## **SIEMENS**

## **Data sheet**

## 6ES7134-6HD01-0BA1



SIMATIC ET 200SP, ANALOG INPUT MODULE, AI 4XU/I 2-WIRE STANDARD, PACKING UNIT: 1 PIECE, FITS TO BU-TYPE A0, A1, COLOR CODE CC03, MODULE DIAGNOSIS, 16BIT, +/-0,3%

General information	
Product type designation	Al 4x U/I 2-wire
HW functional status	From FS02
Firmware version	
<ul> <li>FW update possible</li> </ul>	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
<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>	V14 / -
<ul> <li>STEP 7 configurable/integrated from version</li> </ul>	V5.6 and higher
<ul> <li>PCS 7 configurable/integrated from version</li> </ul>	V8.1 SP1
<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	
<ul> <li>Oversampling</li> </ul>	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; without sensor supply
Encoder supply	
24 V encoder supply	
• 24 V	Yes
Short-circuit protection	Yes
<ul> <li>Output current, max.</li> </ul>	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	
<ul> <li>Address space per module, max.</li> </ul>	8 byte; + 1 byte for QI information

Authoritic encoding  • Nechanical coding element  • Type A  • Nechanical coding element  • Type A  • Service on Beseutinis for commercion  • Type A  • Service on Beseutinis for commercion  • Sum of the Service on Beseutinis for commercion  • Sum of the Service on	Hardware configuration	
* Nechanical coding element * Type A * Type of mechanical coding element * Type A * Selection of Basedarih for connection variants * Zavide connection * Autority Injury * Aut		Yes
■ *Pipe of mechanical codingle element  * 2-wine connection  * Authors (inputs)  * Authors of manage inputs  #	•	
Selection of BaseUnit for connection variants	· ·	Type A
Namber of analog inputs Namber of analog inputs Permissible input current for current input (destruction limit), riex.  So mA  S		
Number of analog inputs  Number of analog input votage for votage input (destruction limit), permissible input current for current input (destruction of the active channels)  • 0 to 10 to +10 V  — Input resistance (10 to 5 V)  • 10 V to +10 V  • Input resistance (10 V to +10 V)  • S V to +5 V  — Input resistance (40 V to +10 V)  • 120 kD		BU type A0, A1
permissible input voltage for voltage input (destruction limit), max.  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  — Input resistance (0 to 10 V)  • 1 V to 5 V  — Input resistance (1 V to 5 V)  • 10 V to +10 V  • 10 V to +10 V  — Input resistance (-10 V to +10 V)  • 120 kΩ  • 10 V to +10 V  — Input resistance (-10 V to +10 V)  • 5 V to +5 V  — Input resistance (5 V to +5 V)  — Input resistance (6 V to +5 V)  — Input resistance (6 V to +5 V)  — Input resistance (6 V to +5 V)  • 120 kΩ  • 10 to 20 mA  • 1 must resistance (10 to 20 mA)  • 4 m to 20 mA  — Input resistance (0 to 20 mA)  • 4 m to 20 mA  — Input resistance (4 mA to 20 mA)  • 4 mid to 20 mA  — Input resistance (4 mA to 20 mA)  • 4 mid to 20 mA  — Input resistance (4 mA to 20 mA)  • 4 mid to 20 mA  — Input resistance (4 max to 20 mA)  • 4 mid to 20 mA  — Input resistance (4 max to 20 mA)  • 5 mid the time time time time time time time tim	Analog inputs	
permissible input voltage for voltage input (destruction limit), max.  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  — Input resistance (0 to 10 V)  • 1 V to 5 V  — Input resistance (1 V to 5 V)  • 10 V to +10 V  • 10 V to +10 V  — Input resistance (-10 V to +10 V)  • 120 kΩ  • 10 V to +10 V  — Input resistance (-10 V to +10 V)  • 5 V to +5 V  — Input resistance (5 V to +5 V)  — Input resistance (6 V to +5 V)  — Input resistance (6 V to +5 V)  — Input resistance (6 V to +5 V)  • 120 kΩ  • 10 to 20 mA  • 1 must resistance (10 to 20 mA)  • 4 m to 20 mA  — Input resistance (0 to 20 mA)  • 4 m to 20 mA  — Input resistance (4 mA to 20 mA)  • 4 mid to 20 mA  — Input resistance (4 mA to 20 mA)  • 4 mid to 20 mA  — Input resistance (4 mA to 20 mA)  • 4 mid to 20 mA  — Input resistance (4 max to 20 mA)  • 4 mid to 20 mA  — Input resistance (4 max to 20 mA)  • 5 mid the time time time time time time time tim		4; Differential inputs
Deministrible injust current for current injust (destruction limit), max.	permissible input voltage for voltage input (destruction limit),	30 V
Sum of the basic convention times and additional processing times (depending on the parameterization of the active channels)	permissible input current for current input (destruction limit),	50 mA
Input ranges (rated values), voltages		
