SIEMENS

Data sheet

7KM2200-2EA40-1CA1

SENTRON, measuring device, 7KM PAC2200, LCD, L-L: 400 V, L-N: 230 V, 65 A, strd rail instr., 3-phase, M-Bus, apparent/ active/reactive energy, self-powered, screw terminals



Model	
product brand name	SENTRON
product designation	7KM PAC2200
design of the product	basic
product type designation	Measuring instrument

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	Yes
automatic line frequency detection	
operating mode for measured value detection	
• set at 50 Hz	No

• set to 60 Hz	No
Supply voltage	
type of voltage of the supply voltage	AC
Degree of protection/protection class protection class IP on the front	IP40
operating resource protection class when installed	
operating resource protection class when installed	"
Product Functions	
product function	
 voltage measurement 	Yes
 current measurement 	Yes
 active power measurement 	Yes
 reactive power measurement 	Yes
Display and operation	
design of the display	LCD
height of the display	27 mm
width of the display	45 mm
color of the background of the display	white
illuminance of display backlight adjustable	Yes
time-controlled reduction of the illuminance of display	Yes
backlight possible	
display contrast adjustable	Yes
number of keys	4
Fault limits	
reference condition for metering accuracy	In accordance with IEC61557-12, IEC62053-22 and IEC62053-23
formula for relative total measurement inaccuracy	
 for measured variable active power 	+/- 1 %
 for measured variable reactive power 	+/- 1 %
 for measured variable output factor 	+/- 0,5 %
 for measured variable reactive energy 	Class 2 acc. to IEC61553-23
Inputs Outputs	
number of digital inputs	1
type of electrical connection at the digital inputs	screw-type terminals
operating conditions for digital inputs external voltage	Yes
supply	
input voltage at digital input at DC maximum	30 V
input current at digital input	
 initial value for signal<1>-recognition 	2.5 mA
• full-scale value for signal<0> recognition	0.5 mA
number of digital outputs	1
digital output version	switching or pulse output function

