



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 FS21                                      |
| Firmware version  | V1.0.1   |
| • FW update possible                                      | Yes  |
| usable BaseUnits  | BU type A0, A1                                 |
| Color code for module-specific color identification plate | CC02   |
| Product function  |  |
| • I&M data  | Yes; I&M0 to I&M3                              |
| • Isochronous mode  | No   |
| • Measuring range scalable                                | No   |
| Engineering with  |  |
| • STEP 7 TIA Portal configurable/integrated from version  | V13 SP1  |
| • STEP 7 configurable/integrated from version             | V5.5 SP3 / -                                   |
| • PROFIBUS from GSD version/GSD revision                  | One GSD file each, Revision 3 and 5 and higher |
| • PROFINET from GSD version/GSD revision                  | GSDML V2.3                                     |
| Operating mode  |  |
| • Oversampling  | No   |
| • MSI   | No   |
| CiR - Configuration in RUN                                |  |
| Reparameterization possible in RUN                        | No   |
| 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                                    |  |
| Automatic encoding  | Yes  |
| • Mechanical coding element                               | Yes  |
| • Type of mechanical coding element                       | type B   |
| Selection of BaseUnit for connection variants             |  |
| • 1-wire connection                                       | BU type A0, A1                                 |

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|--|---|
| • 2-wire connection  | BU type A0, A1  |
| <b>Analog inputs</b>   |   |
| 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   |
| <b>Input ranges (rated values), voltages</b>   |   |
| • 0 to +10 V   | Yes; 15 bit   |
| — Input resistance (0 to 10 V)   | 100 kΩ  |
| • -10 V to +10 V   | Yes; 16 bit incl. sign                                    |
| — Input resistance (-10 V to +10 V)  | 100 kΩ  |
| <b>Cable length</b>  |   |
| • shielded, max.   | 200 m   |
| <b>Analog value generation for the inputs</b>  |   |
| <b>Integration and conversion time/resolution per channel</b>  |   |
| • Resolution with overrange (bit including sign), max.   | 16 bit  |
| • 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            |
| <b>Smoothering of measured values</b>  |   |
| • Number of smoothering levels   | 4   |
| • parameterizable  | Yes   |
| • Step: None   | Yes   |
| • Step: low  | Yes   |
| • Step: Medium   | Yes   |
| • Step: High   | Yes   |
| <b>Encoder</b>   |   |
| <b>Connection of signal encoders</b>   |   |
| • for voltage measurement  | Yes   |
| • for current measurement as 4-wire transducer   | No  |
| <b>Errors/accuracies</b>   |   |
| 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 %  |
| <b>Operational error limit in overall temperature range</b>  |   |
| • Voltage, relative to input range, (+/-)  | 0.5 %   |
| <b>Basic error limit (operational limit at 25 °C)</b>  |   |
| • Voltage, relative to input range, (+/-)  | 0.3 %   |
| <b>Interference voltage suppression for <math>f = n \times (f1 \pm 1 \%)</math>, f1 = interference frequency</b> |   |
| • 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 |
| <b>Interrupts/diagnostics/status information</b>   |   |
| Diagnostics function   | Yes   |
| <b>Alarms</b>  |   |
| • Diagnostic alarm   | Yes   |
| • Limit value alarm  | No  |
| <b>Diagnoses</b>   |   |
| • Monitoring the supply voltage  | Yes   |
| • Wire-break   | No  |
| • Short-circuit  | No  |
| • Group error  | Yes   |
| • Overflow/underflow   | Yes; Module-wise  |
| <b>Diagnostics indication LED</b>  |   |
| • 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 | No   |
| Isolation  |  |
| Isolation tested with  | 707 V DC (type test)   |
| Ambient conditions   |  |
| Ambient temperature during operation                           |  |
| • horizontal installation, min.                                | -30 °C; < 0 °C as of FS04  |
| • horizontal installation, max.                                | 60 °C  |
| • vertical installation, min.                                  | -30 °C; < 0 °C as of FS04  |
| • 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 ET 200SP system manual |
| Dimensions   |  |
| Width  | 15 mm  |
| Height   | 73 mm  |
| Depth  | 58 mm  |
| Weights  |  |
| Weight, approx.  | 31 g   |

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