• 0 to +10 V	Input ranges (rated values), voltages	on the parameterization of the active channels)
- Input resistance (0 to 10 V)		Yes: 15 bit
1 V to 5 V		
- Input resistance (1 V to 5 V)  • 10 V to +10 V  • 15 V to +5 V  • 15 V to +5 V  • 10 to 20 mA  — Input resistance (-5 V to +5 V)  Input ranges (rated values), currents  • 10 to 20 mA  — Input resistance (0 to 20 mA)  • 4 mA to 20 mA  • 4 mA to 20 mA  • 100 Ω; + approx. 0.7 V diode forward voltage  Ves; 15 bit  • 100 Ω; + approx. 0.7 V diode forward voltage  Ves; 15 bit  • 100 Ω; + approx. 0.7 V diode forward voltage  Ves; 15 bit  • 100 Ω; + approx. 0.7 V diode forward voltage  Integration and conversion for the input  Measurement principle  Integration and conversion time/resolution per channel  • Resolution with overrange (bit including sign), max. • Integration sine, parameterizable • Integration sine, parameterizable • Interference voltage suppression for interference frequency If In Hz • Conversion time (per channel)  Smoothing of measured values  • Number of smoothing levis • parameterizable • Rooder  Connection of signal encoders • for voltage measurement • for current measurement as 4-wire transducer — Burden of 2-wire transmitter, max. • for current measurement as 4-wire transducer — Burden of 2-wire transmitter, max. • for current measurement as 4-wire transducer — Burden of 2-wire transmitter, max. • for current measurement as 4-wire transducer — Burden of 2-wire transmitter, max. • for current measurement as 4-wire transducer — Burden of 2-wire transmitter, max. • for current measurement as 5-wire transducer — Burden of 2-wire transmitter, max. • for current measurement as 5-wire transducer — Burden of 2-wire transmitter, max. • for current measurement as 5-wire transducer — Burden of 2-wire transmitter, max. • for current measurement as 5-wire transducer — Burden of 2-wire transmitter, max. • for current measurement as 5-wire transducer — Burden of 2-wire transmitter, max. • for current measurement as 5-wire transducer — Burden of 2-wire transmitter, max. • for current measurement as 5-wire transducer — Burden of 2-wire transmitt	·	
10 V to +10 V		
- Input resistance (-10 V to +10 V)  • 5 V to +5 V  Fers; 16 bit incl. sign  - 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)  Cable lengtit  • 100 Ω; + approx. 0,7 V diode forward voltage  Ves; 15 bit  — Input resistance (4 mA to 20 mA)  Shielded, max.  Analog value generation for the inputs  Measurement principle Integration and conversion time/resolution per channel  • Resolution with overange (bit including sign), max.  • Integration time, parameterizable  • Integration time, parameterizable  • Conversion time (per channel)  • Number of smoothing levels  • Or or voltage measurement as 2-wire transducer  Frooder  Connection of signal encoders  • for outern measurement as 4-wire transducer  • Series under measurement as 4-wire transducer  • Series under transmitter, max.  • for current measurement as 4-wire transducer  From Frouries (relative to input range), (++)  Crosstalk between the inputs, min.  50 dB  Repeata accuracy in steady state at 25 °C (relative to input range), (+-)  Operational error limit (operational limit at 28 °C)  • Voltage, relative to input range, (+-)  Operational error limit (operational limit at 28 °C)  • Voltage, relative to input range, (+-)  O .5 %  • Current, relative to input range, (+-)  • Series model interference peak value of interference recovered requency  • Series model interference peak value of interference recovered requency  • Series model interference peak value of interference recovered requency  • Series model interference peak value of interference recovered requency  • Series model interference peak value of interference recovered requency		
5 V to +5 V — Input resistance (-5 V to +5 V) 120 kΩ  Input ranges (rated values), currents  • 0 to 20 mA Yes; 15 bit — Input resistance (0 to 20 mA) 100 Ω; + approx. 0.7 V diode forward voltage • 4 mA to 20 mA Yes; 15 bit — Input resistance (4 mA to 20 mA) 100 Ω; + approx. 