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Data sheet 6ES7134-6PA20-0BD0



*** spare part *** SIMATIC ET 200SP, Analog input module, AI Energy Meter 480 V AC ST, suitable for BU type D0, channel diagnostics

General information	
Product type designation	AI Energy Meter 480VAC ST
Firmware version	V4.0
● FW update possible	Yes
usable BaseUnits	BU type D0
Supported power supply systems	TT, TN
Product function	
● Voltage measurement	Yes
— without voltage transformer	Yes
— with voltage transformer	Yes
● Current measurement	Yes
— without current transformer	No
— with current transformer	Yes
— 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	No
● Reactive power compensation	No
● Line analysis	No
● I&M data	Yes; I&M0 to I&M3
● Isochronous mode	No
Engineering with	
● STEP 7 TIA Portal configurable/integrated from version	V13 SP1
● STEP 7 configurable/integrated from version	V5.5 SP4 and higher
● PROFIBUS from GSD version/GSD revision	GSD Revision 5
● PROFINET from GSD version/GSD revision	V2.3
Operating mode	
● Cyclic measured value access	Yes
● Acyclic measured value access	Yes
● Fixed measured value sets	Yes
● Freely definable measured value sets	Yes
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	
Design of the power supply	Supply via voltage measurement channel L1
Rated value (AC)	AC 100 - 277 V
permissible range, lower limit (AC)	90 V
permissible range, upper limit (AC)	293 V
Line frequency	
● permissible range, lower limit	47 Hz
● permissible range, upper limit	63 Hz
Power loss	
Power loss, typ.	0.6 W
Address area	
Address space per module	
● Inputs	256 byte
● Outputs	12 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 D0, BU20-P12+A0+0B
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	
● unshielded, max.	200 m
Analog value generation for the inputs	
Measurement principle	Sigma Delta
Sampling frequency, max.	1 024 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)
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	74 byte
● Bandwidth of measured value acquisition	2 kHz; Harmonics: 39 / 50 Hz, 32 / 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	277 V

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— Measurable line voltage between the line conductors	480 V
— Measurable line voltage between phase and neutral conductor, min.	90 V
— Measurable line voltage between phase and neutral conductor, max.	293 V
— Measurable line voltage between the line conductors, min.	155 V
— Measurable line voltage between the line conductors, max.	508 V
— Internal resistance line conductor and neutral conductor	3.4 MΩ
— Power consumption per phase	20 mW
— Impulse voltage resistance 1,2/50µs	1 kV
— Measurement category for voltage measurement in accordance with IEC 61010-2-030	CAT II; CAT III in case of guaranteed protection level of 1.5 kV
Measuring inputs for current	
— measurable relative current (AC), min.	1 %; Relative to the secondary rated current 5 A
— measurable relative current (AC), max.	100 %; Relative to the secondary rated current 5 A
— Continuous current with AC, maximum permissible	5 A
— 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	Parameterizable: 2 ... 250 mA, default 50 mA
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	0.5; calculated
— Measured variable phase angle	±1 °; not covered by IEC 61557-12
— Measured variable frequency	0.05
Potential separation	
Potential separation channels	
● between the channels	No
● between the channels and backplane bus	Yes; 3 700V AC (type test) CAT III
Isolation	
Isolation tested with	2 300V AC for 1 min. (type test)
Ambient conditions	
Ambient temperature during operation	
● horizontal installation, min.	0 °C
● horizontal installation, max.	60 °C
● vertical installation, min.	0 °C
● vertical installation, max.	50 °C
Altitude during operation relating to sea level	
● Ambient air temperature-barometric pressure-altitude	On request: Ambient temperatures lower than 0 °C (without condensation) and/or installation altitudes greater than 2 000 m
Dimensions	
Width	20 mm
Height	73 mm
Depth	58 mm
Weights	
Weight, approx.	45 g
Other	

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Data for selecting a voltage transformer	
● Secondary side, max.	296 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
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

Miscellaneous

Manufacturer Declaration

General Product Approval

China RoHS

For use in hazardous locations

FM

Maritime application

NK / Nippon Kaiji Kyokai

Maritime application

CCS (China Classification Society)

KR (Korean Register of Shipping)

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