SIEMENS

Data sheet

7KM2111-1BA00-3AA0

SENTRON, 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



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	
 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 у
Reference code / acc. to DIN 40719 extended according to IEC 204-2 / acc. to IEC 750	Ρ
Supply voltage	
Type of voltage / of the supply voltage	DC
Measuring category / for supply voltage	CATIII
Apparent power consumption	
 with expansion module / maximum 	8 V·A
 without expansion module / typical 	6 V·A
Relative symmetrical tolerance / of the supply voltage	10 %
Protection class	
Protection class IP	
• on the front	IP65
• Rear side	IP20
Operating resource protection class / when installed	Н
Current	
Measurable current	
• 1 / at AC / Rated value	1 A
• 2 / at AC / Rated value	5 A
Suitability	
Suitability for operation	Installation in stationary control panels in closed rooms
Adjustable time period / minimum	10 ms
Product function	
Product function	
 reactive power measurement 	Yes
 frequency measurement 	Yes
• pulse measurement	Yes
 voltage measurement 	Yes
Current measurement	Yes
 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
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

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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 Ω
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 ΜΩ
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	
• at AWG conductors / solid	2x 24 18
• solid	1x (0.2 2.5 mm²), 2x (0.2 1.0 mm²)
 finely stranded / with core end processing 	1x (0.25 2.5 mm²), 2x (0.25 1.0 mm²)
Type of connectable conductor cross-sections / at the digital outputs	
• at AWG conductors / solid	2x 24 18
• solid	1x (0.2 2.5 mm²), 2x (0.2 1.0 mm²)
 finely stranded / with core end processing 	1x (0.25 2.5 mm²), 2x (0.25 1.0 mm²)
Type of connectable conductor cross-sections / at the inputs for supply voltage	
• at AWG conductors / solid	2x 20 to 14
• solid	1x (0.5 4 mm²), 2x (0.5 2.5 mm²)
 finely stranded / with core end processing 	1x (0.5 2.5 mm²), 2x (0.5 1.5 mm²)
Type of connectable conductor cross-sections	
 at the measurement inputs for voltage / at AWG conductors / solid 	2x 20 to 14
• at the measurement inputs for voltage / solid	1x (0.5 4 mm²), 2x (0.5 2.5 mm²)
 at the measurement inputs for voltage / finely stranded / with core end processing 	1x (0.5 2.5 mm²), 2x (0.5 1.5 mm²)
 at the measurement inputs for current / at AWG conductors / solid 	2x 20 to 14
• at the measurement inputs for current / solid	1x (0.5 4 mm²), 2x (0.5 2.5 mm²)
 at the measurement inputs for current / finely stranded / with core end processing 	1x (0.5 2.5 mm²), 2x (0.5 1.5 mm²)
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
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 /	2 000 m
maximum	
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
• maximum	55 °C
Ambient temperature / during storage	
• minimum	-25 °C
• maximum	70 °C
Certificates	
Certificate of suitability	
 as EC declaration of conformity 	IEC 61010-1: 2001 (2nd Ed.) with Corr. 1, EN 61010-1: 2001 (2nd Ed.) and DIN EN 61010-1:2002 with "Berichtigung 1"
 as approval for Canada 	UL 61010-1, 2nd Ed. CAN/CSA-C22.2 NO. 61010-1-04

Reference code

as approval for USA

• acc. to DIN EN 61346-2

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UL 61010-1, 2nd Ed. CAN/CSA-C22.2 NO. 61010-1-04

General Product	Declaration of Con-	other		
Approval	formity			
	EG-Konf.	<u>Confirmation</u>	Manufacturer Declara- tion	

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

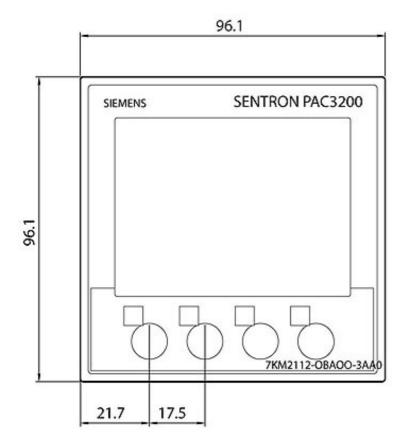
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, ...) http://www.automation.siemens.com/bilddb/cax_en.aspx?mlfb=7KM2111-1BA00-3AA0

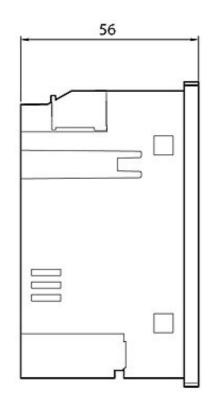
CAx-Online-Generator

http://www.siemens.com/cax

Tender specifications

http://www.siemens.com/specifications





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