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Data sheet 6ES7134-6PA20-0CU0



SIMATIC ET 200SP, analog input module, AI Energy Meter 480V AC/RC HF for Rogowski coils, current/voltage transformer 333 mV, with network analysis functions, suitable for BU type U0, channel diagnostics

General information	
Product type designation	AI Energy Meter 480 VAC/RC HF, PU 1
HW functional status	From FS02
Firmware version	
• 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
— without current transformer	No
— with current transformer	No
— With Rogowski coil	Yes
— With current-voltage-converter	Yes; 333 mV interface
• Energy measurement	Yes

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• 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 V15 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
• 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
Installation type/mounting	
Mounting position	any
Supply voltage	
Design of the power supply	DC
Type of supply voltage	24 V DC
permissible range, lower limit (DC)	19.2 V
permissible range, upper limit (DC)	28.8 V
Input current	

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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	
Automatic encoding	Yes
• Mechanical coding element	Yes
Selection of BaseUnit for connection variants	
• 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.	30 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)
Diagnostic messages	
• Line quality	Yes
• Supply voltage	Yes
• Hardware interrupt lost	Yes
• Parameter assignment error	Yes
• Module fault	Yes
• Channel not available	Yes
• Overflow/underflow	Yes
• Overload current	Yes
Diagnostics indication LED	

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• 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
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.	45 Hz
— Frequency measurement, max.	65 Hz
Measuring inputs for voltage	
— Measurable line voltage between phase and neutral conductor	300 V
— Measurable line voltage between the line conductors	519 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 MΩ
— Power consumption per phase	60 mW; 300 V AC
— Impulse voltage resistance 1,2/50µs	2.5 kV
— Measurement category for voltage measurement in accordance with IEC 61010-2-030	CAT II
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

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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
— 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	Class S
— Measured variable voltage dip and swell	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

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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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