



SENTRON PAC4200; LCD; 96X96MM POWER MONITORING DEVICE PANEL MOUNT TYPE FOR MEASUREMENT OF ELECTR. VALUES VAUX: 110-340VDC / 95-240VAC VIN: MAX.690/400V; 45-65HZ AMPIN: X/1A OR X/5A AC COMPRESSION TYPE TERMINALS

Model		
product brand name		SENTRON
Product designation		multimeter
Design of the product		compact
Product type designation		PAC4200
Type of measured value detection		complete
Design of the power supply		Wide-range power supply

General technical data		
Cutout width	mm	92
Cutout height	mm	92
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	ms	30
• Full-scale value	ms	500
Voltage curve		Sinusoidal or distorted
Measurable line frequency / initial value	Hz	45
Measurable line frequency / Full-scale value	Hz	65
Measuring procedure / for voltage measurement		TRMS
MTBF	y	169.7
Equipment marking / acc. to DIN 40719 extended according to IEC 204-2 / acc. to IEC 750		P

Voltage		
Measurable current / 1 / with AC / Rated value	A	1
Measuring procedure / for current measurement		TRMS

Supply voltage		
<b>Supply voltage frequency / Rated value</b>		
• minimum	Hz	45
• maximum	Hz	65
Type of voltage / of the supply voltage		AC/DC
Measuring category / for supply voltage		CATIII
<b>Apparent power consumption</b>		
• with expansion module / maximum	V·A	32
• without expansion module / typical	V·A	11
<b>Active power consumption</b>		
• with expansion module / typical	W	11
• without expansion module / typical	W	5.5
Relative symmetrical tolerance / of the supply voltage	%	10

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

Electricity		
Short-time current resistance (I <sub>cw</sub> ) / limited to 1 s / Rated value	A	100
Measurable current / 2 / with AC / Rated value	A	5

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

Product function		
<b>Product function</b>		
• Illuminance of display backlighting adjustable		Yes
• Time-controlled reduction of the illuminance of display backlighting possible		Yes
• reactive power measurement		Yes
• frequency measurement		Yes
• pulse measurement		Yes
• Display contrast adjustable		Yes
• voltage measurement		Yes
• Current measurement		Yes
• active power measurement		Yes

Display and operation		
Design of the display		LCD, graphical, monochrome
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, rus, chi, pol
Product function / Display can be inverted (positive <=> negative mode)		Yes
Horizontal image resolution		128
Vertical screen resolution		96

Communication		
Refresh time / at the interface		
<ul style="list-style-type: none"> <li>for instantaneous values / typical</li> </ul>	ms	200
Number of active connections / at the Ethernet interface		3
Number of logical ports / at the Ethernet interface / is supported		2
Design of cable / connectable / Twisted pair		Yes
Product function / at the Ethernet interface		
<ul style="list-style-type: none"> <li>auto-MDI(X)</li> </ul>		Yes
<ul style="list-style-type: none"> <li>Autonegotiation</li> </ul>		Yes
<ul style="list-style-type: none"> <li>serial gateway</li> </ul>		Yes
Protocol		
<ul style="list-style-type: none"> <li>at the Ethernet interface / is supported</li> </ul>		MODBUS TCP
<ul style="list-style-type: none"> <li>is supported</li> </ul>		MODBUS TCP
Transfer rate		
<ul style="list-style-type: none"> <li>minimum</li> </ul>	kbit/s	10 000
<ul style="list-style-type: none"> <li>maximum</li> </ul>	kbit/s	100 000
<ul style="list-style-type: none"> <li>1 / for Ethernet</li> </ul>	Mbit/s	10
<ul style="list-style-type: none"> <li>2 / for Ethernet</li> </ul>	Mbit/s	100

Fault limits		
Reference condition / for metering accuracy		Acc. to IEC61557-12
Formula for relative total measurement inaccuracy		
<ul style="list-style-type: none"> <li>for measured variable reactive energy</li> </ul>		Class 2 according to IEC61557-12 and/or IEC62053-23
<ul style="list-style-type: none"> <li>for measured variable output</li> </ul>		+/- 0,5 %
<ul style="list-style-type: none"> <li>for measured variable output factor</li> </ul>		+/- 2 %
<ul style="list-style-type: none"> <li>for measured variable voltage</li> </ul>		+/- 0,2 %
<ul style="list-style-type: none"> <li>for measured variable current</li> </ul>		+/- 0,2 %
<ul style="list-style-type: none"> <li>for measured variable THD</li> </ul>		+/- 2 %
<ul style="list-style-type: none"> <li>for measured variable active energy</li> </ul>		Class 0.2 according to IEC61557-12 and/or class 0.2S according to IEC62053-22