0.7 V diode forward voltage • shelded, max. 1 000 m; 200 m for voltage measurement • shelded, max. 1 000 m; 200 m for voltage measurement Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max. • Integration time, parameterizable Yes • Interference voltage suppression for interference frequency (1 in Hz • Conversion time (per channel) 180 / 60 / 50 ms  Smoothing of measured values • Number of smoothing levels • parameterizable Yes • parameterizable Yes • for outrent measurement as 2-wire transducer Yes • for outrent measurement as 4-wire transducer No  Forestaccuracies  Linearity error (relative to input range), (+/-) 0.005 %/K  Crossialk between the inputs, min. 50 dB  Repeat accuracy in steady state at 25 °C (relative to input range, (+/-) 0.5 % • Current, relative to input range, (+/-) 0.5 % • Current, relative to input range, (+/-) 0.5 % • Current, relative to input range, (+/-) 0.5 % • Current, relative to input range, (+/-) 0.5 % • Current, relative to input range, (+/-) 0.5 % • Current, relative to input range, (+/-) 0.5 % • Series model interference (peak value of interference  • Voltage, relative to input range, (+/-) 0.3 % • Current, relative to input range, (+/-) 0.3 % • Current, relative to input range, (+/-) 0.3 % • Series model interference (peak value of interference  • Voltage, relative to input range, (+/-) 0.3 % • Series model interference (peak value of interference  • 70 dB		
Input resistance (-5 V to +5 V)		
Input ranges (rated values), currents		,
• 0 to 20 mA  — Input resistance (0 to 20 mA)  4 m kt o 20 mA  — Input resistance (4 mA to 20 mA)  — Input resistance (4 mA to 20 mA)  — Input resistance (4 mA to 20 mA)  5 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  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 t/z  • Conversion time (per channel)  • Number of smoothing levels  • parameterizable  • Number of smoothing levels  • parameterizable  • For ourgan measurement as 2-wire transducer  — Burden of 2-wire transmitter, max.  • for current measurement as 2-wire transducer  — Burden of 2-wire transmitter, max.  • for current measurement as 4-wire transducer  — Burden of 2-wire transmitter, max.  • for or current measurement as 4-wire transducer  — Burden of 2-wire transmitter, max.  • for or current measurement as 4-wire transducer  — Burden of 2-wire transmitter, max.  • for current measurement as 4-wire transducer  — Burden of 2-wire transmitter, max.  • for or current measurement as 4-wire transducer  — Burden of 2-wire transmitter, max.  • for or current measurement as 4-wire transducer  — Consistal between the input, smin.  50 dB  — Respeat accuracy in steady state at 25 °C (relative to input range, (+-)  • Correstal between the input range, (+-)  • Correstal between the input range, (+-)  • Correstal between the input range, (+-)  • Current, relative to input range, (+-)  • Series mode interference (peak value of interference <  70 dB		
- Input resistance (0 to 20 mA) 4 mA to 20 mA Pes; 15 bit Input resistance (4 mA to 20 mA) Pes; 15 bit Input resistance (4 mA to 20 mA) 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 Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max. Integration time, parameterizable • Interference voltage suppression for interference frequency 11 in Hz • Conversion time (per channel)  Smoothing of measured values • Number of smoothing levels • parameterizable  Encoder  Connection of signal encoders • for voltage measurement as 2-wire transducer — Burden of 2-wire transmitter, max. • for current measurement as 4-wire transducer — Burden of 2-wire transmitter, max. • for or current measurement as 4-wire transducer  Frors/accuracy/in steady state at 25 °C (relative to input range), (+/-)  Inegretative to input range, (+/-)  O,005 %/K  Crosstalk between the inputs, min.  Repeat accuracy in steady state at 25 °C (relative to input range, (+/-)  O,07 %/  • Current, relative to input range, (+/-)  • Voltage, relative to input range, (+/-)  • Voltage, relative to input range, (+/-)  • Voltage, relative to input range, (+/-)  • Current, relative to input range, (+/-)  • Series mode interference (peak value of interference   70 dB		Yes; 15 bit
- Input resistance (4 mA to 20 mA)  Cable length  • shielded, max.  1 000 m; 200 m for voltage measurement  Analog value generation for the inputs  Measurement principle integration going for the inputs  Resolution with overrange (bit including sign), max.  • Integration and conversion time/resolution per channel  • Resolution with overrange (bit including sign), max.  • Interference voltage suppression for interference frequency 1f in Hz  • Conversion time (per channel)  Smoothing of measured values  • Number of smoothing levels  • parameterizable  Yes  Finceder  Connection of signal encoders  • for ourrent measurement as 2-wire transducer  — Burden of 2-wire transmitter, max.  • for ourrent measurement as 4-wire transducer  — For current measurement as 4-wire transducer  No  Frors/accuracies  Linearity error (relative to input range), (+/-)  Consetal to between the inputs, min.  5 of B  Repeat accuracy in steady state at 25 °C (relative to input range)  • Voltage, relative to input range, (+/-)  O.5 %  • Current, relative to input range, (+/-)  • Current, relative to input range, (+/-)  • Voltage, relative to input range, (+/-)  • Voltage suppression for f = n x (ff +/-1 %), ff = interference frequency  • Series mode interference (peak value of interference < 70 dB	<ul><li>— Input resistance (0 to 20 mA)</li></ul>	100 Ω; + approx. 0.7 V diode forward voltage
Analog value generation for the inputs  Measurement principle integration and conversion time/resolution per channel  • Resolution with overrange (bit including sign), max.    16 bit   • 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 ft in 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 as 2-wire transducer   Yes   • for current measurement as 2-wire transducer   Yes   • for current measurement as 4-wire transducer   No    Errors/accuracies   Linearity 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)   • Voltage, relative to input range, (+/-)   0.5 %   • Current, relative to input range, (+/-)   0.5 %    Basic error limit (operational limit at 25 °C)   • Voltage, relative to input range, (+/-)   0.3 %    Interference voltage suppression for f = n x (ft +/-1 %), ft = interference < 70 dB		
• shielded, max.  Analog value generation for the inputs  Measurement principle integration and conversion time/resolution per channel  • Resolution with overrange (bit including sign), max. • Integration time, parameterizable Yes • Integration time, parameterizable 16.6 / 50 / 60 Hz • Interference voltage suppression for interference frequency f1 in 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  • for voltage measurement Yes • for current measurement as 2-wire transducer Yes • for current measurement as 4-wire transducer No  • for current measurement as 4-wire transducer 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) () 0.5 %  • Current, relative to input range, (+/-) 0.5 %  Basic error limit (operational limit at 25 °C) • Voltage, relative to input range, (+/-) 0.3 % • Current, relative to input range, (+/-) 0.3 % • Current, relative to input range, (+/-) 0.3 % • Series mode interference (peak value of interference < 70 dB	— Input resistance (4 mA to 20 mA)	100 Ω; + approx. 0.7 V diode forward voltage
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 f1 in Hz       180 / 60 / 50 ms         Smoothing of measured values       180 / 60 / 50 ms         • Number of smoothing levels       4; None; 4/8/16 times         • parameterizable       Yes         Encoder       2         Connection of signal encoders       Yes         • for voltage measurement       Yes         • for current measurement as 2-wire transducer       Yes         — Burden of 2-wire transmitter, max.       650 Ω         • for ourrent measurement as 4-wire transducer       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, (+/-)       0.5 %         • Current, relative to input range, (+/-)       0.5 %         • Current, relative to input range, (+/-)       0.5 % <td< td=""><td>Cable length</td><td></td></td<>	Cable length	
Measurement principle integration and conversion time/resolution per channel  • Resolution with overrange (bit including sign), max.  • Integration and conversion time/presolution 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)  Smoothing of measured values  • Number of smoothing levels  • parameterizable  Possible parameterizable  Floroder  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  — Burden of 2-wire transmitter, max.  • for current measurement as 4-wire transducer  No  Frors/accuracles  Linearity error (relative to input range), (+/-)  Crosstalk between the inputs, min.  50 dB  Repeat accuracy in steady state at 25 °C (relative to input range)  • Voltage, relative to input range, (+/-)  Operational error limit in overall temperature range  • Voltage, relative to input range, (+/-)  Ocar film in overall temperature range  • Voltage, relative to input range, (+/-)  Os %  Basic error limit (operational limit at 25 °C)  • Voltage, relative to input range, (+/-)  • Current, relative to input range, (+/-)  • Series mode interference (peak value of interference   • Out 8  Interference voltage suppression for f = n x (f1 +/- 1 %), f1 = interference frequency  • Series mode interference (peak value of interference	• shielded, max.	1 000 m; 200 m for voltage measurement
