



SIEMENS

SENTRON

Power Monitoring Made Simple

Catalog
LV 14

Edition
11/2021

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

Innovative solutions for industrial controls and power distribution

In ensuring smooth operation of digital production environments and in the construction and operation of industrial or commercial buildings, the underlying power distribution and industrial controls are decisive:

SIRIUS, SENTRON, SIVACON and ALPHA provide a broad portfolio of systems and components for this purpose that can be used for standard-compliant, requirement-based electrification.

Efficient engineering tools and cloud-based solutions are part of the portfolio, which you can flexibly adapt to your specific requirements over the entire value-added process.



We are there when you need us

Your personal contact can be found at
www.siemens.com/lowvoltage/contact

Catalog LV 14 · 11/2021

You will find the latest edition and all future editions in the Siemens Industry Online Support at
www.siemens.com/lowvoltage/catalogs

Refer to the Industry Mall for current prices
www.siemens.com/industrymall



The products and systems described in this catalog are manufactured/distributed under application of a certified quality management system in accordance with EN ISO 9001 (for the Certified Registration Nos., see www.siemens.com/system-certificates/ep). The certificate is recognized by all IQNet countries.

Technical specifications

The technical specifications are for general information purposes only. Always heed the operating instructions and notices on individual products during assembly, operation and maintenance.

All illustrations are not binding.

Power Monitoring Made Simple

Measuring and Monitoring

| | |
|--|-----|
| Introduction | 1/2 |
| Measuring Devices, Power Monitoring and Digitalization Solutions | 1/1 |
| Appendix | A/1 |



The fast route to the product

Overview for better orientation within the catalog

Examples of digitalization in infrastructure

Cloud-based analysis

- Condition monitoring
- Predictive maintenance
- Power management

On premises

- Measuring, monitoring and controlling with SENTRON powermanager /

Stand-alone

- Decentralized visualization of measured values, states and alarms via integrated web servers in measuring devices and Powermeter 5000

Examples of digitalization in industry

Cloud-based analysis

- Condition monitoring
- Predictive maintenance
- Power management

On premises

- Measuring, monitoring and controlling with SIMATIC Energy Suite / TIA Portal

Stand-alone

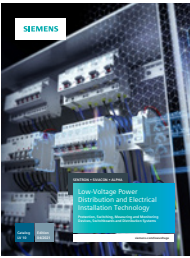
- Decentralized visualization of measured values, states and alarms via integrated web servers in measuring devices and Powermeter 5000

Industrial Ethernet
Siemens
Powermeter 5000

1/4 Siemens LV 14 - 11/2021 1/5 Siemens LV 14 - 11/2021

Overview of digitalization

On pages 1/4 to 1/7 you can find an overview on the topic of digitalization in catalog LV 14.



Catalog LV 10 · 10/2021

You can find the entire product spectrum for low-voltage power distribution and electrical installation technology in catalog LV 10 · 10/2021 at www.siemens.com/lv10

Clickable Article Numbers

Direct forwarding to the individual products in the Industry Mall by clicking on the Article No. in the catalog

7KM2200-2EA30-1GA1



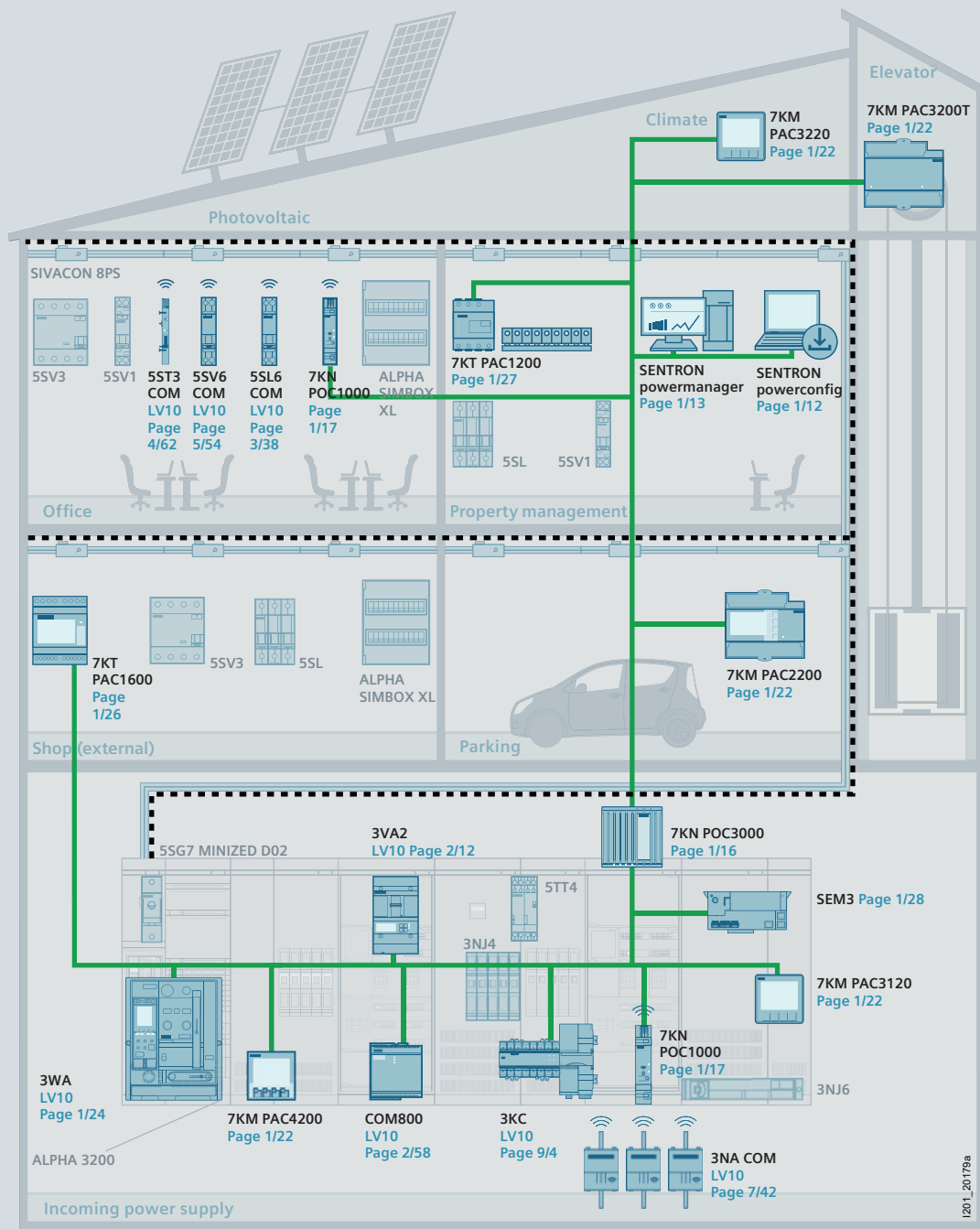
or by entering this web address incl. Article No.
www.siemens.com/product?Article No.

new Search Function

Search for new products by entering "new" in the text field of the search function



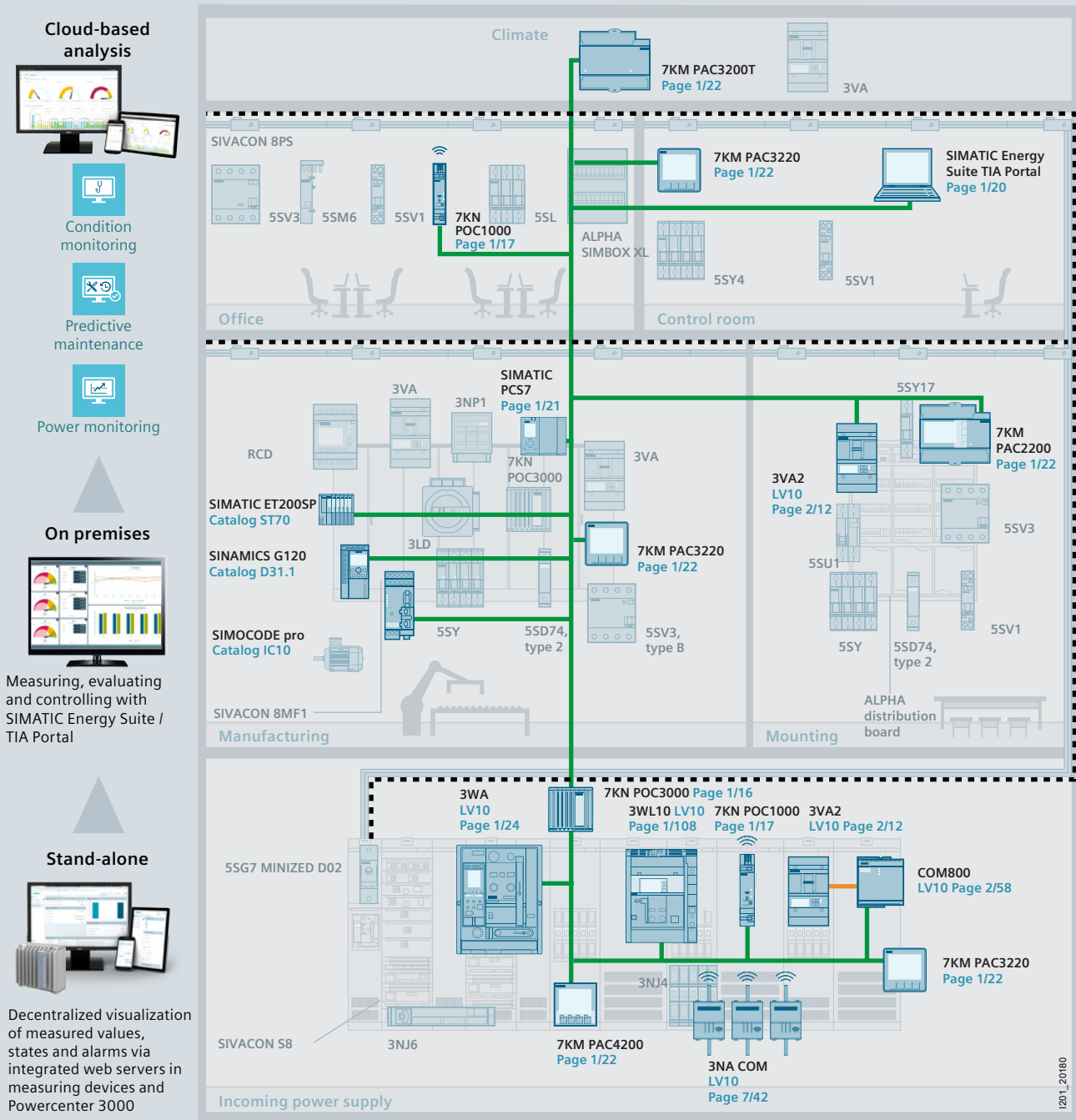
Examples of digitalization in infrastructure



Industrial Ethernet
 3VA-line
 powerline



Examples of digitalization in industry



Introduction to the topic of digitalization and Industry 4.0

In industrial automation, the demand for communication capability, data transparency and flexibility is growing constantly. To enable industrial switchgear technology to meet this demand, the use of bus systems and intelligent switching devices is unavoidable.

Digitalization

Protection, switching, and measuring devices in power distribution systems can display important information on local visualization via integrated communication, e.g. in Powercenter, or transmit it to energy data management systems (EDMS), e.g. SENTRON powermanager, as well as to cloud systems and applications.

- Diagnostics management
- Fault management – Email alarm
- Maintenance management – predictive maintenance
- Cost center management

1. Visualization and plant transparency



- Greater operational reliability thanks to remote access to the plant.
- Plant visualization for central and simple access to all device information.

2. Digital documentation



- Uniform access to digital data and documentation.
- Provision of extensive CAx data for systems and components during planning and operation.
- Support in planning and process creation using SIMARIS planning tools, product and system configurators.

3. Power monitoring



- Fulfilling the ISO 50001 by detecting and transparently presenting the energy flows within energy distribution.

4. Optimization and retrofit



- Retrofitting solutions such as SEM3 offer a simple option for integrating energy monitoring into existing systems.
- Energy monitoring and plant transparency help you efficiently plan plant expansion.

5. Maintenance management



- Maintenance support, even remotely, by transparently presenting the status of a switchgear and controlgear assembly.