## Inputs Outputs

<b>Input voltage / at digital input</b>		
• initial value for signal<1>-recognition	V	19
• for DC / Rated value	V	24
• for DC / maximum	V	30
• Full-scale value for signal<0> recognition	V	10
<b>Number of digital outputs</b>		2
<b>Number of digital inputs</b>		2
<b>Digital output version</b>		switching or pulse output function
<b>Type of switching output</b>		solid state
<b>Type of electrical connection / at the digital outputs</b>		screw-type terminals
<b>Type of electrical connection / at the digital inputs</b>		screw-type terminals
<b>Input current / at digital input</b>		
• for signal <1>	mA	4
<b>Output current</b>		
• at digital output / with signal <0> / maximum	mA	0.2
• at digital output / for signal <1> / maximum	mA	27
• at digital output / for signal <1> / minimum	mA	10
• at the digital outputs / for DC / limited to 100 ms / maximum	mA	300
• at the digital outputs / for DC / maximum	mA	100
<b>Output delay / at digital output</b>		
• for signal <0> to <1> / maximum	ms	5
• for signal <1> to <0> / maximum	ms	5
<b>Operating conditions for digital inputs / external voltage supply</b>		Yes
<b>Operating voltage / as output voltage / for DC / maximum permissible</b>	V	30
<b>Property of the output / Short-circuit proof</b>		Yes
<b>Input delay time / at digital input</b>		
• for signal <0> to <1> / maximum	ms	5
• for signal <1> to <0> / maximum	ms	5
<b>Internal resistance / at the digital outputs</b>	$\Omega$	55
<b>Measuring category / for digital signals</b>		CATI
<b>Switching frequency / at digital output / maximum</b>	Hz	20
<b>Transfer rate / 1 / for fast Ethernet</b>	Mbit/s	100

## Measuring inputs

<b>Outer conductors and neutral conductors internal resistance / for voltage measurement</b>	M $\Omega$	1.05
<b>Measurable supply voltage</b>		
• between (PE)N and L / with AC / minimum	V	11.5
• between (PE)N and L / with AC / maximum	V	480

• between (PE)N and L / with AC / maximum rated value	V	400
• between the outer conductors / with AC / minimum	V	20
• between the outer conductors / with AC / maximum	V	828
• between the outer conductors / with AC / maximum rated value	V	690
<b>Voltage measuring range extension / with external voltage transformers</b>		Yes
<b>Measuring category / for voltage measurement</b>		CATIII
<b>Supply voltage / between the outer conductors / with AC / maximum permissible</b>	V	831
<b>Continuous current / with AC / maximum permissible</b>	A	10
<b>Current measuring range extension / with external current transformers</b>		Yes
<b>Measuring category / for current measurement</b>		CATIII
<b>Zero-point suppression / for current measurement</b>		0 ... 10 %
<b>Relative measurable current / with AC</b>		
• minimum	%	1
• maximum	%	120
<b>Apparent power consumption / for current measurement</b>		
• with measuring range 1 A / per phase	mVA	4
• with measuring range 5 A / per phase	mVA	115

## Connections

<ul style="list-style-type: none"> <li>• Type of connectable conductor cross-section / at the digital inputs <ul style="list-style-type: none"> <li>— for AWG conductors / solid</li> <li>— solid</li> <li>— finely stranded / with core end processing</li> </ul> </li> <li>• Type of connectable conductor cross-section / at the digital outputs <ul style="list-style-type: none"> <li>— for AWG conductors / solid</li> <li>— solid</li> <li>— finely stranded / with core end processing</li> </ul> </li> <li>• Type of connectable conductor cross-section / at the inputs for supply voltage <ul style="list-style-type: none"> <li>— for AWG conductors / solid</li> <li>— solid</li> <li>— finely stranded / with core end processing</li> </ul> </li> <li>• Type of connectable conductor cross-section <ul style="list-style-type: none"> <li>— at the measurement inputs for voltage</li> </ul> </li> </ul>		<p>1x 24 ... 12</p> <p>1x (0.2 ... 2.5 mm<sup>2</sup>), 2x (0.2 ... 1.0 mm<sup>2</sup>)</p> <p>1x (0.25 ... 2.5 mm<sup>2</sup>), 2x (0.25 ... 1.0 mm<sup>2</sup>)</p> <p>1x 24 ... 12</p> <p>1x (0.2 ... 2.5 mm<sup>2</sup>), 2x (0.2 ... 1.0 mm<sup>2</sup>)</p> <p>1x (0.25 ... 2.5 mm<sup>2</sup>), 2x (0.25 ... 1.0 mm<sup>2</sup>)</p> <p>2x 20 to 14</p> <p>1x (0.5 ... 4 mm<sup>2</sup>), 2x (0.5 ... 2.5 mm<sup>2</sup>)</p> <p>1x (0.5 ... 2.5 mm<sup>2</sup>), 2 (0.5 ... 1.5 mm<sup>2</sup>)</p>
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<ul style="list-style-type: none"> <li>— for AWG conductors / solid</li> <li>— solid</li> <li>— finely stranded / with core end processing</li> <li>— at the measurement inputs for current <ul style="list-style-type: none"> <li>— for AWG conductors / solid</li> <li>— solid</li> <li>— finely stranded / with core end processing</li> </ul> </li> </ul>	<p>2x 20 to 14</p> <p>1x (0.5 ... 4 mm<sup>2</sup>), 2x (0.5 ... 2.5 mm<sup>2</sup>)</p> <p>1x (0.5 ... 2.5 mm<sup>2</sup>), 2x (0.5 ... 1.5 mm<sup>2</sup>)</p> <p>2x 20 to 14</p> <p>1x (0.5 ... 4 mm<sup>2</sup>), 2x (0.5 ... 2.5 mm<sup>2</sup>)</p> <p>1x (0.5 ... 2.5 mm<sup>2</sup>), 2x (0.5 ... 1.5 mm<sup>2</sup>)</p>
<b>Type of electrical connection</b> <ul style="list-style-type: none"> <li>• at the inputs for supply voltage</li> <li>• at the measurement inputs for voltage</li> <li>• at the measurement inputs for current</li> <li>• of the fast Ethernet interface</li> </ul>	<p>screw-type terminals</p> <p>screw-type terminals</p> <p>screw-type terminals</p> <p>RJ45 (8P8C)</p>

