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7KM3133-0BA00-3AA0

Siemens

Siemens PAC3100 LCD Digital Power Meter with Pulse Output, 92mm Cutout Height

Any questions,please feel free to contact us.

info@kaimte.com

PAC3100
Power Meter

Basic monitoring of electrical power systems

The PAC3100 is a powerful compact power monitoring device that is suitable for use in industrial, government and commercial applications, where basic metering and energy monitoring is required. The meter may be used as a stand alone device monitoring over twenty-five parameters or as part of an industrial control, building automation or global power monitoring system.

Metering and monitoring applications range from simple analog volt and amp meter replacements to stand-alone sub-billing or cost allocation installations.

The PAC3100 has many features not usually found in this price class of meters. A large graphical display supports multiple languages and easy to use menus that can be used to set up the meter as well as a PC based program, SENTRON powerconfig, that can be used to pre-configure one or multiple units. The meter also has built in Modbus RTU communications via a RS485 interface. The meter comes standard with two digital inputs and outputs. One output is suitable for pulse output for export/import real and reactive energy. The other output is controllable from an outside source by way of a Modbus register. The PAC3100 meets or exceeds ANSI C12.16 (1%) specification for revenue meters.

The PAC3100 can also be used to support LEED certification and provide the needed energy metering data for federal or local government energy reduction programs.

ThePAC3100 provides open communications using Modbus RTU and digital I/O for easy integration into any local or remote monitoring system to indicate values and status. Simple configuration of the meter can be done from the front display or by using a PC with SENTRON powerconfig setup software, supplied with the meter.

usa.siemens.com/pds

96 mm
3.78 in.

96 mm
3.78 in.
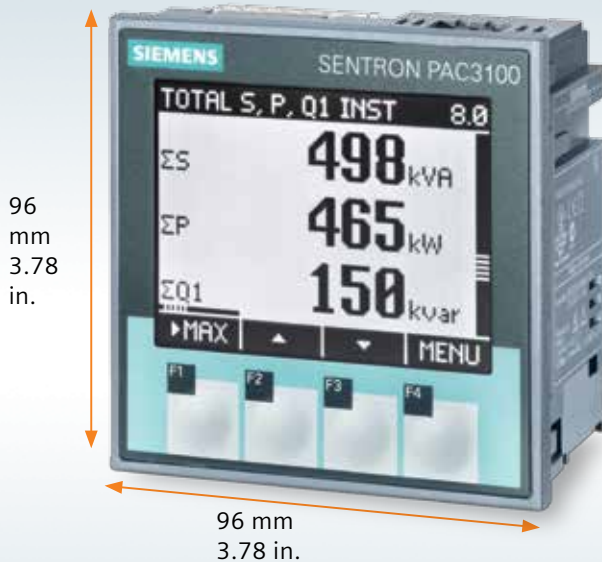
Full Graphic LCD Display to indicate:
• Display title or designation of the
  displayed measurements
• Phase
• Measured value Unit
• Labeling of function keys

Example of operating menu:
With an easy-to-read adjustable back lit LCD display, the
PAC3100 can be commissioned in only two steps. After
selecting the language and setting two parameters
(voltage and current inputs), the meter is ready for use.[1]

When, where and how much
power is consumed?

PAC3100 makes consumption apparent
To accomplish a sustainable reduction of
power costs, you must first analyze the
electrical system's current consumption and
power flows. The PAC3100 power meter
precisely and reliably delivers the required
information of power values to put you
on the path to reduce your power cost.

Applications summary
● Replace multiple analog meters
   An ideal replacement for analog meters.
   Use it for stand-alone metering in
   custom panels, switchboards,
   switchgear, gensets, motor control
   center and UPS systems, PDU, RPPs, etc.

   Beside the ability to measure energy
   data, the device can also track the
   status of a breaker due to the two
   built-in digital inputs. This makes
   the meter a cost effective solution to
   monitor the energy consumption in
   a branch as well as the status of the
   protective device.

