## SIEMENS

## Data sheet

## 6ES7134-6TD00-0CA1



SIMATIC ET 200SP, analog HART input module, AI 4XI 2-wire HART High Feature suitable for BU type A0, A1, color code CC03, channel diagnostics, 16-bit, +/-0.3%,

Figure similar

General information		
Product type designation	AI 4xI 2-wire HART	
Firmware version	V1.0	
<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>	V13 SP1	
<ul> <li>STEP 7 configurable/integrated from version</li> </ul>	V5.5 SP4 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>	GSD Revision 5	
<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.	25 mA; without sensor supply	
Encoder supply		
24 V encoder supply		
• 24 V	Yes	
<ul> <li>Short-circuit protection</li> </ul>	Yes	
• Output current, max.	20 mA; max. 50 mA per channel for a duration < 10 s	
Power loss		

Address space per module (max. 26 byte; + 1 byte for QI Information 24 byte; + 1 byte	Power loss, typ.	0.65 W; without sensor supply
Address space per module     B bpte +1 bpte for OL information       • Address space per module with HART, max.     B bpte +1 bpte for OL information       Automate configuration     Yes       • Address expect per module with HART, max.     28 byte +1 bpte for OL information       Automate conding     Yes       • Tope of mechanical coding element     Type A       Analog inputs     4. Differential inputs       • For current measurement     4       permissible input current for current input (destruction inni), max.     50 nA       • O to 20 nA     No       • 0 to 20 nA     No       • 4 nAt 0 20 nA     No       • 4 nAt 0 20 nA     No       • 4 natio 20 nA     No       • Malog value generation for the Inputs     4       Analog value generation for the Inputs     16 bit       • Integration interpression for interference     16 bit       • For outlage measurement     No       • for outlage measurement <td></td> <td></td>		
• Address space per module, max.        B byte, + 1 byte for QL information           Address space per module, with HART, max.        B byte, + 1 byte for QL information           Automatic encoding         Yes           Automatic encoding         Yes           Mechanical coding element         Yes             For current measurement         4             For current measurement         4             0 to 20 mA         No              0 to 20 mA         No             0 to 30 mA         20 mA         No              0 to 10 mA		
• Address space per module with HART, max.     28 byte, + 1 byte for QL information       Hardware configuration     Automatic encoding       • Automatic encoding element     Yes       • Type of mechanical coding element     Type A       Analog inputs     4, Differential inputs       • For carrent measurement     4       • O to 20 mA     No       • Analog value generation for the Inputs     Heaterstein       • Analog value generation for the Inputs     Heaterstein       Measurement principle     Integrating (Sigma-Delta)       Integration and conversion inneriesolution per channel     10 for /6 Hz       Integration with overnage (bit including sign), max     16 bit       • Integration time conversion for inference frequency 11 in Hz     Yes       • Integration and conversion for inference frequency 11 in Hz     Yes       • For outcage measurement as 2-wite transduce     Yes       • for outcage measurement as 2-wite transduce     Yes       • for outc		
Hardware configuration         Yes           Automatic encoding         Yes           • Mechanical coding element         Type A           Analog inputs         4. Differential inputs           • For current measurement         4           • Differential inputs         50 mA           • Did 20 mA         No           • 10 to 20 mA         No           • 0 to 20 mA         No           • 10 to 20 mA         No           • shelded, max         600 m           Analog value generation for the inputs         integrating (Sigm-Deita)           Integration action with overange (bit including sign), max.         16 bit           • Interference values suppression for intefference frequency if in Hz         Yes           • Number of singal encoders         Yes           • for valtage measurement as 2-with transducer         Yes           • Number of singal encoders         Yes           • None of singal encoders         Yes           • Or valtage measurement as 2-with transducer         Yes           • Norther or indexity to input range, (+/-)         0.005 %k           • Connection of singal encoders		
Autonatic encoding     Yes       • Mechanical coding element     Type A       Analog inputs     Type A       Analog inputs     4: Differential inputs       • Drac current measurement     4       • O to 20 mA     No       • 20 m k 0: *20 m A     No       • 20 m k 0: *20 m A     No       • 4 m Ato 20 m A     Yes: 15 bit + sign       - Input resistence (4 m A to 20 m A)     Yes: 15 bit + sign       - Input resistence (4 m A to 20 m A)     Yes: 15 bit + sign       - Input resistence (4 m A to 20 m A)     Yes: 15 bit + sign       - Input resistence (4 m A to 20 m A)     Yes: 15 bit + sign       - Input resistence (4 m A to 20 m A)     Yes: 15 bit + sign       - Input resistence (4 m A to 20 m A)     Yes: 15 bit + sign       - Integration since/resolution per channel     Integration time/resolution per channel       - Resolution with overange bit including sign), max.     16 bit       - Integration time/resolution per channel     Yes: Stannel by channel       - Integration insolversition for interference     10 / 50 / 60 Hz       - Smoothing d inseasurement     Yes       - For ourset measurement     0.01 %       - For ours	· · ·	28 byte; + 1 byte for QI information
