

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
Firmware version	V1.0
<ul style="list-style-type: none"> FW update possible 	Yes
usable BaseUnits	BU type A0, A1
Color code for module-specific color identification plate	CC01
Product function	
<ul style="list-style-type: none"> I&M data 	Yes; I&M0 to I&M3
<ul style="list-style-type: none"> Measuring range scalable 	No
Engineering with	
<ul style="list-style-type: none"> STEP 7 TIA Portal configurable/integrated as of version 	V13 SP1
<ul style="list-style-type: none"> STEP 7 configurable/integrated as of version 	V5.5 SP3 / -
<ul style="list-style-type: none"> PROFIBUS as of GSD version/GSD revision 	GSD Revision 5
<ul style="list-style-type: none"> PROFINET as of GSD version/GSD revision 	GSDML V2.3
Operating mode	
<ul style="list-style-type: none"> Oversampling 	No
<ul style="list-style-type: none"> 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.	25 mA; without sensor supply
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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
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Address area

Address space per module

• Address space per module, max.	16 byte
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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
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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; None; 4/8/16 times
• parameterizable	Yes

Encoder

Connection of signal encoders	
• for voltage measurement	No
• for current measurement as 2-wire transducer — Burden of 2-wire transmitter, max.	Yes 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

Isochronous mode

Isochronous operation (application synchronized up to terminal)	No
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Interrupts/diagnostics/status information

Diagnostics function	Yes
Alarms	
• Diagnostic alarm	Yes
• Limit value alarm	No
Diagnostic messages	
• 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
Diagnostics indication LED	
• Monitoring of the supply voltage (PWR-LED)	Yes; Green LED

- Channel status display
- for channel diagnostics
- for module diagnostics

Yes; Green LED
 No
 Yes; green/red DIAG LED

Potential separation

Potential separation channels

- between the channels
- between the channels and backplane bus
- between the channels and the power supply of the electronics

No
 Yes
 No

Isolation

Isolation tested with 707 V DC (type test)

Dimensions

Width 15 mm
 Height 73 mm
 Depth 58 mm

Weights

Weight, approx. 31 g

last modified: 02/27/2018