

SIMATIC ET 200SP, Analog input module, AI 8xU Basic, suitable for BU type A0, A1, Color code CC02, Module diagnostics, 16 bit



General information	
Product type designation	AI 8xU 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	CC02
Product function	
<ul style="list-style-type: none"> I&M data 	Yes; I&M0 to I&M3
<ul style="list-style-type: none"> Isochronous mode 	No
<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	

- Oversampling
- MSI

No

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

Power loss

Power loss, typ.

0.7 W

Address area

Address space per module

- Address space per module, max.

16 byte

Hardware configuration

Selection of BaseUnit for connection variants

- 1-wire connection
- 2-wire connection

BU type A0, A1

BU type A0, A1

Analog inputs

Number of analog inputs

8; Single-ended

- For voltage measurement

8

permissible input voltage for voltage input (destruction limit), max.

30 V

Cycle time (all channels), min.

1 ms; per channel

Input ranges (rated values), voltages

- 0 to +10 V
 - Input resistance (0 to 10 V)
- -10 V to +10 V
 - Input resistance (-10 V to +10 V)

Yes; 15 bit

100 k Ω

Yes; 16 bit incl. sign

100 k Ω

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.
- Integration time, parameterizable

16 bit

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	Yes
• for current measurement as 4-wire transducer	No

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	
• Voltage, relative to input range, (+/-)	0.5 %
Basic error limit (operational limit at 25 °C)	
• Voltage, 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
Diagnostic messages	
• Monitoring the supply voltage	Yes
• Wire-break	No
• Short-circuit	No
• 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
- 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)

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. 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. 31 g