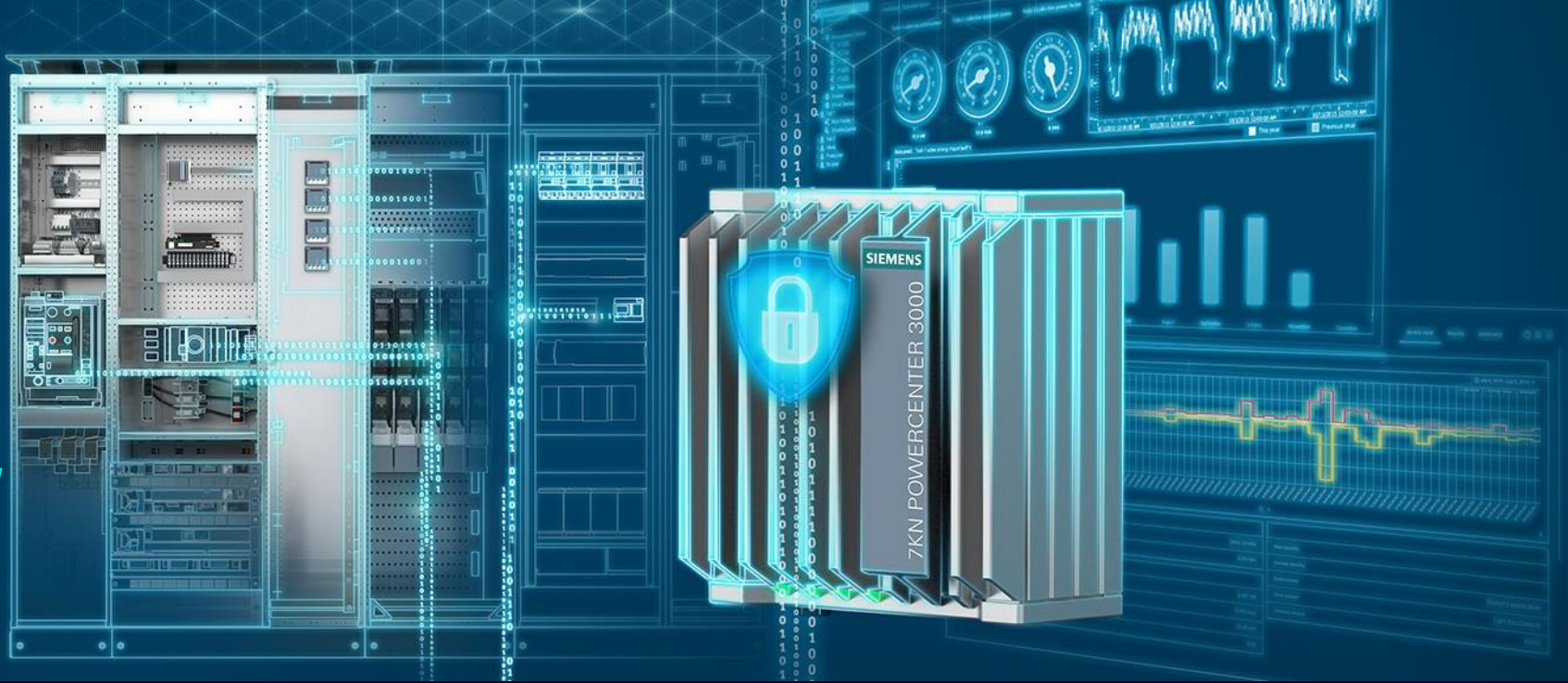


Ready for ISO 5001

Ready for IoT



# 7KN Powercenter 3000

[siemens.com/sentron-digital](https://www.siemens.com/sentron-digital)

