

# Hoja de características del producto

Especificaciones



## EasyLogic PM2130, Power & Energy meter, up to 31stH, LED, RS485, class 0.5S

METSEPM2130

### Principal

Gama	EasyLogic
Nombre del producto	EasyLogic PM2200
Nombre corto del dispositivo	PM2130
Tipo de producto o componente	Central de medida

### Complementario

Aplicación del dispositivo	Facturación sub Supervisión de potencia
Análisis de calidad de energía	Distorsión armónica total Hasta armónico 31
Tipo de medición	Potencia aparente min/max, total Potencia activa y reactiva min/max, total Corriente min/max, media Tensión min/max, media Frecuencia min/max, media Distorsión armónica de corriente total THD(I) por fase Distorsión armónica de tensión total THD(U) por fase Factor de potencia min/max, media Energía aparente total Energía activa y reactiva total
Tipo de medição	Pico de demanda de corrente Potencia activa P, P1, P2, P3 Potencia demandada P,Q,S Potencia reactiva Q, Q1, Q2, Q3 Potencia aparente S, S1, S2, S3 Energía activa, reactiva y aparente activa (firmado, de cuatro cuadrantes) Voltage U, U21, U32, U13, V, V1, V2, V3 Current I, I1, I2, I3 Corriente neutral calculada Corriente de desequilibrio Potencia de pico demandada PM,QM,SM
Clase de precisión	Clase 1 energía reactiva acorde a IEC 62053-24 Clase 0.5S energía activa acorde a IEC 62053-22 Clase 5 distorsión armónica (I THD & U THD)
Precisión de medida	Potencia aparente +/- 0.5 % Energía activa +/- 0.5 % Energía reactiva +/- 1 % Potencia activa +/- 0.5 % Tensión +/- 0.5 % Factor de potencia +/- 0.01 Corriente +/- 0.5 % Frecuencia +/- 0.05 %
Corriente de medición	5...6000 mA
Tensión de medida	35...480 V AC 50/60 Hz entre fases 20...277 V AC 50/60 Hz entre fase y neutro 480...999000 V AC 50/60 Hz con VT externo
Frecuencia	45...65 Hz

[Us] tensión de alimentación asignada	85...265 V AC 45-65 Hz +/- 10 % 100...277 V corriente continua +/- 10 %
Frecuencia de red	50 Hz 60 Hz
Señalizaciones en local	50 ms 120 V AC típico 50 ms 230 V AC típico 50 ms 125 V corriente continua típico
[In] Corriente nominal	1 A 5 A
Maximum power consumption in VA	8 VA en 277 V AC
Consumo de energía en W	3,3 W - tipo de cable: líneas de potencia (AC)) 3,3 W en 27 V - tipo de cable: líneas de potencia (DC))
Input impedance	corriente (impedancia <= 0.3 mOhm) tensión (impedancia > 5 MOhm)
Inviolabilidad de los ajustes	Protegido por código de acceso
Tipo de pantalla	LED de 7 segmentos
Color de pantalla	Rojo
Capacidad de visualización mensajes	3 fields of 4 characters
Dígitos del display	12 dígitos - 14,2 mm en altura
Demand intervals	Configurable de 1 a 60 min
Información mostrada	Corriente demandada - tipo de cable: valor anterior) Corriente demandada - tipo de cable: valor actual) Demanda de potencia - tipo de cable: valor anterior) Demanda de potencia - tipo de cable: valor actual) Tensión Corriente Frecuencia Consumo de energía Distorsión armónica Factor de potencia Potencia activa Potencia aparente Potencia reactiva Desequilibrada en %
Tipo de control	3 botón  Rojo LED, estado 1 señal de salida 1...9999000 pulse/ k_h (kWh, kVAh, kVARh) Verde LED, estado 1 funcionamiento de módulo y comunicación integrada
Número de entradas	0
Número de salidas	0
Communication port protocol	Modbus RTU en 4800 bps, 9600 bps, 19200 bps, 38,4 Kbps Par/Impar o ninguna - 2 cables, aislamiento 2500 V
Soporte del puerto de comunicación	Bornero de tornillo, estado 1 RS485
Registro de datos	Power logs Sellado de tiempo Registros de consumo de energía Min/max para 8 parámetros
Función disponible	Reloj a tiempo real
Velocidad de muestreo	64 muestras/ciclos
Cybersecurity	Enable/disable communication ports
Servicio de comunicación	Supervisión remota
Certificaciones de producto	CE acorde a IEC 61010-1 CULus acorde a UL 61010-1 CULus acorde a CSA C22.2 No 61010-1 RCM Generador C-Tick
Tipo de montaje	Ajustable en clip
Posición de montaje	Vertical

