability) of AutoID  
devices

Maximum reliability during the read/write process even in  
difficult radio environments

\* Only for SIMATIC RF615R



# SIMATIC RF100

## Communication modules SIMATIC RF18xC and SIMATIC RF18xCI

**SIEMENS**  
*Ingenuity for life*



[siemens.com/communication-modules](https://www.siemens.com/communication-modules)

### Feature / Function

**Web-based management and TIA Portal allow access to configuration, diagnostic and logbook data**

**Two connections each for Ethernet and power supply  
L-coded M12 connector for power supply**

**Connection of digital I/Os  
(only available for CI variants)**

**Modular system integration for PROFINET with  
standard function blocks  
RFID technology-object in the TIA Portal**

**AutoID Companion Specification V1.0 (OPC UA)**

**Models for connecting 1, 2 or 4 readers**

### Benefit

Fast and time-saving commissioning  
Status query during operation reduces downtimes  
Fast and powerful error analysis for sporadic events – while doing so, PLC program does not need to be changed

In addition to star topologies, the setup of ring and line topologies is possible  
Enabling high through-transmission currents up to 16 amps

Possibility of directly connecting and operating up to eight actuators and eight sensors  
For the integration of light barriers, inductive proximity switches, track switches, etc.

The programming is compatible with the preceding communication modules  
Quick and easy programming as well as built-in verification of SW/HW components to avoid addressing errors

Non-proprietary communication to the automation technology  
Standardized connection to cloud applications, such as MindSphere, via an industrial IoT gateway, such as RUGGEDCOM RX1400 with CloudConnect

No unused reader connections  
The customer pays only for the number of connections that are actually required

# SIMATIC RF1000R

## Reader SIMATIC RF1070R

**SIEMENS**  
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[siemens.com/rf1000](https://www.siemens.com/rf1000)

### Feature / Function

**Supports the standards ISO 14443 A/B (MIFARE), ISO 15693, Legic Prime and Legic Advant**

**Identification of operating personnel at machinery and equipment, e.g., access control, audit trail**

**Config card Mifare (reading and writing of data from/to ID/card)**

**Integration possibilities into WinCC, SIMATIC Logon, PCS 7 via USB 2.0 interface**

**Serial interface RS232**

**High degree of protection (IP65 at front) and temperature range from -25 to +55 °C**

**ATEX II approval**

**Compact design with low installation depth**

**5 V mains adapter**

### Benefit

Use of existing employee ID cards enables the individual control of access rights

Secure and documented access to machines prevents operating errors

Creation of customer-specific reader parameterizations via the Config card  
Handling and storage of customer-specific key material for data access in the reader

Easy integration into existing hardware (HMI devices and panels)

Direct connection to ET200SP, SIMATIC RF170C, PCs and third-party HMIs

Use at machinery and equipment located in harsh industrial environments possible

For the use in Zones 2/22

For applications with limited installation space (e.g., HMI devices and panels)

Possibility of dedicated electricity supply via serial interface RS232

# SIMATIC RF600

## Transponder SIMATIC RF682T



[siemens.com/rf600](https://www.siemens.com/rf600)

### Feature / Function

**For applications with high temperature loads up to +220 °C**

**Large 256-bit EPC memory / and 3072-bit user memory**

**Long range even when on metal**

**Based on the ISO standard 18000-63, with broadband frequency band from 865 to 928 MHz**

**High degree of protection (IP68/x9K)  
Silicone-free  
Resistant to chemicals**

### Benefit

▶ General application areas in production, production logistics and at assembly lines, e.g., paintshop and its pretreatments, including drying ovens, washing areas at temperatures > 85 °C

▶ Writing of large data volumes  
For centralized as well as decentralized data management

▶ Up to 3.5 m

▶ The transponder can be used in many countries

▶ Use under the harshest industrial conditions, e.g., identification of skids on painting lines in automobile manufacturing, or in the chemical industry

# SIMATIC RF600

## Transponder SIMATIC RF642L

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[siemens.com/rf600](https://www.siemens.com/rf600)

### Feature / Function

Large 448-bit EPC memory / and 2048-bit user memory

Direct mounting on metallic surfaces

Based on UHF Class 1 Gen 2 technology, available in the two frequency variants 865 to 868 MHz (ETSI) and 902 to 928 MHz (FCC)

Use at temperatures from -20 to +85 ° C  
High degree of protection (IP68)

