

SIMATIC ET 200SP, Analog input module, AI 2xU Standard Pack
 quantity: 1 unit, suitable for BU type A0, A1, Color code CC00,
 Module diagnostics, 16 bit



General information	
Product type designation	AI 2xU ST
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	CC00
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.	37 mA
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Encoder supply

24 V encoder supply

• 24 V	No
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Additional 24 V encoder supply

• 24 V	No
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Power loss

Power loss, typ.	0.9 W
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Address area

Address space per module

• Address space per module, max.	4 byte; + 1 byte for QI information
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Analog inputs

Number of analog inputs	2
• For voltage measurement	2
permissible input voltage for voltage input (destruction limit), max.	30 V
Cycle time (all channels), min.	500 μ s

Input ranges (rated values), voltages

• 0 to +10 V	Yes; 15 bit
• Input resistance (0 to 10 V)	180 k Ω
• 1 V to 5 V	Yes; 15 bit
• Input resistance (1 V to 5 V)	180 k Ω
• -10 V to +10 V	Yes; 16 bit incl. sign
• Input resistance (-10 V to +10 V)	180 k Ω
• -5 V to +5 V	Yes; 16 bit incl. sign
• Input resistance (-5 V to +5 V)	180 k Ω

Cable length

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

Measurement principle	Sigma Delta
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Integration and conversion time/resolution per channel

<ul style="list-style-type: none"> • Resolution with overrange (bit including sign), max. 	16 bit
<ul style="list-style-type: none"> • Integration time, parameterizable 	Yes
<ul style="list-style-type: none"> • Interference voltage suppression for interference frequency f1 in Hz 	16.6 / 50 / 60 Hz / off
<ul style="list-style-type: none"> • Conversion time (per channel) 	50 ms @ 60 Hz, 60 ms @ 50 Hz, 180 ms @ 16.6 Hz, 250 μs without filter

Smoothing of measured values	
<ul style="list-style-type: none"> • Number of smoothing levels 	4
<ul style="list-style-type: none"> • parameterizable 	Yes
<ul style="list-style-type: none"> • Step: None 	Yes; 1 x cycle time
<ul style="list-style-type: none"> • Step: low 	Yes; 4 x cycle time
<ul style="list-style-type: none"> • Step: Medium 	Yes; 8 x cycle time
<ul style="list-style-type: none"> • Step: High 	Yes; 16 x cycle time

Encoder	
Connection of signal encoders	
<ul style="list-style-type: none"> • for voltage measurement 	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	
<ul style="list-style-type: none"> • Voltage, relative to input range, (+/-) 	0.5 %
Basic error limit (operational limit at 25 °C)	
<ul style="list-style-type: none"> • Voltage, relative to input range, (+/-) 	0.3 %
Interference voltage suppression for $f = n \times (f_1 \pm 1 \%)$, $f_1 =$ interference frequency	
<ul style="list-style-type: none"> • Series mode interference (peak value of interference < rated value of input range), min. 	70 dB
<ul style="list-style-type: none"> • Common mode voltage, max. 	10 V
<ul style="list-style-type: none"> • Common mode interference, min. 	90 dB

Isochronous mode	
Isochronous operation (application synchronized up to terminal)	No

Interrupts/diagnostics/status information	
Diagnostics function	Yes
Alarms	
<ul style="list-style-type: none"> • Diagnostic alarm 	Yes
<ul style="list-style-type: none"> • Limit value alarm 	No
Diagnostic messages	

• Monitoring the supply voltage	Yes
• Wire-break	No
• Short-circuit	Yes; at 1 to 5 V
• 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	No
• between the channels and backplane bus	Yes
• between the channels and the power supply of the electronics	Yes

Permissible potential difference

between the inputs (UCM)	10 Vpp
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Isolation

Isolation tested with	707 V DC (type test)
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Dimensions

Width	15 mm
Height	73 mm
Depth	58 mm

Weights

Weight, approx.	31 g
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last modified: 01/23/2018