

MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Reference package for procurement and maintenance review

PRODUCT BRAND

Siemens

PRODUCT MODEL

6ES7134-6HD01-0BA1

Siemens 6ES7134-6HD01-0BA1 is a SIMATIC ET 200SP four-channel analog input module for voltage measurement and 2-wire current transducers. It supports standard voltage and current measuring ranges.

OFFICIAL SOURCE

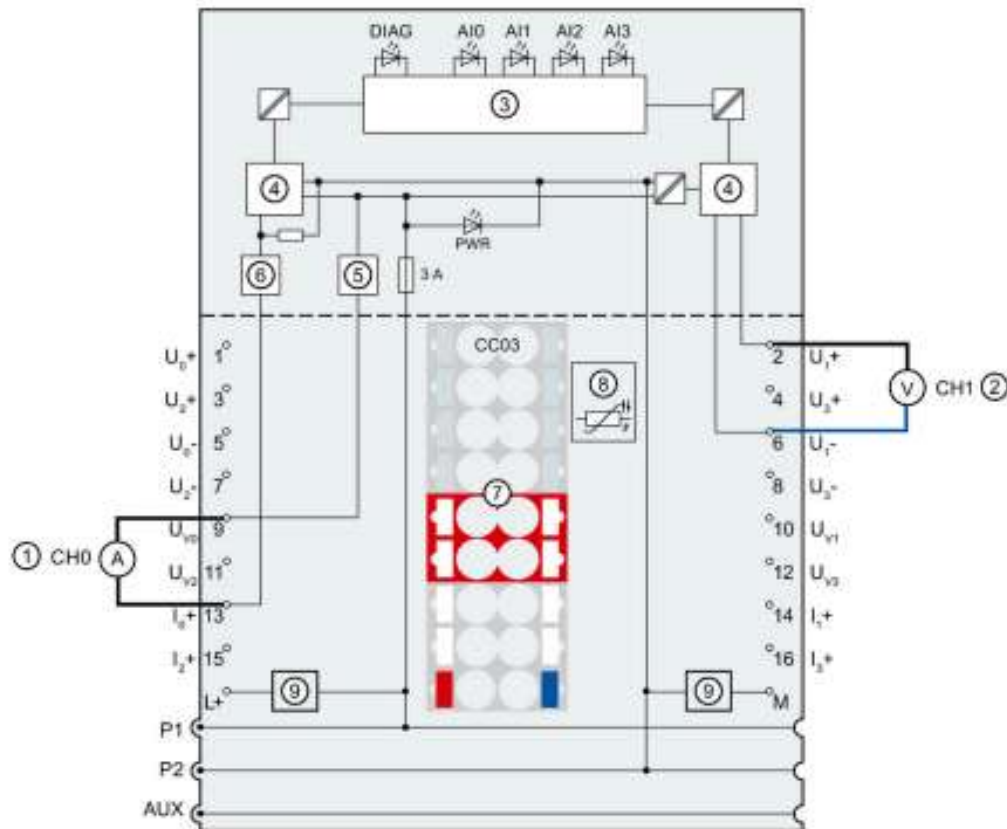
ET 200SP AI 4xU/I 2-Wire ST Equipment Manual

A5E03572832-AF

[Open current Siemens source](#)

Wiring: Voltage and current measurement 2-wire connection

The following figure shows the block diagram and an example of the terminal assignment of the analog input module AI 4xU/I 2-wire ST on the BaseUnit BU type A0/A1.



- | | | | |
|---|---|--------------------|---|
| ① | 2-wire connection for current measurement (2-wire transducer) | U_{n+} | Voltage input positive, channel n |
| ② | 2-wire connection for voltage measurement | U_{n-} | Voltage input negative, channel n |
| ③ | Backplane bus interface | U_{in} | Supply voltage, channel n |
| ④ | Analog-to-digital converter (ADC) | I_{n+} | Current input positive, channel n |
| ⑤ | Short-circuit protection | L+ | 24 V DC (infeed only with light BaseUnit) |
| ⑥ | Current limitation | M | Ground |
| ⑦ | Color-coded label with color code CC03 (optional) | P1, P2, AUX | Internal self-assembling voltage buses
Connection to left (dark BaseUnit)
Connection to left interrupted (light BaseUnit) |
| ⑧ | Temperature recording for BU type A1 only (function cannot be used for this module) | DIAG | Diagnostics LED (green, red) |
| ⑨ | Supply voltage filter circuit (only when light BaseUnit is present) | AI0, AI1, AI2, AI3 | Channel status LED (green) |
| | | PWR | Power LED (green) |

Figure 3-1 Wiring and block diagram for voltage and current measurement

Technical specifications

6.1 Technical specifications

Technical specifications of the AI 4xUI 2-wire ST

The following table shows the technical specifications as of 06/2020. You will find a data sheet including daily updated technical specifications on the Internet (<https://support.industry.siemens.com/cs/ww/en/pv/6ES7134-6HD01-0BA1/td?dl=en>).

