SIEMENS

Data sheet

6ES7134-6PA21-0CU0



SIMATIC ET 200SP, analog input module, AI Energy Meter RC HF, for Rogowski coils or current/voltage transformer 333 mV, with network analysis functions, suitable for BU type U0, channel diagnostics

Firmware version Firmware version Fivu update possible usable BaseUnits Color code for module-specific color identification plate Color code for module-specific color identification plate Supported power supply systems TT, TN, IT Product function Voltage measurement - without voltage transformer - with voltage transformer - with voltage transformer - with voltage transformer - with current transformer - with current transformer - with rogowski coil - With Rogowski coil - Energy measurement Frequency measurement Frequency measurement Frequency measurement Power measurement - Reactive power measurement Power factor measurement Freactive power compensation Line analysis - Monitoring of instantaneous and half-wave values - Harmonics for current and voltage - Harmonics for current and voltage - Voltage dip (DIP) Yes	General information	
• FW update possible usable BaseUnits Color code for module-specific color identification plate Supported power supply systems TT, TN, IT Product function • Voltage measurement — without voltage transformer — with voltage transformer — with outge transformer — with out current transformer — with current transformer — with current transformer — With Rogowski coil — With rurent-voltage-converter • Energy measurement • Power measurement • Power measurement • Active power measurement • Reactive power measurement • Reactive power compensation • Calce to the following of instantaneous and half-wave values — Harmonics for current and voltage — Harmonics for current and voltage — Ves Ves Ves Ves Ves Ves Ves Ves	Product type designation	Al Energy Meter RC HF
usable BaseUnits Color code for module-specific color identification plate CC20 Supported power supply systems Product function • Voltage measurement — without voltage transformer — with voltage transformer — with voltage transformer — with ut current transformer — with ucurrent transformer — with ucurrent transformer — with ucurrent transformer — with gogowski coil — With Rogowski coil — With current-voltage-converter • Energy measurement • Power measurement • Power measurement • Active power measurement • Reactive power measurement • Power factor measurement • Reactive fower compensation • Line analysis — Monitoring of instantaneous and half-wave values — THD measurement and voltage — Harmonics for current and voltage — Harmonics for current and voltage — Voltage dip (DIP) Pes **T, TN, IT CC20 **CC20 **TN, IT, IT **Pes **No. 4 **Obliage Up (DIP) **Pes **Description in transformer **Ves **Pes **	Firmware version	V8.0
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Product function • Voltage measurement Yes — without voltage transformer Yes — with voltage transformer Yes; Max. 4 — without current transformer No — with current transformer No — with Rogowski coil Yes — With Rogowski coil Yes — With current-voltage-converter Yes; 333 mV interface • Energy measurement Yes • Frequency measurement Yes • Power measurement Yes • Active power measurement Yes • Reactive power measurement Yes • Active factor measurement Yes • Active factor measurement Yes • Reactive power compensation Yes • Line analysis Yes — Monitoring of instantaneous and half-wave values — THD measurement for current and voltage Yes — Harmonics for current and voltage Yes — Voltage dip (DIP) Yes	Color code for module-specific color identification plate	CC20
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 with current transformer With Rogowski coil With current-voltage-converter Energy measurement Frequency measurement Power measurement Active power measurement Reactive power measurement Power factor measurement Active factor measurement Power factor measurement Active factor measurement Reactive power compensation Line analysis Monitoring of instantaneous and half-wave values THD measurement for current and voltage Harmonics for current and voltage Ves 	 Current measurement 	Yes; Max. 4
 With Rogowski coil With current-voltage-converter Energy measurement Frequency measurement Power measurement Active power measurement Reactive power measurement Power factor measurement Active factor measurement Reactive power compensation Reactive power compensation Line analysis Monitoring of instantaneous and half-wave values THD measurement for current and voltage Harmonics for current and voltage Ves Ves Yes Ye	 — without current transformer 	No
 With current-voltage-converter Energy measurement Frequency measurement Power measurement Active power measurement Reactive power measurement Power factor measurement Active factor measurement Active factor measurement Reactive power compensation Reactive power compensation Line analysis Monitoring of instantaneous and half-wave values THD measurement for current and voltage Harmonics for current and voltage Ves Ves Yes Yes	 — with current transformer 	No
 Energy measurement Frequency measurement Power measurement Active power measurement Reactive power measurement Power factor measurement Active factor measurement Active factor measurement Reactive power compensation Reactive power compensation Line analysis Monitoring of instantaneous and half-wave values THD measurement for current and voltage Harmonics for current and voltage Ves Ves Yes 	 With Rogowski coil 	Yes
 Frequency measurement Power measurement Active power measurement Reactive power measurement Power factor measurement Active factor measurement Active factor measurement Reactive power compensation Reactive power compensation Line analysis Monitoring of instantaneous and half-wave values THD measurement for current and voltage Harmonics for current and voltage Ves Ves Yes 	 With current-voltage-converter 	Yes; 333 mV interface
 Power measurement Active power measurement Reactive power measurement Power factor measurement Active factor measurement Active factor measurement Reactive power compensation Line analysis Monitoring of instantaneous and half-wave values THD measurement for current and voltage Harmonics for current and voltage Yes Ves Yes 	 Energy measurement 	Yes
 Active power measurement Reactive power measurement Power factor measurement Active factor measurement Active factor measurement Reactive power compensation Line analysis Monitoring of instantaneous and half-wave values THD measurement for current and voltage Harmonics for current and voltage Ves 	 Frequency measurement 	Yes
 Reactive power measurement Power factor measurement Active factor measurement Reactive power compensation Line analysis Monitoring of instantaneous and half-wave values THD measurement for current and voltage Harmonics for current and voltage Ves Yes 	 Power measurement 	Yes
 Power factor measurement Active factor measurement Reactive power compensation Line analysis Monitoring of instantaneous and half-wave values THD measurement for current and voltage Harmonics for current and voltage Ves Yes 	 Active power measurement 	Yes
 Active factor measurement Reactive power compensation Line analysis Monitoring of instantaneous and half-wave values THD measurement for current and voltage Harmonics for current and voltage Yes Ves Yes Yes Yes Yes Yes Voltage dip (DIP) Yes 	 Reactive power measurement 	Yes
 Reactive power compensation Line analysis Monitoring of instantaneous and half-wave values THD measurement for current and voltage Harmonics for current and voltage Ves Yes Yes Yes Yes Yes Yes Yes Yes 	 Power factor measurement 	Yes
 Line analysis — Monitoring of instantaneous and half-wave values — THD measurement for current and voltage — Harmonics for current and voltage — Voltage dip (DIP) Yes 	 Active factor measurement 	Yes
 — Monitoring of instantaneous and half-wave values — THD measurement for current and voltage — Harmonics for current and voltage — Voltage dip (DIP) Yes 	 Reactive power compensation 	Yes
values — THD measurement for current and voltage Yes — Harmonics for current and voltage Yes — Voltage dip (DIP) Yes	Line analysis	Yes
 — Harmonics for current and voltage — Voltage dip (DIP) Yes 	<u> </u>	Yes
— Voltage dip (DIP)	 THD measurement for current and voltage 	Yes
	 Harmonics for current and voltage 	Yes
	— Voltage dip (DIP)	Yes
— Voltage swell Yes	Voltage swell	Yes
• I&M data Yes; I&M0 to I&M3	• I&M data	Yes; I&M0 to I&M3
• Isochronous mode No	Isochronous mode	No
Engineering with	Engineering with	
• STEP 7 TIA Portal configurable/integrated from version STEP 7 V16 or higher with HSP	The state of the s	STEP 7 V16 or higher with HSP
• STEP 7 configurable/integrated from version V5.5 SP3 or higher	 STEP 7 configurable/integrated from version 	V5.5 SP3 or higher
 PROFIBUS from GSD version/GSD revision One GSD file each, Revision 3 and 5 and higher 	 PROFIBUS from GSD version/GSD revision 	One GSD file each, Revision 3 and 5 and higher
PROFINET from GSD version/GSD revision V2.3	PROFINET from GSD version/GSD revision	V2.3
Operating mode	Operating mode	

