

Siemens
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SIMATIC ET 200SP HA, vibration protection 4xAI, 8xAQ, 4xDI, 6xDI/DQ suitable for terminal block H1, N0 color code CC00,

General information	
Product type designation	Vibration protection module 4 channels
HW functional status	FS04
Firmware version	V1.2
• FW update possible	Yes
Color code for module-specific color identification plate	CC00
Product function	
• I&M data	Yes; I&M0 to I&M3
• Isochronous mode	No
Engineering with	
• STEP 7 configurable/integrated from version	V5.6 with HSP 298 or higher
• PCS 7 configurable/integrated from version	V9.1 SP1
• SPPA-T3000 can be configured/integrated from version	V8.2 SP2
Operating mode	
• DI	Yes
• DQ	Yes
CiR - Configuration in RUN	
Reparameterization possible in RUN	Yes
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)	150 mA; without load
Current consumption, max.	2 A; At 24 V DC
from backplane bus 24 V DC, max.	21 mA
Encoder supply	
Number of outputs	6; max. depending on parameterization
Output voltage (DC)	24 V
Output voltage, min.	18.2 V
Short-circuit protection	Yes; per channel, electronic
24 V encoder supply	
• 24 V	Yes
• Short-circuit protection	Yes; per channel, electronic
• Output current per channel, max.	0.5 A

• Output current per module, max.	2 A
Power loss	
Power loss, typ.	4 W
Address area	
Address space per module	
• Address space per module, max.	162 byte; Quick inputs and outputs (without AI) and 4 vibration protection function chains: 88 bytes. Of which 71 bytes for inputs, 17 bytes for outputs. Quick inputs and outputs (without AI) and 8 vibration protection function chains: 154 bytes. Of which 137 bytes for inputs, 17 bytes for outputs. Quick inputs and outputs (with AI) and 4 vibration protection function chains 96 bytes. Of which 79 bytes for inputs, 17 bytes for outputs. Quick inputs and outputs (with AI) and 8 vibration protection function chains: 162 bytes. Of which 145 bytes for inputs, 17 bytes for outputs.
Hardware configuration	
Automatic encoding	
• Mechanical coding element	Yes; A, B coding; mounting position B8
Digital inputs	
Number of digital inputs	10; Of these, 6 combined DI/DQ
Digital inputs, parameterizable	Yes
Source/sink input	Yes; DI0 ... DI3 (param.); sinking DIDQ4 ... DIDQ9
Input characteristic curve in accordance with IEC 61131, type 1	Yes
Pulse extension	Yes
• Length	2 s; off, 50 ms, 100 ms, 200 ms, 500 ms, 1 s, 2 s
Input voltage	
• Rated value (DC)	24 V
• for signal "0"	0 ... 5 V
• for signal "1"	+11 to +30V
Input current	
• for signal "1", typ.	2.6 mA; 2.6 mA DI, 3.5 mA DIDQ
Input delay (for rated value of input voltage)	
for standard inputs	
— parameterizable	Yes; 0.05 / 0.1 / 0.4 / 0.8 / 1.6 / 3.2 / 12.8 / 20 ms (in each case + delay of 30 to 500 µs, depending on line length)
Cable length	
• shielded, max.	1 000 m
Digital outputs	
Number of digital outputs	6; max. depending on parameterization
Current-sinking	No
Current-sourcing	Yes
Digital outputs, parameterizable	Yes
Short-circuit protection	Yes
• Response threshold, typ.	0.95 A
Open-circuit detection	Yes
• Response threshold, typ.	45 mA
Overload protection	Yes
• Response threshold, typ.	950 mA
Limitation of inductive shutdown voltage to	L+ -(37 to 41V)
Controlling a digital input	Yes
Digital output functions, parameterizable	
• Freely usable digital output	Yes
Switching capacity of the outputs	
• with resistive load, max.	0.5 A
Load resistance range	
• lower limit	48 Ω
Output voltage	
• for signal "1", min.	18.1 V
Output current	
• for signal "1" rated value	0.5 A
Output delay with resistive load	
• "0" to "1", typ.	1 ms
• "1" to "0", typ.	100 µs

