

SIMATIC ET 200SP, ANALOG INPUT MODULE, AI 8X1 2-/4-WIRE BASIC, FITS TO BU-TYPE A0, A1, COLOR CODE CC01, MODULE DIAGNOSIS, 16BIT



Product type designation	
General information	
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"> Scalable measuring range 	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
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Encoder supply

24 V encoder supply

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|----------------------------|---|
| • 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

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| • Address space per module, max. | 16 byte |
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Analog inputs

Number of analog inputs	8; Single-ended
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

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|---------------------------------------|--------------------------|
| • 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

- | | |
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| • shielded, max. | 200 m |
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Analog value generation for the inputs

Integration and conversion time/resolution per channel

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|--|--------|
| • Resolution with overrange (bit including sign), max. | 16 bit |
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• 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 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	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 area), (+/-)	0.05 %
Operational error limit in overall temperature range	
• Current, relative to input area, (+/-)	0.5 %
Basic error limit (operational limit at 25 °C)	
• Current, relative to input area, (+/-)	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

Interrupts/diagnostics/status information	
Alarms	
• Diagnostic alarm	Yes
• Limit value alarm	No
Diagnostic messages	
• Diagnostics	Yes
• 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	

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|--|-------------------------|
| • 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

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| • between the channels | No |
| • between the channels and the backplane bus | Yes |
| • between the channels and the supply voltage of the electronics | No |

Permissible potential difference

between different circuits	75 V DC/60 V AC (base isolation)
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Isolation

Isolation tested with	707 V DC (type test)
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Dimensions

Width	15 mm
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Weights

Weight, approx.	31 g
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last modified:	21.07.2015
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