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For further technical product information:

Configuration Manual

Measuring Devices and Power Monitoring
Article No.: 3ZW1012-7KM42-0AC1

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Overview

Power monitoring made simple

Simplified installation, a wide range of measuring devices, and easy-to-use software: the system from the SENTRON portfolio is optimally suited for small and medium-sized businesses in industry and infrastructure.

Advantages of our power monitoring system

A scalable system

The power monitoring system requires no expert knowledge for commissioning and is available in small, entry-level starter packages. Both hardware and software can be easily expanded.

Industrie 4.0 and smart buildings

It's not just large companies but SMEs as well that can benefit from digitalization and automation – without incurring high procurement costs. Our power monitoring system gathers the data.

Focus on power quality

A decreasing power quality can cause malfunctions in production facilities and terminal equipment. Our power monitoring system analyzes power quality, thus ensuring higher plant availability.

Audits and standards

Companies have to deal with laws and regulations governing energy efficiency. Our power monitoring system has been certified by the German TÜV, thus providing the basis for energy management in conformance with requirements.

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New in our range

New additions to our comprehensive power monitoring portfolio:

The compact standard mounting rail measuring devices

- 7KM PAC3200T and
- 7KM PAC2200

for the simple and low-cost introduction to energy monitoring as well as the

- I(N), I(Diff), analog expansion module

for N conductors and residual current monitoring as well as the measuring of non-electrical quantities using 0/4 ... 20 mA current signals.

New hardware components of the power monitoring system

Minimum order quantity (PS) or a multiple thereof can be ordered.

Overview

Power management is a matter for decision at the top level

Responsible use of valuable energy resources

Global climate change, scarce energy resources and the increasing demand for energy mean that there is an urgent need for action. The industrialized nations have therefore committed to continuously reduce their annual CO_2 emissions by 2020. The European Council has set a target of improving energy efficiency by 20 percent by 2020. In Germany, the aim is to reduce energy consumption compared with 2008 by 10 percent by 2020, and by 25 percent by 2050.

The international standard ISO 50001 specifies the basic conditions for establishing a corporate energy management system for improved energy efficiency and sustained reduction in a company's energy consumption. Our TÜV-certified power monitoring system from the SENTRON portfolio provides the technical foundation for this. It enables energy flows to be recorded, visualized and analyzed to derive specific measures for optimizing energy use.

A systematic approach to energy efficiency

The standard ISO 50001 supports companies with a specific process description for introducing a corporate energy management system. Standard-compliant energy management optimizes energy utilization, while continuously enhancing energy efficiency.

Defining energy policy objectives

A central management task is the formulation of an in-house energy policy. It defines relevant strategic and operational objectives. Ongoing planning will include the identification of additional optimization potential for the business areas under scrutiny, and the development of relevant improvement measures.

Introducing process optimization

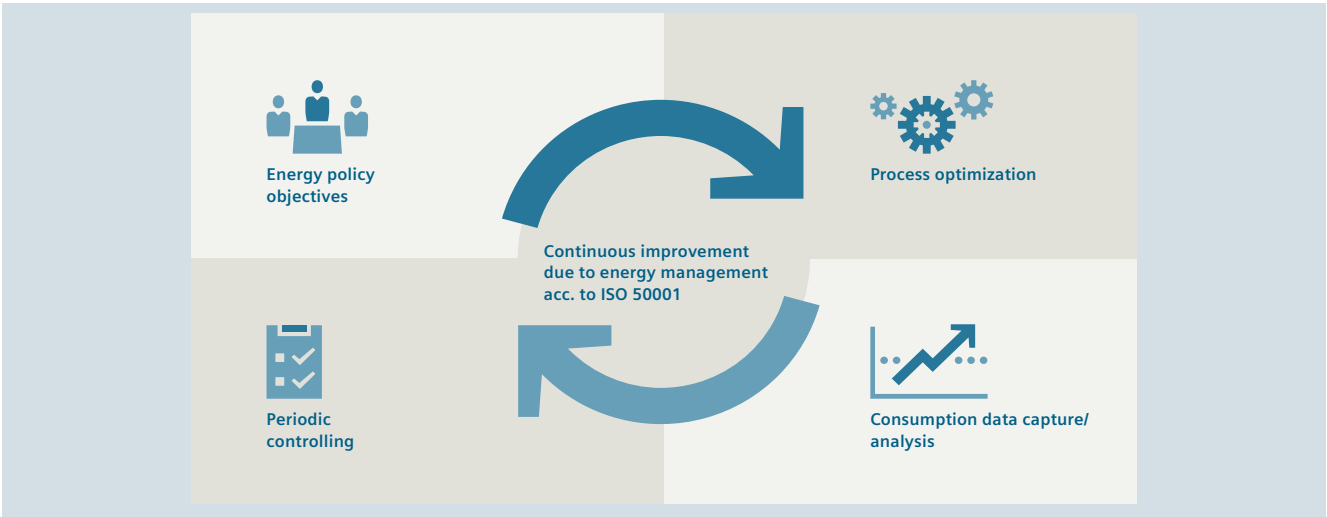
As a first step, an energy manager must be identified and nominated. He will then evaluate captured data, and derive and implement appropriate optimization measures. He will report the achieved results to corporate management.

Making energy flows transparent

As a second step, basic energy consumption and cost data, as well as information on in-house energy production must be collected and documented clearly and verifiably. This requires the development of a reliable and precise system for the capture and analysis of consumption data. The objective is to recognize sustainable savings potential, to derive appropriate measures for that potential, and to implement these measures systematically.

Periodic controlling

Periodic checks will ensure that your energy management system functions correctly, and that objectives are reached. Corrective and preventative measures can then be implemented as needed.



Introduction of a corporate energy management system in accordance with ISO 50001 for continuous improvement of energy efficiency by reducing energy consumption and costs.

Energy management in accordance with ISO 50001

Providing the basis with power monitoring

The power monitoring system from the SENTRON portfolio is suitable for infrastructure, industrial applications, and buildings. The 7KT/7KM PAC measuring devices record the data of outgoing feeders or individual loads.

The 3WL/3VA/3VL circuit breakers supply measured values and important information for diagnostics, fault detection, and maintenance via standardized bus systems.

With the powermanager power monitoring software, the recorded measured values can be easily visualized, analyzed, archived, and monitored.

Recording of generated energy using MID measuring devices

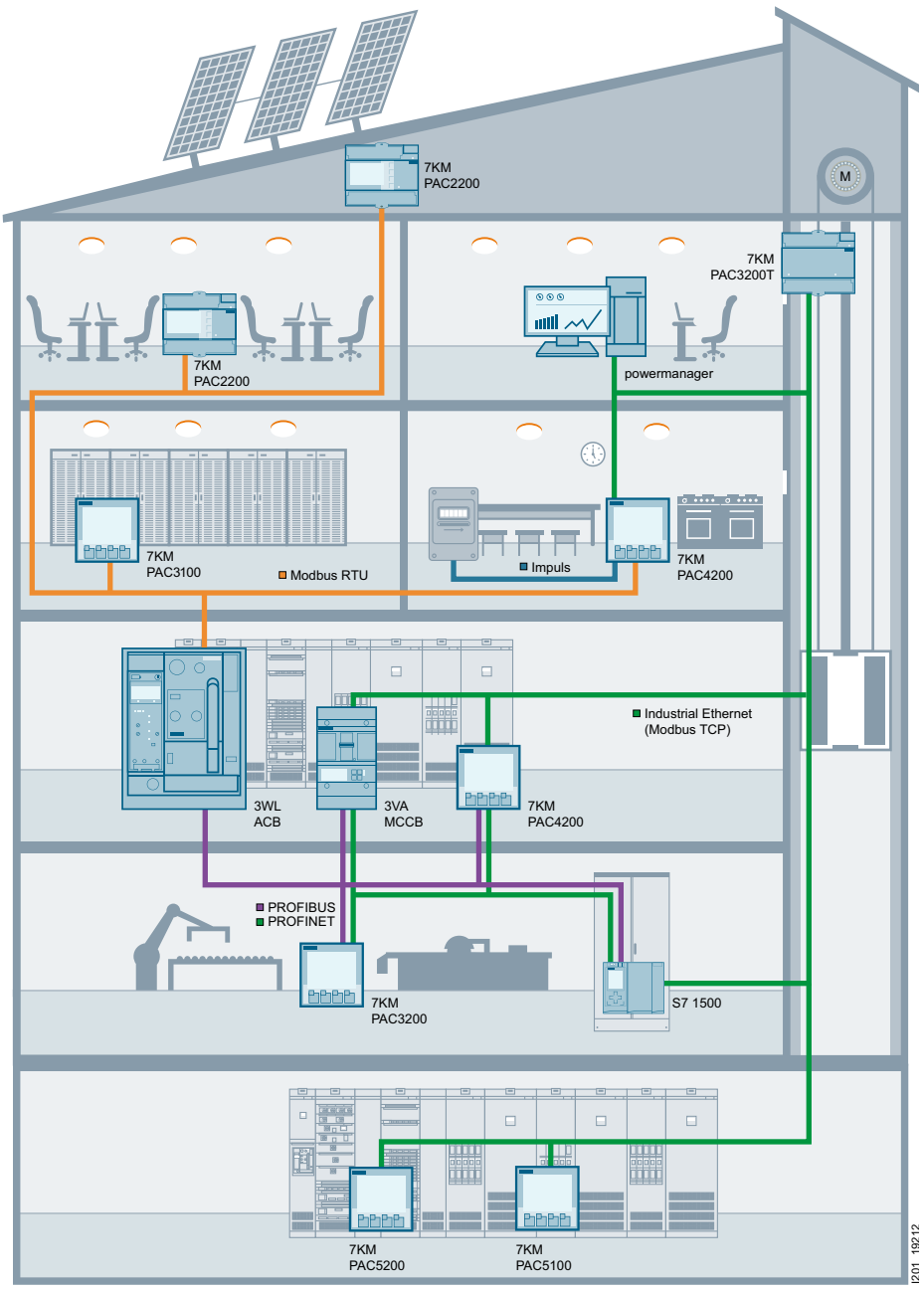
Derivation of optimization measures through transparency of the energy flows

Increased availability of energy through monitoring of critical states in the power supply

Increased system availability through continuous monitoring of switching states

Increased productivity through optimization of energy consumption and energy costs

Transparency at the infeed thanks to seamless recording of the power supply quality



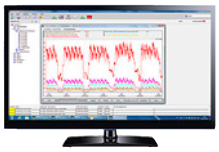
Minimum order quantity (PS) or a multiple thereof can be ordered.

Continuously increasing energy efficiency

Precise cost center accounting for consumers

- Precise allocation of energy costs to cost centers
- Benchmarking between different cost centers
- Increased energy awareness

Detection of energy guzzlers, reduction of load peaks



- Detection of energy-intensive processes and loads
- Cost savings created by amending the power supply agreement
- Tax savings by seamless documentation of application-specific consumption

Protection of sensitive areas for high plant safety

- Avoidance of equipment failures due to overload
- Protection of sensitive devices against harmonics
- Early intervention possible by means of notifications

Monitoring of protective devices for high system availability

- Increased system availability
- Optimization of maintenance
- Fast response to service call-outs

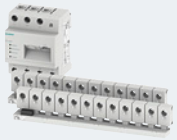
Multi-site power monitoring

- Centralized, multi-site power monitoring via standard IT networks
- Benchmarking of various corporate units increases energy awareness
- Improvement of power supply conditions by bundling supply volumes

Hardware and software components

Overview

Measuring devices and circuit breakers

	7KT PAC1200	7KT PAC1500	7KM PAC2200 NEW	7KM PAC3100	7KM PAC3200T NEW
					
	The flexible solution for multichannel monitoring in the final circuit	The entry-level solution when it comes to energy measurement	The energy meter solution for the standard mounting rail	The cost-effective solution for digital measurement	The compact solution for precise energy measurement
Measuring range/connection					
Max. input voltage L-L/L-N	400 V/230 V	400 V/230 V	480 V/277 V	480 V/276 V	480 V/277 V
Transformer connection version	x/5 A	x/5 A	x/1 A or x/5 A	x/5 A	x/1 A or x/5 A
Direct connection version	40/63 A	80 A/125 A	–	–	–
DC power supply unit with extra-low volt. version	–	–	–	–	–
Single-phase counter version	–	✓	✓	–	–
Electrically isolated voltage inputs	–	–	–	–	–
Version without display (with web server)	–	–	–	–	✓
Measured quantities					
Voltage, current, frequency,	✓	✓[2)]	✓	✓	✓
Power, power factor	✓	✓[2)]	✓	✓	✓
Energy measurement					
• Apparent, active, reactive energy, cos phi	– I ✓ I ✓ I –	– I ✓ I ✓I –	✓ I ✓ I ✓I –	– I ✓ I ✓I –	✓ I ✓ I ✓I –
Extended measured quantities					
• 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	–	–	–	–	–
System integration and communication					
Digital inputs/digital outputs	–	–	1/1	2/2	1/1
S0 interface	–	✓	✓	✓	✓
4DI/2DO expansion module	–	–	–	–	–
M-Bus	–	Optional	✓	–	–
Instabus KNX	–	Optional	–	–	–
Modbus RTU	–	Optional	✓	✓	–
Ethernet with Modbus TCP	✓	–	✓	–	✓
PROFIBUS DPV1	–	–	–	–	–
PROFINET IO/ PROFIenergy	–	–	–	–	–
Expansion module I(N), I(Diff), analog NEW	–	–	–	–	–
Parameterization software	powerconfig	powerconfig	powerconfig	powerconfig	powerconfig
Integration of power monitoring system	powermanager	powermanager	powermanager	powermanager	powermanager
Web servers	✓	–	✓	–	✓
General data					
Measuring accuracy, active/reactive energy	2	1 I 2	1 I 3	1 I 3	0.5 S I 2
MID version	–	✓	✓	–	–
Installation	Standard mounting rail	Standard mounting rail	Standard mounting rail	Front mounting	Standard mounting rail
Dimensions in MW (1 MW = 18 mm) or in mm	4 MW	2 / 4 / 6 MW	6 MW	96 × 96 × 56	6 MW

1) With the exception of devices with power supply units with extra-low voltage.
2) On the display – energy and power values only. Additional measured quantities are transmitted via optional expansion modules 7KT Modbus / 7KT M-Bus
3) THD indication.
4) Measuring accuracy including current transformer
5) DSP800, see chapter "Molded Case Circuit Breakers"

✓ Available / possible -- Not available / not possible

Minimum order quantity (PS) or a multiple thereof can be ordered.