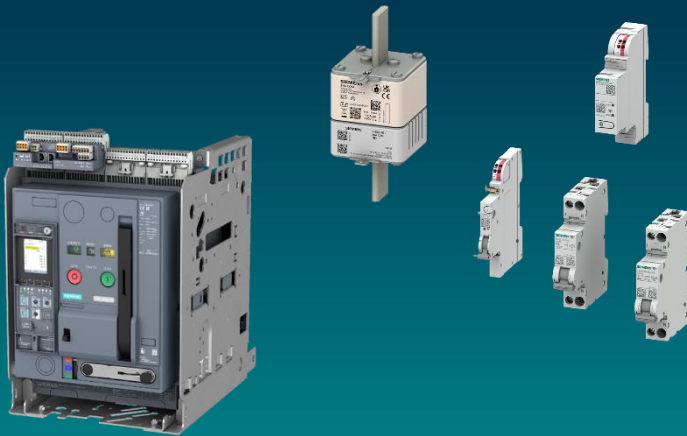
# 7KN Powercenter 3000

## New Developments in V1.4

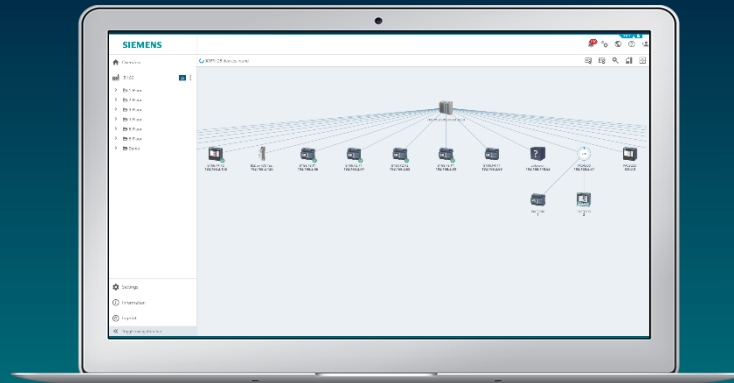


### New device support:

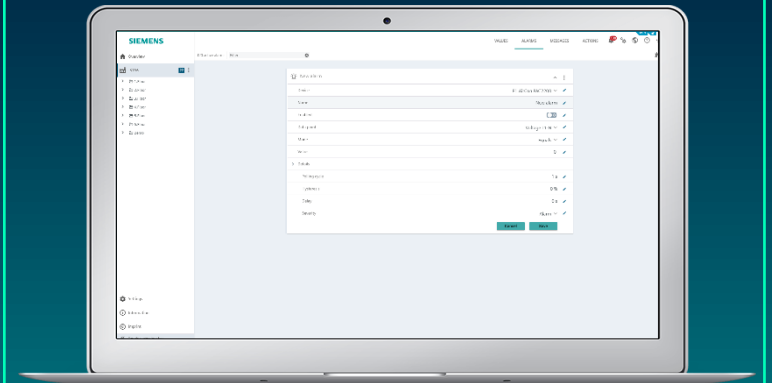
- 3WA air circuit breakers
- SENTRON circuit protection devices with measuring and communication function via 7KN Powercenter 1000



Change an existing project or launch a new project even without SENTRON powerconfig



Define notifications (information, warning, alarm) for devices and data points (values, bit) directly in the 7KN Powercenter 3000



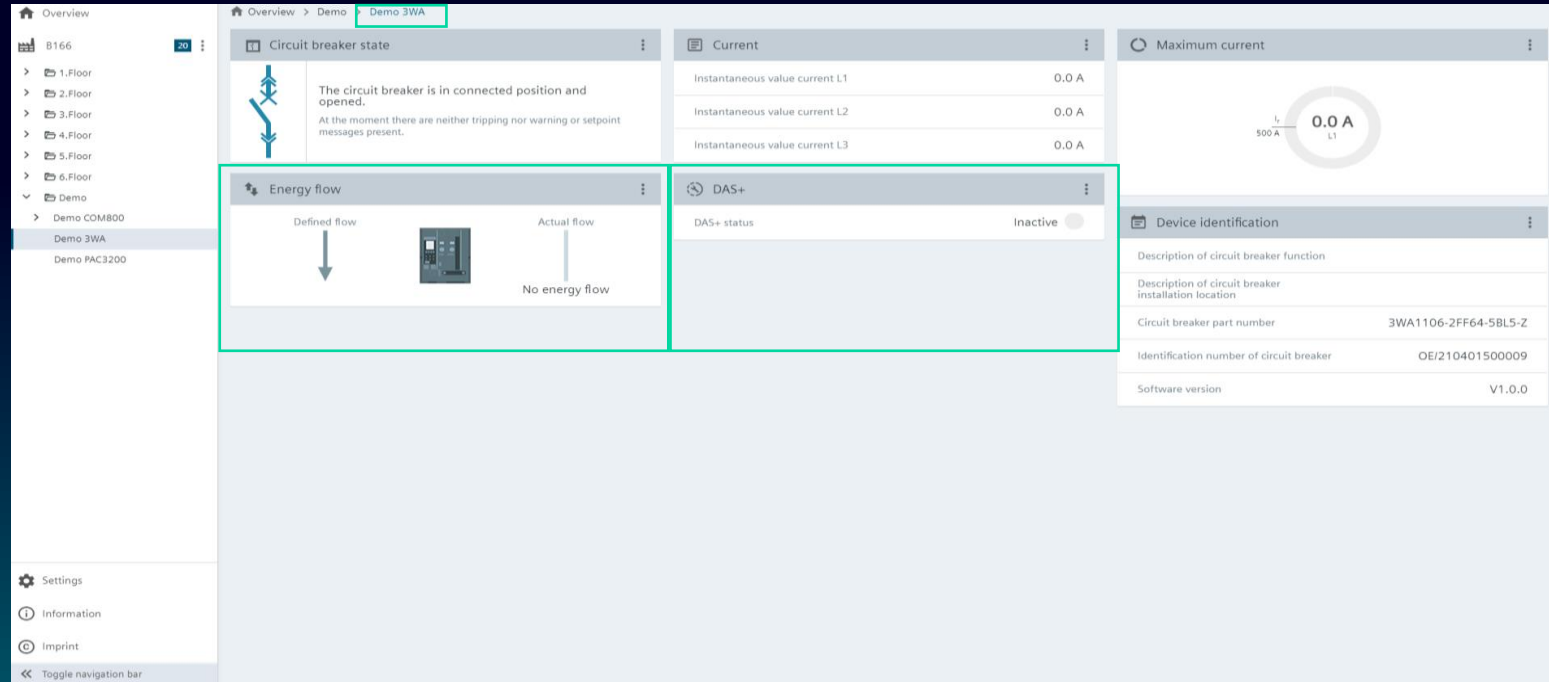
# 7KN Powercenter 3000

## New Developments in V1.4 – 3WA support of devices

Direct support:  
3WA air circuit breakers

New "energy flow" widget shows information on the "defined flow" and "actual flow" of electrical power (import or export)

