## **SIEMENS**

## **Data sheet**

## 6ES7134-6FB00-0BA1



SIMATIC ET 200SP, Analog input module, AI 2xU Standard Pack quantity: 1 unit, suitable for BU type A0, A1, Color code CC00, Module diagnostics, 16 bit

General information	
Product type designation	AI 2xU ST
HW functional status	from FS21
Firmware version	V1.0.1
<ul> <li>FW update possible</li> </ul>	Yes
usable BaseUnits	BU type A0, A1
Color code for module-specific color identification plate	CC00
Product function	
■ I&M data	Yes; I&M0 to I&M3
<ul> <li>Isochronous mode</li> </ul>	No
Measuring range scalable	No
Engineering with	
<ul> <li>STEP 7 TIA Portal configurable/integrated from version</li> </ul>	V13 SP1
<ul> <li>STEP 7 configurable/integrated from version</li> </ul>	V5.5 SP3 / -
<ul> <li>PROFIBUS from GSD version/GSD revision</li> </ul>	One GSD file each, Revision 3 and 5 and higher
<ul> <li>PROFINET from GSD version/GSD revision</li> </ul>	GSDML V2.3
Operating mode	
Oversampling	No
• MSI	No
CiR - Configuration in RUN	
Reparameterization possible in RUN	Yes
Calibration possible in RUN	No
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
Encoder supply	
24 V encoder supply	
• 24 V	No
Additional 24 V encoder supply	
• 24 V	No
Power loss	
Power loss, typ.	0.9 W
Address area	
Address space per module	
Address space per module, max.	4 byte; + 1 byte for QI information
Hardware configuration	

Automatic encoding	Yes
Mechanical coding element	Yes
Type of mechanical coding element	Type A
Selection of BaseUnit for connection variants	
• 1-wire connection	BU type A0, A1
2-wire connection	BU type A0, A1
Analog inputs	
Number of analog inputs	2
For voltage measurement	2
permissible input voltage for voltage input (destruction limit), max.	30 V
Cycle time (all channels), min.	500 μs
Input ranges (rated values), voltages	
• 0 to +10 V	Yes; 15 bit
<ul><li>— Input resistance (0 to 10 V)</li></ul>	180 kΩ
• 1 V to 5 V	Yes; 15 bit
<ul><li>— Input resistance (1 V to 5 V)</li></ul>	180 kΩ
• -10 V to +10 V	Yes; 16 bit incl. sign
<ul><li>— Input resistance (-10 V to +10 V)</li></ul>	180 kΩ
• -5 V to +5 V	Yes; 16 bit incl. sign
<ul><li>— Input resistance (-5 V to +5 V)</li></ul>	180 kΩ
Cable length	
• shielded, max.	200 m
Analog value generation for the inputs	
Measurement principle	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 f1 in Hz	16.6 / 50 / 60 Hz / off
<ul> <li>Conversion time (per channel)</li> </ul>	50 ms @ 60 Hz, 60 ms @ 50 Hz, 180 ms @ 16.6 Hz, 250 μs without filter
Smoothing of measured values	
<ul> <li>Number of smoothing levels</li> </ul>	4
parameterizable	Yes
Step: None	Yes
Step: low	Yes; 4x smoothing
Step: Medium	Yes; 8x smoothing
Step: High	Yes; 16x smoothing
Encoder	
Connection of signal encoders	
Connection of signal encoders  • for voltage measurement	Yes
<u> </u>	Yes
for voltage measurement     Errors/accuracies	
• for voltage measurement  Errors/accuracies  Linearity error (relative to input range), (+/-)	0.01 %
• for voltage measurement  Errors/accuracies  Linearity error (relative to input range), (+/-)  Temperature error (relative to input range), (+/-)	0.01 % 0.005 %/K
for voltage measurement     Errors/accuracies     Linearity error (relative to input range), (+/-)     Temperature error (relative to input range), (+/-)     Crosstalk between the inputs, min.     Repeat accuracy in steady state at 25 °C (relative to input	0.01 %
for voltage measurement     Errors/accuracies  Linearity error (relative to input range), (+/-)  Temperature error (relative to input range), (+/-)  Crosstalk between the inputs, min.  Repeat accuracy in steady state at 25 °C (relative to input range), (+/-)  **Temperature error (relative to input range), (+/-)	0.01 % 0.005 %/K -50 dB
• for voltage measurement  Errors/accuracies  Linearity error (relative to input range), (+/-)  Temperature error (relative to input range), (+/-)  Crosstalk between the inputs, min.  Repeat accuracy in steady state at 25 °C (relative to input range), (+/-)  Operational error limit in overall temperature range	0.01 % 0.005 %/K -50 dB
