



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	from FS21
Firmware version	V1.0.1
• FW update possible	Yes
usable BaseUnits	BU type A0, A1
Color code for module-specific color identification plate	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	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	GSDML V2.3
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, max.	25 mA; without sensor supply
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; Without encoder supply voltage
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 f_1 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
• Step: Medium	Yes
• Step: High	Yes
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 $f = n \times (f_1 \pm 1 \%)$, f_1 = 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

<ul style="list-style-type: none"> • Wire-break • Short-circuit • Group error • Overflow/underflow 	<p>Yes; at 4 to 20 mA</p> <p>Yes; Sensor supply to M; module by module</p> <p>Yes</p> <p>Yes; Module-wise</p>
Diagnostics indication LED	
<ul style="list-style-type: none"> • Monitoring of the supply voltage (PWR-LED) • Channel status display • for channel diagnostics • for module diagnostics 	<p>Yes; green LED</p> <p>Yes; green LED</p> <p>No</p> <p>Yes; green/red DIAG LED</p>
Potential separation	
Potential separation channels	
<ul style="list-style-type: none"> • between the channels • between the channels and backplane bus • between the channels and the power supply of the electronics 	<p>No</p> <p>Yes</p> <p>No</p>
Isolation	
Isolation tested with	707 V DC (type test)
Ambient conditions	
Ambient temperature during operation	
<ul style="list-style-type: none"> • horizontal installation, min. • horizontal installation, max. • vertical installation, min. • vertical installation, max. 	<p>-30 °C; < 0 °C as of FS04</p> <p>60 °C</p> <p>-30 °C; < 0 °C as of FS04</p> <p>50 °C</p>
Altitude during operation relating to sea level	
<ul style="list-style-type: none"> • 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
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