Switching between operating modes in RUN	Yes; For module version 32 I/20 Q, it is possible to dynamically switch between 25 user data variants, 23 of which are pre-defined and 2 of which can be defined by the specific user
Cyclic measured value access	Yes
Acyclic measured value access	Yes
Fixed measured value sets	Yes
Freely definable measured value sets	Yes; For cyclic and acyclic measured value access
CiR - Configuration in RUN	,
Reparameterization possible in RUN	Yes
Calibration possible in RUN	Yes
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Installation type/mounting	
Mounting position	any
Supply voltage	
Rated value (DC)	24 V
permissible range, lower limit (DC)	19.2 V
permissible range, upper limit (DC)	28.8 V
Input current	
Current consumption (rated value)	12.5 mA
Current consumption, max.	17 mA
Power loss	
Power loss, typ.	400 mW; 3x 230 V AC
Address area	
Address space per module	
• Inputs	256 byte
Outputs	20 byte
Hardware configuration	20 byte
	Ves
Automatic encoding	Yes
Mechanical coding element	Yes
Type of mechanical coding element	type C
Selection of BaseUnit for connection variants	DIL4 110
2-wire connection	BU type U0
Time of day	
Operating hours counter	
• present	Yes
Analog inputs	
Cycle time (all channels), typ.	50 ms; Time for consistent update of all measured and calculated values (cyclic und acyclic data)
Cable length	
shielded, max.	200 m
unshielded, max.	200 m
Analog value generation for the inputs	
Sampling frequency, max.	2 048 kHz
Interrupts/diagnostics/status information	
Alarms	
Diagnostic alarm	Yes
Limit value alarm	Yes
Hardware interrupt	Yes; Monitoring of up to 16 freely selectable process values (exceeding or undershooting of value)
Diagnoses	,
Line quality	Yes
Supply voltage	Yes
Hardware interrupt lost	Yes
Parameter assignment error	Yes
Module fault	Yes
Channel not available	Yes
Overflow/underflow	Yes
Overlow/underflow Overload current	Yes
	100
Diagnostics indication LED ● Monitoring of the supply voltage (PWR-LED)	Yes