for voltage measurement  Errors/accuracies  Linearity error (relative to input range), (+/-)  Temperature error (relative to input range), (+/-)  Crosstalk between the inputs, min.  Repeat accuracy in steady state at 25 °C (relative to input range), (+/-)  Operational error limit in overall temperature range      Voltage, relative to input range, (+/-)	0.01 % 0.005 %/K -50 dB 0.05 %
● for voltage measurement  Errors/accuracies  Linearity error (relative to input range), (+/-)  Temperature error (relative to input range), (+/-)  Crosstalk between the inputs, min.  Repeat accuracy in steady state at 25 °C (relative to input range), (+/-)  Operational error limit in overall temperature range  ● Voltage, relative to input range, (+/-)  Basic error limit (operational limit at 25 °C)	0.01 % 0.005 %/K -50 dB 0.05 %
● for voltage measurement  Errors/accuracies  Linearity error (relative to input range), (+/-)  Temperature error (relative to input range), (+/-)  Crosstalk between the inputs, min.  Repeat accuracy in steady state at 25 °C (relative to input range), (+/-)  Operational error limit in overall temperature range  ● Voltage, relative to input range, (+/-)  Basic error limit (operational limit at 25 °C)  ● Voltage, relative to input range, (+/-)	0.01 % 0.005 %/K -50 dB 0.05 % 0.5 %
<ul> <li>for voltage measurement</li> <li>Errors/accuracies</li> <li>Linearity error (relative to input range), (+/-)</li> <li>Temperature error (relative to input range), (+/-)</li> <li>Crosstalk between the inputs, min.</li> <li>Repeat accuracy in steady state at 25 °C (relative to input range), (+/-)</li> <li>Operational error limit in overall temperature range</li> <li>Voltage, relative to input range, (+/-)</li> <li>Basic error limit (operational limit at 25 °C)</li> <li>Voltage, relative to input range, (+/-)</li> <li>Interference voltage suppression for f = n x (f1 +/- 1 %), f1 = interference</li> <li>Series mode interference (peak value of interference &lt;</li> </ul>	0.01 % 0.005 %/K -50 dB 0.05 % 0.5 %
<ul> <li>for voltage measurement</li> <li>Errors/accuracies</li> <li>Linearity error (relative to input range), (+/-)</li> <li>Temperature error (relative to input range), (+/-)</li> <li>Crosstalk between the inputs, min.</li> <li>Repeat accuracy in steady state at 25 °C (relative to input range), (+/-)</li> <li>Operational error limit in overall temperature range         <ul> <li>Voltage, relative to input range, (+/-)</li> </ul> </li> <li>Basic error limit (operational limit at 25 °C)         <ul> <li>Voltage, relative to input range, (+/-)</li> </ul> </li> <li>Interference voltage suppression for f = n x (f1 +/- 1 %), f1 = interference of the properties o</li></ul>	0.01 % 0.005 %/K -50 dB 0.05 %  0.5 %  0.3 % erence frequency 70 dB
<ul> <li>for voltage measurement</li> <li>Errors/accuracies</li> <li>Linearity error (relative to input range), (+/-)</li> <li>Temperature error (relative to input range), (+/-)</li> <li>Crosstalk between the inputs, min.</li> <li>Repeat accuracy in steady state at 25 °C (relative to input range), (+/-)</li> <li>Operational error limit in overall temperature range</li> <li>Voltage, relative to input range, (+/-)</li> <li>Basic error limit (operational limit at 25 °C)</li> <li>Voltage, relative to input range, (+/-)</li> <li>Interference voltage suppression for f = n x (f1 +/- 1 %), f1 = interference value of interference (peak value of interference &lt; rated value of input range), min.</li> <li>Common mode voltage, max.</li> </ul>	0.01 % 0.005 %/K -50 dB 0.05 %  0.5 %  0.3 % erence frequency 70 dB 10 V
<ul> <li>for voltage measurement</li> <li>Errors/accuracies</li> <li>Linearity error (relative to input range), (+/-)</li> <li>Temperature error (relative to input range), (+/-)</li> <li>Crosstalk between the inputs, min.</li> <li>Repeat accuracy in steady state at 25 °C (relative to input range), (+/-)</li> <li>Operational error limit in overall temperature range         <ul> <li>Voltage, relative to input range, (+/-)</li> </ul> </li> <li>Basic error limit (operational limit at 25 °C)</li> <li>Voltage, relative to input range, (+/-)</li> <li>Interference voltage suppression for f = n x (f1 +/- 1 %), f1 = interference value of interference (peak value of interference &lt; rated value of input range), min.</li> <li>Common mode voltage, max.</li> <li>Common mode interference, min.</li> </ul>	0.01 % 0.005 %/K -50 dB 0.05 %  0.5 %  0.3 % erence frequency 70 dB
