

# 7KM PAC measuring devices

## Basic units



Connections	Power supply	Display	Interface	MID	PTB-A50.7	7KM PAC1020	7KM PAC2200/PAC2200 CLP	7KM PAC3200T
<b>Transformer measurement</b>								
Screw terminals	Self-powered	With	M-Bus	With	Without	–	7KM2200-2EA30-1GA1	–
				Without	Without	–	7KM2200-2EA30-1CA1	–
			Modbus RTU	With	Without	–	7KM2200-2EA30-1HA1	–
				Without	Without	–	7KM2200-2EA30-1DA1	–
			Modbus TCP	With	With	–	7KM2200-2EA00-1JB1	–
					Without	–	7KM2200-2EA30-1JA1	–
					Without	–	7KM2200-2EA30-1EA1	–
AC/DC wide-voltage power supply unit	With	Modbus RTU	Without	Without	7KM1020-0BA01-1DAO	–	–	–
		Modbus TCP	Without	Without	–	–	–	–
	Without	Modbus TCP	Without	Without	–	–	7KM3200-0CA01-1AA0	–
DC power supply unit with extra-low voltage	With	Modbus TCP	Without	Without	–	–	–	–
		Modbus RTU	Without	Without	–	–	–	–
Ring cable lug connection	AC/DC wide-voltage power supply unit	With	Modbus TCP	Without	Without	–	–	–
<b>Direct measurement</b>								
Screw terminals	Self-powered	With	M-Bus	With	Without	–	7KM2200-2EA40-1GA1	–
				Without	Without	–	7KM2200-2EA40-1CA1	–
			Modbus RTU	With	Without	–	7KM2200-2EA40-1HA1	–
				Without	Without	–	7KM2200-2EA40-1DA1	–
			Modbus TCP	With	With	–	7KM2200-2EA40-1JB1	–
					Without	–	7KM2200-2EA40-1JA1	–
					Without	–	7KM2200-2EA40-1EA1	–

Further technical specifications		7KM1020-..	7KM2200-..	7KM3200-..	7KM3120-0..	7KM3120-1..
<b>Basic data</b>						
Installation		Front mounting	DIN rail		Front mounting	
Modular width		–	6 MW	–	–	–
Control panel instrument		96 x 96 mm	–	96 x 96 mm	–	–
External auxiliary voltage	50/60 Hz AC	100 ... 250 V	–	90 ... 276 V	100 ... 250 V ±10%	–
	DC	110 ... 250 V ±10%	–	110 ... 275 V	110 ... 250 V ±10%	24 ... 60 V ±20%
<b>Measuring inputs</b>						
Transformer connection	Secondary input current $I_e$	x/1 A or x/5 A	x/1 A or x/5 A		x/1 A or x/5 A	
Direct connection	Input voltage $U_e$ 3 AC 50/60 Hz	400/230 V			690/400 V	
	Rated current $I_n$	–	65 A	–	–	–



# 7KM PAC measuring devices

## Accessories

	7KM PAC1020	7KM PAC3120 7KM PAC3220 7KM PAC4200
<b>7KM PAC TMP2 DIN-rail adapter</b>		
	<ul style="list-style-type: none"> <li>Two-tier adapter for mounting a measuring device on a DIN rail</li> <li>Front display</li> <li>For manual intervention</li> </ul>	7KM9900-0XA00-0AA0
<b>7KM PAC TMP mounting plate</b>		
	<ul style="list-style-type: none"> <li>Adapter for mounting a measuring device on DIN rail</li> <li>Display faces backwards towards DIN rail</li> <li>Readout and evaluation of measurements solely via mains operation</li> </ul>	7KM9900-0YA00-0AA0
<b>Compact holder</b>		
	<ul style="list-style-type: none"> <li>Device holder for 7KM PAC1020/3100/3120/3200/3220/4200</li> <li>10 holders for 5 PAC devices</li> <li>For seamless side-by-side mounting of the devices (without spaces)</li> </ul>	7KM9900-0GA00-0AA0
<b>Spare parts for 7KM PAC</b>		
	<ul style="list-style-type: none"> <li>Spare parts comprising: <ul style="list-style-type: none"> <li>Device holders for panel mounting (2X)</li> <li>Screw terminal for connection of voltage inputs</li> <li>Screw terminal for connection of current inputs</li> <li>Terminal block inputs/outputs for 7KM PAC3100/4200</li> <li>Terminal block inputs/outputs for 7KM PAC3200</li> <li>RS485 terminal blocks for 7KM PAC3100</li> </ul> </li> </ul>	7KM9900-0SA00-0AA0

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	7KM PAC2200 7KM PAC2200 CLP 7KM PAC2200 MID	7KM PAC300T
<b>SENTRON PROFINET Proxy SPP2000 new</b>		
	<ul style="list-style-type: none"> <li>Proxy for transition from Modbus TCP-capable measuring devices to PROFINET IO. Connection of up to 8 devices from the PAC2200, PAC2200 CLP, PAC2200 MID and PAC3200T product ranges</li> <li>PROFINET Conformance Class C</li> <li>Two switched ports</li> <li>Integration in TIA by means of GSDML file</li> </ul>	7KM9300-0PP20-0AA0