Small compact design measuring 50 x 22.5 x 1.65 mm

### Benefit

▶ Writing of large data volumes

▶ Long range of up to 2.8 m

▶ The transponder can be used in many countries

▶ Use under harsh industrial conditions: in production, in logistics as well as at assembly lines, e.g., for an RFID-based asset management or the identification of load carriers, containers and metallic devices


▶ For the permanent mounting to tools, machinery and plants



# Hannover Messe 2019 SITOP Power Supplies Innovations

# SITOP power supplies

## Portfolio overview

Advanced		Standard		Basic			SIMATIC design	DC/DC converter	Special designs
<p><b>SITOP PSU8600</b> The power supply system with TIA integration and open communication up to the Cloud</p> 	<p><b>SITOP PSU8200</b> The technology power supply for demanding solutions</p> 	<p><b>SITOP PSU6200</b> <i>new</i> The all-around power supply for a wide range of applications</p> 	<p><b>SITOP smart</b> The high-performance power supply</p> 	<p><b>SITOP lite</b> The cost-effective basic power supply</p> 	<p><b>LOGO!Power</b> The flat power supply for distribution boards</p> 	<p><b>SITOP compact</b> The slim power supply unit for control boxes</p> 	<p><b>SITOP in SIMATIC design</b> The optimal power supply for SIMATIC S7 and more</p> 	<p><b>SITOP DC/DC converter</b> Stable supply despite fluctuating DC voltage</p> 	<p><b>Special designs</b> Equipped for special tasks and conditions</p> 



... individual extendable to all-round protection

<p><b>SITOP Redundancy modules</b></p>  	<p><b>SITOP Selectivity modules</b></p>  	<p><b>SITOP Buffer module</b></p> 	<p><b>SITOP DCUPS with capacitors</b></p> 	<p><b>SITOP DCUPS with battery modules</b></p> 
<p>Failure of a power supply</p>	<p>Overload in 24 V circuit</p>	<p>Up to seconds</p>	<p>Power failure on the input side Up to minutes</p>	<p>Up to hours</p>

# Product news

## Standard Power Supply SITOP PSU6200

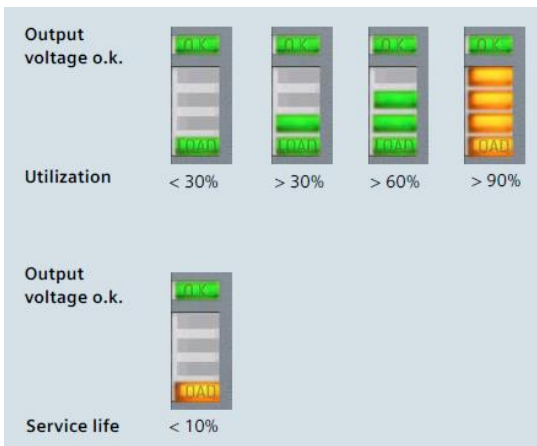
**SIEMENS**  
Ingenuity for life



### SITOP PSU6200: The all-around power supply for a wide range of applications

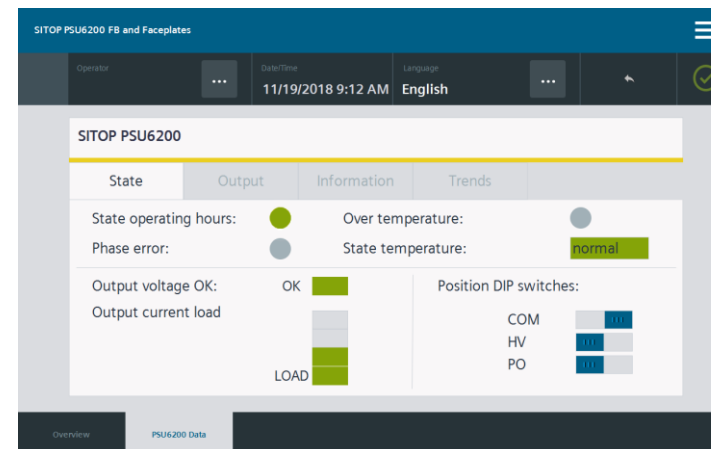
The SITOP PSU6200 product line is the new standard power supply for 12 V and 24 V DC applications, e.g. used in standard machines, control cabinets and system construction.

- High overload capability, thanks to 50% Extra Power and constant current
- High degree of efficiency up to 95 %
- Rugged wide range input, DC compatible
- Easy mounting due to slim design and push-in connection system
- Condition monitoring via diagnostics monitor and diagnostics interface



### Diagnostics monitor

5 LEDs indicate their operating status, current utilization, and end of service life



### Diagnostics interface

A serial code can be read in via a digital input on a PLC and evaluated by a function block. The visualization of status and operating data like output current, voltage and temperature state can be visualized in a WinCC faceplate.

