



Figure similar

SIPLUS S7-300 SM 331 AI 20-pole based on 6ES7331-7SF00-0AB0 with conformal coating, 0...+60 °C, without PTB approval

General information	
based on	6ES7331-7SF00-0AB0
Supply voltage	
Load voltage L+	
• Rated value (DC)	24 V
Input current	
from backplane bus 5 V DC, max.	120 mA
Power loss	
Power loss, typ.	0.6 W
Analog inputs	
Number of analog inputs	8; 8x thermocouples; 4x RTD thermoresistors
Input ranges	
• Voltage	Yes
• Current	No
• Thermocouple	Yes
• Resistance thermometer	Yes
• Resistance	Yes
Input ranges (rated values), thermocouples	
• Type B	Yes
— Input resistance (Type B)	10 MΩ
• Type E	Yes
— Input resistance (Type E)	10 MΩ
• Type J	Yes
— Input resistance (type J)	10 MΩ
• Type K	Yes
— Input resistance (Type K)	10 MΩ
• Type L	Yes
— Input resistance (Type L)	10 MΩ
• Type N	Yes
— Input resistance (Type N)	10 MΩ
• Type R	Yes
— Input resistance (Type R)	10 MΩ
• Type S	Yes
— Input resistance (Type S)	10 MΩ
• Type T	Yes
— Input resistance (Type T)	10 MΩ
• Type U	Yes
— Input resistance (Type U)	10 MΩ

Input ranges (rated values), resistance thermometer	
<ul style="list-style-type: none"> • Ni 100 <ul style="list-style-type: none"> — Input resistance (Ni 100) • Pt 100 <ul style="list-style-type: none"> — Input resistance (Pt 100) • Pt 200 <ul style="list-style-type: none"> — Input resistance (Pt 200) 	<ul style="list-style-type: none"> Yes 10 MΩ Yes 10 MΩ Yes 10 MΩ
Cable length	
<ul style="list-style-type: none"> • shielded, max. 	200 m; TC: 50 m
Analog value generation for the inputs	
Integration and conversion time/resolution per channel	
<ul style="list-style-type: none"> • Resolution with overrange (bit including sign), max. • Integration time, parameterizable • Interference voltage suppression for interference frequency f1 in Hz 	<ul style="list-style-type: none"> 16 bit; 10 bit to 15 bit + sign Yes; 2.5 to 100 ms 10 to 400 Hz
Encoder	
Connection of signal encoders	
<ul style="list-style-type: none"> • for current measurement as 2-wire transducer • for current measurement as 4-wire transducer 	<ul style="list-style-type: none"> Yes Yes
Errors/accuracies	
Operational error limit in overall temperature range	
<ul style="list-style-type: none"> • Resistance thermometer, relative to input range, (+/-) 	0.09 to 0.04%
Basic error limit (operational limit at 25 °C)	
<ul style="list-style-type: none"> • Resistance thermometer, relative to input range, (+/-) 	0.1 %
Interrupts/diagnostics/status information	
Diagnostics function	Yes
Diagnoses	
<ul style="list-style-type: none"> • Diagnostic information readable • Overrange • Wire-break in signal transmitter cable • Short-circuit of the signal encoder cable 	<ul style="list-style-type: none"> Yes Yes Yes Yes
Diagnostics indication LED	
<ul style="list-style-type: none"> • Group error SF (red) • Channel fault indicator F (red) 	<ul style="list-style-type: none"> Yes Yes
Ex(i) characteristics	
Module for Ex(i) protection	Yes
maximum values for connecting terminals for gas group IIC	
<ul style="list-style-type: none"> • Uo (no-load voltage), max. • Io (short-circuit current), max. • Po (power output), max. • Co (permissible external capacity), max. • Lo (permissible external inductivity), max. 	<ul style="list-style-type: none"> 5.9 V 28.8 mA 41.4 mW 43 μF 40 mH
Standards, approvals, certificates	
CE mark	Yes
UL approval	Yes; File E239877
RCM (formerly C-TICK)	Yes
KC approval	Yes
EAC (formerly Gost-R)	Yes
Use in hazardous areas	
<ul style="list-style-type: none"> • ATEX certificate 	KEMA 09 ATEX 0077X
Railway application	
<ul style="list-style-type: none"> • EN 50155 	No
Ambient conditions	
Ambient temperature during operation	
<ul style="list-style-type: none"> • min. • max. 	<ul style="list-style-type: none"> 0 °C; = Tmin 60 °C; = Tmax
Ambient temperature during storage/transportation	
<ul style="list-style-type: none"> • min. • max. 	<ul style="list-style-type: none"> -40 °C 70 °C

Altitude during operation relating to sea level		
<ul style="list-style-type: none"> • Installation altitude above sea level, max. • Ambient air temperature-barometric pressure-altitude 	5 000 m Tmin ... Tmax at 1 140 hPa ... 795 hPa (-1 000 m ... +2 000 m) // Tmin ... (Tmax - 10 K) at 795 hPa ... 658 hPa (+2 000 m ... +3 500 m) // Tmin ... (Tmax -20 K) at 658 hPa ... 540 hPa (+3 500 m ... +5 000 m)	
Relative humidity		
<ul style="list-style-type: none"> • With condensation, tested in accordance with IEC 60068-2-38, max. 	100 %; RH incl. condensation/frost (no commissioning under condensation conditions)	
Resistance		
Use in stationary industrial systems		
— to biologically active substances according to EN 60721-3-3	Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request	
— to chemically active substances according to EN 60721-3-3	Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *	
— to mechanically active substances according to EN 60721-3-3	Yes; Class 3S4 incl. sand, dust, *	
Use on ships/at sea		
— to biologically active substances according to EN 60721-3-6	Yes; Class 6B2 mold and fungal spores (excluding fauna); Class 6B3 on request	
— to chemically active substances according to EN 60721-3-6	Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *	
— to mechanically active substances according to EN 60721-3-6	Yes; Class 6S3 incl. sand, dust; *	
Usage in industrial process technology		
— Against chemically active substances acc. to EN 60654-4	Yes; Class 3 (excluding trichlorethylene)	
— Environmental conditions for process, measuring and control systems acc. to ANSI/ISA-71.04	Yes; Level GX group A/B (excluding trichlorethylene; harmful gas concentrations up to the limits of EN 60721-3-3 class 3C4 permissible); level LC3 (salt spray) and level LB3 (oil)	
Remark		
— Note regarding classification of environmental conditions acc. to EN 60721, EN 60654-4 and ANSI/ISA-71.04	* The supplied plug covers must remain in place over the unused interfaces during operation!	
Connection method		
required front connector	20-pin	
Dimensions		
Width	40 mm	
Height	125 mm	
Depth	120 mm	
Weights		
Weight, approx.	210 g	
Classifications		
	Version	Classification
eClass	14	27-24-22-01
eClass	12	27-24-22-01
eClass	9.1	27-24-22-01
eClass	9	27-24-22-01
eClass	8	27-24-22-01
eClass	7.1	27-24-22-01
eClass	6	27-24-22-01
ETIM	10	EC001420
ETIM	9	EC001420
ETIM	8	EC001420
ETIM	7	EC001420
IDEA	4	3562
UNSPSC	15	32-15-17-05
Approvals / Certificates		
General Product Approval	EMV	

[China RoHS](#)

[Manufacturer Declaration](#)



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