SIEMENS

Data sheet

6ES7134-7SD51-0AB0

SIMATIC DP, electronics module for ET200iSP, 4 AI, RTD, for connection of resistance thermometers Pt100/NI100



Figure similar

Input current	
from supply voltage L+, max.	22 mA
Power loss	
Power loss, typ.	0.4 W
Analog inputs	
Number of analog inputs	4
Cycle time (all channels) max.	320 ms; 66 ms basic conversion time x 4 channels with
	interference frequency suppression 60 Hz, 80 ms basic
	conversion time x 4 channels with interference frequency
	suppression 50 Hz
Technical unit for temperature measurement	Yes
adjustable	
Input ranges	
Voltage	No
Current	No
Thermocouple	No
Resistance thermometer	Yes

Input ranges (rated values), resistance thermometer • Ni 100 Yes • Input resistance (Ni 100) 2 000 kΩ • Pt 100 Yes • Input resistance (Pt 100) 2 000 kΩ Input ranges (rated values), resistors 2 000 kΩ • 0 to 600 ohms Yes; Also 1000 ohms • 1 put resistance (0 to 600 ohms) 1 000 kΩ Characteristic linearization Yes • parameterizable Yes - for resistance thermometer Yes Oable length 500 m Analog value generation for the inputs fintegrating (Sigma-Delta) Integration and conversion time/resolution per channel 16 bit • Resolution with overrange (bit including sign), max. 16 bit • Integration time, parameterizable Yes - additional conversion time for wire-break monitoring 5 ms - additional conversion for interference frequency f1 in Hz 50 / 60 Hz Smoothing of measured values Yes; in 4 stages	
Interference voltage supression for interference frequency f1 in Hz2 000 kΩPt 1002 000 kΩInput resistance (Ni 100)2 000 kΩInput resistance (Pt 100)2 000 kΩInput ranges (rated values), resistorsYes; Also 1000 ohms0 to 600 ohms1 000 kΩCharacteristic linearizationYes• parameterizableYes- for resistance thermometerYesCable lengthYes• shielded, max.500 mAnalog value generation for the inputsMeasurement principleintegrating (Sigma-Delta)Integration and conversion time/resolution per channel• Integration time, parameterizableYes- additional conversion time for wire-break monitoring16 bit- additional conversion time for wire-break monitoring50 m s at 50 Hz; 66 ms at 60 Hz• Interference voltage suppression for interference frequency f1 in Hz50 / 60 Hz• Smoothing of measured values50 / 60 Hz	
• Pt 100 Yes • Pt 100 2 000 kΩ Input ranges (rated values), resistors 2 000 kΩ • 0 to 600 ohms Yes; Also 1000 ohms • Input resistance (0 to 600 ohms) 1 000 kΩ Characteristic linearization Yes • parameterizable Yes - for resistance thermometer Yes Cable length 500 m Analog value generation for the inputs Integrating (Sigma-Delta) Integration and conversion time/resolution per channel Integrating (Sigma-Delta) Integration time, parameterizable Yes • Resolution with overrange (bit including sign), max. 16 bit • Integration time, parameterizable Yes • Basic conversion time for wire-break monitoring 5 ms - additional conversion time for wire-break monitoring 5 ms • Interference voltage suppression for interference frequency f1 in Hz 50 / 60 Hz Stroothing of measured values 50 / 60 Hz	
• Input resistance (Pt 100) 2 000 kΩ Input ranges (rated values), resistors Ves; Also 1000 ohms • 0 to 600 ohms Yes; Also 1000 ohms • Input resistance (0 to 600 ohms) 1 000 kΩ Characteristic linearization Yes • parameterizable Yes - for resistance thermometer Yes Cable length 500 m • shielded, max. 500 m Analog value generation for the inputs Measurement principle integrating (Sigma-Delta) Integration and conversion time/resolution per channel Yes • Resolution with overrange (bit including sign), max. 16 bit • Integration time, parameterizable Yes • Basic conversion time for wire-break monitoring 5 ms - additional conversion time for wire-break monitoring 5 ms • Interference voltage suppression for interference frequency f1 in Hz 50 / 60 Hz Stmoothing of measured values	
Input ranges (rated values), resistors • 0 to 600 ohms Yes; Also 1000 ohms • Input resistance (0 to 600 ohms) 1 000 kΩ Characteristic linearization • • parameterizable Yes — for resistance thermometer Yes Cable length 500 m • shielded, max. 500 m Analog value generation for the inputs measurement principle • Resolution with overrange (bit including sign), max. 16 bit • Integration time, parameterizable Yes • Basic conversion time, including integration time (ms) 80 ms at 50 Hz; 66 ms at 60 Hz • Interference voltage suppression for interference frequency f1 in Hz 5 ms Smoothing of measured values 50 / 60 Hz	
• 0 to 600 ohms Yes; Also 1000 ohms • Input resistance (0 to 600 ohms) 1 000 kΩ Characteristic linearization - • parameterizable Yes - for resistance thermometer Yes Cable length 500 m • shielded, max. 500 m Analog value generation for the inputs	
• Input resistance (0 to 600 ohms) 1 000 kΩ Characteristic linearization Yes • parameterizable Yes — for resistance thermometer Yes Cable length Yes • shielded, max. 500 m Analog value generation for the inputs Measurement principle Integration and conversion time/resolution per channel integrating (Sigma-Delta) Integration and conversion time/resolution per channel 6 bit • Resolution with overrange (bit including sign), max. 16 bit • Integration time, parameterizable Yes • Basic conversion time, including integration time (ms) 50 ms at 50 Hz; 66 ms at 60 Hz — additional conversion time for wire-break monitoring 5 ms • Interference voltage suppression for interference frequency f1 in Hz 50 / 60 Hz Smoothing of measured values 6	