Resolution with overrange (bit including sign), max.   16 bit	Analog value generation for the inputs	
<ul> <li>Resolution with overrange (bit including sign), max.</li> <li>Integration time, parameterizable</li> <li>Interference voltage suppression for interference frequency f1 in Hz</li> <li>Conversion time (per channel)</li> <li>180 / 60 / 50 ms</li> <li>Smoothing of measured values</li> <li>Number of smoothing levels</li> <li>parameterizable</li> <li>Yes</li> <li>for voltage measurement</li> <li>of or current measurement as 2-wire transducer</li> <li>for current measurement as 4-wire transducer</li> <li>for current measureme</li></ul>	Measurement principle	integrating (Sigma-Delta)
<ul> <li>Integration time, parameterizable</li> <li>Interference voltage suppression for interference frequency f1 in Hz</li> <li>Conversion time (per channel)</li> <li>180 / 60 / 50 ms</li> <li>Smoothing of measured values</li> <li>Number of smoothing levels</li> <li>parameterizable</li> <li>For voltage measurement</li> <li>for voltage measurement</li> <li>for current measurement as 2-wire transducer</li> <li>For current measurement as 4-wire transducer</li> <li>For vortent measurement as 4-wire transducer</li> <li>For vorrent measurement as 4-wire transducer</li> <li>No</li> <li>Errors/accuracies</li> <li>Linearity error (relative to input range), (+/-)</li> <li>Constalk between the inputs, min.</li> <li>50 dB</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>Current, relative to input range, (+/-)</li> <li>So %</li> <li>Current, relative to input range, (+/-)</li> <li>So %</li> <li>Current, relative to input range, (+/-)</li> <li>So %</li> <li>Sourrent, relative to input range, (+/-)</li> <li>Voltage, relative to input range, (+/-)</li> <li>So %</li> <li>Series mode interference (peak value of interference </li> <li>70 dB</li> </ul>	Integration and conversion time/resolution per channel	
<ul> <li>Interference voltage suppression for interference frequency f1 in Hz</li> <li>Conversion time (per channel)</li> <li>180 / 60 / 50 ms</li> <li>Smoothing of measured values</li> <li>Number of smoothing levels</li> <li>parameterizable</li> <li>For voltage measurement</li> <li>for voltage measurement as 2-wire transducer</li> <li>Burden of 2-wire transmitter, max.</li> <li>for current measurement as 4-wire transducer</li> <li>So 0 Ω</li> <li>for current measurement as 4-wire transducer</li> <li>No</li> <li>Errors/accuracies</li> <li>Linearity error (relative to input range), (+/-)</li> <li>0.005 %/K</li> <li>Crosstalk between the inputs, min.</li> <li>50 dB</li> <li>Repeat accuracy in steady state at 25 °C (relative to input range).</li> <li>oVoltage, relative to input range, (+/-)</li> <li>0.5 %</li> <li>Current, relative to input range, (+/-)</li> <li>0.5 %</li> <li>Current, relative to input range, (+/-)</li> <li>0.5 %</li> <li>Basic error limit (operational limit at 25 °C)</li> <li>Voltage, relative to input range, (+/-)</li> <li>0.3 %</li> <li>Current, relative to input range, (+/-)</li> <li>0.3 %</li> <li>Current, relative to input range, (+/-)</li> <li>0.3 %</li> <li>Interference voltage suppression for f = n x (f1 +/- 1 %), f1 = interference frequency</li> <li>Series mode interference (peak value of interference </li> <li>70 dB</li> </ul>	<ul> <li>Resolution with overrange (bit including sign), max.</li> </ul>	16 bit
• Conversion time (per channel)  Smoothing of measured values  • Number of smoothing levels • parameterizable  Pes  Encoder  Connection of signal encoders • for outlage measurement • for outlage measurement as 2-wire transducer — Burden of 2-wire transmitter, max. • for current measurement as 4-wire transducer No  Errors/accuracies  Linearity error (relative to input range), (+/-)  Consstalk 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, (+/-)  Ocurrent, relative to i	<ul> <li>Integration time, parameterizable</li> </ul>	Yes
Smoothing of measured values  Number of smoothing levels parameterizable  Freeder  Connection of signal encoders  of or voltage measurement for current measurement as 2-wire transducer Burden of 2-wire transmitter, max. for current measurement as 4-wire transducer  of or current measurement as 4-wire transducer  Inearity 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, (+/-) Current, relative to input range, (+/-) Sesies mode interference (peak value of interference < 70 dB		16.6 / 50 / 60 Hz