### Mechanical Design

<b>Height</b>	mm	96
Height / of the display	mm	54
<b>Width</b>	mm	96
<b>Width</b> <ul style="list-style-type: none"> <li>• of the display</li> </ul>	mm	72
<b>Depth</b>	mm	82
<b>mounting position</b>		vertical
<b>Installation depth</b>	mm	77
<b>Installation depth / with expansion module / maximum</b>	mm	99
Mounting type / panel mounting		Yes
<b>Material thickness / of the control panel</b> <ul style="list-style-type: none"> <li>• maximum</li> </ul>	mm	4

### Environmental conditions

<b>Degree of pollution</b>		2
<b>Installation altitude / at height above sea level / maximum</b>	m	2 000
<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> </ul>		<p>IEC 61000-6-2</p> <p>IEC 61000-4-2</p> <p>IEC 61000-4-3</p> <p>IEC 61000-6-4</p> <p>IEC 61000-4-6</p> <p>IEC 61000-4-8</p>

<ul style="list-style-type: none"> <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 61000-4-4
		IEC 61000-4-11
		IEC 61000-4-5
		IEC 60068-2-32
		according to IEC62053-31
		IEC 60068-2-30
		IEC 60068-2-1
		IEC 60068-2-2
<b>Relative humidity / at 25 °C / without condensation / during operation</b>		
<ul style="list-style-type: none"> <li>• minimum</li> </ul>	%	5
<ul style="list-style-type: none"> <li>• maximum</li> </ul>	%	95
<b>Ambient temperature</b>		
<ul style="list-style-type: none"> <li>• during operation / minimum</li> </ul>	°C	-10
<ul style="list-style-type: none"> <li>• during operation / maximum</li> </ul>	°C	55
<ul style="list-style-type: none"> <li>• during storage / minimum</li> </ul>	°C	-25
<ul style="list-style-type: none"> <li>• during storage / maximum</li> </ul>	°C	70

## Certificates

<b>Certificate of suitability</b>		
<ul style="list-style-type: none"> <li>• as EC declaration of conformity</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 style="list-style-type: none"> <li>• as approval for Canada</li> </ul>		UL 61010-1, 2nd Ed. CAN/CSA-C22.2 NO. 61010-1-04
<ul style="list-style-type: none"> <li>• as approval for USA</li> </ul>		UL 61010-1, 2nd Ed. CAN/CSA-C22.2 NO. 61010-1-04
<ul style="list-style-type: none"> <li>• Approval Australia</li> </ul>		Yes
<ul style="list-style-type: none"> <li>• Approval Russia</li> </ul>		Yes
Equipment marking / acc. to DIN EN 61346-2		P

General Product Approval	EMC	Declaration of Conformity	other
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**CB**

CB



UL

**EAC**



C-TICK



EG-Konf.

[other](#)

**other**

[Confirmation](#)



Profibus

[PROFINET-Certification](#)

**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/7KM42120BA003AA0>

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

<http://support.automation.siemens.com/WW/view/en/7KM42120BA003AA0/all>

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

[http://www.automation.siemens.com/bilddb/cax\\_en.aspx?mlfb=7KM42120BA003AA0](http://www.automation.siemens.com/bilddb/cax_en.aspx?mlfb=7KM42120BA003AA0)

**CAX-Online-Generator**

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

**Tender specifications**

<http://ausschreibungstexte.siemens.com/tiplv>





