

Siemens
EcoTech



SIMATIC ET 200SP, Analog input module, AI 8xI 2-/4-wire Basic, suitable for BU type A0, A1, Color code CC01, Module diagnostics, 16 bit

General information	
Product type designation	AI 8xI 2-/4-wire 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-coded label	CC01
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.	725 mA; worst case voltage, all channels active, max. load, no derating
Encoder supply	
24 V encoder supply	
• 24 V	Yes
• Short-circuit protection	Yes
• Output current, max.	0.7 A; total current of all encoders/channels
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 A
Selection of BaseUnit for connection variants	
• 1-wire connection	BU type A0, A1
• 2-wire connection	BU type A0, A1
• 4-wire connection	BU type A0, A1 + potential distributor module
Analog inputs	
Number of analog inputs	8; Single-ended
• For current measurement	8
permissible input current for current input (destruction limit), max.	50 mA
Cycle time (all channels), min.	1 ms; per channel
Input ranges (rated values), currents	
• 0 to 20 mA	Yes
— Input resistance (0 to 20 mA)	100 Ω; 15 bit
• -20 mA to +20 mA	Yes
— Input resistance (-20 mA to +20 mA)	100 Ω; 16 bit incl. sign
• 4 mA to 20 mA	Yes
— Input resistance (4 mA to 20 mA)	100 Ω; 15 bit
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.	16 bit
• Integration time, parameterizable	Yes
• Interference voltage suppression for interference frequency f1 in Hz	16.67 / 50 / 60 / 4 800 (16.67 / 50 / 60)
• Conversion time (per channel)	180 / 60 / 50 / 0.625 (67.5 / 22.5 / 18.75) ms
Smoothing of measured values	
• Number of smoothing levels	4
• Parameterizable	Yes
• Step: None	Yes
• Step: low	Yes; 4x smoothing
• Step: Medium	Yes; 8x smoothing
• Step: High	Yes; 16x smoothing
Encoder	
Connection of signal encoders	
• for voltage measurement	No
• for current measurement as 2-wire transducer	Yes
— Burden of 2-wire transmitter, max.	650 Ω
• for current measurement as 4-wire transducer	Yes
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	
• Current, relative to input range, (+/-)	0.5 %
Basic error limit (operational limit at 25 °C)	
• Current, 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	Yes		
Limit value alarm	No		
Diagnoses			
Monitoring the supply voltage	Yes		
Wire break	Yes; at 4 to 20 mA		
short-circuit	Yes; Sensor supply to M; module by module		
Group error	Yes		
Overflow/Underflow	Yes; module-wise		
Diagnostics indication LED			
Monitoring of the supply voltage (PWR-LED)	Yes; green LED		
Channel status display	Yes; green LED		
for channel diagnostics	No		
for module diagnostics	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		
Security			
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		
Absolute humidity			
dew point, min.	-60 °C; suitable for dry room applications		
Dimensions			
Width	15 mm		
Height	73 mm		
Depth	58 mm		
Weights			
Weight, approx.	31 g		
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](#)



[Metrological Approval](#)

General Product Approval



[China RoHS](#)



General Product Approval

EMV

For use in hazardous locations



[FM](#)

[CCC-Ex](#)



For use in hazardous locations

Maritime application

[Type Examination Certificate](#)



[Miscellaneous](#)

[CCC-Ex](#)



Maritime application



[NK / Nippon Kaiji Kyokai](#)



[CCS \(China Classification Society\)](#)

Maritime application

Environment

[KR \(Korean Register of Shipping\)](#)



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