

SENTRON, Measuring instrument, 7KM PAC3200, LCD, L-L: 500 V, L-N: 289 V, 5 A, Modbus TCP, optionally Modbus RTU / PROFINET / PROFIBUS, apparent / active / reactive energy, Class 0.5 acc. to IEC61557-12 or Class 0.5S acc. to IEC62053-22 ELV power supply unit, DC, screw terminal



Model	
Product brand name	SENTRON
Product designation	7KM PAC3200
Design of the product	basic
Product type designation	Measuring instrument
Type of measured value detection	complete
Design of the power supply	Extra-low voltage power supply unit
General technical data	
Cutout width	92 mm
Cutout height	92 mm
Size of Power Monitoring Device / company-specific	size 96
Operating mode for measured value detection	
<ul style="list-style-type: none"> • automatic line frequency detection 	Yes
<ul style="list-style-type: none"> • set at 50 Hz 	No
<ul style="list-style-type: none"> • set to 60 Hz 	No
Pulse duration	
<ul style="list-style-type: none"> • initial value 	30 ms
<ul style="list-style-type: none"> • 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	RMS
MTBF	185.8 y
Reference code / acc. to DIN 40719 extended according to IEC 204-2 / acc. to IEC 750	P

Supply voltage

Type of voltage / of the supply voltage	DC
Measuring category / for supply voltage	CATIII
Apparent power consumption	
<ul style="list-style-type: none"> with expansion module / maximum 	8 V·A
<ul style="list-style-type: none"> without expansion module / typical 	6 V·A
Relative symmetrical tolerance / of the supply voltage	10 %

Protection class

Protection class IP	
<ul style="list-style-type: none"> on the front 	IP65
<ul style="list-style-type: none"> Rear side 	IP20
Operating resource protection class / when installed	II

Electricity

Measurable current / 2 / at AC / Rated value	5 A
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Suitability

Suitability for operation	Installation in stationary control panels in closed rooms
Adjustable time period / minimum	10 ms

Product function

Product function	
<ul style="list-style-type: none"> reactive power measurement 	Yes
<ul style="list-style-type: none"> frequency measurement 	Yes
<ul style="list-style-type: none"> pulse measurement 	Yes
<ul style="list-style-type: none"> voltage measurement 	Yes
<ul style="list-style-type: none"> Current measurement 	Yes
<ul style="list-style-type: none"> active power measurement 	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	ger, en, fr, spa, ita, por, tur, chi
Horizontal image resolution	128
Vertical screen resolution	96

Communication

Refresh time / at the interface	
<ul style="list-style-type: none"> • minimum • maximum 	<p>0.33 s</p> <p>1 s</p>
Design of cable / connectable / Twisted pair	Yes
Protocol	
<ul style="list-style-type: none"> • at the Ethernet interface / is supported • is supported 	<p>MODBUS TCP</p> <p>Modbus TCP</p>
Transfer rate	
<ul style="list-style-type: none"> • minimum • maximum 	<p>10 000 kbit/s</p> <p>10 000 kbit/s</p>

Fault limits

Reference condition / for metering accuracy	Acc. to IEC62053-22 and IEC62053-23
Formula for relative total measurement inaccuracy	
<ul style="list-style-type: none"> • for measured variable reactive energy • for measured variable output • for measured variable output factor • for measured variable voltage • for measured variable current • for measured variable active energy 	<p>Class 2 according to IEC61557-12 and/or IEC62053-23</p> <p>+/- 0,5 %</p> <p>+/- 0,5 %</p> <p>+/- 0,3 %</p> <p>+/- 0,2 %</p> <p>Cl. 0.5 acc. to... IEC62053-22</p>

Inputs Outputs

Input voltage / at digital input	
<ul style="list-style-type: none"> • initial value for signal<1>-recognition • at DC / rated value • Full-scale value for signal<0> recognition 	<p>13 V</p> <p>24 V</p> <p>8 V</p>
Number of digital outputs	1
Number of digital inputs	1
Digital output version	switching or pulse output function
Input current / at digital input	
<ul style="list-style-type: none"> • for signal <1> 	7 mA
Output current	
<ul style="list-style-type: none"> • at digital output / with signal <0> / maximum • at digital output / for signal <1> / minimum • at digital output / for signal <1> / maximum • at the digital outputs / at DC / maximum 	<p>0.2 mA</p> <p>10 mA</p> <p>27 mA</p> <p>100 mA</p>
Output delay / at digital output	
<ul style="list-style-type: none"> • for signal <0> to <1> / maximum • for signal <1> to <0> / maximum 	<p>5 ms</p> <p>5 ms</p>
Operating voltage / as output voltage / at DC / maximum permissible	30 V
Property of the output / Short-circuit proof	Yes