type of electrical connection screw-type terminals • at the measurement inputs for voltage screw-type terminals • at the measurement inputs for current screw-type terminals		
output current 0.2 mA • id igital output with signal <0> maximum 0.2 mA • id igital output for signal <1> maximum 50 mA • interial resistance at the digital outputs 30 Ω standard for pulse emitter according to IEC62053-31 pulse duration 500 mS • initial value 30 mS • digital output short-circuit proof Yes Measurable supply voltage between (PE)N and L at AC maximum 71 Hz • ninimum 46 V • ninimum 56 A • ninimum 56 A • ninimum 46 V • ninimum 54.6 V • ninimum 56 A • nonimum 56 A current transf		30 V
• at digital output with signal <0> maximum0.2 mA• at digital output for signal <1> maximum50 mA• at the digital outputs at DC limited to 100 ms maximum30 Ωinternal resistance at the digital outputs30 Ωstandard for pulse emitter pulse durationaccording to EC62053·31• initial value30 ms• full-scale value500 msadjustable time period minimum10 msswitching frequency at digital output maximum properly of the output short-circuit proofYesMessuriable supply voltage between (PE)N and L at AC200 V• ninimum • enaximum46 V• ninimum • enaximum276 Vmeasurable supply voltage between (PE)N and L at AC400 V• ninimum • enaximum rated value34.6 V• ninimum • naximum34.6 V• ninimum • maximum34.6 V• ninimum • maximum34.6 V• nonimum • maximum35.6 N• nonimum • maximum34.6 V• nonimum • maximum • m	type of electrical connection at the digital outputs	screw-type terminals
Integrate copy for water of the maximum Form • at the digital output s at DC limited to 100 ms maximum 130 mA • at the digital outputs at DC limited to 100 ms maximum 30 Ω internal resistance at the digital outputs 30 Ω standard for pulse emitter according to EC62053-31 pulse duration 30 ms • initial value 300 ms - digitable time period minum 10 ms switching frequency at digital output maximum 17 Hz property of the output short-circuit proof Yes Measuring inputs 220 V Measurable supply voltage between (PE)N and L at AC maximum rade value 46 V • minimum 276 V • maximum 34.6 V • maximum 34.6 V • maximum 480 V voltage measuring range extension with external resistance for voltage measurement No • maximum 480 V voltage measuring range extension with external resistance for voltage measurement No • maximum 65 A current measuring category for voltage 65 A current measuring range extension with external	output current	
a) 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 EC62053-31 pulse duration 500 ms • initial value 500 ms • dil-scale value 500 ms adjustable time period minimum 10 ms switching frequency at digital output maximum 17 Hz property of the output short-circuit proof Yes Measurable supply voltage between (PE)N and L at AC maximum rated value 230 V AC maximum rated value 276 V measurable supply voltage between (PE)N and L at AC 46 V • minimum 34.6 V • maximum 34.6 V • maximum 480 V voltage measurable supply voltage between the line conductors at AC No • maximum 480 V voltage measurable supply outge between the line conductors at AC No • maximum 480 V voltage transformers No Inconductors and neutral conductors internal resistance for voltage measurement CATIII contructors and neutral conductors internal resistance for voltage measurement 65 A <tr< td=""><td> at digital output with signal <0> maximum </td><td>0.2 mA</td></tr<>	 at digital output with signal <0> maximum 	0.2 mA
internal resistance at the digital outputs 30 Ω standard for pulse emitter according to IEC62053-31 pulse duration 30 ms • initial value 30 ms • full-scale value 500 ms adjustable time period minimum 10 ms switching frequency at digital output maximum 17 Hz property of the output short-circuit proof Yes Measuring inputs measurable supply voltage between (PE)N and L at AC maximum rated value 230 V • minimum 46 V 230 V • minimum 46 V 400 V • maximum 246 V 30 V • onductors at AC 400 V 400 V • onductors at AC 480 V 30 V • maximum 34.6 V 30 V • orductors at AC No 30 V • onductors at AC No 30 V • maximum 480 V 30 V • orductors and neutral conductors internal resistance for voltage measurement ACTIII • orductors and neutral conductors internal resistance for voltage measurement ACTIII • o	 at digital output for signal <1> maximum 	50 mA
standard for pulse emitteraccording to IEC62053-31pulse duration30 ms• initial value30 ms• full-scale value30 msadjustable time period minimum10 msswitching frequency at digital output maximum17 Hzproperty of the output short-circuit proofYesMeasuriable supply voltage between (PE)N and L at AC maximum rated value230 Vmeasurable supply voltage between (PE)N and L at AC46 V• minimum46 V• minimum46 V• maximum400 V• maximum440 V• maximum440 V• minimum440 V• maximum480 V• minimum56 A• minimum56 A• noncouctors and neutral conductors internal resistance for voltage measurementNovoltage transformersCATIIImeasuring range extension with external voltage transformersCATIIImeasuring range extension with external voltage measuring range extension with external voltage measuring range extension with external voltage measuring range extension with external current measuring range extension with external measuring range extension with external current measuring range extension with external measuring range extension with external 		130 mA
