



SIMATIC ET 200BL, analog input module, AI 8xTC, module diagnostics, 16 bit packing unit: 1 unit, color code CC00

General information	
Product type designation	AI 8xTC
HW functional status	from FS01
Firmware version	V1.0.0
• FW update possible	Yes
Color code for module-specific color-coded label	CC00
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	STEP 7 V18 or higher; MicroWin V3.0 or higher; Configuration in ES via GSDML;
• PROFINET from GSD version/GSD revision	GSDML V2.45
Operating mode	
• Oversampling	No
• MSI	No
Supply voltage	
Rated value (DC)	24 V
permissible range, lower limit (DC)	20.4 V
permissible range, upper limit (DC)	28.8 V
Reverse polarity protection	Yes
external protection for power supply lines	Yes; 24 V DC/10 A miniature circuit breaker with type B or C tripping characteristic
Input current	
Current consumption (rated value)	18 mA
Current consumption, max.	25 mA
Current carrying capacity	
For P1 and P2 bus, max.	10 A
Power loss	
Power loss, typ.	0.4 W
Address area	
Address space per module	
• Address space per module, max.	16 byte
• Inputs	16 byte
Hardware configuration	
Automatic encoding	No
• Mechanical coding element	No
Formation of potential groups	

• support of potential groups	Yes
Analog inputs	
Number of analog inputs	8; Differential inputs
• For voltage measurement	8
• For thermocouple measurement	8
permissible input voltage for voltage input (destruction limit), max.	30 V
Cycle time (all channels), min.	Sum of the basic conversion times and additional processing times (depending on the parameterization of the active channels)
Technical unit for temperature measurement adjustable	Yes; Celsius / Fahrenheit
Input ranges (rated values), voltages	
• -80 mV to +80 mV	Yes; 16 bit incl. sign
— Input resistance (-80 mV to +80 mV)	1 MΩ
Input ranges (rated values), thermocouples	
• type B	Yes; 16 bit incl. sign
— Input resistance (Type B)	1 MΩ
• type C	Yes; 16 bit incl. sign
— Input resistance (Type C)	1 MΩ
• Type E	Yes; 16 bit incl. sign
— Input resistance (Type E)	1 MΩ
• Type J	Yes; 16 bit incl. sign
— Input resistance (type J)	1 MΩ
• Type K	Yes; 16 bit incl. sign
— Input resistance (Type K)	1 MΩ
• Type N	Yes; 16 bit incl. sign
— Input resistance (Type N)	1 MΩ
• Type R	Yes; 16 bit incl. sign
— Input resistance (Type R)	1 MΩ
• Type S	Yes; 16 bit incl. sign
— Input resistance (Type S)	1 MΩ
• Type T	Yes; 16 bit incl. sign
— Input resistance (Type T)	1 MΩ
Thermocouple (TC)	
Temperature compensation	
— Parameterizable	Yes
— internal temperature compensation	Yes
— Compensation for 0 °C reference point temperature	Yes
— internal comparison point	Yes; inside the module
— fixed reference temperature	Yes
Cable length	
• shielded, max.	50 m
Analog value generation for the inputs	
Measurement principle	integrating (Sigma-Delta)
Integration and conversion time/resolution per channel	
• Resolution with overrange (bit including sign), max.	16 bit
• Integration time, parameterizable	Yes
• Basic conversion time, including integration time (ms)	
— additional processing time for wire-break check	1 ms
• Interference voltage suppression for interference frequency f1 in Hz	16.6 / 50 / 60 Hz
• Conversion time (per channel)	180 / 60 / 50 ms
Smoothing of measured values	
• Number of smoothing levels	4; None; 4/8/16 times
• Parameterizable	Yes
• Step: None	Yes
• Step: low	Yes; 4x smoothing
• Step: Medium	Yes; 8x smoothing
• Step: High	Yes; 16x smoothing
Encoder	
Connection of signal encoders	

• 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	
• Voltage, relative to input range, (+/-)	0.1 %
• Thermocouple, relative to input range, (+/-)	0.1 %
Basic error limit (operational limit at 25 °C)	
• Voltage, relative to input range, (+/-)	0.05 %
• Thermocouple, relative to input range, (+/-)	0.05 %
Interference voltage suppression for $f = n \times (f_1 \pm 1 \%)$, f_1 = interference frequency	
• Series mode interference (peak value of interference < rated value of input range), min.	70 dB
Interrupts/diagnostics/status information	
Diagnostics function	Yes
Alarms	
• Diagnostic alarm	Yes
• Limit value alarm	No
Diagnoses	
• Monitoring the supply voltage	Yes
• Wire break	Yes; module-wise
• short-circuit	No
• Group error	No
• Overflow/Underflow	Yes; module-wise
Diagnostics indication LED	
• 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	
between backplane bus and supply voltage	Yes
Potential separation analog inputs	
• between the channels	No
• between the channels and backplane bus	Yes
• between the channels and the power supply of the electronics	Yes
Isolation	
Isolation tested with	500 V AC/707 V DC, type test
Standards, approvals, certificates	
Ecological footprint	
• environmental product declaration	Yes
Global warming potential	
— global warming potential, (total) [CO2 eq]	9.28 kg
— global warming potential, (during production) [CO2 eq]	3.16 kg
— global warming potential, (during operation) [CO2 eq]	6.21 kg
— global warming potential, (after end of life cycle) [CO2 eq]	-0.106 kg
Use in hazardous areas	
• EAC Ex	No
Ambient conditions	
Ambient temperature during operation	
• horizontal installation, min.	-30 °C
• horizontal installation, max.	60 °C
• vertical installation, min.	-30 °C
• 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 200BL system manual

Connection method

Terminals	
Conductor cross-section, min.	0.14 mm²; follow detailed information in System manual of ET 200BL
Conductor cross-section, max.	2.5 mm²; follow detailed information in System manual of ET 200BL
Number of process terminals to I/O module	16
Number of terminals with connection to P1 and P2 bus	2

Dimensions

Width	15 mm
Height	117 mm
Depth	74 mm

Weights

Weight, approx.	82 g
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Classifications

	Version	Classification
eClass	16	27-24-26-01
eClass	14	27-24-26-01
eClass	12	27-24-26-01
eClass	9.1	27-24-26-01
eClass	9	27-24-26-01
eClass	8	27-24-26-01
eClass	7.1	27-24-26-01
eClass	6	27-24-26-01
ETIM	10	EC001596
ETIM	9	EC001596
ETIM	8	EC001596
ETIM	7	EC001596

Approvals / Certificates

General Product Approval



[China RoHS](#)



General Product Approval	EMV	Environment
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