	7KM PAC3200	7KM PAC4200	7KM PAC5100	7KM PAC5200	3WL	3VA ETU8
						
	The specialist solution for precise energy measurement	The professional solution for communication and monitoring	The specialist solution for measured value acquisition	The expert solution for power supply quality	The specialist solution for protection and energy measurement	The specialist solution for protection and energy measurement
	690 V/400 V[1]	690 V/400 V[1]	690 V/400 V	690 V/400 V	690 V/400 V	690 V/400 V
	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	Integrated	Integrated
	–	–	–	–	–	–
	22 ... 65 V	22 ... 65 V	–	–	24 V	24 V
	–	–	–	–	–	–
	–	–	✓	✓	–	–
	–	–	✓	✓	–	–
	✓	✓	✓	✓	✓	✓
	✓	✓	✓	✓	✓	✓
	✓ I ✓ I ✓ I –	✓ I ✓ I ✓ I ✓	✓ I ✓ I ✓ I ✓	✓ I ✓ I ✓ I ✓	✓ I ✓ I ✓ I ✓	✓ I ✓ I ✓ I ✓
	✓[3]	✓	✓	✓	✓	✓
	–	3. ... 31.	2. ... 40.	2. ... 40.	–	–
	–	✓	✓	✓	–	–
	–	✓	–	✓	✓	✓
	–	–	–	✓	–	–
	✓	✓	–	–	✓	✓
	✓	✓	✓	✓	✓	✓
	✓	✓	✓	✓	–	–
	–	> 4000 events	✓	✓	✓	✓
	–	✓	–	–	–	–
	–	–	–	✓	–	–
	–	–	–	✓	–	–
	1/1	2/2	0/2	0/2	–	–
	✓	✓	–	–	Optional	Optional
	–	Optional	–	–	Optional	Optional
	–	–	–	–	–	–
	–	–	–	–	–	–
	Optional	Optional	–	–	Optional	Optional
	✓	✓	✓	✓	✓	✓
	Optional	Optional	–	–	Optional	Optional
	Optional	Optional	–	–	Optional	Optional
	Optional	Optional	–	–	--	--
	powerconfig, TIA Portal V14	powerconfig, TIA Portal V14	powerconfig	powerconfig	powerconfig	powerconfig, TIA Portal V14
	powermanager SIMATIC Energy Suite	powermanager SIMATIC Energy Suite	powermanager	powermanager	powermanager	powermanager SIMATIC Energy Suite
	–	–	✓	✓	–	–
	0.5 S I 2	0.2 S I 2	0.5 S I 2	0.5 S I 2	2 S I 2[4]	2 S I 2[4]
	–	–	–	–	–	–
	Front mounting	Front mounting	Front installation/standard rail		see Chapter 1	see Chapter 2
	96 × 96 × 56	96 × 96 × 82	96 × 96 × 100	96 × 96 × 100	96 × 96 × 82[5]	96 × 96 × 82[5]

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Minimum order quantity (PS) or a multiple thereof can be ordered.

Hardware and software components

Expansion modules for 7KT PAC measuring devices

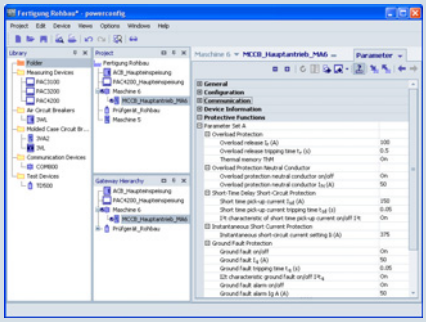
			
	M-Bus	Modbus RTU	KNX
Specification	Up to 9600 bit/s	Up to 115200 bit/s	Up to 19200 bit/s

Expansion modules for 7KM PAC measuring devices

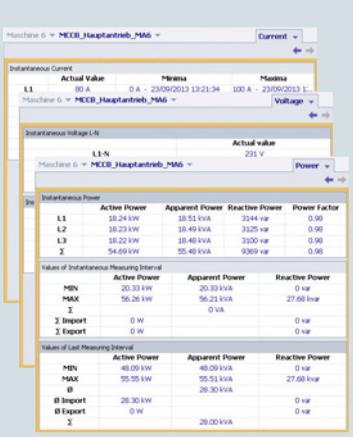
					
	Switched Ethernet For 7KM PAC3200, 7KM PAC4200 and 3VA COM100/COM800	PROFIBUS DP For 7KM PAC3200, 7KM PAC4200 and 3VA COM100/COM800	RS 485 For 7KM PAC3200, 7KM PAC4200 and 3VA COM100/COM800	4DI/2DO For 7KM PAC4200 (number of digital inputs/outputs per module 4/2)	7KM PAC I(N), I(Diff), analog NEW For 7KM PAC4200 and 3200
Protocol	PROFINET IO PROFIenergy Modbus TCP	DPV1	Modbus RTU	--	--
Maximum number of connectable expansion modules of the same type	1	1	1	2	1

The powerconfig software for commissioning

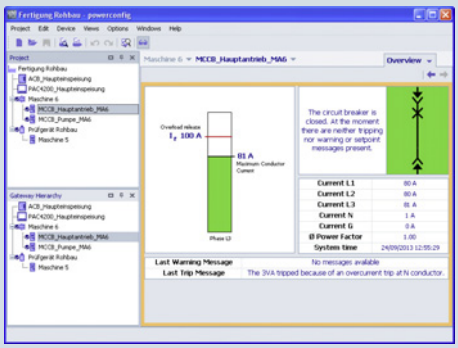
	Software tool for the efficient commissioning and diagnosis of communication-capable SENTRON components
License	Free use
Supported devices	All PAC measuring devices, incl. expansion modules 3WL/3VL/3VA/ATC5300 circuit breakers
General range of functions	The PC-based tool facilitates parameterization of the devices, resulting in substantial time savings, particularly when several devices have to be set up. The device settings can be stored in the PC and printed out. The tool enables monitoring of instantaneous measured quantities, which can be printed out if required. Execution of specific device functions, such as resetting of devices and setting of energy counters
Supported languages	German, English, Chinese, Spanish, Portuguese
Service functions	Firmware updates and switching of language packs for 7KM PAC measuring devices
Functional scope with 7KM PAC4200 and 3VA	Readout of data stored in the device (events; load profile history; daily energy counters), which are saved in csv format



Setting of parameter values



Display of actual measured quantities



Display of the circuit breaker state

For more information about powerconfig, see chapter "Software"

Minimum order quantity (PS) or a multiple thereof can be ordered.

Overview

Hardware components of the PC-based power monitoring system

Software component of the power monitoring software: powermanager

Power monitoring system with SENTRON components

The TÜV-certified power monitoring system from the SENTRON portfolio consists of the 7KT/7KM PAC measuring devices, the 3WL/3VA/3VL circuit breakers, and the powermanager power monitoring software. This forms the technical basis for supporting a corporate energy management system as specified by ISO 50001.

The hardware and software components are optimally coordinated with each other. For example, special drivers for the SENTRON devices are integrated in the powermanager power monitoring software. They enable energy data to be captured without any great configuration effort and they indicate the key measured values or the status by means of predefined views.

This reduces the engineering overhead. The device functions are optimally supported in the software.

Features of the powermanager power monitoring software

The powermanager power monitoring software constitutes the optimum technical basis for supporting a corporate power monitoring system as specified by ISO 50001 and EN 16247:

- Independent power monitoring software
- Can be operated using a Windows PC and measuring devices with Ethernet connection
- Easy getting started with basic license (Basic Package), can be extended with flexible licensing concept according to customer requirements
- Fully scalable, relative to number of devices and software functions
- Optimum integration of 7KT/7KM PAC measuring devices, 3WL/3VL/3VA circuit breakers, 7KM PAC 5200 power quality devices and any other Modbus devices
- Support of the various device and communication interfaces (Modbus RTU, Modbus TCP)
- Status display of devices
- Available languages: German, English, Spanish, Portuguese, Italian, French, Turkish, Chinese

PC-based power monitoring system

Application

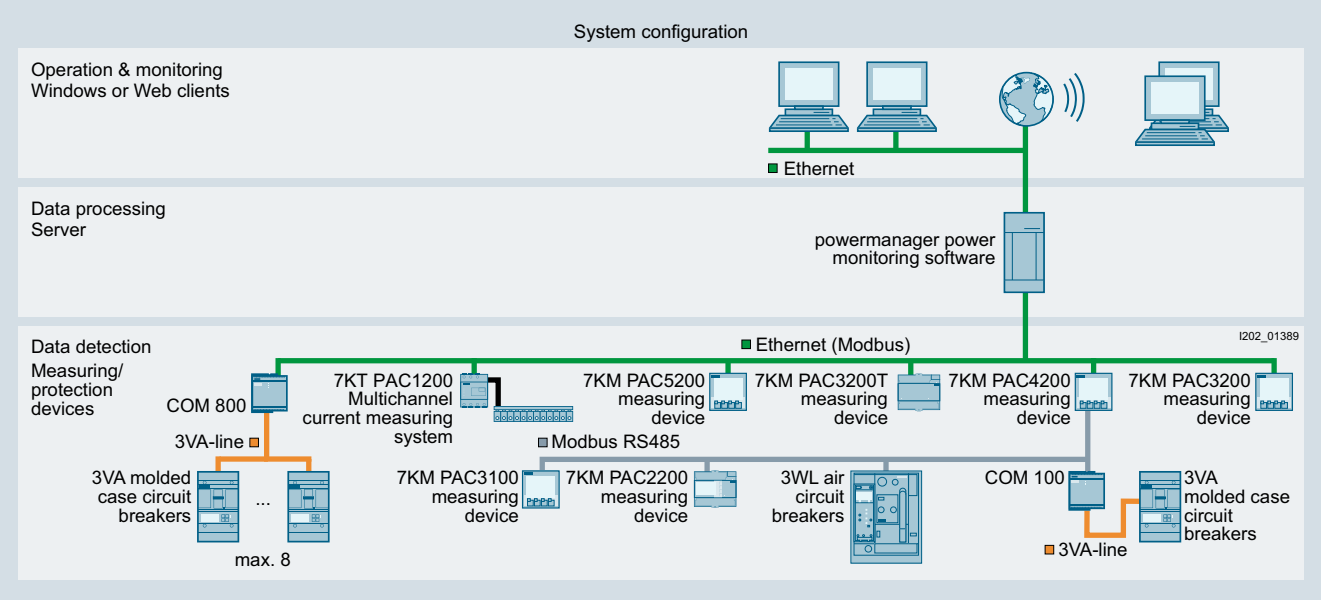
Industries

An energy-efficient production system enhances both the image and the productivity of the company, and thus its competitiveness.

Power monitoring as the technical basis for energy management for increasing a company's energy efficiency is thus of interest to all areas, from industrial applications to infrastructure, and buildings in the service sector.

System configuration

- Integration of measuring devices by means of predefined device templates for the 7KT/7KM PAC measuring devices and the 3WL/3VA/3VL circuit breakers
- Easy integration of existing modbus-capable measuring devices
- Communication through Standard Ethernet
- Integration of devices with RS 485 interface (ModbusRTU) through Modbus gateway, e.g. the 7KM PAC4200 measuring device can be used as the gateway



Typical topology of a power monitoring system

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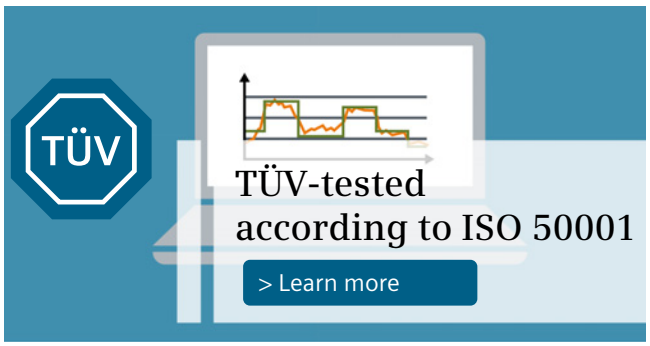
More information

TÜV certification



The TÜV certificate is available from

www.siemens.com/tuev-certificate-of-conformity

Hardware of the PC-based power monitoring system

The hardware components of the PC-based power monitoring system are

- 7KM PAC measuring devices, see this chapter
- 3WL air circuit breakers, see chapter "Air Circuit Breakers"
- 3VL molded case circuit breakers, see chapter "Molded Case Circuit Breakers"
- 3VA molded case circuit breakers, see chapter "Molded Case Circuit Breakers"

Software of the PC-based power monitoring system

The software of the PC-based power monitoring system is powermanager; see chapter "Software".

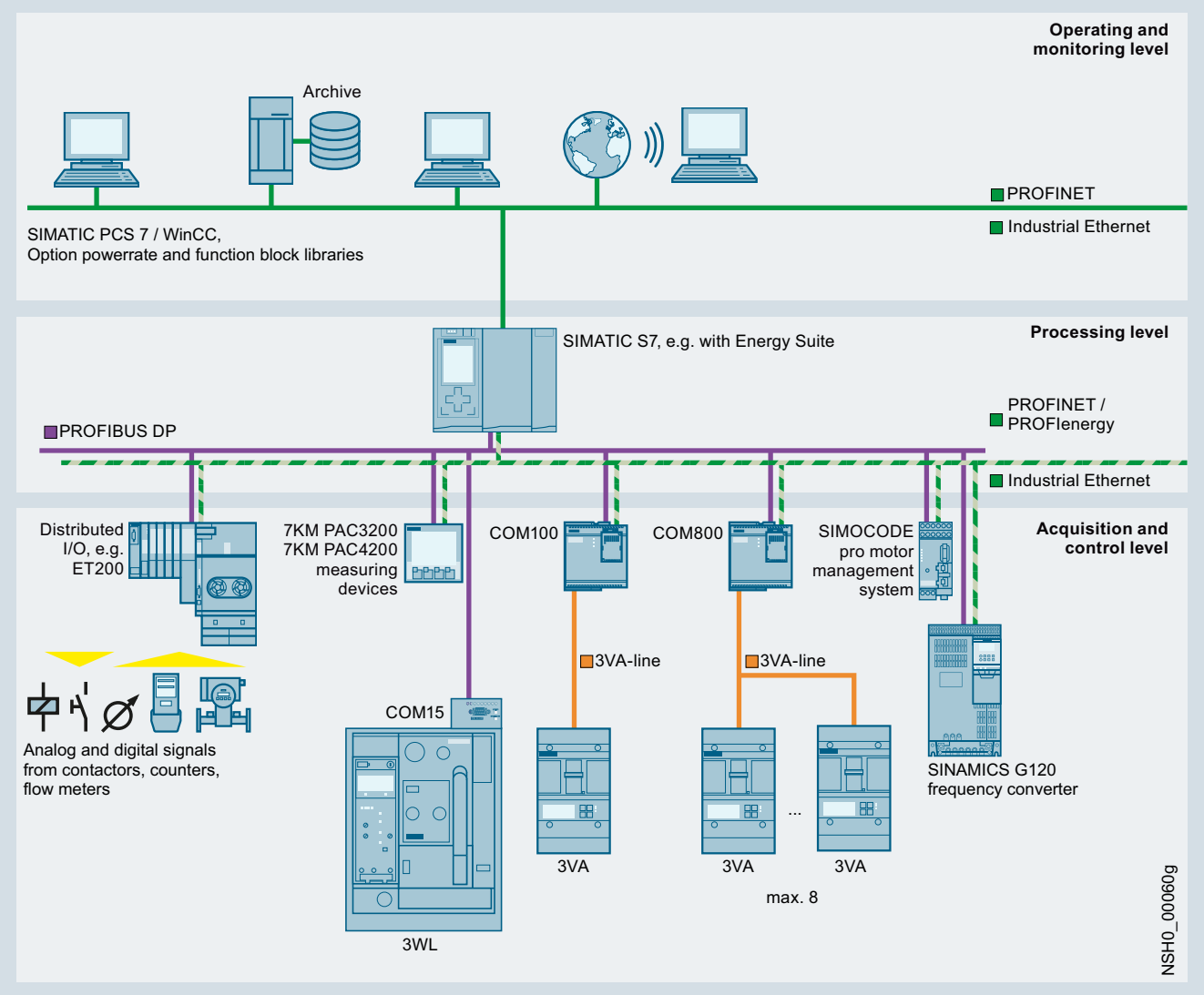
Powermanager system packages with software and hardware are an easy and low-cost way to get started with a power monitoring system; see chapter "Software".

Internet

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

Minimum order quantity (PS) or a multiple thereof can be ordered.

Overview



SIMATIC-based solutions for the process and manufacturing industry

A key feature of the process and manufacturing industry is frequently high energy consumption. It therefore makes sense to integrate a power data management system in existing systems.

Communication via PROFIBUS DP

PROFIBUS DP enables integration of a wide range of devices:

- For the protection of distribution boards and loads: Protective devices, such as circuit breakers
- For open-loop and closed-loop control: Frequency converters, motor management systems and soft starters
- For detection
  - Electrical measured quantities: Via the 7KM PAC3200/4200 measuring devices
  - Non-electrical measured quantities: Via analog/digital converters

PROFINET and PROFIenergy

An increasing number of devices in automation technology offer PROFINET. The 7KM PAC Switched Ethernet PROFINET expansion module enables the 7KM PAC3200/PAC4200 measuring devices and 3VA circuit breakers to be connected to the automation systems.

