



SIMATIC ET 200SP, Analog input module, AI 8xU Basic, suitable for BU type A0, A1, Color code CC02, Module diagnostics, 16 bit

General information	
Product type designation	AI 8xU BA
HW functional status	FS23 or higher
Firmware version	V2.0.0
• FW update possible	Yes
usable BaseUnits	BU type A0, A1
Color code for module-specific color identification plate	CC02
Product function	
• I&M data	Yes; I&M0 to I&M3
• Isochronous mode	No
• Measuring range scalable	No
Engineering with	
• STEP 7 TIA Portal configurable/integrated from version	TIA Portal V21
• STEP 7 configurable/integrated from version	V5.7 SP3
• PROFIBUS from GSD version/GSD revision	One GSD file each, Revision 3 and 5 and higher
• PROFINET from GSD version/GSD revision	GSDML V2.45
Operating mode	
• Oversampling	No
• MSI	No
CiR - Configuration in RUN	
Reparameterization possible in RUN	No
Calibration possible in RUN	No
Supply voltage	
Rated value (DC)	24 V
permissible range, lower limit (DC)	19.2 V
permissible range, upper limit (DC)	28.8 V
Reverse polarity protection	Yes
Input current	
Current consumption (rated value)	25 mA; rated voltage, all channels active, no load
Current consumption, max.	25 mA; worst case voltage, all channels active, max. load, no derating
Power loss	
Power loss, typ.	0.7 W; rated voltage, 50 % active channels, 50 % of range
Address area	
Address space per module	
• Address space per module, max.	16 byte
Hardware configuration	
Automatic encoding	Yes
• Mechanical coding element	Yes
• Type of mechanical coding element	type B
Selection of BaseUnit for connection variants	

• 1-wire connection • 2-wire connection	BU type A0, A1 BU type A0, A1
Analog inputs	
Number of analog inputs	8; Single-ended
• For voltage measurement	8
permissible input voltage for voltage input (destruction limit), max.	30 V
Cycle time (all channels), min.	1 ms; per channel
Input ranges (rated values), voltages	
• 0 to +10 V — Input resistance (0 to 10 V) • -10 V to +10 V — Input resistance (-10 V to +10 V)	Yes; 15 bit 100 kΩ Yes; 16 bit incl. sign 100 kΩ
Cable length	
• shielded, max.	200 m
Analog value generation for the inputs	
Integration and conversion time/resolution per channel	
• Resolution with overrange (bit including sign), max. • Integration time, parameterizable • Interference voltage suppression for interference frequency f1 in Hz • Conversion time (per channel)	16 bit Yes 16.67 / 50 / 60 / 4 800 (16.67 / 50 / 60) 180 / 60 / 50 / 0.625 (67.5 / 22.5 / 18.75) ms
Smoothing of measured values	
• Number of smoothing levels • parameterizable • Step: None • Step: low • Step: Medium • Step: High	4 Yes Yes Yes; 4x smoothing Yes; 8x smoothing Yes; 16x smoothing
Encoder	
Connection of signal encoders	
• for voltage measurement • for current measurement as 4-wire transducer	Yes No
Errors/accuracies	
Linearity error (relative to input range), (+/-)	0.01 %
Temperature error (relative to input range), (+/-)	0.005 %/K
Crosstalk between the inputs, min.	-50 dB
Repeat accuracy in steady state at 25 °C (relative to input range), (+/-)	0.05 %
Operational error limit in overall temperature range	
• Voltage, relative to input range, (+/-)	0.5 %
Basic error limit (operational limit at 25 °C)	
• Voltage, relative to input range, (+/-)	0.3 %
Interference voltage suppression for $f = n \times (f1 \pm 1 \%)$, f1 = interference frequency	
• Series mode interference (peak value of interference < rated value of input range), min.	70 dB; With conversion time 67.5 / 22.5 / 18.75 ms: 40 dB
Interrupts/diagnostics/status information	
Diagnostics function	Yes
Alarms	
• Diagnostic alarm • Limit value alarm	Yes No
Diagnoses	
• Monitoring the supply voltage • Wire-break • Short-circuit • Group error • Overflow/underflow	Yes No No Yes Yes; Module-wise
Diagnostics indication LED	
• Monitoring of the supply voltage (PWR-LED) • Channel status display • for channel diagnostics • for module diagnostics	Yes; green PWR LED Yes; green LED No Yes; green/red DIAG LED

Potential separation			
Potential separation channels			
• between the channels	No		
• between the channels and backplane bus	Yes		
• between the channels and the power supply of the electronics	No		
Isolation			
Isolation tested with	707 V DC (type test)		
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		
product functions / security / header			
signed firmware update	Yes; firmware V2.0.0 or higher		
safely removing data	Yes; firmware V2.0.0 or higher		
data integrity	Yes; firmware V2.0.0 or higher		
Ambient conditions			
Ambient temperature during operation			
• horizontal installation, min.	-30 °C; < 0 °C as of FS04		
• horizontal installation, max.	60 °C		
• vertical installation, min.	-30 °C; < 0 °C as of FS04		
• vertical installation, max.	50 °C		
Altitude during operation relating to sea level			
• Installation altitude above sea level, max.	5 000 m; restrictions for installation altitudes > 2 000 m, see ET 200SP system manual		
Dimensions			
Width	15 mm		
Height	73 mm		
Depth	58 mm		
Weights			
Weight, approx.	31 g		
Classifications			
		Version	Classification
	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			EMV



EMV	Test Certificates	Maritime application
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[KC](#)

[Type Test Certificates/Test Report](#)



Maritime application	other	Railway	Environment
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