Characteristic linearization Yes • parameterizable Yes — for resistance thermometer Yes Cable length 500 m • shielded, max. 500 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 per channel 16 bit • Resolution with overrange (bit including sign), max. 16 bit • Integration time, parameterizable Yes • Basic conversion time, including integration time (ms) 80 ms at 50 Hz; 66 ms at 60 Hz — additional conversion time for wire-break monitoring 5 ms • Interference voltage suppression for interference frequency f1 in Hz 50 / 60 Hz Smoothing of measured values	
• parameterizable Yes - for resistance thermometer Yes Cable length 500 m • shielded, max. 500 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 • Basic conversion time, including integration time (ms) 80 ms at 50 Hz; 66 ms at 60 Hz - additional conversion time for wire-break monitoring 5 ms • Interference voltage suppression for interference frequency f1 in Hz 50 / 60 Hz Smoothing of measured values	
for resistance thermometer Yes Cable length 500 m • shielded, max. 500 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 • Basic conversion time, including integration time (ms) 80 ms at 50 Hz; 66 ms at 60 Hz additional conversion time for wire-break monitoring 5 ms • Interference voltage suppression for interference frequency f1 in Hz 50 / 60 Hz Smoothing of measured values	
Cable length 500 m Analog value generation for the inputs integrating (Sigma-Delta) Measurement principle integrating (Sigma-Delta) Integration and conversion time/resolution per channel 6 • Resolution with overrange (bit including sign), max. 16 bit • Integration time, parameterizable Yes • Basic conversion time, including integration time (ms) - additional conversion time for wire-break monitoring • Interference voltage suppression for interference frequency f1 in Hz 50 / 60 Hz Smoothing of measured values 50 / 60 Hz	
• shielded, max.500 mAnalog value generation for the inputsMeasurement principleintegrating (Sigma-Delta)Integration and conversion time/resolution per channel• Resolution with overrange (bit including sign), max.16 bit• Integration time, parameterizableYes• Basic conversion time, including integration time (ms)80 ms at 50 Hz; 66 ms at 60 Hz- additional conversion time for wire-break monitoring5 ms• Interference voltage suppression for interference frequency f1 in Hz50 / 60 HzSmoothing of measured values	
Analog value generation for the inputs Measurement principle integrating (Sigma-Delta) Integration and conversion time/resolution per channel integrating (Sigma-Delta) Resolution with overrange (bit including sign), max. 16 bit Integration time, parameterizable Yes Basic conversion time, including integration time (ms) 30 ms at 50 Hz; 66 ms at 60 Hz — additional conversion time for wire-break monitoring 5 ms Interference voltage suppression for interference frequency f1 in Hz 50 / 60 Hz Smoothing of measured values 4	
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 • Basic conversion time, including integration time (ms) 80 ms at 50 Hz; 66 ms at 60 Hz - additional conversion time for wire-break monitoring 5 ms • Interference voltage suppression for interference frequency f1 in Hz 50 / 60 Hz	
Measurement principle integrating (Sigma-Delta) Integration and conversion time/resolution per channel Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max. 16 bit • Integration time, parameterizable Yes • Basic conversion time, including integration time (ms) 80 ms at 50 Hz; 66 ms at 60 Hz - additional conversion time for wire-break monitoring 5 ms • Interference voltage suppression for interference frequency f1 in Hz 50 / 60 Hz	
Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max. 16 bit • Integration time, parameterizable Yes • Basic conversion time, including integration time (ms) 80 ms at 50 Hz; 66 ms at 60 Hz additional conversion time for wire-break monitoring 5 ms • Interference voltage suppression for interference frequency f1 in Hz 50 / 60 Hz	
 Resolution with overrange (bit including sign), max. Integration time, parameterizable Basic conversion time, including integration time (ms) additional conversion time for wire-break monitoring Interference voltage suppression for interference frequency f1 in Hz Smoothing of measured values 	
max. Integration time, parameterizable Basic conversion time, including integration time (ms)	
 Basic conversion time, including integration time (ms) — additional conversion time for wire-break monitoring Interference voltage suppression for interference frequency f1 in Hz Smoothing of measured values 	
time (ms) - additional conversion time for wire-break monitoring • Interference voltage suppression for interference frequency f1 in Hz Smoothing of measured values	
 additional conversion time for wire-break monitoring Interference voltage suppression for interference frequency f1 in Hz Smoothing of measured values 	
• Interference voltage suppression for interference frequency f1 in Hz Smoothing of measured values	
Interference voltage suppression for interference frequency f1 in Hz Smoothing of measured values	
interference frequency f1 in Hz Smoothing of measured values	
Smoothing of measured values	
parameterizable Yes: In 4 stages	
Step: None Yes; 1 x cycle time	
Step: low Yes; 4 x cycle time	
Step: Medium Yes; 32 x cycle time	
Step: High Yes; 64 x cycle time	
Encoder	
Connection of signal encoders	
for resistance measurement with two-wire Yes connection	
• for resistance measurement with three-wire Yes Connection	
• for resistance measurement with four-wire Yes connection	
Errors/accuracies	
Linearity error (relative to input range), (+/-) 0.015 %	

