## Data sheet

SENTRON, measuring device, 7KM PAC2200, LCD, L-L: 400 V, L-N: 230 V, 5 A, strd rail instr., 3-phase, Modbus RTU, apparent /active/reactive energy, self-powered, screw terminals



Model	
product brand name	SENTRON
Product designation	7KM PAC2200
Design of the product	basic
Product type designation	Measuring instrument
Type of measured value detection	complete

General technical data	
Size of Power Monitoring Device / company-specific	6MW
Operating mode for measured value detection	
<ul> <li>automatic line frequency detection</li> </ul>	Yes
● set at 50 Hz	No
• set to 60 Hz	No
Pulse duration	
● initial value	30 ms
Full-scale value	500 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	
Type of voltage / of the supply voltage	AC
Protection class	
protection class     protection class IP / on the front	IP40
Protection class IP / Rear side	IP20
Operating resource protection class / when installed	"
Current	
Measurable current	
• 1 / at AC / Rated value	1 A
• 2 / at AC / Rated value	5 A
adjustable time period / minimum	10 ms
Product function	
Product function / illuminance of display	Yes
backlighting adjustable	
<ul> <li>Product function / Time-controlled reduction of</li> </ul>	Yes
the illuminance of display backlighting possible	
<ul> <li>product function / reactive power measurement</li> </ul>	Yes
<ul> <li>Product function / display contrast adjustable</li> </ul>	Yes
<ul><li>product function / voltage measurement</li></ul>	Yes
<ul> <li>product function / current measurement</li> </ul>	Yes
<ul> <li>product function / active power measurement</li> </ul>	Yes
Display and operation	
design of the display	LCD
number of keys	4
Color / of the background of the display	white
Communication	
Protocol	
• is supported	Modbus RTU
Fault limits	
Reference condition / for metering accuracy	In accordance with IEC61557-12, IEC62053-22 and IEC62053-23
Formula for relative total measurement	Class 2 acc. to IEC61553-23
inaccuracy / for measured variable reactive	
energy	
<ul> <li>formula for relative total measurement</li> </ul>	+/- 1 %
inaccuracy / for measured variable reactive	
power	0.5.0/
Formula for relative total measurement     inaccuracy / for measured variable output factor.	+/- 0,5 %
inaccuracy / for measured variable output factor  • formula for relative total measurement	1/ 4.0/
■ IOITIUIA IOI TEIALIVE LOLAI MEASUFEMENT	
inaccuracy / for measured variable active power	+/- 1 %

Inputs Outputs	
Input voltage / at digital input	
• at DC / maximum	30 V
number of digital outputs	1
number of digital inputs	1
Digital output version	switching or pulse output function
Type of electrical connection	
at the digital inputs	screw-type terminals
at the digital outputs	screw-type terminals
Input current / at digital input	
• initial value for signal<1>-recognition	2.5 mA
<ul> <li>Full-scale value for signal&lt;0&gt; recognition</li> </ul>	0.5 mA
Output current	
• at digital output / with signal <0> / maximum	0.2 mA
• at digital output / for signal <1> / maximum	50 mA
at the digital outputs / at DC / limited to 100 ms	130 mA
/ maximum	
Operating conditions for digital inputs / external	Yes
voltage supply	
Operating voltage / as output voltage / at DC / maximum permissible	30 V
property of the output / short-circuit proof	Yes
Internal resistance / at the digital outputs	30 Ω
Switching frequency / at digital output / maximum	17 Hz
Measuring inputs	
Outer conductors and neutral conductors internal	1 ΜΩ
resistance / for voltage measurement	
Measurable supply voltage	
<ul><li>between (PE)N and L / at AC / minimum</li></ul>	46 V
<ul><li>between (PE)N and L / at AC / maximum</li></ul>	276 V
<ul> <li>between (PE)N and L / at AC / maximum rated value</li> </ul>	230 V
<ul> <li>between the outer conductors / at AC / minimum</li> </ul>	34.6 V
<ul> <li>between the outer conductors / at AC / maximum</li> </ul>	480 V
<ul> <li>between the outer conductors / at AC / maximum rated value</li> </ul>	400 V
Voltage measuring range extension / with external voltage transformers	No
Current measuring range extension / with external current transformers	Yes
Measuring category / for voltage measurement	CATIII