<ul> <li>for voltage measurement</li> <li>Errors/accuracies</li> <li>Linearity error (relative to input range), (+/-)</li> <li>Temperature error (relative to input range), (+/-)</li> <li>Crosstalk between the inputs, min.</li> <li>Repeat accuracy in steady state at 25 °C (relative to input range), (+/-)</li> <li>Operational error limit in overall temperature range         <ul> <li>Voltage, relative to input range, (+/-)</li> </ul> </li> <li>Basic error limit (operational limit at 25 °C)</li> <li>Voltage, relative to input range, (+/-)</li> <li>Interference voltage suppression for f = n x (f1 +/- 1 %), f1 = interference value of input range), min.</li> <li>Common mode voltage, max.</li> <li>Common mode interference, min.</li> <li>Interrupts/diagnostics/status information</li> </ul>	0.01 % 0.005 %/K -50 dB 0.05 %  0.5 %  0.3 % erence frequency 70 dB  10 V 90 dB
for voltage measurement  Errors/accuracies  Linearity error (relative to input range), (+/-)  Temperature error (relative to input range), (+/-)  Crosstalk between the inputs, min.  Repeat accuracy in steady state at 25 °C (relative to input range), (+/-)  Operational error limit in overall temperature range      • Voltage, relative to input range, (+/-)  Basic error limit (operational limit at 25 °C)      • Voltage, relative to input range, (+/-)  Interference voltage suppression for f = n x (f1 +/- 1 %), f1 = interference value of input range), min.      • Series mode interference (peak value of interference < rated value of input range), min.      • Common mode voltage, max.      • Common mode interference, min.  Interrupts/diagnostics/status information  Diagnostics function	0.01 % 0.005 %/K -50 dB 0.05 %  0.5 %  0.3 % erence frequency 70 dB 10 V
<ul> <li>for voltage measurement</li> <li>Errors/accuracies</li> <li>Linearity error (relative to input range), (+/-)</li> <li>Temperature error (relative to input range), (+/-)</li> <li>Crosstalk between the inputs, min.</li> <li>Repeat accuracy in steady state at 25 °C (relative to input range), (+/-)</li> <li>Operational error limit in overall temperature range         <ul> <li>Voltage, relative to input range, (+/-)</li> </ul> </li> <li>Basic error limit (operational limit at 25 °C)         <ul> <li>Voltage, relative to input range, (+/-)</li> </ul> </li> <li>Interference voltage suppression for f = n x (f1 +/- 1 %), f1 = interference value of input range), min.</li> <li>Common mode voltage, max.</li> <li>Common mode voltage, max.</li> <li>Common mode interference, min.</li> </ul> <li>Interrupts/diagnostics/status information</li> <li>Diagnostics function</li> <li>Alarms</li>	0.01 % 0.005 %/K -50 dB 0.05 %  0.5 %  0.3 % erence frequency 70 dB 10 V 90 dB  Yes
<ul> <li>for voltage measurement</li> <li>Errors/accuracies</li> <li>Linearity error (relative to input range), (+/-)</li> <li>Temperature error (relative to input range), (+/-)</li> <li>Crosstalk between the inputs, min.</li> <li>Repeat accuracy in steady state at 25 °C (relative to input range), (+/-)</li> <li>Operational error limit in overall temperature range</li> <li>Voltage, relative to input range, (+/-)</li> <li>Basic error limit (operational limit at 25 °C)</li> <li>Voltage, relative to input range, (+/-)</li> <li>Interference voltage suppression for f = n x (f1 +/- 1 %), f1 = interference value of input range), min.</li> <li>Series mode interference (peak value of interference &lt; rated value of input range), min.</li> <li>Common mode voltage, max.</li> <li>Common mode interference, min.</li> <li>Interrupts/diagnostics/status information</li> <li>Diagnostics function</li> <li>Alarms</li> <li>Diagnostic alarm</li> </ul>	0.01 % 0.005 %/K -50 dB 0.05 %  0.5 %  0.3 % erence frequency 70 dB 10 V 90 dB  Yes  Yes