PROFIenergy is a "Common Application Profile" from Profibus International. Thanks to PROFIenergy it is possible to create a power data management system with standardized device interfaces.

Function block libraries for SIMATIC PCS 7 and WinCC

The function block library for SIMATIC PCS 7 and WinCC ensures device integration as follows:

- Measured quantities and states can be connected via CFC
- Structured display of measured quantities and protection parameters for the 3WL/3VA/3VL circuit breakers
- Limit value violations are displayed, archived and acknowledged in the relevant communications system in the usual way
- Circuit breakers can be program-controlled or manually operated with the appropriate user authorization

SIMATIC-based power data management system

Benefits

- Increased energy efficiency due to precise knowledge of the load profile
- Optimization of power supply agreements
- Allocation of power costs to cost centers
- Optimization of plant maintenance
- Identification of critical plant conditions
- Reliable monitoring of the power limit through automatic load management

Application

The SIMATIC-based power data management system is used in all industries in which PCS 7 and WinCC are used, and the transparency and monitoring of power flows is crucial.

More information

Hardware components

The hardware components of the SIMATIC-based power data management system are

- 7KM PAC measuring devices, see this chapter
- 3WL air circuit breakers, see chapter "Air Circuit Breakers"
- 3VL molded case circuit breakers, see chapter "Molded Case Circuit Breakers"
- 3VA molded case circuit breakers, see chapter "Molded Case Circuit Breakers"

Software components

The software components of the SIMATIC-based power data management system are

- Energy Suite
- SIMATIC Modbus/TCP SENTRON PAC
- Library 7KM PAC3200 for SIMATIC WinCC

For information about all the software components, see chapter "Software"

Internet

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

Overview

Devices	Page	Application	Standards	Used in: Non-residential buildings	Residential buildings	Industry
7KM PAC measuring devices						
		The 7KM PAC measuring devices are used to measure and display all relevant system parameters in low-voltage power distribution. They can be used for both single-phase and multi-phase measurements in 3 and 4-conductor power supply systems (TN, TT, IT). They record energy values for main distribution boards, electrical branches or individual loads precisely and reliably, and also supply key measured values for assessment of the state of the plant and the quality of the power supply.				
	**7KM PAC2200 measuring device** *NEW* Screw terminals	12/16	Standard rail instrument with graphics display, one integrated digital input and output and an integrated communication interface (Mobus TCP -3 simultaneous connections, Modbus RTU, M-Bus) for the transmission of measured values and for configuration. Display of 30 electrical measured values and consumption values in switchboard assemblies, infeeds or outgoing feeders. International standards and multi-lingual displays for worldwide use.	Measurement accuracy for energy acc. to IEC 61557-12	✓	--	✓
	**7KM PAC3100 measuring device** AC/DC wide-range power supply unit, screw connection	12/16	Control panel instrument with graphics display, integrated digital inputs and outputs and an RS 485 interface for the transmission of measured values and for configuration. Display of 30 electrical measured values and consumption values in switchboard assemblies, infeeds or outgoing feeders. International standards and multi-lingual displays for worldwide use.	Measurement accuracy for energy acc. to IEC 61557-12	✓	--	✓
	**7KM PAC3200T measuring device** *NEW* Screw terminals	12/16	Standard rail instrument without graphics display with integrated web server, one integrated digital input and output and a Modbus TCP interface for the transmission (3 simultaneous connections) of measured values and for configuration. Display of 50 electrical measured values and consumption values in switchboard assemblies, infeeds or outgoing feeders. International standards for worldwide use.	Measurement accuracy for energy acc. to IEC 61557-12	✓	--	✓
	**7KM PAC3200 measuring device** 3 versions: • AC/DC wide-range power supply unit, screw connection • DC power supply unit with extra-low voltage, screw connection • AC/DC wide-range power supply unit, ring cable lug connection	12/18	Control panel instrument with graphics display, integrated digital inputs and outputs and an integrated Ethernet interface for the transmission of measured values and for configuration. Display of over 50 electrical measured values for switchboard assemblies, infeeds or outgoing feeders. Dual-tariff measuring devices for precise energy measurement for power import and feedback. The following expansion modules are available: • 7KM PAC Switched Ethernet PROFINET • 7KM PAC RS 485 • 7KM PAC PROFIBUS DP • 7KM PAC I(N), I(Diff), analog	Measuring accuracy for energy acc. to IEC 62053-22/23 and IEC 61557-12	✓	--	✓
	**7KM PAC4200 measuring device** 3 versions: • AC/DC wide-range power supply unit, screw connection • DC power supply unit with extra-low voltage, screw connection • AC/DC wide-range power supply unit, ring cable lug connection	12/20	Control panel instrument with graphics display, user-defined displays, memory, clock and calendar function, digital inputs and outputs and an integrated Ethernet interface with gateway function to transfer measured values and configurations. Display of over 200 electrical measured values for switchboard assemblies, infeeds or outgoing feeders. Extensive functions for precise energy measurement for power import and feedback and assessment of the system quality. The following expansion modules are available: • 7KM PAC Switched Ethernet PROFINET • 7KM PAC RS 485 • 7KM PAC PROFIBUS DP • 7KM PAC 4DI/2DO • 7KM PAC I(N), I(Diff), analog	Measuring accuracy for energy acc. to IEC 62053-22/23 and IEC 61557-12	✓	--	✓

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Introduction

Devices		Page	Application	Standards	Used in		
					Non-residential buildings	Residential buildings	Industry
	**7KM PAC5100 measuring device** 2 versions: • Control panel instrument with graphics display • Standard rail instrument without display	12/22	Control panel instrument with graphics display and user-defined displays, or instrument for standard rail mounting in accordance with EN 60750, web server for parameterization, visualization and data management, 2 binary outputs, electrically isolated voltage inputs, synchronization via internal RTC clock or externally via NTP, 4 freely parameterizable LEDs for device status or limit violations, as well as an integrated RJ45 Ethernet interface. Recording of more than 250 electrical measured values for switchboard assemblies, infeeds or outgoing feeders, extensive functions for precise energy measurement for power import and feedback, and for assessment of the system quality.	Measuring accuracy for energy acc. to IEC 62053-22/23 and IEC 61557-12	✓	--	✓
	**7KM PAC5200 measuring device** 2 versions: • Control panel instrument with graphics display • Standard rail instrument without display	12/23	Control panel instrument with graphics display and user-defined displays or instrument for standard rail mounting in accordance with EN 60750, web server for parameterization, visualization and data management, 2 binary outputs, electrically isolated voltage inputs, flicker in accordance with IEC 61000-4-15, synchronization via internal RTC clock or externally via NTP, 4 freely parameterizable LEDs for device status or limit violations, 2 GB memory, integrated fault recorder, reporting in accordance with EN 50160, rms recorder, as well as an integrated RJ45 Ethernet interface. Recording of more than 250 electrical measured values for switchboard assemblies, infeeds or outgoing feeders. Extensive functions for precise energy measurement for power import and feedback and assessment of the system quality.	Measuring accuracy for energy acc. to IEC 62053-22/23 and IEC 61557-12	✓	--	✓
	**7KM PAC expansion modules**	12/26	• The 7KM PAC Switched Ethernet PROFINET expansion module is used to connect the 7KM PAC3200 and 7KM PAC4200 measuring devices and 3VA molded case circuit breakers to Switched Ethernet PROFINET (PROFIenergy). • The 7KM PAC PROFIBUS DP expansion module is used to connect the 7KM PAC3200 and 7KM PAC4200 measuring devices and 3VA molded case circuit breakers to the PROFIBUS DPV1 • The 7KM PAC RS 485 expansion module is used to connect simple devices with RS 485 interface, such as the 7KM PAC3200 and 3VA molded case circuit breaker, and supports the Modbus RTU protocol. • The 7KM PAC 4DI/2DO expansion module is used to expand the 7KM PAC4200 measuring device to up to 10 digital inputs and 6 digital outputs. • The 7KM PAC I(N), I(Diff), analog expansion module adds the following functions for 7KM PAC3200 and 7KM PAC4200 devices: - N-conductor measurement - Two analog inputs with 0/4 ... 20 mA signaling to measure electrical and non-electrical quantities - Residual current measurement	IEC 61784-2 IEC 61158 RS 485 IEC 62053-31	✓	--	✓

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Minimum order quantity (PS) or a multiple thereof can be ordered.

Overview

7KM PAC2200 measuring device

The 7KM PAC2200 measuring device is a standard rail instrument with a graphical display and integrated web server for acquiring important measured values to evaluate the plant state and power quality.

The 7KM PAC2200 measuring device has

- an integrated Ethernet interface with Modbus TCP protocol, which enables up to 3 simultaneous connections
- an M-Bus interface or
- a Modbus RTU interface

An expansion module is not required for this.

The 7KM PAC2200 measuring device

- is also suitable for direct measurement up to 480 V UL-L, CATIII
- is designed for current measurement via x/1 A or x/5 A transformers, or directly up to 65 A (CATIII)
- is powered by the measurement voltage

Benefits

- Simple mounting and commissioning on standard mounting rail
- Compact design, directly in the control panel
- Worldwide use
- Interface to power monitoring system
- Low mounting depth
- Free, intuitive configuration software, powerconfig, see chapter "Software"
- Interface possible to power monitoring software, powermanager, see chapter "Software"

Selection and ordering data

	Version	SD d	Article No. www.siemens.com/product?Article No.	PU (UNIT, SET, M)	PS	PG
 7KM2200-2EA30-1CA1	**7KM PAC2200 measuring device**		**Screw connection** ⏚			
	Standard rail instrument 6 MW Screw connections for current and voltage connection Measuring inputs U_e: max. 480/277 V 3 AC, 50/60 Hz					
	7KM PAC2200 measuring device, x/1 A or x/5 A transformer measurement					
	• With M-Bus interface		**7KM2200-2EA30-1CA1**	1	1 unit	1DD
	• With Modbus RTU interface		**7KM2200-2EA30-1DA1**	1	1 unit	1DD
	• With Modbus TCP interface		**7KM2200-2EA30-1EA1**	1	1 unit	1DD
	7KM PAC2200 measuring device, direct measurement 65 A					
	• With M-Bus interface		**7KM2200-2EA40-1CA1**	1	1 unit	1DD
	• With Modbus RTU interface		**7KM2200-2EA40-1DA1**	1	1 unit	1DD
	• With Modbus TCP interface		**7KM2200-2EA40-1EA1**	1	1 unit	1DD

More information

For current transformers, see page 12/45 or see chapter "Switch Disconnectors"

For other accessories, see page 12/44

powerconfig is available free of charge at http://support.automation.siemens.com/WW/view/en/63452759

For more information about powerconfig and powermanager, see chapter "Software"

7KM PAC3100 measuring devices

Overview

7KM PAC3100 measuring device

The 7KM PAC3100 measuring device is a control panel instrument for acquiring important measured values to evaluate the plant state and power quality.

The 7KM PAC3100 measuring device is fitted with an integrated Modbus RTU interface via RS 485, no expansion module is required.

Benefits

- Simple mounting and commissioning
- High IP65 degree of protection (front side, when installed) permits usage in extremely dusty and wet environments
- Intuitive operation using 4 function buttons and multilingual plain text displays
- Easy adaptation to different systems using integrated and optional
  - Digital inputs and outputs
  - Communication interfaces
- Worldwide use
  - At least 8 languages
  - International approvals
  - Developed and tested to European and international standards
- Low mounting depth
- Free, intuitive configuration software, powerconfig, see chapter "Software"

Selection and ordering data

	Version	SD	Article No. www.siemens.com/product?Article No.	PU (UNIT, SET, M)	PS	PG
		d				
 7KM3133-0BA00-3AA0	**7KM PAC3100 measuring device** Control panel instrument, 96 x 96 mm Screw connections for current and voltage connection AC/DC wide-voltage power supply unit U_{AUX}: 100 … 240 V AC ± 10%, 50/60 Hz 110 … 250 V DC ± 10% Measuring inputs U_e: max. 480/277 V 3 AC, 50/60 Hz I_e: /5 A		**Screw connection** ⊕			
			7KM3133-0BA00-3AA0	1	1 unit	1DD

More information

For current transformers, see page 12/45 or see chapter "Switch Disconnectors"

For other accessories, see page 12/44

powerconfig is available free of charge at http://support.automation.siemens.com/WW/view/en/63452759

For more information about powerconfig, see chapter "Software"

Minimum order quantity (PS) or a multiple thereof can be ordered.

Overview

7KM PAC3200T measuring device

The 7KM PAC3200T measuring device is a standard rail instrument without a display but with an integrated web server for acquiring important measured values to evaluate the plant state and power quality.

The 7KM PAC3200T measuring device has an integrated Ethernet interface with Modbus TCP protocol, which enables up to 3 simultaneous connections. An expansion module is not required for this.

The 7KM PAC3200T measuring device

- is also suitable for direct measurement up to 480 V UL-L, CATIII or via current transformer
- is for x/1A or x/5A transformer current measurement and
- meets the high requirements of IEC 61557-1,

Benefits

- Simple mounting and commissioning on standard mounting rail
- Compact design, directly in the control panel
- Worldwide use
- Interface to power monitoring system, powermanager, see chapter "Software"
- Low mounting depth
- Free, intuitive configuration software, powerconfig, see chapter "Software"

Selection and ordering data

	Version	SD d	Article No. www.siemens.com/product?Article No.	PU (UNIT, SET, M)	PS	PG
 7KM3200-0CA01-1AA0	**7KM PAC3200T measuring device** • Standard rail instrument 6 MW without display, with integrated web server • Screw connections for current and voltage connection • AC/DC wide-voltage power supply unit U_{AUX}: 90 … 276 V AC 50/60 Hz 110 … 275 V DC • Measuring inputs U_e: max. 480/277 V 3 AC, 50/60 Hz		**Screw connection** ⏚ **7KM3200-0CA01-1AA0**	1	1 unit	1DD

More information

For current transformers, see page 12/45 or see chapter "Switch Disconnectors"

For other accessories, see page 12/44

powerconfig is available free of charge at http://support.automation.siemens.com/WW/view/en/63452759

For more information about powerconfig, see chapter "Software"

7KM PAC3200 measuring devices

Overview

7KM PAC3200 measuring device

The 7KM PAC3200 measuring device is a control panel instrument for acquiring important measured values to evaluate the plant state and power quality.

The 7KM PAC3200 measuring device is fitted with an integrated Modbus TCP interface via Ethernet, no expansion module is required.

Power distribution in the TIA Portal

The devices fit seamlessly into V14 or higher of TIA Portal, thus enabling parameter assignment, commissioning and automation of power distribution in the application itself.

The benefits for you:

- Engineering with one tool only
- Intuitive configuration of power distribution
- Access to measured and diagnostic data

More information

www.siemens.com/lowvoltage/tia-portal

Benefits

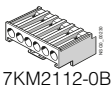
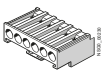
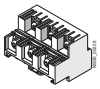
- Simple mounting and commissioning
- High IP65 degree of protection (front side, when installed) permits usage in extremely dusty and wet environments
- Intuitive operation using 4 function buttons and multilingual plain text displays
- Easy adaptation to different systems using integrated and optional
  - Digital inputs and outputs
  - Communication interfaces
- Worldwide use
  - At least 8 languages
  - International approvals
  - Developed and tested to European and international standards
- Low mounting depth

Additional performance characteristics of the 7KM PAC3200

- Precise energy measurement
- Versatile system integration
  - Integrated Ethernet interface
  - Optional communication modules available
  - Multifunctional digital inputs and outputs
  - Limit monitoring
- Can be connected directly to power supply systems up to 690 V AC (UL-L) and CATIII without voltage transformers (with the exception of devices with power supply units with extra-low voltage)
- User-friendly configuration software, powerconfig, see chapter "Software"

Minimum order quantity (PS) or a multiple thereof can be ordered.