6. Emergency management

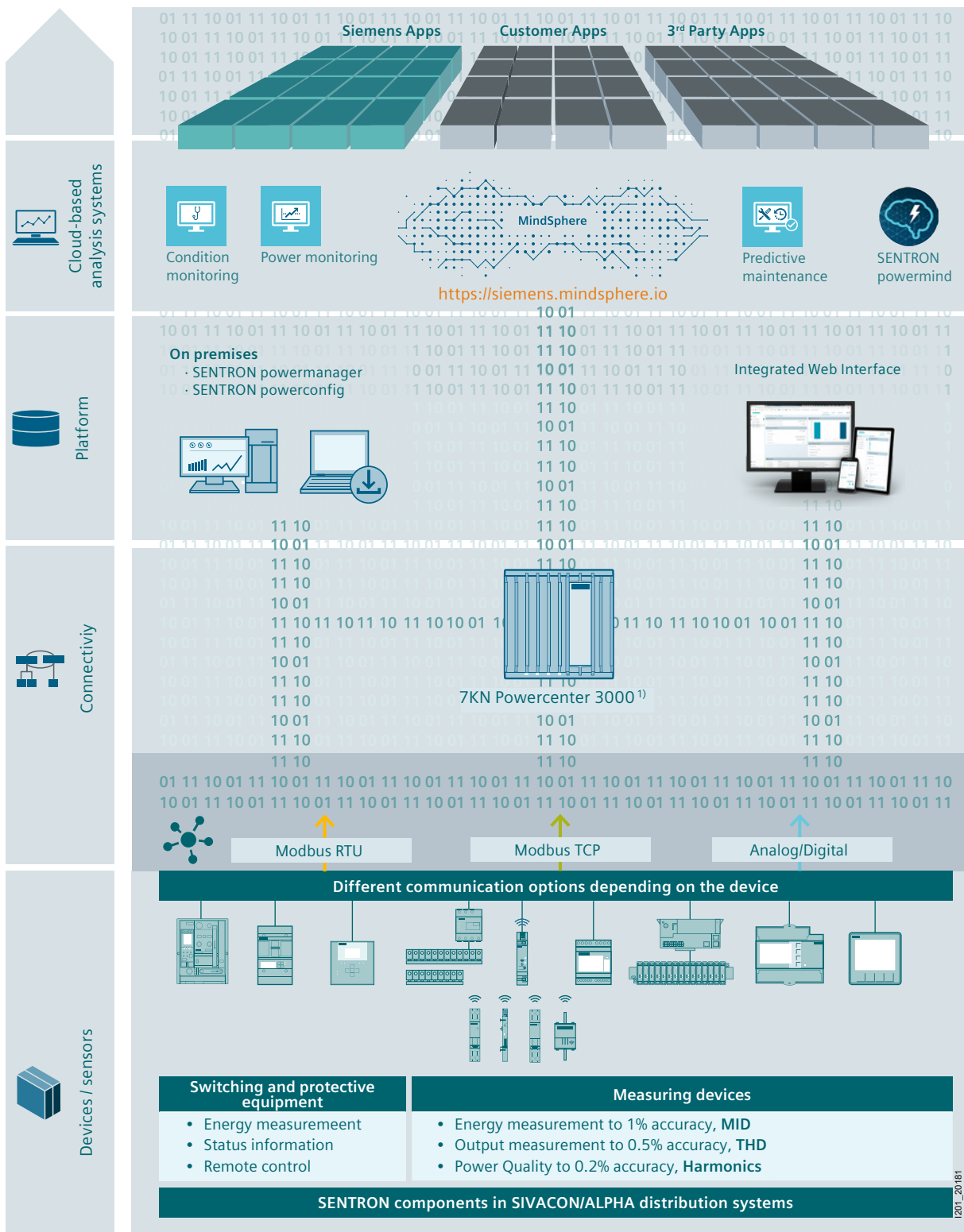


- Quick error localization which therefore leads to a minimization of outage times.

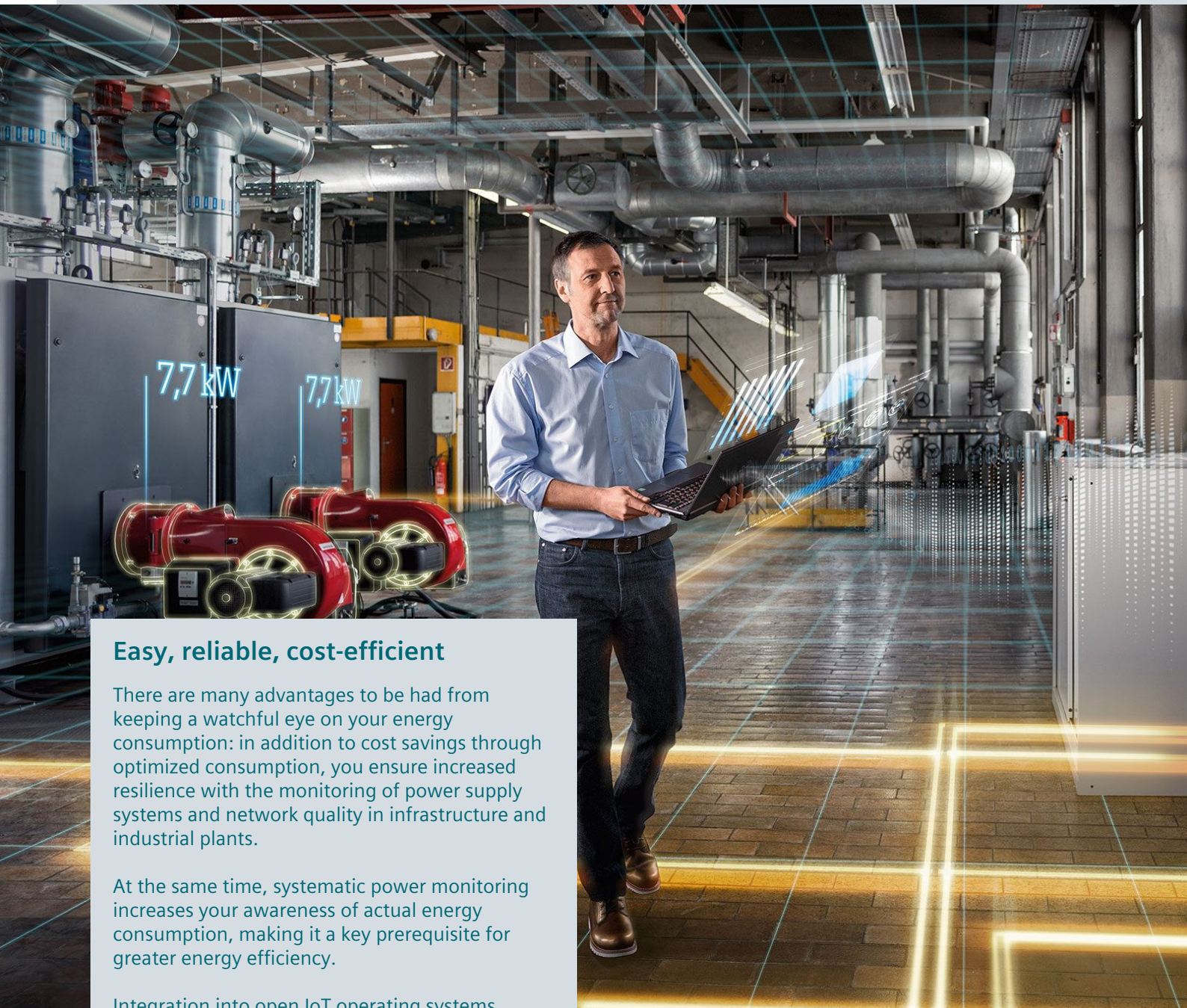
7. Cybersecurity



- Protection from unauthorized access and manipulation to switchgear and controlgear assemblies and devices ensures integrity, availability and confidentiality.



¹⁾ Modbus TCP



Easy, reliable, cost-efficient

There are many advantages to be had from keeping a watchful eye on your energy consumption: in addition to cost savings through optimized consumption, you ensure increased resilience with the monitoring of power supply systems and network quality in infrastructure and industrial plants.

At the same time, systematic power monitoring increases your awareness of actual energy consumption, making it a key prerequisite for greater energy efficiency.

Integration into open IoT operating systems such as MindSphere results in even greater optimization potential.

What is more, with a power monitoring system you lay the foundation for regular energy audits and a corporate energy management system according to ISO 50001 and ISO 50003.

Measuring Devices, Power Monitoring and Digitalization Solutions

1



| | |
|--|------|
| All the information you need | 1/2 |
| Quick selection guide | 1/4 |
| Power monitoring | 1/4 |
| Hardware components | 1/6 |
| Accessories | 1/10 |
| Software and digitalization solutions | 1/12 |
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| SENTRON classic powermanager (V3) | 1/13 |
| SENTRON powermanager | 1/14 |
| 7KN Powercenter | 1/16 |
| SENTRON powermind | 1/18 |
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A multitude of additional information ...

Information + ordering

All the important things at a glance

For information about measuring devices, power monitoring and digitalization solutions, please visit our websites

www.siemens.com/powermonitoring
www.siemens.com/sentron-digital

Your product in detail

The Siemens Industry Online Support (SIOS) provides comprehensive information

www.siemens.com/lowvoltage/product-support

- Technical basic information – SENTRON power monitoring and digital solutions ([109769851](#))
- Brochure – Reliable, sustainable, and efficient – TÜV-certified power monitoring system in accordance with ISO 50001 ([109744679](#))
- Brochure – SENTRON portfolio for power monitoring ([109744725](#))

The relevant tender specifications can be found at

www.siemens.com/lowvoltage/tenderspecifications

Siemens YouTube channel

- Power monitoring (general) bit.ly/2lZ9QqC

Everything you need for your order

Refer to the Industry Mall for an overview of your products

- Measuring devices and power monitoring sie.ag/2kTH9Lz
- Digitalization solutions sie.ag/2olliNi
- Library for SIMATIC sie.ag/2kpbwcs
- SENTRON powermanager/SENTRON powerconfig sie.ag/2kTJjuF

Direct forwarding to the individual products in the Industry Mall by clicking on the article number in the catalog or by entering this web address incl. article number

www.siemens.com/product?Article No.

The fast track to the experts

Contact persons in your region

We offer a comprehensive portfolio of services.

You can find your local contacts at

www.siemens.com/lowvoltage/components/contact

You can find further information on services at

www.siemens.com/service-catalog

Competent expert advice on technical questions with a wide range of demand-optimized services for all our products and systems.

Assistance with technical queries is provided at

www.siemens.com/support-request

... can be found in our online services

Commissioning + operation

SENTRON powerconfig

The combined commissioning and service tool SENTRON powerconfig for communication-capable measuring devices, circuit protection devices and circuit breakers.

Free download SENTRON powerconfig via www.siemens.com/powerconfig

Free download SENTRON powerconfig mobile via [App Store](#) and [Play Store](#)

Your product in detail

The Siemens Industry Online Support (SIOS) provides detailed technical information www.siemens.com/lowvoltage/product-support

- Operating instructions
- Certificates

Comprehensive mobile support via the Siemens Industry Online Support app available for download from the [App Store](#) and [Play Store](#)

You will find further information under: www.siemens.com/support-app

Provision of 3D data (step and u3d data formats)

- Siemens Industry Mall www.siemens.com/lowvoltage/mall
- Image database www.siemens.com/lowvoltage/picturedb

Engineering data for CAD or CAE systems are available in the CAx Download Manager at www.siemens.com/cax

Classroom or online training

Our training courses can be found at www.siemens.com/sitrain-lowvoltage

- SENTRON circuit protection devices with measuring and communication function (WT-LVBCOM)
- Power Monitoring with SENTRON (WT-LVAEM)
- Energy Management with Powermanager 4.x - User training (LV-EMUSER)
- Communication with SENTRON components (LV-COM)

Manuals

Manuals are available for downloading in Siemens Industry Online Support at www.siemens.com/lowvoltage/manuals

- Configuration manual – Measuring devices and power monitoring ([45315973](#))
- Equipment manual – 7KT PAC1600 energy meter ([109759827](#))
- Equipment manual – 7KT PAC1600 multimeter ([109760293](#))
- System manual – 7KT multichannel current measuring system ([109483442](#))
- Equipment manual – PAC2200 measuring device ([109746835](#))
- Equipment manual – 7KM Power Monitoring Device PAC2200CLP Manual ([109783220](#))
- Equipment manual – SENTRON PAC3200 power monitoring device ([26504150](#))
- Equipment manual – PAC3200T measuring device ([109746833](#))
- System manual – SENTRON PAC4200 power monitoring devices ([34261595](#))
- Equipment manual – PAC3100 measuring device ([37881976](#))
- Equipment manual – SENTRON PAC5100/5200 7KM5212/5412 ([109477872](#))
- Equipment manual – 7KM PAC3120 and 7KM PAC3220 ([109767307](#))
- Communication manual – SENTRON PAC5100/5200 7KM5212/5412 ([109477870](#))
- Communication manual – 3VA molded case circuit breakers with IEC and UL certification ([98746267](#))
- SEM3™ – Embedded Micro Metering Module™ ([109748928](#))
- Equipment manual – 7KN POWERCENTER 3000 ([109763838](#))
- Quick Installation Guide – 7KN POWERCENTER 3000 ([109766001](#))
- Installation manual – SENTRON circuit protection devices with communication and measuring function ([109791805](#))
- System manual – Circuit protection devices with communication and metering function ([109791806](#))

Technical overview – Measuring devices, power monitoring and digitalization solutions



The fast way to get you to our online services


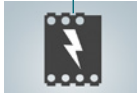

This page provides you with comprehensive information and links on measuring devices, power monitoring and digitalization solutions

www.siemens.com/lowvoltage/product-support ([109764480](#))

Power monitoring

Software

Local monitoring systems

| Web | Mobile app | |
|--|---|---|
|  |  |  |
| Web interface integrated | 7KT PAC1200 | SENTRON powerconfig |

Functions for power monitoring

| | | | |
|---|---|---|---|
| Commissioning of measuring devices and circuit breakers | – | – | ■ |
| Displaying current data | ■ | ■ | ■ |
| Displaying/evaluating current/historical values | ■ | ■ | ■ |
| Prepared analyses/reports | – | – | – |
| Customized reporting | – | – | – |
| Data analysis in the cloud | – | – | – |

Additionally for energy management

Switching loads on and off

| | | |
|---|---|---|
| – | – | – |
|---|---|---|

Operating environment

| | | | |
|-----------------------------------|----------------|----------------|----------------|
| Use | Free of charge | Free of charge | Free of charge |
| System requirements | Browser | Android, iOS | Android, iOS |
| Suitable according to ISO 50001 | – | – | – |
| Connection of non-Siemens devices | – | – | – |
| Integrated cloud interface | – | – | – |
| More information | | From page 1/22 | From page 1/12 |

