



SIPLUS S7-300 SM331 - 20POLE MEDIAL STRESS WITH CONFORMAL COATING BASED ON 6ES7331-7SF00-0AB0 WITHOUT PTB APPROBATION

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	
Thermocouple	Yes
Resistance thermometer	Yes
Input ranges (rated values), thermocouples	
Type B	Yes
Input resistance (Type B)	10 M Ω
Type E	Yes
Input resistance (Type E)	10 M Ω
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 thermometers	
Ni 100	Yes
Input resistance (Ni 100)	10 MΩ
Pt 100	Yes
Input resistance (Pt 100)	10 MΩ
Pt 200	Yes
Input resistance (Pt 200)	10 MΩ
Cable length	
Cable length, shielded, max.	200 m ; TC: 50 m
Analog value generation	
Measurement principle	Sigma Delta
Integration and conversion time/resolution per channel	
Resolution with overrange (bit including sign), max.	16 bit ; 10 to 15 bits + sign
Integration time, parameterizable	Yes ; 2.5 to 100 ms
Interference voltage suppression for interference frequency f1 in Hz	10 to 400 Hz
Encoder	
Connection of signal encoders	
for current measurement as 2-wire transducer	Yes
for current measurement as 4-wire transducer	Yes
Errors/accuracies	
Temperature error (relative to input range), (+/-)	Temperature error: 0.001 to 0.002 %/K
Operational error limit in overall temperature range	
Resistance thermometer, relative to input area, (+/-)	0.09 to 0.04%

Basic error limit (operational limit at 25 °C)	
Resistance thermometer, relative to input area, (+/-)	0.1 %
Interference voltage suppression for $f = n \times (f_1 \pm 1 \%)$, f_1 = interference frequency	
Series mode interference (peak value of interference < rated value of input range), min.	60 dB
Common mode interference, min.	130 dB
Interrupts/diagnostics/status information	
Diagnostic messages	
Diagnostic functions	Yes
Diagnostic information readable	Yes
Overrange	Yes
Wire-break in signal transmitter cable	Yes
Short-circuit of the signal encoder cable	Yes
Diagnostics indication LED	
Short-circuit per channel (red)	Yes
Short-circuit group error (red)	Yes
Ex(i) characteristics	
Module for Ex(i) protection	Yes
Maximum values of input circuits (per channel)	
Co (permissible external capacity), max.	43 µF
Io (short-circuit current), max.	28.8 mA
Lo (permissible external inductivity), max.	40 mH
Po (power of load), max.	41.4 mW
Uo (output no-load voltage), max.	5.9 V
Galvanic isolation	
Galvanic isolation analog inputs	
Galvanic isolation analog inputs	Yes
Permissible potential difference	
between the inputs (UCM)	60 V DC/30 V AC when used in the hazardous area; 400 V DC/250 V AC when used in NON-hazardous area
between inputs and MANA (UCM)	60 V DC/30 V AC when used in the hazardous area; 400 V DC/250 V AC when used in NON-hazardous area
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
Use in hazardous areas	
Test number KEMA	KEMA 09 ATEX 0077X
Ambient conditions	
Operating temperature	
min.	0 °C ; = Tmin
max.	60 °C ; = Tmax
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	20-pin
Weights	
Weight, approx.	210 g
Status	Jul 14, 2014