Type of electrical connection  • at the measurement inputs for voltage • at the measurement inputs for current  Mechanical Design  Height 97 mm  Height / of the display 27 mm  Width 108 mm • Width / of the display 45 mm  Depth 71 mm  installation depth 64 mm  Mounting type / panel mounting No mounting position any net weight 310 g		
Zero-point suppression / for current measurement  • for neutral conductor current  • for neutral conductor current  Relative measurable current / at AC  • minimum  • maximum  • maximum  • paparent power consumption / for current measurement / with measuring range 5 A / per phase  Measuring procedure / for current measurement  TRMS  Connections  Type of electrical connection  • at the measurement inputs for voltage • at the measurement inputs for current  Screw-type terminals  **crew-type terminals  **screw-type terminals  **scre		480 V
for neutral conductor current Relative measurable current / at AC     ininimum	Continuous current / at AC / maximum permissible	10 A
Relative measurable current / at AC  • minimum  • maximum  • apaprent power consumption / for current measurement / with measuring range 5 A / per phase  Measuring procedure / for current measurement  TRMS  Connections  • at the measurement inputs for voltage screw-type terminals • at the measurement inputs for current screw-type terminals  • at the measurement inputs for current  Height 97 mm  Height 97 mm  Height 108 mm  • Wridth / of the display 45 mm  • Wridth / of the display 45 mm  Mounting type / panel mounting No mounting position any anounting position any anounting position any anounting position  net weight 310 g  Environmental conditions  Installation altitude / at height above sea level / maximum  Standard  • for pulse emitter  Relative humidity / at 25 °C / without condensation / during operation  • maximum  • maximum  75 %  Ambient temperature / during operation  • maximum	Zero-point suppression / for current measurement	10 mA
maximum  naximum  naximum  naximum  120 % 0.5 V-A  17 MX 0.5 V-A  18 MX 0.5 V-A  18 MX 0.5 V-A  18 MX 0.5 V-A  18 MX  18	• for neutral conductor current	45 mA
maximum     apparent power consumption / for current measurement / with measuring range 5 A / per phase  Measuring procedure / for current measurement  TRMS  Connections  Type of electrical connection     at the measurement inputs for voltage screw-type terminals     at the measurement inputs for current  Mechanical Design  Height 97 mm  Height 0f the display 27 mm  Width 108 mm  • Width / of the display 45 mm  Depth 71 mm  installation depth 64 mm  Mounting type / panel mounting No mounting type / panel mounting neutweight 310 g  Environmental conditions  Installation altitude / at height above sea level / maximum  Standard     • for pulse emitter  Relative humidity / at 25 °C / without condensation / during operation     • maximum  * maximum  To % C  Ambient temperature / during storage  • minimum     -25 °C  Ambient temperature / during storage  • minimum     -25 °C  Ambient temperature / during storage  • minimum     -25 °C	Relative measurable current / at AC	
• apparent power consumption / for current measurement / with measuring range 5 A / per phase  Measuring procedure / for current measurement  TRMS   Connections  Type of electrical connection  • at the measurement inputs for voltage screw-type terminals  • at the measurement inputs for current screw-type terminals  Mechanical Design  Height 97 mm  Height 108 mm  • Width / of the display 27 mm  Width 108 mm  • Width / of the display 45 mm  Depth 71 mm  installation depth 64 mm  Mounting type / panel mounting No mounting position any net weight 310 g  Environmental conditions  Installation altitude / at height above sea level / maximum  Standard  • for pulse emitter  Relative humidity / at 25 °C / without condensation / during operation  • maximum  • maximum  75 %  Ambient temperature / during operation  • maximum  • maximum  55 °C  Ambient temperature / during storage  • minimum  • maximum  -25 °C  -25 °C  -25 °C  -30 °C  -4 maximum  -25 °C  -4 maximum  -25 °C  -5 °C  -5 °C  -6 maximum  -25 °C  -6 minimum  -25 °C  -70 °C	• minimum	1 %