## Expansion and communication modules

	7KM PAC3220 7KM PAC4200	COM100/800 (3VA)
<b>7KM Switched Ethernet PROFINET communication module</b>		
	• Latest PROFINET switching properties • S2 system redundancy for operation in H systems • CiR Configuration in Run • Firmware update via the modules for PAC4200 and PAC3220	7KM9300-0AE02-0AA0
<b>7KM PROFIBUS DP communication module</b>		
		7KM9300-0AB01-0AA0
<b>7KM RS485 communication module</b>		
		7KM9300-0AM00-0AA0 <sup>1)</sup>
<b>7KM PAC 4DI/2DO expansion module</b>		
		7KM9200-0AB00-0AA0 –
<b>7KM PAC I(N), I(Diff), analog expansion module</b>		
	• 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	7KM9200-0AD00-0AA0 –

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

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

# 7KT PAC measuring devices

## PAC1600 basic unit



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

## PAC1200 multichannel current measuring system



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

### PAC1200

7KT PAC1200

	<b>Data manager with 7KT1260, sensor bars</b>	<b>Number of connections</b>	<b>Article No.</b>
	3		7KT1233
	6		7KT1236
	9		7KT1238
	12		7KT1242
	<b>Data manager with 7KT1260, sensors</b>	<b>Current <math>I_e</math></b>	<b>Article No.</b>
	40 A		7KT1254
	63 A		7KT1255

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### PAC1200 Bundles



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

# SEM3 multichannel current measuring system

## Data manager



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

## Further technical specifications

SEM3

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

## Accessories

### Metering modules



- For recording measured values
- Accuracy of 0.2% or 1% for the entire measurement including current transformer
- Simple setting of phase configuration by means of slide switch
- Connection of a current transformer for measuring a phase
- Metering module is plugged into meter rack

#### Measuring accuracy

0.2%
1%

#### Article No.

US2:SEM3PHAMETER
US2:SEM3PLAMETER

### Meter racks



#### Version

For 3 metering modules
For 9 metering modules
For 15 metering modules
For 21 metering modules

#### Article No.

US2:SEM3RACK3
US2:SEM3RACK9
US2:SEM3RACK15
US2:SEM3RACK21

### Connecting cables



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

#### Length

0.3 m
0.6 m
0.9 m

#### Article No.

US2:SEM3CAB12INCH
US2:SEM3CAB24INCH
US2:SEM3CAB36INCH

### Standard current transformers



- Standard power cable brown and yellow, 1.82 m long
- Can be extended up to 100 m while still maintaining accuracy
- Transformer configuration is carried out in the data manager

#### Output signal      Transformer transmission ratio

100 mA	50 : 0.1
	125 : 0.1
	250 : 0.1
	400 : 0.1
	600 : 0.1
	800 : 0.1
	1200 : 0.1

#### Article No.

US2:SEM3SCCT50
US2:SEM3SCCT125
US2:SEM3SCCT250
US2:SEM3SCCT400
US2:SEM3SCCT600
US2:SEM3SCCT800
US2:SEM3SCCT1200

### Folding transformers



- Standard power cable brown and yellow, 1.82 m long
- Can be extended up to 100 m while still maintaining accuracy
- Transformer configuration is carried out in the data manager

#### Output signal      Transformer transmission ratio

100 mA	50 : 0.1
	125 : 0.1
	250 : 0.1
	400 : 0.1
	600 : 0.1
	800 : 0.1
	1200 : 0.1
	1600 : 0.1
	2000 : 0.1

#### Article No.

7KT1280-5MA00
7KT1280-5MA01
7KT1280-5MA02
7KT1280-5MA03
7KT1280-5MA04
7KT1280-5MA05
7KT1280-5MA06
7KT1280-5MA07
7KT1280-5MA08

### DIN-rail adapters



- 5 adapters for snapping onto DIN rail
- 1 adapter each for data manager and for meter racks with 3, 9, 15 and 21 metering modules
- Adapters are screwed onto the data manager or the meter racks

#### Article No.

US2:SEM3DINKIT
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# SEM3T multichannel temperature measuring system **new**

Data manager for thermal monitoring in electrical systems



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

## Further technical specifications

**SEM3T**

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

## Accessories

### Metering module



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

Article No.  
7KT1281-1AA00

### Meter racks



#### Version

- For 3 metering modules
- For 9 metering modules
- For 15 metering modules
- For 21 metering modules

Article No.  
US2:SEM3RACK3  
US2:SEM3RACK9  
US2:SEM3RACK15  
US2:SEM3RACK21

### Connecting cables



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

#### Length

- 0.3 m
- 0.6 m
- 0.9 m

Article No.  
US2:SEM3CAB12INCH  
US2:SEM3CAB24INCH  
US2:SEM3CAB36INCH

### Temperature sensors

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

#### Version

Sensors with ring terminal lugs

#### Size

- Sensor 1/4"
- Sensor 5/16"
- Sensor 3/8"
- Sensor 1/2"

Article No.  
7KT1281-2SA00  
7KT1281-2SA01  
7KT1281-2SA02  
7KT1281-2SA03

Cylindrical sensor

7KT1281-2CA00

# Time and pulse counters

## Mechanical counting mechanisms



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

## Further technical specifications

7KT55..      7KT56..      7KT58..