pulse duration 30 ms • initial value 30 ms • full-scale value 500 ms adjustable time period minimum 10 ms switching frequency at digital output maximum 17 Hz property of the output short-circuit proof Yes Measuring inputs 200 V measurable supply voltage between (PE)N and L at AC maximum rated value 200 V measurable supply voltage between (PE)N and L at AC 46 V • minimum 46 V • minimum 46 V • maximum 276 V measurable supply voltage between the line conductors at AC maximum rated value 400 V measurable supply voltage between the line conductors at AC maximum rated value 480 V • minimum 34.6 V • minimum 480 V • maximum 1MΩ • maximum As 6 V • maximum 65 A • maximum 65 A • continuous current at AC maximum permissible 65 A current measuring range extension with external current measuring range extension with external current measuring range extension with external current measuring range extension with	internal resistance at the digital outputs	30 Ω
• initial value30 ms• full-scale value500 msadjustable time period minimum10 msswitching frequency at digital output maximum17 Hzproperty of the output short-circuit proofYesMeasuring inputs230 Vmeasurable supply voltage between (PE)N and L at A C maximum rated value230 Vmeasurable supply voltage between (PE)N and L at A C240 V• minimum46 V• minimum276 Vmeasurable supply voltage between the line conductors at AC maximum rated value400 Vmeasurable supply voltage between the line conductors at AC maximum480 V• minimum34.6 V• maximum34.6 V• maximum480 Vvoltage measuring range extension with external voltage measuring range extension with external resistance for voltage measurementNo• measuring category for voltage measurement measuring category for voltage measurement measuring category for current measurementCATIIIConnectionsCATIII• connections • extension with external current measuring range extension with external current measuring range extension with external current measuring range extension with external current transformersNo• connections • extension gate extension with external current transformersCATIIII• connections • at the measurement inputs for voltage • at the measuremen	standard for pulse emitter	according to IEC62053-31
Indicate 500 ms adjustable time period minimum 10 ms switching frequency at digital output maximum 17 Hz property of the output short-circuit proof Yes Measuring inputs 230 V measurable supply voltage between (PE)N and L at AC maximum rated value 230 V measurable supply voltage between (PE)N and L at AC 26 V measurable supply voltage between the line 46 V onductors at AC 46 V minimum 246 V measurable supply voltage between the line 400 V conductors at AC 480 V woltage measuring range extension with external No voltage measuring range extension with external No urrent measuring range extension with external CATIII continuous current at AC maximum permissible 65 A current measuring range extension with external No current measuring range extension with external CATIII	pulse duration	
Interface Interface adjustable time period minimum 10 ms switching frequency at digital output maximum 17 Hz property of the output short-circuit proof Yes Measuring inputs 230 V measurable supply voltage between (PE)N and L at AC maximum rated value 230 V measurable supply voltage between (PE)N and L at AC 46 V iminimum 46 V imaximum 276 V measurable supply voltage between the line conductors at AC maximum rated value 400 V measurable supply voltage between the line conductors at AC No iminimum 48.0 V voltage measuring range extension with external voltage measurement No voltage measuring range extension with external resistance for voltage measurement CATIII continuous current at AC maximum permissible 65 A current measuring range extension with external current measuring range extension with external current transformers No current measuring category for current measurement CATIII continuous current at AC maximum permissible 65 A current measuring category for current measurement CATIII connections	initial value	30 ms
switching frequency at digital output maximum17 Hzproperty of the output short-circuit proofYesMeasuring inputs230 Vmeasurable supply voltage between (PE)N and L at AC maximum rated value230 Vmeasurable supply voltage between (PE)N and L at AC200 V• minimum46 V• maximum276 Vmeasurable supply voltage between the line conductors at AC maximum rated value400 V• minimum46 V• maximum34.6 V• maximum480 Vvoltage measuring range extension with external voltage measuring category for voltage measurementNocontinuous current at AC maximum permissible65 Acurrent measuring range extension with external current transformersNoine conductors at Or voltage measurement reasuring category for voltage measurementCATIIIcontinuos current at AC maximum permissible current measuring range extension with external current transformersNocontinuos current at AC maximum permissible current measuring range extension with external current transformersNocontinuos current at AC maximum permissible current measuring range extension with external current transformersNocontinuos current at AC maximum permissible reasuring category for voltage measurementCATIIIcontencionstat the measurement inputs for voltage screw-type terminalsi at the measurement inputs for voltage screw-type terminalsscrew-type terminals	• full-scale value	500 ms