The new "DAS+" widget indicates whether special switch settings are active, e.g. during maintenance work



**Electricians and maintenance personnel can easily review the most important values and information and receive messages or alarm indications also via the latest 3WA air circuit breakers.**

# 7KN Powercenter 3000

## New Developments in V1.4 – 7KN Powercenter 1000 support of devices and integrated devices

Overview of all connected devices

The screenshot shows the Siemens Powercenter 1000 overview page. On the left, a sidebar lists the project and a tree view of connected devices under 'POWERCENTER 1000':

- POWERCENTER 1000
  - SSV6 AFDD COM
  - SST3 AS+FC COM
  - SSL6 MCB COM
  - 3NA Fuse COM

The main content area displays 'Device identification' for 'POC1000-BLRSim' with the following details:

Plant Identifier	POC1000-BLRSim
Location Identifier	BLR-PA
Order number	7KN1110-0MC00
Serial number	QAE39070000003
Firmware revision	V1.0.0

Below this, a 'Messages' table shows three entries:

ID	Timestamp	Text
3	8/2/2020 2:00:00 AM +02:00	Exceeded threshold of average device temperature cleared.
2	8/2/2020 2:00:00 AM +02:00	Threshold of average device temperature exceeded
1	8/2/2020 2:00:00 AM +02:00	Limit of operating hours exceeded.

The screenshot shows the detailed view for 'SSV6 AFDD COM'. It features a graphical representation of 'Maximum current' as a gauge showing 5.24 A. Below this, an 'Instantaneous power' table displays the following data:

Active Power L1	11908.6 W
Apparent Power L1	11000.0 VA
Reactive Power Qtot L1	1190.2 var
Power Factor L1	0.9

To the right, an 'Active energy counter' table shows:

Active energy imported	20.56 kWh
Active energy exported	0.0 Wh
Reactive energy imported	0.0 varh
Reactive energy exported	0.0 varh

Below these, a 'Device identification' table shows details for 'Afd-d-BLRSim':

Plant Identifier	Afd-d-BLRSim
Location Identifier	BLR-PA
Order number	SSV6016-6MC06
Serial number	12
Firmware revision	V1.0.0

A 'Messages' table at the bottom shows one entry:

ID	Timestamp	Text
72242	1/4/1970 2:10:24 AM +01:00	?

Graphical representation of the values (can be customized)

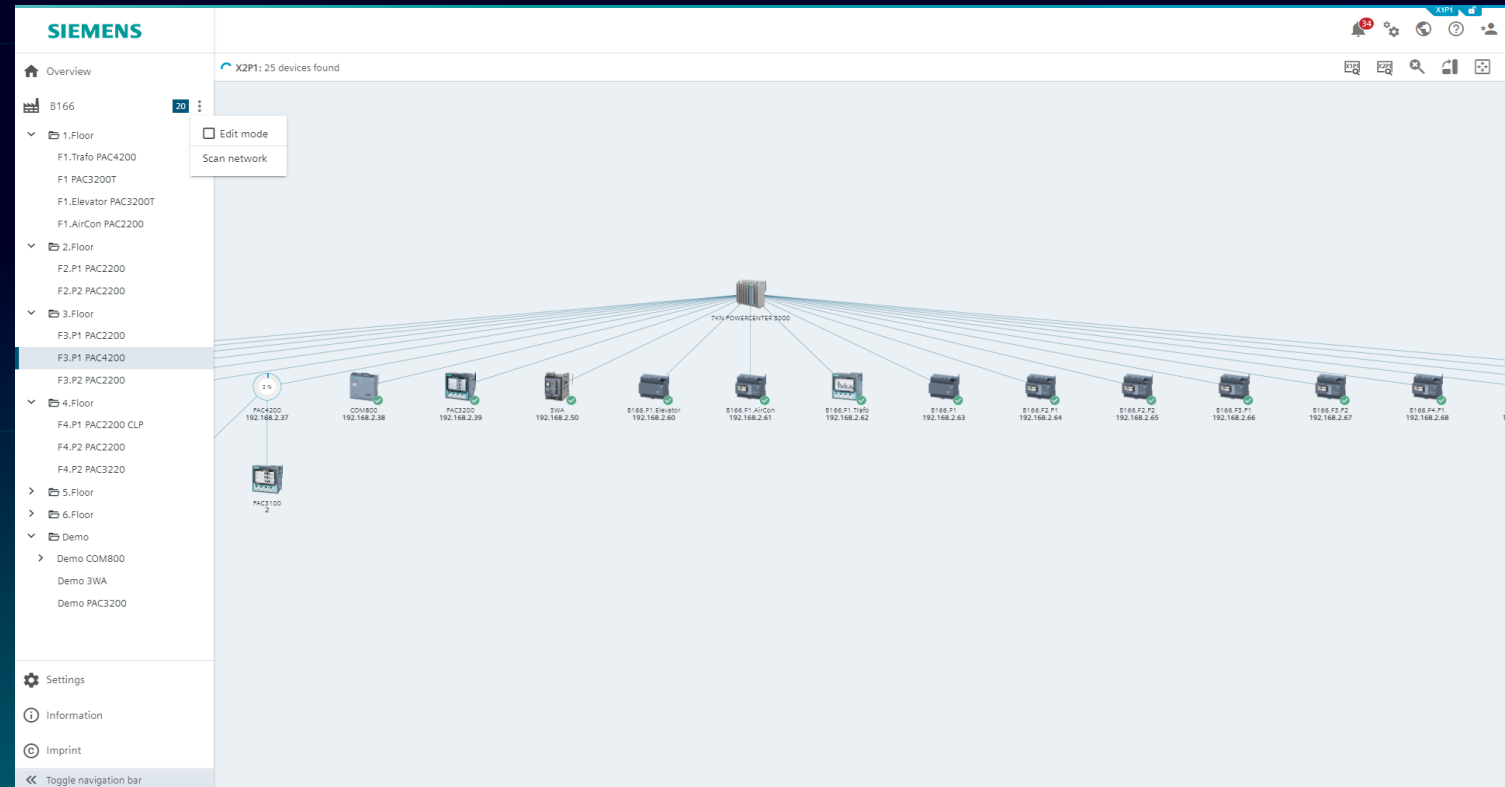
Tabular display of the values (can be customized)

