

SENTRON, meas. device & power quality recorder, 7KM PAC5200, LCD, L-L: 690 V, L-N: 400 V, 10 A, 3-phase, Modbus TCP, apparent/active/reactive energy / cos phi, harmonics: 2.-40., THD, class 0.5 acc. to IEC61557-12 or cl. 0.5S acc. to IEC62053-22, wide-range pwr sup. unit AC/DC, screw terminals



Model	
Product brand name	SENTRON
Product designation	7KM PAC5200
Design of the product	Advanced
Product type designation	Measuring instrument and power quality recorder
Type of measured value detection	complete
Design of the power supply	Wide-range power supply
General technical data	
Cutout width	94 mm
Cutout height	94 mm
Size of Power Monitoring Device / company-specific	size 96
Operating mode for measured value detection	
<ul style="list-style-type: none"> <li>• automatic line frequency detection</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• set at 50 Hz</li> </ul>	No
<ul style="list-style-type: none"> <li>• set to 60 Hz</li> </ul>	No
Pulse duration	
<ul style="list-style-type: none"> <li>• initial value</li> </ul>	50 ms
<ul style="list-style-type: none"> <li>• Full-scale value</li> </ul>	3 600 000 ms

Voltage curve	Sinusoidal or distorted
Measurable line frequency / initial value	45 Hz
Measurable line frequency / Full-scale value	65 Hz
Measuring procedure / for voltage measurement	TRMS

### Supply voltage

Supply voltage frequency / rated value	
<ul style="list-style-type: none"> <li>• minimum</li> <li>• maximum</li> </ul>	45 Hz 65 Hz
Type of voltage / of the supply voltage	AC/DC
Measuring category / for supply voltage	CATIII
<b>Apparent power consumption</b>	
<ul style="list-style-type: none"> <li>• with expansion module / maximum</li> <li>• without expansion module / typical</li> </ul>	6 V·A 6 V·A
Relative symmetrical tolerance / of the supply voltage	20 %

### Protection class

Protection class IP	
<ul style="list-style-type: none"> <li>• on the front</li> <li>• Rear side</li> </ul>	IP40 IP20
Operating resource protection class / when installed	II

### Electricity

Measurable current / 2 / at AC / Rated value	10 A
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### Suitability

Suitability for operation	Installation in stationary control panels in closed rooms
Adjustable time period / minimum	50 ms

### Product function

Product function	
<ul style="list-style-type: none"> <li>• Illuminance of display backlighting adjustable</li> <li>• Time-controlled reduction of the illuminance of display backlighting possible</li> <li>• reactive power measurement</li> <li>• frequency measurement</li> <li>• pulse measurement</li> <li>• Display contrast adjustable</li> <li>• voltage measurement</li> <li>• Current measurement</li> <li>• active power measurement</li> </ul>	Yes Yes Yes Yes Yes Yes Yes Yes Yes

### Display and operation

Design of the display	LCD
Number of keys	4
Color / of the background of the display	white

National language / on the display screen / is supported	de, en
Product function / Display can be inverted (positive <=> negative mode)	Yes
Horizontal image resolution	128
Vertical screen resolution	96
Refresh time / on display	
• minimum	0.33 s
• maximum	3 s

### Communication

Refresh time / at the interface	
• maximum	1 s
Number of interfaces / acc. to Fast Ethernet	1
Design of cable / connectable / Twisted pair	Yes
Protocol	
• is supported	Modbus TCP

### Fault limits

Reference condition / for metering accuracy	according to IEC 62053-22, IEC 62053-23, IEC 62586-1, Class S, IEC 61000-4-30, IEC 61000-4-7, IEC 61000-4-23
Formula for relative total measurement inaccuracy	
• for measured variable reactive energy	Class 2 according to IEC61557-12 and/or IEC62053-23
• for measured variable output	+/- 0,5 %
• for measured variable output factor	+/- 0,5 %
• for measured variable voltage	+/- 0,2 %
• for measured variable current	+/- 0,2 %
• for measured variable THD	+/- 0.5 %
• for measured variable active energy	Cl. 0.5 acc. to... IEC62053-22

