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Data sheet 7KM4220-1BA01-1EA0



SENTRON PAC4220, Power Monitoring Device with color graphic TFT display PMD-III acc. to IEC 61557-12 active energy Class 0.2 (Class 0.2S acc. to IEC 62053-22) 96 x 96 mm, 3-phase, 45 - 65 Hz Ue rated: 690/400 V, Ie rated: x/1 A or x/5 A DC extra-low-voltage power supply unit 24 to 48 V +-25% screw terminal connection control panel instrument with measurement of electrical variables apparent / active / reactive energy / cos phi / THDu / THDi / even and odd harmonics per phase up to 64th

Model	
product brand name	SENTRON
product designation	Measuring device for power system quality measurement
product type designation	7KM PAC4220
Measurements	
measuring procedure	
● for voltage measurement	TRMS
● for current measurement	TRMS
type of measured value detection	complete
voltage curve	Sinusoidal or distorted
measurable line frequency	
● initial value	45 Hz
● full-scale value	65 Hz
operating mode for measured value detection automatic line frequency detection	Yes
operating mode for measured value detection	
● set at 50 Hz	No
● set to 60 Hz	No
Supply voltage	
design of the power supply	Extra-low voltage power supply unit
type of voltage of the supply voltage	DC
supply voltage at DC	18 ... 60 V
apparent power consumption of the power supply	9 V·A
Degree of protection protection class	
protection class IP on the front	IP65
protection class IP of the terminal	IP20
operating resource protection class when installed	II
Suitability	
suitability for operation	Installation in stationary panels in closed rooms
Product Functions	
product function	
● voltage measurement	Yes
● current measurement	Yes
● active power measurement	Yes
● reactive power measurement	Yes
● power factor measurement	Yes
● frequency measurement	Yes
● apparent energy/active energy/reactive energy	Yes
Display and operation	

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design of the display	color graphics TFT
height of the display	54 mm
width of the display	72 mm
color of the background of the display	white
illuminance of display backlight adjustable	Yes
time-controlled reduction of the illuminance of display backlight possible	Yes
display contrast adjustable	Yes
national language on the display screen is supported	ger, en, fr, spa, ita, por, tur, rus, chi, pol
number of keys	4
Communication	
transfer rate minimum	10 000 kbit/s
transfer rate maximum	100 000 kbit/s
number of interfaces according to Fast Ethernet	2
type of electrical connection of the fast Ethernet interface	2 x RJ45
protocol at the Ethernet interface is supported	MODBUS TCP
transfer rate 1 for Ethernet	10 Mbit/s
transfer rate 2 for Ethernet	100 Mbit/s
Fault limits	
reference condition for metering accuracy	according to IEC61557-12
formula for relative total measurement inaccuracy	
● for measured variable voltage	+/- 0.2 %
● for measured variable current	+/- 0.2 %
● for measured variable apparent power	+/- 0.5 %
● for measured variable active power	+/- 0.2 %
● for measured variable reactive power	+/- 0.5 %
● for measured variable output factor	+/- 0,5 %
● for measured variable active energy	Class 0.2 according to IEC61557-12 and/or class 0.2S according to IEC62053-22
● for measured variable reactive energy	class 0.5 acc. to IEC61557-12 or IEC62053-23
● for measured variable THD	+/- 2 %
Inputs Outputs	
number of digital inputs	2
design of the switching input	electronic, passive
type of electrical connection at the digital inputs	screw-type terminals
operating conditions for digital inputs external voltage supply	Yes
input voltage at digital input at DC maximum	30 V
number of digital outputs	2
type of switching output	electronic, passive
digital output version	switching or pulse output function
operating voltage as output voltage at DC maximum permissible	30 V
type of electrical connection at the digital outputs	screw-type terminals
output current	
● at digital output with signal <0> maximum	0.2 mA
● at digital output for signal <1> maximum	50 mA
● at the digital outputs at DC limited to 100 ms maximum	130 mA
internal resistance at the digital outputs	30 Ω
standard for pulse emitter	according to IEC62053-31
pulse duration	
● initial value	30 ms
● full-scale value	500 ms
adjustable time period minimum	10 ms
switching frequency at digital output maximum	20 Hz
property of the output short-circuit proof	Yes
measuring category for digital signals	CATIII
Measuring inputs	
measurable supply voltage between (PE)N and L at AC maximum rated value	400 V

