



SIMATIC ET 200SP, Analog input module, AI 2 X SG 4-/6-wire High Speed, two-channel analog input module for strain gauges (full bridges), Color code CC00, Module diagnostics 28/16 bit, 2xLC load cell interface (1-4mV/V), suitable for BU type A0, packing quantity: 1 unit

General information	
Product type designation	AI 2xSG 4-/6-wire HS
HW functional status	01
Firmware version	V1.0.1
• FW update possible	Yes
usable BaseUnits	BU type A0
Color code for module-specific color-coded label	CC00
Product function	
• I&M data	Yes; I&M0 to I&M3
• Isochronous mode	Yes
• Measuring range scalable	Yes
• Scalable measured values	No
• Adjustment of measuring range	Yes; $\pm 0.5 \dots 320$ mV/V
Engineering with	
• STEP 7 TIA Portal configurable/integrated from version	V14 SP1
• STEP 7 configurable/integrated from version	V5.6
• PROFIBUS from GSD version/GSD revision	V03.01.105
• PROFINET from GSD version/GSD revision	GSDML V2.33
Operating mode	
• Oversampling	Yes; 2 channels per module
• MSI	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 (rated value)	70 mA
Encoder supply	
Output voltage (DC)	4.85 V
Short-circuit protection	Yes
Output current	
• Rated value	60 mA; Per channel
Power	
Power consumption from the backplane bus	65 mW
Power loss	

Power loss, typ.	1.5 W
Address area	
Address space per module	
<ul style="list-style-type: none"> Address space per module, max. Inputs Outputs 	32 byte 32 byte 8 byte
Hardware configuration	
Automatic encoding	Yes
<ul style="list-style-type: none"> Mechanical coding element Type of mechanical coding element 	Yes Type A
Analog inputs	
Number of analog inputs	2; Differential inputs
Cycle time (all channels), min.	100 μ s
Analog input with oversampling	Yes
<ul style="list-style-type: none"> Values per cycle, max. Resolution, min. 	14 100 μ s
Input ranges	
<ul style="list-style-type: none"> Strain gauges (full bridges) 	Yes
Cable length	
<ul style="list-style-type: none"> shielded, max. 	500 m
Analog value generation for the inputs	
Measurement principle	Sigma Delta
Integration and conversion time/resolution per channel	
<ul style="list-style-type: none"> Resolution with overrange (bit including sign), max. Integration time, parameterizable Interference voltage suppression for interference frequency f_1 in Hz Conversion time (per channel) 	28 bit; 16 bits with oversampling Yes 60 / 50 Hz / no 100 μ s
Smoothing of measured values	
<ul style="list-style-type: none"> IIR low-pass filter frequency IIR low-pass filter ordinal number Notch filter frequency Notch filter quality Average value filter 	0.01 ... 600 Hz 1 ... 4 0.1 ... 1 000 Hz 5.00 ... 250.00 0.1 ... 655.3 ms
Encoder	
Connection of signal encoders	
<ul style="list-style-type: none"> For strain gauges (full bridges) with 4-conductor connection For strain gauges (full bridges) with 6-conductor connection Resistance of full bridge, min. Resistance of full bridge, max. 	Yes Yes 80 Ω 5 000 Ω
Errors/accuracies	
Linearity error (relative to input range), (+/-)	0.025 %
Temperature error (relative to input range), (+/-)	0.0005 %/°C; Strain gauge full bridge, 6-conductor connection
Temperature coefficient, zero point	$\leq \pm 0.25 \mu$ V/K
Temperature coefficient, span, 4-wire connection (in relation to end value)	$\leq \pm 5$ ppm/K
Temperature coefficient, span, 6-wire connection (in relation to end value)	$\leq \pm 10$ ppm/K
Basic error limit (operational limit at 25 °C)	
<ul style="list-style-type: none"> Voltage, relative to input range, (+/-) 	0.05 %; See manual for details
Isochronous mode	
Filtering and processing time (TCI), min.	87 μ s
Bus cycle time (TDP), min.	125 μ s
Interrupts/diagnostics/status information	
Diagnostics function	Yes; Diagnostic alarm
Alarms	
<ul style="list-style-type: none"> Diagnostic alarm Limit value alarm 	Yes; Parameterizable Yes; two upper and two lower limit values in each case

Diagnoses	
• Monitoring the supply voltage	Yes
• Wire break	Yes
• Short-circuit	Yes
• 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	Yes; red LED
• 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
Isolation	
Isolation tested with	707 V DC (type test)
Standards, approvals, certificates	
Ecological footprint	
• environmental product declaration	Yes
Global warming potential	
— global warming potential, (total) [CO2 eq]	42.65 kg
— global warming potential, (during production) [CO2 eq]	4.6 kg
— global warming potential, (during operation) [CO2 eq]	38 kg
— global warming potential, (after end of life cycle) [CO2 eq]	0.05 kg
Ambient conditions	
Ambient temperature during operation	
• horizontal installation, min.	-25 °C
• horizontal installation, max.	60 °C
• vertical installation, min.	-25 °C
• vertical installation, max.	50 °C
Altitude during operation relating to sea level	
• Ambient air temperature-barometric pressure-altitude	Tmin ... Tmax at 1 140 hPa ... 795 hPa (-1 000 m ... +2 000 m) // Tmin ... (Tmax - 1 K/100 m) at 795 hPa ... 701 hPa (+2 000 m ... +3 000 m)
Dimensions	
Width	15 mm
Height	73 mm
Depth	58 mm
Weights	
Weight, approx.	30 g
Classifications	

	Version	Classification
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



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For use in hazardous locations

Environment

[EM](#)



[Miscellaneous](#)



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