Measuring devices, circuit breakers and circuit protection devices

Measuring devices for industrial applications



| | | | |
|-------------------------|---|---|--------------------|
| 7KM PAC1020 | – | – | – |
| 7KM PAC2200/PAC2200 CLP | ■ | – | ■ ^{1) 2)} |
| 7KM PAC3200T | ■ | – | ■ ¹⁾ |
| 7KM PAC3120 | – | – | ■ ²⁾ |
| 7KM PAC3220 | ■ | – | ■ |
| 7KM PAC4200 | ■ | – | ■ |
| 7KM PAC5200 | ■ | – | – |

Measuring devices for buildings and infrastructure



| | | | |
|-----------------------|---|---|---|
| 7KT PAC1200 | ■ | ■ | – |
| 7KT PAC1600 | – | – | – |
| SEM3/SEM3T new | ■ | – | – |

Circuit breakers



| | | | |
|-------------|---|---|---|
| 3WA | – | – | ■ |
| 3WL | – | – | ■ |
| 3WL10/3VA27 | – | – | – |
| 3VA ETU5/8 | – | – | ■ |

Communication-capable circuit protection devices **new**



| | | | |
|--------------------------------------|---|---|---|
| 7KN Powercenter 1000/5ST3 COM AS+FC/ | – | – | ■ |
| 5SL6 COM MCB/ | – | – | – |
| 5SV6 COM AFDD/ | – | – | – |
| 3NA COM Fuse | – | – | – |

Other Modbus devices

| | | |
|---|---|---|
| – | – | – |
|---|---|---|

■ Function available

□ Available with limited functionality

– Function not available

¹⁾ Via WiFi


²⁾ Via gateway (PAC4200)

³⁾ Incl. module for Desigo CC building management

⁴⁾ Via XML/JSON


1

PC-based



**SETRON
powerconfig**
**SETRON
powermanager³⁾**
**7KN Powercenter
3000**

Cloud



**SETRON
powermind
(MindSphere)**

World of SIMATIC

TIA Portal



**SIMATIC
TIA Portal
integrated**
**SIMATIC
TIA Portal
capable**

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| ■ | ■ | ■ |
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| - | ■ | - |
| - | - | - |
| - | ■ | - |
| Free of charge | License and trial license | - |
| Windows X64 | Windows X64 | - |
| - | ■ (TÜV) | ■ |
| - | ■ | ■ |
| - | ■ | ■ |
| From page 1/12 | From page 1/13 | From page 1/16 |

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| Subscription |
| Browser |
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| From page 1/18 |

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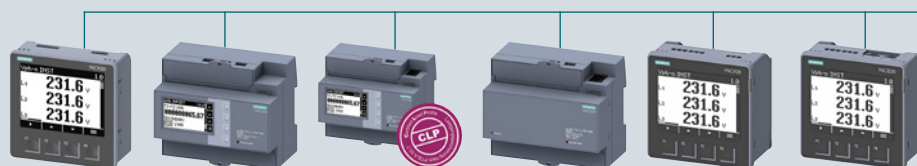
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| ■ | ■ | ■ |
| - | ■ / ■ ⁴⁾ | - |
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| ■ | ■ | ■ |
| ■ | ■ ⁴⁾ | ■ |
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Hardware components

Industry



7KM
PAC1020

7KM
PAC2200

7KM
PAC2200 CLP

7KM
PAC3200T

7KM
PAC3120

7KM
PAC3220

Type of mounting

| | | | | | | |
|--|-----------|-----------|-----------|-----------|-----------|-----------|
| Front mounting Standard mounting rail Screw mounting | ■ - - | - ■ - | - ■ - | - ■ - | ■ - - | ■ - - |
| Withdrawable Fixed-mounted | - - | - - | - - | - - | - - | - - |

Measuring connection

| | | | | | | |
|-------------------------------|---|---|---|---|---|---|
| Direct measurement | - | ■ | ■ | - | - | - |
| Transformer measurement | ■ | ■ | ■ | ■ | ■ | ■ |
| Multichannel measuring system | - | - | - | - | - | - |

Suitable transformers

| | | | | | | |
|----------------------------------|---|---|---|---|---|---|
| Window-type current transformers | ■ | ■ | ■ | ■ | ■ | ■ |
| Folding transformer | ■ | ■ | ■ | ■ | ■ | ■ |
| Integrated transformer | - | - | - | - | - | - |

Commissioning

| | | | | | | |
|---|----------------|----------------|----------------|----------------|----------------|----------------|
| MID version | - - | ■ - | ■ ■ | - - | - - | - - |
| Max. input voltage L-L/L-N | 400 V/230 V | 400 V/230 V | 400 V/230 V | 400 V/230 V | 690 V/400 V | 690 V/400 V |
| Transformer connection version | x/1 A or x/5 A | x/1 A or x/5 A | x/1 A or x/5 A | x/1 A or x/5 A | x/1 A or x/5 A | x/1 A or x/5 A |
| Direct connection version | - | 65 A | 65 A | - | - | - |
| DC power supply unit with extra-low voltage version | - | - | - | - | 22 ... 65 V DC | 22 ... 65 V DC |
| 1-phase counter version | - | ■ | ■ | - | - | - |
| Electrically isolated voltage inputs | - | - | - | - | - | - |
| Version without display (for web interface) | - | - | - | ■ | - | - |

Evaluation

Measured quantities

| | | | | | | |
|----------------------------------|---|---|---|---|---|---|
| Average value of measured values | - | ■ | ■ | ■ | ■ | ■ |
| Voltage, current, frequency | ■ | ■ | ■ | ■ | ■ | ■ |
| Power, power factor | ■ | ■ | ■ | ■ | ■ | ■ |

Energy measurement

| | | | | | | |
|--|---------------|---------------|---------------|---------------|---------------|---------------|
| Daily energy storage | - | 60 days | 60 days | 60 days | 60 days | 60 days |
| Apparent Active Reactive energy p.f. | - ■ ■ - | ■ ■ ■ - | ■ ■ ■ - | ■ ■ ■ - | ■ ■ ■ - | ■ ■ ■ - |
| Distortion factor THD (voltage, current) | - | - | - | ■ | ■ | ■ |
| Harmonics (voltage, current) | - | - | - | - | - | - |
| Phase angle/phase chart | - | - | - | - | - | - |
| Load profile recording | - | - | ■ | - | - | - |
| Flicker acc. to IEC 61000-4-15 | - | - | - | - | - | - |

Monitoring functions

| | | | | | | |
|----------------------------|---|---|---|---|---|---|
| Operating hours counter | - | - | - | ■ | ■ | ■ |
| Limit monitoring | - | - | - | ■ | ■ | ■ |
| Logic functions | - | - | - | ■ | ■ | ■ |
| Event log | - | - | - | - | - | - |
| Gateway function | - | - | - | - | - | - |
| Reporting acc. to EN 50160 | - | - | - | - | - | - |
| Integrated fault recorder | - | - | - | - | - | - |

Integrated communication interfaces

| | | | | | | |
|--------------------------------|-----|-----|-----|-----|-----|-----|
| Digital inputs/digital outputs | 1/1 | 1/1 | 1/1 | 1/1 | 2/2 | 2/2 |
| SO interface | ■ | ■ | ■ | ■ | ■ | ■ |
| M-Bus | - | ■ | - | - | - | - |
| RS485 (Modbus RTU) | ■ | ■ | - | - | ■ | - |
| Ethernet with Modbus TCP | - | ■ | ■ | ■ | - | ■ |
| BACnet | - | - | - | - | - | - |

More information

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Industry

Buildings and infrastructure

Circuit breakers



7KM
PAC4200

7KM
PAC5200

7KT
PAC1200

7KT
PAC1600

SEM3

3WA **new**

3WL

3WL10/
3VA27

3VA ETU8

| | | | | | | | | |
|-------------------------------|-------------------------------|----------------------|----------------------|----------------------------------|----------------------------|---------------------------|---------------------------|---------------------------|
| ■ - - | ■ ■ - | - ■ - | - ■ - | - - ■ | - - - | - - - | - - - | - - - |
| - - | - - | - - | - - | - - | ■ ■ | ■ ■ | ■ ■ | - ■ |
| - | - | ■ | ■ | - | - | - | - | - |
| ■ | ■ | ■ | ■ | - | ■ | ■ | ■ | ■ |
| - | - | ■ | - | ■ | - | - | - | - |
| ■ | ■ | ■ | ■ | ■ | - | - | - | - |
| ■ | ■ | ■ | ■ | ■ | - | - | - | - |
| - | - | ■ | - | ■ | ■ | ■ | ■ | ■ |
| - - | - - | - - | ■ - | - - | - - | - - | - - | - - |
| 690 V/400 V x/1 A or x/5 A | 690 V/400 V x/1 A or x/5 A | 400 V/230 V x/5 A | 400 V/230 V x/5 A | 480 V/277 V 50...1200 A/0.1 A | 1000 V/577 V integrated | 690 V/400 V integrated | 690 V/400 V integrated | 690 V/400 V integrated |
| - | - | 40/63 A | 63/80 A | - | - | - | - | - |
| 22 ... 65 V DC | - | - | - | - | 24 V DC | 24 V DC | 24 V DC | 24 V DC |
| - | - | ■ | ■ | ■ | - | - | - | - |
| - | ■ | - | - | - | - | - | - | - |
| - | ■ | ■ | - | ■ | - | - | - | - |
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| ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| - | - | - | - | - | - | - | - | - |
| ■ ■ ■ ■ | ■ ■ ■ ■ | - ■ ■ ■ | ■ ■ ■ ■ | ■ ■ ■ ■ | ■ ■ ■ ■ | ■ ■ ■ ■ | ■ ■ ■ ■ | ■ ■ ■ ■ |
| ■ | ■ | - | - | - | ■ | ■ | - | ■ |
| 2nd to 64th | 2nd to 40th | - | - | - | 2nd to 31st | 2nd to 29th | - | - |
| ■ | ■ | - | - | - | ■ | ■ | - | ■ |
| ■ | ■ | - | - | - | ■ | ■ | ■ | ■ |
| - | ■ | - | - | - | - | - | - | - |
| ■ | - | - | ■ | - | ■ | ■ | - | ■ |
| ■ | ■ | - | ■ | - | - | ■ | ■ | ■ |
| ■ | ■ | - | - | ■ | - | - | - | - |
| >4000 events | ■ | - | - | ■ | - | ■ | ■ | ■ |
| ■ | - | - | - | - | - | - | - | - |
| - | ■ | - | - | - | - | - | - | - |
| 2/2 | 0/2 | - | 1/1 | 2/1 | ■ | ■ | ■ | ■ |
| ■ | - | - | ■ | - | ■ | - | ■ | ■ |
| - | - | - | ■ | - | - | - | - | - |
| - | - | - | ■ | ■ | - | ■ | ■ | ■ |
| ■ | ■ | ■ | - | ■ | ■ | ■ | ■ | ■ |
| - | - | - | - | ■ | - | - | - | - |

Hardware components **new**

Circuit protection devices



7KN Powercenter 1000

5ST3 COM auxiliary
switches and fault
signal contacts

5SV6 COM AFDD/MCB

Communication interfaces

| | | | |
|------------------|---|---|---|
| Wireless | ■ | ■ | ■ |
| Modbus TCP | ■ | - | - |
| Bluetooth | ■ | - | - |
| Gateway function | ■ | - | - |

Type of mounting

| | | | |
|------------------------|---|---|---|
| Standard mounting rail | ■ | ■ | ■ |
| Busbars | - | - | - |

Evaluation

| | | | |
|---|---|---|---|
| Temperatures | - | ■ | ■ |
| Current | - | - | ■ |
| Voltage | - | - | ■ |
| Frequency | - | - | ■ |
| Apparent, reactive and active power, power factor | - | - | ■ |
| Reactive and active energy | - | - | ■ |

Monitoring functions

| | | | |
|---|---|---|---|
| Operating hours counter | ■ | ■ | ■ |
| Operating hours counter with load current | - | - | ■ |
| Operating cycle counter | - | ■ | ■ |
| Trip counter | - | ■ | ■ |
| Short-circuit trip counter | - | - | ■ |
| Alarms for limit monitoring | ■ | ■ | ■ |
| Detection of overload and short circuit | - | - | ■ |
| Detection of arcing faults | - | - | ■ |

More information

See page 1/17

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LV10 page 4/62

LV10 page 4/54

¹⁾ Protection function provided, but tripping is not communicated

Circuit protection devices



5SL6 COM miniature circuit breakers

3NA COM fuses

| | |
|---|-----------------|
| ■ | ■ |
| - | - |
| - | - |
| - | - |
| ■ | - |
| - | ■ |
| ■ | ■ |
| ■ | ■ |
| ■ | - |
| ■ | - |
| ■ | - |
| ■ | - |
| ■ | - |
| ■ | - |
| ■ | ■ |
| ■ | ■ |
| ■ | - |
| ■ | - |
| ■ | - |
| ■ | ■ |
| ■ | - ¹⁾ |
| - | - |

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Accessories

1

Communication modules











**7KM Switched Ethernet
PROFINET/Modbus TCP**




7KM PROFIBUS DP

**7KM RS485
Modbus RTU**




Industry

| | | | | |
|---|-----------------|---|---|---|
|  | 7KM PAC1020 | - | - | - |
|  | 7KM PAC2200 | - | - | - |
|  | 7KM PAC2200 CLP | - | - | - |
|  | 7KM PAC3200T | - | - | - |
|  | 7KM PAC3120 | - | - | - |
|  | 7KM PAC3220 | ■ | ■ | ■ |
|  | 7KM PAC4200 | ■ | ■ | ■ |
|  | 7KM PAC5200 | - | - | - |

Buildings and infrastructure

| | | | | |
|---|-------------|---|---|---|
|  | 7KT PAC1200 | - | - | - |
|  | 7KT PAC1600 | - | - | - |
|  | SEM3 | - | - | - |