Selection and ordering data

	Version	SD d	Article No. www.siemens.com/product?Article No.	PU (UNIT, SET, M)	PS	PG
  7KM2112-0BA00-3AA0	**7KM PAC3200 measuring device** Control panel instrument, 96 x 96 mm Screw connections for current and voltage connection AC/DC wide-voltage power supply unit U_{AUX}: 95 … 240 V AC ± 10%, 50/60 Hz 110 … 340 V DC ± 10% Measuring inputs U_e: max. 690/400 V 3 AC, 50/60 Hz I_e: /1 A or /5 A		**Screw connection** **7KM2112-0BA00-3AA0**	1	1 unit	1DD
  7KM2111-1BA00-3AA0	**7KM PAC3200 measuring device** Control panel instrument, 96 x 96 mm Screw connections for current and voltage connection DC power supply unit with extra-low voltage U_{AUX}: 22 … 65 V DC ± 10% Measuring inputs U_e: max. 500/289 V 3 AC, 50/60 Hz I_e: /1 A or /5 A		**Screw connection** **7KM2111-1BA00-3AA0**	1	1 unit	1DD
  7KM2112-0BA00-2AA0	**7KM PAC3200 measuring device** Control panel instrument, 96 x 96 mm Ring cable lug connections for current and voltage connection AC/DC wide-range power supply U_{AUX}: 95 … 240 V AC ± 10%, 50/60 Hz 110 … 340 V DC ± 10% Measuring inputs U_e: max. 690/400 V 3 AC, 50/60 Hz I_e: /1 A or /5 A		**Ring cable lug connection** **7KM2112-0BA00-2AA0**	1	1 unit	1DD

More information

For current transformers, see page 12/45 or see chapter "Switch Disconnectors"

For other accessories, see page 12/44

powerconfig is available free of charge at http://support.automation.siemens.com/WW/view/en/63452759

For more information about powerconfig, see chapter "Software"

7KM PAC4200 measuring devices

Overview

7KM PAC4200 measuring device

The 7KM PAC4200 measuring device is a control panel instrument for acquiring important measured values to evaluate the plant state and power quality.

The 7KM PAC4200 measuring device is fitted with an integrated Modbus TCP interface via Ethernet, no expansion module is required.

Power distribution in the TIA Portal

The devices fit seamlessly into V14 or higher of TIA Portal, thus enabling parameter assignment, commissioning and automation of power distribution in the application itself.

The benefits for you:

- Engineering with one tool only
- Intuitive configuration of power distribution
- Access to measured and diagnostic data

More information:

www.siemens.com/lowvoltage/tia-portal

Benefits

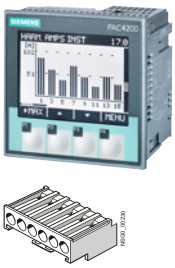
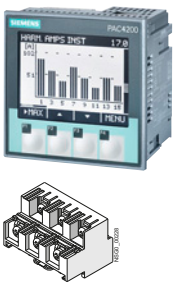
- Simple mounting and commissioning
- High IP65 degree of protection (front side, when installed) permits usage in extremely dusty and wet environments
- Intuitive operation using 4 function buttons and multilingual plain text displays
- Easy adaptation to different systems using integrated and optional
  - Digital inputs and outputs
  - Communication interfaces
- Worldwide use
  - At least 8 languages
  - International approvals
  - Developed and tested to European and international standards
- Low mounting depth

Additional performance characteristics of the 7KM PAC4200:

- Precise energy measurement
- Versatile system integration
  - Integrated Ethernet interface
  - Optional communication modules available
  - Multifunctional digital inputs and outputs
  - Limit monitoring
- Can be connected directly to power supply systems up to 690 V AC (UL-L) and CATIII without voltage transformers (with the exception of devices with extra-low voltage power supply units)
- User-friendly configuration software, powerconfig, see chapter "Software"
- Monitoring of plant status and power supply quality
  - Basic information for evaluating the power supply quality
  - Logging of plant history in the form of operation, control and system-related events
- Recording of the power range through power averaging (load profile)
- Daily energy meters for apparent, active and reactive energy across 365 days for cut-off date assessment
- Detection of gas, water, compressed air or other energy sources via pulse counter to the digital inputs
- Can be expanded using modules to up to 10 digital inputs and 6 digital outputs
- Counters for apparent, active and reactive energy for the precise detection of the power consumption of a partial process or manufacturing process
- 10/100 Mbit/s Ethernet interface with gateway function for the easy connection of devices with serial RS 485 interface via 7KM PAC RS 485 expansion module to an Ethernet network
- Comprehensive user-friendly indicators, such as user-defined displays, bar and status indicators, phase diagram and list and histogram graphics
- Satisfies the accuracy requirements of class 0.1 S high-precision meters used by power supply companies according to IEC 62053-22, which are normally reserved for exacting industrial applications

Minimum order quantity (PS) or a multiple thereof can be ordered.

Selection and ordering data

	Version	SD d	Article No. www.siemens.com/product?Article No.	PU (UNIT, SET, M)	PS	PG
 7KM4212-0BA00-3AA0	**7KM PAC4200 measuring device** Control panel instrument, 96 x 96 mm Screw connections for current and voltage connection AC/DC wide-voltage power supply unit U_{AUX}: 95 … 240 V AC ± 10%, 50/60 Hz 110 … 340 V DC ± 10% Measuring inputs U_e: max. 690/400 V 3 AC, 50/60 Hz I_e: /1 A or /5 A		**Screw connection** **7KM4212-0BA00-3AA0**	1	1 unit	1DD
 7KM4211-1BA00-3AA0	**7KM PAC4200 measuring device** Control panel instrument, 96 x 96 mm Screw connections for current and voltage connection DC power supply unit with extra-low voltage U_{AUX}: 22 … 65 V DC ± 10% Measuring inputs U_e: max. 500/289 V 3 AC, 50/60 Hz I_e: /1 A or /5 A		**Screw connection** **7KM4211-1BA00-3AA0**	1	1 unit	1DD
 7KM4212-0BA00-2AA0	**7KM PAC4200 measuring device** Control panel instrument, 96 x 96 mm Ring cable lug connections for current and voltage connection AC/DC wide-range power supply U_{AUX}: 95 … 240 V AC ± 10%, 50/60 Hz 110 … 340 V DC ± 10% Measuring inputs U_e: max. 690/400 V 3 AC, 50/60 Hz I_e: /1 A or /5 A		**Ring cable lug connection** **7KM4212-0BA00-2AA0**	1	1 unit	1DD

More information

For current transformers, see page 12/45 or see chapter "Switch Disconnectors"

For other accessories, see page 12/44

powerconfig is available free of charge at http://support.automation.siemens.com/WW/view/en/63452759

For more information about powerconfig, see chapter "Software"

7KM PAC5100 measuring devices

Overview

7KM PAC5100 measuring device

The 7KM PAC5100 measuring device is a control panel instrument for acquiring important measured values to evaluate the plant state and power quality.

The 7KM PAC5100 measuring device has an integrated Modbus TCP interface via Ethernet and a web server for parameterization, visualization and data management.

Benefits

- Simple mounting and commissioning
- Intuitive operation via 4 function keys
- Integrated web server for parameterization, display and evaluation
- 4 parameterizable LEDs
- Worldwide use
  - International approvals
  - Developed and tested to European and international standards
- Low mounting depth
- Precise energy measurement
- Versatile system integration
  - Integrated Ethernet interface
  - Multifunctional digital outputs
  - Limit monitoring
- Can be directly connected to power supply networks up to 690 V AC (UL-L), CATIII without voltage transformer
- Electrically isolated voltage inputs
- Monitoring of plant status and power supply quality
  - Basic information for evaluating the power supply quality
  - Logging of plant history in the form of operation, control and system-related events
- Energy counters for apparent energy, active energy, reactive energy, as well as import, supply, inductive and capacitive
- Comprehensive user-friendly indicators, such as user-defined displays, bar and status indicators
- Measurement up to the 40th individual harmonic of current and voltage

Selection and ordering data

	Version	SD	Article No. www.siemens.com/product?Article No.	PU (UNIT, SET, M)	PS	PG
		d				
 7KM5212-6BA00-1EA2	**7KM PAC5100 measuring device** Control panel instrument, 96 x 96 mm Screw connections for current and voltage connection AC/DC wide-voltage power supply unit U_{AUX}: 110 … 230 V AC ± 10 %, 50/60 Hz 24 … 250 V DC ± 10 % Measuring inputs U_e: max. 690/400 V 3 AC, 50/60 Hz I_e: /1 A or /5 A		**Screw connection** **7KM5212-6BA00-1EA2**	1	1 unit	1DD
 7KM5212-6CA00-1EA8	**7KM PAC5100 measuring device** Standard rail instrument without display Screw connections for current and voltage connection AC/DC wide-voltage power supply unit U_{AUX}: 110 … 230 V AC ± 10 %, 50/60 Hz 24 … 250 V DC ± 10 % Measuring inputs U_e: max. 690/400 V 3 AC, 50/60 Hz I_e: /1 A or /5 A		**Screw connection** **7KM5212-6CA00-1EA8**	1	1 unit	1DD

More information

For current transformers, see page 12/45 or see chapter "Switch Disconnectors"

Minimum order quantity (PS) or a multiple thereof can be ordered.

Overview

7KM PAC5200 measuring device

The 7KM PAC5200 power quality measuring device is

- a control panel instrument
- or a standard rail instrument without display

for acquiring important measured values to evaluate the plant state and power quality.

It has an integrated Modbus TCP interface via Ethernet as well as a web server for parameterization, visualization and data management.

Benefits

- Simple mounting and commissioning
- Intuitive operation via 4 function keys
- 4 parameterizable LEDs
- Integrated web server for parameterization, display and evaluation
- Worldwide use
  - International approvals
  - Developed and tested to European and international standards
- Low mounting depth
- Precise energy measurement
- Versatile system integration
  - Integrated Ethernet interface
  - Multifunctional digital outputs
  - Limit monitoring
- Can be directly connected to power supply networks up to 690 V AC (UL-L), CATIII without voltage transformer
- Electrically isolated voltage inputs
- Monitoring the plant status and the power supply quality:
  - Basic information for evaluating the power supply quality
  - Logging of plant history in the form of operation, control and system-related events
  - Flicker acc. to IEC 61000-4-15
- Energy counters for apparent energy, active energy, reactive energy, as well as import, supply, inductive and capacitive
- Comprehensive user-friendly indicators, such as user-defined displays, bar and status indicators
- Measurement up to the 40th individual harmonic of current and voltage
- Integrated 2 GB SD card for recorder functions
- Flexible recorder:
  - Measured value recorder
  - Trend recorder
  - Event recorder
  - Fault recorder
- Integrated PQ recording and reporting in accordance with EN 50160
- Data export:
  - COMTRADE
  - PQDif
- Classification of events
- ITIC /CBEMA evaluation in the device

7KM PAC5200 measuring devices

Selection and ordering data

	Version	SD d	Article No. www.siemens.com/product?Article No.	PU (UNIT, SET, M)	PS	PG
 7KM5412-6BA00-1EA2	**7KM PAC5200 measuring device** Control panel instrument, 96 x 96 mm Screw connections for current and voltage connection AC/DC wide-voltage power supply unit U_{AUX}: 110 … 230 V AC ± 10 %, 50/60 Hz 24 … 250 V DC ± 10 % Measuring inputs U_e: max. 690/400 V 3 AC, 50/60 Hz I_e: /1 A or /5 A		**Screw connection** **7KM5412-6BA00-1EA2**	1	1 unit	1DD
 7KM5412-6CA00-1EA8	**7KM PAC5200 measuring device** Standard rail instrument without display Screw connections for current and voltage connection AC/DC wide-voltage power supply unit U_{AUX}: 110 … 230 V AC ± 10 %, 50/60 Hz 24 … 250 V DC ± 10 % Measuring inputs U_e: max. 690/400 V 3 AC, 50/60 Hz I_e: /1 A or /5 A		**Screw connection** **7KM5412-6CA00-1EA8**	1	1 unit	1DD

More information

For current transformers, see page 12/45 or see chapter "Switch Disconnectors"

Minimum order quantity (PS) or a multiple thereof can be ordered.

Selection and ordering data

for 7KM PAC3100/3200/4200

	Version	SD d	Article No. www.siemens.com/product?Article No.	PU (UNIT, SET, M)	PS	PG
 7KM9900-0XA00-0AA0	**7KM PAC TMP2 standard mounting rail adapter** Two-tier adapter for mounting a measuring device on a standard mounting rail • Front display • For manual intervention		**7KM9900-0XA00-0AA0**	1	1 unit	1DD
 7KM9900-0YA00-0AA0	**7KM PAC TMP mounting plate** 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**	1	1 unit	1DD
 7KM9900-0GA00-0AA0	**Compact holder** Device holder for 7KM PAC3100/3200/4200: • 10 holders for 5 PAC devices • For seamless side-by-side mounting of the devices (without spaces)		**7KM9900-0GA00-0AA0**	1	1 unit	1DD
 7KM9900-0SA00-0AA0	**7KM PAC spare parts** Spare parts comprising: • 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 • RS 485 terminal block for 7KM PAC3100		**7KM9900-0SA00-0AA0**	1	1 unit	1DD

More information

Current transformers

For current transformers, see page 12/45 or see chapter "Switch Disconnectors"

Software components

For more information about the software components, see chapter "Software" and on the internet at www.siemens.com/lowvoltage/powermonitoring

More information

More information is available on the internet at www.siemens.com/lowvoltage/powermonitoring

7KM PAC expansion modules

Overview

Expansion modules are used as communication interfaces and for expanding the digital inputs/outputs and measuring inputs for 7KM PAC measuring devices.

The expansion modules are plugged in at the back of the measuring device. The device identifies the module automatically and presents the relevant parameters for this module for selection in the parameterization menu.

Versions

The following expansion modules are available (shown from left to right in the adjacent figure):

- 7KM PAC Switched Ethernet PROFINET expansion module
- 7KM PAC PROFIBUS DP expansion module
- 7KM PAC RS 485 expansion module
- 7KM PAC 4DI/2DO expansion module
- 7KM PAC I(N), I(Diff), analog expansion module

Connection for 3VA molded case circuit breakers

The following expansion modules can also be mounted on the front of the COM800/COM100 breaker data servers of the 3VA molded case circuit breaker:

- 7KM PAC Switched Ethernet PROFINET and
- 7KM PAC PROFIBUS DP
- 7KM PAC RS 485

For further details, see chapter "Molded Case Circuit Breakers" or in the manual at http://support.automation.siemens.com/DE/view/en/90318775

More information

For more information about the software components, see chapter "Software" and on the internet at www.siemens.com/lowvoltage/powermonitoring

Version	Use in 7KM PAC							3VA
	PAC2200	PAC3100	PAC3200T	PAC3200	PAC4200	PAC5100	PAC5200	COM800/ COM100
7KM PAC expansion modules								
 **7KM PAC Switched Ethernet PROFINET expansion module** The 7KM PAC Switched Ethernet PROFINET expansion module is a plug-in communication module for 7KM PAC3200 and 7KM PAC4200 measuring devices and 3VA molded case circuit breakers. It provides the following features: • Standardized PROFIenergy interface to the measured quantities • The measured quantities can be individually selected using a GSDML file. This permits use of cost-effective S7 CPUs • Easy parameter assignment using the device display and STEP 7 • Integrated Ethernet switching allows networking with short cables without additional switches • Direct integration in production machine networks using IRT (IRT = Isochronous-Real-Time) • Full support of PROFINET IO (DHC, DNS, SNMP, SNTP) • Device replacement without PG in the PROFINET assembly using LLDP • Deterministic reversing time through ring redundancy (MRP) • Modbus TCP communication • Communication with powermanager or powerconfig • 2 x Ethernet (RJ45) sockets • Transmission rates 10 and 100 Mbit/s • Protocols PROFINET IO, PROFIenergy and Modbus TCP • No external auxiliary power necessary • Additional display via the device display and via LEDs on the module All measured variables from 7KM PAC3200 and 7KM PAC4200 can be individually selected and cyclically transmitted by means of the GSDML file. This enables optimum use of the process image of the PROFINET controller, e.g. CPU 315-2 PN/DP of SIMATIC S7. The measured quantities can be read out in acyclic mode using PROFIenergy, a PNO protocol profile. Thanks to PROFIenergy, it is possible to assemble a power monitoring system with devices from various manufacturers using PROFINET.	--	--	--	✓	✓	--	--	✓

Minimum order quantity (PS) or a multiple thereof can be ordered.