Measurement / with measuring range 5 A / per phase  Measuring procedure / for current measurement  TRMS  Trye of electrical connection  • at the measurement inputs for voltage • at the measurement inputs for current  screw-type terminals  Mechanical Design  Height 97 mm  Height 97 mm  Width 108 mm • Width / of the display 45 mm  Depth 171 mm  installation depth 64 mm  Mounting type / panel mounting No mounting position any net weight 310 g  Environmental conditions  Installation altitude / at height above sea level / maximum  Standard • for pulse emitter  Relative humidity / at 25 °C / without condensation / during operation • maximum  • maximum  75 %  Ambient temperature / during storage • minimum • 25 °C  Ambient temperature / during storage • minimum • 75 °C  Ambient temperature / during storage • minimum • maximum • maximum  70 °C	• maximum	120 %
Type of electrical connection  • at the measurement inputs for voltage screw-type terminals • at the measurement inputs for current screw-type terminals  • at the measurement inputs for current screw-type terminals  Mechanical Design  Height 97 mm  Height 97 mm  Height 108 mm  • Width of the display 45 mm  Depth 71 mm  Installation depth 64 mm  Mounting type / panel mounting No mounting position any net weight 310 g  Environmental conditions  Installation altitude / at height above sea level / maximum  Standard • for pulse emitter  Relative humidity / at 25 °C / without condensation / during operation • maximum  To %  Ambient temperature / during operation • minimum • maximum  55 °C  Ambient temperature / during storage • minimum • maximum  -25 °C	measurement / with measuring range 5 A / per	0.5 V·A
Type of electrical connection  • at the measurement inputs for voltage • at the measurement inputs for current  **Mechanical Design*  Height 97 mm  Height 97 mm  Width 108 mm • Width / of the display 45 mm  Depth 71 mm installation depth 84 mm  Mounting type / panel mounting neutring storage  **Environmental conditions*  Installation altitude / at height above sea level / maximum  **Standard* • for pulse emitter  Relative humidity / at 25 °C / without condensation / during operation • maximum  **The Width of the display 45 mm  **The Maximum 75 %  Ambient temperature / during operation • maximum  **The Maximum 45 °C / without condensely of maximum  **The Maximum 55 °C / without condensely of maximum  **The Maximum 45 °C / without condensely of maximum 55 °C C  **The Maximum 55 °C C  **The Maximum 65 °C C  **The Maximum 75 °C C  **The Maxim	Measuring procedure / for current measurement	TRMS
at the measurement inputs for current screw-type terminals  at the measurement inputs for current screw-type terminals  Mechanical Design  Height 97 mm  Height 108 mm  Width 108 mm  Width 108 mm  Width 61 fine display 45 mm  Depth 71 mm Installation depth 84 mm  Mounting type / panel mounting mounting position any net weight 310 g  Environmental conditions  Installation altitude / at height above sea level / maximum  Standard 10 for pulse emitter according to IEC62053-31  Relative humidity / at 25 °C / without condensation / during operation 1 minimum 2 minimum 2 minimum 2 minimum 2 minimum 2 minimum 2 minimum 3 minim	Connections	
● at the measurement inputs for current  Mechanical Design  Height   97 mm	Type of electrical connection	
Height 97 mm  Height / of the display 27 mm  Width 108 mm  • Width / of the display 45 mm  Depth 71 mm installation depth 64 mm  Mounting type / panel mounting No mounting position any net weight 310 g  Environmental conditions  Installation altitude / at height above sea level / maximum  Standard  • for pulse emitter  Relative humidity / at 25 °C / without condensation / during operation  • maximum  75 %  Ambient temperature / during operation  • minimum  • maximum  Arbient temperature / during storage  • minimum  • maximum  -25 °C  Ambient temperature / during storage  • minimum  • maximum  -25 °C  Ambient temperature / during storage  • minimum  • maximum  -25 °C  -70 °C	<ul> <li>at the measurement inputs for voltage</li> </ul>	screw-type terminals