Circuit breakers

| | | | | |
|---|-------------|---|---|---|
|  | 3WA/3WL | - | - | - |
|  | 3WL10/3VA27 | - | - | - |
|  | 3VA ETU5/8 | ■ | ■ | ■ |

Expansion modules

Current transformers



7KM PAC
4DI/2DO

7KM PAC
I(N), I(Diff), analog

4NC

7KT

3NJ calibrated

| 7KM PAC 4DI/2DO | 7KM PAC I(N), I(Diff), analog | 4NC | 7KT | 3NJ calibrated |
|--------------------|----------------------------------|-----|-----|----------------|
| - | - | ■ | ■ | ■ |
| - | - | ■ | ■ | ■ |
| - | - | - | - | ■ |
| - | - | ■ | ■ | ■ |
| - | - | ■ | ■ | ■ |
| ■ | ■ | ■ | ■ | ■ |
| ■ | ■ | ■ | ■ | ■ |
| - | - | ■ | ■ | ■ |
| - | - | - | - | - |
| - | - | ■ | ■ | ■ |
| - | - | - | - | - |
| - | - | - | - | - |
| - | - | - | - | - |
| - | - | - | - | - |
| - | - | - | - | - |

SENTRON powerconfig

Configuration software for commissioning and maintenance

SENTRON powerconfig is available free of charge at www.siemens.com/powerconfig

You can find more information on the Internet at www.siemens.com/sentron

1

- Software tool for the efficient commissioning and diagnostics of communication-capable SENTRON components
- Supports all electronic SENTRON devices, e.g. 3WA, 3WL, 3VA, 7KN Powercenter 3000 and 7KN Powercenter 1000, with 5ST3 AS+FC COM, 5SL6 MCB COM, 5SV6 AFDD COM and 3NA Fuse COM
- General range of functions:
 - User-friendly parameter assignment even for complex devices such as the 3WA
 - Fast, optical detection of communication and metering-capable circuit protection devices, such as 7KN Powercenter 1000
 - Saving and printing of device settings
 - Monitoring, saving and printing of instantaneous measured quantities
 - Execution of specific device functions, such as resetting of devices and setting of energy counters

Free download SENTRON powerconfig mobile via:

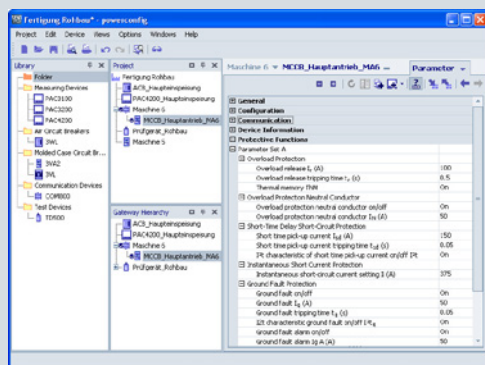


App Store

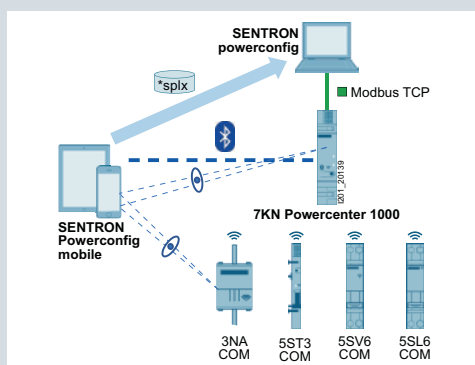


Play Store

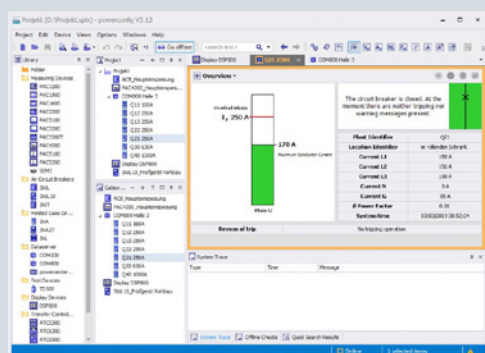
- Service functions:
 - Detection of devices and acquisition of measured quantities and status information via different networks, e.g. via Ethernet
 - Device and status acquisition via local interfaces, such as Bluetooth and USB
 - Acquisition and archiving of historic records, such as load profiles and events
 - Firmware updates
 - Switching of language packs for 7KM PAC measuring devices
- Cooperative interaction between powerconfig mobile and powerconfig on the PC:
 - powerconfig mobile offers a high degree of mobile versatility, e.g. to scan codes on the circuit protection devices
 - powerconfig on the PC can be used for subsequent editing and archiving of the system configuration



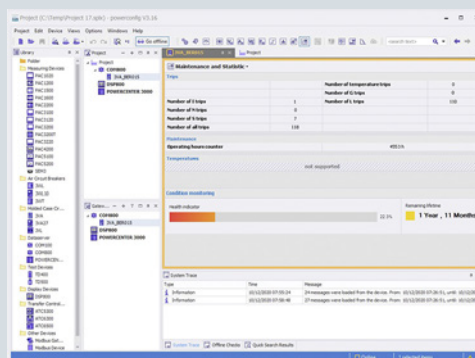
Setting of parameter values



Scanning of circuit protection devices



Display of the circuit breaker status



Display of the state of health of the 3VA

SENTRON classic powermanager (V3)

PC-based power monitoring software



SENTRON classic powermanager (V3.6)

- Support of new devices:
 - PAC3120
 - PAC3220 with firmware V2.1

1

| Version | Description | Article No. |
|--|--|--------------------|
| classic powermanager (V3.5) | | |
| Basic Package | Full product license for up to 10 devices, installation for client/server, web access | 3ZS2711-0CC30-0YA0 |
| Trial license | Full product license limited to 60 days for up to 10 devices, incl. "Expert" and "Web" option packs Available free of charge at www.siemens.com/lowvoltage/product-support (64850998) | |
| V3.x device expansions | | |
| Device Pack (20) | Device expansion license for up to 20 devices | 3ZS2711-0CC30-0YD0 |
| Device Pack (50) | Device expansion license for up to 50 devices | 3ZS2712-0CC30-0YD0 |
| Device Pack (100) | Device expansion license for up to 100 devices | 3ZS2713-0CC30-0YD0 |
| Device Pack (200) | Device expansion license for up to 200 devices | 3ZS2714-0CC30-0YD0 |
| Device Pack (500) | Device expansion license for up to 500 devices | 3ZS2715-0CC30-0YD0 |
| Device Pack (1000) | Device expansion license for up to 1000 devices | 3ZS2716-0CC30-0YD0 |
| Option packs | | |
| "Expert" option pack | Option for creating/presenting any number of freely configured images | 3ZS2710-2CC20-0YH0 |
| "Client (5)" option pack | Expansion for up to 5 clients | 3ZS2710-3CC00-0YD0 |
| "Distributed Systems (2)" option pack | Option for the connection of 2 autonomous powermanager systems for the exchange of measured values and alarms | 3ZS2718-1CC00-0YH0 |
| "Distributed Systems (5)" option pack | Option for the connection of 5 autonomous powermanager systems for the exchange of measured values and alarms | 3ZS2718-2CC00-0YH0 |
| "Distributed Systems (10)" option pack | Option for the connection of 10 autonomous powermanager systems for the exchange of measured values and alarms | 3ZS2718-3CC00-0YH0 |
| "OPC UA Server" option pack | Option pack for data exchange with other processing platforms via OPC UA | 3ZS2710-4CC30-0YD0 |
| Update powermanager V2.0 to classic powermanager (V3.0) | | |
| Update license | From V2.0 Lean to V3.x (10) | 3ZS2711-0CC30-0YE0 |
| Update license | From V2.0 Standard to V3.x (50) | 3ZS2712-0CC30-0YE0 |
| Update license | From V2.0 Maximum to V3.x (100) | 3ZS2713-0CC30-0YE0 |
| Update license | From V2.0 Maximum to V3.x (200) | 3ZS2714-0CC30-0YE0 |

SENTRON powermanager

PC-based power monitoring software



SENTRON powermanager

SENTRON powermanager is based on the modern Desigo CC platform with advanced graphical capabilities and a standard SQL database. The workflows for setting up the system, creating devices, graphically displaying the device data and processing it in reports have been fundamentally revised.

You can find the latest download and change information in the SIOS portal

www.siemens.com/lowvoltage/product-support (109771760)

The „Trial“ license gives customers the opportunity to gain initial experience with SENTRON powermanager during a 60-day test phase. The application can still be used by purchasing a regular license.

The migration of existing SENTRON classic powermanager projects will be supported as of a future SENTRON powermanager version.

You can find more information on the Internet at

www.siemens.com/powermanager

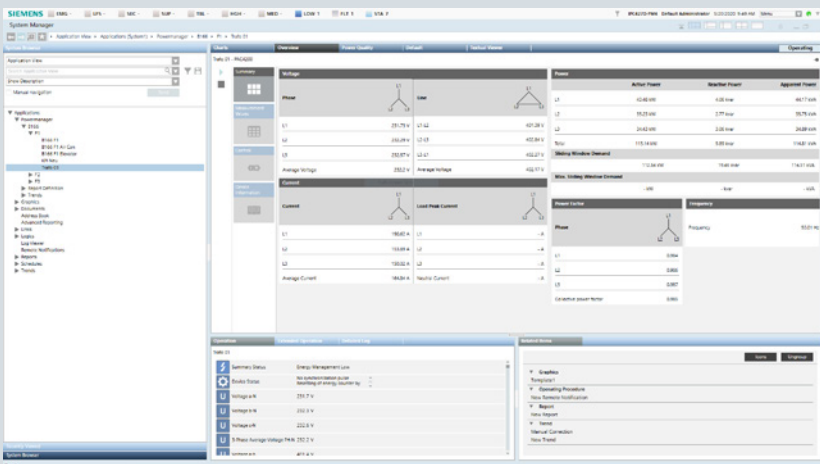
You can find training courses on the Internet at

www.siemens.com/sitrain-lowvoltage

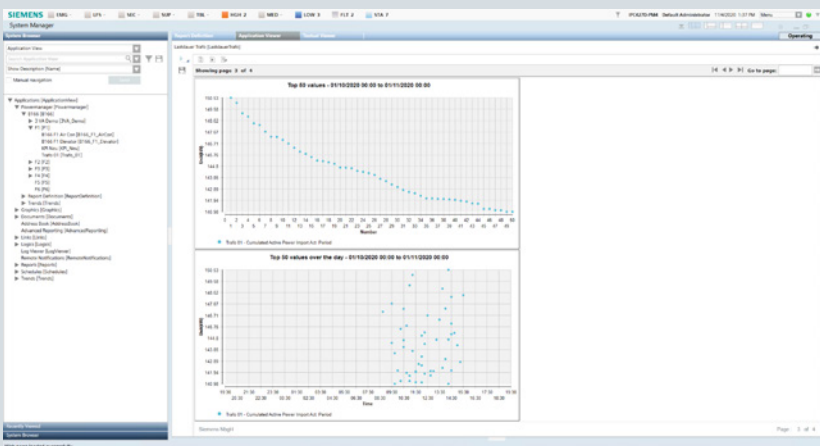
| Version | Description | Article No. |
|---|--|---------------------|
| powermanager | | |
| Extended Package | Full product license for up to 10 devices, installation for client/server, web access | 7KN2710-2CE40-0YCO |
| Trial license | Full product license limited to 60 days for up to 10 devices, incl. all functions; software download via SIOS Portal www.siemens.com/lowvoltage/product-support (109771760) A free license for one-time use (limited to 60 days) must also be requested via powermanagerlicence.de@siemens.com | |
| Device expansions | | |
| Device Pack (20) | Device expansion license for up to 20 devices | 7KN2711-1CE40-0YCO |
| Device Pack (50) | Device expansion license for up to 50 devices | 7KN2711-2CE40-0YCO |
| Device Pack (100) | Device expansion license for up to 100 devices | 7KN2711-3CE40-0YCO |
| Device Pack (200) | Device expansion license for up to 200 devices | 7KN2711-4CE40-0YCO |
| Device Pack (500) | Device expansion license for up to 500 devices | 7KN2711-5CE40-0YCO |
| Device Pack (1000) | Device expansion license for up to 1000 devices | 7KN2711-6CE40-0YCO |
| Option packs | | |
| "Graphics Editor 60 Days" option pack | Option for creating/presenting any number of freely configured images, validity period limited to 60 days | 7KN2712-0CE40-0YCO |
| "Graphics Editor Unlimited" option pack | Option for creating custom-made SENTRON powermanager applications, e.g. graphics; especially suitable for partners such as Solution Providers, control cabinet builders, etc. | 7KN2712-0CE40-0YCO1 |
| "Client (2)" option pack | Expansion for up to 2 clients | 7KN2712-1CE40-0YCO |
| "Client (5)" option pack | Expansion for up to 5 clients | 7KN2712-2CE40-0YCO |
| "powermanager Server" option pack | Additionally, powermanager server license for distributed systems without devices, web, etc. | 7KN2712-4CE40-0YCO |
| System packages | | |
| System 1 | Package comprising 1× powermanager Extended 1× PAC4200 1× PAC3120 1× RS485 modules | 7KN2715-1CE40-0YCO |
| System 3 | Package comprising 1× powermanager Extended 3× PAC3220 | 7KN2715-3CE40-0YCO |
| System 4 | Package comprising 1× powermanager Extended 1× PAC4200 4× PAC1600 1× RS485 module | 7KN2715-4CE40-0YCO |
| System 5 | Package comprising 1× powermanager Extended 5× PAC2200 transformer measurement Modbus TCP | 7KN2715-5CE40-0YCO |



powermanager – Measuring device diagram



powermanager – Overview of measuring devices



powermanager – Load duration report

7KN Powercenter

Edge/IoT-based data acquisition and visualization for low-voltage power distribution