• Mechanical coding element     Type A       Analog imputs     4: Differential inputs       • Procurrent measurement     4       • O to 20 mA     90 mA       • O to 20 mA     No       • Instruct enstance (4 mA to 20 mA)     280 (2) + approx 0.35 V diode forward voltage       Cibic length     • sheledet, max.       • sheledet, max.     800 m       Analog value generation for the inputs     Integrating (Sigma-Detta)       Integration and conversion time/resolution per channel     Integrating (Sigma-Detta)       • Interference voltage suppression for interference frequency of in htz     Yes, channel by channel       • Interference voltage suppression for interference frequency of in htz     Yes       • Number of smoothing levels     4: None; 4/8/16 times       • for voltage measurement s2-wire transducer     Yes       • Connection of signal encoders     No       • for voltage measurement s2 - Vire transducer     Yes       • Tord voltage measurement s2 - Vire transducer     Yes       • Tord voltage measurement s2 - Vire transducer     Yes       • Connection of	Hardware configuration	
Type A         Type A           Analog inputs         4           Number of nanos input current for current input (destruction limit, max.         4           Diput carges (rated values), currents         50 mA           • 0 to 20 mA         No           • 20 mA to 20 mA         No           • 4 mA to 20 mA         No           • - Input resistance (4 mA to 20 mA)         280 0; + approx. 0.35 V diode forward voltage           Cobbe length         -           • shelded, max.         800 m           Analog value generation for the inputs         400 hz           Messurement principle         integration (50 km A)           • Integration time, parameterizable         integration time, parameterizable           • Integration time, parameterizable         Yes; the time by channel           • Integration time, parameterizable         Yes           • Nomber of smoothing levels         4; None; 4B/16 times           • parameterizable         Yes           • for ordinge messurement         No           • for ourset messure status         0.05 %/k           Consection of signal encoders         0.05 %/k           • for ourset messurement         0.05 %/k           Consection of signal encoders         0.05 %           • for ourset messurement	Automatic encoding	Yes
Analog inputs       4; Differential inputs         For current measurement       4         permissible input current for current input (destruction imit), max.       50 mA         Input ranges (rated values), currents       50 mA         • 0 to 20 mA       No         • - 10 co 20 mA       No         • - 10 co 20 mA       No         • Input resistance (4 mA to 20 mA)       280 (2; + spprox. 0.35 V diode forward voltage         Cable length       • sheleded, max.         • sheleded, max.       800 m         Analog value generation for the inputs       integrating (Sigma-Detta)         Integration a conversion time/resolution per channel       integrating (Sigma-Detta)         Integration a conversion time/resolution gen, max.       16 bit         • Insequency 11 in Hz       16 bit         Standard conversion time/resolution gen channel       10 / 50 / 60 Hz         • for voltage measurement as 2-wire transducer       Yes         • for voltage measurement as 2-wire transducer       Yes         • for voltage measurement as 2-wire transducer       Yes <b>Consection of signal encoders</b> 0.01 %         • for voltage measurement as 2-wire transducer       Yes <b>Connection of signal encoders</b> 0.01 %         Consection of singnal encoders </td <td><ul> <li>Mechanical coding element</li> </ul></td> <td>Yes</td>	<ul> <li>Mechanical coding element</li> </ul>	Yes
Number of analog inputs     4: Differential inputs       • For current measurement     50 mA       permissible input current to current input (destruction limit), max.     50 mA       • 10 20 mA     50 mA       • 10 20 mA     No       • 2.00 mA to +20 mA     No       - Input resistance (4 mA to 20 mA)     280 0; + approx. 0.35 V diode forward voltage       Cable length     800 m       Analog value generation for the inputs     400 m       Maaag value generation to the inputs     16 bit       Measurement principle     integrating (Sigma-Deita)       Integration and conversion timefresolution gap), max.     16 bit       • Integration time, parameter/zable     4: None, 4/8/16 times       • Number of smoothing levels     4: None, 4/8/16 times       • parameter/zable     Yes       Encoder     10 / 50 / 60 Hz       Connection of signal encoders     No       • for vortage measurement as 2-wire transducer     Yes       Encoder     0.01 %       Temperature error (relative to input range), (+/)     0.01 %       Consettal betwen the inputs, min.     60 dB       Respect accuracy in stady state at 25 °C (relative to input range).     0.05 %       Consettal betwen the inputs, min.     60 dB       Respect accuracy in stady state at 25 °C (relative to input range).     0.3 % <td< td=""><td><ul> <li>Type of mechanical coding element</li> </ul></td><td>Туре А</td></td<>	<ul> <li>Type of mechanical coding element</li> </ul>	Туре А