Input delay time / at digital input	
• for signal <0> to <1> / maximum	5 ms
• for signal <1> to <0> / maximum	5 ms
Internal resistance / at the digital outputs	55 Ω
Measuring category / for digital signals	CATII
Switching frequency / at digital output / maximum	17 Hz

Measuring inputs

Outer conductors and neutral conductors internal resistance / for voltage measurement	1.05 MΩ
Measurable supply voltage	
• between (PE)N and L / at AC / minimum	40 V
• between (PE)N and L / at AC / maximum	346 V
• between (PE)N and L / at AC / maximum rated value	289 V
• between the outer conductors / at AC / minimum	70 V
• between the outer conductors / at AC / maximum	600 V
• between the outer conductors / at AC / maximum rated value	500 V
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	600 V
Consumed active power / for current measurement / per phase	115 mW
Continuous current / at AC / maximum permissible	10 A
Measuring category / for current measurement	CATIII
Zero-point suppression / for current measurement	0,1 ... 10 %
Relative measurable current / at AC	
• minimum	1 %
• maximum	120 %
Measuring procedure / for current measurement	TRMS
Measurable current / 1 / at AC / Rated value	1 A
Short-time current resistance (I _{cw}) / limited to 1 s / rated value	100 A

Connections

Type of electrical connection	
• at the measurement inputs for voltage	screw-type terminals

Mechanical Design

Height	96 mm
Height / of the display	54 mm

Width	96 mm
Width	
• of the display	72 mm
Depth	56 mm
Mounting position	vertical
Installation depth	51 mm
Mounting type / panel mounting	Yes
Net weight	459 g

Environmental conditions

Installation altitude / at height above sea level / maximum	2 000 m
Standard	
• for EMC for industrial sector	IEC 61000-6-2 respectively IEC 61326-1:2005, table 2
• for EMC against unloading	IEC 61000-4-2: 2001-04
• for EMC against high frequency fields	IEC 61000-4-3: 2006-02
• for EMC against conducted LF disturbance variables (industry)	IEC 61000-6-4, Group 1 Klasse A / CISPR11 Gruppe 1 Klasse A FCC Part 15 Subpart B Class A
• for EMC against conducted disturbance variables via HF fields	IEC 61000-4-6: 2001-12
• for EMC against magnetic fields with power engineering frequencies	IEC 61000-4-8: 2001-03
• for EMC against quick, transient electrical disturbances	IEC 61000-4-4: 2005-07
• for EMC against voltage drops and interruptions	IEC 61000-4-11: 2004-03
• for EMC against surge voltages	IEC 61000-4-5: 2001-12
• for free fall	IEC 60068-2-32: 1975
• for pulse emitter	according to IEC62053-31
• for cyclic, environmental damp heat check	IEC 60068-2-30
• for environmental coldness check	IEC 60068-2-1
• for environmental dry heat check	IEC 60068-2-2
Relative humidity / at 25 °C / without condensation / during operation	
• minimum	5 %
• maximum	95 %
Ambient temperature	
• during operation / minimum	-10 °C
• during operation / maximum	55 °C
• during storage / minimum	-25 °C
• during storage / maximum	70 °C

Certificates

Certificate of suitability

- as EC declaration of conformity
- as approval for Canada
- as approval for USA

IEC 61010-1: 2001 (2nd Ed.) with Corr. 1, EN 61010-1: 2001 (2nd Ed.) and DIN EN 61010-1:2002 with "Berichtigung 1"
 UL 61010-1, 2nd Ed. CAN/CSA-C22.2 NO. 61010-1-04
 UL 61010-1, 2nd Ed. CAN/CSA-C22.2 NO. 61010-1-04

Reference code / acc. to DIN EN 61346-2

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General Product Approval	Declaration of Conformity	other
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[Confirmation](#)

[Metrological Approval](#)

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=7KM2111-1BA00-3AA0>

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

<https://support.industry.siemens.com/cs/ww/en/ps/7KM2111-1BA00-3AA0>

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

http://www.automation.siemens.com/bilddb/cax_en.aspx?mlfb=7KM2111-1BA00-3AA0

CAX-Online-Generator

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

Tender specifications

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