7KN Powercenter 3000

Areas of use and applications

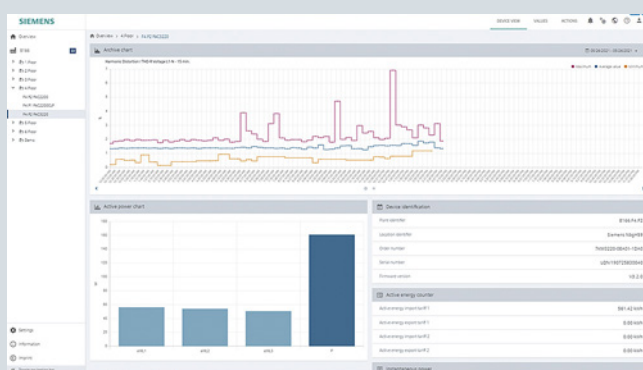
- Basis for certified energy management according to ISO 50001 to improve energy efficiency and optimize maintenance management
- Transparency and fault localization in single and distributed locations
- Future-proof foundation for expanding data analysis from on-site analysis to cloud-based analysis

Features

- Data acquisition
 - Key data of subordinate devices
 - 15-minute energy values as a basis for ISO 50001 and their provision in the form of a CSV file via e-mail (once, periodically)
- Visualization
 - On the web interface, as an overview of the most important data and also of all data for each device
 - The states of the system, of all devices and messages, and also of connections to cloud applications, for example
 - In both graphical and tabular form
- Interfaces for the digitalization of low-voltage power distribution
 - Integrated and easy-to-configure communication with SENTRON powermind (see separate section)

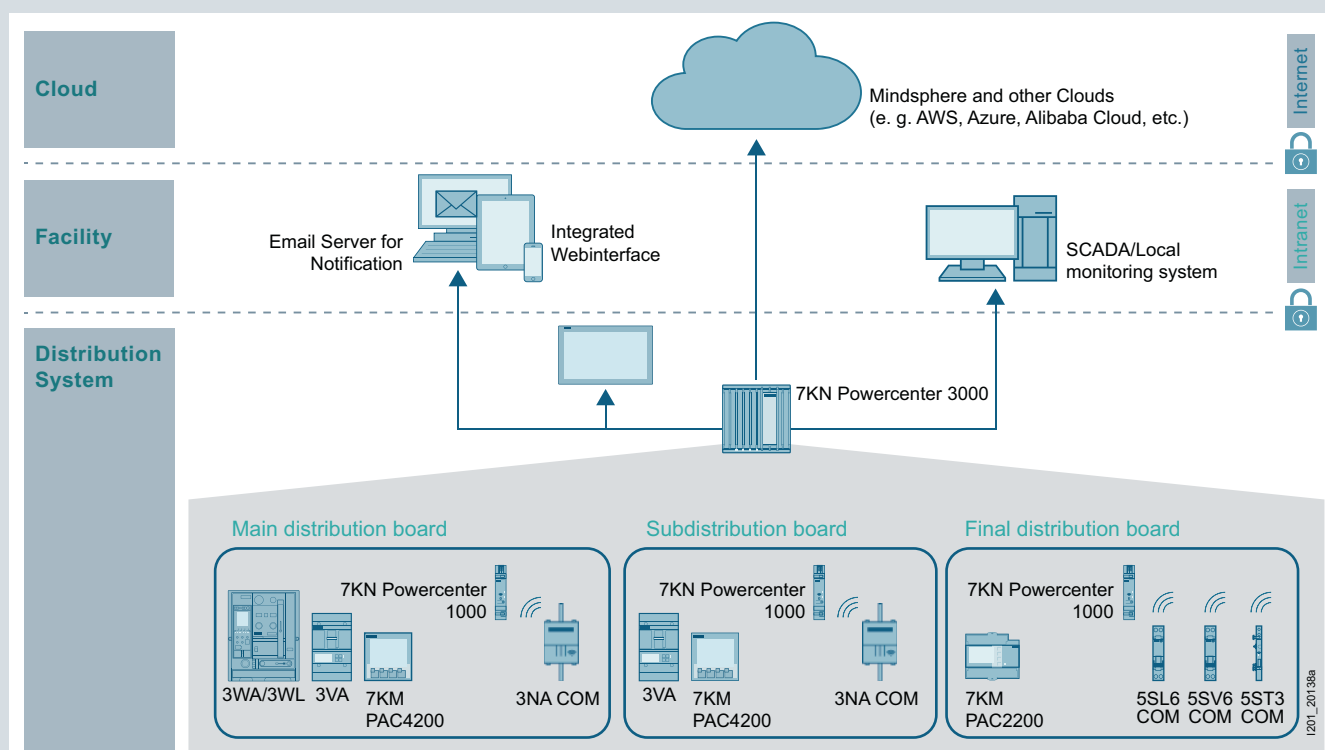
- To other cloud applications, e.g. based on AWS, Azure, AliCloud, etc.
- Via Modbus TCP for other applications, e.g. SENTRON power-manager
- In general
 - Easy commissioning using powerconfig
 - Compact design, 24 V DC supply
 - Web interface in 10 languages
 - Flexible IT security features for protection against unauthorized access

More information: www.siemens.com/powermonitoring



Data visualization based on the example of a measuring device

| Mounting | Interfaces | Protocols | Article No. |
|------------------------|-------------|------------------------------|--------------------|
| Standard rail mounting | 2x Ethernet | Modbus TCP, http, MindSphere | 7KN1310-0MC00-0AA8 |



Areas of use and applications for 7KN Powercenter 3000

Radio-controlled data acquisition and visualization for low-voltage power distribution **new**

7KN Powercenter 1000

The 7KN Powercenter 1000 data transceiver is designed to enable comprehensive data acquisition of communication and metering-capable circuit protection devices. This increases transparency in the final circuit, through which optimization measures can be derived to increase system availability.

Up to 24 devices can communicate wirelessly with 7KN Powercenter 1000 via radio link. This means that no increased installation effort is required for communication. Selected measured values of the circuit protection devices are stored in the data transceiver for up to 30 days. These can be visualized to ensure extensive data availability.

The compact design of the 7KN Powercenter 1000, in a single modular width, results in an extremely small footprint in the distribution board so as to enable wireless, comprehensive data acquisition. This is complemented by easy mounting on a 35 mm

DIN rail and plug-in terminals for a 24 V DC power supply, which can be immediately looped through (daisy chain) to supply other devices.

The integrated Bluetooth interface enables simple on-site communication and commissioning via the SENTRON powerconfig mobile app. Connection to various configuration or power monitoring systems, such as SENTRON powerconfig, SENTRON powermanager or customized solutions, is ensured via the Modbus TCP interface. Furthermore, this interface also enables a connection via e.g. 7KN Powercenter 3000 or via LOGO! to cloud applications.

1

| Mounting | Power supply | Devices that can be connected | Interfaces | Article No. |
|------------------------|--------------|--|----------------------------------|---------------|
| Standard rail mounting | 24 V DC SELV | 24 circuit protection devices via radio link | Bluetooth, Ethernet (Modbus TCP) | 7KN1110-0MC00 |

7KN Powercenter 1000 data transceiver

- Acquisition and storage of data and measured values from up to 24 communication-capable circuit protection devices via radio link
- Parameterization, visualization and further processing of the data in higher-level applications via Bluetooth and Modbus TCP

You will find further information under:

Installation Manual – Circuit protection devices with communication and metering function ([109791805](#))

System Manual – Circuit protection devices with communication and metering function ([109791806](#))

SENTRON powermind

Cloud-based solution for data visualization and analysis in power distribution systems



1

SENTRON powermind is aimed equally at energy managers, facility managers and/or operators. For energy managers, predefined, automated representations and analyses of energy data are available, such as:

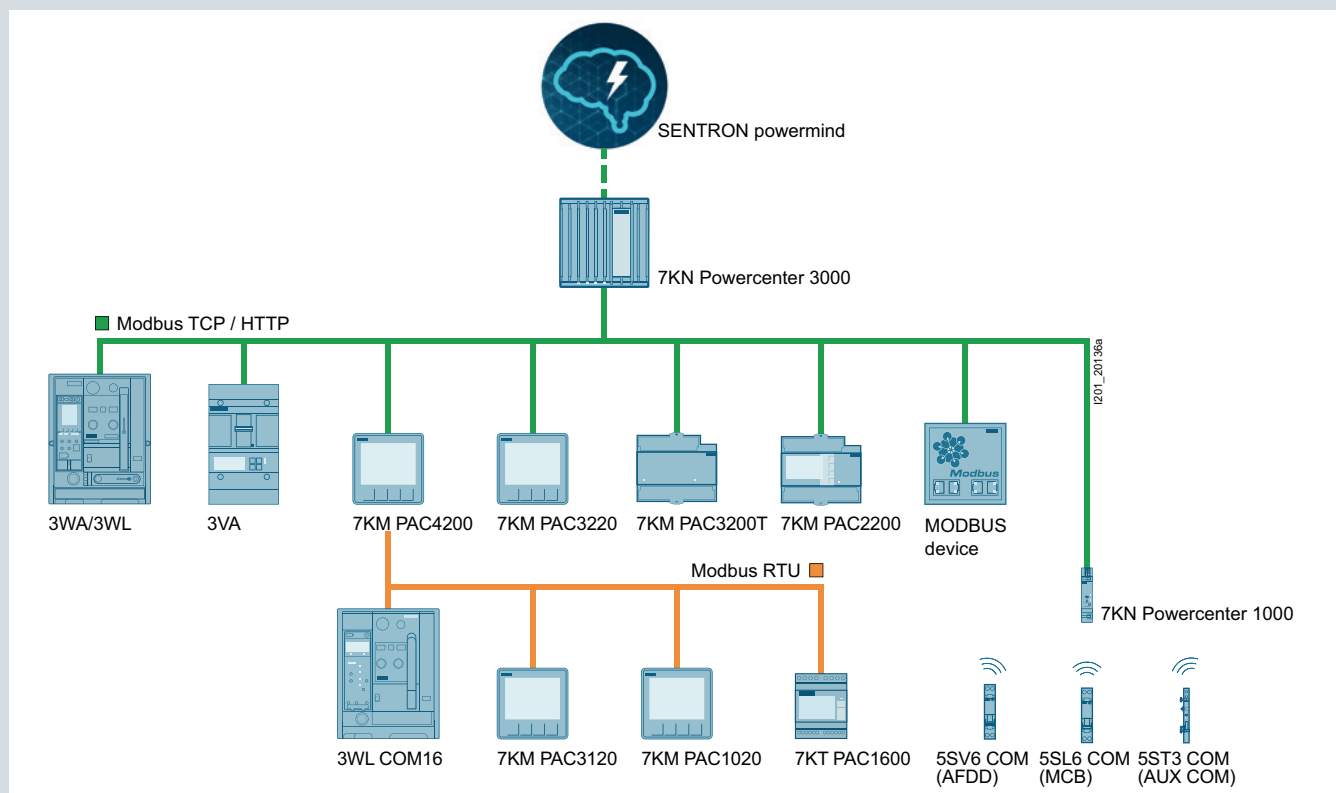
- Comparison of energy consumption on weekdays versus weekends with percentage day-by-day representation of the distribution of energy consumption to identify unnecessary energy consumption
- Comparison of energy consumption and power import during a selected period as compared with a reference period to assess the effectiveness of energy efficiency measures
- Day-by-day representation of the 15 min power demand, incl. min and max values to assess power peaks

SENTRON powermind offers operators and facility managers the following information and analyses:

- Status of the switching and protection devices, such as 3VA, 3WA and 3WL
- Display of the maximum current value of an individual phase in relation to I_n
- Condition monitoring information about the condition of the contact system of each circuit breaker and also as an overview of all circuit breakers
- The following devices are supported:
PAC2200/PAC2200CLP, PAC3100/PAC3120, PAC3200/PAC3200T/PAC3220, PAC4200 measuring devices,
3VA, 3WA and 3WL circuit breakers

You can find more information on the MindSphere Store at

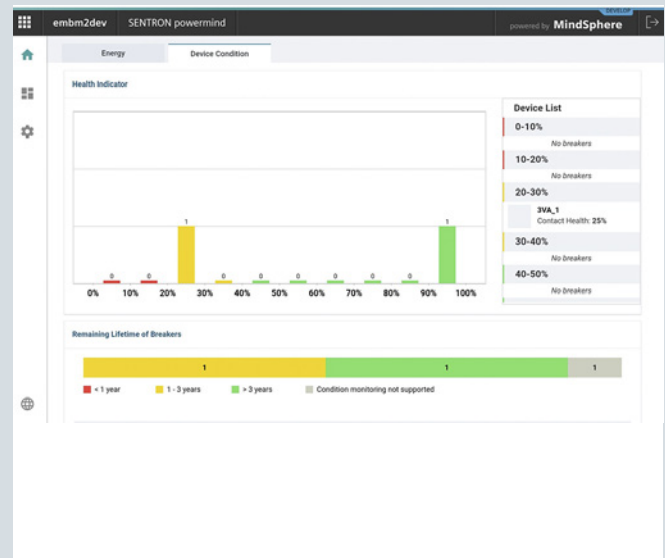
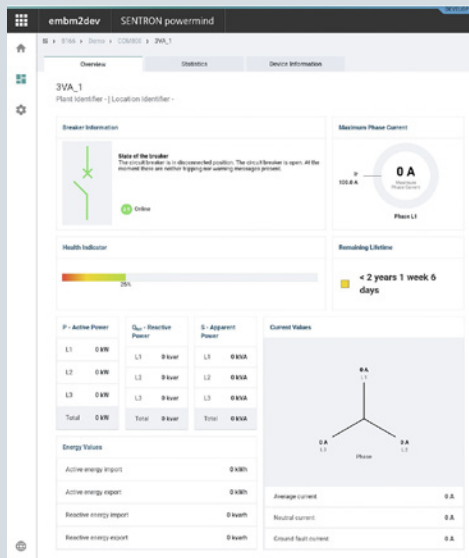
www.dex.siemens.com/mindsphere/applications



A large number of devices transmit data via SENTRON Powercenter 3000 or SENTRON powermanager to SENTRON powermind

SENTRON powermind processes data from SENTRON Powercenter 3000. No complex configuration or parameterization is required, as the necessary information is exchanged using files. This also prevents possible incorrect entries or write errors. An error-free connection can thus be easily established in just a few minutes.