• For current measurement         4           permissible input current for current input (destruction inhi), max.         50 mA           input ranges (rated values), currents         0 to 20 mA           • 0 to 20 mA         No           • - 20 mA to 20 mA         No           • 4 m At 0 20 mA         Yes; 15 bit + sign           - Input resistance (4 mA to 20 mA)         280 Ω(+ approx. 0.35 V diode forward voltage           Cable length         • shelded, max.           • shelded, max.         800 m           Analog value generation for the inputs         integrating (Sigma-Detta)           Measurement principle         integrating (Sigma-Detta)           • Interforence voltage suppression for interference frequency if in Hz         Yes; channel by channel           • Number of smoothing levels         4; None; 4/8/16 times           • parameterizable         Yes; Channel by channel           • Tor voltage measurement         No           • for uvoltage measurement as 2-wire transducer         Yes           • for voltage measurement as 2-wire transducer         Yes           • for voltage measurement as 2-wire transducer         Yes           • for uvoltage measurement as 2-wire transducer         Yes           • for voltage measurement as 2-wire transducer         Yes           • Correnet, relati	Analog inputs	
permissible input current for current input (destruction limit); max.         50 mA           • 0 to 20 mA         No           • 0 to 20 mA         No           • -20 mA         Yes: 15 bit sign           - Input resistance (4 mA to 20 mA)         280 0; + approx. 0.35 V diode forward voltage           Cable length         shelded, max.           • Analog value generation for the inputs         integrating (Sigma-Detta)           Measurement principle         integrating (Sigma-Detta)           • Integration time, parameterizable         Yes: channel by channel           • Integration time, parameterizable         Yes: channel by channel           • Number of smoothing of measurement         Yes           • For outma measurement         No           • for outma measurement         No           • for outma measurement as 2-wire transducer         Yes           • for outma measurement as 2-	Number of analog inputs	4; Differential inputs
limpt ranges (rade values), currents         • 0 to 20 mA       No         • 20 mA to +20 mA       No         • 4 m A to 20 mA       Yes: 15 bit + sign         - Input resistance (4 mA to 20 mA)       280 0; + approx. 0.35 V diode forward voltage         Cable length       800 m         • shelded, max.       800 m         Anslog value generation for the inputs       Integrating (Sigma-Delta)         Integration and conversion time/resolution per channel       Integrating (Sigma-Delta)         Integration time, parameterizable       integrating (Sigma-Delta)         Integration time, parameterizable       Yes: channel by channel         • Interforence voltage suppression for interference       10 / 50 / 60 Hz         requency ff in Hz       Yes: Channel by channel         • Number of smoothing levels       4; None; 4/8/16 times         • parameterizable       Yes         Encoder       Ves         Connection of signal encoders       0.01 %         • for voltage measurement       No         •	<ul> <li>For current measurement</li> </ul>	4
Input ranges (rated values), currents         No           • 0 to 20 mA         No           • -20 mA         No           • -20 mA         No           • -20 mA         No           • -20 mA         No           • -10 put resistance (4 mA to 20 mA)         280 Ω; + approx. 0.35 V didde forward voltage           Cable length         • shielded, max.           • Analog value generation for the inputs         Integrating (Sigma-Delta)           Measurement principle         Integrating (Sigma-Delta)           Integration and concension interfesolution per channel         • Resolution with overrange (bit including sign), max.           • Integration time, parameterizable         Yes; channel by channel           • Integration time, parameterizable         Yes           • Number of smoothing levels         4; None; 4/8/16 times           • parameterizable         Yes           Encoder         Connection of signal encoders           • for outrent measurement as 2-wire transducer         Yes           Encoder         Ves           Connection of signal encoders         0.01 %           • for outrent measurement as 2-wire transducer         Yes           Encoder         Ves           Connection of signal encoders         0.005 %/K	permissible input current for current input (destruction	50 mA
• 0 to 20 mA     No       • - 20 mA to +20 mA     No       • 4 m Ab 20 mA     Yes: 15 bit + sign       - Input resistance (4 mA to 20 mA)     280 Ω; + approx. 0.35 V diode forward voltage       Cable length     800 m       Analog value generation for the inputs     800 m       Measurement principle     integration and conversion time/resolution per channel       • Resolution with overrange (bit including sign), max.     16 bit       • Interference voltage suppression for interference frequency for in Hz     10 / 50 / 60 Hz       • Smoothing of measured values     4; None; 4/8/16 times       • Number of smoothing levels     4; None; 4/8/16 times       • parameterizable     Yes       Encoder     Ves       Connection of signal encoders     Ves       • for voltage measurement as 2-wire transducer     Yes       Encoder     Ves       Constalk betwen the inputs, min.     60 dB       Constalk betwen the inputs, min.     60 dB       Corrent, relative to input range), (+/-)     0.5 %       Operational error limit in coerail temperature range     0.5 %       • Current, relative to input range, (+/-)     0.3 %.       Interference voltage suppression for in x (ff +-1 %), f1 = interference frequency       • Series mode interference (peak value     0.05 %       Corrent, relative to input range, (+/-)     0.3 %	limit), max.	