[www.siemens.de/sitop-psu6200](http://www.siemens.de/sitop-psu6200)

# Product news – Redundancy module SITOP RED1200 and selectivity modules SITOP SEL1200/1400



## Redundancy module SITOP RED1200 20 A, 40 A

- High withstand voltage up to 100 V
- Redundant setup of power supplies for DC voltages from 12 to 48 V
- Parallel use of 2 modules to increase power
- Series connection of two modules to increase voltage
- Easy installation due to small width and push-in terminals

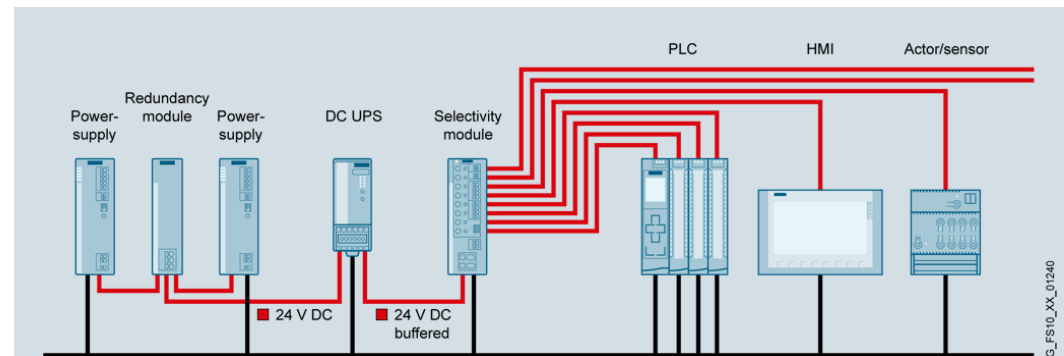
## Selectivity modules SITOP SEL1200/SEL1400 8 x 10 A

- Reliable tripping of defect 24 V load circuits in case of overload, independent of wire length or diameter
- SITOP SEL1200: Switching electronic characteristics for standard protection according to PLC norm
- SITOP SEL1400: Limiting electronic characteristics for highest requirements in 24 V protection
- 8 continuously adjustable outputs 2...10 A, parallel connection of 2 outputs
- Single-channel signaling with comprehensive diagnostics per output: Current, threshold, reason for shutdown

State	Outputs	Information	Trends
No.: 1	Limit	5 A	Output
2	Output	2 A	Current:
3	Current:	2 A	0 A
4		9 A	0 A
5		7 A	0 A
6		10 A	0 A
7		10 A	0 A
8		10 A	0 A

Position:	COM	<input type="checkbox"/>
DIP switches:	TD1	<input type="checkbox"/>
	TD2	<input type="checkbox"/>
Startup sequence:		
Load-dependent startup		
Outputs:	<input type="button" value="RESET"/>	



**SITOP all-round protection:**  
Redundancy, DC-UPS and selectivity modules increase 24 V availability



[www.siemens.com/sitop-addons](http://www.siemens.com/sitop-addons)



# Power supply system SITOP PSU8600

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## Power supply for Digitalisation and Industrie 4.0

SITOP PSU8600 enables full integration in your automation system – via PROFINET in Totally Integrated Automation (TIA) or in OPC UA via Industrial Ethernet with open communication.

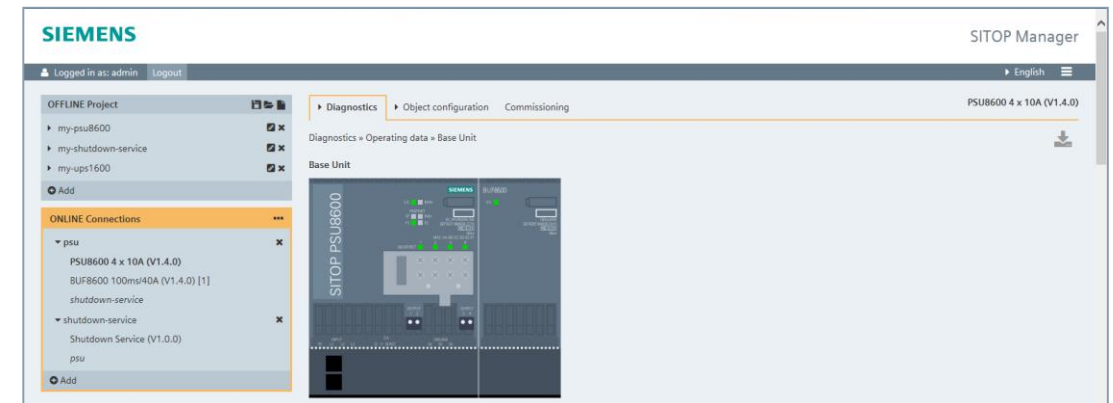
- Base unit with 1 or 4 integrated outputs, upgradable with up to 36 selectively monitored outputs
- Each output is switchable and adjustable (4...28 V), also dynamic
- Continuous monitoring of current voltage for each output, e.g. for predictive maintenance or energy management
- Upgradable to DC-UPS, e.g. for protection of PCs/IPCs
- Easy engineering via TIA Portal or the SITOP Manager for PCs

