

SIMATIC ET 200SP, ANALOG INPUT MODULE, AI 2XU  
STANDARD PACKING UNIT: 1 PIECE, FITS TO BU-TYPE A0, A1,  
COLOR CODE CC00, MODULE DIAGNOSIS, 16BIT



General information	
Product type designation	ET 200SP, AI 2xU Standard
Firmware version	V1.0
<ul style="list-style-type: none"><li>FW update possible</li></ul>	Yes
usable BaseUnits	BU type A0, A1
Color code for module-specific color identification plate	CC00
Product function	
<ul style="list-style-type: none"><li>I&amp;M data</li></ul>	Yes; I&M0 to I&M3
<ul style="list-style-type: none"><li>Scalable measuring range</li></ul>	No
Engineering with	
<ul style="list-style-type: none"><li>STEP 7 TIA Portal configurable/integrated as of version</li></ul>	V13 SP1
<ul style="list-style-type: none"><li>STEP 7 configurable/integrated as of version</li></ul>	V5.5 SP3 / -
<ul style="list-style-type: none"><li>PROFIBUS as of GSD version/GSD revision</li></ul>	GSD Revision 5
<ul style="list-style-type: none"><li>PROFINET as of GSD version/GSD revision</li></ul>	GSDML V2.3
Operating mode	
<ul style="list-style-type: none"><li>Oversampling</li></ul>	No
<ul style="list-style-type: none"><li>MSI</li></ul>	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
permissible input voltage for voltage input (destruction limit), max.	30 V
Cycle time (all channels), min.	500 $\mu$ s

### Input ranges (rated values), voltages

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

### Cable length

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

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

<ul style="list-style-type: none"> <li>Resolution with overrange (bit including sign), max.</li> <li>Integration time, parameterizable</li> <li>Interference voltage suppression for interference frequency <math>f_1</math> in Hz</li> <li>Conversion time (per channel)</li> </ul>	16 bit Yes 16.6 / 50 / 60 Hz / off 50 ms @ 60 Hz, 60 ms @ 50 Hz, 180 ms @ 16.6 Hz, 250 $\mu$ s without filter
<b>Smoothing of measured values</b>	
<ul style="list-style-type: none"> <li>Number of levels</li> <li>parameterizable</li> <li>Step: None</li> <li>Step: low</li> <li>Step: Medium</li> <li>Step: High</li> </ul>	4 Yes Yes; 1 x cycle time Yes; 4 x cycle time Yes; 8 x cycle time Yes; 16 x cycle time
<b>Encoder</b>	
<b>Connection of signal encoders</b>	
<ul style="list-style-type: none"> <li>for voltage measurement</li> </ul>	Yes
<b>Errors/accuracies</b>	
Linearity error (relative to full-scale), (+/-)	0.01 %
Temperature error (relative to full-scale), (+/-)	0.005 %/K
Crosstalk between the inputs, min.	-50 dB
Repeat accuracy in steady state at 25 °C (relative to full-scale), (+/-)	0.05 %
<b>Operational error limit in overall temperature range</b>	
<ul style="list-style-type: none"> <li>Voltage, relative to full-scale, (+/-)</li> </ul>	0.5 %
<b>Basic error limit (operational limit at 25 °C)</b>	
<ul style="list-style-type: none"> <li>Voltage, relative to full-scale, (+/-)</li> </ul>	0.3 %
<b>Interference voltage suppression for <math>f = n \times (f_1 \pm 1 \%)</math>, <math>f_1</math> = interference frequency</b>	
<ul style="list-style-type: none"> <li>Series mode interference (peak value of interference &lt; rated value of input range), min.</li> <li>Common mode voltage, max.</li> <li>Common mode interference, min.</li> </ul>	70 dB 10 V 90 dB
<b>Isochronous mode</b>	
Isochronous operation (application synchronized up to terminal)	No
<b>Interrupts/diagnostics/status information</b>	
Diagnostics	Yes
<b>Alarms</b>	
<ul style="list-style-type: none"> <li>Diagnostic alarm</li> <li>Limit value alarm</li> </ul>	Yes No
<b>Diagnostic messages</b>	

• 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 different circuits	75 V DC/60 V AC (base isolation)
between the inputs (UCM)	10 Vpp

#### 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:** 20.05.2016