Soporte de montaje	Marco
Equipo suministrado	1 guía de instalación
Categoría de medición	Categoría III 480 V Categoría II 480...600 V
Clase de aislamiento eléctrico	Clase II Doble aislamiento
Resistencia a las llamas	V-0 acorde a UL 94
Conexiones - terminales	Transformador de corriente, estado 1 conexión de tornillo - tipo de cable: inferior) 6 Entradas de tensión, estado 1 conexión de tornillo - tipo de cable: superior) 4
Material	Polycarbonato
Anchura	96 mm
Profundidad	Total, estado 1 76,09 mm Incorporar, estado 1 61,64 mm
Altura	96 mm
Peso del producto	300 g
Código de compatibilidad	PM2210

### Entorno

Vida útil	7 yr
Grado de protección IP	Frontal, estado 1 IP54 acorde a IEC 60529 Cuerpo, estado 1 IP30 acorde a IEC 60529
Humedad relativa	5...95 % en 50 °C
Grado de contaminación	2
Temperatura ambiente de funcionamiento	-10...60 °C
Temperatura ambiente de almacenamiento	-25...70 °C
Altitud máxima de funcionamiento	<= 2000 m
Compatibilidad electromagnética	Descarga electroestática acorde a IEC 61000-4-2 Prueba de inmunidad de la radiofrecuencia radiada del campo electromagnético acorde a IEC 61000-4-3 Prueba de inmunidad oscilatoria/ráfagas eléctrica acorde a IEC 61000-4-4 Prueba de inmunidad frente a sobretensión acorde a IEC 61000-4-5 Conducted rf disturbances acorde a IEC 61000-4-6 Campo magnético a frecuencia eléctrica acorde a IEC 61000-4-8 Prueba de inmunidad de huecos y caídas de tensión acorde a IEC 61000-4-11 Prueb. emisión acorde a FCC parte 15 clase A
Categoría de sobretensión	III

### Unidades de embalaje

Unit Type of Package 1	PCE
Number of Units in Package 1	1
Package 1 Height	11,5 cm
Package 1 Width	8,7 cm
Package 1 Length	12,0 cm
Package 1 Weight	404,0 g
Unit Type of Package 2	S03
Number of Units in Package 2	18
Package 2 Height	30,0 cm
Package 2 Width	30,0 cm
Package 2 Length	40,0 cm

Package 2 Weight	7,71 kg
Unit Type of Package 3	P12
Number of Units in Package 3	432
Package 3 Height	80,0 cm
Package 3 Width	80,0 cm
Package 3 Length	120,0 cm
Package 3 Weight	197,112 kg

Sostenibilidad de la oferta

Estado de oferta sostenible	Producto Green Premium
Reglamento REACH	<a href="#">Declaración de REACH</a>
Directiva RoHS UE	Conforme <a href="#">Declaración RoHS UE</a>
Sin mercurio	Sí
Información sobre exenciones de RoHS	<a href="#">Sí</a>
Normativa de RoHS China	<a href="#">Declaración RoHS China</a>
Comunicación ambiental	<a href="#">Perfil ambiental del producto</a>
Perfil de circularidad	<a href="#">Información de fin de vida útil</a>

## HY-3D type three phase LCD multifunction meter



### INTRODUCTION

Multifunction Power Meter can accurately measure the three-phase power distribution system for all common power parameters: three-phase voltage, phase current, active power, reactive power, power factor, line frequency, active power, reactive power, and with communication interface and pulse output functions.

### FEATURE

- Using MODBUS-RTU communication protocol, to achieve LED display and remote RS-485 digital communications.
- Has easy installation, wiring is simple, easy maintenance, small quantities, field programmable set of input parameters and other characteristics.
- Can be completed with the industry PLC, industrial computer group network communication.

## TECHNICAL DATA

Accuracy of measurement	Voltage level 0.5, current level 0.5, active power 0.5, reactive power level 0.5, power factor 0.5, frequency
	±0.2Hz, active energy level 0.5/0.2, reactive energy level 1/2
Singal input	Connection mode of single or three phase four wire, three phase three line
	Rated current of AC 1A, AC 5A
	Over load voltage 1.2 times ( Continued ), 2 times / second ( instantaneous )
	Over load current 1.2 times ( Continued ), 10 times / 5 seconds ( instantaneous )
	Power consumption voltage <1VA/phase, current: <.0.4VA/phase
	Impedance voltage: >300KΩ current: <20mΩ
	The frequency 45~65Hz
	Rated voltage of AC57.7 V, AC100V, AC220V, AC380V
Auxiliary power supply	Working range of AC/DC 80V~270V
	Power consumption <4VA
Function module	Communication interface 1 way RS-485 communication, Modbus-RTU protocol
	Baud rate: 1200~9600 bps, the default 2400 bps
	Switch input support 4 stem node input
	The switch output support 3 relay output, capacity: AC 250V/5A, DC 30V/5A
	Transmission output support 3 analog output: 0/4~20mA or 0~5/10V
Environment	Working temperature: -10°C ~+55°C
	Storage temperature: -25°C ~+70°C
	Relative humidity is less than 93%, no corrosive gas
	Elevation≤2500m
safety	Insulation resistance >100MΩ
	AC withstand voltage AC 2KV

