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Data sheet 6ES7134-6PA01-0CU0



SIMATIC ET 200SP, analog input module, AI Energy Meter CT HF, for 1A or 5A current transformer, with network analysis functions, suitable for BU type U0, channel diagnostics

General information	
Product type designation	AI Energy Meter CT HF
Firmware version	V8.0
● FW update possible	Yes
usable BaseUnits	BU type U0
Color code for module-specific color-coded label	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	Yes; 1 A or 5 A current transformer
— With Rogowski coil	No
— With current-voltage-converter	No
● 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

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● 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	
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.	1.4 W; 4x 6 A input current, 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
● Type of mechanical coding element	type C
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.	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
● 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
● 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 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	
— measurable relative current (AC), min.	1 %; Relative to measuring range; 1 A, 5 A
— measurable relative current (AC), max.	120 %; Relative to the secondary rated current 5 A
— Continuous current with AC, maximum permissible	5 A; 6 A permanent thermal overload
— Apparent power consumption per phase for measuring range 5 A	0.6 VA
— Rated value short-time withstand current restricted to 1 s	100 A
— Input resistance measuring range 0 to 5 A	25 mΩ; At the terminal
— Surge strength	10 A; for 1 minute
— Zero point suppression	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

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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
Standards, approvals, certificates	
Ecological footprint	
● environmental product declaration	Yes
Global warming potential	
— global warming potential, (total) [CO2 eq]	9.32 kg
— global warming potential, (during production) [CO2 eq]	4.97 kg
— global warming potential, (during operation) [CO2 eq]	4.79 kg
— global warming potential, (after end of life cycle) [CO2 eq]	-0.449 kg
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
Absolute humidity	
● dew point, min.	-60 °C; suitable for dry room applications
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
Data for selecting a current transformer	
● Burden power current transformer x/1A, min.	As a function of cable length and cross section, see device manual
● Burden power current transformer x/5A, min.	As a function of cable length and cross section, see device manual

Classifications

	Version	Classification
eClass	16	27-24-26-01
eClass	14	27-24-26-01
eClass	12	27-24-26-01
eClass	9.1	27-24-26-01
eClass	9	27-24-26-01
eClass	8	27-24-26-01
eClass	7.1	27-24-26-01

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eClass	6	27-24-26-01
ETIM	10	EC001596
ETIM	9	EC001596
ETIM	8	EC001596
ETIM	7	EC001596
IDEA	4	3562
UNSPSC	15	32-15-17-05

Approvals / Certificates

General Product Approval

Test Certificates

Type Test Certificates/Test Report

Maritime application

Maritime application

other

Confirmation

Environment

Environmental Confirmations

Environment

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