Article number	6ES7134-6HD01-0BA1
General information	
HW functional status	From FS02
Firmware version	
• FW update possible	Yes
usable BaseUnits	BU type A0, A1
Color code for module-specific color identification plate	CC03
Product function	
• I&M data	Yes; I&M0 to I&M3
• Isochronous mode	No
• Measuring range scalable	No
Engineering with	
• STEP 7 TIA Portal configurable/integrated as of version	V14 / -
• STEP 7 configurable/integrated as of version	V5.6 and higher
• PCS 7 configurable/integrated as of version	V8.1 SP1
• PROFIBUS as of GSD version/GSD revision	One GSD file each, Revision 3 and 5 and higher
• PROFINET as of GSD version/GSD revision	GSDML V2.3
Operating mode	
• Oversampling	No
• MSI	No
GIR – Configuration in RUN	
Reparameterization possible in RUN	Yes
Calibration possible in RUN	No

Article number	6ES7134-6HD01-0BA1
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, max.	37 mA; without sensor supply
24 V encoder supply	
• 24 V	Yes
• Short-circuit protection	Yes
• Output current, max.	20 mA; max. 50 mA per channel for a duration < 10 s
Power loss	
Power loss, typ.	0.85 W; Without encoder supply voltage
Address area	
Address space per module	
• Address space per module, max.	8 byte; + 1 byte for QI information
Hardware configuration	
Automatic encoding	
• Mechanical coding element	Yes
Selection of BaseUnit for connection variants	
• 2-wire connection	BU type A0, A1
Analog Inputs	
Number of analog inputs	4; Differential inputs
permissible input voltage for voltage input (destruction limit), max.	30 V
permissible input current for current input (destruction limit), max.	50 mA
Cycle time (all channels), min.	Sum of the basic conversion times and additional processing times (depending on the parameterization of the active channels)
Input ranges (rated values), voltages	
• 0 to +10 V	Yes; 15 bit
– Input resistance (0 to 10 V)	120 kΩ
• 1 V to 5 V	Yes; 15 bit
– Input resistance (1 V to 5 V)	120 kΩ
• -10 V to +10 V	Yes; 16 bit incl. sign
– Input resistance (-10 V to +10 V)	120 kΩ
• -5 V to +5 V	Yes; 16 bit incl. sign
– Input resistance (-5 V to +5 V)	120 kΩ

Article number	6ES7134-6HD01-0BA1
Input ranges (rated values), currents	
0 to 20 mA - Input resistance (0 to 20 mA) 4 mA to 20 mA - Input resistance (4 mA to 20 mA)	Yes; 15 bit 100 Ω; + approx. 0.7 V diode forward voltage Yes; 15 bit 100 Ω; + approx. 0.7 V diode forward voltage
Cable length	
shielded, max.	1 000 m; 200 m for voltage measurement
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. - Integration time, parameterizable - Interference voltage suppression for interference frequency f1 in Hz - Conversion time (per channel)	16 bit Yes 16.6 / 50 / 60 Hz 180 / 60 / 50 ms
Smoothing of measured values	
- Number of smoothing levels - parameterizable	4; None; 4/8/16 times Yes
Encoder	
Connection of signal encoders	
- for voltage measurement - for current measurement as 2-wire transducer - Burden of 2-wire transmitter, max. - for current measurement as 4-wire transducer	Yes Yes 650 Ω No
Errors/accuracies	
Linearity error (relative to input range), (+/-)	0.01 %
Temperature error (relative to input range), (+/-)	0.005 %/K
Crosstalk between the inputs, min.	50 dB
Repeat accuracy in steady state at 25 °C (relative to input range), (+/-)	0.05 %
Operational error limit in overall temperature range	
- Voltage, relative to input range, (+/-) - Current, relative to input range, (+/-)	0.5 % 0.5 %

Article number	6ES7134-6HD01-0BA1
Isolation	
Isolation tested with	707 V DC (type test)
Standards, approvals, certificates	
Suitable for applications according to AMS 2750	Yes; Declaration of Conformity, see online support entry 109757262
Suitable for applications according to CQI-9	Yes
Ambient conditions	
Ambient temperature during operation	
• horizontal installation, min.	-30 °C
• horizontal installation, max.	60 °C
• vertical installation, min.	-30 °C
• vertical installation, max.	50 °C
Altitude during operation relating to sea level	
• Installation altitude above sea level, max.	5 000 m; Restrictions for installation altitudes > 2 000 m, see manual
Dimensions	
Width	15 mm
Height	73 mm
Depth	58 mm
Weights	
Weight, approx.	31 g

Dimension drawing

See manual ET 200SP BaseUnits
(<http://support.automation.siemens.com/WW/view/en/59753521>)