• -20 mA to +20 mA     No       • 4 mA to 20 mA     Yes; 15 bit + sign       - Input resistance (4 mA to 20 mA)     280 Ω; + approx. 0.35 V diode forward voltage       Cable length     800 m       • ahlody value generation for the inputs     800 m       Massurement principle     integrating (Sigma-Delta)       Integration and conversion time/resolution per channel     16 bit       • Resolution with overname (bit including sign), max.     16 bit       • Interference voltage suppression for interference frequency fit in htz     10 / 50 / 60 Hz       • Simothing of measured values     4. None; 4/8/16 times       • Number of smoothing levels     4. None; 4/8/16 times       • for voltage measurement     No       • for voltage measurement as 2-wire transducer     Yes <b>Encoder</b> Connection of signal encoders       • for voltage measurement as 2-wire transducer     Yes       • for voltage neasurement as 2-wire transducer     Yes       • Constait between the inputs,	Input ranges (rated values), currents	
• 4 mA to 20 mA     Yes; 15 bit + sign       — Input resitance (4 mA to 20 mA)     280 (2) + approx. 0.35 V diode forward voltage       Cable length     • shielded, max.       • a shielded, max.     800 m       Analog value generation for the inputs     measurement principle       • Resolution with overrange (bit including sign), max.     16 bit       • Interfarence voltage suppression for interference frequency fil in Hz     Yes; channel by channel       • Number of smoothing levels     4; None; 4/8/16 times       • parametrizable     Yes       Encoder     Ves       Connection of signal encoders     No       • for voltage measurement as 2-wire transducer     Yes       Encoder     Unov       Connection of signal encoders     0.01 %       Crosstalk between the inputs, min.     60 dB       Repeat accuracies     0.05 %/K       Connection el ror limit in overal temperature range     0.05 %       • Current, relative to input range), (+/-)     0.5 %       Descreter limit (operational limit d2 5° C)     0.3 %       Interference voltage suppression for 1 = n x (fl +-1 %), fl = interference frequency       • Series mode interference (peak value of bit onput range), min.     0.05 %       Interference voltage suppression for 1 = n x (fl +-1 %), fl = interference frequency       • Series mode interference (peak value of bit onput range, (+/-) <td< td=""><td>• 0 to 20 mA</td><td>No</td></td<>	• 0 to 20 mA	No
	<ul> <li>-20 mA to +20 mA</li> </ul>	No
Cable length     shielded, max.     800 m       Analog value generation for the inputs     integrating (Sigma-Delta)       Integration and conversion time/resolution per channel     integrating (Sigma-Delta)       Integration and conversion time/resolution gen, max.     16 bit       • Integration inme, parameter/zable     Yes; channel by channel       • Interference voltage suppression for interference frequency f1 in Hz     10 / 50 / 60 Hz       Smoothing of measured values     4; None; 4/8/16 times       • Drivoltage measurement     Yes       Encoder     Ves       Connection of signal encoders     Ves       • for ovoltage measurement as 2-wire transducer     Yes       Errors/accuracies     Unit of the input range), (+/-)     0.01 %       Temperature error (relative to input range), (+/-)     0.05 %/K       Constalk between the inputs, min.     60 dB       Repeat accuracy in stedy state at 25 °C (relative to input range), (+/-)     0.5 %       Basic error limit (operational limit at 25 °C)     0.05 %       • Current, relative to input range, (+/-)     0.3 %       Interference voltage suppression for 1 = nx (11 +/-1 %), 0.1 = interference frequency       • Series mode interference (peak value of input range), min.       Interference voltage suppression for 1 = nx (11 +/-1 %), 0.1 = interference frequency       • Series mode interference (peak value of input range), min.       <	• 4 mA to 20 mA	Yes; 15 bit + sign
• shielded, max.         800 m           Analog value generation for the inputs         integrating (Sigma-Delta)           Measurement principle         integrating (Sigma-Delta)           Integration and conversion time/resolution per channel         16 bit           • Resolution with overrange (bit including sign), max.         16 bit           • Integration time, parameterizable         Yes: channel by channel           • Interference voltage suppression for interference frequency f1 in f12.         10 / 50 / 60 Hz           • Number of smoothing dressured values         4: None; 4/8/16 times           • bit or urrent measured values         4: None; 4/8/16 times           • for voltage measurement as 2-wire transducer         Yes           Encoder         Yes           Encotic error (relative to input range), (+/-)         0.01 %           Consection of signal encoders         0.01 %           Encoder trent measurement as 2-wire transducer         Yes           Encoder trent measurement input, min.         60 dB           Constalk between the input, min.         60 dB           Repeat accuracy in steady state at 25 °C (relative to input range), (+/-)         0.05 %           Generational inmit at 25 °C)         0.05 %           • Current, relative to input range, (+/-)         0.3 %           Interference voltage suppression for 1	— Input resistance (4 mA to 20 mA)	280 $\Omega$ ; + approx. 0.35 V diode forward voltage
Analog value generation for the inputs         Measurement principle       integrating (Sigma-Delta)         Integration and conversion time/resolution per channel       16 bit         • Resolution with overrange (bit including sign), max.       16 bit         • Integration time, parameterizable       Yes; channel by channel         • Interference voltage suppression for interference frequency f1 in ftz       10 / 50 / 60 Hz         Smoothing of measured values       4: None; 4/8/16 times         • Number of smoothing levels       4: None; 4/8/16 times         • parameterizable       Yes         Encoder       Voltage measurement         Connection of signal encoders       No         • for voltage measurement as 2-wire transducer       Yes         Encoder       Unrent/versor (relative to input range), (+/-)         Consective or input range), (+/-)       0.01 %         Temperature error (relative to input range), (+/-)       0.005 %/K         Corsestalk between the inputs, min.       60 dB         Repeat accuracy in steady state at 25 °C (relative to input range), (+/-)       0.5 %         Operational error limit in overall temperature range       •         • Current, relative to input range, (+/-)       0.3 %         Interference voltage suppression for f = n x (f1 +/- 1 %), f1 = interference frequency         •	Cable length	