### Inputs Outputs

Number of digital outputs	2
Digital output version	Continuous output, pulse output
Type of switching output	solid state
Type of electrical connection	
• at the digital outputs	screw-type terminals
Output current	
• at digital output / for signal <1> / minimum	100 mA
• at digital output / for signal <1> / maximum	300 mA
• at the digital outputs / at DC / maximum	100 mA
Operating voltage / as output voltage / at DC / maximum permissible	250 V
Property of the output / Short-circuit proof	Yes
Internal resistance / at the digital outputs	35 Ω
Measuring category / for digital signals	Cat. III

Switching frequency / at digital output / maximum	10 Hz
Transfer rate	
<ul style="list-style-type: none"> <li>• 1 / for fast Ethernet</li> </ul>	10 Mbit/s
<ul style="list-style-type: none"> <li>• 2 / for fast Ethernet</li> </ul>	100 Mbit/s

## Measuring inputs

Outer conductors and neutral conductors internal resistance / for voltage measurement	6 MΩ
Measurable supply voltage	
<ul style="list-style-type: none"> <li>• between (PE)N and L / at AC / maximum rated value</li> </ul>	400 V
<ul style="list-style-type: none"> <li>• between the outer conductors / at AC / maximum</li> </ul>	831 V
<ul style="list-style-type: none"> <li>• between the outer conductors / at AC / maximum rated value</li> </ul>	690 V
Voltage measuring range extension / with external voltage transformers	Yes
Current measuring range extension / with external current transformers	Yes
Measuring category / for voltage measurement	CATIII
Supply voltage / between the outer conductors / at AC / maximum permissible	831 V
Consumed active power / for current measurement / per phase	2.5 mW
Continuous current / at AC / maximum permissible	10 A
Measuring category / for current measurement	CATIII
Zero-point suppression / for current measurement	0 ... 10 %
<ul style="list-style-type: none"> <li>• for neutral conductor current</li> </ul>	0.0 % to 10.0 % (from Vrated, Irated)
Relative measurable current / at AC	
<ul style="list-style-type: none"> <li>• minimum</li> </ul>	1 %
<ul style="list-style-type: none"> <li>• maximum</li> </ul>	200 %
Apparent power consumption / for current measurement	
<ul style="list-style-type: none"> <li>• with measuring range 5 A / per phase</li> </ul>	2 V·A
Measuring procedure / for current measurement	TRMS
Measurable current / 1 / at AC / Rated value	1 A

## Connections

<b>Type of connectable conductor cross-sections</b>	
<ul style="list-style-type: none"> <li>• at the measurement inputs for voltage / at AWG conductors / solid</li> </ul>	Screw connection
<ul style="list-style-type: none"> <li>• at the measurement inputs for voltage / solid</li> </ul>	2.5 mm <sup>2</sup>
<ul style="list-style-type: none"> <li>• at the measurement inputs for voltage / finely stranded / with core end processing</li> </ul>	2.5 mm <sup>2</sup>
<ul style="list-style-type: none"> <li>• at the measurement inputs for current / at AWG conductors / solid</li> </ul>	Screw connection

<b>Type of electrical connection</b>	
<ul style="list-style-type: none"> <li>• at the inputs for supply voltage</li> <li>• at the measurement inputs for voltage</li> <li>• at the measurement inputs for current</li> <li>• of the fast Ethernet interface</li> </ul>	<p>screw-type terminals</p> <p>screw-type terminals</p> <p>screw-type terminals</p> <p>RJ45 (8P8C)</p>

