

SETRON, measuring device, 7KM PAC3200, LCD, L-L: 500 V, L-N: 289 V, 5 A, 3-phase, Modbus TCP, optional Modbus RTU / PROFINET / PROFIBUS, apparent/ active/reactive energy, class 0.5 acc. to IEC61557-12 or class 0.5s acc. to IEC62053-22, ext-low volt. pwr sup. unit DC, DC 22 ... 65 V +/- 10%, screw terminals



Model	
Product brand name	SETRON
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	
• automatic line frequency detection	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	RMS
MTBF	185.8 y
Reference code / acc. to DIN 40719 extended according to IEC 204-2 / acc. to IEC 750	P

<b>Supply voltage</b>	
Type of voltage / of the supply voltage	DC
Measuring category / for supply voltage	CATIII
<b>Apparent power consumption</b>	
• with expansion module / maximum	8 V·A
• without expansion module / typical	6 V·A
Relative symmetrical tolerance / of the supply voltage	10 %

<b>Protection class</b>	
Protection class IP	
• on the front	IP65
• Rear side	IP20
Operating resource protection class / when installed	II

<b>Current</b>	
Measurable current	
• 1 / at AC / Rated value	1 A
• 2 / at AC / Rated value	5 A

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

<b>Product function</b>	
Product function	
• reactive power measurement	Yes
• frequency measurement	Yes
• pulse measurement	Yes
• voltage measurement	Yes
• Current measurement	Yes
• active power measurement	Yes

<b>Display and operation</b>	
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
Refresh time / on display	
• minimum	0.33 s
• maximum	3 s

## Communication

Refresh time / at the interface	
• minimum	0.33 s
• maximum	1 s
Number of interfaces / acc. to Fast Ethernet	1
Design of cable / connectable / Twisted pair	Yes
Protocol	
• at the Ethernet interface / is supported	MODBUS TCP
• is supported	Modbus TCP
Transfer rate	
• minimum	10 000 kbit/s
• maximum	10 000 kbit/s

## Fault limits

Reference condition / for metering accuracy	Acc. to IEC62053-22 and IEC62053-23
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	+/- 0,3 %
• for measured variable current	+/- 0,2 %
• for measured variable active energy	Cl. 0.5 acc. to... IEC62053-22

## Inputs Outputs

Input voltage / at digital input	
• initial value for signal<1>-recognition	13 V
• at DC / rated value	24 V
• Full-scale value for signal<0> recognition	8 V
Number of digital outputs	1
Number of digital inputs	1
Digital output version	switching or pulse output function
Input current / at digital input	
• for signal <1>	7 mA
Output current	
• at digital output / with signal <0> / maximum	0.2 mA
• at digital output / for signal <1> / minimum	10 mA
• at digital output / for signal <1> / maximum	27 mA
• at the digital outputs / at DC / maximum	100 mA

Output delay / at digital output	
• for signal <0> to <1> / maximum	5 ms
• for signal <1> to <0> / maximum	5 ms
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 $\Omega$
Measuring category / for digital signals	CATII
Switching frequency / at digital output / maximum	17 Hz
Transfer rate	
• 1 / for fast Ethernet	10 Mbit/s

### Measuring inputs

Outer conductors and neutral conductors internal resistance / for voltage measurement	1.05 M $\Omega$
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

### Connections

Type of connectable conductor cross-sections / at the digital inputs	
<ul style="list-style-type: none"> <li>• at AWG conductors / solid</li> <li>• solid</li> <li>• finely stranded / with core end processing</li> </ul>	2x 24 ... 18 1x (0.2 ... 2.5 mm <sup>2</sup> ), 2x (0.2 ... 1.0 mm <sup>2</sup> ) 1x (0.25 ... 2.5 mm <sup>2</sup> ), 2x (0.25 ... 1.0 mm <sup>2</sup> )
Type of connectable conductor cross-sections / at the digital outputs	
<ul style="list-style-type: none"> <li>• at AWG conductors / solid</li> <li>• solid</li> <li>• finely stranded / with core end processing</li> </ul>	2x 24 ... 18 1x (0.2 ... 2.5 mm <sup>2</sup> ), 2x (0.2 ... 1.0 mm <sup>2</sup> ) 1x (0.25 ... 2.5 mm <sup>2</sup> ), 2x (0.25 ... 1.0 mm <sup>2</sup> )
Type of connectable conductor cross-sections / at the inputs for supply voltage	
<ul style="list-style-type: none"> <li>• at AWG conductors / solid</li> <li>• solid</li> <li>• finely stranded / with core end processing</li> </ul>	2x 20 to 14 1x (0.5 ... 4 mm <sup>2</sup> ), 2x (0.5 ... 2.5 mm <sup>2</sup> ) 1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x (0.5 ... 1.5 mm <sup>2</sup> )
Type of connectable conductor cross-sections	
<ul style="list-style-type: none"> <li>• at the measurement inputs for voltage / at AWG conductors / solid</li> <li>• at the measurement inputs for voltage / solid</li> <li>• at the measurement inputs for voltage / finely stranded / with core end processing</li> <li>• at the measurement inputs for current / at AWG conductors / solid</li> <li>• at the measurement inputs for current / solid</li> <li>• at the measurement inputs for current / finely stranded / with core end processing</li> </ul>	2x 20 to 14  1x (0.5 ... 4 mm <sup>2</sup> ), 2x (0.5 ... 2.5 mm <sup>2</sup> ) 1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x (0.5 ... 1.5 mm <sup>2</sup> )  2x 20 to 14  1x (0.5 ... 4 mm <sup>2</sup> ), 2x (0.5 ... 2.5 mm <sup>2</sup> ) 1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x (0.5 ... 1.5 mm <sup>2</sup> )
Type of electrical connection	
<ul style="list-style-type: none"> <li>• at the measurement inputs for voltage</li> </ul>	screw-type terminals

## 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	56 mm
Installation depth	51 mm
Mounting type / panel mounting	Yes
Mounting position	vertical
Net weight	459 g

## Environmental conditions

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 pulse emitter</li> <li>• for cyclic, environmental damp heat check</li> <li>• for environmental coldness check</li> <li>• for environmental dry heat check</li> </ul>	IEC 61000-6-2 respectively IEC 61326-1:2005, table 2 IEC 61000-4-2: 2001-04 IEC 61000-4-3: 2006-02 IEC 61000-6-4, Group 1 Klasse A / CISPR11 Gruppe 1 Klasse A FCC Part 15 Subpart B Class A IEC 61000-4-6: 2001-12  IEC 61000-4-8: 2001-03  IEC 61000-4-4: 2005-07  IEC 61000-4-11: 2004-03  IEC 61000-4-5: 2001-12 IEC 60068-2-32: 1975 according to IEC62053-31 IEC 60068-2-30 IEC 60068-2-1 IEC 60068-2-2
Relative humidity / at 25 °C / without condensation / during operation <ul style="list-style-type: none"> <li>• minimum</li> <li>• maximum</li> </ul>	5 % 95 %
Ambient temperature / during operation <ul style="list-style-type: none"> <li>• minimum</li> <li>• maximum</li> </ul>	-10 °C 55 °C
Ambient temperature / during storage <ul style="list-style-type: none"> <li>• minimum</li> <li>• maximum</li> </ul>	-25 °C 70 °C

## Certificates

Certificate of suitability <ul style="list-style-type: none"> <li>• as EC declaration of conformity</li> <li>• as approval for Canada</li> <li>• as approval for USA</li> </ul>	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 <ul style="list-style-type: none"> <li>• acc. to DIN EN 61346-2</li> </ul>	P

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

[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=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](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>