Height / of the display 27 mm  Width 108 mm  Width / of the display 45 mm  Depth 71 mm installation depth 64 mm  Mounting type / panel mounting No mounting position any and any any any any and any maximum  Environmental conditions  Installation altitude / at height above sea level / maximum  Standard of or pulse emitter according to IEC62053-31  Relative humidity / at 25 °C / without condensation / during operation maximum  Ambient temperature / during operation  maximum 55 °C  Ambient temperature / during storage minimum -25 °C maximum -25 °C	<ul> <li>at the measurement inputs for current</li> </ul>	screw-type terminals
Height / of the display  Width  Width  Width / of the display  Depth  installation depth  Mounting type / panel mounting  mounting position  net weight  No  Installation altitude / at height above sea level / maximum  Standard  of or pulse emitter  Relative humidity / at 25 °C / without condensation / during operation  maximum  To waximum  Ambient temperature / during operation  maximum  maximum  To so °C  Ambient temperature / during storage  minimum  maximum  To °C  To maximum  To maximum  To °C  To maximum  To maximum  To o °C	Mechanical Design	
Width  Width / of the display  Popth  Installation depth  Mounting type / panel mounting  mounting position  net weight  Privronmental conditions  Installation altitude / at height above sea level / maximum  Standard  of or pulse emitter  Relative humidity / at 25 °C / without condensation / during operation  maximum  To show the preventing operation  maximum  Ambient temperature / during operation  maximum  maximum  To show  maximum  To sh	Height	97 mm
Width / of the display  Pepth  Installation depth  Mounting type / panel mounting  Mounting position  The weight  Environmental conditions  Installation altitude / at height above sea level / maximum  Standard  Installation altitude / at height above sea level / maximum  Standard  Installation altitude / at height above sea level / maximum  Standard  Installation altitude / at height above sea level / maximum  Standard  Installation altitude / at height above sea level / maximum  Standard  Installation altitude / at height above sea level / maximum  Standard  Installation altitude / at height above sea level / maximum  To for pulse emitter  According to IEC62053-31  According to IEC62053-31  To %  Ambient temperature / during operation  Installation altitude / at height above sea level / maximum  To %  Ambient temperature / during operation  Installation altitude / at height above sea level / maximum  To %  To %  Ambient temperature / during storage  Installation altitude / at height above sea level / maximum  To %  To %  Ambient temperature / during storage  Installation altitude / at height above sea level / maximum  To %  To	Height / of the display	27 mm
Depth installation depth 64 mm  Mounting type / panel mounting mounting position net weight  Servironmental conditions  Installation altitude / at height above sea level / maximum  Standard • for pulse emitter  Relative humidity / at 25 °C / without condensation / during operation • maximum  Ambient temperature / during operation • maximum  - temperature / during storage • minimum • minimum • maximum  - 25 °C  Ambient temperature / during storage • minimum • min	Width	108 mm
installation depth  Mounting type / panel mounting  Mounting position  net weight  Environmental conditions  Installation altitude / at height above sea level / maximum  Standard  • for pulse emitter  Relative humidity / at 25 °C / without condensation / during operation  • maximum  75 %  Ambient temperature / during operation  • maximum  Ambient temperature / during storage  • minimum  • minimum  • maximum  -25 °C  Ambient temperature / during storage  • minimum  • maximum  -25 °C  70 °C	<ul><li>Width / of the display</li></ul>	45 mm
Mounting type / panel mounting mounting position net weight  Standard of prulse emitter Relative humidity / at 25 °C / without condensation / during operation omaximum  To which temperature / during operation omaximum omaximum  To which temperature / during storage omaximum  To conditions  No any	Depth	71 mm