Measurement principle         integration and conversion time/resolution per channel           Integration and conversion time/resolution per channel         16 bit           • Resolution with overrange (bit including sign), max.         16 bit           • Interference voltage suppression for interference frequency 11 in Hz         Yes; channel by channel           • Number of smoothing levels         4: None; 4/8/16 times           • parameterizable         Yes           Encoder         Connection of signal encoders           • for voltage measurement         No           • for voltage measurement as 2-wire transducer         Yes           Encoder         Yes           Encoder         0.01 %           Constatil 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         0.05 %           • Current, relative to input range, (+/-)         0.3 %           Interference voltage suppression for f = n x (f1 +/-1 %), f1 = interference frequency         60 dB           • Series mode interference (pak value of input range), min.         60 dB           Interference voltage suppression for f = n x (f1 +/-1 %), f1 = interference frequency         60 dB           Interference voltage suppression for f = n x (f1 +/-1 %), f1 = interference	• shielded, max.	800 m
Measurement principle         integration and conversion time/resolution per channel           Integration and conversion time/resolution per channel         16 bit           • Resolution with overrange (bit including sign), max.         16 bit           • Interference voltage suppression for interference frequency 11 in Hz         Yes; channel by channel           • Number of smoothing levels         4: None; 4/8/16 times           • parameterizable         Yes           Encoder         Connection of signal encoders           • for voltage measurement         No           • for voltage measurement as 2-wire transducer         Yes           Encoder         Yes           Encoder         0.01 %           Constatil 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         0.05 %           • Current, relative to input range, (+/-)         0.3 %           Interference voltage suppression for f = n x (f1 +/-1 %), f1 = interference frequency         60 dB           • Series mode interference (pak value of input range), min.         60 dB           Interference voltage suppression for f = n x (f1 +/-1 %), f1 = interference frequency         60 dB           Interference voltage suppression for f = n x (f1 +/-1 %), f1 = interference	Analog value generation for the inputs	
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         Smoothing of measured values         • Number of smoothing levels         • parameterizable         • Number of smoothing levels         • parameterizable         • for voltage measurement         • for voltage measurement as 2-wire transducer         • for voltage measurement as 2-wire transducer         • for voltage measurement so for current measurement as 2-wire transducer         • for current measurement so (relative to input range), (+/-)         Constatils between the input, smin.         © dd B         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, (+/-)         0.05 %         Basic error limit (operational limit at 25 °C         • Series mode interference (peak value of finiterference frequency         • Series mode interference (peak value of finiterference rated value of finiterference (rate value of finiterference rate value of finiterference (rate value of finiterference (r		integrating (Sigma-Delta)
<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>Smoothing of measured values</li> <li>Number of smoothing levels</li> <li>A: None; 4/8/16 times</li> <li>parameterizable</li> <li>Yes</li> <li>Frooder</li> <li>Connection of signal encoders</li> <li>For voltage measurement</li> <li>No</li> <li>For voltage measurement as 2-wire transducer</li> <li>Yes</li> <li>Frootsaccuracies</li> <li>Linearity error (relative to input range), (+/-)</li> <li>0.01 %</li> <li>Temperature error (relative to input range), (+/-)</li> <li>0.005 %/K</li> <li>Crosstalk between the inputs, min.</li> <li>60 dB</li> <li>Operational error limit in overall temperature range</li> <li>Current, relative to input range, (+/-)</li> <li>0.5 %</li> <li>Basic error limit (operational limit at 25 °C)</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 (pack value of input range), min.</li> <li>Interference voltage suppression for f = n x (f1+/-1 %), f1 = interference frequency</li> <li>Series mode interference (pack value of input range), min.</li> <li>Interference &lt; rated value of input range), min.</li> <li>Interpretidiggnostice/status information</li> <li>Yes</li> <li>Marms</li> <li>Diagnostic alarm</li> <li>Yes</li> <li>Maining the supply voltage</li> <li>Wire-break</li> <li>Short-circuit</li> <li>Yes</li> <li>Yes, channel by channel</li> <li>Yes, channel by channel</li> <li>Short-circuit</li> </ul>		
<ul></ul>		16 bit
• Interference voltage suppression for interference frequency ft in Hz       10 / 50 / 60 Hz         • Number of smoothing levels       4; None; 4/8/16 times         • Number of smoothing levels       4; None; 4/8/16 times         • parameterizable       Yes         Encoder       Connection of signal encoders         • for voltage measurement as 2-wire transducer       No         • for current measurement as 2-wire transducer       Yes         Errors/accuracies       Linearity error (relative to input range), (+/-)       0.01 %         Temperature error (relative to input range), (+/-)       0.05 %/K       Coostalk between the inputs, min.         Repeat accuracy in steady state at 25 °C (relative to input range), (+/-)       0.05 %       Repeat accuracy in steady state at 25 °C (relative to input range), (+/-)         Operational error limit (operational limit at 25 °C)       0.5 %       Basic error limit (operational limit at 25 °C)         • Current, relative to input range, (+/-)       0.3 %       Interference voltage suppression for = n x (11 +/-1 %), f1 = interference frequency         • Series mode interference (peak value of input range), min.       Intergence voltage suppression for = n x (11 +/-1 %), f1 = interference frequency         • Series mode interference (peak value of input range), min.       Yes         Diagnostics function       Yes         Obagnostic alatintherformence (peak value of input range), Ye		