<ul> <li>Number of smoothing levels</li> <li>parameterizable</li> <li>Yes</li> </ul> Encoder Connection of signal encoders <ul> <li>for voltage measurement</li> <li>for current measurement as 2-wire transducer</li> <li>Burden of 2-wire transmitter, max.</li> <li>for current measurement as 4-wire transducer</li> <li>No</li> </ul> Errors/accuracies Linearity error (relative to input range), (+/-) <ul> <li>0.01 %</li> </ul> Temperature error (relative to input range), (+/-) <ul> <li>0.05 %/K</li> </ul> Crosstalk between the inputs, min. <ul> <li>50 dB</li> </ul> Repeat accuracy in steady state at 25 °C (relative to input range), (+/-)   Operational error limit in overall temperature range   Voltage, relative to input range, (+/-) 0.5 %   Current, relative to input range, (+/-) 0.5 %   Basic error limit (operational limit at 25 °C)   Voltage, relative to input range, (+/-) 0.3 %   Current, relative to input range, (+/-) 0.3 %   Current, relative to input range, (+/-) 0.3 %   Current, relative to input range, (+/-) 0.3 %   Eurrent, relative to input range, (+/-) 0.3 %   Current, relative to input range, (+/-) 0.3 %   Eurrent, relative to input range, (+/-) 0.3 %	Conversion time (per channel)	180 / 60 / 50 ms
Parameterizable Yes  Encoder  Connection of signal encoders      • for voltage measurement Yes     • for current measurement as 2-wire transducer Yes     — Burden of 2-wire transmitter, max. 650 Ω     • for current measurement as 4-wire transducer No  Errors/accuracies  Linearity error (relative to input range), (+/-) 0.01 %  Temperature error (relative to input range), (+/-) 50 dB  Repeat accuracy in steady state at 25 °C (relative to input range), (+/-) 0.05 %///  Coperational error limit in overall temperature range      • Voltage, relative to input range, (+/-) 0.5 %  Basic error limit (operational limit at 25 °C)      • Voltage, relative to input range, (+/-) 0.3 %     • Current, relative to input range, (+/-) 0.3 %     • Current, relative to input range, (+/-) 0.3 %  Interference voltage suppression for f = n x (f1 +/- 1 %), f1 = interference frequency      • Series mode interference (peak value of interference < 70 dB	Smoothing of measured values	
Encoder  Connection of signal encoders  • for voltage measurement Yes  • for current measurement as 2-wire transducer Yes  — Burden of 2-wire transmitter, max. 650 Ω  • for current measurement as 4-wire transducer 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 %  range), (+/-)  Operational error limit in overall temperature range  • Voltage, relative to input range, (+/-) 0.5 %  Basic error limit (operational limit at 25 °C)  • Voltage, relative to input range, (+/-) 0.3 %  • Current, relative to input range, (+/-) 0.3 %  Interference voltage suppression for f = n x (f1 +/- 1 %), f1 = interference frequency  • Series mode interference (peak value of interference < 70 dB	Number of smoothing levels	4; None; 4/8/16 times
Connection of signal encoders  • for voltage measurement • for current measurement as 2-wire transducer — Burden of 2-wire transmitter, max. 650 Ω • for current measurement as 4-wire transducer No  Errors/accuracies  Linearity error (relative to input range), (+/-)  Temperature error (relative to input range), (+/-)  Crosstalk between the inputs, min. 50 dB  Repeat accuracy in steady state at 25 °C (relative to input range), (+/-)  Operational error limit in overall temperature range  • Voltage, relative to input range, (+/-) • Current, relative to input range, (+/-)  Assice error limit (operational limit at 25 °C)  • Voltage, relative to input range, (+/-)  • Current, relative to input range, (+/-)  0.3 % • Current, relative to input range, (+/-)	<ul> <li>parameterizable</li> </ul>	Yes
<ul> <li>for voltage measurement</li> <li>for current measurement as 2-wire transducer</li> <li>Burden of 2-wire transmitter, max.</li> <li>for current measurement as 4-wire transducer</li> <li>for current measurement as 4-wire transducer</li> <li>No</li> </ul> Errors/accuracies Linearity error (relative to input range), (+/-) <ul> <li>0.01 %</li> </ul> Temperature error (relative to input range), (+/-) <ul> <li>0.005 %/K</li> </ul> <li>Crosstalk between the inputs, min.</li> <li>60 dB</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>Current, relative to input range, (+/-)</li> <li>Sasic error limit (operational limit at 25 °C)</li> <li>Voltage, relative to input range, (+/-)</li> <li>Current, relative to input range, (+/-)</li> <li>Current, relative to input range, (+/-)</li> <li>3 %</li> <li>Current, relative to input range, (+/-)</li> <li>Series mode interference (peak value of interference frequency</li> <li>Series mode interference (peak value of interference </li>	Encoder	