property of the output short-circuit proof Yes Measuring inputs measurable supply voltage between (PE)N and L at AC maximum rated value 230 V measurable supply voltage between (PE)N and L at AC 240 V measurable supply voltage between (PE)N and L at AC 45 V minimum 45 V measurable supply voltage between the line 276 V conductors at AC 400 V measurable supply voltage between the line 400 V conductors at AC 480 V woltage measuring range extension with external No voltage transformers 1 MΩ ine conductors and neutral conductors internal 1 MΩ resistance for voltage measurement CATIII continuous current at AC maximum permissible 65 A current measuring range extension with external No current transformers CATIII measuring category for current measurement CATIII continuous current at AC maximum permissible 65 A current transformers CATIII measuring category for current measurement CATIII contectors CATIII	adjustable time period minimum	10 ms
Measuring inputs 230 V measurable supply voltage between (PE)N and L at AC maximum rated value 230 V measurable supply voltage between (PE)N and L at AC 230 V • minimum 46 V • maximum 276 V measurable supply voltage between the line conductors at AC maximum rated value 400 V measurable supply voltage between the line conductors at AC maximum rated value 400 V measurable supply voltage between the line conductors at AC 480 V • minimum 34.6 V • maximum 480 V voltage measuring range extension with external voltage transformers No line conductors and neutral conductors internal resistance for voltage measurement CATIII measuring category for voltage measurement 65 A current measuring range extension with external current transformers No measuring category for current measurement CATIII continuous current at AC maximum permissible 65 A current transformers CATIII measuring category for current measurement CATIII continuous current at AC maximum permissible 65 A current transformers CATIIII	switching frequency at digital output maximum	17 Hz
measurable supply voltage between (PE)N and L at 230 V AC maximum rated value 26 V measurable supply voltage between (PE)N and L at 46 V AC 76 V measurable supply voltage between the line 400 V conductors at AC maximum rated value 400 V measurable supply voltage between the line 400 V conductors at AC maximum rated value 480 V measurable supply voltage between the line 80 V conductors at AC ************************************	property of the output short-circuit proof	Yes
measurable supply voltage between (PE)N and L at 230 V AC maximum rated value 26 V measurable supply voltage between (PE)N and L at 46 V AC 76 V measurable supply voltage between the line 400 V conductors at AC maximum rated value 400 V measurable supply voltage between the line 400 V conductors at AC maximum rated value 480 V measurable supply voltage between the line 80 V conductors at AC ************************************	Measuring inputs	
AC maximum rated value Image: AC maximum rated value measurable supply voltage between (PE)N and L at AC AC V AC maximum 46 V maximum 276 V measurable supply voltage between the line conductors at AC maximum rated value 400 V measurable supply voltage between the line conductors at AC 400 V conductors at AC 480 V minimum 448 V voltage measuring range extension with external voltage transformers No line conductors and neutral conductors internal resistance for voltage measurement 1 MΩ continuous current at AC maximum permissible 65 A current measuring range extension with external conductors internal resistance for voltage measurement No continuous current at AC maximum permissible 65 A current transformers CATIII reasuring category for current measurement CATIII continuous current at AC maximum permissible 65 A current transformers CATIII reasuring category for current measurement CATIII continuous current at AC maximum permissible 65 A current transformers category for current measurement reasuring category for curren		230 V
AC 46 V • minimum 46 V • maximum 276 V measurable supply voltage between the line conductors at AC maximum rated value 400 V measurable supply voltage between the line conductors at AC 480 V • minimum 480 V • maximum 480 V voltage measuring range extension with external voltage transformers No line conductors and neutral conductors internal resistance for voltage measurement CATIII continuous current at AC maximum permissible current measuring range extension with external current transformers 65 A remeasuring category for current measurement CATIII continuous current at AC maximum permissible current transformers 65 A remeasuring category for current measurement CATIII connections CATIII remeasuring category for current measurement CATIII current transformers CATIII remeasuring category for current measurement CATIII current transformers CATIII remeasuring category for current measurement Screw-type terminals screw-type terminals		