Electromagnetic compatibility	ESD level 4
	Electrical fast transient burst level 4

Selection of Specification											
Model	Measurement				Extended Function				Display		Dimension
	3-phase electric parameters	multi-rate	harmonic	fire monit	Switch input	Switch output	Transmission output	Communication interface	LED	LCD	
HY-3D3	√	—	—	—	4	4	4	2	√	—	96*96
HY-3D3Y	√	—	—	—	4	4	4	2	—	√	
HY-3FD3Y	√	√	—	—	4	4	4	2	—	√	
HY-3HD3Y	√	—	√	—	4	4	4	2	—	√	
HY-3LD3	√	—	—	√	4	—	—	2	√	—	
HY-3LD3Y	√	—	—	√	4	—	—	2	—	√	
HY-FHD3Y	√	√	√	—	4	4	4	2	—	√	

# DP Type Split Core Current Transformer



## INTRODUCTION

DP type of split core current transformers have been designed to easily fit around cables without breaking the circuit. Its advantages of big capacity and big mounting hole size, could be used in more power applications. DP was global used in most power applications.

## FEATURE

- Double-screw fastening, safe, easy to install, portable.
- Two built in fixing methods: Base; Busbar mounting
- Wide inner window, allowing clamping of big cables or bus-bars.
- Wide range of sizes to accommodate all the existing installations.
- Primary current from 5A to 5000A.

## APPLICATIONS

- Current measurement, monitoring and protection for electrical wiring and equipment.
- Current and power measurement for electric motors, lighting, air compressor, heating and ventilation system, air-condition equipment and automation-control system.



- Current, power and energy monitoring device.
- Relay protection device.

## TECHNICAL DATA

Electrical Parameter		Mechanical Parameter	
Frequency	50-400Hz	Case	PC/UL94-V0
Rated Input	5A-5000A	Bobbin	PBT
Measuring range	10%In-120%In	Core	Silicon steel
Rated Output	0-5A	Internal structure	Epoxy
Ratio	$\leq \pm 0.5\%$	Construction	Tie
Phase angle	$\leq \pm 30\text{min}$	Operation Temp	-25oC~+75oC
Dielectric strength	2.5KV/1mA/1min	Operating Humidity	$\leq 85\%$
Insulation Resistance	DC500V/100M $\Omega$ min	Output Connection	Terminal

MODEL	Ratio	Burden(VA)Accuracy		Frequency(Hz)
		0.5	1	
DP-23	100/5A	/	2.5VA	50/60Hz
	150/5A	/	2.5VA	50/60Hz
	200/5A	2.5VA	5VA	50/60Hz
	250/5A	2.5VA	5VA	50/60Hz
	300/5A	5VA	5VA	50/60Hz
	400/5A	5VA	5VA	50/60Hz

MODEL	Ratio	Burden(VA)Accuracy		Frequency(Hz)
		class:0.5	class:1	
DP-58	250/5A	/	2.5VA	50/60Hz
	300/5A	/	2.5VA	50/60Hz
	400/5A	2.5VA	2.5VA	50/60Hz
	500/5A	2.5VA	5VA	50/60Hz
	600/5A	2.5VA	5VA	50/60Hz
	800/5A	5VA	5VA	50/60Hz
	1000/5A	5VA	10VA	50/60Hz

MODEL	Ratio	Burden(VA)Accuracy		Frequency(Hz)
		0.5	1	
DP-88	250/5A	/	2.5VA	50/60Hz
	300/5A	/	2.5VA	50/60Hz
	400/5A	2.5VA	2.5VA	50/60Hz
	500/5A	2.5VA	5VA	50/60Hz
	600/5A	2.5VA	5VA	50/60Hz
	800/5A	5VA	5VA	50/60Hz
	1000/5A	5VA	10VA	50/60Hz

MODEL	Ratio	Burden(VA)Accuracy		Frequency(Hz)
		0.5	1	
DP-812	500/5A	/	2.5VA	50/60Hz
	600/5A	/	2.5VA	50/60Hz
	750/5A	2.5VA	5VA	50/60Hz
	800/5A	2.5VA	5VA	50/60Hz
	1000/5A	5VA	10VA	50/60Hz
	1200/5A	5VA	10VA	50/60Hz
	1500/5A	5VA	10VA	50/60Hz
	1600/5A	5VA	10VA	50/60Hz
	2000/5A	5VA	10VA	50/60Hz