7KM PAC expansion modules

Version		Use in 7KM PAC							3VA
		PAC2200	PAC3100	PAC3200T	PAC3200	PAC4200	PAC5100	PAC5200	COM800/ COM100
	**7KM PAC PROFIBUS DP expansion module** The 7KM PAC PROFIBUS DP expansion module is a plug-in communication module for 7KM PAC3200 and 7KM PAC4200 measuring devices and 3VA molded case circuit breakers. The 7KM PAC PROFIBUS DP expansion module has the following features: • Plug-in communication module for measuring devices for connection to PROFIBUS DPV1 • For 7KM PAC3200 and 7KM PAC4200 • Parameterizable via device front or using parameterization software • Data can be transferred both cyclically and acyclically via PROFIBUS DPV1 • Easy engineering thanks to integration in SIMATIC STEP 7 and/or simple integration via GSD file for other programming systems • Optimum use of process image of a control system for selection of individual measured quantities for cyclical transfer • Supports all baud rates from 9.6 kbit/s up to 12 Mbit/s • Connection through 9-pole Sub-D connector according to IEC 61158 • No external auxiliary power necessary • Additional display via the device display and via LEDs on the module	--	--	--	✓	✓	--	--	✓
	**7KM PAC RS 485 expansion module** The 7KM PAC RS 485 expansion module has the following features: • Plug-in 7KM PAC RS 485 communication module for 7KM PAC3200 and 7KM PAC4200 measuring devices and 3VA molded case circuit breakers • Parameterizable via device front or using parameterization software • Support for the Modbus RTU protocol • Plug and play • Supports transmission rates of 4.8/9.6/19.2 and 38.4 kbit/s • Connection by means of 6-pole screw terminals • No external auxiliary power necessary • Status indication by LED on the module • The 7KM PAC RS 485 expansion module is required for the gateway function of the 7KM PAC4200 for communication with simple devices with RS 485 interface, such as the 7KM PAC3100, via Ethernet (Modbus TCP).	--	--	--	✓	✓	--	--	✓
	**7KM PAC 4DI/2DO expansion module** The 7KM PAC 4DI/2DO expansion module is used to expand the 7KM PAC4200 measuring device to up to 10 digital inputs and 6 digital outputs and offers the following features: • Up to two 7KM PAC 4DI/2DO modules can be plugged onto a 7KM PAC4200. • The 7KM PAC 4DI/2DO expansion modules mean that the internal digital inputs and outputs can be expanded by up to 8 inputs and 4 outputs. • The 7KM PAC 4DI/2DO expansion modules can be configured locally at the front of the device or via the powerconfig parameterization software. • The digital inputs can be used without the need for an external power supply as they are self-powered. This is particularly useful for the integration of non-electric measuring devices, such as water or compressed-air counters • All functions of the integrated multifunctional inputs/outputs on the 7KM PAC4200 are also available in the 7KM PAC 4DI/2DO expansion module • Inputs and outputs can be used as an S0 interface conforming to IEC 62053-31 • The connection is made via a 9-pole screw terminal • No external auxiliary power supply is required	--	--	--	--	✓	--	--	--
	**7KM PAC I(N), I(Diff), analog expansion module** NEW The 7KM PAC I(N), I(Diff), analog expansion module adds the following features for 7KM PAC4200 and 7KM PAC3200 devices: • N-conductor measurement (IN), Class 1, in accordance with IEC 61557-12 via x/5A current transformers • Two analog inputs: The analog inputs can be used without an external voltage source via imposed direct currents from 0/4 to 20mA. This is especially advantageous for measuring non-electrical quantities such as temperature, water or air pressure. • Residual current measurement: One of the two analog inputs can be used for residual current measurement via Type A or Type B summation current transformers. • The 7KM PAC I(N), I(Diff), analog expansion module can be configured locally at the front of the device or via the powerconfig parameterization software. • The connection is made via a 6-pole screw terminal • One 7KM PAC I(N), I(Diff), analog module can be plugged onto a 7KM PAC4200 or 7KM PAC3200. • No external auxiliary power supply is required	--	--	--	✓	✓	--	--	--

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Minimum order quantity (PS) or a multiple thereof can be ordered.

7KM PAC expansion modules

Selection and ordering data

	Version	SD d	Article No. www.siemens.com/product?Article No.	PU (UNIT, SET, M)	PS	PG
 7KM9300-0AE01-0AA0	**7KM PAC Switched Ethernet PROFINET expansion module** Expansion module for 7KM PAC3200 and 7KM PAC4200 (PROFIenergy) and COM100/800 (3VA) breaker data server		**7KM9300-0AE01-0AA0**	1	1 unit	1DD
 7KM9300-0AB01-0AA0	**7KM PAC PROFIBUS DP expansion module** Expansion module for 7KM PAC3200 and 7KM PAC4200 (PROFIBUS DPV1) and COM100/800 (3VA) breaker data server		**7KM9300-0AB01-0AA0**	1	1 unit	1DD
 7KM9300-0AM00-0AA0	**7KM PAC RS 485 expansion module** Expansion module for 7KM PAC3200 and 7KM PAC4200 (Modbus RTU) and COM100/800 (3VA) breaker data server		**7KM9300-0AM00-0AA0**	1	1 unit	1DD
 7KM9200-0AB00-0AA0	**7KM PAC 4DI/2DO expansion module** Expansion module for 7KM PAC4200		**7KM9200-0AB00-0AA0**	1	1 unit	1DD
 7KM9200-0AD00-0AA0	**7KM PAC I(N), I(Diff), analog expansion module** NEW Expansion module for 7KM PAC3200 and 7KM PAC4200 to add the following functions to the measuring inputs: • 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, see chapter "Monitoring Devices"		**7KM9200-0AD00-0AA0**	1	1 unit	1DD

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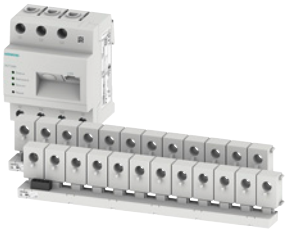
Minimum order quantity (PS) or a multiple thereof can be ordered.

Overview

Devices		Page	Application	Standards	Used in		
					Non-residential buildings	Residential buildings	Industry
7KT PAC measuring devices							
	**7KT PAC1200 multichannel current measuring system** 7KT12	12/30	Measurement of individual feeders – thus direct comparison of consumers Detection of current peaks – thus avoidance of high energy costs Web server and app representation – thus plug-and-play visualization of measured values and consumption values		✓	✓	✓
	**7KT PAC1500 three-phase measuring device** 7KT154	12/35	Measurement of consumption data in three-phase systems of plant sections, offices or holiday apartments.	EN 50470-1, EN 50470-3 EN 62052-23, EN 62053-31	✓	✓	✓
	**7KT PAC1500 single-phase measuring device** 7KT153	12/37	For measurement of consumption data in single-phase systems, e.g. in industrial plants, offices and apartments in apartment blocks.	EN 50740-1, EN 50470-3, EN 62053-31	✓	✓	✓
	**7KT PAC expansion modules** 7KT19	12/38	Communication interfaces with IrDA infra-red interface for 7KT PAC1500 measuring devices. Modules are available for the following bus systems: • M-Bus • Modbus RTU • KNX/EIB	EN 13321-1, EN 13757 ISO/IEC 14543-3 EN 50090	✓	✓	✓

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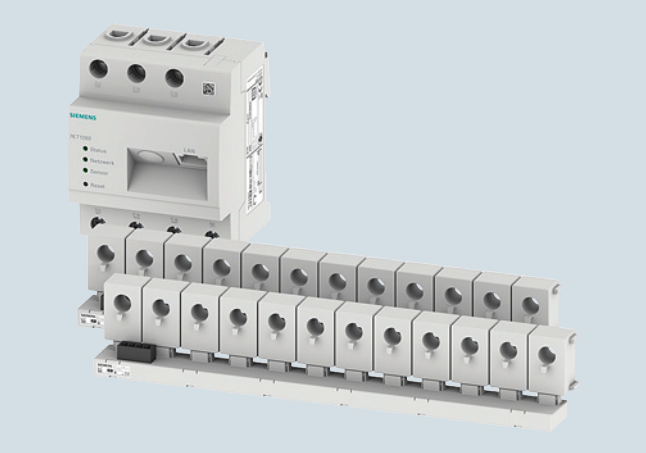
7KT PAC1200 multichannel current measuring system

Overview



7KT PAC1200 multichannel current measuring system

The 7KT PAC1200 multichannel current measuring system is used for the transparent representation of energy consumption. The current values themselves are measured by means of sensors that are fitted above the miniature circuit breakers. The simple cost center allocation enables maximum transparency over the entire application.

Scalability

The 7KT PAC1200 multichannel current measuring system monitors and displays the energy consumption of up to 96 outgoing feeders. A maximum of eight sensor bars can be configured. Up to eight different, selectable consumption sources can be compared with each other. The system can be scaled to individual needs and application scenarios. The individual sensors can be named individually and compared with each other. The system can be configured flexibly as the number of sensor bars can be varied.

Consumption statistics

The statistics shows the overall consumption of selected sensors. The consumption can be shown both in euros and in kWh. The results can be displayed in the form of a pie chart or a bar chart, depending on selection. The periods that can be selected are as follows:

- Days
- Weeks
- Months
- Year

Both the overall consumption and the individual consumption of a sensor can be displayed.
It is also possible to generate a history so that any deviations can be investigated. To do this, select a date using the button below the chart.

Representation of the current values

Under the navigation item "Current values" you can see how high the consumption at a particular moment in time is. The value behind "Current" indicates this consumption. "Min/Max" indicates the minimum and maximum consumption. The kW values consumed at a certain time are shown in a curve diagram. Here also, either the overall consumption or the consumption of an individual sensor can be displayed. It is also possible to switch between various modes in this view.

- History
- Current values: for individual sensors
  - Current
  - Voltage
  - Power factor of the individual phases
- Counter reading

Installation in an ALPHA power distribution board, for example

7KT PAC1200 multichannel current measuring system installed

Benefits

- Measurement of individual feeders – thus direct comparison of consumers
- Detection of current peaks – thus avoidance of high energy costs
- Web server and app representation – thus plug-and-play visualization of measured values and consumption values
- Scalability – thus number of measuring points can be adjusted to size of the power distribution system
- 1 GB internal memory – thus long-time data recording over one year possible

Minimum order quantity (PS) or a multiple thereof can be ordered.

Application

Use cases

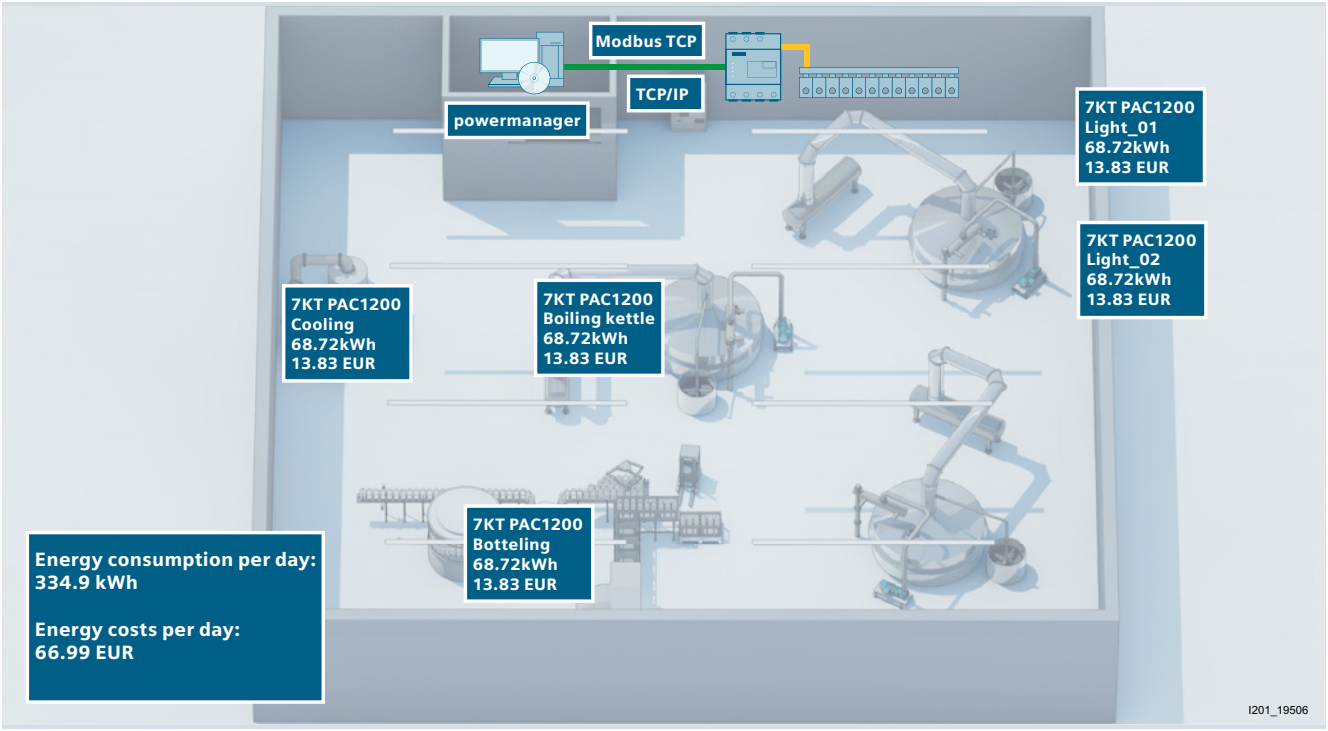
Energy measurement on

- Strip lighting
- Production machines
- Motors

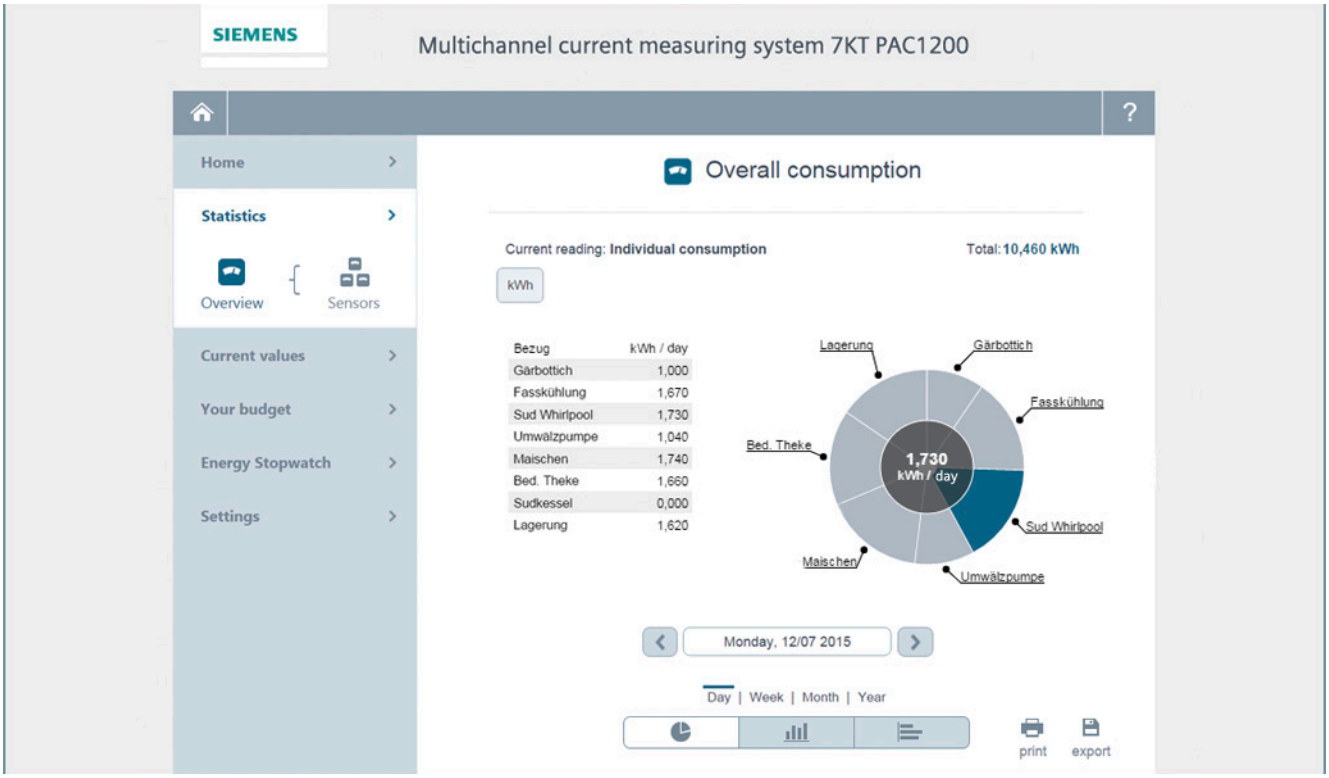
Application areas

- Carpenters' and joiners' workshops, locksmiths' shops
- Large bakeries, breweries, slaughterhouses
- Municipal utilities
- Banks, etc.

