SIEMENS

Product data sheet 6AG1331-1KF02-7AB0

SIPLUS S7-300 SM331 8AE -25 ... +70 DEGREES C WITH CONFORMAL COATING BASED ON 6ES7331-1KF02-0AB0 . OPTICALLY ISOLATED,
8 AI, 13 BIT RESOLUTION,
U/I/RESISTANCE/PT100, NI100, NI1000,
LG-NI1000, PTC / KTY,
66 MS MODULE UPDATE, 1 X 40 PIN

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Input current	
from backplane bus 5 V DC, max.	90 mA
Power loss	
Power loss, typ.	0.4 W
Analog inputs	
Number of analog inputs	8
Number of analog inputs for resistance measurement	8
permissible input voltage for voltage input (destruction limit), max.	30 V ; 12 V continuous, 30 V for max. 1 s
permissible input current for current input (destruction limit), max.	40 mA
Input ranges	
Voltage	Yes
Current	Yes
Thermocouple	No
Resistance thermometer	Yes
Resistance	Yes
Input ranges (rated values), voltages	
0 to +10 V	Yes
Input resistance (0 to 10 V)	100 kΩ
1 to 5 V	Yes

Input resistance (1 to 5 V)	100 kΩ
1 to 10 V	No
-1 V to +1 V	Yes
Input resistance (-1 V to +1 V)	100 kΩ
-10 V to +10 V	Yes
Input resistance (-10 V to +10 V)	100 kΩ
-2.5 V to +2.5 V	No
-250 mV to +250 mV	No
-5 V to +5 V	Yes
Input resistance (-5 V to +5 V)	100 kΩ
-50 mV to +50 mV	Yes
Input resistance (-50 mV to +50 mV)	100 kΩ
-500 mV to +500 mV	Yes
Input resistance (-500 mV to +500 mV)	100 kΩ
-80 mV to +80 mV	No
Input ranges (rated values), currents	
0 to 20 mA	Yes
Input resistance (0 to 20 mA)	100 Ω
-10 to +10 mA	No
-20 to +20 mA	Yes
Input resistance (-20 to +20 mA)	100 Ω
-3.2 to +3.2 mA	No
4 to 20 mA	Yes
Input resistance (4 to 20 mA)	100 Ω
Input ranges (rated values), thermocouples	
Type B	No
Type E	No
Type J	No
Type K	No
Type L	No
Type N	No
Type R	No
Type S	No
Type T	No
Type U	No
Type TXK/TXK(L) acc. GOST	No
Input ranges (rated values), resistance thermometers	
Cu 10	No
Ni 100	Yes ; Standard/climate

Input resistance (Ni 100)	100 MΩ
Ni 1000	Yes
Input resistance (Ni 1000)	100 MΩ
LG-Ni 1000	Yes ; Standard/climate
Input resistance (LG-Ni 1000)	100 MΩ
Ni 120	No
Ni 200	No
Ni 500	No
Pt 100	Yes ; Standard/climate
Input resistance (Pt 100)	100 MΩ
Pt 1000	No
Pt 200	No
Pt 500	No
Input ranges (rated values), resistors	
0 to 150 Ohm	No
0 to 300 Ohm	No
0 to 600 Ohm	Yes
Input resistance (0 to 600 Ohm)	100 MΩ
0 to 6000 Ohm	Yes
Input resistance (0 to 6000 Ohm)	100 MΩ
Resistance thermometer (RTD)	
Characteristic linearization	
for resistance thermometer	yes; Pt100 standard/air con.; Ni100 standard/air con.; Ni1000 standard/air con.; LG-Ni1000 standard/air con.
Characteristic linearization	
parameterizable	Yes
Cable length	
Cable length, shielded, max.	200 m ; max. 50 m at 50 mV
Analog value generation	
Measurement principle	integrating
Integration and conversion time/resolution per channel	
Resolution with overrange (bit including sign), max.	13 bit
Integration time, parameterizable	Yes ; 60 / 50 ms
Basic conversion time, ms	66 / 55 ms
Interference voltage suppression for interference frequency f1 in Hz	50 / 60 Hz
Encoder	
Connection of signal encoders	
for current measurement as 2-wire transducer	Yes ; with external supply