MODBUS RTU

Terminal block for
(2) Digital I/O

Terminals for
current and voltage
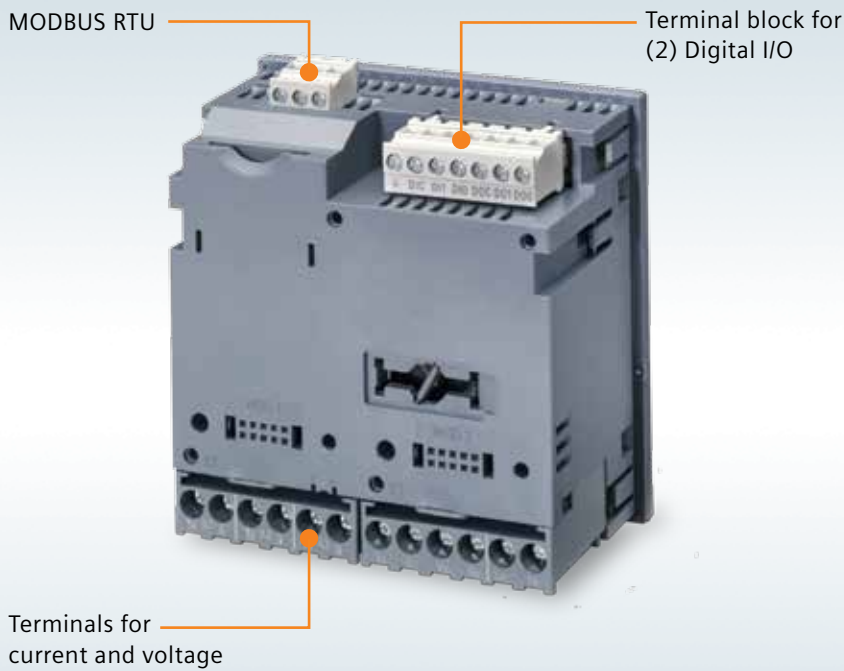
- **Basic Metering**
  The PAC3100 offers high-accuracy power, energy and demand measurements. These revenue accurate values can be used for bill verification, monitoring backup power on critical systems and offering cost-effective energy solutions.

- **Cost allocation / Energy monitoring**
  Perfect for monitoring right down to the tool level, the meter can help monitor cost centers, identify opportunities for demand control and check energy consumption patterns.

- **Automation integration**
  Monitor critical equipment processes and tie directly to the Siemens family of PLCs and automation networks.

- **Sub-metering**
  Low cost, high accuracy and simple retrofit installation enables economical measurement of commercial and residential tenant space. Integrate the PAC3100 with existing energy management systems and RTUs.

Reduce energy onsumption by eliminating previously uncontrolled expenses.

Power management and PAC3100
The PAC3100 can easily be integrated into a power management system using Modbus RTU. With communication, the PAC3100 transmits measured values to the supervisory systems, where the data can be further processed for display and control.

Siemens offers a low cost Powermanager or enterprise level WinPM.Net power monitoring software which can provide easy integration to the PAC3100 meter. Powermanager or WinPM.Net provide standard overview displays allowing detailed analysis of the electrical power, which allows for easy allocation of power consumption and cost. Additionally, unexpected operating conditions can be detected on a timely basis.

[1] Languages included as standard in the meter are English, German, French, Spanish, Italian, Portuguese, Polish, Turkish, Russian and Chinese.

Functional features

Instantaneous values		
Voltage	Phase-phase / phase-neutral	✓
Currents	Per phase including neutral current total	✓
Apparent, active and reactive power (kW, kVAR, kVA)	Per phase and total	✓
Power factor	Total	✓
Frequency	45…64 Hz	✓
Min. / max. values	Voltage – phase-phase, phase-neutral Current / Power / Power factor Frequency Three phase average voltage and current	✓
Average values	Voltage – phase-phase, phase-neutral Voltage min. / max. for phase-phase-phase-neutral Current Current min. / max.	✓
Energy measurement		
Real (active) energy (kWh)	Import / export	✓ / ✓
Reactive energy (KVArh)	Positive / negative; high / low tariff	✓ / ✓
Energy demand per measuring period	Three phase average rating for active and reactive power	1 to 60 min.
Min. / max. rating values within the measuring period		✓
Measurement accuracy		
Voltages		±1%
Currents		±1%
Active Power		±1%
Reactive Power		±3%
Active energy		Class 1 according to IEC 61557-12 and IEC62053-21
Reactive energy		Class 3 according to IEC61557-12 and IEC62053-23
Communication		
Modbus RTU	Standard • Parameterization via device front or with SENTRON powerconfig software • Transition of data via MODBUS register based points	• Support of all baud rates from 4800, 9600, 19.2K and 38.4K BPS (4.8 / 9.6 / 19.2 and 38.4 kB/sec)
Standard Inputs / Outputs		
Integrated Digital input	30 Vdc / 2.5 mA	2: wet, no external power needed
Integrated Digital output	30 Vdc max. / 10-27mA; 130 mA max.	2
General		
Password protection		✓