Application example



Result: For example, display of overall energy consumption (from application example above)



7KT PAC1200 multichannel current measuring system

Technical specifications

7KT PAC 1200 multichannel current measuring system		7KT1222 1 x 18 bundle	7KT1223 1 x 24 bundle	7KT1260 Data manager	7KT123./4. Sensor bar	7KT125. Sensor
Product designation		Starter kit	Starter kit	Data manager	Sensor bar	Sensor
Version		2x9 with system, 40 A	2x12 with system, 40 A		3/6/9/12-bar	40 A / 63 A
Measuring input						
• Connection type		--	--	Direct / transformer 5 A	--	--
• Current I_e	A	--	--	63	--	40 / 63
Measuring accuracy		Total accuracy +/- 2% (of full-scale value / class 2)				
Measurable line frequency	Hz	50/60 +/- 5%	50/60 +/- 5%	50/60 +/- 5%	--	--
Communication						
• Sensor bar connection to data manager		RS 485				--
• Data manager connection to web browser		Ethernet via RJ 45, Modbus TCP protocol (10 / 100 Mbit/s)			--	--
Dimensions and weights						
• Height	mm			85	3-bar: 54.5 6-bar: 105.5 9-bar: 159.5 12-bar: 212.4	32
• Width	mm			70	21	17.7
• Data manager width	MW[1)]	4	4	4	--	--
• Depth	mm			32.7	14.8	13

[1)] 1 MW = 1 modular width = 18 mm

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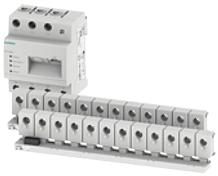
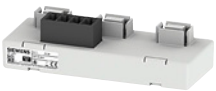
Minimum order quantity (PS) or a multiple thereof can be ordered.

Selection and ordering data

		SD d	Article No. www.siemens.com/product?Article No.	Price per PU	PU (UNIT, SET, M)	PS	PG
	**7KT PAC1200 multichannel current measuring system** Multichannel current measuring system for locating high consumption values and cost center allocation 1 x 18 bundle, containing: • 2 x 9-sensor bar 7KT1238 • 1 x data manager 7KT1260 • 18 x sensors 40 A, 7KT1254		**7KT1222**		1	1 unit	1BK
	**7KT PAC1200 multichannel current measuring system** Multichannel current measuring system for locating high consumption values and cost center allocation 1 x 24 bundle, containing: • 2 x 12-sensor bar 7KT1242 • 1 x data manager 7KT1260 • 24 x sensors 40 A, 7KT1254		**7KT1223**		1	1 unit	1BK
	**7KT PAC1200 data manager** Fully integrated smart meter, containing • Three-phase active power and reactive power energy measurement • Measurement of energy as balancing counter • Direct connection up to 63 A • Optional use with external measuring transformer for extending the measuring range (e.g. 100 ... 600 A) • Standard rail mounting (4 MW) • Operator input / configuration: Web interface • Support of up to 96 sensors for single-phase measurement		**7KT1260**		1	1 unit	1BK
	7KT PAC1200 sensor bars						
	• 3-sensor bar		**7KT1233**		1	1 unit	1BK
	• 6-sensor bar		**7KT1236**		1	1 unit	1BK
	• 9-sensor bar		**7KT1238**		1	1 unit	1BK
	• 12-sensor bar		**7KT1242**		1	1 unit	1BK
	Sensors						
	• Sensor 40 A		**7KT1254**		1	3 units	1BK
	• Sensor 63 A		**7KT1255**		1	3 units	1BK

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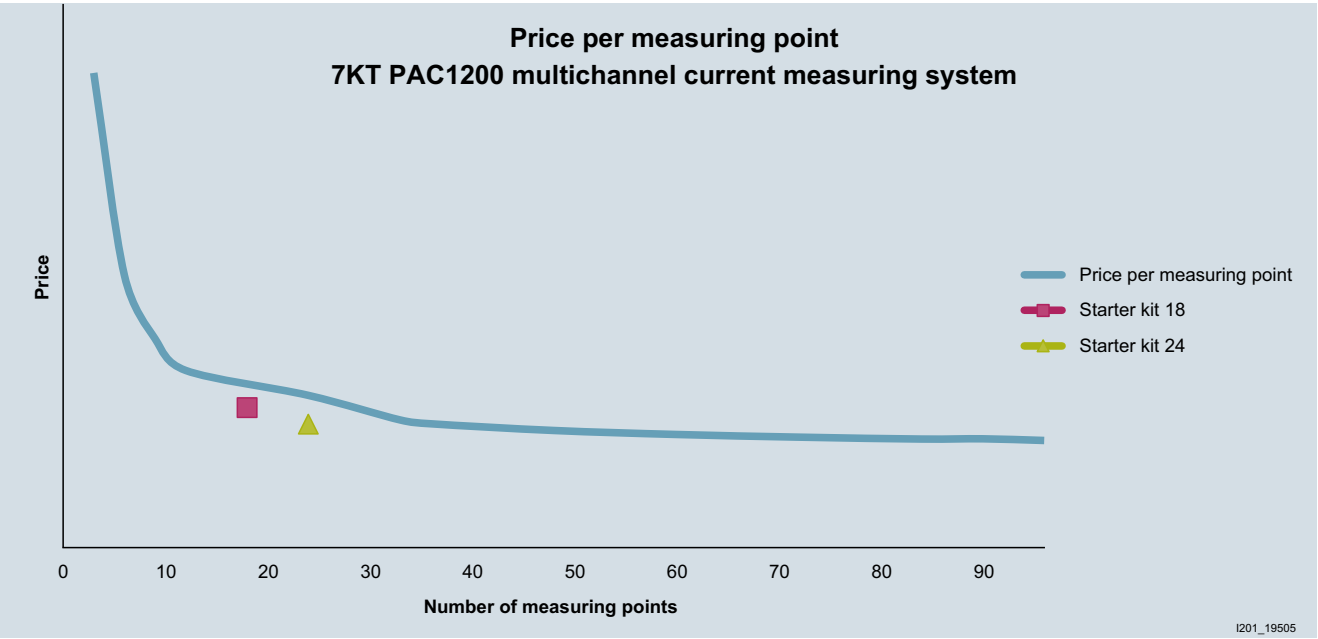
Minimum order quantity (PS) or a multiple thereof can be ordered.

More information

Procurement costs: The more measuring points (sensors) the lower the costs



Internet

You can find more information on the internet at www.siemens.com/powermonitoring.

Apple iOS

Download on the App Store

7KT PAC1200 App iOS

Android

GET IT ON Google Play

7KT PAC1200 App ANDROID

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Minimum order quantity (PS) or a multiple thereof can be ordered.

Overview

7KT PAC1500 three-phase measuring devices for direct connection up to 80 A / 125 A

The measuring devices (power meters) are used to record the amount of electrical energy and power exported and imported. Siemens compact measuring devices are designed as modular devices for alternating current and can be mounted on standard mounting rails. They comply with the metering equipment standard EN 50470 (Parts 1 and 3) and come with an LCD.

The three-phase measuring devices for direct connection are available up to 125 A and in versions with transformer connections (…/5 A to 10000/5 A).

The measuring devices store active and reactive energy and all comply with accuracy class 1 (for active energy).

All measuring devices have a pulse output (S0) and are designed for 2-tariff measurements.

The measuring devices also have an integrated optical interface (IrDA) for connecting communication modules, which enables their integration in a range of other systems, such as power management systems.

Technical specifications

7KT PAC1500 three-phase measuring device			7KT1540 7KT1542	7KT1543 7KT1545	7KT1546 7KT1548
Standards			EN 50470-1, EN 50470-3, EN 62053-23, EN 62053-31		
Connection					
• Direct connection			--	80 A	125 A
• Transformer current connection			.../5 A	--	--
General data					
• Enclosure	Acc. to DIN 43880	MW (1 MW = 18 mm)	4	4	6
• Mounting	Acc. to EN 60715		35 mm		
• Mounting height		mm	70		
Function					
• Connection	Single-phase or three-phase	Number of conductors	4	2 ... 4	2 ... 4
• Storage of setting and counter reading	Via (EEPROM)		Yes	Yes	Yes
• Tariffs	For active and reactive energy		T1/T2	T1/T2	T1/T2
Supply (via measuring terminals)					
• Rated control supply voltage U_n		V AC	230		
• Voltage range		V	110... 276		
• Rated frequency f_n		Hz	50		
Measuring accuracy (at 23 ±1 °C)	Based on nominal value				
• Active energy and active power	Acc. to EN 50470-3		Class B		
• Reactive energy and reactive power	Acc. to EN 62053-23		Class 2		
Measuring input					
• Connection type			Transformer TA-TC .../5 A	Direct	Direct
• Terminal capacity	Rigid, min. (max.) Flexible min. (max.)	mm^2 mm^2	1.5 (6) 1.5 (6)	1.5 (35) 1.5 (35)	5 (50) 5 (50)
• Voltage U_n	Phase/phase Phase/N	V V	400 230		
• Operating range voltage	Phase/phase Phase/N	V V	190 ... 480 110 ... 276		
• Current I_{ref}		A	--	5	5
• Current I_n		A	5	--	--
• Current I_{min}		A	0.05	0.25	0.25
• Current operating range (I_{st} … I_{max})	Direct connection Transformer connection	A A	-- 0.003 ... 6	0.015 ... 80 --	0.020 ... 125 --
• Transformer current	Primary current of the transformer Smallest input step	A A	5 ... 10000 5	-- --	-- --
• Input ripple form			Sinusoidal		
• Operational starting current I_{st}		mA	3	15	20
S0 interface	Acc. to EN 62053-31				
• Pulse outputs for absorbed active and reactive energy T1 + T2			Yes		
• Pulse count	For input current I_{max} Automatic for transformers	Pulses/kWh Pulses/kWh	-- 100 - 10 - 1	500 --	500 --
IR interface					
• At the side for connecting communication modules			M-Bus/Modbus RTU/KNX		

Minimum order quantity (PS) or a multiple thereof can be ordered.

7KT PAC1500 three-phase measuring devices

Selection and ordering data

		U_n	I_{max}	Mounting width	SD	Article No. www.siemens.com/product?Article No.	Price per PU	PU (UNIT, SET, M)	PS	PG
		V AC	A AC	MW	d					
	**7KT PAC1500 three-phase measuring device**									
	Digital measuring device									
	• For transformer connection, double tariff	230	Transformer /5	4		**7KT1540**		1	1 unit	1DD
	• For transformer connection, double tariff, MID	230	Transformer /5	4		**7KT1542**		1	1 unit	1DD
	• For direct connection, double tariff	230	80	4		**7KT1543**		1	1 unit	1DD
	• For direct connection, double tariff, MID	230	80	4		**7KT1545**		1	1 unit	1DD
	• For direct connection, double tariff	230	125	6		**7KT1546**		1	1 unit	1DD
	• For direct connection, double tariff, MID	230	125	6		**7KT1548**		1	1 unit	1DD

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Minimum order quantity (PS) or a multiple thereof can be ordered.

Overview

The 7KT PAC1500 single-phase measuring devices (power meters) are used to record the amount of electrical energy and power exported and imported. They comply with the metering equipment standard EN 50470 (Parts 1 and 3) and come with an LCD.

The 7KT PAC1500 single-phase measuring devices for direct connection are available up to 80 A. They store active and reactive energy, and all comply with accuracy class 1 (for active energy).

All measuring devices have a pulse output (S0) and are designed for 1-tariff or 2-tariff measurements, depending on the version.

The measuring devices (with the exception of 7KT1530) also have an integrated optical interface (IrDA) for connecting communication modules.

Technical specifications

7KT PAC1500 measuring device, single-phase direct connection up to 80 A			**7KT1530**	**7KT1531 7KT1533**
Standards			EN 50470-1, EN 50470-3, EN 62053-23, EN 62053-31	
General data				
• Enclosure	Acc. to DIN 43880	MW	2	
• Mounting	Acc. to EN 60715		35 mm	
• Mounting height		mm	70	
Function				
• Operating mode	Single-phase loads	Conductors	2	
• Storage of setting and counter reading	Via (EEPROM)		Yes	
• Tariff	For active energy For reactive energy		T1 T1	T1 + T2 T1 + T2
Supply (via measuring terminals)				
• Rated control supply voltage U_n		V AC	230	
• Voltage range		V	110 ... 276	
• Rated frequency f_n		Hz	50	
Measuring accuracy (at 23 ±1 °C)	Based on nominal value			
• Active energy and active power	Acc. to EN 50470-3		Class B	
• Reactive energy and reactive power	Acc. to EN 62053-23		Class 2	
Measuring input				
• Connection type	Phase/N		Direct	
• Terminal capacity	Rigid, min. (max.) Flexible min. (max.)	mm^2 mm^2	1.5 (35) 1.5 (35)	1.5 (35) 1.5 (35)
• Operating range voltage	Phase/N	V AC	110... 276	
• Current I_{ref}		A	5	
• Current I_{min}		A	0.25	
• Current operating range (I_{st} ... I_{max})	Direct connection	A	0.015 ... 80	
• Current waveform			Sinusoidal	
• Operational starting current I_{st}		mA	15	
S0 interface	Acc. to EN 62053-31			
• Pulse outputs for absorbed active and reactive energy			Yes	
• Pulse count		Pulses/kWh	1000	
IR interface				
• At the side for connecting communication modules (M-Bus/Modbus RTU/KNX)			--	Yes

Selection and ordering data

		U_n	I_{max}	Mounting width	SD	Article No. www.siemens.com/product?Article No.	Price per PU	PU (UNIT, SET, M)	PS	PG
		V AC	A AC	MW	d					
	**7KT PAC1500 single-phase measuring devices** Digital measuring device									
	• For direct connection, single tariff	230	80	2		**7KT1530**		1	1 unit	1DD
	• For direct connection, double tariff	230	80	2		**7KT1531**		1	1 unit	1DD
	• For direct connection, double tariff, MID	230	80	2		**7KT1533**		1	1 unit	1DD

Minimum order quantity (PS) or a multiple thereof can be ordered.