<ul> <li>for voltage measurement</li> <li>Errors/accuracies</li> <li>Linearity error (relative to input range), (+/-)</li> <li>Temperature error (relative to input range), (+/-)</li> <li>Crosstalk between the inputs, min.</li> <li>Repeat accuracy in steady state at 25 °C (relative to input range), (+/-)</li> <li>Operational error limit in overall temperature range         <ul> <li>Voltage, relative to input range, (+/-)</li> </ul> </li> <li>Basic error limit (operational limit at 25 °C)         <ul> <li>Voltage, relative to input range, (+/-)</li> </ul> </li> <li>Interference voltage suppression for f = n x (f1 +/- 1 %), f1 = interference value of input range), min.</li> <li>Common mode voltage, max.</li> <li>Common mode voltage, max.</li> <li>Common mode interference, min.</li> </ul> <li>Interrupts/diagnostics/status information</li> <li>Diagnostics function</li> <li>Alarms</li>	0.01 % 0.005 %/K -50 dB 0.05 %  0.5 %  0.3 % erence frequency 70 dB 10 V 90 dB  Yes

Monitoring the supply voltage Wire-break No Short-circuit Yes; at 1 to 5 V Group error Yes Overflow/underflow Ves; Module-wise  Diagnostics indication LED  Monitoring of the supply voltage (PWR-LED) Channel status display For channel diagnostics No for module diagnostics Yes; green LED  Potential separation  Potential separation channels between the channels and backplane bus between the channels and the power supply of the electronics  Permissible potential difference  between the inputs (UCM)  Isolation  Isolation tested with  707 V DC (type test)  Ambient conditions		
Short-circuit Group error Overflow/underflow Piagnostics indication LED  Monitoring of the supply voltage (PWR-LED) Channel status display For channel diagnostics For module diagnostics For module diagnostics Obetween the channels Determined the channels and backplane bus Determined the channels and the power supply of the electronics  Permissible potential difference  Detween the inputs (UCM)  Short Ves; green PWR LED Yes; green LED No Yes; green/red DIAG LED  Potential separation Yes Yes Yes Obetween the channels Yes Obetween the channels and the power supply of the electronics  Permissible potential difference  Detween the inputs (UCM)  Solation  Isolation  Isolation tested with	oring the supply voltage	Yes
Group error Overflow/underflow  Pages; Module-wise  Diagnostics indication LED  Monitoring of the supply voltage (PWR-LED) Channel status display For channel diagnostics For module diagnostics For module diagnostics No Potential separation  Potential separation channels  between the channels and backplane bus between the channels and the power supply of the electronics  Permissible potential difference  between the inputs (UCM)  Isolation  Isolation  Yes; Module-wise Yes; green PWR LED Yes; green LED No Yes; green/red DIAG LED  Permissible potential difference  10 Vpp  Isolation  Yes  Yes  10 Vpc (type test)	break	No
Overflow/underflow  Diagnostics indication LED  Monitoring of the supply voltage (PWR-LED) Channel status display For channel diagnostics For module diagnostics Ves; green LED  No  Potential separation  Potential separation channels between the channels between the channels and backplane bus between the channels and the power supply of the electronics  Permissible potential difference between the inputs (UCM)  Isolation  Isolation  Isolation tested with  Yes; green PWR LED Yes; green PWR LED Yes; green LED No Yes; green/red DIAG LED  Yes Yes; green/red DIAG LED  Yes Yes  10 Vop  10 Vpp  Isolation  Isolation  Yes; green PWR LED Yes; green LED Yes; green LED No Yes; green LED Yes; green/red DIAG LED Yes; green/re	-circuit	Yes; at 1 to 5 V
Diagnostics indication LED  • Monitoring of the supply voltage (PWR-LED) • Channel status display • for channel diagnostics • for module diagnostics • for module diagnostics  Potential separation  Potential separation channels • between the channels and backplane bus • between the channels and the power supply of the electronics  Permissible potential difference  between the inputs (UCM)  Isolation  Isolation tested with	p error	Yes
Monitoring of the supply voltage (PWR-LED)     Channel status display     for channel diagnostics     for module diagnostics     Yes; green/red DIAG LED  Potential separation  Potential separation channels     between the channels     between the channels and backplane bus     between the channels and the power supply of the electronics  Permissible potential difference  between the inputs (UCM)  Isolation  Isolation tested with  Yes; green PWR LED  Yes; green LED  No  Yes; green PWR LED  Yes; green PWR LED  Yes; green LED  No  Yes; green PWR LED  Yes; green LED  No  Yes; green PWR LED  Yes; green LED  Yes; green/red DIAG LED	low/underflow	Yes; Module-wise
