Overview

ET 200SP analog input module for force and torque sensors

Selection and ordering data

	Article No.
SIMATIC ET 200SP analog input module, AI 2xSG 4-, 6-wire high speed Suitable for BU type A0 color code CC00, channel diagnostics, 28/16-bit, +/- 0.05% for full-bridge strain gauges	**7MH4134-6LB00-0DA0**
Accessories	
SIMATIC ET 200SP, BaseUnit BU15-P16+A0+2B, BU type A0, push-in terminals, without AUX terminals, bridged to the left, W × H: 15 × 117 mm (1.57 × 7.09 in)	**6ES7193-6BP00-0BA0**
SIMATIC ET 200SP, BaseUnit BU15-P16+A0+2D, BU type A0, push-in terminals, without AUX terminals, new load group, W x H: 15 × 117 mm (1.57 × 7.09 in)	**6ES7193-6BP00-0DA0**
SIMATIC ET 200SP, BaseUnit BU15-P16+A10+2B, BU type A0, push-in terminals, with 10 AUX terminals, bridged to the left, W × H: 15 × 141 mm (1.57 × 7.09 in)	**6ES7193-6BP20-0BA0**
SIMATIC ET 200SP, BaseUnit BU15-P16+A10+2D, BU type A0, push-in terminals, with 10 AUX terminals, new load group, W × H: 15 × 141 mm (1.57 × 7.09 in)	**6ES7193-6BP20-0DA0**
SIMATIC ET 200SP, 5 shield connection clamps and 5 shield supports, for direct connection	**6ES7193-6SC00-1AM0**

Technical specifications

SIMATIC ET 200SP, analog input module, AI 2xSG 4-, 6-wire high speed	
General information	
Product type designation	AI 2xSG 4-/6-wire HS
Product function	
• I&M data	Yes, I&M0 to I&M3
• Measuring range scalable	Yes
• Measured values scalable	No
• Measuring range adaptation	Yes; ± 0.5 ... 320 mV/V
Engineering with	
• STEP 7 TIA Portal can be configured/integrated as of version	V14 SP1
• STEP 7 can be configured/integrated as of version	V5.6
• PROFIBUS as of GSD version/GSD revision	V03.01.105
• PROFINET as of GSD version/GSD revision	GSDML V2.33
Operating mode	
• Oversampling	Yes; 2 channels per module
• MSI	No
CiR – Configuration in RUN	
Parameter reassignment possible in RUN	Yes
Calibration possible in RUN	No
Supply voltage	
Rated value (DC)	24 V
Reverse polarity protection	Yes
Analog inputs	
No. of analog inputs	2; differential inputs
Cycle time (all channels), min.	100 µs
Analog input with oversampling	Yes
• Values per cycle, max.	14
• Resolution, min.	100 µs
Input ranges	
• Strain gauge (full bridge)	Yes
Cable length	
• Shielded, max.	500 m
Generation of analog input values	
Measuring principle	Sigma delta
Integration and conversion time/resolution per channel	
• Resolution with overrange (bits including sign), max.	28 bits; 16 bits with oversampling
• Configurable integration time	Yes
• Interference voltage suppression for interference frequency f1 in Hz	60 / 50 Hz / no
• Conversion time (per channel)	100 µs
Measured value smoothing	
• IIR low-pass filter frequency	0.01 ... 600 Hz
• IIR low-pass filter ordinal number	1 ... 4
• Notch filter frequency	0.1 ... 1 000 Hz
• Notch filter quality	5.00 ... 250.00
• Average value filter	0.1 ... 655.3 ms
Encoders **Connection of sensors**	
• For strain gauge (full bridge) with 4-wire connection	Yes
• For strain gauge (full bridge) with 6-wire connection	Yes
• Resistance of full bridge min.	80 W
• Resistance of full bridge max.	5 000 W

Technical specifications (Continued)

SIMATIC ET 200SP, analog input module, AI 2xSG 4-, 6-wire high speed	
Errors/accuracies	
Temperature coefficient zero point	≤ ±0.25 mV/K
Temperature coefficient, span 4-wire connection (in relation to end value)	≤ ±5 ppm/K
Temperature coefficient, span 6-wire connection (in relation to end value)	≤ ±10 ppm/K
Basic error limit (operational limit at 25 °C)	
• Voltage, related to input range, (+/-)	0.05%; see manual for details
Isochronous mode	
Isochronous mode (application synchronized up to terminal)	Yes
Filter and processing (TWE), min.	87 µs
Bus cycle time (TDP), min.	125 µs
Interrupts/diagnostics/status information	
Diagnostic function	Yes
Interrupts	
• Diagnostic interrupt	Yes
• Limit alarms	Yes, two high and two low limits
Diagnostic messages	
• Monitoring of supply voltage	Yes
• Wire break	Yes
• Short circuit	Yes
• Group error	Yes
• Overflow/underflow	Yes
Diagnostics LED	
• Monitoring of 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
Galvanic isolation Galvanic isolation of channels	
• Between the channels and backplane bus	Yes
Insulation	
Insulation tested with	707 V DC (type test)
Standards, approvals, certificates	
Suitable for safety functions	No
Ambient conditions Ambient temperature in operation	
• Horizontal mounting, min.	-25 °C
• Horizontal mounting, max.	60 °C
• Vertical mounting, min.	-25 °C
• Vertical mounting, max.	50 °C
Operating height in relation to sea level	
• With reference to ambient temperature, air pressure and altitude	T_{min} ... T_{max} at 1 140 hPa ... 795 hPa (-1 000 m ... +2 000 m) T_{min} ... (T_{max} - 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
Weight	
Weight, approx.	45 g