



SIMATIC ET 200SP HA, analog HART input module, AI 4xI 2-/4-Wire HART isol, suitable for terminal block K0, L0, color code CC01, channel diagnostics, 16-bit, +/- 0.1%,

General information	
Product type designation	AI 4xI 2-/4-wire HART ISOL HA
Firmware version	V1.0
• FW update possible	Yes; The firmware update can take more than 5 minutes.
Color code for module-specific color identification plate	CC40
Product function	
• I&M data	Yes; I&M0 to I&M3
Engineering with	
• STEP 7 TIA Portal configurable/integrated from version	V17
• STEP 7 configurable/integrated from version	V5.6
• PCS 7 configurable/integrated from version	V9.1
• PCS neo can be configured/integrated from version	V3.0
• PROFINET from GSD version/GSD revision	GSDML V2.35
Redundancy	
• Redundancy capability	Yes; see the system manual
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)	184 mA; sensor supply without loads
Current consumption, max.	234 mA; at 1.5 kOhm load on sensor supply
Encoder supply	
Number of outputs	4
Output voltage (DC)	24 V
Output voltage, min.	19.2 V
Short-circuit protection	Yes; Electronic
Output current	
• Rated value	20 mA
• permissible range, lower limit	0 mA
• permissible range, upper limit	23.52 mA
24 V encoder supply	
• 24 V	Yes
• Short-circuit protection	Yes
• Output current per channel, max.	23.5 mA
• Output current per module, max.	88 mA

Power loss	
Power loss, typ.	1.8 W
Address area	
Address space per module	
• Address space per module, max.	9 byte; 8 bytes for inputs and 1 byte for QI information
• Address space per module with HART, max.	29 byte; 8 bytes for inputs, 1 byte for QI information, 20 bytes for HART information
• Address space per module with MultiHART, max.	16 byte; 8 bytes for inputs, 1 byte for QI information, 6 bytes for HART information, 1 byte for HART command
Analog inputs	
Number of analog inputs	4
• For current measurement	4
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	
Integration and conversion time/resolution per channel	
• Resolution with overrange (bit including sign), max.	16 bit; 14 bit at 60 Hz (0 ... 10 mA), 16 bit at 10 Hz, 15 bit at 50 Hz and 15 bit at 60 Hz interference suppression
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	Yes; 125 V AC / 150 V DC (when using terminal blocks with push-in terminals); SELV/PELV (when using terminal blocks with D-SUB)
• between the channels and backplane bus	Yes; 125 V AC / 150 V DC (when using terminal blocks with push-in terminals); SELV/PELV (when using terminal blocks with D-SUB)
• between the channels and the power supply of the electronics	Yes; 125 V AC / 150 V DC (when using terminal blocks with push-in terminals); SELV/PELV (when using terminal blocks with D-SUB)

Permissible potential difference

between the channels	125 V AC / 150 V DC (when using terminal blocks with push-in terminals); SELV/PELV (when using terminal blocks with D-SUB)
between the channels and supply voltage	125 V AC / 150 V DC (when using terminal blocks with push-in terminals); SELV/PELV (when using terminal blocks with D-SUB)
between the channels and backplane bus	125 V AC / 150 V DC (when using terminal blocks with push-in terminals); SELV/PELV (when using terminal blocks with D-SUB)

Isolation

tested with	
• between backplane bus and load voltage	3 000 V DC/1 min, type test
• between the channels and load voltage	between the channels 2 100 V DC/1 min, type test (when using terminal blocks with push-in terminals); 1 200 V DC/1 min, type test (when using terminal blocks with D-SUB)
• between the channels and backplane bus	3 000 V DC/1 min, type test
• Between channels	between the channels 4 200 V DC/1 min, type test (when using terminal blocks with push-in terminals); 1 200 V DC/1 min, type test (when using terminal blocks with D-SUB)

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.	70 °C; Observe derating

Dimensions

Width	22.5 mm
Height	115 mm
Depth	138 mm

Weights

Weight, approx.	163 g
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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



[Miscellaneous](#)



[China RoHS](#)

[KC](#)



General Product Approval	For use in hazardous locations
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[Declaration of Con-
formity](#)



[CCC-Ex](#)



For use in hazard-
ous locations

Maritime application

[Miscellaneous](#)



[NK / Nippon Kaiji Ky-
okai](#)

Maritime application

Environment

[CCS \(China Classifica-
tion Society\)](#)



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