MODEL	Ratio	Burden(VA)Accuracy		Frequency(Hz)
		class:0.5	class:1	
DP-816	1000/5A	5VA	10VA	50/60Hz
	1200/5A	7.5VA	10VA	50/60Hz
	1500/5A	7.5VA	10VA	50/60Hz
	1600/5A	10VA	10VA	50/60Hz
	2000/5A	10VA	15VA	50/60Hz
	2500/5A	10VA	20VA	50/60Hz
	3000/5A	20VA	25VA	50/60Hz
	4000/5A	20VA	25VA	50/60Hz
	5000/5A	20VA	25VA	50/60Hz

SETRON, measuring device, 7KM PAC3200, LCD, L-L: 690 V, L-N: 400 V, 5 A, 3-phase, Modbus TCP, optional Modbus RTU / PROFINET / PROFIBUS, apparent/ active/reactive energy, class 0.5 acc. to IEC61557-12 or class 0.5s acc. to IEC62053-22, wide-range pwr sup. unit AC/DC, screw terminals



Model	
Product brand name	SETRON
Product designation	7KM PAC3200
Design of the product	basic
Product type designation	Measuring instrument
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
Reference code / acc. to DIN 40719 extended according to IEC 204-2 / acc. to IEC 750	P

<b>Supply voltage</b>	
Type of voltage / of the supply voltage	AC/DC
Measuring category / for supply voltage	CATIII
Supply voltage frequency / rated value	
• minimum	65 Hz
• maximum	45 Hz
<b>Apparent power consumption</b>	
• with expansion module / maximum	8 V·A
• without expansion module / typical	6 V·A
Relative symmetrical tolerance / of the supply voltage	10 %

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

<b>Current</b>	
Measurable current	
• 1 / at AC / Rated value	1 A
• 2 / at AC / Rated value	5 A

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

<b>Product function</b>	
Product function	
• reactive power measurement	Yes
• frequency measurement	Yes
• pulse measurement	Yes
• voltage measurement	Yes
• Current measurement	Yes
• active power measurement	Yes

<b>Display and operation</b>	
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
Refresh time / on display	
• minimum	0.33 s
• maximum	3 s

## Communication

Refresh time / at the interface	
• minimum	0.33 s
• maximum	1 s
Number of interfaces / acc. to Fast Ethernet	1
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
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
Current measuring range extension / with external current 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
Measuring category / for current measurement	CATIII
Zero-point suppression / for current measurement	0,1 ... 10 %
Relative measurable current / at AC	
• minimum	1 %



• maximum	120 %
Measuring procedure / for current measurement	TRMS
<b>Connections</b>	
Type of electrical connection	
• at the measurement inputs for voltage	screw-type terminals
• of the fast Ethernet interface	RJ45 (8P8C)
<b>Mechanical Design</b>	
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
Mounting position	vertical
Net weight	451 g
<b>Environmental conditions</b>	
Installation altitude / at height above sea level / maximum	2 000 m
<b>Standard</b>	
• for EMC for industrial sector	IEC 61000-6-2 respectively IEC 61326-1:2005, table 2
• for EMC against unloading	IEC 61000-4-2: 2001-04
• for EMC against high frequency fields	IEC 61000-4-3: 2006-02
• for EMC against conducted LF disturbance variables (industry)	IEC 61000-6-4, Group 1 Klasse A / CISPR11 Gruppe 1 Klasse A FCC Part 15 Subpart B Class A
• for EMC against conducted disturbance variables via HF fields	IEC 61000-4-6: 2001-12
• for EMC against magnetic fields with power engineering frequencies	IEC 61000-4-8: 2001-03
• for EMC against quick, transient electrical disturbances	IEC 61000-4-4: 2005-07
• for EMC against voltage drops and interruptions	IEC 61000-4-11: 2004-03
• for EMC against surge voltages	IEC 61000-4-5: 2001-12
• for free fall	IEC 60068-2-32: 1975
• 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
Ambient temperature / during operation	
• minimum	-10 °C

• maximum	55 °C
Ambient temperature / during storage	
• minimum	-25 °C
• maximum	70 °C

## 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
Reference code	
• acc. to DIN EN 61346-2	P

General Product Approval	Declaration of Conformity	other
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[Confirmation](#)

[Manufacturer Declaration](#)

## Further information

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

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

**Industry Mall (Online ordering system)**

<https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=7KM2112-0BA00-3AA0>

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

<https://support.industry.siemens.com/cs/ww/en/ps/7KM2112-0BA00-3AA0>

**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](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>