The examples show some of the functions of SENTRON powermind, which are aimed at different customer groups, such as energy managers and maintenance personnel, but also electricians. All information is available via a web browser on a standard PC, but also on mobile devices, such as tablets and smartphones. The information is therefore available both on-site (locally) and off-site (remotely).

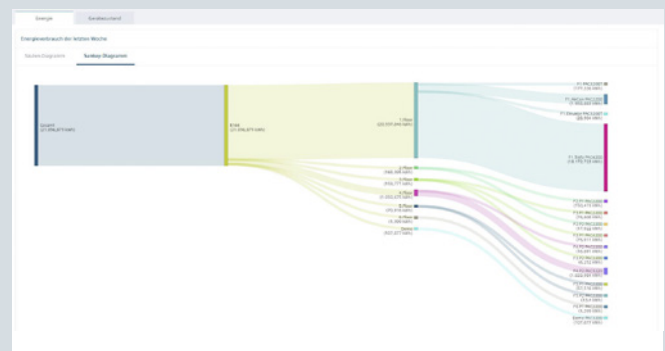
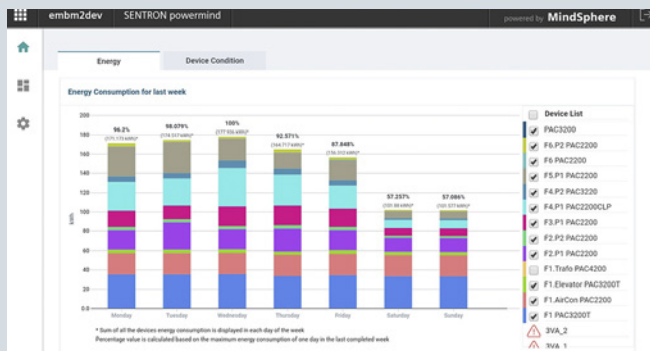


Creating transparency

- Representation of the device status, e.g. open, closed, tripped and relevant measured quantities, such as maximum phase current, total power ...
- Information about the state of health of the device to take action proactively

Overview of the circuit breaker status

- Overview of the state of the health of all circuit breakers in the switchboard
- Assignment to a maintenance cycle (< 1 year; between 1 and 3 years; > 3 years)
- Display of circuit breakers in list form as well as link to the respective circuit breaker dashboard



Creating transparency

- Representation of the power flow/power import in various parts of the power distribution system
- Comparison of the weekly energy consumption (percentage distribution of weekdays in comparison to weekend) to identify unusual energy consumption patterns and to check energy-saving measures in the form of a bar chart or Sankey diagram



Energy management

- Comparison of the energy consumption of two periods, for example, to assess the effectiveness of energy saving measures
- Representation of the active power as mean and min/max values in a line diagram or heatmap

SIMATIC Energy Suite

For integrated energy management

Highlights

- Simple and intuitive configuration instead of programming
- Automatic generation of the PLC energy program
- Convenient integration of measuring components from the Siemens portfolio and from other manufacturers
- Integrated into the TIA Portal and the automation system
- Archiving in WinCC Professional or PLC
- Seamless interfacing to Energy Manager PRO and Energy
- Analytics

Additional information on the SIMATIC Energy Suite:

www.siemens.com/energysuite

SIMATIC Modbus/TCP SENTRON PAC

For 7KM PAC3200/4200 measuring devices

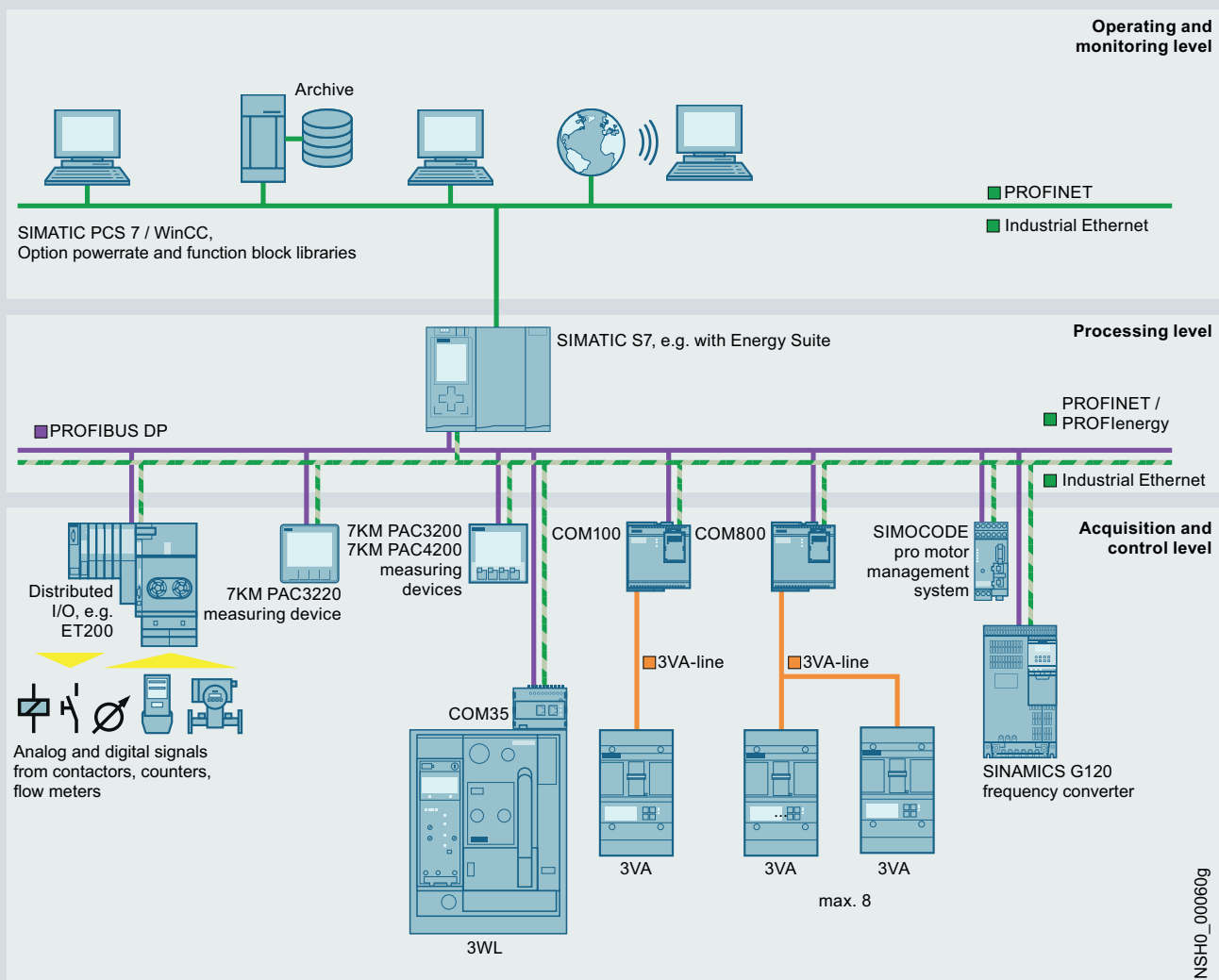
| Use and version | Valid for | Type | Article No. |
|---|----------------------------------|----------------------------|--------------------|
| Communication via the integrated PN interface for reading values out of PAC 3200 and PAC PAC 4200 devices, single license | 1 CPU and up to 20 SENTRON PACs | Modbus/TCP 20 SENTRON PAC | 6AV6676-6MA30-0AX0 |
| | 1 CPU and up to 100 SENTRON PACs | Modbus/TCP 100 SENTRON PAC | 6AV6676-6MA30-1AX0 |
| | 1 CPU and up to 512 SENTRON PACs | Modbus/TCP 512 SENTRON PAC | 6AV6676-6MA30-2AX0 |

PAC/3WL/3VA SIMATIC PCS 7 library

For 7KM PAC3200/3220/4200 measuring devices and 3WL/3VA/3VL circuit breakers

| Application | Version | Type of delivery | Article No. |
|---|---|---|--------------------|
| PAC/3WL/3VA SIMATIC PCS 7 library | | | |
| <ul style="list-style-type: none"> AS blocks and faceplates for integrating the 3WL/3VA/3VL circuit breakers into SIMATIC PCS 7, V8.x, V9.0 SP2 or V9.1 For each SIMATIC PCS 7 Operator Station of the single station/server version, a license containing the following is required: <ul style="list-style-type: none"> Engineering license for one SIMATIC PCS 7 Operator Station of the single station/server version Runtime license for one automation system (1 required per automation system, further AS runtime licenses can be ordered separately) | Engineering and runtime software, software class A, 2-language (English, German), single license for one installation | Software and electronic documentation as a software download, engineering and runtime license as Certificate of License | 3ZS2787-1CC30-0YGO |
| AS runtime license for PAC/3WL/3VA library for SIMATIC PCS 7 | | | |
| License for one automation system in each case | Runtime software, software class A, 2-language (English, German), single license for one installation | Runtime license as Certificate of License without software and documentation | 3ZS2787-1CC30-6YH0 |

1



NSHO_00060g

7KM PAC measuring devices

Basic units

1



| Connections | Power supply | Display | Interface | MID | PTB-A50.7 | 7KM PAC1020 | 7KM PAC2200/PAC2200 CLP | 7KM PAC3200T | | |
|--------------------------------|--------------------------------------|---------|---|------------|------------|--------------------|-------------------------|--------------------|---|--------------------|
| Transformer measurement | | | | | | | | | | |
| Screw terminals | Self-powered | With | M-Bus | With | Without | – | 7KM2200-2EA30-1GA1 | – | | |
| | | | | Without | Without | – | 7KM2200-2EA30-1CA1 | – | | |
| | | | | Modbus RTU | With | Without | – | 7KM2200-2EA30-1HA1 | – | |
| | | | | | Without | Without | – | 7KM2200-2EA30-1DA1 | – | |
| | | | | Modbus TCP | With | With | – | 7KM2200-2EA00-1JB1 | – | |
| | | | | | Without | Without | – | 7KM2200-2EA30-1JA1 | – | |
| | | | Without | Without | – | 7KM2200-2EA30-1EA1 | – | | | |
| | | | AC/DC wide-voltage power supply unit | With | Modbus RTU | Without | Without | 7KM1020-0BA01-1DA0 | – | – |
| | | | | | Modbus TCP | Without | Without | – | – | – |
| | | | DC power supply unit with extra-low voltage | Without | Modbus TCP | Without | Without | – | – | 7KM3200-OCA01-1AA0 |
| Modbus RTU | Without | Without | | | – | – | – | | | |
| Ring cable lug connection | AC/DC wide-voltage power supply unit | With | Modbus TCP | Without | Without | – | – | – | | |
| Direct measurement | | | | | | | | | | |
| Screw terminals | Self-powered | With | M-Bus | With | Without | – | 7KM2200-2EA40-1GA1 | – | | |
| | | | | Without | Without | – | 7KM2200-2EA40-1CA1 | – | | |
| | | | | Modbus RTU | With | Without | – | 7KM2200-2EA40-1HA1 | – | |
| | | | | | Without | Without | – | 7KM2200-2EA40-1DA1 | – | |
| | | | Modbus TCP | With | With | – | 7KM2200-2EA40-1JB1 | – | | |
| | | | | Without | Without | – | 7KM2200-2EA40-1JA1 | – | | |
| | | | | Without | Without | – | 7KM2200-2EA40-1EA1 | – | | |
| | | | | Without | Without | – | 7KM2200-2EA40-1EA1 | – | | |

Further technical specifications

| | 7KM1020-.. | 7KM2200-.. | 7KM3200-.. | 7KM3120-0.. | 7KM3120-1.. |
|----------------------------|-----------------------------------|------------------------|----------------|----------------|--------------------|
| Basic data | | | | | |
| Installation | Front mounting | Standard mounting rail | | Front mounting | |
| Modular width | – | 6 MW | | – | |
| Control panel instrument | 96 × 96 mm | – | | 96 × 96 mm | |
| External auxiliary voltage | 50/60 Hz AC | 100 ... 250 V | – | 90 ... 276 V | 100 ... 250 V ±10% |
| | DC | 110 ... 250 V ±10% | – | 110 ... 275 V | 110 ... 250 V ±10% |
| Measuring inputs | | | | | |
| Transformer connection | Secondary input current I_e | x/1 A or x/5 A | x/1 A or x/5 A | x/1 A or x/5 A | |
| Direct connection | Input voltage U_e 3 AC 50/60 Hz | 400/230 V | – | 690/400 V | |
| | Rated current I_n | – | 65 A | – | – |



7KM PAC3120

7KM PAC3220

7KM PAC4200

7KM PAC5200

| | | | |
|--------------------|--------------------|--------------------|--------------------|
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| 7KM3120-0BA01-1DA0 | - | - | - |
| - | 7KM3220-0BA01-1DA0 | 7KM4212-0BA00-3AA0 | 7KM5412-6BA00-1EA2 |
| - | - | - | 7KM5412-6CA00-1EA8 |
| - | 7KM3220-1BA01-1EA0 | 7KM4211-1BA00-3AA0 | - |
| 7KM3120-1BA01-1EA0 | - | - | - |
| - | - | 7KM4212-0BA00-2AA0 | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |

7KM3220-0..