SITOP PSU8600	
State	Trends Alarms PSU_1
PSU8600	PSU8600 information
CNX8600 #1	Operating state: <span style="color: green;">■</span>
CNX8600 #2	Input voltage: 408 V
CNX8600 #3	System load current: 1.1 A
BUF8600 #1	Output information
BUF8600 #2	Output 1: Uout: 24.0 V Iout: 1.0 A State: <span style="color: green;">■</span>
Information	Output 2: Uout: 24.0 V Iout: 0.0 A State: <span style="color: green;">■</span>
	Output 3: Uout: 24.0 V Iout: 0.1 A State: <span style="color: green;">■</span>
	Output 4: Uout: 24.0 V Iout: 0.0 A State: <span style="color: green;">■</span>

## Transparent control circuit

Values and state of the power supply system can be visualised via

- integrated webserver
- WinCC Faceplate (left)
- SITOP Manager (right)
- SIMATIC PCS7 library



[www.siemens.com/sitop-psu8600](http://www.siemens.com/sitop-psu8600)

# Product news

## Compact DC/DC converter SITOP PSU3400 up to 120 Watt



### Feature/function

- 12-V and 24-V devices with wide range input
- DC/DC converter 5 A with 24-V input (18 ...32 V DC) and 24-V output
- DC/DC converter 48 V/24 V/3.5 A with NEC Class 2
- Reverse polarity protection at the input
- Slim design, 32 mm width only
- High efficiency up to 92%

### Benefit

- ▶ Stable power supply despite fluctuating DC voltage, e.g. batteries
- ▶ „Refresher“ to compensate voltage drop-off on long lines
- ▶ For device with an input requirement of less than 100 VA. Conformity makes it easier to accept switchgear in the USA
- ▶ Avoidance of incorrect installation
- ▶ Small mounting footprint
- ▶ Low heat dissipation and low energy consumption

# Product news

## Compact DC/DC converter SITOP PSU3400 up to 120 Watt

SITOP PSU3400		SITOP PSU3400				
12 V DC		24 V DC				
	24 V DC/4 A 6EP3133-0TA10-0AY0		24 V DC/5 A 6EP3133-0TA00-0AY0	12 V DC/8 A 6EP3123-0TA00-0AY0	24 V DC/10 A 6EP3134-0TA00-0AY0	12 V DC/15 A 6EP3124-0TA00-0AY0
48 V DC	SITOP PSU3400		SITOP PSU3400		SITOP PSU400M	
						
	24 V DC/3,5 A (*) 6EP3233-0TA10-0AY0	24 V DC/5 A 6EP3233-0TA00-0AY0	24 V DC/10 A 6EP3234-0TA00-0AY0	200 – 900 V DC		24 V DC/20 A 6EP1536-3AA00

(\*) NEC Class 2

# Product news - SITOP PSU3600 dual

## Two power supplies in one compact device



### Feature/function

Two isolated outputs

Two outputs, each stepless adjustable in the range of 12 ... 28 VDC

Power limitation of each output acc. NEC Class2

Wide range input 85...264 V AC, 88...250 V DC

Slim metal housing, 42 mm width only

### Benefit

- ▶ Generation of  $\pm 15$  V DC e.g. for operational amplifiers or transducers
- ▶ Generation of two different supply voltages, e.g. for: 12-V and 24-V loads or 24-V loads inside of the control cabinet and outside (setting 2. output > 24 V)
- ▶ For device with an input requirement of less than 100 VA. Conformity makes it easier to accept switchgear in the USA
- ▶ Operation on 120 V or 230 V AC without switchover or on DC voltage
- ▶ Small mounting footprint