maximum276 Vmeasurable supply voltage between the line conductors at AC maximum rated value400 Vmeasurable supply voltage between the line conductors at AC400 V• minimum34.6 V• minimum480 V• voltage measuring range extension with external voltage transformersNoIne conductors and neutral conductors internal resistance for voltage measurement1 MΩmeasuring category for voltage measurementCATIIIcontinuous current at AC maximum permissible current measuring range extension with external current transformersNomeasuring category for current measurementCATIIIcontinuous current at AC maximum permissible current transformersCATIIIcontinuous current at AC maximum permissible current transformersCATIIIconnectionsCATIIImeasuring category for current measurementCATIIIconnectionscurrent measurementtype of electrical connection e at the measurement inputs for voltage e at the measurement inputs for currentscrew-type terminals screw-type terminals screw-type terminals		
measurable supply voltage between the line conductors at AC maximum rated value 400 V measurable supply voltage between the line conductors at AC 400 V • minimum 34.6 V • maximum 480 V voltage measuring range extension with external voltage transformers No line conductors and neutral conductors internal resistance for voltage measurement 1 MΩ continuous current at AC maximum permissible 65 A current measuring range extension with external voltage measuring range extension with external resistance for voltage measurement No continuous current at AC maximum permissible 65 A current transformers No remeasuring category for voltage measurement CATIII current transformers CATIII current transformers CATIII current transformers CATIII reasuring category for current measurement CATIII current transformers current transformers measuring category for current measurement CATIII current transformers screw-type terminals e at the measurement inputs for current screw-type terminals e at the measurement inputs for current screw-type terminals	• minimum	46 V
conductors at AC maximum rated valueImage: Conductors at ACmeasurable supply voltage between the line conductors at AC34.6 V• minimum480 V• maximum480 Vvoltage measuring range extension with external voltage transformersNoIne conductors and neutral conductors internal resistance for voltage measurement1 MΩmeasuring category for voltage measurementCATIIIcontinuous current at AC maximum permissible current measuring range extension with external current transformersSAcontinuous current at AC maximum permissible current transformersCATIIIcontinuous current at AC maximum permissible current transformersCATIIIcontinuous current at AC maximum permissible current transformersCATIIIcontinuous current measurementCATIIIconnectionsCATIIIcurrent transformersScrew-type terminalstype of electrical connection • at the measurement inputs for currentscrew-type terminalse at the measurement inputs for currentscrew-type terminals	• maximum	276 V
measurable supply voltage between the line conductors at AC 34.6 V • minimum 34.6 V • maximum 480 V voltage measuring range extension with external voltage transformers No line conductors and neutral conductors internal resistance for voltage measurement 1 MΩ measuring category for voltage measurement CATIII continuous current at AC maximum permissible current measuring range extension with external current transformers No measuring category for current measurement CATIII connections CATIII current measuring range extension with external current transformers No measuring category for current measurement CATIII connections catten measurement inputs for voltage e at the measurement inputs for current screw-type terminals e at the measurement inputs for current screw-type terminals	measurable supply voltage between the line	400 V
conductors at AC34.6 V• minimum34.6 V• maximum480 Vvoltage measuring range extension with external voltage transformersNoline conductors and neutral conductors internal resistance for voltage measurement1 MΩmeasuring category for voltage measurementCATIIIcontinuous current at AC maximum permissible65 Acurrent measuring range extension with external current measuring range extension with external current transformersNocontinuous current at AC maximum permissible65 Acontinuous current measurementCATIIIcontinuous current measurementCATIIIcurrent measuring range extension with external current transformersNoreasuring category for current measurementCATIIIconnectionscategory for current measurementtype of electrical connection • at the measurement inputs for voltage • at the measurement inputs for currentscrew-type terminalse at the measurement inputs for currentscrew-type terminals	conductors at AC maximum rated value	
