

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 FS04
Firmware version	
<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

- 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

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

- Mechanical coding element Yes

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; 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 $f = n \times (f_1 \pm 1 \%)$, $f_1 =$ 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

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	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)
Ambient conditions	
Ambient temperature during operation	
• horizontal installation, min.	-30 °C
• horizontal installation, max.	60 °C
• vertical installation, min.	-30 °C
• vertical installation, max.	50 °C
Altitude during operation relating to sea level	
• Installation altitude above sea level, max.	2 000 m; On request: Installation altitudes greater than 2 000 m
Dimensions	
Width	15 mm
Height	73 mm
Depth	58 mm
Weights	
Weight, approx.	31 g
last modified:	08/16/2019