frequency f1 in Hz       Frequency f1 in Hz         Smoothing of measured values       4; None; 4/8/16 times <ul> <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>Yes</li> <li>Errors/accuracies</li> <li>Linearity error (relative to input range), (+/-)</li> <li>0.01 %</li> <li>Temperature error (relative to input range), (+/-)</li> <li>0.005 %//K</li> <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>0.05 %</li> <li>Current, relative to input range, (+/-)</li> <li>0.5 %</li> <li>Basic error limit (noverall temperature range</li> <li>Current, relative to input range, (+/-)</li> <li>0.3 %</li> <li>Interference voltage suppression for T = nx (f1 +/- 1 %), f1 = interference frequency</li> <li>Series mode interference (peak value of input range), min.</li> <li>Interference voltage suppression for T = nx (f1 +/- 1 %), f1 = interference frequency</li> <li>Series mode interference (peak value of input range), min.</li> <li>Interference &lt; rated value of input range), min.</li> <li>Diagnostics/status information</li> <li>Diagnostics/status information</li> <li>Diagnostics/status information</li> <li>Yes</li> <li>Diagnostics/status information</li> <li>Yes</li> <li>Diagnostic sharm</li> <li>Yes (channel by channel</li> <li>Yes; channel by channel</li> <li>Yes; channel by channel</li> <li>Yes; channel by channel</li> <li>Short-circuit of the encoder supply to ground or of an input to t</li></ul>		
Smoothing of measured values       4: None; 4/8/16 times         • Number of smoothing levels       4: None; 4/8/16 times         • parameterizable       Yes         Encodor       Connection of signal encoders         • for voltage measurement       No         • 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), (+/-)       0.5 %         Departional error limit in overall temperature range       • Current, relative to input range, (+/-)         • Current, relative to input range, (+/-)       0.5 %         Basic error limit (operational limit at 25 °C)       • Current, relative to input range, (+/-)         • 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 (repak value of input range), min.         Diagnostics function       Yes         Alarms       • Diagnostic status         • Diagnostic alarm       Yes         • Monitoring the supply voltage       Yes; Channel by channel		107 007 00 112
• Number of smoothing levels     4; None; 4/8/16 times       • parameterizable     Yes       Encodar     Connection of signal encoders       • for voltage measurement     No       • for current measurement as 2-wire transducer     Yes       Errors/accuracies     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), (+/-)     0.5 %       Depertional error limit in overall temperature range     • Current, relative to input range, (+/-)       • Current, relative to input range, (+/-)     0.5 %       Basic error limit (operational limit at 25 °C)     • Current, relative to input range, (+/-)       • 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 (peak value of interference (peak value of interference state value of interference value of interference (peak value of interference (peak value of interference state value of interference / Peak value of i		
parameterizable Yes  Ercoder  Connection of signal encoders      for voltage measurement     for ourrent measurement as 2-wire transducer  Errors/accuracies  Linearity 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      Current, relative to input range, (+/-)      Sacie cror limit (operational limit at 25 °C)      Current, relative to input range, (+/-)      Sacie cror limit (operational limit at 25 °C)      Current, relative to input range, (+/-)      Sacie cror limit (operational limit at 25 °C)      Current, relative to input range, (+/-)      Sacie cror limit (operational limit at 25 °C)      Current, relative to input range, (+/-)      D.3 %  Interference < rated value of input range, min.  Interrupts/diagnostics/status information  Diagnostics function  Yes  Aarms  Monitoring the supply voltage  Wire-break  Short-circuit  Yes  Yes  Yes  Yes  Yes  Yes  Yes  Ye	-	4; None; 4/8/16 times
Connection of signal encoders       • for voltage measurement       No         • for current measurement as 2-wire transducer       Yes         Errors/accuracies       0.01 %         Linearity error (relative to input range), (+/-)       0.01 %         Constalk 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       • Current, relative to input range, (+/-)         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 x (f1 +/- 1 %), f1 = interference frequency       • Series mode interference (peak value of input range), min.         Interrupts/diagnostics/status information       60 dB         Diagnostics function       Yes         Alarms       -         • Diagnostic sfunction       Yes         • Limit value alarm       Yes         • Monitoring the supply voltage       Yes; Channel by channel         • Wire-break       Yes; Channel-by-channel, short-circuit of the encoder supply to ground or of an input to the encoder supply to ground or of an input to the encoder supply	-	
Connection of signal encoders       • for voltage measurement       No         • for current measurement as 2-wire transducer       Yes         Errors/accuracies       0.01 %         Linearity error (relative to input range), (+/-)       0.01 %         Constalk 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       • Current, relative to input range, (+/-)         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 x (f1 +/- 1 %), f1 = interference frequency       • Series mode interference (peak value of input range), min.         Interrupts/diagnostics/status information       60 dB         Diagnostics function       Yes         Alarms       -         • Diagnostic sfunction       Yes         • Limit value alarm       Yes         • Monitoring the supply voltage       Yes; Channel by channel         • Wire-break       Yes; Channel-by-channel, short-circuit of the encoder supply to ground or of an input to the encoder supply to ground or of an input to the encoder supply	Encoder	
• for voltage measurement       No         • for current measurement as 2-wire transducer       Yes         Errors/accuracies       Enearity 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       0.5 %         • 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 x (f1 +/- 1 %), f1 = interference frequency       • Series mode interference (peak value of input range), min.         Interretence < rated value of input range), min.		
