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Data sheet 6DL1134-6JD00-0HX1

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SIMATIC ET 200SP HA, ET 200SP, analog ex-i input module, Ex-AI 4xTC/2xRTD 2-/3-/4-wire, suitable for BaseUnit type X1, channel diagnostics, 16bit, +/-0.05%



Figure similar

General information	
Product type designation	Ex-AI 4xTC/2xRTD 2-/3-/4-wire
Firmware version	V1.0
● FW update possible	Yes
usable BaseUnits	BU type X1
Product function	
● I&M data	Yes; I&M0 to I&M3
● Isochronous mode	No
Engineering with	
● STEP 7 TIA Portal configurable/integrated from version	V16
● STEP 7 configurable/integrated from version	V5.6 SP2
● PCS 7 configurable/integrated from version	V9.1
● PCS neo can be configured/integrated from version	V3.1
● PROFINET from GSD version/GSD revision	GSDML V2.35
Operating mode	
● MSI	Yes
Redundancy	
● Redundancy capability	No
CiR - Configuration in RUN	
Reparameterization possible in RUN	Yes
Input current	
Current consumption (rated value)	33 mA
Current consumption, max.	40 mA
Power loss	
Power loss, typ.	0.8 W
Address area	
Address space per module	
● Address space per module, max.	16 byte; + 1 byte for QI information
● Inputs	16 byte; + 1 byte for QI information
Hardware configuration	
Automatic encoding	
● Mechanical coding element	Yes
Selection of BaseUnit for connection variants	
● 2-wire connection	BU type X1
● 3-wire connection	BU type X1

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● 4-wire connection	BU type X1
Analog inputs	
Number of analog inputs	
● For voltage measurement	4
● For resistance/resistance thermometer measurement	2
● For thermocouple measurement	4
Constant measurement current for resistance-type transmitter, typ.	0.5 mA
Technical unit for temperature measurement adjustable	Yes; °C/°F/K
Input ranges (rated values), voltages	
● -1 V to +1 V	Yes; 16 bit incl. sign
— Input resistance (-1 V to +1 V)	1 MΩ
● -250 mV to +250 mV	Yes; 16 bit incl. sign
— Input resistance (-250 mV to +250 mV)	1 MΩ
● -50 mV to +50 mV	Yes; 16 bit incl. sign
— Input resistance (-50 mV to +50 mV)	1 MΩ
● -80 mV to +80 mV	Yes; 16 bit incl. sign
— Input resistance (-80 mV to +80 mV)	1 MΩ
Input ranges (rated values), thermocouples	
● Type B	Yes; 16 bit incl. sign
— Input resistance (Type B)	1 MΩ
● Type C	Yes; 16 bit incl. sign
— Input resistance (Type C)	1 MΩ
● Type E	Yes; 16 bit incl. sign
— Input resistance (Type E)	1 MΩ
● Type J	Yes; 16 bit incl. sign
— Input resistance (type J)	1 MΩ
● Type K	Yes; 16 bit incl. sign
— Input resistance (Type K)	1 MΩ
● Type L	Yes; 16 bit incl. sign
— Input resistance (Type L)	1 MΩ
● Type N	Yes; 16 bit incl. sign
— Input resistance (Type N)	1 MΩ
● Type R	Yes; 16 bit incl. sign
— Input resistance (Type R)	1 MΩ
● Type S	Yes; 16 bit incl. sign
— Input resistance (Type S)	1 MΩ
● Type T	Yes; 16 bit incl. sign
— Input resistance (Type T)	1 MΩ
● Type U	Yes; 16 bit incl. sign
— Input resistance (Type U)	1 MΩ
● Type TXK/TXK(L) to GOST	Yes; 16 bit incl. sign
— Input resistance (Type TXK/TXK(L) to GOST)	1 MΩ
Input ranges (rated values), resistance thermometer	
● Cu 10	Yes; 16 bit incl. sign
— Input resistance (Cu 10)	1 MΩ
● Ni 100	Yes; 16 bit incl. sign
— Input resistance (Ni 100)	1 MΩ
● Ni 1000	
— Input resistance (Ni 1000)	1 MΩ
● LG-Ni 1000	Yes; 16 bit incl. sign
● Ni 120	Yes; 16 bit incl. sign
— Input resistance (Ni 120)	1 MΩ
● Ni 200	Yes; 16 bit incl. sign
— Input resistance (Ni 200)	1 MΩ
● Ni 500	Yes; 16 bit incl. sign
— Input resistance (Ni 500)	1 MΩ
● Pt 100	Yes; 16 bit incl. sign
— Input resistance (Pt 100)	1 MΩ

