

MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Reference package for procurement and maintenance review

PRODUCT BRAND

Siemens

PRODUCT MODEL

6ES7134-6GD01-0BA1

Siemens 6ES7134-6GD01-0BA1 is a SIMATIC ET 200SP four-channel analog input module for 2-wire and 4-wire current transducers. It supports 0–20 mA, ± 20 mA and 4–20 mA measuring ranges.

OFFICIAL SOURCE

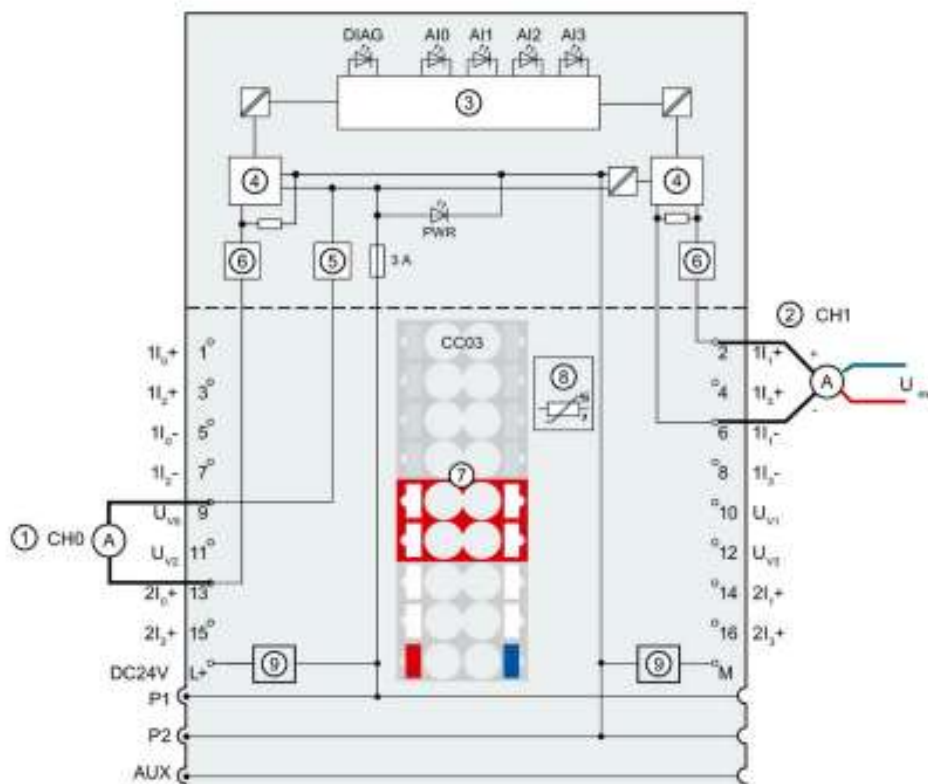
ET 200SP AI 4xI 2-/4-Wire ST Equipment Manual

A5E03551866-AF

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Wiring: Current measurement 2-wire and 4-wire connection (2-wire and 4-wire transducer)

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



①	2-wire connection for current measurement (2-wire transducer)	1In+	Current input positive, channel n
②	4-wire connection for current measurement (4-wire transducer)	1In-	Current input negative, channel n
③	Backplane bus interface	UvIn	Supply voltage, channel n
④	Analog-to-digital converter (ADC)	2In+	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)
U _{ext}	Encoder supply external	AI0, AI1, AI2, AI3	Channel status LED (green)
		PWR	Power LED (green)

Figure 3-1 Wiring and block diagram for current measurement 2-wire and 4-wire connection (2- and 4-wire transducer)

Technical specifications

6.1 Technical specifications

Technical specifications of the AI 4xI 2-/4-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/6ES7134-6GD01-0BA1/td?dl=en>).

Article number	6ES7134-6GD01-0BA1
General information	
Product type designation	AI 4xI 2-/4-wire ST
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
CIR – Configuration in RUN	
Reparameterization possible in RUN	Yes
Calibration possible in RUN	No

Article number	6ES7134-6GD01-0BA1
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
• 4-wire connection	BU type A0, A1
Analog inputs	
Number of analog inputs	4; Differential inputs
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), currents	
• 0 to 20 mA	Yes; 16 bit incl. sign
– Input resistance (0 to 20 mA)	100 Ω; + approx. 0.7 V diode forward voltage in 2-wire operation
• -20 mA to +20 mA	Yes
– Input resistance (-20 mA to +20 mA)	100 Ω
• 4 mA to 20 mA	Yes; 15 bit
– Input resistance (4 mA to 20 mA)	100 Ω; + approx. 0.7 V diode forward voltage in 2-wire operation
Cable length	
• shielded, max.	1 000 m

Article number	6ES7134-6GD01-0BA1
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
Integration time, parameterizable	Yes
Interference voltage suppression for interference frequency f_1 in Hz	16.6 / 50 / 60 Hz
Conversion time (per channel)	180 / 60 / 50 ms
Smoothing of measured values	
Number of smoothing levels	4; None; 4/8/16 times
parameterizable	Yes
Encoder	
Connection of signal encoders	
for voltage measurement	No
for current measurement as 2-wire transducer	Yes
– Burden of 2-wire transmitter, max.	650 Ω
for current measurement as 4-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.	50 dB; Applies to up to ± 5 V overvoltage in other channels
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, (+/-)	0.3 %
Interference voltage suppression for $f = n \times (f_1 \pm 1 \%)$, f_1 = interference frequency	
Series mode interference (peak value of interference < rated value of input range), min.	70 dB
Common mode voltage, max.	10 V
Common mode interference, min.	90 dB