Temperature error (relative to input range), (+/-) 0.02 %/K Crosstalk between the inputs, min. -50 dB Repeat accuracy in steady state at 25 °C (relative to input range), (+/-) 0.01 % Operational error limit in overall temperature range 0.15 %; Applies to resistances standard ±0.8 K, climatic range, (+/-) Basic error limit (operational limit at 25 °C) 0.1 %; Applies to resistances standard ±0.5 K, climatic : ange, (+/-) Interference voltage suppression for f = n x (f1 +/- 1 %), f1 = interference frequency 0.1 %; Applies to resistances standard ±0.5 K, climatic : ange, (+/-) Interference < rated value of input range), min. 0.0 dB • Common mode interference, (peak value of input range), min. 90 dB • Common mode interference, min. 90 dB Interrupts/diagnostics/status information Alarms • Diagnostic alarm • Diagnostic information readable Yes • Diagnostic information readable Yes • Short-circuit Yes • Group error Yes Diagnostics indication LED Yes • Group error SF (red) Yes	
Repeat accuracy in steady state at 25 °C (relative to input range), (+/-) 0.01 % Operational error limit in overall temperature range 0.15 %; Applies to resistances standard ±0.8 K, climatic range, (+/-) Basic error limit (operational limit at 25 °C) 0.15 %; Applies to resistances standard ±0.5 K, climatic range, (+/-) Interference voltage suppression for f = n x (f1 +/- 1 %), f1 = interference frequency 0.1 % • Series mode interference (peak value of interference < rated value of input range), min.	
input range), (+/-) Operational error limit in overall temperature range • Resistance thermometer, relative to input range, (+/-) Basic error limit (operational limit at 25 °C) • Resistance thermometer, relative to input range, (+/-) Interference voltage suppression for f = n x (f1 +/- 1 %), f1 = interference frequency • Series mode interference (peak value of interference, min. • Odd B Interrupts/diagnostics/status information Alarms • Diagnostic information readable Yes • Diagnostic information readable Yes • Wire-break Yes • Diagnostic information LED Yes • Group error SF (red) Yes	
• Resistance thermometer, relative to input range, (+/-) 0.15 %; Applies to resistances standard ±0.8 K, climatic Basic error limit (operational limit at 25 °C) • Resistance thermometer, relative to input range, (+/-) Interference voltage suppression for f = n x (11 +/- 1 %), f1 = interference frequency 0.1 %; Applies to resistances standard ±0.5 K, climatic interference of the standard ±0.5 K, climatic interference voltage suppression for f = n x (11 +/- 1 %), f1 = interference frequency • Series mode interference (peak value of interference (peak value of interference < rated value of input range), min.	
range, (+/-) Basic error limit (operational limit at 25 °C) • Resistance thermometer, relative to input range, (+/-) 0.1 %; Applies to resistances standard ±0.5 K, climatic : Interference voltage suppression for f = n x (f1 +/- 1 %), f1 = interference frequency 0 • Series mode interference (peak value of interference (peak value of interference < rated value of input range), min.	
 Resistance thermometer, relative to input range, (+/-) 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. Common mode interference, min. 90 dB Interrupts/diagnostics/status information Alarms Diagnostic alarm Limit value alarm Diagnostic information readable Wire-break Short-circuit Group error Group error SF (red) Yes Potential separation 	:0.2 K