mounting position net weight  310 g  Environmental conditions  Installation altitude / at height above sea level / maximum  Standard  • for pulse emitter  Relative humidity / at 25 °C / without condensation / during operation • maximum  75 %  Ambient temperature / during operation • maximum  - 25 °C  Ambient temperature / during storage • minimum • maximum  - 25 °C  Ambient temperature / during storage • minimum • maximum  - 25 °C  - 70 °C	installation depth	64 mm
Installation altitude / at height above sea level / maximum  Standard  • for pulse emitter  Relative humidity / at 25 °C / without condensation / during operation  • maximum  75 %  Ambient temperature / during operation  • maximum  -25 °C  Ambient temperature / during storage  • minimum  • maximum  -25 °C  Ambient temperature / during storage  • minimum  • maximum  -25 °C	Mounting type / panel mounting	No
Installation altitude / at height above sea level / maximum  Standard  • for pulse emitter  Relative humidity / at 25 °C / without condensation / during operation  • maximum  75 %  Ambient temperature / during operation  • minimum  • maximum  55 °C  Ambient temperature / during storage  • minimum  • minimum  -25 °C  Ambient temperature / during storage  • minimum  • maximum  70 °C	mounting position	any
Installation altitude / at height above sea level / maximum  Standard  • for pulse emitter  Relative humidity / at 25 °C / without condensation / during operation  • maximum  75 %  Ambient temperature / during operation  • minimum  • maximum  55 °C  Ambient temperature / during storage  • minimum  • minimum  -25 °C  70 °C	net weight	310 g
Standard  • for pulse emitter  Relative humidity / at 25 °C / without condensation / during operation  • maximum  75 %  Ambient temperature / during operation  • maximum  -25 °C  Ambient temperature / during storage  • minimum  -25 °C  Ambient temperature / during storage  • minimum  -25 °C  70 °C	Environmental conditions	
Standard  • for pulse emitter  Relative humidity / at 25 °C / without condensation / during operation  • maximum  Ambient temperature / during operation  • minimum  • maximum  55 °C  Ambient temperature / during storage  • minimum  • minimum  -25 °C  70 °C	_	2 000 m
for pulse emitter  Relative humidity / at 25 °C / without condensation / during operation		
Relative humidity / at 25 °C / without condensation / during operation  • maximum  75 %  Ambient temperature / during operation  • minimum  • maximum  55 °C  Ambient temperature / during storage  • minimum  • maximum  75 °C  70 °C		according to IFC620E2 24
during operation		according to IEC62053-31
<ul> <li>maximum</li> <li>Ambient temperature / during operation</li> <li>minimum</li> <li>maximum</li> <li>55 °C</li> <li>Ambient temperature / during storage</li> <li>minimum</li> <li>-25 °C</li> <li>70 °C</li> </ul>		
Ambient temperature / during operation  • minimum  • maximum  55 °C  Ambient temperature / during storage  • minimum  -25 °C  70 °C		75 %
<ul> <li>minimum</li> <li>-25 °C</li> <li>maximum</li> <li>55 °C</li> <li>Ambient temperature / during storage</li> <li>minimum</li> <li>-25 °C</li> <li>maximum</li> <li>70 °C</li> </ul>		1 5 70
<ul> <li>maximum</li> <li>55 °C</li> <li>Ambient temperature / during storage</li> <li>minimum</li> <li>-25 °C</li> <li>maximum</li> <li>70 °C</li> </ul>		25 °C
Ambient temperature / during storage  • minimum  • maximum  -25 °C  70 °C		
<ul><li>minimum</li><li>-25 °C</li><li>maximum</li><li>70 °C</li></ul>		55 C
• maximum 70 °C		25.00
Certificates	• maximum	70 °C
	Certificates	

Certificate of suitability / as approval for Canada
 Certificate of suitability / as approval for USA
 Certificate of suitability / Approval Australia
 Certificate of suitability / Approval Russia
 Yes
 Certificate of suitability / Approval Russia

**Declaration of Conformity** 

other



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=7KM2200-2EA30-1DA1

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

https://support.industry.siemens.com/cs/ww/en/ps/7KM2200-2EA30-1DA1

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

http://www.automation.siemens.com/bilddb/cax\_en.aspx?mlfb=7KM2200-2EA30-1DA1

**CAx-Online-Generator** 

http://www.siemens.com/cax

**Tender specifications** 

http://www.siemens.com/specifications