Channel status display for channel diagnostics for module diagnostics  Yes; green/red DIAG LED  Potential separation  Potential separation channels  between the channels and backplane bus between the channels and the power supply of the electronics  Permissible potential difference  between the inputs (UCM)  Isolation  Isolation tested with  Yes; green LED  No Yes; green/red DIAG LED  Yes  Yes  Yes  10 Vop  10	indication LED	
• for channel diagnostics     • for module diagnostics     Yes; green/red DIAG LED  Potential separation  Potential separation channels     • between the channels     • between the channels and backplane bus     • between the channels and the power supply of the electronics  Permissible potential difference  between the inputs (UCM)  Isolation  Isolation tested with  No  Yes  Yes  10 Vpp  Isolation tested with	oring of the supply voltage (PWR-LED)	Yes; green PWR LED
• for module diagnostics      Potential separation  Potential separation channels      • between the channels      • between the channels and backplane bus      • between the channels and the power supply of the electronics  Permissible potential difference  between the inputs (UCM)  Isolation  Isolation tested with  Yes; green/red DIAG LED  No  Yes  10 Vo  Yes  10 Vpp	nel status display	Yes; green LED
Potential separation  Potential separation channels  • between the channels • between the channels and backplane bus • between the channels and the power supply of the electronics  Permissible potential difference  between the inputs (UCM)  Isolation  Isolation tested with	annel diagnostics	No
Potential separation channels  • between the channels • between the channels and backplane bus • between the channels and the power supply of the electronics  Permissible potential difference  between the inputs (UCM)  Isolation  Isolation tested with  No Yes Yes  10 Vpp  10 Vpp	odule diagnostics	Yes; green/red DIAG LED
between the channels     between the channels and backplane bus     between the channels and the power supply of the electronics  Permissible potential difference  between the inputs (UCM)  10 Vpp  Isolation  Isolation tested with  707 V DC (type test)	aration	
between the channels and backplane bus     between the channels and the power supply of the electronics  Permissible potential difference  between the inputs (UCM)  10 Vpp  Isolation  Isolation tested with  707 V DC (type test)	paration channels	
between the channels and the power supply of the electronics  Permissible potential difference  between the inputs (UCM)  10 Vpp  Isolation  Isolation tested with  707 V DC (type test)	een the channels	No
electronics  Permissible potential difference  between the inputs (UCM)  Isolation  Isolation tested with  707 V DC (type test)	een the channels and backplane bus	Yes
between the inputs (UCM)  Isolation  Isolation tested with  707 V DC (type test)		Yes
Isolation Isolation tested with 707 V DC (type test)	potential difference	
Isolation tested with 707 V DC (type test)	inputs (UCM)	10 Vpp
(3)		
Ambient conditions	ited with	707 V DC (type test)
	ditions	
Ambient temperature during operation	nperature during operation	
<ul> <li>◆ horizontal installation, min.</li> <li>-30 °C; &lt; 0 °C as of FS04</li> </ul>	ontal installation, min.	-30 °C; < 0 °C as of FS04
• horizontal installation, max. 60 °C	ontal installation, max.	60 °C
• vertical installation, min30 °C; < 0 °C as of FS04	al installation, min.	-30 °C; < 0 °C as of FS04
• vertical installation, max. 50 °C	al installation, max.	50 °C
Altitude during operation relating to sea level	ng operation relating to sea level	
• Installation altitude above sea level, max. 5 000 m; restrictions for installation altitudes > 2 000 m, see ET 200SP systemanual	lation altitude above sea level, max.	5 000 m; restrictions for installation altitudes > 2 000 m, see ET 200SP system manual
Dimensions		
Width 15 mm		15 mm
Height 73 mm		73 mm
Depth 58 mm		58 mm
Weights		
Weight, approx. 31 g	arov.	31 a
Weight, approx. 31 g	arov.	31 a

last modified:

7/13/2024