Switching frequency	
• with resistive load, max.	800 Hz
Total current of the outputs	
• Current per channel, max.	0.5 A
• Current per module, max.	2 A
Cable length	
• shielded, max.	1 000 m
Analog inputs	
Number of analog inputs	4
permissible input voltage for voltage input (destruction limit), max.	30 V
permissible input current for current input (destruction limit), max.	50 mA; Protection available against destruction
Cycle time (all channels), min.	1.25 ms; For up to 128 samples per channel
Input ranges	
• Voltage	Yes; 0 ... 10 V, -10 ... 10 V, 0 ... 20 V, -20 ... 0 V
• Current	Yes; 0 ... 20 mA, 4 ... 20 mA, -20 ... 20 mA, -30 ... 30 mA, -20 ... 0 mA
Input ranges (rated values), voltages	
• 0 to +10 V	Yes
— Input resistance (0 to 10 V)	100 k Ω
• -10 V to +10 V	Yes
— Input resistance (-10 V to +10 V)	100 k Ω
Input ranges (rated values), currents	
• 0 to 20 mA	Yes; 0 mA or 4 mA to 20 mA
— Input resistance (0 to 20 mA)	70 Ω
• -20 mA to +20 mA	Yes
— Input resistance (-20 mA to +20 mA)	70 Ω
• 4 mA to 20 mA	Yes; and 0 to 20 mA
— Input resistance (4 mA to 20 mA)	70 Ω
Cable length	
• shielded, max.	600 m
Analog outputs	
Number of analog outputs	8; 4 AQ-I, 4 AQ-U
Voltage output, short-circuit protection	Yes; per channel, electronic to chassis
Voltage output, short-circuit current, max.	10 mA
Current output, no-load voltage, max.	24 V
Cycle time (all channels), min.	625 μ s
Current signal at analog output	Yes; -50 ... 50 mA
Output ranges, voltage	
• -10 V to +10 V	Yes
Output ranges, current	
• 0 to 20 mA	Yes
• -20 mA to +20 mA	Yes; $\pm$ 30 mA, $\pm$ 50 mA
• 4 mA to 20 mA	Yes
Connection of actuators	
• for voltage output two-wire connection	Yes
Load impedance (in rated range of output)	
• with current outputs, max.	330 Ω ; 150 ohms at $\pm$ 50 mA
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.	24 bit
Smoothing of measured values	
• parameterizable	Yes
• Step: None	Yes
• Step: low	Yes
• Step: Medium	Yes
• Step: High	Yes
Analog value generation for the outputs	

Integration and conversion time/resolution per channel			
Resolution with overrange (bit including sign), max.	16 bit		
Encoder			
Connection of signal encoders			
for voltage measurement	Yes		
for current measurement as 2-wire transducer	Yes		
for current measurement as 4-wire transducer	Yes		
Connectable encoders			
Single contact / changeover contact unconnected	Yes		
2-wire sensor	Yes		
— permissible quiescent current (2-wire sensor), max.	1.5 mA		
Errors/accuracies			
Linearity error (relative to input range), (+/-)	0.05 %		
Temperature error (relative to input range), (+/-)	0.0025 %/K		
Crosstalk between the inputs, min.	60 dB		
Operational error limit in overall temperature range			
Voltage, relative to input range, (+/-)	0.3 %		
Current, relative to input range, (+/-)	0.3 %		
Interrupts/diagnostics/status information			
Diagnostics function	Yes		
Substitute values connectable	Yes		
Alarms			
Diagnostic alarm	Yes		
Diagnoses			
Monitoring the supply voltage	Yes		
Wire-break	Yes; AI 4 ... 20 mA, AQ, DQ, DI 0 ... 3		
Short-circuit to M	Yes; Encoder supply to M, channel by channel		
Short-circuit to L+	Yes; Analog inputs		
Group error	Yes		
Overflow/underflow	Yes		
Diagnostics indication LED			
RUN LED	Yes; green LED		
MAINT LED	Yes; Yellow LED		
Monitoring of the supply voltage (PWR-LED)	Yes; green PWR LED		
for module diagnostics	Yes; green/red DIAG LED		
Potential separation			
Potential separation channels			
between the channels and backplane bus	Yes		
Permissible potential difference			
between different circuits	75 V DC/60 V AC between L+ and backplane bus		
Isolation			
Isolation tested with	1 500 V DC/1 min, type test		
Ambient conditions			
Ambient temperature during operation			
horizontal installation, min.	-40 °C		
horizontal installation, max.	70 °C; Observe derating		
vertical installation, min.	-40 °C		
vertical installation, max.	60 °C		
Altitude during operation relating to sea level			
Installation altitude above sea level, max.	3 500 m		
Dimensions			
Width	22.5 mm		
Height	115 mm		
Depth	138 mm		
Weights			
Weight, approx.	200 g		
Classifications			
		Version	Classification

eClass	14	27-23-01-90
eClass	12	27-23-01-90
eClass	9.1	27-23-01-90
eClass	9	27-23-01-90
eClass	8	27-23-01-90
eClass	7.1	27-23-01-90
eClass	6	27-23-01-90
ETIM	10	EC000236
ETIM	9	EC000236
ETIM	8	EC000236
ETIM	7	EC000236

Approvals / Certificates

General Product Approval



[China RoHS](#)



[KC](#)



For use in hazardous locations

[Declaration of Con-
formity](#)



[Miscellaneous](#)

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