

SIPLUS S7-300 SM331 40-POLE -25 ... +70 DGR C WITH CONFORMAL COATING CONFORMITY WITH EN50155 T1 CAT 1 KL A/B BASED ON 6ES7331-7NF00-0AB0 . ANALOG INPUT OPTIC. ISOLATED 8 AI; +/-5/10V, 1-5 V, +/-20MA, 0/4 UP TO 20MA, 16 BIT (55 MS), 1 COMMON POINT (50V COM.)



Figure similar

Input current	
from backplane bus 5 V DC, max.	130 mA
Power loss	
Power loss, typ.	0.6 W
Analog inputs	
Number of analog inputs	8
permissible input voltage for voltage input (destruction limit), max.	50 V; Permanent
permissible input current for current input (destruction limit), max.	32 mA
Input ranges	
• Voltage	Yes
• Current	Yes
• Thermocouple	No
• Resistance thermometer	No
• Resistance	No
Input ranges (rated values), voltages	

• 0 to +10 V	No
• 1 V to 5 V	Yes
• Input resistance (1 V to 5 V)	2 M Ω
• 1 V to 10 V	No
• -1 V to +1 V	No
• -10 V to +10 V	Yes
• Input resistance (-10 V to +10 V)	2 M Ω
• -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)	2 M Ω
• -50 mV to +50 mV	No
• -500 mV to +500 mV	No
• -80 mV to +80 mV	No

Input ranges (rated values), currents

• 0 to 20 mA	Yes
• Input resistance (0 to 20 mA)	250 Ω
• -20 mA to +20 mA	Yes
• Input resistance (-20 mA to +20 mA)	250 Ω
• -3.2 mA to +3.2 mA	No
• 4 mA to 20 mA	Yes
• Input resistance (4 mA to 20 mA)	250 Ω

Input ranges (rated values), thermocouples

• Type B	No
• Type C	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) to GOST	No

Input ranges (rated values), resistance thermometer

• Cu 10	No
• Ni 100	No
• Ni 1000	No
• LG-Ni 1000	No
• Ni 120	No

• Ni 200	No
• Ni 500	No
• Pt 100	No
• Pt 1000	No
• Pt 200	No
• Pt 500	No

Input ranges (rated values), resistors

• 0 to 150 ohms	No
• 0 to 300 ohms	No
• 0 to 600 ohms	No
• 0 to 6000 ohms	No

Cable length

• shielded, max.	200 m
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Analog value generation for the inputs

Measurement principle	integrating
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Integration and conversion time/resolution per channel

• Resolution with overrange (bit including sign), max.	16 bit; Unipolar: 15/15/15/15 bit; bipolar: 15 bit + sign/15 bit + sign/15 bit + sign/15 bit + sign
• Integration time, parameterizable	Yes; 10/ 16.67/ 20/ 100 ms
• Interference voltage suppression for interference frequency f1 in Hz	400 / 60 / 50 / 10 Hz

Encoder

Connection of signal encoders

• for current measurement as 2-wire transducer	Yes; with external transmitter; possible with separate supply for transmitter
• for current measurement as 4-wire transducer	Yes

Errors/accuracies

Operational error limit in overall temperature range

• Voltage, relative to input range, (+/-)	0.1 %; @ Ucm = 0 V; @ Ucm = +50 V: +/-0.7 % - @ 0 ... +60 °C; +/-0.5% @ Ucm = 0 V; @ Ucm = +50 V: +/-0.9% - @ -25 ... +70 °C;
• Current, relative to input range, (+/-)	0.3 %; @ Ucm = 0 V; @ Ucm = +50 V: +/-0.4 % @ 0 ... +60 °C; +/-0.5% @ Ucm = 0 V; @ Ucm = +50 V: +/-0.6% @ -25 ... +70 °C

Basic error limit (operational limit at 25 °C)

• Voltage, relative to input range, (+/-)	0.05 %
• Current, relative to input range, (+/-)	0.05 %

Interrupts/diagnostics/status information

Diagnostic functions	Yes; Parameterizable
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Alarms

• Diagnostic alarm	Yes; Parameterizable
• Limit value alarm	Yes; Parameterizable, channels 0 and 2

Diagnostic messages	
• Diagnostic information readable	Yes
Diagnostics indication LED	
• Group error SF (red)	Yes
Potential separation	
Potential separation analog inputs	
• between the channels and backplane bus	Yes
Isolation	
Isolation tested with	500 V DC
Standards, approvals, certificates	
CE mark	Yes
UL approval	Yes; File E239877
FM approval	Yes
RCM (formerly C-TICK)	Yes
KC approval	Yes
EAC (formerly Gost-R)	Yes
Railway application	
• EN 50121-4	No
• EN 50155	Yes; T1 Category 1 Class A/B horizontal mounting position
Ambient conditions	
Ambient temperature during operation	
• min.	-25 °C; = Tmin
• max.	70 °C; = Tmax; for use on railway vehicles according to EN 50155, the rated temperature range -25 ... +55 °C (T1) or 60 °C @ UL/UL hazardous use applies
Ambient temperature during storage/transportation	
• min.	-40 °C
• max.	70 °C
Extended ambient conditions	
Relative humidity	
— With condensation, tested in accordance with IEC 60068-2-38, max.	100 %; RH incl. condensation/frost (no commissioning under condensation conditions)
Resistance	
— against biologically active substances / conformity with EN 60721-3-3	Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request
— against 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!
— against 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.	272 g
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last modified: 05/31/2017