



SIMATIC ET 200BL, analog input module, AI 8xU, module diagnostics, 16 bit packing unit: 1 unit, color code CC02

General information	
Product type designation	AI 8xU
HW functional status	from FS01
Firmware version	V1.0.0
• FW update possible	Yes
Color code for module-specific color-coded label	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	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)	12 mA
Current consumption, max.	20 mA
Current carrying capacity	
For P1 and P2 bus, max.	10 A
Power loss	
Power loss, typ.	0.3 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; Single-ended
• For voltage measurement	8
permissible input voltage for voltage input (destruction limit), max.	30 V
Cycle time (all channels), min.	50 ms; per channel
Input ranges (rated values), voltages	
• 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
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
• Interference voltage suppression for interference frequency f1 in Hz	50 / 60 Hz
• Conversion time (per channel)	60 / 50 ms
Smoothing of measured values	
• Number of smoothing levels	4
• 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, (+/-)	0.5 %
Basic error limit (operational limit at 25 °C)	
• Voltage, relative to input range, (+/-)	0.3 %
Interference voltage suppression for $f = n \times (f1 \pm 1 \%)$, f1 = 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	No
• 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	No		
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.	81 g		
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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