• for current measurement as 2-wire transducer — Burden of 2-wire transmitter, max. 650 Ω • for current measurement as 4-wire transducer  No  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, (+/-) • Current, relative to input range, (+/-)  Basic error limit (operational limit at 25 °C)  • Voltage, relative to input range, (+/-) • Current, relative to input range, (+/-)  O.3 % • Current, relative to input range, (+/-) • Current, relative to input range, (+/-)  • Series mode interference (peak value of interference < 70 dB	Connection of signal encoders	
- Burden of 2-wire transmitter, max.  • for current measurement as 4-wire transducer  No  Errors/accuracies  Linearity error (relative to input range), (+/-)  Temperature error (relative to input range), (+/-)  Crosstalk between the inputs, min.  50 dB  Repeat accuracy in steady state at 25 °C (relative to input range), (+/-)  Operational error limit in overall temperature range  • Voltage, relative to input range, (+/-)  • Current, relative to input range, (+/-)  Basic error limit (operational limit at 25 °C)  • Voltage, relative to input range, (+/-)  • Current, relative to input range, (+/-)  • Series mode interference (peak value of interference < 70 dB	<ul> <li>for voltage measurement</li> </ul>	Yes
• for current measurement as 4-wire transducer    No	• for current measurement as 2-wire transducer	Yes
Linearity error (relative to input range), (+/-)  Temperature error (relative to input range), (+/-)  Crosstalk between the inputs, min.  So dB  Repeat accuracy in steady state at 25 °C (relative to input range), (+/-)  Operational error limit in overall temperature range  Voltage, relative to input range, (+/-)  Current, relative to input range, (+/-)  Voltage, relative to input range, (+/-)  Voltage, relative to input range, (+/-)  Current, relative to input range, (+/-)  Voltage, relative to input range, (+/-)  Voltage, relative to input range, (+/-)  Voltage relative to input range, (+/-)  Series mode interference (peak value of interference < 70 dB		650 Ω
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, (+/-)  • Current, relative to input range, (+/-)  • Voltage, relative to input range, (+/-)  • Voltage, relative to input range, (+/-)  • Current, relative to input range, (+/-)  • Series mode interference (peak value of interference < 70 dB		No
Temperature error (relative to input range), (+/-)  Crosstalk between the inputs, min.  So dB  Repeat accuracy in steady state at 25 °C (relative to input range), (+/-)  Operational error limit in overall temperature range  • Voltage, relative to input range, (+/-)  • Current, relative to input range, (+/-)  • Voltage, relative to input range, (+/-)  • Voltage, relative to input range, (+/-)  • Current, relative to input range, (+/-)  • Current, relative to input range, (+/-)  • Current, relative to input range, (+/-)  • Series mode interference (peak value of interference <  70 dB	Errors/accuracies	
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, (+/-)  • Current, relative to input range, (+/-)  • Voltage, relative to input range, (+/-)  • Voltage, relative to input range, (+/-)  • Current, relative to input range, (+/-)  • Current, relative to input range, (+/-)  • Current, relative to input range, (+/-)  • Series mode interference (peak value of interference <  70 dB	Linearity error (relative to input range), (+/-)	0.01 %
Repeat accuracy in steady state at 25 °C (relative to input range), (+/-)  Operational error limit in overall temperature range  • Voltage, relative to input range, (+/-)  • Current, relative to input range, (+/-)  • Voltage, relative to input range, (+/-)  • Voltage, relative to input range, (+/-)  • Current, relative to input range, (+/-)  • Current, relative to input range, (+/-)  • Current, relative to input range, (+/-)  • Series mode interference (peak value of interference < 70 dB		0.005 %/K