range, (+/-) 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.	:0.2 K
• Series mode interference (peak value of interference < rated value of input range), min. • Common mode interference, min.70 dB• Common mode interference, min.90 dBInterrupts/diagnostics/status informationAlarms• Diagnostic alarm • Limit value alarmYes• Diagnostic messagesYes• Diagnostic information readable • Wire-break • Short-circuit • Group errorYes• Diagnostics indication LED • Group error SF (red)YesPotential separationYes	
interference < rated value of input range), min. • Common mode interference, min. 90 dB Interrupts/diagnostics/status information Alarms • Diagnostic alarm Yes • Diagnostic messages • Diagnostic information readable Yes • Wire-break Yes • Wire-break Yes • Short-circuit Yes • Group error Yes Diagnostics indication LED • Group error SF (red) Yes	
• Common mode interference, min.90 dBInterrupts/diagnostics/status informationAlarms• Diagnostic alarmYes• Limit value alarmYesDiagnostic messagesYes• Diagnostic information readableYes• Wire-breakYes• Short-circuitYes• Group errorYesDiagnostics indication LEDYes• Group error SF (red)YesPotential separation	
Interrupts/diagnostics/status information Alarms • Diagnostic alarm Yes • Limit value alarm Yes Diagnostic messages Yes • Diagnostic information readable Yes • Wire-break Yes • Short-circuit Yes • Group error Yes Diagnostics indication LED Yes • Group error SF (red) Yes	
Alarms Yes • Diagnostic alarm Yes • Limit value alarm Yes Diagnostic messages Yes • Diagnostic information readable Yes • Wire-break Yes • Short-circuit Yes • Group error Yes Diagnostics indication LED Yes • Group error SF (red) Yes	
• Diagnostic alarmYes• Limit value alarmYesDiagnostic messagesYes• Diagnostic information readableYes• Wire-breakYes• Short-circuitYes• Group errorYesDiagnostics indication LEDYes• Group error SF (red)YesPotential separationYes	
• Limit value alarm Yes Diagnostic messages Yes • Diagnostic information readable Yes • Wire-break Yes • Short-circuit Yes • Group error Yes Diagnostics indication LED Yes • Group error SF (red) Yes	
Diagnostic messages • Diagnostic information readable Yes • Wire-break Yes • Short-circuit Yes • Group error Yes Diagnostics indication LED Yes • Group error SF (red) Yes	
• Diagnostic information readableYes• Wire-breakYes• Short-circuitYes• Group errorYesDiagnostics indication LEDYes• Group error SF (red)YesPotential separation	
 Wire-break Short-circuit Group error Yes Diagnostics indication LED Group error SF (red) Yes 	
Short-circuit Short-circuit Group error Yes Diagnostics indication LED Group error SF (red) Yes Potential separation	
Diagnostics indication LED • Group error SF (red) Yes	
Group error SF (red) Yes Potential separation	
Potential separation	
Potential separation analog inputs	
between the channels No	
between the channels and backplane bus Yes	
Between the channels and load voltage L+ Yes; Channels and power bus	
Standards, approvals, certificates	
CE mark Yes	
Highest safety class achievable in safety mode	
Performance level according to ISO 13849-1 none	
SIL acc. to IEC 61508 No	
Use in hazardous areas	
• Type of protection acc. to EN 50020 II2 G (1) GD Ex ib[ia] IIC T4 and I M2 Ex ib[ia] I (CENELEC)	
• Type of protection acc. to KEMA 04 ATEX 1247	
Dimensions	
Width 30 mm	

Height Depth	129 mm 136.5 mm	
Weights		
Weight, approx.	230 g	
last modified:	05/17/2018	