



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

General information	
Product type designation	AI Energy Meter RC ST
Firmware version	V8.0
<ul style="list-style-type: none"> <li>FW update possible</li> </ul>	Yes
usable BaseUnits	BU type U0
Color code for module-specific color identification plate	CC20
Supported power supply systems	TT, TN, IT
Product function	
<ul style="list-style-type: none"> <li>Voltage measurement                             <ul style="list-style-type: none"> <li>without voltage transformer</li> <li>with voltage transformer</li> </ul> </li> <li>Current measurement                             <ul style="list-style-type: none"> <li>without current transformer</li> <li>with current transformer</li> <li>With Rogowski coil</li> <li>With current-voltage-converter</li> </ul> </li> <li>Energy measurement</li> <li>Frequency measurement</li> <li>Power measurement</li> <li>Active power measurement</li> <li>Reactive power measurement</li> <li>Power factor measurement</li> <li>Active factor measurement</li> <li>Reactive power compensation</li> <li>Line analysis</li> <li>I&amp;M data</li> <li>Isochronous mode</li> </ul>	Yes Yes Yes Yes; max. 3 + neutral conductor No No Yes Yes; 333 mV interface Yes Yes Yes Yes Yes Yes Yes Yes No Yes; I&M0 to I&M3 No
Engineering with	
<ul style="list-style-type: none"> <li>STEP 7 TIA Portal configurable/integrated from version</li> <li>STEP 7 configurable/integrated from version</li> <li>PROFIBUS from GSD version/GSD revision</li> <li>PROFINET from GSD version/GSD revision</li> </ul>	STEP 7 V16 or higher with HSP Configurable via GSD file One GSD file each, Revision 3 and 5 and higher V2.3
Operating mode	
<ul style="list-style-type: none"> <li>Switching between operating modes in RUN</li> <li>Cyclic measured value access</li> <li>Acyclic measured value access</li> <li>Fixed measured value sets</li> <li>Freely definable measured value sets</li> </ul>	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 Yes Yes Yes Yes; For cyclic and acyclic measured value access
CiR - Configuration in RUN	

Reparameterization possible in RUN	Yes
Calibration possible in RUN	Yes
<b>Installation type/mounting</b>	
Mounting position	any
<b>Supply voltage</b>	
Rated value (DC)	24 V
permissible range, lower limit (DC)	19.2 V
permissible range, upper limit (DC)	28.8 V
<b>Input current</b>	
Current consumption (rated value)	12.5 mA
Current consumption, max.	17 mA
<b>Power loss</b>	
Power loss, typ.	400 mW; 3x 230 V AC
<b>Address area</b>	
Address space per module	
• Inputs	256 byte
• Outputs	20 byte
<b>Hardware configuration</b>	
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
<b>Time of day</b>	
Operating hours counter	
• present	Yes
<b>Analog inputs</b>	
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
<b>Analog value generation for the inputs</b>	
Sampling frequency, max.	2 048 kHz
<b>Interrupts/diagnostics/status information</b>	
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	
• 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	
• 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
<b>Integrated Functions</b>	
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
<b>Measuring range</b>	
— Frequency measurement, min.	40 Hz
— Frequency measurement, max.	70 Hz
<b>Measuring inputs for voltage</b>	
— 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
— Overvoltage category	CAT II according to IEC 61010 Part 1
<b>Measuring inputs for current (Rog. or I/U converter)</b>	
— Measurable current at AC, max.	424 mA
— 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
<b>Accuracy class according to IEC 61557-12</b>	
— 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
<b>Potential separation</b>	
Potential separation channels	
• between the channels	No
• between the channels and backplane bus	Yes
• Between the channels and load voltage L+	Yes; Including FE
<b>Isolation</b>	
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
<b>Ambient conditions</b>	
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
<b>Dimensions</b>	
Width	20 mm
Height	73 mm
Depth	58 mm
<b>Weights</b>	
Weight, approx.	45 g

Other

Data for selecting a voltage transformer

- Secondary side, max.

300 V

last modified:

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