

SIMATIC ET 200SP HA, ANALOG HART INPUT MODULE, AI 16X I 2-WIRE HART HA FITS TO TERMINAL BLOCK H1, M1, COLOR CODE CC01, CHANNEL DIAGNOSIS, 16BIT, +/-0.1%



General information	
Product type designation	AI 16 x I 2-wire mA HART
HW functional status	FS01
Firmware version	V1.0
<ul style="list-style-type: none"> FW update possible 	Yes
Usable terminal block	TB type H1 and M1
Color code for module-specific color identification plate	CC01
Product function	
<ul style="list-style-type: none"> I&M data 	Yes; I&M0 to I&M3
Engineering with	
<ul style="list-style-type: none"> PCS 7 configurable/integrated as of version 	V9.0
Redundancy	
<ul style="list-style-type: none"> 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	
<ul style="list-style-type: none"> • 24 V 	Yes
<ul style="list-style-type: none"> • Short-circuit protection 	Yes; Electronic (response threshold 0.7 A to 1.5 A)

Power loss	
Power loss, typ.	4.5 W; without sensor supply

Address area	
Address space per module	
<ul style="list-style-type: none"> • Address space per module, max. 	34 byte; 32-byte inputs and 2 bytes for QI information
<ul style="list-style-type: none"> • Address space per module with HART, max. 	74 byte; 32-byte inputs and 2 bytes for QI information, 40-byte inputs for HART
<ul style="list-style-type: none"> • Address space per module with MultiHART, max. 	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	
<ul style="list-style-type: none"> • 0 to 20 mA 	Yes; 16 bit incl. sign
<ul style="list-style-type: none"> • Input resistance (0 to 20 mA) 	250 Ω
<ul style="list-style-type: none"> • 4 mA to 20 mA 	Yes; 16 bit incl. sign
<ul style="list-style-type: none"> • Input resistance (4 mA to 20 mA) 	250 Ω
Cable length	
<ul style="list-style-type: none"> • shielded, max. 	800 m; Shielded

Analog value generation for the inputs	
Measurement principle	integrating (Sigma-Delta)
Integration and conversion time/resolution per channel	
<ul style="list-style-type: none"> • 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
<ul style="list-style-type: none"> • Integration time, parameterizable 	Yes; channel by channel
Smoothing of measured values	
<ul style="list-style-type: none"> • parameterizable 	Yes; none, weak, medium, strong, channel-by-channel

Encoder

Connection of signal encoders	
<ul style="list-style-type: none"> 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	
<ul style="list-style-type: none"> Current, relative to input range, (+/-) 	0.5 %
Basic error limit (operational limit at 25 °C)	
<ul style="list-style-type: none"> Current, relative to input range, (+/-) 	0.1 %
Interrupts/diagnostics/status information	
Diagnostics function	Yes
Alarms	
<ul style="list-style-type: none"> Diagnostic alarm 	Yes
<ul style="list-style-type: none"> Limit value alarm 	Yes; two upper and two lower limit values in each case
Diagnostic messages	
<ul style="list-style-type: none"> Monitoring the supply voltage 	Yes
<ul style="list-style-type: none"> Wire-break 	Yes; channel by channel
<ul style="list-style-type: none"> Short-circuit 	Yes; Channel-by-channel, short-circuit of the encoder supply to ground or of an input to the encoder supply
<ul style="list-style-type: none"> Overflow/underflow 	Yes; channel by channel
Diagnostics indication LED	
<ul style="list-style-type: none"> MAINT LED 	Yes; yellow LED
<ul style="list-style-type: none"> Monitoring of the supply voltage (PWR-LED) 	Yes; green PWR LED
<ul style="list-style-type: none"> Channel status display 	Yes; Green LED
<ul style="list-style-type: none"> for channel diagnostics 	Yes; Red LED
<ul style="list-style-type: none"> for module diagnostics 	Yes; green/red DIAG LED
Potential separation	
Potential separation channels	
<ul style="list-style-type: none"> between the channels 	No
<ul style="list-style-type: none"> between the channels and backplane bus 	Yes
<ul style="list-style-type: none"> Between the channels and load voltage L+ 	No
Isolation	
Isolation tested with	1 500 V DC/1 min, type test
Ambient conditions	
Ambient temperature during operation	
<ul style="list-style-type: none"> horizontal installation, min. 	-40 °C
<ul style="list-style-type: none"> horizontal installation, max. 	70 °C; Observe derating

- vertical installation, min.
- vertical installation, max.

-40 °C
60 °C; Observe derating

Dimensions

Width	22.5 mm
Height	115 mm
Depth	138 mm
last modified:	10/13/2017