

SENTRON & SIMATIC software solutions for power monitoring and energy management



Power monitoring in low voltage power distribution

Energy management in industrial production plants

Minimal effort (commissioning)	System documentation and archiving	Transparency of energy flows and costs by data recording	Increase system reliability by continuous condition monitoring	Key indicators (dashboard, reports)	Energy management according to ISO 50001 / 50003		Minimal effort (commissioning)	Data collection and processing, machine-oriented visualization	Transparency of energy flows and costs from machine to factory level	Key indicators (dashboard, reports)	Energy management according to ISO 50001*
			SENTRON powermanager			location-independent use		SIMATIC Energy Manager MindSphere App			
						location-wide use		SIMATIC Energy Manager			
SENTRON powerconfig		SENTRON 7KN Powercenter 3000				Use at the switchgear and production plant	SIMATIC Energy Suite				
			Webinterface			On the device / the machine	S7 Energy Efficiency Monitor				
							TIA Portal		WinCC		

* Baselinemanagement, forecast, batch analysis



You will find further information at:

	SENTRON powerconfig		SENTRON powermanager		SIMATIC Energy Manager		SIMATIC Energy Suite
	SENTRON powerconfig Mobile App		SENTRON 7KN Powercenter		S7 Energy Efficiency Monitor		SIMATIC MindSphere Apps

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SENTRON
 Portfolio for power monitoring
 Quick Selection Guide