7KT PAC expansion modules

Overview

Expansion modules for 7KT PAC1500 measuring devices, from left to right: Expansion modules for M-Bus, Modbus RTU, Instabus KNX

Expansion modules are used as communication interfaces for 7KT PAC1500 measuring devices. They have the following features:

- The expansion modules can be selected independently of the measuring device. This means they can also be retrofitted in already installed measuring devices.
- Data transmission between the measuring devices and expansion modules is executed via the IrDA infrared interface.
- The expansion modules are placed alongside the measuring devices in the installation direction so that their IrDA interfaces are exactly opposite each other.

7KT PAC M-Bus expansion module (7KT1908)

- Power supply through bus cable
- Baud rates: 300 to 9600 kbit/s
- Status indication by LED on the module
- Can be parameterized using M-Bus master software

7KT PAC Modbus RTU expansion module (7KT1907)

- Power supply: 230 V AC
- Baud rates: 4.8/9.6/19.2 and 38.4 kbit/s
- Status indication by LED on the module
- Configurable via RS 485 master software

7KT PAC 7KNX expansion module (7KT1900)

- Power supply through the KNX/EIB bus cable
- Status indication by LED on the module

Selection and ordering data

	Version	Mounting width	SD	Article No. www.siemens.com/product?Article No.	Price per PU	PU (UNIT, SET, M)	PS	PG
		MW	d					
 7KT1908	**7KT PAC M-Bus expansion module** For connecting 7KT PAC1500 measuring devices to M-Bus	1		**7KT1908**		1	1 unit	1DD
 7KT1907	**7KT PAC Modbus RTU expansion module** For connecting 7KT PAC1500 measuring devices to Modbus RTU	1		**7KT1907**		1	1 unit	1DD
 7KT1900	**7KT PAC KNX expansion module** For connecting 7KT PAC1500 measuring devices to Instabus KNX	1		**7KT1900**		1	1 unit	1DD

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Minimum order quantity (PS) or a multiple thereof can be ordered.

Overview

Digital measuring devices: 7KT1 voltmeter (left), 7KT1 ammeter (right)

These devices for measuring voltages and currents can be used for monitoring incoming and outgoing currents or device currents in electric plants.

They are suitable for direct connection in a single-phase system or with measuring transducers in three-phase systems.

The measuring ranges of the ammeter are set locally at the device using a coding switch.

Benefits

- The ammeters have 14 measuring ranges from 0 A to 20 A and 0 A to 999 A, which can be set using a coding switch. This ensures universal application.

Technical specifications

			7KT1110	7KT1120
Standards			DIN 43751-1, -2	
Rated voltage U_e		V AC	230	
Primary operating range	x U_e		0.9 ... 1.15	
Rated frequency		Hz	50/60	
Rated operational power P_S		VA	<2	
7+1-segment display			3 digits	
Measuring range				
• Voltage	Direct measurement	V AC	12 ... 600 (U_n)	--
• Current	Direct measurement	A AC	--	0.4 ... 20 (I_n)
	Transformer measurement	A AC	--	x/5 A
Lower display value	From the full-scale value	%	2	
Measuring shunt				
• Current	Direct measurement 20 A	mΩ	--	5
	Transformer measurement	mΩ	--	10
• Voltage	Direct measurement 600 V	MΩ	1	--
Measuring frequency		Hz	45 65	
Measurement cycle		/s	4	
Measuring accuracy	At 23 °C ±1 °C	%	±0.5 ±1 digit	
Temperature influence		%/°C	±0.03	
Overload capability				
• Voltage	Continuous	V	1.2 x U_n	--
	Short-time for 1 s	V	1.3 x U_n	--
• Current	Continuous, direct	A	--	1.1 x I_n
	Short-time for 1 s, direct	A	--	10 x I_n
Terminals	±screw (Pozidriv)		1	
Conductor cross-sections	Rigid, max.	mm^2	1 × 6/2 × 4	
	Flexible, with end sleeve, min.	mm^2	0.75	
Degree of protection			IP20, with connected conductors	
Permissible ambient temperature			IP20, with connected conductors	
• Operation		°C	-10 ... +55	
• Storage		°C	-40 ... +70	

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Digital voltmeters and ammeters

Selection and ordering data

	Version	U_e	Mounting width	SD	Article No. www.siemens.com/product?Article No.	Price per PU	PU (UNIT, SET, M)	PS	PG
		V AC	MW	d					
	**Digital voltmeter** Measuring range 12 ... 600 V AC	230	2		**7KT1110**		1	1 unit	1BK
	**Digital ammeter for direct and transformer connection** Measuring range Direct: 0.4 ... 20 A Transformer: 0.1 ... 1000 A/5	230	2		**7KT1120**		1	1 unit	1BK

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Minimum order quantity (PS) or a multiple thereof can be ordered.

Overview

Time counters: Electromechanical (left), electronic (right)

Time and pulse counters are used for the reliable monitoring of production and service times, which enables the exact planning and monitoring of production sequences, maintenance cycles and warranty times.
As well as the proven electromechanical time and pulse counters for mounting in distribution boards, we also supply digital time and pulse counters.
The fields of application for both counter types are very diverse, such as the recording of operating hours of machines, systems or building management systems, as well as pulse counting for general volume flow counting, registration of starting frequencies, starting cycles or production quantities in systems and machines.

Benefits

- Time and pulse counters help to plan maintenance intervals, which safeguard and ensure high plant availability
- Versions without zero position and with electric or manual zero position for all applications
- Flexible application of the digital counters for power supplies of 12 V to 150 V DC and 24 V to 240 V AC in a single device

Technical specifications

			7KT5801	7KT5802	7KT5803	7KT5804	7KT5806	7KT5807
Standards **Approvals**			DIN VDE 0435-110; EN 60255-6; UL 863 UL 863, UL File No. E300537, CSA C22.2 No. 6 and 55					
Rated control supply voltage U_c		V AC V DC	-- 12 ... 24	24 --	115	230	115	230
Primary operating range	At 50/60 Hz	× U_c	0.9 ... 1.1					
Rated frequency		Hz	--	50			60	
Rated power loss P_v		VA	< 1		< 2			
Method of operation	Counting of		Hours					
Display	Drum-type register	h	00000.00					
Terminals	±screw (Phillips)		1					
Conductor cross-sections	Rigid Flexible, with end sleeve, min.	mm^2 mm^2	1.5 0.75					
Permissible ambient temperature		°C	-10 ... +70					
Degree of protection	Acc. to EN 60529		IP20, with connected conductors					
Safety class	Acc. to EN 61140/VDE 0140-1		II					
Permissible humidity		%	< 80					

			7KT5811	7KT5812	7KT5814	7KT5821	7KT5822	7KT5823	7KT5833
Standards **Approvals**			DIN VDE 0435-110; EN 60255-6; UL 863 UL 863, UL File No. E300537, CSA C22.2 No. 6 and 55						
Rated control supply voltage U_c		V AC V DC	-- 12 ... 24	24 --	230 --	24 ... 240 12 ... 150			
Primary operating range	At 50/60 Hz	× U_c	0.9 ... 1.1						
Rated frequency		Hz	--	50/60					
Rated power dissipation P_v		VA	< 1		< 2	< 1			
Method of operation	Counting of		Pulses			Hours			Pulses
Display	Drum-type register		0000000			--			--
	LCD	h	--			000000.0			--
			--			--			0000000
Counting frequency		Hz	10			--			10
Pulse duration		ms	50			--			50
Resetting	Electrical Mechanical		-- --				Yes	Yes	
Terminals	±screw (Phillips)		1						
Conductor cross-sections	Rigid Flexible, with end sleeve, min.	mm^2 mm^2	1.5 0.75						
Permissible ambient temperature		°C	-10 ... +70						
Degree of protection	Acc. to EN 60529		IP20, with connected conductors						
Safety class	Acc. to EN 61140/VDE 0140-1		II						
Permissible humidity		%	< 80						

Time and pulse counters for standard rail mounting

Selection and ordering data

		U_c	Frequency	Mounting width	SD	Article No. www.siemens.com/product?Article No.	Price per PU	PU (UNIT, SET, M)	PS	PG
		V	Hz	MW	d					
	**Time counter**									
	Mechanical counting mechanism, display 00000.00 h without resetting									
		12 ... 24 DC	--	2		**7KT5801**		1	1 unit	1BK
		24 AC	50			**7KT5802**		1	1 unit	1BK
		115 AC				**7KT5803**		1	1 unit	1BK
		230 AC				**7KT5804**		1	1 unit	1BK
		115 AC	60			**7KT5806**		1	1 unit	1BK
		230 AC				**7KT5807**		1	1 unit	1BK
	Pulse counter									
	Mechanical counting mechanism, display 0000000 ⎍ without resetting									
		12 ... 24 DC	--	2		**7KT5811**		1	1 unit	1BK
		24 AC	50/60			**7KT5812**		1	1 unit	1BK
		230 AC				**7KT5814**		1	1 unit	1BK
	**Electronic time counter**									
	LCD 000000.0h without resetting									
		12 ... 150 DC, 24 ... 240 AC	-- 50/60	2		**7KT5821**		1	1 unit	1BK
	With electrical resetting									
		12 ... 150 DC, 24 ... 240 AC	-- 50/60			**7KT5822**		1	1 unit	1BK
	With electrical and mechanical resetting									
		12 ... 150 DC, 24 ... 240 AC	-- 50/60			**7KT5823**		1	1 unit	1BK
	Electronic pulse counter									
	LCD 0000000 ⎍									
	With electrical and mechanical resetting									
		12 ... 150 DC, 24 ... 240 AC	-- 50/60	2		**7KT5833**		1	1 unit	1BK

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More information

Time counters count the time in hours with an accuracy of two decimal places (hundredths of hours). The pulse counter adds the number of pulses, e.g. the making operations of devices.

A power supply is required at terminals 1 and 2 of the electronic counters so that the device can constantly display the measured values. Once terminal 3 is supplied with voltage (for DC "+"), the counting procedure starts. If terminal 4 is supplied for a short time with voltage (for DC "+"), the counter is reset.

In the case of electronic counters, the counting result is saved indefinitely in the event of a power failure (EEPROM). On recovery of the power, the counting is continued from the saved value. As well as a modern design, the electronic counter has a 7-digit LCD, which can be reset electrically or manually.

Minimum order quantity (PS) or a multiple thereof can be ordered.

Overview

Time counters: Counting mechanism (left), counting mechanism with front frame (right)

Time and pulse counters for control cabinets, control systems and mechanical engineering are used, e.g. in boilers, machine tools or compressors. The pulse counters count the starting frequencies. This supports planning for preventative maintenance.

In-time and regular maintenance is the best protection against unexpected shutdowns.

Benefits

- Time and pulse counters help to plan maintenance intervals, which safeguard and ensure high plant availability

Technical specifications

			7KT5500	7KT5501	7KT5502	7KT5503	7KT5504	7KT5505
Standards			DIN VDE 0435-110; EN 60255-6					
Rated control supply voltage U_c		V AC V DC	-- 10 ... 80	115 --	230	115	230	24
Rated frequency		Hz	--	50		60		50
Front-panel mounting • Without masking frame 55 × 55 mm • With masking frame 55 × 55 mm	Switchboard cutout	mm × mm Ø mm	45.2 × 45.2$^{+0.3}$ 50.2$^{+0.3}$					

			7KT5600	7KT5601	7KT5602	7KT5603	7KT5604
Standards			DIN VDE 0435-110; EN 60255-6				
Rated control supply voltage U_c		V AC V DC	-- 10 ... 50	115 --	230	115	230
Rated frequency		Hz	--	50		60	
Front-panel mounting	Switchboard cutout	mm × mm	68$^{+0.5}$ × 68$^{+0.5}$				

Selection and ordering data

	U_c	Frequency	Mounting width	SD	Article No. www.siemens.com/product?Article No.	Price per PU	PU (UNIT, SET, M)	PS	PG
	V	Hz	MW	d					
 **Time counter** Mechanical counting mechanism, display 00000.00 h, For front-panel mounting, front frame 48 × 48 mm									
	10 ... 80 DC	–			**7KT5500**		1	1 unit	1BK
	24 AC 115 AC 230 AC	50			**7KT5505** **7KT5501** **7KT5502**		1 1 1	1 unit 1 unit 1 unit	1BK 1BK 1BK
	115 AC 230 AC	60			**7KT5503** **7KT5504**		1 1	1 unit 1 unit	1BK 1BK
 For front-panel mounting, front frame 72 × 72 mm, with narrow frame according to DIN 43700									
	10 ... 50 DC	–	2		**7KT5600**		1	1 unit	1BK
	115 AC 230 AC	50			**7KT5601** **7KT5602**		1 1	1 unit 1 unit	1BK 1BK
	115 AC 230 AC	60			**7KT5603** **7KT5604**		1 1	1 unit 1 unit	1BK 1BK
Cover for 7KT55 time counters									
55 × 55 mm					**7KT9020**		1	1 unit	1BK
Sealing rings for 7KT9020 covers									
IP43 installation in switchboards with smooth surfaces (1 set = 5 units)					**7KT9000**		1	1 set	1BK
Terminal cover for 7KT56 time counters									
Degree of protection, IP20, with connected conductors					**7KT9021**		1	1 unit	1BK

Minimum order quantity (PS) or a multiple thereof can be ordered.

Introduction

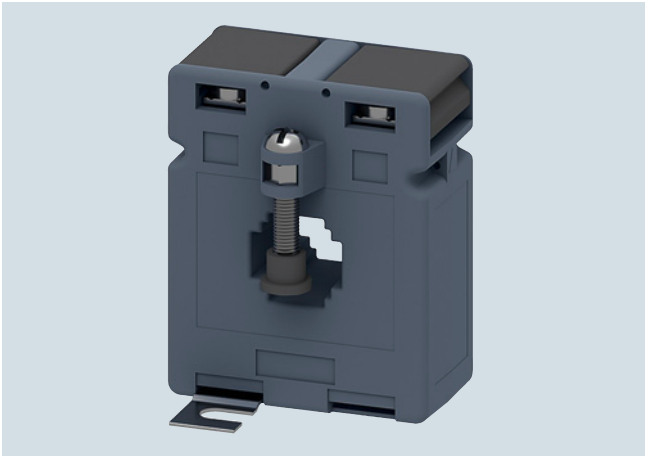
Overview

Devices		Page	Application	Standards	Used in		
					Non-residential buildings	Residential buildings	Industry
Accessories							
	**4NC current transformers** NEW	12/45	Window-type/pin-wound current transformers	EN 61869-1 EN 61869-2 VDE 0414-9-2	✓	--	✓
	**7KT12 current transformers**	12/49	Straight-through transformers for installation in distribution boards and non-contact measuring of primary currents. Ideal for combination with switch disconnectors, measuring devices and counters.	IEC 60044-1, EN 60044-1 (VDE 0414 T 44-1)	✓	--	✓
	**7KT90 measuring selector switches**	12/50	For switching over the phases for voltmeters and ammeters		✓	--	✓

12

Minimum order quantity (PS) or a multiple thereof can be ordered.