Mechanical Design	
Height	96 mm
Height / of the display	54 mm
Width	96 mm
Width <ul style="list-style-type: none"> <li>• of the display</li> </ul>	72 mm
Depth	147.9 mm
Mounting position	vertical
Installation depth	102.9 mm
Mounting type / panel mounting	Yes
Net weight	809 g

Environmental conditions	
Degree of pollution	2
Installation altitude / at height above sea level / maximum	2 000 m
<b>Standard</b>	
<ul style="list-style-type: none"> <li>• for EMC for industrial sector</li> <li>• for EMC against unloading</li> <li>• for EMC against high frequency fields</li> <li>• for EMC against conducted LF disturbance variables (industry)</li> <li>• for EMC against conducted disturbance variables via HF fields</li> <li>• for EMC against magnetic fields with power engineering frequencies</li> <li>• for EMC against quick, transient electrical disturbances</li> <li>• for EMC against voltage drops and interruptions</li> <li>• for EMC against surge voltages</li> <li>• for free fall</li> <li>• for cyclic, environmental damp heat check</li> <li>• for environmental coldness check</li> <li>• for environmental dry heat check</li> </ul>	<p>IEC 61000-6-2</p> <p>IEC 61000-4-2 - 6 kV contact discharge; 8 kV air discharge</p> <p>IEC 61000-4-3 80 MHz up to 3 GHz, 10 Vm</p> <p>IEC 61000-6-4</p> <p>IEC 61000-4-6; 2008; 0.15 MHz - 80 MHz</p> <p>IEC 61000-4-8, Class IV</p> <p>IEC 61000-4-4 Class 3; 2 kV, 5 KHz</p> <p>IEC 61000-4-11; 2004-03</p> <p>IEC 61000-4-5 installation class 2, 2 kV/1 kV,</p> <p>IEC 60068-2-31</p> <p>IEC 60068-2-78 Test Ca</p> <p>IEC 60068-2-1 Test Ad</p> <p>IEC 60068-2-2 Test Bd</p>
Relative humidity / at 25 °C / without condensation / during operation <ul style="list-style-type: none"> <li>• minimum</li> </ul>	75 %

<ul style="list-style-type: none"> <li>• maximum</li> </ul>	95 %
Ambient temperature	
<ul style="list-style-type: none"> <li>• during operation / minimum</li> </ul>	-25 °C
<ul style="list-style-type: none"> <li>• during operation / maximum</li> </ul>	55 °C
<ul style="list-style-type: none"> <li>• during storage / minimum</li> </ul>	-40 °C
<ul style="list-style-type: none"> <li>• during storage / maximum</li> </ul>	70 °C

### Certificates

Certificate of suitability		
<ul style="list-style-type: none"> <li>• as EC declaration of conformity</li> <li>• as approval for USA</li> </ul>		EN 61000-6-2 and EN 61000-6-4 for EMC guideline UL - File E228586, Vol. X1: A1
Waste electronic equipment must not be disposed as unsorted municipal waste, e.g. household waste. For disposing the waste electronic equipment it is necessary to observe the current local national/international regulations.		

Declaration of Conformity	other
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[Manufacturer Declaration](#)

### Further information

**Information- and Downloadcenter (Catalogs, Brochures,...)**

<http://www.siemens.com/lowvoltage/catalogs>

**Industry Mall (Online ordering system)**

<https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=7KM5412-6BA00-1EA2>

**Service&Support (Manuals, Certificates, Characteristics, FAQs,...)**

<https://support.industry.siemens.com/cs/ww/en/ps/7KM5412-6BA00-1EA2>

**Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, ...)**

[http://www.automation.siemens.com/bilddb/cax\\_en.aspx?mlfb=7KM5412-6BA00-1EA2](http://www.automation.siemens.com/bilddb/cax_en.aspx?mlfb=7KM5412-6BA00-1EA2)

**CAX-Online-Generator**

<http://www.siemens.com/cax>

**Tender specifications**

<http://www.siemens.com/specifications>