• for current measurement as 2-wire transducer       Yes         Errors/accuracies		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.       60 dB         Repeat accuracy in steady state at 25 °C (relative to input range), (+/-)       0.05 %         Operational error limit in overall temperature range       0.05 %         e Current, relative to input range, (+/-)       0.5 %         Basic error limit (operational limit at 25 °C)       0.3 %         Interference voltage suppression for f = n x (f1 +/- 1 %), f1 = interference frequency       60 dB         • Series mode interference (peak value of interference (peak value of interference (rade value of input range), min.       60 dB         Interference < rated value of input range), min.	-	
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       0.05 %         Current, relative to input range, (+/-)       0.5 %         Basic error limit (operational limit at 25 °C)       0.3 %         Interference voltage suppression for f = n x (f1 +/- 1 %), f1 = interference frequency       60 dB         • Series mode interference (peak value of input range), min.       60 dB         Interference < rated value of input range), min.		
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       0.05 %         • Current, relative to input range, (+/-)       0.5 %         Basic error limit (operational limit at 25 °C)       0.5 %         • Current, relative to input range, (+/-)       0.3 %         Interference voltage suppression for f = n x (f1 +/- 1 %), f1 = interference frequency       60 dB         • Series mode interference (peak value of interference (peak value of interference (peak value of interference (peak value of interference < rated value of input range), min.		0.04.0/
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       0.05 %         e Current, relative to input range, (+/-)       0.5 %         Basic error limit (operational limit at 25 °C)       0.3 %         Interference voltage suppression for f = n x (f1 +/- 1 %), f1 = interference frequency       60 dB         • Series mode interference (peak value of interference (peak value of interference < rated value of interference (peak value of interference < rated value of input range), min.		
Repeat accuracy in steady state at 25 °C (relative to input range), (+/-)       0.05 %         Operational error limit in overall temperature range       0.05 %         Current, relative to input range, (+/-)       0.5 %         Basic error limit (operational limit at 25 °C)       0.5 %         Current, relative to input range, (+/-)       0.3 %         Interference voltage suppression for f = n x (f1 +/- 1 %), f1 = interference frequency       60 dB         Series mode interference (peak value of interference (peak value of interference < rated value of input range), min.		
range), (+/-)       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, (+/-)         • 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 input range), min.         Interrupts/diagnostics/status information       60 dB         Diagnostics function       Yes         Alarms       • Diagnostic alarm         • Diagnoses       Yes         • Monitoring the supply voltage       Yes         • Monitoring the supply voltage       Yes; channel by channel         • Short-circuit       Yes; Channel-by-channel, short-circuit of the encoder supply to ground or of an input to the encoder supply		
Operational error limit in overall temperature range       0.5 %         Basic error limit (operational limit at 25 °C)       0.3 %         Current, relative to input range, (+/-)       0.3 %         Interference voltage suppression for f = n x (f1 +/- 1 %), f1 = interference frequency       60 dB         • Series mode interference (peak value of interference (peak value of interference < rated value of input range), min.		0.05 %
• 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 x (f1 +/- 1 %), f1 = interference frequency       • Series mode interference (peak value of interference (peak value of interference < rated value of input range), min.		