The measurement- and communication-capable SENTRON circuit-protection devices are integrated; as a result, data such as status, cause of tripping, temperature and operating hours are made available.

# 7KN Powercenter 3000

## New Developments in V1.4 – New network scan function and changes in the project

New "network scan" function: Search for connected devices and direct adding / deleting. (Information such as network address, device name, order number etc.)

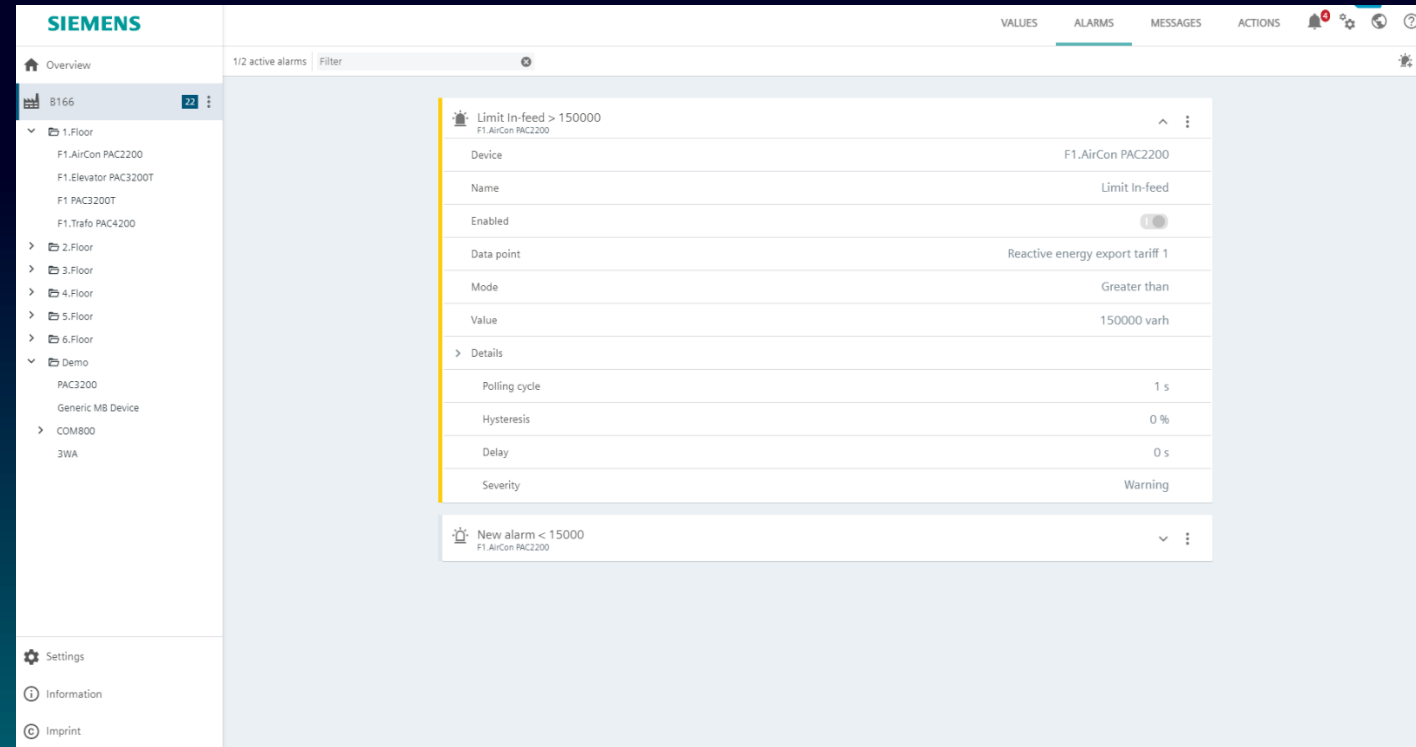


Simple changes of the 7KN Powercenter 3000 – project directly in the web interface, e.g. adding new devices, changing the configuration.

# 7KN Powercenter 3000

## New Developments in V1.4 – messages

New "Alarms" system function, to inform users of abnormal status conditions and create notifications (3 categories: information, warning, alarm). The alarms are triggered by values (greater/lesser than) or figures (equal to/not equal too) of connected devices. The notifications are saved in the list of messages.