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measurable supply voltage between (PE)N and L at AC	
● minimum	11.5 V
● maximum	480 V
measurable supply voltage between the line conductors at AC maximum rated value	690 V
measurable supply voltage between the line conductors at AC	
● minimum	20 V
● maximum	828 V
voltage measuring range extension with external voltage transformers	yes
line conductors and neutral conductors internal resistance for voltage measurement	1.62 MΩ
measuring category for voltage measurement	CAT III
measurable current	
● 1 at AC rated value	1 A
● 2 at AC rated value	5 A
relative measurable current at AC at energy and power measurement	
● minimum	1 %
● maximum	120 %
relative measurable current at AC	
● minimum	10 %
● maximum	120 %
current measuring range extension with external current transformers	Yes
zero point suppression for current measurement	0 ... 10 %
apparent power consumption for current measurement	
● with measuring range 5 A per phase	0.3 V·A
measuring category for current measurement	CATIII
Connections	
type of connectable conductor cross-sections	
● at the measurement inputs for voltage solid	1x (0.2 ... 6 mm²), 2x (0.2 ... 1.5 mm²)
● at the measurement inputs for voltage finely stranded with core end processing	1x (0.2 ... 4 mm²), 2x (0.5 ... 2.5 mm²)
● at the measurement inputs for voltage for AWG cables solid	1x 24 to 10
● at the measurement inputs for current solid	1x (0.2 ... 6 mm²), 2x (0.2 ... 1.5 mm²)
● at the measurement inputs for current finely stranded with core end processing	1x (0.2 ... 4 mm²), 2x (0.5 ... 2.5 mm²)
● at the measurement inputs for current for AWG cables solid	1x 24 to 10
type of electrical connection	
● at the measurement inputs for voltage	screw-type terminals
● at the measurement inputs for current	screw-type terminals
Mechanical Design	
fastening method DIN-rail mounting	No
size of Power Monitoring Device	size 96
height	96 mm
width	96 mm
depth	56 mm
installation depth	51 mm
mounting position	vertical
Environmental conditions	
ambient temperature during operation	
● minimum	-25 °C
● maximum	55 °C
ambient temperature during storage	
● minimum	-25 °C
● maximum	70 °C
relative humidity at 25 °C without condensation during operation maximum	75 %

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installation altitude at height above sea level maximum	2 000 m
degree of pollution	2

Certificates

certificate of suitability as EC Declaration of Conformity	yes

Approvals Certificates

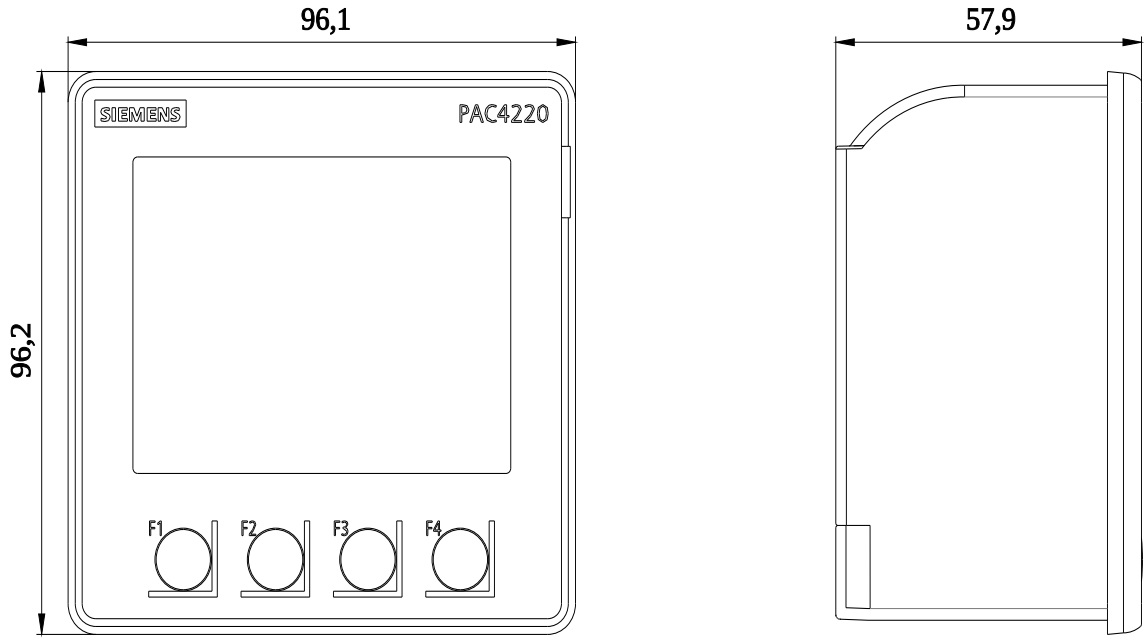
General Product Approval					EMV
		Confirmation			