Functional features (continued)

Inputs / Outputs		
Input voltage / at digital input • at DC / maximum	30 V	
Number of digital outputs	2	
Number of digital inputs	2	
Digital output version	Switching or pulse output function	
Design of the switching input	Self-supplied	
Type of switching output	bidirectional	
Input current / at digital input • initial value for signal<1>-recognition • Full-scale value for signal<0> recognition • for signal <1> / minimum	2.5 mA 0.5 mA 2.5 mA	
Output current • 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 / limited to 100 ms / maximum • at the digital outputs / at DC / maximum	0.2 mA 10 mA 27 mA 130 mA 30 mA	
Output delay / at digital output • for signal <0> to <1> / maximum • for signal <1> to <0> / maximum	5 ms 5 ms	
Operating conditions for digital inputs / external voltage supply	No	
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 • for signal <1> to <0> / maximum	30 ms 30 ms	
Internal resistance / at the digital outputs	55 Ω	
Load resistance / at digital input • initial value for signal<0>-recognition • Full-scale value for signal<1> recognition	100 000 Ω 1 000 Ω	
Measuring category / for digital signals	CATI	
Switching frequency / at digital output / maximum	17 Hz	
Technical data		
Two-quadrant (import) / four-quadrant (import and export) measuring		4Q
Measurement types		1 ph, 2 ph or 3 ph
Applicable for network type		TN, TT, IT
Sampling rate	64 samples/cycle, all channels measured simultaneously	
Measured voltage	Direct connection up to max. delta/wye without transformer	690 V / 400 V (CAT III)
Current inputs	Settable on device	5A nominal
Power supply	AC/DC	100...240V AC (±10%) / 110...250V DC (±10%)
Dimensions	L x W x D in mm Installation depth (mm)	96 x 96 55 mm / 2.0 in.
Degree of protection	Front Rear	IP65, NEMA 12 IP20, NEMA 1
Operating temperature	°C / °F	−10...+55 / +14...+131
Display	Type	Background-illuminated graphic LCD
Resolution (pixels)		128 x 96
Text displays		Multilingual

Functional features (continued)

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

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
Material thickness / of the control panel	
• maximum	4 mm
Net weight	469 g

Environmental conditions	
Degree of pollution	2
Installation altitude / at height above sea level / maximum	2 000 mm

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
• for EMC against high frequency fields	IEC 61000-4-3
• for EMC against conducted disturbance variables via HF vields	IEC 61000-6-4
• for EMC against magnetic fields with power engineering frequencies	IEC 61000-4-8
• for EMC against quick, transient electrical disturbances	IEC 61000-4-4
• for EMC against voltage drops and interruptions	IEC 61000-4-11
• for EMC against surge voltages	IEC 61000-4-5
• 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 %

Functional features (continued)

Ambient temperature	
• during operation / minimum	-10 ℃
• during operation / maximum	55 ℃
• during storage / minimum	-25 ℃
• during storage / maximum	70 ℃
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
• as approval for USA	UL 61010-1, 2nd Ed. CAN/CSA-C22.2 NO. 61010-1-04
• Approval Australia	Yes
Reference identifier / acc. to DIN EN 61346-2	P

General Product Approval

Declaration of Conformity

CE

UL

Order information

Product	Order Number[1]
PAC3100 compression terminals AC/DC	**7KM3133-0BA00-3AA0**
Adapter Plate for 4700/4720 meter cutout	**93-47ADAPTER**
PAC3xxx/4xxx Meter Front Facing DIN Rail adapter	**7KM99000XA000AA0**

1) Omit dashes from part numbers when ordering except on 93-47ADAPTER.