The screenshot shows the Siemens 7KN Powercenter 3000 interface. The top navigation bar includes 'VALUES', 'ALARMS', 'MESSAGES', and 'ACTIONS'. The left sidebar shows a tree view of the system structure, including 'Overview', '1.Floor', '2.Floor', '3.Floor', '4.Floor', '5.Floor', '6.Floor', 'Demo', 'PAC3200', 'Generic MB Device', 'COM800', and '3WA'. The main area displays '1/2 active alarms' and a list of alarms. One alarm is selected, showing its details in a table:

Property	Value
Device	F1.AirCon PAC2200
Name	Limit In-feed
Enabled	<input checked="" type="checkbox"/>
Data point	Reactive energy export tariff 1
Mode	Greater than
Value	150000 varh
Details	
Polling cycle	1 s
Hysteresis	0 %
Delay	0 s
Severity	Warning

Below the table, a notification bar indicates 'New alarm < 150000' for device 'F1.AirCon PAC2200'.

The user can create conditions in order to trigger notifications via system behavior.

# 7KN Powercenter 3000

## The Development

### V 1.3

#### Global Market

- Web interface in 10 languages (incl. Chinese)

#### Broad-based use

- Avoid a DGUV3 inspection through continuous residual current measurement (PAC4200, N-conductor module)
- 3VA Condition Monitoring
- Support of the PAC2200 CLP
- (simple) log-in as preparation for RBA (Role Based Access)

### V 1.4

#### Extended Support

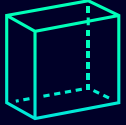
- New 3WA air circuit breakers
- SENTRON circuit protection devices with measuring and communication function

#### Easy commissioning and user info

- Commissioning without configuration tool with network scan
- User information on limit value violation or status change via alarms that are easy to set up

# 7KN Powercenter 3000

## Customer benefits



Requires little space



Early detection and prevention of downtimes



Support of safety standards



Reduction of error frequency and duration through quick localization



Easy digitalization of "brownfield" projects



Basis for energy management, such as: ISO 50001



Multifunctionality via a central interface into the switchboard



Optional cloud interface



Local visualization/ data aggregation "on premise"

