MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Reference package for procurement and maintenance review

SIEMENS

6ES7123-1JA00-0AB0

RTD RESISTANCE INPUT SUBMODULE

Used with the applicable SIMATIC SC configuration.

REFERENCE PACKAGE

OFFICIAL DOCUMENT

Selected official manufacturer pages follow this cover.

Source: Siemens 6ES7123-1JA00-0AB0 official product data sheet

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Data sheet 6ES7123-1JA00-0AB0

*** SPARE PART*** SIMATIC SC,ELECTRONIC SUBMODULE 1 AI RTD PT100,N:100,0..600 OHM

General information	
Usable terminal block	TB 16SC
Supply voltage	
Rated value (DC)	24 V
Reverse polarity protection	Yes
Input current	
from supply voltage L+, max.	30 mA
Power loss	
Power loss, typ.	0.6 W
Hardware configuration	
Slots	
• required slots	1; from 8
Analog inputs	
Number of analog inputs	1
permissible input voltage for voltage input (destruction limit), max.	10 V; 10 V continuous, 25 V for max. 1 s
Constant measurement current for resistance-type transmitter, typ.	1.5 mA
Cycle time (all channels), typ.	110 / 130 ms
Input ranges	
• Resistance thermometer	Yes
• Resistance	Yes
Input ranges (rated values), resistance thermometer	
• Ni 100	Yes; Standard; -60 to +250 °C
• Input resistance (Ni 100)	1 MΩ
• Pt 100	Yes; Climate: -120 to +130 °C; standard: -200 to +850 °C
• Input resistance (Pt 100)	1 MΩ
Input ranges (rated values), resistors	
• 0 to 600 ohms	Yes
• Input resistance (0 to 600 ohms)	1 MΩ
Thermocouple (TC)	
Temperature compensation	
— parameterizable	No
Characteristic linearization	

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• parameterizable	Yes; Pt100 to DIN IEC 751, Ni100 to DIN 43760
Cable length	
• shielded, max.	50 m
Analog value generation for the inputs	
Measurement principle	integrating
Integration and conversion time/resolution per channel	
• Resolution with overrange (bit including sign), max.	14 bit; S7 representation: 0 to 600 ohms: 14 bit, Pt100 climate: 0,1 °C/digit, Pt100 standard: 0,1 °C/digit, Ni100 standard: 0.1 °C/digit; S5 representation: 0 to 600 ohms: 13 bit, Pt100 climate: 0.05 °C/digit, Pt100 standard: 0.5 °C/digit, Ni100 standard: 0.5°C/digit
• Integration time, parameterizable	Yes
• Basic conversion time (ms)	110 / 130 ms
• Integration time (ms)	50 / 60 ms
• Interference voltage suppression for interference frequency f1 in Hz	50 / 60 Hz
Smoothing of measured values	
• parameterizable	Yes; parameterizable in 4 stages by means of digital filtering
• Step: None	Yes; 1x cycle time
• Step: low	Yes; 8x cycle time
• Step: Medium	Yes; 64x cycle time
• Step: High	Yes; 128x cycle time
Encoder	
Connection of signal encoders	
• for resistance measurement with four-wire connection	Yes; with compensation of line resistors
Errors/accuracies	
Linearity error (relative to input range), (+/-)	0.05 %
Temperature error (relative to input range), (+/-)	0.03 %/K
Crosstalk between the inputs, min.	50 dB; At 50/60 Hz
Repeat accuracy in steady state at 25 °C (relative to input range), (+/-)	0.1 %
Operational error limit in overall temperature range	
• Resistance thermometer, relative to input range, (+/-)	1 %; 0 to 600 ohms ±1.0 %; Pt100 (climate), 4 °C; Pt100 (standard) 8°C; Ni100 (standard) 4 °C
Basic error limit (operational limit at 25 °C)	
• Resistance thermometer, relative to input range, (+/-)	0.7 %; 0 to 600 Ohm ±0.7 %; Pt100 (climate) 1 °C; Pt100 (standard) 4°C; Ni100 (standard) 2 °C
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 interference (USS < 2.5 V) , min.	90 dB

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Interrupts/diagnostics/status information	
Alarms	No
Diagnostics function	No

Potential separation	
Potential separation analog inputs	
• between the channels	No
• between the channels and backplane bus	No; Optocoupler
• between the channels and the power supply of the electronics	No

Permissible potential difference	
Between the inputs and MANA (UCM)	2 V DC / 2 Vpp AC

Isolation	
Isolation tested with	1500 V AC

Dimensions	
Width	10 mm
Height	64 mm
Depth	51 mm

Weights	
Weight, approx.	20 g

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