

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



General information	
Product type designation	ET 200SP, AI 8x1 2-/4-wire Basic
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	CC01
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.	25 mA; without sensor supply
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## 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
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## Address area

### Address space per module

- |                                  |         |
|----------------------------------|---------|
| • Address space per module, max. | 16 byte |
|----------------------------------|---------|

## 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

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

<ul style="list-style-type: none"> <li>• Interference voltage suppression for interference frequency f1 in Hz</li> </ul>	16.67 / 50 / 60 / 4 800 (16.67 / 50 / 60)
<ul style="list-style-type: none"> <li>• Conversion time (per channel)</li> </ul>	180 / 60 / 50 / 0.625 (67.5 / 22.5 / 18.75) ms
<b>Smoothing of measured values</b>	
<ul style="list-style-type: none"> <li>• Number of levels</li> </ul>	4; None; 4/8/16 times
<ul style="list-style-type: none"> <li>• parameterizable</li> </ul>	Yes
<b>Encoder</b>	
<b>Connection of signal encoders</b>	
<ul style="list-style-type: none"> <li>• for voltage measurement</li> </ul>	No
<ul style="list-style-type: none"> <li>• for current measurement as 2-wire transducer</li> </ul>	Yes
<ul style="list-style-type: none"> <li>— Burden of 2-wire transmitter, max.</li> </ul>	650 Ω
<ul style="list-style-type: none"> <li>• for current measurement as 4-wire transducer</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>• Current, 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>• Current, relative to full-scale, (+/-)</li> </ul>	0.3 %
<b>Interference voltage suppression for <math>f = n \times (f1 \pm 1 \%)</math>, f1 = 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> </ul>	70 dB; With conversion time 67.5 / 22.5 / 18.75 ms: 40 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> </ul>	Yes
<ul style="list-style-type: none"> <li>• Limit value alarm</li> </ul>	No
<b>Diagnostic messages</b>	
<ul style="list-style-type: none"> <li>• Monitoring the supply voltage</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• Wire-break</li> </ul>	Yes; at 4 to 20 mA
<ul style="list-style-type: none"> <li>• Short-circuit</li> </ul>	Yes; Sensor supply to M; module by module
<ul style="list-style-type: none"> <li>• Group error</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• Overflow/underflow</li> </ul>	Yes
<b>Diagnostics indication LED</b>	
<ul style="list-style-type: none"> <li>• Monitoring of the supply voltage (PWR-LED)</li> </ul>	Yes; Green LED

- Channel status display
- for channel diagnostics
- for module diagnostics

Yes; Green LED  
 No  
 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

### Permissible potential difference

#### between different circuits

75 V DC/60 V AC (base isolation)

### Isolation

#### Isolation tested with

707 V DC (type test)

### Dimensions

#### Width

15 mm

### Weights

#### Weight, approx.

31 g

#### last modified:

14.05.2016