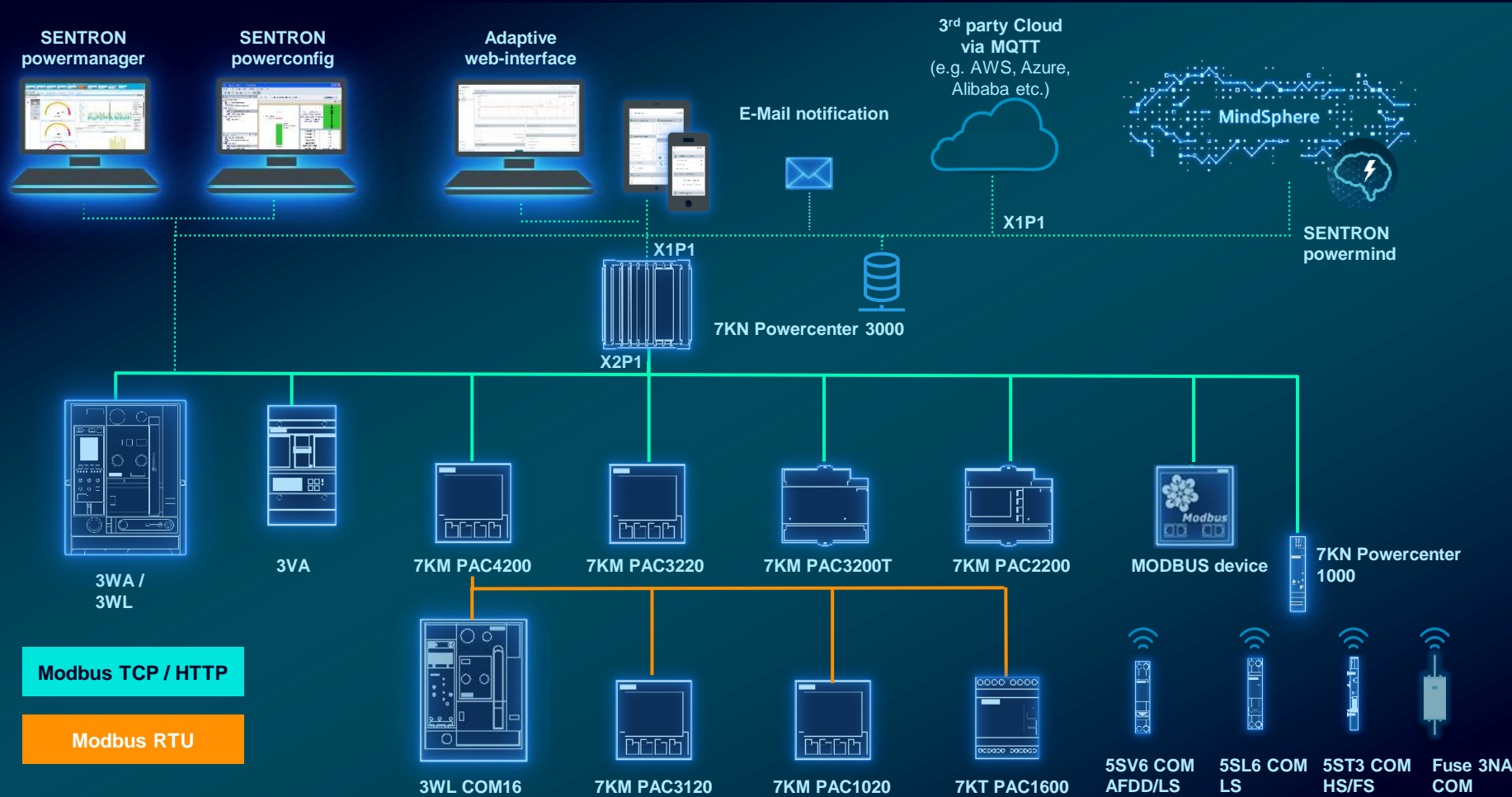


Support of several languages





# 7KN Powercenter 3000 Topology



- Safe and transparent network access via Modbus TCP and RTU, e.g. for **powermanager**
- Data visualization via Web interface
- Energy data analysis on the basis of CSV files
- Cloud-based applications
  - in particular **SENTRON powermind**
  - other MindSphere app and
  - Apps in other cloud systems
- Easy commissioning through the **SENTRON powerconfig**

# 7KN Powercenter 3000

## Technical features

### WEB INTERFACE

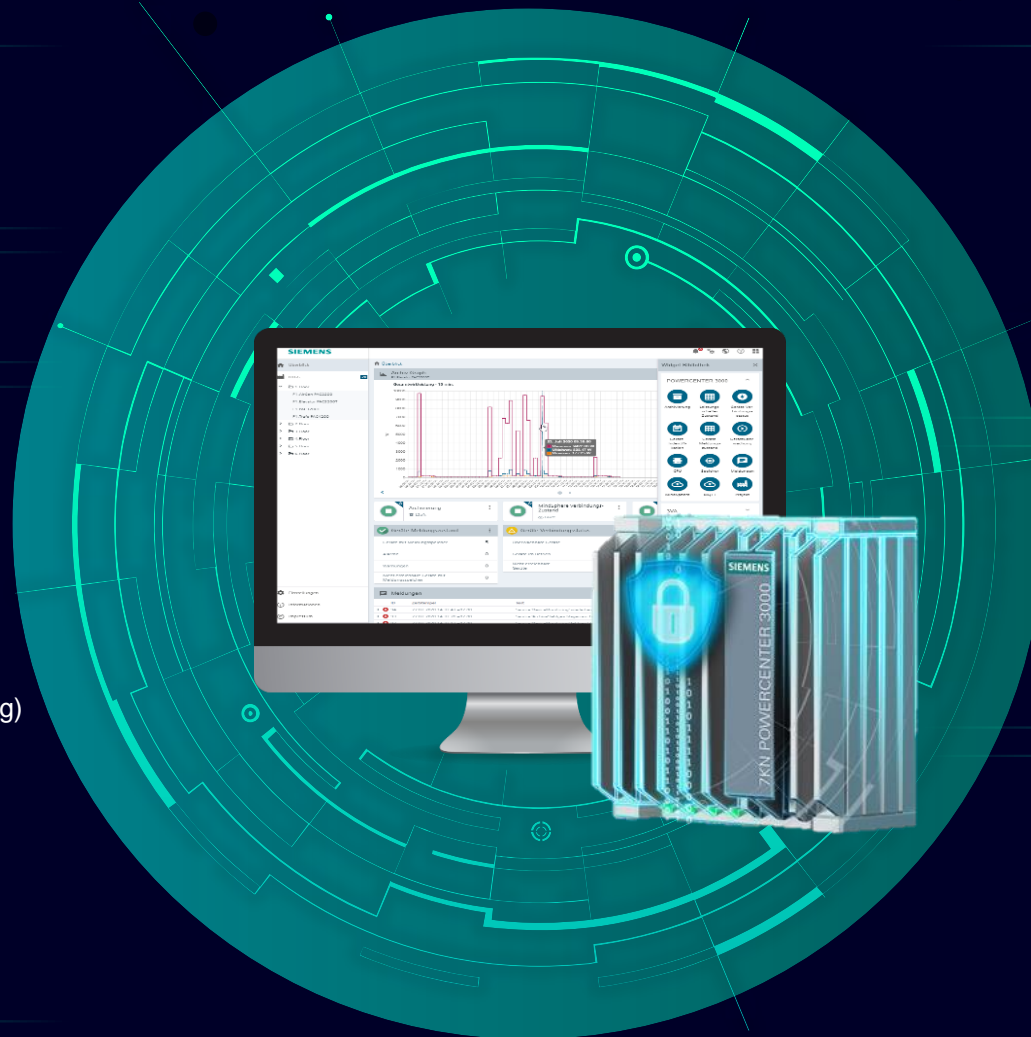
- Customizable display by means of an adaptable widget structure
- 10 different languages

### MESSAGING FUNCTION

Notification per e-mail and web interface alarm

### SUPPORTED DEVICES

- 7KM PAC4200
  - 7KM PAC3220/PAC3200
  - 7KM PAC3120/PAC3100\*
  - 7KM PAC2200 (incl. PAC2200 CLP)
  - 7KT PAC1600\*
  - 7KM PAC1020\*
  - 3VA via COM100/COM800 (incl. Condition Monitoring)
  - 3WA via COM190
  - 3WL via COM35
  - 3WL via COM16\*
  - CP COM devices via 7KN Powercenter 1000
  - Modbus devices of other manufacturers
  - Modbus TCP/RTU gateway of other manufacturers
- Up to 32 downstream devices \* via 7KM PAC4200



