

Siemens
EcoTech



SIMATIC ET 200SP HA, analog HART input module, AI 16xI 2-wire HART HA, suitable for terminal block H1, M1, color code CC01, channel diagnostics, 16-bit, +/-0.1%,

General information	
Product type designation	AI 16 x I 2-wire mA HART
Firmware version	V1.1
• FW update possible	Yes; The firmware update can take more than 5 minutes.
Usable terminal block	type H1, M1, N0, H0, M0 (for details see the system manual)
Color code for module-specific color identification plate	CC01
Product function	
• I&M data	Yes; I&M0 to I&M3
Engineering with	
• STEP 7 TIA Portal configurable/integrated from version	V16
• STEP 7 configurable/integrated from version	V5.6
• PCS 7 configurable/integrated from version	V9.0
• PCS neo can be configured/integrated from version	V3.0
• PROFINET from GSD version/GSD revision	GSDML V2.3
Redundancy	
• Redundancy capability	Yes; With TB type M1
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)	80 mA; without sensor supply
Current consumption, max.	90 mA; without sensor supply
Encoder supply	
24 V encoder supply	
• 24 V	Yes
• Short-circuit protection	Yes; Electronic (response threshold 0.7 A to 1.5 A)
• Output current per channel, max.	0.5 A
• Output current per module, max.	2 A
Power loss	
Power loss, typ.	4.5 W; without sensor supply
Address area	
Address space per module	

- Address space per module, max.
- Address space per module with HART, max.
- Address space per module with MultiHART, max.

34 byte; 32-byte inputs and 2 bytes for QI information
 74 byte; 32-byte inputs and 2 bytes for QI information, 40-byte inputs for HART
 41 byte; 32-byte inputs for HART and 2 bytes for QI information, 6-byte inputs for HART, and 1-byte output for MultiHART command

Analog inputs

Number of analog inputs	16
permissible input current for current input (destruction limit), max.	30 mA
Input ranges (rated values), currents	
• 0 to 20 mA	Yes; 16 bit incl. sign
— Input resistance (0 to 20 mA)	250 Ω
• 4 mA to 20 mA	Yes; 16 bit incl. sign
— Input resistance (4 mA to 20 mA)	250 Ω
Cable length	
• shielded, max.	800 m; with unshielded cables up to 800 m, remember that (external) EMC loads can cause incorrect measured values

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; 15 bit at 0 ... 10 mA and 60 Hz interference suppression
• Integration time, parameterizable	Yes; channel by channel
Smoothing of measured values	
• parameterizable	Yes; none, weak, medium, strong, channel-by-channel

Encoder

Connection of signal encoders	
• for current measurement as 2-wire transducer	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.	60 dB
Repeat accuracy in steady state at 25 °C (relative to input range), (+/-)	0.05 %
Operational error limit in overall temperature range	
• Current, relative to input range, (+/-)	0.5 %
Basic error limit (operational limit at 25 °C)	
• Current, relative to input range, (+/-)	0.1 %

Interrupts/diagnostics/status information

Diagnostics function	Yes
Alarms	
• Diagnostic alarm	Yes
• Limit value alarm	Yes; two upper and two lower limit values in each case
Diagnoses	
• Monitoring the supply voltage	Yes
• Wire-break	Yes; channel by channel
• Short-circuit	Yes; Channel-by-channel, short-circuit of the encoder supply to ground or of an input to the encoder supply
• Overflow/underflow	Yes; channel by channel
Diagnostics indication LED	
• MAINT LED	Yes; Yellow 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 load voltage L+	No

Isolation

Isolation tested with	1 500 V DC/1 min, type test
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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; Observe derating		
Dimensions			
Width	22.5 mm		
Height	115 mm		
Depth	138 mm		
Weights			
Weight, approx.	148 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			
 EG-Konf.	Miscellaneous		China RoHS
		 UL	KC
General Product Approval		For use in hazardous locations	
 RCM		 IECEX	Declaration of Conformity
		 CCC	 UL
For use in hazardous locations		Maritime application	
 ATEX	 IECEX	Miscellaneous	 ABS
		 BUREAU VERITAS	 DNV
Maritime application		Environment	
 LRS	NK / Nippon Kaiji Kyokai	 RINA	CCS (China Classification Society)
		 EPD	 Siemens EcoTech

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