7KM3220-1..

7KM4212-..

7KM4211-..

7KM5412-

Front mounting

Front mounting/standard mounting rail

96 × 96 mm

100 ... 250 V
±10%-
24 ... 60 V
±20%95 ... 240 V
±10%110 ... 340 V
±10%-
22 ... 65 V
±10%110 ... 230 V
±10%24 ... 250 V
±10%

x/1 A or x/5 A

690/400 V





500/289 V

690/400 V






7KM PAC measuring devices

Accessories

1

| | 7KM PAC1020 | 7KM PAC3120 7KM PAC3220 7KM PAC4200 |
|--|-------------|---|
| 7KM PAC TMP2 standard mounting rail adapter  <ul style="list-style-type: none"> • Two-tier adapter for mounting a measuring device on a standard mounting rail • Front display • For manual intervention | | |
| | | 7KM9900-0XA00-0AA0 |
| 7KM PAC TMP mounting plate  <ul style="list-style-type: none"> • Adapter for mounting a measuring device on standard mounting rail • Display faces backwards towards standard mounting rail • Readout and evaluation of measurements solely via mains operation | | |
| | | 7KM9900-0YA00-0AA0 |
| Compact holder  <ul style="list-style-type: none"> • Device holder for 7KM PAC3100/3120/3200/3220/4200 • 10 holders for 5 PAC devices • For seamless side-by-side mounting of the devices (without spaces) | | |
| | | 7KM9900-0GA00-0AA0 |
| Spare parts for 7KM PAC  <ul style="list-style-type: none"> • Spare parts comprising: <ul style="list-style-type: none"> – Device holders for panel mounting (2X) – Screw terminal for connection of voltage inputs – Screw terminal for connection of current inputs – Terminal block inputs/outputs for 7KM PAC3100/4200 – Terminal block inputs/outputs for 7KM PAC3200 – RS485 terminal blocks for 7KM PAC3100 | | |
| | – | 7KM9900-0SA00-0AA0 |

Expansion and communication modules

| | 7KM PAC3220 7KM PAC4200 | COM100/800 (3VA) |
|--|----------------------------|----------------------------------|
| 7KM Switched Ethernet PROFINET communication module | | |
|  <ul style="list-style-type: none"> • Latest PROFINET switching properties • S2 system redundancy for operation in H systems • CIR Configuration in Run • Firmware update via the modules for PAC4200 and PAC3220 | | |
| | | 7KM9300-0AE02-0AA0 |
| 7KM PROFIBUS DP communication module | | |
|  | | |
| | | 7KM9300-0AB01-0AA0 |
| 7KM RS485 communication module | | |
|  | | |
| | | 7KM9300-0AM00-0AA0 ¹⁾ |
| 7KM PAC 4DI/2DO expansion module | | |
|  | | |
| | 7KM9200-0AB00-0AA0 | – |
| 7KM PAC I(N), I(Diff), analog expansion module | | |
|  <ul style="list-style-type: none"> • To add the following functions to the measuring inputs: <ul style="list-style-type: none"> – N conductor measurement – Two analog inputs, also for measuring non-electrical quantities such as temperature, water or air pressure – Residual current measurement via type A or type B summation current transformers | | |
| | 7KM9200-0AD00-0AA0 | – |

¹⁾ Suitable for 7KM PAC4200 (especially for the Modbus TCP/RTU Gateway)

Residual-current transformers for 7KM PAC I(N), I(Diff), analog expansion module, [see LV 10 from page 11/1 onwards](#)

7KT PAC measuring devices

PAC1600 basic unit



| Connections | Version | Power supply | Display | Interface | MID | 7KT PAC1600 | |
|--------------------------------|---------------------------|---|--------------|--------------|------------|-------------|---------|
| Transformer measurement | | | | | | | |
| Screw terminals | 3-phase | Self-powered | With | Modbus RTU | Without | 7KT1661 | |
| | | | | | With | 7KT1662 | |
| | | | | M-Bus | Without | 7KT1663 | |
| | | | | | With | 7KT1664 | |
| | | | | SO interface | Without | 7KT1672 | |
| | | | | | With | 7KT1673 | |
| | 3-phase, universal | Auxiliary power: 100 ... 240 V AC, 110 ... 250 V DC 50/60Hz | With | – | Without | 7KT1681 | |
| | | | | Modbus RTU | Without | 7KT1682 | |
| | Direct measurement | | | | | | |
| | Screw terminals | 1-phase | Self-powered | With | Modbus RTU | Without | 7KT1651 |
| With | | | | | | 7KT1652 | |
| M-Bus | | | | | Without | 7KT1653 | |
| | | | | | With | 7KT1654 | |
| SO interface | | | | | Without | 7KT1655 | |
| | | | | | With | 7KT1656 | |
| 3-phase | | Self-powered | With | Modbus RTU | Without | 7KT1665 | |
| | | | | | With | 7KT1666 | |
| | | | | M-Bus | Without | 7KT1667 | |
| | | | | | With | 7KT1668 | |
| | | | | SO interface | Without | 7KT1670 | |
| | | | | | With | 7KT1671 | |

PAC1200 multichannel current measuring system



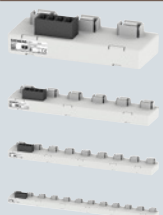
1

| Connections | Version | Power supply | Display | Interface | MID | 7KT PAC1200 |
|---------------------------|---------|--------------|---------|------------|---------|-------------|
| Direct measurement | | | | | | |
| Screw terminals | 3-phase | Self-powered | Without | Modbus TCP | Without | 7KT1260 |

PAC1200

7KT PAC1200

Data manager with 7KT1260, sensor bars



| Number of connections | Article No. |
|-----------------------|-------------|
| 3 | 7KT1233 |
| 6 | 7KT1236 |
| 9 | 7KT1238 |
| 12 | 7KT1242 |

Data manager with 7KT1260, sensors



| Current I_e | Article No. |
|---------------|-------------|
| 40 A | 7KT1254 |
| 63 A | 7KT1255 |

PAC1200 Bundles



| Data manager | Sensor bars | Sensors | 18 bundle | 24 bundle |
|-------------------------|--------------------------|--------------------------|-----------|-----------|
| 1× data manager 7KT1260 | 2× 9-sensor bar 7KT1238 | 18× sensors 40 A 7KT1254 | 7KT1222 | – |
| 1× data manager 7KT1260 | 2× 12-sensor bar 7KT1242 | 24× sensors 40 A 7KT1254 | – | 7KT1223 |

SEM3 multichannel current measuring system

Data manager




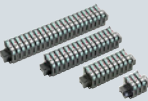


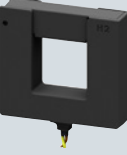

| Connections | Version | Power supply | Display | Interface | MID | |
|--------------------------------|---------|--------------|---------|--------------------------------|---------|--------------------|
| Transformer measurement | | | | | | |
| Screw terminals | 3-phase | Self-powered | Without | Modbus TCP RS485 Modbus RTU | Without | US2:SEM3CONTROLLER |

Further technical specifications

SEM3

| | |
|--------------------------------|---------------------|
| Basic data | |
| Installation | Screw mounting |
| Measuring inputs | |
| Max. input voltage 50/60 Hz AC | 480 V/277 V |
| Standard current transformers | 50 ... 1200 A/0.1 A |
| Folding transformer | 50 ... 2000 A/0.1 A |

Accessories

| Metering modules | | | |
|---|---|---------------------------------------|--------------------|
|  | <ul style="list-style-type: none"> For recording measured values Accuracy of 0.2% or 1% for the entire measurement including current transformer Simple setting of phase configuration by means of slide switch Connection of a current transformer for measuring a phase Metering module is plugged into meter rack | | |
| | Measuring accuracy | Article No. | |
| | 0.2% | US2:SEM3PHAMETER | |
| | 1% | US2:SEM3PLAMETER | |
| Meter racks | | | |
|  | Version | Article No. | |
| | For 3 metering modules | US2:SEM3RACK3 | |
| | For 9 metering modules | US2:SEM3RACK9 | |
| | For 15 metering modules | US2:SEM3RACK15 | |
| | For 21 metering modules | US2:SEM3RACK21 | |
| Connecting cables | | | |
|  | <ul style="list-style-type: none"> 600 V insulated special cable for connecting meter racks to the data manager | | |
| | Length | Article No. | |
| | 0.3 m | US2:SEM3CAB12INCH | |
| | 0.6 m | US2:SEM3CAB24INCH | |
| | 0.9 m | US2:SEM3CAB36INCH | |
| Standard current transformers | | | |
|  | <ul style="list-style-type: none"> Standard power cable brown and yellow, 1.82 m long Can be extended up to 100 m while still maintaining accuracy Transformer configuration is carried out in the data manager | | |
| | Output signal | Transformer transmission ratio | Article No. |
| | 100 mA | 50 : 0.1 | US2:SEM3SCCT50 |
| | | 125 : 0.1 | US2:SEM3SCCT125 |
| | | 250 : 0.1 | US2:SEM3SCCT250 |
| | | 400 : 0.1 | US2:SEM3SCCT400 |
| | | 600 : 0.1 | US2:SEM3SCCT600 |
| | | 800 : 0.1 | US2:SEM3SCCT800 |
| | | 1200 : 0.1 | US2:SEM3SCCT1200 |
| | | | |
| Folding transformers | | | |
|  | <ul style="list-style-type: none"> Standard power cable brown and yellow, 1.82 m long Can be extended up to 100 m while still maintaining accuracy Transformer configuration is carried out in the data manager | | |
| | Output signal | Transformer transmission ratio | Article No. |
| | 100 mA | 50 : 0.1 | 7KT1280-5MA00 |
| | | 125 : 0.1 | 7KT1280-5MA01 |
| | | 250 : 0.1 | 7KT1280-5MA02 |
| | | 400 : 0.1 | 7KT1280-5MA03 |
| | | 600 : 0.1 | 7KT1280-5MA04 |
| | | 800 : 0.1 | 7KT1280-5MA05 |
| | | 1200 : 0.1 | 7KT1280-5MA06 |
| | | 1600 : 0.1 | 7KT1280-5MA07 |
| | 2000 : 0.1 | 7KT1280-5MA08 | |
| DIN rail adapters | | | |
|  | <ul style="list-style-type: none"> 5 adapters for snapping onto standard mounting rail 1 adapter each for data manager and for meter racks with 3, 9, 15 and 21 metering modules Adapters are screwed onto the data manager or the meter racks | | |
| | | Article No. | |
| | | US2:SEM3DINKIT | |

SEM3T multichannel temperature measuring system **new**

Data manager for thermal monitoring in electrical systems



| Connections | Version | Power supply | Display | Interface | |
|--------------------|-------------------------|--------------|---------|------------------|---------------|
| Plug-in connectors | Temperature measurement | 24 V DC | Without | Modbus TCP | 7KT1281-0AA00 |
| Plug-in connectors | Temperature measurement | 24 V DC | Without | Modbus TCP/Wi-Fi | 7KT1281-0AA10 |

Further technical specifications

SEM3T

| | |
|-------------------------|------------------------|
| Basic data | |
| Installation | Standard rail mounting |
| Measuring inputs | |
| Temperature sensors | 0 to 130°C |

Accessories

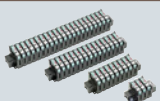
Metering module



- For recording measured values
- No configuration necessary for modules
- Connection of a temperature sensor
- Metering module is plugged into meter rack

| Article No. |
|---------------|
| 7KT1281-1AA00 |

Meter racks



| Version | Article No. |
|-------------------------|----------------|
| For 3 metering modules | US2:SEM3RACK3 |
| For 9 metering modules | US2:SEM3RACK9 |
| For 15 metering modules | US2:SEM3RACK15 |
| For 21 metering modules | US2:SEM3RACK21 |

Connecting cables



- 600 V insulated special cable for connecting meter racks to the data manager

| Length | Article No. |
|--------|-------------------|
| 0.3 m | US2:SEM3CAB12INCH |
| 0.6 m | US2:SEM3CAB24INCH |
| 0.9 m | US2:SEM3CAB36INCH |

Temperature sensors

- Standard connection cable, brown and yellow, 3 m long
- Can be extended up to 15 m while still maintaining accuracy
- Configuration is carried out in the data manager



| Version | Size | Article No. |
|---------------------------------|--------------|---------------|
| Sensors with ring terminal lugs | Sensor 1/4" | 7KT1281-2SA00 |
| | Sensor 5/16" | 7KT1281-2SA01 |
| | Sensor 3/8" | 7KT1281-2SA02 |
| | Sensor 1/2" | 7KT1281-2SA03 |
| Cylindrical sensor | | 7KT1281-2CA00 |