### COMMUNICATION TO MINDSPHERE AND OTHER CLOUDS

- 7KN Powercenter 3000 acts as a data source (agent) for the subordinate SENTRON devices
- For each device, measurement variables and states can be selected as needed.
- Optimal support for MindSphere application SENTRON powermind
- Third-party cloud connection via MQTT interface

### LEVEL

### COMMUNICATION

Device level:

Modbus TCP/RTU

Switchboard level:

Ethernet with https

Plant, buildings, ...:

Ethernet with Modbus TCP

Cloud:

Internet with https/MQTT

### PARAMETERIZATION FUNCTIONS

- Add devices, change or create a project directly in the web interface of the 7KN Powercenter 3000
- Configurable via SENTRON powerconfig
- Back transfer of the current configuration into SENTRON powerconfig

# Applications in operation

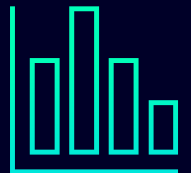
For power monitoring and energy efficiency



Energy manager

## TRANSPARENCY OF ENERGY CONSUMPTION AND THE LOAD PROFILE

- Identify energy wasted
- Pinpoint hidden areas of saving potentials
- Comply with requirements of ISO 5001
- Benchmarking: Formation of key indicators



# 7KN Powercenter 3000

## Basis for energy management

### The requirements of the ISO...



### ISO 50001

Requirements for cost savings opportunities, etc.  
15 min. power values as a basis for energy management according to ISO 50001



### ISO 50003

Requirement for verification of continual improvement of energy efficiency: data storage, etc.



### ISO 50006

Regulations for establishing energy starting bases (EnB) and energy performance indicators (EnPI)



## 7KN Powercenter 3000

Ready for ISO 50001



### ...implemented with 7KN Powercenter 3000

Providing 15 min. power values for the connected devices, export of the values as a csv file



Continuous improvement verifiable via data storage for 14 months



Straight-forward integration independent of the type of energy media (e.g.: electricity, water, natural gas) into a system based on PAC measuring devices, circuit breakers, Modbus devices and 7KN Powercenter 3000



# Applications in operation

## Personal and plant protection



### RAPID FAULT LOCALIZATION

- Remote access to all data
- Status information of the electrical equipment
- Alarm indications
- E-mail notification



# 7KN Powercenter 3000

## Early detection and prevention of downtimes

### MESSAGING IN EXCEPTIONAL SITUATIONS

01

Receive demand-based messaging easily in the web interface or per e-mail

- in the right place
- promptly
- and in the right scope

7KN Powercenter 3000 offers signaling via the web interface and per e-mail

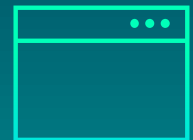


### ANALYSIS VIA WEB INTERFACE

02

For example, it can be explained whether an overload trip was the result of a slow increase or a short-term overload. Accordingly, countermeasures can be selected.

- 10 sec. Measured quantities (mean value 1) are stored for one day
- The archiving function for this can be launched and verified via the web interface.
- In the archive graph widget, a selection can be made as to which value is to be displayed and exported



# Applications in operation

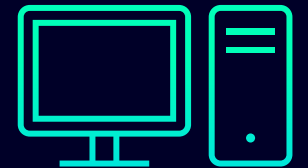
Streamlined maintenance management for high availability

Critical applications



## CONDITION MONITORING FOR REDUCTION OF DOWNTIMES

- State of health of the protection and switching devices
- Detection of status information such as switching frequencies and triggering information
- Better planning of maintenance

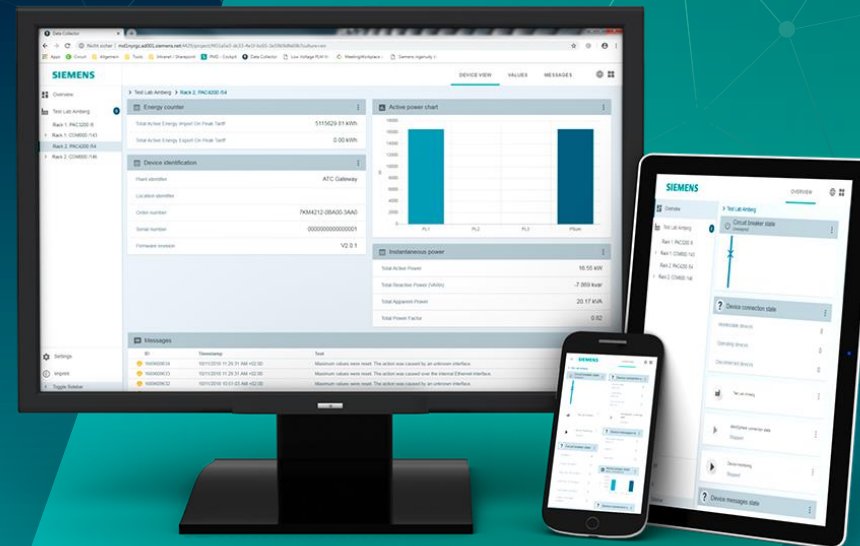


# Local visualization/data aggregation "on premise"

## THE WEB INTERFACE OF THE 7KN POWERCENTER 3000 FOR VISUALIZATION IN ALL ENVIRONMENTS:

- Responsive web design with HTML5 for use on
  - PCs with all standard browsers: Google Chrome, Mozilla Firefox,
  - Tablet (Android, Apple iOS)
  - Smartphone (Android, Apple iOS)
- 10 different languages