Overview



4NC current transformer

Technical specifications

4NC current transformers for measuring purposes

Standards	EN 61869-1, EN 61869-2, VDE 0414-9-2
Window-type current transformers	The conductor to be measured (busbar or cable) is passed through the window opening and constitutes the primary circuit of the window-type current transformer. Pin-wound transformers: An economical solution especially for small primary currents of 5 ... 75 A are window-type current transformers when the conductor to be measured is pin-wound several times.
Rated primary current I_{pr}	Current transformers can be continuously loaded with 1.3 times the rated primary current (I_{pn}).
Rated secondary current I_{sr}	
1 A	Particularly suitable for longer measuring leads. Cable losses of only 4% in contrast to 5 A current transformers.
5 A	5 A current transformers generate 25 times the power losses on measuring leads as compared with 1 A current transformers. These stray losses result in higher power in the case of long cables. Only recommended for use with short measuring leads.
Accuracy class	
Class 0.2S	Operation measurement, internal metering, current error ±0.2% at 1 x I_{pr} and 1.2 x I_{pr}
Class 0.5	Operation measurement, internal metering, current error ±0.5% at 1 x I_{pr} and 1.2 x I_{pr}
Class 1	Operation measurement, internal metering, current error ±1% at 1 x I_{pr} and 1.2 x I_{pr}
Rated power P_n	The rated power of transformers is specified in VA. The actual load rating should be similar to the rated power; a lower actual load rating (underburden) increases the overcurrent factor and measuring devices are not sufficiently protected in case of a short-circuit, a higher actual load rating (overburden) has a negative effect on the accuracy. With a frequency of 60 Hz the rated power increases by a factor of 1.2. With $16^2/_3$ Hz the output power decreases to $^1/_3$ of the rated power.
Maximum voltage for equipment U_m	This is the rms value of the maximum voltage between the conductors of a system. For this voltage the insulation must be rated at normal operating conditions. 4NC5 current transformers are suitable for 720 V.
Overcurrent limiting factor *FS*	The overcurrent limiting factor is expressed using the characters FS and a factor, e.g. FS5 or FS10. When a short-circuit current flows through the primary winding of a current transformer, the stress on the measuring devices connected to the current transformer is the lower the smaller the overcurrent limiting factor is.
Rated short-time thermal current I_{th}	The rated short-time thermal current I_{th} is the rms value of the primary current with a duration of one second, whose heat effect the current transformer can resist without being damaged in the event of a short-circuited secondary winding.
Rated impulse current I_{dyn}	The rated impulse current I_{dyn} is the highest instantaneous value of the current after a short-circuit whose force the current transformer can resist without being damaged. The rated impulse current is specified as peak value.

4NC current transformers NEW

4NC51 window-type current transformers, used as pin-wound transformers, class 1 from 5 A to 150 A

Pin-winding increases the primary current of the current transformer. Consequently, window-type current transformers can also be used for low primary currents.

4NC51 used as pin-wound transformer

		Basic type -->	4NC5112	4NC5113	4NC5115	4NC5117	4NC5121
Rated primary current I_{pr} (without pin-winding)	A		50	60	75	100	150
Rated power P_n							
• For transformers with rated secondary current I_{sr} = 1 A	VA		2.5	2.5	2.5	2.5	2.5
• For transformers with rated secondary current I_{sr} = 5 A	VA		1.2	1.2	2.5	2.5	2.5
Primary current to be measured			Number of required pin windings				
		• I_{pr} = 5 A	10	--	--	--	--
		• I_{pr} = 10 A	5	6	--	10	--
		• I_{pr} = 15 A	--	4	5	--	10
		• I_{pr} = 20 A	--	3	--	5	--
		• I_{pr} = 25 A	2	--	3	4	6
		• I_{pr} = 30 A	--	2	--	--	5
		• I_{pr} = 40 A	--	--	--	--	--
		• I_{pr} = 50 A	--	--	--	2	3
		• I_{pr} = 75 A	--	--	--	--	2

Selection and ordering data

4NC current transformers for measuring purposes, rated secondary current I_{sr} = 5 A

	Accuracy class	Size	Rated primary current I_{pr}	Rated power P_n	SD	Article No. www.siemens.com/product?Article No.	Price per PU	PU (UNIT, SET, M)	PS	PG
			A	VA	d					
	Class 0.2s	1	150	1.0		**4NC5121-2FA21**		1	1 unit	1CL
			200	2.5		**4NC5122-2FC21**		1	1 unit	1CL
			250	2.5		**4NC5123-2FC21**		1	1 unit	1CL
			300	5		**4NC5124-2FE21**		1	1 unit	1CL
			400	5		**4NC5125-2FE21**		1	1 unit	1CL
			500	5		**4NC5126-2FE21**		1	1 unit	1CL
		5	600	5		**4NC5227-2FE21**		1	1 unit	1CL
			700	5		**4NC5228-2FE21**		1	1 unit	1CL
			800	5		**4NC5231-2FE21**		1	1 unit	1CL
			1000	5		**4NC5232-2FE21**		1	1 unit	1CL

Minimum order quantity (PS) or a multiple thereof can be ordered.

	Accuracy class	Size	Rated primary current I_{pr}	Rated power P_n	SD	Article No. www.siemens.com/product?Article No.	Price per PU	PU (UNIT, SET, M)	PS	PG
			A	VA	d					
	**Class 0.5**	1	100	1		**4NC5117-2DA21**		1	1 unit	1CL
			150	2.5		**4NC5121-2DC21**		1	1 unit	1CL
			200	5		**4NC5122-2DE21**		1	1 unit	1CL
			250	5		**4NC5123-2DE21**		1	1 unit	1CL
		2	200	5		**4NC5222-2DE21**		1	1 unit	1CL
			250	5		**4NC5223-2DE21**		1	1 unit	1CL
			300	5		**4NC5224-2DE21**		1	1 unit	1CL
			400	5		**4NC5225-2DE21**		1	1 unit	1CL
		3	400	5		**4NC5325-2DE21**		1	1 unit	1CL
			500	5		**4NC5326-2DE21**		1	1 unit	1CL
			600	5		**4NC5327-2DE21**		1	1 unit	1CL
			750	5		**4NC5330-2DE21**		1	1 unit	1CL
			800	5		**4NC5331-2DE21**		1	1 unit	1CL
		4	800	10		**4NC5431-2DH21**		1	1 unit	1CL
			1000	10		**4NC5432-2DH21**		1	1 unit	1CL
			1200	10		**4NC5433-2DH21**		1	1 unit	1CL
			1500	10		**4NC5435-2DH21**		1	1 unit	1CL
			1600	15		**4NC5436-2DK21**		1	1 unit	1CL
			2000	20		**4NC5438-2DL21**		1	1 unit	1CL
			2500	25		**4NC5440-2DM21**		1	1 unit	1CL
			3000	30		**4NC5441-2DN21**		1	1 unit	1CL
	**Class 1.0**	1	50	1.2		**4NC5112-2CB21**		1	1 unit	1CL
			60	1.2		**4NC5113-2CB21**		1	1 unit	1CL
			75	2.5		**4NC5115-2CC21**		1	1 unit	1CL
			100	2.5		**4NC5117-2CC21**		1	1 unit	1CL
			150	2.5		**4NC5121-2CC21**		1	1 unit	1CL
			200	5		**4NC5122-2CE21**		1	1 unit	1CL
			250	5		**4NC5123-2CE21**		1	1 unit	1CL
		2	200	5		**4NC5222-2CE21**		1	1 unit	1CL
			250	5		**4NC5223-2CE21**		1	1 unit	1CL
			300	5		**4NC5224-2CE21**		1	1 unit	1CL
			400	5		**4NC5225-2CE21**		1	1 unit	1CL
		3	400	5		**4NC5325-2CE21**		1	1 unit	1CL
			500	5		**4NC5326-2CE21**		1	1 unit	1CL
			600	5		**4NC5327-2CE21**		1	1 unit	1CL
			750	5		**4NC5330-2CE21**		1	1 unit	1CL
		4	800	10		**4NC5431-2CH21**		1	1 unit	1CL
			1000	10		**4NC5432-2CH21**		1	1 unit	1CL
			1250	10		**4NC5434-2CH21**		1	1 unit	1CL
			1500	10		**4NC5435-2CH21**		1	1 unit	1CL
			2000	12.5		**4NC5438-2CJ21**		1	1 unit	1CL
			2500	12.5		**4NC5440-2CJ21**		1	1 unit	1CL
			3000	30		**4NC5441-2CN21**		1	1 unit	1CL

4NC current transformers NEW

4NC current transformers for measuring purposes, rated secondary current I_{sr} = 1 A

	Accuracy class	Size	Rated primary current I_{pr}	Rated power P_n	SD	Article No. www.siemens.com/product?Article No.	Price per PU	PU (UNIT, SET, M)	PS	PG
			A	VA	d					
	**Class 0.5**	1	100	1		**4NC5117-0DA21**		1	1 unit	1CL
			150	2.5		**4NC5121-0DC21**		1	1 unit	1CL
			200	5		**4NC5122-0DE21**		1	1 unit	1CL
			250	5		**4NC5123-0DE21**		1	1 unit	1CL
		2	200	5		**4NC5222-0DE21**		1	1 unit	1CL
			250	5		**4NC5223-0DE21**		1	1 unit	1CL
			300	5		**4NC5224-0DE21**		1	1 unit	1CL
			400	5		**4NC5225-0DE21**		1	1 unit	1CL
		3	400	5		**4NC5325-0DE21**		1	1 unit	1CL
			500	5		**4NC5326-0DE21**		1	1 unit	1CL
			600	5		**4NC5327-0DE21**		1	1 unit	1CL
			750	5		**4NC5330-0DE21**		1	1 unit	1CL
		4	800	10		**4NC5431-0DH21**		1	1 unit	1CL
			1000	10		**4NC5432-0DH21**		1	1 unit	1CL
			1200	10		**4NC5433-0DH21**		1	1 unit	1CL
			1500	10		**4NC5435-0DH21**		1	1 unit	1CL
	**Class 1.0**	1	50	1.2		**4NC5112-0CB21**		1	1 unit	1CL
			60	1.2		**4NC5113-0CB21**		1	1 unit	1CL
			75	2.5		**4NC5115-0CC21**		1	1 unit	1CL
			100	2.5		**4NC5117-0CC21**		1	1 unit	1CL
			150	2.5		**4NC5121-0CC21**		1	1 unit	1CL
			200	5		**4NC5122-0CE21**		1	1 unit	1CL
			250	5		**4NC5123-0CE21**		1	1 unit	1CL
		2	200	5		**4NC5222-0CE21**		1	1 unit	1CL
			250	5		**4NC5223-0CE21**		1	1 unit	1CL
			300	5		**4NC5224-0CE21**		1	1 unit	1CL
			400	5		**4NC5225-0CE21**		1	1 unit	1CL
		3	400	5		**4NC5325-0CE21**		1	1 unit	1CL
			500	5		**4NC5326-0CE21**		1	1 unit	1CL
			600	5		**4NC5327-0CE21**		1	1 unit	1CL
			750	5		**4NC5330-0CE21**		1	1 unit	1CL
		4	800	10		**4NC5431-0CH21**		1	1 unit	1CL
			1000	10		**4NC5432-0CH21**		1	1 unit	1CL
			1250	10		**4NC5434-0CH21**		1	1 unit	1CL
			1500	10		**4NC5435-0CH21**		1	1 unit	1CL
			2000	12.5		**4NC5438-0CJ21**		1	1 unit	1CL
			2500	12.5		**4NC5440-0CJ21**		1	1 unit	1CL

Accessories

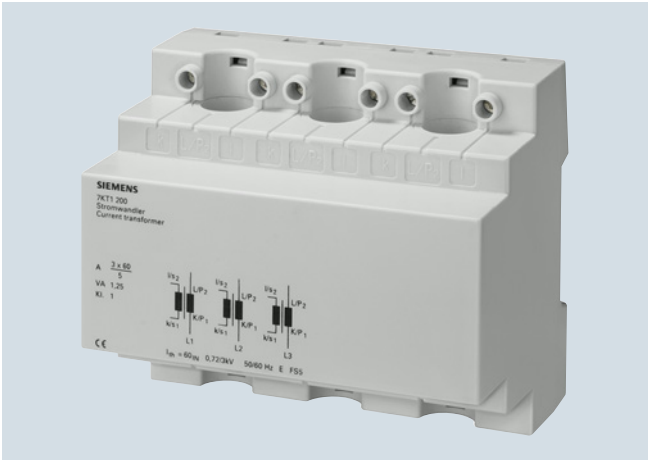
	For transformer size	SD	Article No. www.siemens.com/product?Article No.	Price per PU	PU (UNIT, SET, M)	PS	PG
		d					
Standard rail mounting							
	1, 5		**4NC5923-5LT21**		1	1 unit	1CL
	2		**4NC5925-5LT21**		1	1 unit	1CL
	3		**4NC5930-5LT21**		1	1 unit	1CL
	4		**4NC5940-5LT21**		1	1 unit	1CL

More information

Other current transformers for measuring purposes,
see chapter "Switch Disconnectors"
and summation current transformers,
see chapter "Monitoring Devices"

Minimum order quantity (PS) or a multiple thereof can be ordered.

Overview



7KT12 current transformer

The three-phase 7KT12 current transformer can be used in distribution boards according to DIN 43880. The measuring leads are routed vertically through to the standard mounting rail.

This type of current transformer is suitable for infeeds or outgoing lines in connection with the installation of a 5TE8 switch or a 5TE1 disconnector, as the primary connecting leads do not have to be interrupted.

The current transformer is designed for cables of up to 13 mm in diameter, e.g. H07V-R with 50 mm^2 conductor cross-section.

Benefits

- The current transformer has accuracy class 1 in accordance with EN 60044-1.
- The versions designed for a transformer ratio of 60/5 A, 100/5 A and 150/5 A enable an even broader range of applications.

Technical specifications

			7KT1200	7KT1201	7KT1202
Standards			DIN EN 60044-1		
Secondary rated current strength		A	5		
Accuracy class		Cl.	1		
Rated power		VA	1.25	2.5	3.75
Rated frequency f_n		Hz	50/60		
Thermal current limit I_{th}	Short-time	A	60 × I_e		
Thermal continuous current		A	1 × I_e		
Overcurrent limit factor		FS	5		
Rated impulse withstand voltage U_{imp}		kV	> 3		
Creepage distances and clearances		mm	> 3		
Rated operational voltage U_e		V AC	720		
Rated operational current I_e		A AC	3 × 60	3 × 100	3 × 150
Terminals ±screw (Pozidriv)			PZ 1		
Conductor cross-sections					
- Rigid		mm^2	0.5 ... 4		
- Flexible, with end sleeve		mm^2	0.5 ... 2.5		
Permissible ambient temperature		°C	-5 ... +60		
Resistance to climate	Acc. to EN 60068-1		20/60/4		

Selection and ordering data

		U_e	I_e	I_{sek}	Mounting width	SD	Article No. www.siemens.com/product?Article No.	Price per PU	PU (UNIT, SET, M)	PS	PG
		V AC	A AC	A AC	MW	d					
	**Current transformer**										
		720	3 × 60	5	6		**7KT1200**		1	1 unit	1BK
			3 × 100				**7KT1201**		1	1 unit	1BK
			3 × 150				**7KT1202**		1	1 unit	1BK

More information

Other current transformers for measuring purposes,
see chapter "Switch Disconnectors"
and summation current transformers,
see chapter "Monitoring Devices"

Minimum order quantity (PS) or a multiple thereof can be ordered.

7KT90 measuring selector switches

Overview

Measuring selector switch (voltmeter selector switch)

Measuring selector switches are used as CO contacts of the phases for voltages and currents in three-phase systems for voltmeters and ammeters.

The design of these switches is adapted to match the modular installation devices. They support use in compliance with EN 60947-3.

Benefits

The devices have a rated insulation voltage of 660 V. This permits use in many systems.

Selection and ordering data

		U_e	I_e	U_c	Mounting width	SD	Article No. www.siemens.com/product?Article No.	Price per PU	PU (UNIT, SET, M)	PS*/ P. unit	PG
		V AC	A AC	V AC	MW	d					
	**Voltmeter selector switch**	400	12	6	3		**7KT9010**		1	1 unit	1BK
	**Ammeter selector switch for operation with current transformer**	400	12	6	3		**7KT9011**		1	1 unit	1BK

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Minimum order quantity (PS) or a multiple thereof can be ordered.