SENTRON portfolio for power monitoring

	Multichannel current measuring system 7KT PAC1200	Multichannel current measuring system SEM3	Measuring device 7KT PAC1600	Measuring device 7KM PAC1020	Measuring device 7KM PAC2200 (CLP)	Measuring device 7KM PAC3120	Measuring device 7KM PAC3200T	Measuring device 7KM PAC3220	Measuring device 7KM PAC4200	Measuring device 7KM PAC5100/ 7KM PAC5200	Multifunctional recorder SICAM Q100/Q200	Modular measuring device AI Energy Meter	Molded case circuit breaker 3VA2 ETU 8-series	Air Circuit Breaker 3WA	Air Circuit Breaker 3WL
U, I, P, f, λ	U ¹⁾ , I, P, S, Q ¹⁾ , f ¹⁾ , λ ¹⁾	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Apparent active reactive energy cosφ	x x x -	x x x x	x x x -	- x x -	x x x -	x x x x	x x x -	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x
Maximum input voltage L-L/L-N	400 V/230 V	480 V/277 V	400 V/230 V	400 V/230 V	400 V/230 V	690 V/400 V	400 V/230 V	690 V/400 V	690 V/400 V	690 V/400 V galvanically separated	690 V/400 V galvanically separated	480 V/277 V	690 V/400 V (integrated)	1000 V / 577 V (integrated)	690 V/400 V (integrated)
Current transformer connection direct measuring	x x (up to 63 A)	x -	x x (up to 63 A – 1-phase, up to 80 A – 3-phase)	x/1 A x/5 A	x x (up to 65 A)	x -	x -	x -	x -	x -	x -	x -	Transformer (integrated)	Transformer (integrated)	Transformer (integrated)
DI/DO	-	2/1	1/2	1/1	1/1	2/2	1/1	2/2 (10/6 with expansion module)	2/2 (10/6 with expansion module)	0/2	Q100: 2/2 Q200: 6/6	via ET200/via S7-1200	EFB300 (optional)	optional	optional
Integrated communication	Modbus TCP	BACnet IP, MSTP, SNMP, NTP, SMT, Modbus TCP, Modbus RTU	Modbus RTU, M-Bus, S0	Modbus RTU	Modbus TCP, Modbus RTU, M-Bus	Modbus RTU	Modbus TCP	Modbus TCP	Modbus TCP	Modbus TCP	Modbus TCP, IEC61850	PROFINET PROFIBUS	-	-	-
Communication via expansion module	-	-	-	-	-	-	-	Modbus RTU PROFINET PROFIBUS	Modbus RTU PROFINET PROFIBUS	-	Q100: 1 x Modbus TCP + IEC61850 Q200: 2 x Modbus TCP + IEC61850	Modbus TCP via CPU	Modbus TCP Modbus RTU PROFINET PROFIBUS	Modbus TCP, PROFINET	Modbus TCP Modbus RTU PROFINET PROFIBUS
I(N), I(Diff)	-	-	-	-	-	-	-	with expansion module	with expansion module	-	x	-	x	-	-
Analog input	-	-	-	-	-	-	-	with expansion module	with expansion module	-	-	via ET200 / via S7-1200	-	-	-
Load profile record	x	x	-	-	x (7KM PAC2200 CLP)	-	-	-	x	x	x	in S7 CPU	x	x	x
Software interfaces	Webinterface, App (iOS & Android), powerconfig, powermanager	Webinterface, powermanager	powerconfig, powermanager	powerconfig, powermanager	Webinterface, powerconfig, powermanager	powerconfig, powermanager	Webinterface, powerconfig, powermanager	Webinterface, SIMATIC Energy Suite, SIMATIC Energy Manager PRO, powerconfig, powermanager	Webinterface, SIMATIC Energy Suite, SIMATIC Energy Manager PRO, powerconfig, powermanager	Webinterface, powerconfig, powermanager	Webinterface / SICAM PQS / PQA, powermanager (online values)	SIMATIC / SIMATIC Energy Suite	SIMATIC Energy Suite, SIMATIC Energy Manager PRO, powerconfig, powermanager	SIMATIC Energy Suite, SIMATIC Energy Manager PRO, powerconfig, powermanager	SIMATIC Energy Suite, SIMATIC Energy Manager PRO, powerconfig, powermanager
THD Flicker, fault recorder, EN50160 reporting	- -	- -	- -	- -	- -	x -	x -	x -	x -	x x ⁵⁾	x x Transient recording up to 1 μs (Q200)	x x	x -	x -	x -
Harmonics	-	-	1 ... 15. ²⁾	-	-	-	-	-	1 ... 64.	2 ... 40.	Q100: 2–50 kHz Q200: 2–63 kHz, 2–9 kHz, 9–150 kHz Harmonic Direction	2 ... 40.	1 ... 19.	2 ... 31.	1 ... 29.
Accuracy class active energy reactive energy	1 ¹⁾ 1 ¹⁾ 2 -	0.2 1	1 2	1 2	1 1	0.5 2	0.5 1	0.5 2	0.2 S 2	0.5 S 2	0.2 S 2	0.5 1	2 S 2 (incl. transformer)	2 S 2 (incl. transformer)	2 S 2 (incl. transformer)
Standard measuring devices	IEC 62053-21	IEC 62052-11, IEC 62053-23, IEC 61010-1, UL 61010-1	IEC 50470-3, IEC 62053-21, IEC 62053-23	IEC 62053-21 ³⁾ , IEC 62053-23 ³⁾	IEC 62053-22, IEC 62053-23, IEC 61557-12	IEC 62053-22, IEC 62053-23, IEC 61557-12, UL 61010-1	IEC 62053-22, IEC 62053-23, IEC 61557-12	IEC 62053-22, IEC 62053-23, IEC 61557-12, UL 61010-1	IEC 62053-22, IEC 62053-23, IEC 61557-12, UL 61010-1	IEC 62053-22, IEC 62053-23, IEC 61557-12, UL 61010-1 ⁶⁾	IEC 62586-1, IEC 61000-4-30, IEC 61000-4-7, IEC 61000-4-15	IEC 61557-12	IEC 61557-12	IEC 61557-12	IEC 61557-12
MID certified	-	-	x	-	x ⁴⁾	-	-	-	-	-	-	-	-	-	-
Order information	siemens.com/product?7KT12	siemens.com/product?US2:SEM3	siemens.com/product?7KT16	siemens.com/product?7KM1020	siemens.com/product?7KM22	siemens.com/product?7KM31	siemens.com/product?7KM32	siemens.com/product?7KM32	siemens.com/product?7KM42	siemens.com/product?7KM5	siemens.com/product?7KG9	siemens.com/product?7ES7	siemens.com/product?3VA2	siemens.com/product?3WA	siemens.com/product?3WL

¹⁾ Measured in data manager

²⁾ 7KT PAC1600 Multimeter

³⁾ Uncertainty limits acc. to this standard

⁴⁾ CLP version additionally certified acc. to PTB A50.7

⁵⁾ 7KM PAC5200
⁶⁾ 7KM PAC5100



Plug & operate solution for the digitalization of low-voltage power distribution

- Central interface into the switchboard
- Up to 32 subordinated devices
- Connectivity function for cloudbased applications (MindSphere)
- Integrated, user-definable web-interface
- Parameterization via SENTRON powerconfig

Your Benefits:

- Minimization of security efforts
- Early detection and prevention of downtimes
- Reduction of error frequency and duration
- Easy digitalization of brownfield projects
- Basis for energy management (such as ISO 50001)

Ready for ISO 50001

Ready for IoT

[siemens.com/product?7KN](https://www.siemens.com/product?7KN)