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● Pt 1000	Yes; 16 bit incl. sign
— Input resistance (Pt 1000)	1 MΩ
● Pt 200	Yes; 16 bit incl. sign
— Input resistance (Pt 200)	1 MΩ
● Pt 500	Yes; 16 bit incl. sign
— Input resistance (Pt 500)	1 MΩ
Input ranges (rated values), resistors	
● 0 to 150 ohms	Yes; 15 bit
— Input resistance (0 to 150 ohms)	1 MΩ
● 0 to 300 ohms	Yes; 15 bit
— Input resistance (0 to 300 ohms)	1 MΩ
● 0 to 600 ohms	Yes; 15 bit
— Input resistance (0 to 600 ohms)	1 MΩ
● 0 to 3000 ohms	Yes; 15 bit
— Input resistance (0 to 3000 ohms)	1 MΩ
● 0 to 6000 ohms	Yes; 15 bit
— Input resistance (0 to 6000 ohms)	1 MΩ
● PTC	Yes; 15 bit
— Input resistance (PTC)	1 MΩ
Thermocouple (TC)	
Temperature compensation	
— Parameterizable	Yes
— internal comparison point	Yes; BU type X1
— Reference channel of the group	Yes
— Number of reference channel groups	4
— fixed reference temperature	Yes
Cable length	
● shielded, max.	200 m; Ex characteristic values must be observed; line resistance at RTD (simple) max. 25 ohm; loop resistance at TC max. 8 kOhm
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; Channel-by-channel, results from the selected interference frequency suppression
● Basic conversion time, including integration time (ms)	
— additional processing time for wire-break check	20 ms; In the ranges resistance thermometers, resistors and thermocouples
— additional power line wire-break check	20 ms, for 3/4-wire transducer (resistance thermometer and resistor)
● Interference voltage suppression for interference frequency f1 in Hz	16.6 / 50 / 60 Hz, channel-by-channel
● Conversion time (per channel)	180 / 60 / 50 ms, results from the selected interference frequency suppression
Smoothing of measured values	
● Parameterizable	Yes; none, weak, medium, strong, channel-by-channel
Errors/accuracies	
Linearity error (relative to input range), (+/-)	0.01 %; ±0.1 % for resistance thermometers and resistance
Temperature error (relative to input range), (+/-)	0.0009 %/K; ±0.005 % / K at thermocouple
Crosstalk between the inputs, min.	50 dB
Repeat accuracy in steady state at 25 °C (relative to input range), (+/-)	0.05 %
Operational error limit in overall temperature range	
● Voltage, relative to input range, (+/-)	0.1 %
● Resistance, relative to input range, (+/-)	0.1 %
Basic error limit (operational limit at 25 °C)	
● Voltage, relative to input range, (+/-)	0.05 %
● Resistance, relative to input range, (+/-)	0.05 %
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.	70 dB
● Common mode voltage, max.	60 V; Applicable for use in non-hazardous areas; no common mode voltage permissible in hazardous areas
● Common mode interference, min.	90 dB

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Interrupts/diagnostics/status information	
Diagnostics function	Yes
Alarms	
● Diagnostic alarm	Yes
● Limit value alarm	Yes; two upper and two lower limit values in each case
Diagnoses	
● Monitoring the supply voltage	Yes
● Wire break	Yes; channel by channel
● Overflow/Underflow	Yes; channel by channel
Diagnostics indication LED	
● MAINT LED	Yes; Yellow LED
● Monitoring of the supply voltage (PWR-LED)	Yes; green PWR LED
● Channel status display	Yes; green LED
● for channel diagnostics	Yes; red LED
● for module diagnostics	Yes; green/red DIAG LED
Ex(i) characteristics	
maximum values for connecting terminals for gas group IIC	
● Uo (no-load voltage), max.	5.9 V
● Io (short-circuit current), max.	18 mA
● Po (power output), max.	27 mW
● Co (permissible external capacity), max.	43 µF
● Lo (permissible external inductivity), max.	110 mH
● Um (voltage at non-intrinsically safe connecting terminals), max.	60 V
Potential separation	
Potential separation channels	
● between the channels	No
● between the channels and backplane bus	Yes
● between the channels and the power supply of the electronics	Yes; Electrical isolation between the channels and input voltage PME
Isolation	
Isolation tested with	further information on insulation can be found in the "ET 200SP HA / ET 200SP modules for devices in hazardous areas" System Manual
insulation of the field circuits to local ground acc. to IEC/EN 60079-11 tested with	707 V DC (type test)
Ambient conditions	
Ambient temperature during operation	
● horizontal installation, min.	-40 °C
● horizontal installation, max.	70 °C
● vertical installation, min.	-40 °C
● vertical installation, max.	60 °C
Altitude during operation relating to sea level	
● Installation altitude above sea level, max.	2 000 m
Dimensions	
Width	20 mm
Height	73 mm
Depth	58 mm
Weights	
Weight, approx.	55 g

Classifications

	Version	Classification
eClass	16	27-24-26-01
eClass	14	27-24-26-01
eClass	12	27-24-26-01
eClass	9.1	27-24-26-01
eClass	9	27-24-26-01
eClass	8	27-24-26-01
eClass	7.1	27-24-26-01

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eClass	6	27-24-26-01
ETIM	10	EC001596
ETIM	9	EC001596
ETIM	8	EC001596
ETIM	7	EC001596

Approvals / Certificates

General Product Approval












General Product Approval	For use in hazardous locations				
Manufacturer Declaration				Miscellaneous	

For use in hazardous locations	Maritime application				
				 LRS	NK / Nippon Kaiji Kyokai

Maritime application		Environment	
	CCS (China Classification Society)		

last modified: 10/23/2025

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