### Basic data

Installation	Front mounting		DIN rail
Modular width	-		2 MW
Front frame	48 × 48 mm	72 × 72 mm	-
Display	Drum-type register		
Version	-	With narrow frame according to DIN 43700	-

## Accessories

7KT55..      7KT56..      7KT58..

### Cover

Size	Article No.	Article No.	Article No.
55 × 55 mm	7KT9020	-	-

### Sealing ring for cover

Degree of protection	Scope of supply	Article No.	Article No.	Article No.
IP43 (in switchboards with smooth surfaces)	1 set = 5 units	7KT9000	-	-

### Terminal cover

Degree of protection	Article No.	Article No.	Article No.
IP20 (with connected conductors)	-	7KT9021	-

## Electronic counting mechanisms



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

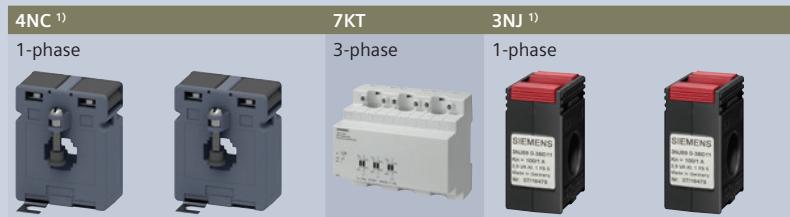
### Further technical specifications

7KT58..

Basic data	
Installation	DIN rail
Modular width	2 MW
Display	LCD display

# Current transformers

For measuring purposes



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

<sup>1)</sup> Overcurrent limiting factor FS5



		4NC <sup>1)</sup>		7KT		3NJ <sup>1)</sup>		
Size	Insulation level $U_m$	Rated primary current $I_{pr}$	Rated power $P_n$	$I_{sr} = 5 \text{ A}$	$I_{sr} = 1 \text{ A}$	$I_{sr} = 5 \text{ A}$	$I_{sr} = 5 \text{ A}$	$I_{sr} = 1 \text{ A}$
<b>Accuracy class 1.0</b>								
1	720 V	50 A	1.2 VA	4NC5112-2CB21	4NC5112-0CB21	–	–	–
		60 A	1.2 VA	4NC5113-2CB21	4NC5113-0CB21	–	–	–
		1.25 VA	–	–	7KT1200	–	–	–
		75 A	2.5 VA	4NC5115-2CC21	4NC5115-0CC21	–	–	–
		100 A	2.5 VA	4NC5117-2CC21	4NC5117-0CC21	7KT1201	–	–
		150 A	2.5 VA	4NC5121-2CC21	4NC5121-0CC21	–	–	–
		3.75 VA	–	–	7KT1202	–	–	–
		200 A	5 VA	4NC5122-2CE21	4NC5122-0CE21	–	–	–
		250 A	5 VA	4NC5123-2CE21	4NC5123-0CE21	–	–	–
		200 A	5 VA	4NC5222-2CE21	4NC5222-0CE21	–	–	–
2	720 V	250 A	5 VA	4NC5223-2CE21	4NC5223-0CE21	–	–	–
		300 A	5 VA	4NC5224-2CE21	4NC5224-0CE21	–	–	–
		400 A	5 VA	4NC5225-2CE21	4NC5225-0CE21	–	–	–
		400 A	5 VA	4NC5325-2CE21	4NC5325-0CE21	–	–	–
3	720 V	500 A	5 VA	4NC5326-2CE21	4NC5326-0CE21	–	–	–
		600 A	5 VA	4NC5327-2CE21	4NC5327-0CE21	–	–	–
		750 A	5 VA	4NC5330-2CE21	4NC5330-0CE21	–	–	–
		800 A	10 VA	4NC5431-2CH21	4NC5431-0CH21	–	–	–
4	720 V	1000 A	10 VA	4NC5432-2CH21	4NC5432-0CH21	–	–	–
		1250 A	10 VA	4NC5434-2CH21	4NC5434-0CH21	–	–	–
		1500 A	10 VA	4NC5435-2CH21	4NC5435-0CH21	–	–	–
		2000 A	12.5 VA	4NC5438-2CJ21	4NC5438-0CJ21	–	–	–
		2500 A	12.5 VA	4NC5440-2CJ21	4NC5440-0CJ21	–	–	–
		3000 A	30 VA	4NC5441-2CN21	–	–	–	–

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## Accessories

### DIN-rail mounting



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