 Channel status display Yes; green LED • for channel diagnostics Yes; red Fn LED for module diagnostics Yes; green/red DIAG LED

•	TOF	module	diagno

for module diagnostics	Yes; green/red DIAG LED			
Integrated Functions				
Measuring functions				
Measuring procedure for voltage measurement	TRMS			
Measuring procedure for current measurement	TRMS			
Type of measured value acquisition	seamless			
Curve shape of voltage	Sinusoidal or distorted			
Buffering of measured variables	Yes			
Parameter length	128 byte			
Bandwidth of measured value acquisition	3.2 kHz; Harmonics: 63 / 50 Hz, 52 / 60 Hz			
Measuring range				
Frequency measurement, min.	40 Hz			
— Frequency measurement, max.	70 Hz			
Measuring inputs for voltage				
 Measurable line voltage between phase and neutral conductor 	277 V			
 Measurable line voltage between the line conductors 	480 V			
 Measurable line voltage between phase and neutral conductor, min. 	3 V			
 Measurable line voltage between phase and neutral conductor, max. 	300 V			
 Measurable line voltage between the line conductors, min. 	6 V			
 Measurable line voltage between the line conductors, max. 	519 V			
 Internal resistance line conductor and neutral conductor 	1.5 ΜΩ			
 Power consumption per phase 	60 mW; 300 V AC			
Impulse voltage resistance 1,2/50µs	2.5 kV			
Overvoltage category	CAT II according to IEC 61010 Part 1			
Measuring inputs for current (Rog. or I/U converter)				
Measurable current at AC, max.	424 mV			
Continuous voltage, maximum permissible	2 V			
 Rated value, short-time withstand voltage restricted to 1 s 	30 V			
— Input resistance	120 kΩ			
— Zero point suppression	Yes; 0 20%, referred to the nominal current			
Accuracy class according to IEC 61557-12				
Measured variable voltage	0,2			
Measured variable current	0,2			
Measured variable apparent power	0.5			
Measured variable active power	0.5			
Measured variable reactive power	1			
Measured variable power factor	0.5			
Measured variable active energy	0.5			
Measured variable reactive energy	1			
Measured variable neutral current	0,2 +0.5 °: not covered by IEC 61557.12			
— Measured variable phase angle— Measured variable frequency	±0.5°; not covered by IEC 61557-12			
Measured variable frequency Measured variable harmonic	0.05; only valid for the permissible voltage measuring range 1			
Measured variable THDU	1			
Measured variable THDI Measured variable THDI	1			
Accuracy class line analysis acc. to IEC 61000-4-30				
Measured variable voltage	Class S			
Measured variable voltage Measured variable current	Class S			
Measured variable frequency	Class S			
Measured variable requertry - Measured variable voltage interruption	Class S			
Measured variable voltage the and swell	Class S			
Managered variable barmania valtage	Class C			

— Measured variable harmonic voltage

Class S

 Measured variable harmonic current 	Class S
Potential separation	
Potential separation channels	
 between the channels 	No
 between the channels and backplane bus 	Yes
 Between the channels and load voltage L+ 	Yes; Including FE
Isolation	
Isolation tested with	Between channels and backplane bus, 24 V supply: Routine test, 1 920 V AC, 2 s; between backplane bus and 24 V supply: Type test, 707 V DC
Ambient conditions	
Ambient temperature during operation	
 horizontal installation, min. 	-30 °C
 horizontal installation, max. 	60 °C
 vertical installation, min. 	-30 °C
 vertical installation, max. 	50 °C
Altitude during operation relating to sea level	
 Installation altitude above sea level, max. 	3 000 m; Restrictions for installation altitudes > 2 000 m, see manual
Dimensions	
Width	20 mm
Height	73 mm
Depth	58 mm
Weights	
Weight, approx.	45 g
Other	
Data for selecting a voltage transformer	
 Secondary side, max. 	300 V
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