for current measurement as 4-wire transducer	Yes
for resistance measurement with two-wire connection	Yes
for resistance measurement with three-wire connection	Yes
for resistance measurement with four-wire connection	Yes
Errors/accuracies	
Operational error limit in overall temperature range	
Voltage, relative to input area, (+/-)	0.6 % ; +/-0.6% (+/-5 V, 10 V, 1 to 5 V, 0 to 10 V); +/-0.5 % (+/-50 mV, 500 mV, 1 V) @ 0 ... +60 °C; +/-0.7% (+/-5 V, 10 V, 1 to 5 V, 0 to 10 V); +/-0.6% (+/-50 mV, 500 mV, 1 V) @ -25 ... +70 °C
Current, relative to input area, (+/-)	0.5 % ; @ 0 ... +60 °C; +/-0.6% @ -25 ... +70 °C; +/-20 mA, 0 to 20 mA, 4 to 20 mA
Resistance, relative to input area, (+/-)	0.5 % ; @ 0 ... +60 °C; 0.6% @ -25 ... +70 °C; 0 to 6 kohm, 0 to 600 kohm
Resistance thermometer, relative to input area, (+/-)	1 Kelvin (Pt100, Ni100, climate; Ni1000, LG-Ni1000, standard; Ni1000, LG-Ni1000, climate); 1.2 Kelvin (Pt100, Ni100, standard) @ 0 ... +60 °C; 1.2 Kelvin (Pt100, Ni100, climate; Ni1000, LG-Ni1000, standard; Ni1000, LG-Ni1000, climate); 1.4 Kelvin (Pt100, Ni100, standard) @ -25 ... +70 °C
Basic error limit (operational limit at 25 °C)	
Voltage, relative to input area, (+/-)	0.4 % ; 0.4% (+/-5 V, 10 V, 1 to 5 V, 0 to 10 V); 0.3% (+/-50 mV, 500 mV, 1 V)
Current, relative to input area, (+/-)	0.3 % ; +/-20 mA, 0 to 20 mA, 4 to 20 mA
Resistance, relative to input area, (+/-)	0.3 % ; 0 to 6 kohms, 0 to 600 kohms
Resistance thermometer, relative to input area, (+/-)	1 Kelvin (Pt100, Ni100, standard); 0.8 Kelvin (Pt100, Ni100, climatic; Ni1000, LG-Ni1000, standard; Ni1000, LG-Ni1000, climatic)
Isochronous mode	
Isochronous mode (application synchronized up to terminal)	No
Interrupts/diagnostics/status information	
Alarms	
Diagnostic alarm	No
Limit value alarm	No
Diagnostic messages	
Diagnostic functions	No
Diagnostic information readable	No
Diagnostics	No
Group error	No
Diagnostics indication LED	
Group error SF (red)	No
Galvanic isolation	
Galvanic isolation analog inputs	
between the channels	No
between the channels and the backplane bus	Yes

Isolation	
Isolation tested with	500 V DC
Standards, approvals, certificates	
CE mark	Yes
KC approval	Yes
UL approval	Yes ; File E239877
RCM (former C-TICK)	Yes
FM approval	Yes ; CofC 3028431
EAC (former Gost-R)	Yes
EN 50155	No
EN 50121-4	No
Ambient conditions	
Operating temperature	
min.	-25 °C
max.	70 °C ; = Tmax; 60 °C @ UL/cUL, ATEX and FM use
Extended ambient conditions	
relative to ambient temperature-atmospheric pressure-installation altitude	Tmin ... Tmax at 1080 hPa ... 795 hPa (-1000 m ... +2000 m) // Tmin ... (Tmax - 10K) at 795 hPa ... 658 hPa (+2000 m ... +3500 m) // Tmin ... (Tmax - 20K) at 658 hPa ... 540 hPa (+3500 m ... +5000 m)
Relative humidity	
with condensation, maximum	100 % ; RH incl. condensation/frost (no commissioning under condensation conditions)
Resistance	
to biologically active substances/conformity with EN 60721-3-3	Yes ; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna). The supplied connector covers must remain on the unused interfaces during operation!
to chemically active substances/conformity with EN 60721-3-3	Yes ; Class 3C4 (RH < 75%) incl. salt spray according to EN 60068-2-52 (degree of severity 3). The supplied connector covers must remain on the unused interfaces during operation!
to mechanically active substances/conformity with EN 60721-3-3	Yes ; Class 3S4 incl. sand, dust. The supplied connector covers must remain on the unused interfaces during operation!
Connection method	
required front connector	40-pin
Dimensions	
Width	40 mm
Height	125 mm
Depth	117 mm
Weights	
Weight, approx.	250 g
Status	Jul 14, 2014