

SENTRON, measuring instrument, 7KM PAC3200, LCD, L-L: 690 V, L-N: 400 V, MODBUS TCP, optional Modbus RTU / PROFINET / PROFIBUS, apparent / active / reactive energy, Cl. 0.5 acc. to IEC61557-12 or Cl. 0.5S acc. to IEC62053-22

Model	
product brandname	SENTRON
Design of the product	basic
Type of measured value detection	complete
Design of the power supply	Wide-range power supply
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
Equipment marking / acc. to DIN 40719 extended according to IEC 204-2 / acc. to IEC 750	P
Voltage	
Measurable current / 1 / at AC / Rated value	1 A
Measuring procedure / for current measurement	TRMS
Supply voltage	
Supply voltage frequency / rated value	
• minimum	65 Hz
• maximum	45 Hz
Type of voltage / of the supply voltage	AC/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	II

Electricity

Short-time current resistance (I _{cw}) / limited to 1 s / rated value	100 A
Measurable current / 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

Communication

Refresh time / at the interface	
• minimum	0.33 s
• maximum	1 s
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> / 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 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 MΩ
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Measurable supply voltage	
• between (PE)N and L / at AC / minimum	40 V
• between (PE)N and L / at AC / maximum	480 V
• between (PE)N and L / at AC / maximum rated value	400 V
• between the outer conductors / at AC / minimum	70 V
• between the outer conductors / at AC / maximum	831 V
• between the outer conductors / at AC / maximum rated value	690 V
Voltage measuring range extension / with external voltage 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	115 mW
Continuous current / at AC / maximum permissible	10 A
Current measuring range extension / with external current transformers	Yes
Measuring category / for current measurement	CATIII
Zero-point suppression / for current measurement	0,1 ... 10 %
Relative measurable current / at AC	
• minimum	1 %
• maximum	120 %

Connections

Type of electrical connection	
• at the inputs for supply voltage	screw-type terminals
• at the measurement inputs for voltage	screw-type terminals
• at the measurement inputs for current	screw-type terminals
• of the fast Ethernet interface	RJ45 (8P8C)

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
Net weight	451 g

Environmental conditions

Installation altitude / at height above sea level / maximum	2 000 m
Standard • for EMC for industrial sector • for EMC against unloading • for EMC against high frequency fields • for EMC against conducted LF disturbance variables (industry) • for EMC against conducted disturbance variables via HF fields • for EMC against magnetic fields with power engineering frequencies • for EMC against quick, transient electrical disturbances • for EMC against voltage drops and interruptions • for EMC against surge voltages • for free fall • for pulse emitter • for cyclic, environmental damp heat check • for environmental coldness check • for environmental dry heat check	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 • minimum • maximum	5 % 95 %
Ambient temperature • during operation / minimum • during operation / maximum • during storage / minimum • during storage / maximum	-10 °C 55 °C -25 °C 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
Equipment marking / acc. to DIN EN 61346-2	P

General Product Approval		Declaration of Conformity	other
			
CB	UL		EG-Konf.

[Bestätigungen](#)

other	
PROFINET-Zertifizierung	Metrologische Zulassung

Further information

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

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

Industry Mall (Online ordering system)

<https://eb.automation.siemens.com/mall/en/WW/Catalog/Product/7KM2112-0BA00-3AA0>

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

<http://support.automation.siemens.com/WW/view/en/7KM2112-0BA00-3AA0/all>

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

http://www.automation.siemens.com/bilddb/cax_en.aspx?mlfb=7KM2112-0BA00-3AA0

CAX-Online-Generator

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

Tender specifications

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