Basic error limit (operational limit at 25 °C)         • 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 < rated value of input range), min.	· · ·	0.5.%
• 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 input range), min.         Interrupts/diagnostics/status information       60 dB         Diagnostics function       Yes         Alarms       • Diagnostic alarm         • Limit value alarm       Yes         Diagnoses       • Kes         • Monitoring the supply voltage       Yes; channel by channel         • Short-circuit       Yes; Channel-by-channel, short-circuit of the encoder supply to ground or of an input to the encoder supply		0.5 %
Interference voltage suppression for f = n x (f1 +/- 1 %), f1 = interference frequency       60 dB         • Series mode interference (peak value of interference (peak value of input range), min.       60 dB         Interrupts/diagnostics/status information       7         Diagnostics function       Yes         Alarms       Yes         • Diagnostic alarm       Yes         • Limit value alarm       Yes         Diagnoses       Yes         • Monitoring the supply voltage       Yes; channel by channel         • Short-circuit       Yes; Channel-by-channel, short-circuit of the encoder supply to ground or of an input to the encoder supply		0.0.11
<ul> <li>Series mode interference (peak value of input range), min.</li> <li>Interrupts/diagnostics/status information</li> <li>Diagnostics function</li> <li>Yes</li> <li>Alarms</li> <li>Diagnostic alarm</li> <li>Limit value alarm</li> <li>Yes</li> <li>Diagnoses</li> <li>Monitoring the supply voltage</li> <li>Wire-break</li> <li>Short-circuit</li> <li>Yes; Channel by channel</li> <li>Yes; Channel-by-channel, short-circuit of the encoder supply to ground or of an input to the encoder supply</li> </ul>		
interference < rated value of input range), min.		
Interrupts/diagnostics/status information         Diagnostics function       Yes         Alarms       • Diagnostic alarm         • Diagnostic alarm       Yes         • Limit value alarm       Yes         Diagnoses       • Monitoring the supply voltage         • Wire-break       Yes; channel by channel         • Short-circuit       Yes; Channel-by-channel, short-circuit of the encoder supply to ground or of an input to the encoder supply		00 GR
Diagnostics function       Yes         Alarms       • Diagnostic alarm         • Diagnostic alarm       Yes         • Limit value alarm       Yes         Diagnoses       • Monitoring the supply voltage         • Wire-break       Yes; channel by channel         • Short-circuit       Yes; Channel-by-channel, short-circuit of the encoder supply to ground or of an input to the encoder supply		
Alarms       Yes         • Diagnostic alarm       Yes         • Limit value alarm       Yes         Diagnoses       Yes         • Monitoring the supply voltage       Yes         • Wire-break       Yes; channel by channel         • Short-circuit       Yes; Channel-by-channel, short-circuit of the encoder supply to ground or of an input to the encoder supply		N
<ul> <li>Diagnostic alarm</li> <li>Limit value alarm</li> </ul> Yes           Diagnoses         Diagnoses <ul> <li>Monitoring the supply voltage</li> <li>Yes; channel by channel</li> <li>Short-circuit</li> <li>Yes; Channel-by-channel, short-circuit of the encoder supply to ground or of an input to the encoder supply</li> </ul>		Yes
Limit value alarm       Yes         Diagnoses       Yes         • Monitoring the supply voltage       Yes         • Wire-break       Yes; channel by channel         • Short-circuit       Yes; Channel-by-channel, short-circuit of the encoder supply to ground or of an input to the encoder supply		
Diagnoses       • Monitoring the supply voltage       Yes         • Wire-break       Yes; channel by channel         • Short-circuit       Yes; Channel-by-channel, short-circuit of the encoder supply to ground or of an input to the encoder supply	-	
<ul> <li>Monitoring the supply voltage</li> <li>Wire-break</li> <li>Short-circuit</li> <li>Yes; channel by channel</li> <li>Yes; Channel-by-channel, short-circuit of the encoder supply to ground or of an input to the encoder supply</li> </ul>		Yes
Wire-break Yes; channel by channel     Short-circuit     Yes; Channel-by-channel, short-circuit of the encoder supply to ground     or of an input to the encoder supply	5	
• Short-circuit Yes; Channel-by-channel, short-circuit of the encoder supply to ground or of an input to the encoder supply		
or of an input to the encoder supply	• Wire-break	
	Short-circuit	
Group error     Yes		
	• Group error	res

Overflow/underflow	Yes; channel by channel
Diagnostics indication LED	
<ul> <li>Monitoring of the supply voltage (PWR-LED)</li> </ul>	Yes; green PWR LED
<ul> <li>Channel status display</li> </ul>	Yes; green LED
<ul> <li>for channel diagnostics</li> </ul>	Yes; red LED
<ul> <li>for module diagnostics</li> </ul>	Yes; green/red DIAG LED
Potential separation	
Potential separation channels	
<ul> <li>between the channels</li> </ul>	No
<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>	No
Isolation	
Isolation tested with	707 V DC (type test)
Ambient conditions	
Ambient temperature during operation	
<ul> <li>horizontal installation, min.</li> </ul>	-30 °C
<ul> <li>horizontal installation, max.</li> </ul>	60 °C
<ul> <li>vertical installation, min.</li> </ul>	-30 °C
<ul> <li>vertical installation, max.</li> </ul>	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 ET 200SP system manual
Dimensions	
Width	15 mm
Height	73 mm
Depth	58 mm
Weights	
Weight, approx.	31 g
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