Time and pulse counters

Mechanical counting mechanisms



| Display | Resetting | Rated frequency | Rated control supply voltage U_c | 48 × 48 mm | 72 × 72 mm | – |
|----------------------|-----------|-----------------|------------------------------------|------------|------------|---------|
| Time counter | | | | | | |
| 00000.00 h | Without | – | 10 ... 80 V DC | 7KT5500 | – | – |
| | | | 10 ... 50 V DC | – | 7KT5600 | – |
| | | | 12 ... 24 V DC | – | – | 7KT5801 |
| | | 50 Hz | 24 V AC | 7KT5505 | – | 7KT5802 |
| | | | 115 V AC | 7KT5501 | 7KT5601 | 7KT5803 |
| | | | 230 V AC | 7KT5502 | 7KT5602 | 7KT5804 |
| | | 60 Hz | 115 V AC | 7KT5503 | 7KT5603 | 7KT5806 |
| | | | 230 V AC | 7KT5504 | 7KT5604 | 7KT5807 |
| Pulse counter | | | | | | |
| 0000000 | Without | – | 12 ... 24 V DC | – | – | 7KT5811 |
| | | 50/60 Hz | 24 V AC | – | – | 7KT5812 |
| | | | 230 V AC | – | – | 7KT5814 |

Further technical specifications

| | 7KT55.. | 7KT56.. | 7KT58.. |
|-------------------|--------------------|--|------------------------|
| Basic data | | | |
| Installation | Front mounting | | Standard mounting rail |
| Modular width | – | | 2 MW |
| Front frame | 48 × 48 mm | 72 × 72 mm | – |
| Display | Drum-type register | | |
| Version | – | With narrow frame according to DIN 43700 | – |

Accessories

| | 7KT55.. | 7KT56.. | 7KT58.. |
|---|-----------------|-------------|-------------|
| Cover | | | |
| Size | Article No. | Article No. | Article No. |
| 55 × 55 mm | 7KT9020 | – | – |
| Sealing ring for cover | | | |
| Degree of protection | Scope of supply | Article No. | Article No. |
| IP43 (in switchboards with smooth surfaces) | 1 set = 5 units | 7KT9000 | – |
| Terminal cover | | | |
| Degree of protection | Article No. | Article No. | Article No. |
| IP20 (with connected conductors) | – | 7KT9021 | – |

Electronic counting mechanisms



1

| Display | Resetting | Rated frequency | Rated control supply voltage U_c | |
|----------------------|---------------------------|-----------------|------------------------------------|---------|
| Time counter | | | | |
| 000000.0 h | Without | 50/60 Hz | 24 ... 240 V AC, 12 ... 150 V DC | 7KT5821 |
| | Electrical | 50/60 Hz | 24 ... 240 V AC, 12 ... 150 V DC | 7KT5822 |
| | Electrical and mechanical | 50/60 Hz | 24 ... 240 V AC, 12 ... 150 V DC | 7KT5823 |
| Pulse counter | | | | |
| 0000000 | Electrical and mechanical | 50/60 Hz | 24 ... 240 V AC, 12 ... 150 V DC | 7KT5833 |

Further technical specifications

7KT58..

| Basic data | |
|-------------------|------------------------|
| Installation | Standard mounting rail |
| Modular width | 2 MW |
| Display | LCD display |

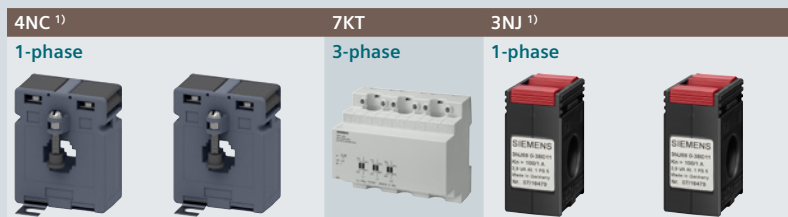
Current transformers

For measuring purposes



| Size | Insulation level U_m | Rated primary current I_{pr} | Rated power P_n | 4NC ¹⁾ 1-phase | | 7KT 3-phase | 3NJ ¹⁾ 1-phase | |
|--------------------------------------|---------------------------|-----------------------------------|----------------------|------------------------------|----------------|----------------|------------------------------|----------------|
| | | | | $I_{sr} = 5 A$ | $I_{sr} = 1 A$ | $I_{sr} = 5 A$ | $I_{sr} = 5 A$ | $I_{sr} = 1 A$ |
| Accuracy class 0.2s | | | | | | | | |
| 1 | 720 V | 150 A | 1 VA | 4NC5121-2FA21 | – | – | – | – |
| | | 200 A | 2.5 VA | 4NC5122-2FC21 | – | – | – | – |
| | | 250 A | 2.5 VA | 4NC5123-2FC21 | – | – | – | – |
| | | 300 A | 5 VA | 4NC5124-2FE21 | – | – | – | – |
| | | 400 A | 5 VA | 4NC5125-2FE21 | – | – | – | – |
| 5 | 720 V | 500 A | 5 VA | 4NC5126-2FE21 | – | – | – | – |
| | | 600 A | 5 VA | 4NC5227-2FE21 | – | – | – | – |
| | | 700 A | 5 VA | 4NC5228-2FE21 | – | – | – | – |
| | | 800 A | 5 VA | 4NC5231-2FE21 | – | – | – | – |
| | | 1000 A | 5 VA | 4NC5232-2FE21 | – | – | – | – |
| Accuracy class 0.5 | | | | | | | | |
| 1 | 720 V | 100 A | 1 VA | 4NC5117-2DA21 | 4NC5117-0DA21 | – | – | – |
| | | 150 A | 2.5 VA | 4NC5121-2DC21 | 4NC5121-0DC21 | – | – | – |
| | | 200 A | 5 VA | 4NC5122-2DE21 | 4NC5122-0DE21 | – | – | – |
| | | 250 A | 5 VA | 4NC5123-2DE21 | 4NC5123-0DE21 | – | – | – |
| 2 | 720 V | 200 A | 5 VA | 4NC5222-2DE21 | 4NC5222-0DE21 | – | – | – |
| | | 250 A | 5 VA | 4NC5223-2DE21 | 4NC5223-0DE21 | – | – | – |
| | | 300 A | 5 VA | 4NC5224-2DE21 | 4NC5224-0DE21 | – | – | – |
| | | 400 A | 5 VA | 4NC5225-2DE21 | 4NC5225-0DE21 | – | – | – |
| 3 | 720 V | 400 A | 5 VA | 4NC5325-2DE21 | 4NC5325-0DE21 | – | – | – |
| | | 500 A | 5 VA | 4NC5326-2DE21 | 4NC5326-0DE21 | – | – | – |
| | | 600 A | 5 VA | 4NC5327-2DE21 | 4NC5327-0DE21 | – | – | – |
| | | 750 A | 5 VA | 4NC5330-2DE21 | 4NC5330-0DE21 | – | – | – |
| 4 | 720 V | 800 A | 5 VA | 4NC5331-2DE21 | – | – | – | – |
| | | 800 A | 10 VA | 4NC5431-2DH21 | 4NC5431-0DH21 | – | – | – |
| | | 1000 A | 10 VA | 4NC5432-2DH21 | 4NC5432-0DH21 | – | – | – |
| | | 1200 A | 10 VA | 4NC5433-2DH21 | 4NC5433-0DH21 | – | – | – |
| | | 1500 A | 10 VA | 4NC5435-2DH21 | 4NC5435-0DH21 | – | – | – |
| | | 1600 A | 15 VA | 4NC5436-2DK21 | – | – | – | – |
| | | 2000 A | 20 VA | 4NC5438-2DL21 | – | – | – | – |
| | | 2500 A | 25 VA | 4NC5440-2DM21 | – | – | – | – |
| | | 3000 A | 30 VA | 4NC5441-2DN21 | – | – | – | – |
| Accuracy class 0.5 calibrated | | | | | | | | |
| – | 720 V | 100 A | 1.5 VA | – | – | – | 3NJ6920-3BD23 | 3NJ6920-3BD13 |
| | | 150 A | 2.5 VA | – | – | – | 3NJ6920-3BE23 | 3NJ6920-3BE13 |
| | | 300 A | 5 VA | – | – | – | 3NJ6940-3BH23 | 3NJ6940-3BH13 |
| | | 400 A | 5 VA | – | – | – | 3NJ6940-3BJ23 | 3NJ6940-3BJ13 |
| | | 500 A | 5 VA | – | – | – | 3NJ6940-3BK23 | 3NJ6940-3BK13 |
| | | 600 A | 5 VA | – | – | – | 3NJ6940-3BL23 | 3NJ6940-3BL13 |

¹⁾ Overcurrent limiting factor FS5



| Size | Insulation level U_m | Rated primary current I_{pr} | Rated power P_n | 4NC 1) 1-phase | | 7KT 3-phase | 3NJ 1) 1-phase | |
|---------------------------|---------------------------|-----------------------------------|----------------------|-------------------|----------------|----------------|-------------------|----------------|
| | | | | $I_{sr} = 5 A$ | $I_{sr} = 1 A$ | $I_{sr} = 5 A$ | $I_{sr} = 5 A$ | $I_{sr} = 1 A$ |
| Accuracy class 1.0 | | | | | | | | |
| 1 | 720 V | 50 A | 1.2 VA | 4NC5112-2CB21 | 4NC5112-0CB21 | – | – | – |
| | | 60 A | 1.2 VA | 4NC5113-2CB21 | 4NC5113-0CB21 | – | – | – |
| | | | 1.25 VA | – | – | 7KT1200 | – | – |
| | | 75 A | 2.5 VA | 4NC5115-2CC21 | 4NC5115-0CC21 | – | – | – |
| | | 100 A | 2.5 VA | 4NC5117-2CC21 | 4NC5117-0CC21 | 7KT1201 | – | – |
| | | 150 A | 2.5 VA | 4NC5121-2CC21 | 4NC5121-0CC21 | – | – | – |
| | | | 3.75 VA | – | – | 7KT1202 | – | – |
| | | | 5 VA | 4NC5122-2CE21 | 4NC5122-0CE21 | – | – | – |
| 2 | 720 V | 200 A | 5 VA | 4NC5222-2CE21 | 4NC5222-0CE21 | – | – | – |
| | | 250 A | 5 VA | 4NC5223-2CE21 | 4NC5223-0CE21 | – | – | – |
| | | 300 A | 5 VA | 4NC5224-2CE21 | 4NC5224-0CE21 | – | – | – |
| | | 400 A | 5 VA | 4NC5225-2CE21 | 4NC5225-0CE21 | – | – | – |
| | | 500 A | 5 VA | 4NC5325-2CE21 | 4NC5325-0CE21 | – | – | – |
| 3 | 720 V | 500 A | 5 VA | 4NC5326-2CE21 | 4NC5326-0CE21 | – | – | – |
| | | 600 A | 5 VA | 4NC5327-2CE21 | 4NC5327-0CE21 | – | – | – |
| | | 750 A | 5 VA | 4NC5330-2CE21 | 4NC5330-0CE21 | – | – | – |
| | | 800 A | 10 VA | 4NC5431-2CH21 | 4NC5431-0CH21 | – | – | – |
| 4 | 720 V | 1000 A | 10 VA | 4NC5432-2CH21 | 4NC5432-0CH21 | – | – | – |
| | | 1250 A | 10 VA | 4NC5434-2CH21 | 4NC5434-0CH21 | – | – | – |
| | | 1500 A | 10 VA | 4NC5435-2CH21 | 4NC5435-0CH21 | – | – | – |
| | | 2000 A | 12.5 VA | 4NC5438-2CJ21 | 4NC5438-0CJ21 | – | – | – |
| | | 2500 A | 12.5 VA | 4NC5440-2CJ21 | 4NC5440-0CJ21 | – | – | – |
| | | 3000 A | 30 VA | 4NC5441-2CN21 | – | – | – | – |

Accessories

Standard rail mounting



| For transformer size | Article No. | Article No. | Article No. | Article No. | Article No. |
|----------------------|---------------|---------------|-------------|-------------|-------------|
| 1 and 5 | 4NC5923-5LT21 | 4NC5923-5LT21 | – | – | – |
| 2 | 4NC5925-5LT21 | 4NC5925-5LT21 | – | – | – |
| 3 | 4NC5930-5LT21 | 4NC5930-5LT21 | – | – | – |
| 4 | 4NC5940-5LT21 | 4NC5940-5LT21 | – | – | – |



Appendix

A



| | |
|---------------------------------|-----|
| Link directory | A/2 |
| Conditions of sale and delivery | A/4 |
| Article number index | A/6 |
| Index | A/7 |
| Notes | A/8 |

Link directory

Catalog LV 14

General information

| | |
|--|--|
| Information on low-voltage power distribution and electrical installation technology | www.siemens.com/lowvoltage |
| Tender specifications | www.siemens.com/lowvoltage/tenderspecifications |
| Conversion tool | www.siemens.com/conversion-tool |
| Image database | www.siemens.com/lowvoltage/picturedb |
| CAX download manager | www.siemens.com/cax |
| Newsletter system | www.siemens.com/lowvoltage/newsletter |
| Siemens YouTube channel | www.youtube.com/Siemens |
| Brochures/catalogs | www.siemens.com/lowvoltage/catalogs |
| Operating instructions/manuals | www.siemens.com/lowvoltage/manuals |
| Siemens Industry Online Support | www.siemens.com/lowvoltage/product-support |
| Siemens Industry Online Support app | www.siemens.com/support-app |
| My Documentation Manager (MDM) | www.siemens.com/lowvoltage/mdm |
| Configurators | www.siemens.com/lowvoltage/configurators |
| Siemens Industry Mall – product catalog and online ordering system | www.siemens.com/industrymall |
| Direct forwarding to the Industry Mall | www.siemens.com/product?Article No. |
| Training | www.siemens.com/sitrain-lowvoltage |
| Local contacts | www.siemens.com/lowvoltage/contact |
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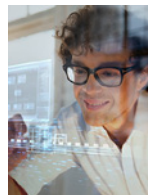
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