• maximum480 Vvoltage measuring range extension with external voltage transformersNoline conductors and neutral conductors internal resistance for voltage measurement1 MΩmeasuring category for voltage measurementCATIIIcontinuous current at AC maximum permissible current measuring range extension with external current transformersNomeasuring category for current measurementCATIIIconnectionsCATIIItype of electrical connection • at the measurement inputs for voltage • at the measurement inputs for currentscrew-type terminals screw-type terminals		
voltage measuring range extension with external voltage transformersNoline conductors and neutral conductors internal resistance for voltage measurement1 MΩmeasuring category for voltage measurementCATIIIcontinuous current at AC maximum permissible current measuring range extension with external current transformers65 Ameasuring category for current measurementNocontinuous current at AC maximum permissible current transformers65 Acurrent measuring range extension with external current transformersNomeasuring category for current measurementCATIIIconnectionsCATIIIcurrent measurement inputs for voltage • at the measurement inputs for currentscrew-type terminals screw-type terminals	• minimum	34.6 V
voltage transformers 1 MΩ line conductors and neutral conductors internal resistance for voltage measurement 1 MΩ measuring category for voltage measurement CATIII continuous current at AC maximum permissible 65 A current measuring range extension with external current transformers No measuring category for current measurement CATIII connections CATIII connections current measurement type of electrical connection screw-type terminals • at the measurement inputs for voltage screw-type terminals	• maximum	480 V
resistance for voltage measurementCATIIImeasuring category for voltage measurementCATIIIcontinuous current at AC maximum permissible65 Acurrent measuring range extension with external current transformersNomeasuring category for current measurementCATIIIConnectionstype of electrical connection • at the measurement inputs for voltage • at the measurement inputs for currentscrew-type terminals screw-type terminals		No
continuous current at AC maximum permissible65 Acurrent measuring range extension with external current transformersNomeasuring category for current measurementCATIIIConnectionstype of electrical connection • at the measurement inputs for voltage • at the measurement inputs for currentscrew-type terminals screw-type terminals		1 ΜΩ
current measuring range extension with external current transformers No measuring category for current measurement CATIII Connections CATIII type of electrical connection screw-type terminals • at the measurement inputs for voltage screw-type terminals • at the measurement inputs for current screw-type terminals	measuring category for voltage measurement	CATIII
current transformers CATIII measuring category for current measurement CATIII Connections type of electrical connection • at the measurement inputs for voltage screw-type terminals • at the measurement inputs for current screw-type terminals	continuous current at AC maximum permissible	65 A
measuring category for current measurement CATIII Connections		No
Connections type of electrical connection • at the measurement inputs for voltage • at the measurement inputs for current screw-type terminals screw-type terminals		
type of electrical connection screw-type terminals • at the measurement inputs for voltage screw-type terminals • at the measurement inputs for current screw-type terminals	measuring category for current measurement	CATIII
 at the measurement inputs for voltage at the measurement inputs for current screw-type terminals screw-type terminals 	Connections	
at the measurement inputs for current screw-type terminals		
	 at the measurement inputs for voltage 	screw-type terminals
	 at the measurement inputs for current 	screw-type terminals
Mechanical Design	Mechanical Design	

size of Power Monitoring Device	6MW	
height	97 mm	
width	108 mm	
depth	71 mm	
installation depth	64 mm	
net weight	415 g	
mounting position	any	
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	75 %	
during operation maximum		
installation altitude at height above sea level	2 000 m	
maximum		
degree of pollution	2	

Certificates

Declaration of Conformity



Manufacturer Declaration

Further information

Information- and Downloadcenter (catalogues, leaflets,...) http://www.siemens.com/energy-automation

Industry Mall (Online ordering system)

https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=7KM2200-2EA40-1CA1

Service&Support (Manuals, Certificates, Characteristics, FAQs,...) https://support.industry.siemens.com/cs/ww/en/ps/7KM2200-2EA40-1CA1

Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, ...) http://www.automation.siemens.com/bilddb/cax_en.aspx?mlfb=7KM2200-2EA40-1CA1

other

CAx-Online-Generator http://www.siemens.com/cax

Tender specifications http://www.siemens.com/specifications