range), (+/-)  Operational error limit in overall temperature range  • Voltage, relative to input range, (+/-)  • Current, relative to input range, (+/-)  Basic error limit (operational limit at 25 °C)  • Voltage, relative to input range, (+/-)  • Current, relative to input range, (+/-)  • Current, relative to input range, (+/-)  Interference voltage suppression for f = n x (f1 +/- 1 %), f1 = interference frequency  • Series mode interference (peak value of interference < 70 dB	·	
<ul> <li>Voltage, relative to input range, (+/-)</li> <li>Current, relative to input range, (+/-)</li> <li>0.5 %</li> <li>Basic error limit (operational limit at 25 °C)</li> <li>Voltage, relative to input range, (+/-)</li> <li>Current, relative to input range, (+/-)</li> <li>O.3 %</li> <li>Interference voltage suppression for f = n x (f1 +/- 1 %), f1 = interference frequency</li> <li>Series mode interference (peak value of interference </li> <li>70 dB</li> </ul>		0.05 %
<ul> <li>Current, relative to input range, (+/-)</li> <li>Basic error limit (operational limit at 25 °C)</li> <li>Voltage, relative to input range, (+/-)</li> <li>Current, relative to input range, (+/-)</li> <li>Interference voltage suppression for f = n x (f1 +/- 1 %), f1 = interference frequency</li> <li>Series mode interference (peak value of interference </li> <li>70 dB</li> </ul>	Operational error limit in overall temperature range	
Basic error limit (operational limit at 25 °C)  • Voltage, relative to input range, (+/-)  • Current, relative to input range, (+/-)  Interference voltage suppression for f = n x (f1 +/- 1 %), f1 = interference frequency  • Series mode interference (peak value of interference < 70 dB	<ul> <li>Voltage, relative to input range, (+/-)</li> </ul>	0.5 %
<ul> <li>Voltage, relative to input range, (+/-)</li> <li>Current, relative to input range, (+/-)</li> <li>0.3 %</li> <li>Interference voltage suppression for f = n x (f1 +/- 1 %), f1 = interference frequency</li> <li>Series mode interference (peak value of interference </li> </ul>	• Current, relative to input range, (+/-)	0.5 %
<ul> <li>Current, relative to input range, (+/-)</li> <li>Interference voltage suppression for f = n x (f1 +/- 1 %), f1 = interference frequency</li> <li>Series mode interference (peak value of interference </li> <li>70 dB</li> </ul>	Basic error limit (operational limit at 25 °C)	
Interference voltage suppression for f = n x (f1 +/- 1 %), f1 = interference frequency  • Series mode interference (peak value of interference < 70 dB	<ul> <li>Voltage, relative to input range, (+/-)</li> </ul>	0.3 %
Series mode interference (peak value of interference < 70 dB	• Current, relative to input range, (+/-)	0.3 %
	Interference voltage suppression for f = n x (f1 +/- 1 %), f1 = inter	ference frequency
· · · · · · · · · · · · · · · · · · ·	<ul> <li>Series mode interference (peak value of interference &lt; rated value of input range), min.</li> </ul>	70 dB

Common mode voltage, max.	10 V
Common mode interference, min.	90 dB
nterrupts/diagnostics/status information	00.05
Diagnostics function	Yes
Alarms	
Diagnostic alarm	Yes
Limit value alarm	No
Diagnoses	
Monitoring the supply voltage	Yes
Wire-break	Yes; at 4 to 20 mA
Short-circuit	Yes; with 1 to 5 V or 2-wire mode: Short-circuit of the encoder supply to ground or of an input to the encoder supply
Group error	Yes
Overflow/underflow	Yes
Diagnostics indication LED	
Monitoring of the supply voltage (PWR-LED)	Yes; green LED
Channel status display	Yes; green LED
for channel diagnostics	No
• for module diagnostics	Yes; green/red LED
Potential separation	
Potential separation channels	
• between the channels	Yes; channel group-specific between 2-wire current input group and voltage input group
<ul> <li>between the channels and backplane bus</li> </ul>	Yes
<ul> <li>between the channels and the power supply of the electronics</li> </ul>	Yes; only for voltage inputs
Permissible potential difference	<u>_</u>
between the inputs (UCM)	10 V DC
solation	
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
mbient conditions	
Ambient temperature during operation	
<ul> <li>horizontal installation, min.</li> </ul>	-30 °C; < 0 °C as of FS02
<ul> <li>horizontal installation, max.</li> </ul>	60 °C
<ul> <li>vertical installation, min.</li> </ul>	-30 °C; < 0 °C as of FS02
vertical installation, max.	50 °C
Altitude during operation relating to sea level	
<ul> <li>Installation altitude above sea level, max.</li> </ul>	5 000 m; Restrictions for installation altitudes > 2 000 m, see manual
Dimensions	
Width	15 mm
Height	73 mm
Depth	58 mm
<b>Neights</b>	
Weight, approx.	31 g

last modified:

9/7/2023