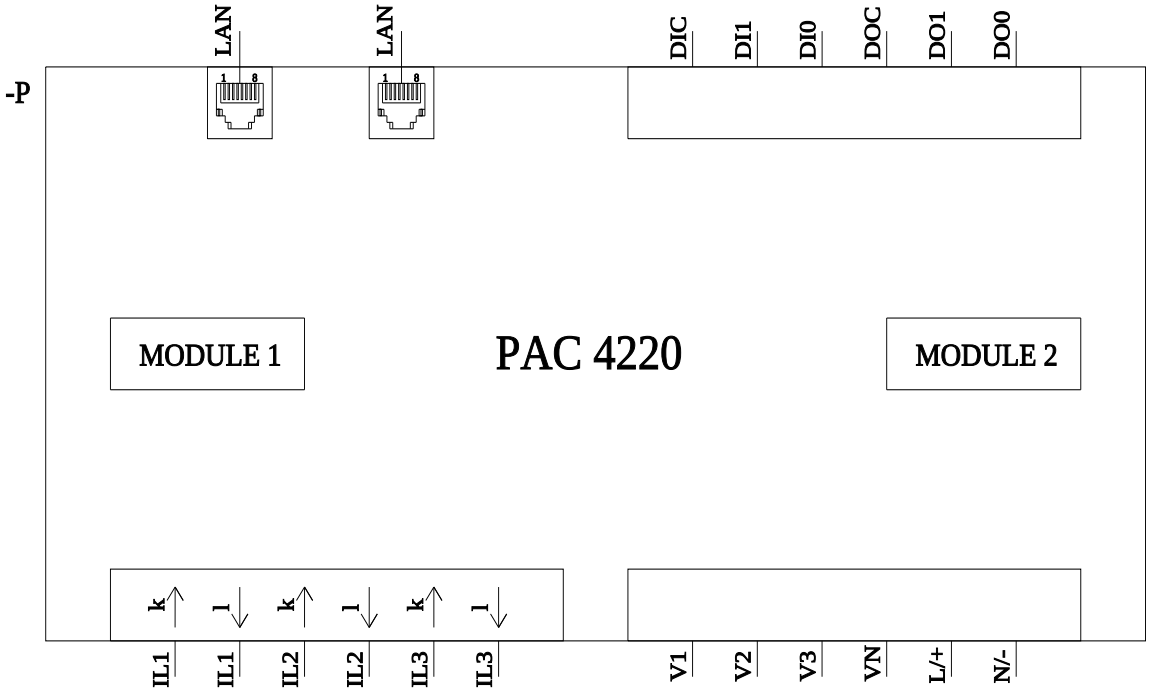
other		Environment			
Confirmation		Environmental Confirmations	Environmental Confirmations		

Further information

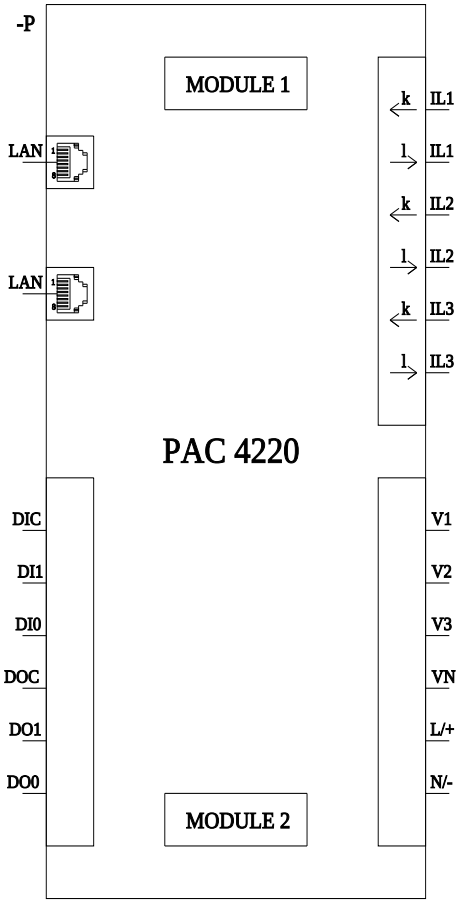
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Information- and Downloadcenter (catalogues, leaflets,...)
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Industry Mall (Online ordering system)
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Service&Support (Manuals, Certificates, Characteristics, FAQs,...)
https://support.industry.siemens.com/cs/ww/en/ps/7KM4220-1BA01-1EA0
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, ...)
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