6ES7134-6PA21-0CU0

Data sheet



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

General information	
Product type designation	Al Energy Meter RC HF
Firmware version	V8.0
 FW update possible 	Yes
usable BaseUnits	BU type U0
Color code for module-specific color identification plate	CC20
Supported power supply systems	TT, TN, IT
Product function	
 Voltage measurement 	Yes
 — without voltage transformer 	Yes
 — with voltage transformer 	Yes
Current measurement	Yes; Max. 4
 — without current transformer 	No
 — with current transformer 	No
— 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
 Power factor measurement 	Yes
 Active factor measurement 	Yes
 Reactive power compensation 	Yes
 Line analysis 	Yes
 Monitoring of instantaneous and half-wave values 	Yes
 THD measurement for current and voltage 	Yes
 Harmonics for current and voltage 	Yes
— Voltage dip (DIP)	Yes
— Voltage swell	Yes
• I&M data	Yes; I&M0 to I&M3
Isochronous mode	No
Engineering with	
 STEP 7 TIA Portal configurable/integrated from version 	STEP 7 V16 or higher with HSP
 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
PROFINET from GSD version/GSD revision	V2.3
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
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Diagnostics indication LED ● Monitoring of the supply voltage (PWR-LED)	Yes

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

	• TOT	module	diagnostics	

 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	0.2 Kt 12, Harriotiloo. 00 / 00 Hz, 02 / 00 Hz
Frequency measurement, min.	40 Hz
Frequency measurement, max.	70 Hz
Measuring inputs for voltage	
Measurable line voltage between phase and	277 V
neutral conductor	2
 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 	30 V
restricted to 1 s	
— 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
 Measured variable phase angle 	±0.5°; not covered by IEC 61557-12
Measured variable frequency	0.05; only valid for the permissible voltage measuring range
 Measured variable harmonic 	1
 Measured variable THDU 	1
— Measured variable THDI	1
Accuracy class line analysis acc. to IEC 61000-4-30	
Measured variable voltage	Class S
Measured variable current	Class S
 Measured variable frequency 	Class S
— Measured variable voltage interruption— Measured variable voltage dip and swell	Class S Class S

— 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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