

Siemens
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SIMATIC ET 200SP, Analog input module, AI 2xI 2-/4-wire Standard, Pack quantity: 1 unit, suitable for BU type A0, A1, Color code CC05, Module diagnostics, 16 bit

General information	
Product type designation	AI 2xI 2-/4-wire ST
HW functional status	from FS04
Firmware version	
• FW update possible	Yes
usable BaseUnits	BU type A0, A1
Color code for module-specific color-coded label	CC05
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	V13 SP1
• STEP 7 configurable/integrated from version	V5.5 SP3
• PROFIBUS from GSD version/GSD revision	One GSD file each, Revision 3 and 5 and higher
• PROFINET from GSD version/GSD revision	V2.3 / -
Operating mode	
• Oversampling	No
• MSI	No
CiR - Configuration in RUN	
Reparameterization possible in RUN	Yes
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, max.	45 mA; without sensor supply
Encoder supply	
24 V encoder supply	
• 24 V	Yes
• Short-circuit protection	Yes
• Output current, max.	50 mA; Total current for both channels (two-wire)
Additional 24 V encoder supply	
• 24 V	Yes

• Short-circuit protection • Output current, max.	Yes; Module-wise 200 mA; Total current for both channels (four-wire)
Power loss	
Power loss, typ.	1.1 W
Address area	
Address space per module	
• Address space per module, max.	4 byte; + 1 byte for QI information
Hardware configuration	
Automatic encoding	Yes
• Mechanical coding element • Type of mechanical coding element	Yes Type A
Selection of BaseUnit for connection variants	
• 1-wire connection • 2-wire connection • 4-wire connection	BU type A0, A1 BU type A0, A1 BU type A0, A1
Analog inputs	
Number of analog inputs	2
• For current measurement	2
permissible input current for current input (destruction limit), max.	50 mA
Cycle time (all channels), min.	500 µs
Input ranges (rated values), currents	
• 0 to 20 mA — Input resistance (0 to 20 mA) • -20 mA to +20 mA — Input resistance (-20 mA to +20 mA) • 4 mA to 20 mA — Input resistance (4 mA to 20 mA)	Yes; 15 bit 130 Ω; 90 ohms with two wires Yes; 16 bit incl. sign 130 Ω Yes; 15 bit 130 Ω; 90 ohms with two wires
Cable length	
• shielded, max.	1 000 m
Analog value generation for the inputs	
Measurement principle	Sigma Delta
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 16.6 / 50 / 60 Hz / off 50 ms @ 60 Hz, 60 ms @ 50 Hz, 180 ms @ 16.6 Hz, 500 µs without filter
Smoothing of measured values	
• Number of smoothing levels • parameterizable • Step: None • Step: low • Step: Medium • Step: High	4 Yes Yes; 1x conversion time Yes; 4x conversion time Yes; 8x conversion time Yes; 16x conversion time
Encoder	
Connection of signal encoders	
• for current measurement as 2-wire transducer — Burden of 2-wire transmitter, max. • for current measurement as 4-wire transducer	Yes 650 Ω 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 $f = n \times (f_1 \pm 1 \%)$, f_1 = interference frequency			
• Series mode interference (peak value of interference < rated value of input range), min.	70 dB		
• Common mode voltage, max.	10 V		
• Common mode interference, min.	90 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; Short-circuit of the encoder supply		
• Group error	Yes		
• Overflow/underflow	Yes		
Diagnostics indication LED			
• Monitoring of the supply voltage (PWR-LED)	Yes; green PWR 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	Yes		
Permissible potential difference			
between the inputs (UCM)	10 Vpp		
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		
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 manual		
Dimensions			
Width	15 mm		
Height	73 mm		
Depth	58 mm		
Weights			
Weight, approx.	32 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

[Miscellaneous](#)



[Manufacturer Declaration](#)

[China RoHS](#)



General Product Approval

For use in hazardous locations

[Metrological Approval](#)



[EM](#)

[CCC-Ex](#)

For use in hazardous locations

Maritime application



[Type Examination Certificate](#)

[Miscellaneous](#)



Maritime application



[NK / Nippon Kaiji Kyokai](#)



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

Maritime application

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