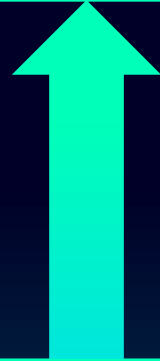
```
101 0
1 11101
0011011
10101
00101
```





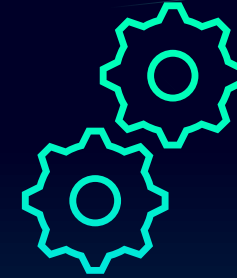
## 7KN Powercenter 3000

Easy digitalization of "brownfield" projects



### 7KN Powercenter 3000 supports other clouds

Through MQTT interface (Message Queuing Telemetry Transport). Existing projects can connect with any cloud.  
For example: AWS, Azure and Alibaba.



### Easy integration of other Modbus devices into the digitalization environment

Other existing Modbus devices are described with powerconfig in such a way that they can be used like SENTRON devices.

# 7KN Powercenter 3000

## Digitalization options of Modbus devices

### Display via the web interface

- Grouped
- in 10 different languages

### Archiving

- up to 14 months
- in 10 second and
- in 15 minute intervals

### Integration into cloud systems

- SENTRON powermind
- MindSphere
- Other clouds

### Time synchronization via SNTP / NTP, in case this is supported by the respective Modbus device



## DIGITALIZATION SERVICES

### Export of the 15-minute count values

### Export of the archived values as CVS files

### Access via the transparent Modbus gateway

### Protection through security features of the 7KN Powercenter 3000

# 7KN Powercenter 3000

## Advantages for customers

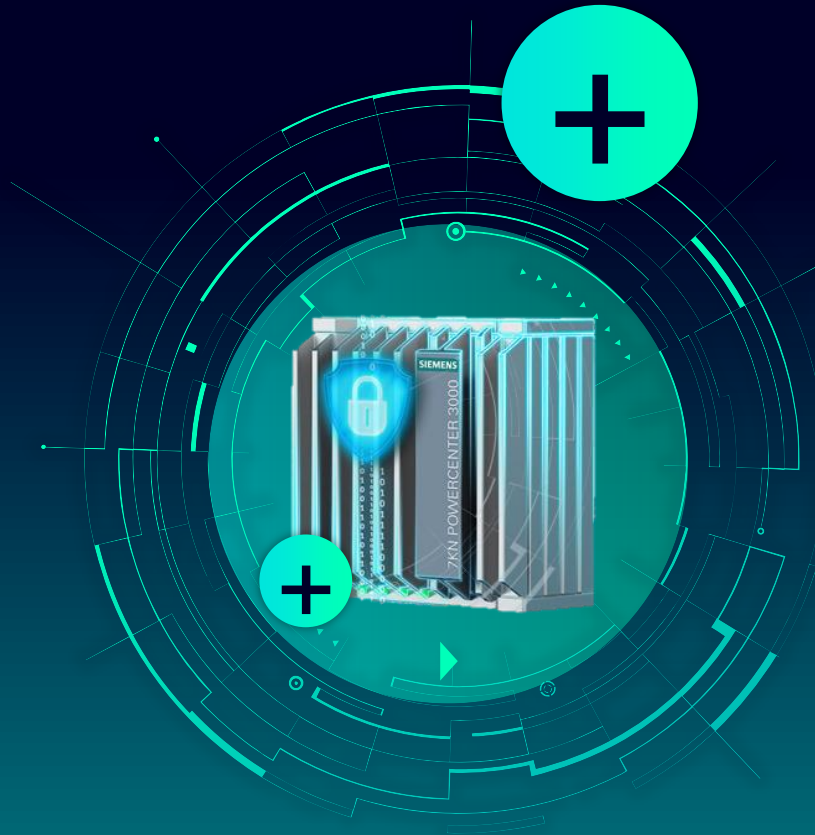
Parameter assignment instead of programming – Plug & operate

Connectivity to MindSphere and other clouds

Perfect in coordination with SENTRON powermind

Integration of SENTRON and other Modbus devices

Periodic and spontaneous energy data export per e-mail



Definable, responsive web interface

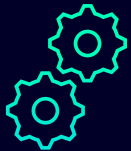
One communication access for one power distribution

Notification per e-mail and web interface

Easy and quick localization of errors

Transparency for streamlined power supply

# 7KN Powercenter 3000 Application



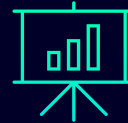
## Process control

Operative part in building management, production and infrastructure



## Commissioning

The technical communication infrastructure streamlines the commissioning of medium to large power distribution systems, especially in extensive areas or buildings



## Energy management

Detection, transparency and control of energy flows in one power distribution system



## Operational management

Measures for providing and ensuring the electrical power supply in a plant, especially during maintenance and repair



The **7KN Powercenter 3000** can be used in industry, infrastructure and building applications. It serves as an easy and cost-efficient introduction into energy management, digitalization of power distribution and cloud applications. Already installed measuring devices and communication-capable 3WL, 3VA circuit breakers can thus be expanded with numerous additional functions (e.g.: cloud capability, overview of web interface, cross-locational benchmarking etc.).

**The simple introduction into "IoT – Internet of Things", Industry 4.0, Smart Buildings.**



# Thank you for your attention!

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