



Figure similar

SIPLUS S7-300 SM 331 8AI 40-pole based on 6ES7331-7NF10-0AB0 with conformal coating, -25...+60 °C, analog input isolated, 8 AI; +/-5/10V, 1-5 V, +/-20 mA, 0/4 to 20 mA, 16-bit, single rooting (60 V COM.), 4-channel operation: 10 ms, 8-channel operation: 23-95 ms, 1x 40-pole

Supply voltage	
Load voltage L+	
<ul style="list-style-type: none"> Rated value (DC) 	24 V
<ul style="list-style-type: none"> Reverse polarity protection 	Yes
Input current	
from load voltage L+ (without load), max.	200 mA
from backplane bus 5 V DC, max.	100 mA
Power loss	
Power loss, typ.	3 W
Analog inputs	
Number of analog inputs	8
permissible input voltage for voltage input (destruction limit), max.	75 V; 35 V continuous, 75 V for max. 1 s (mark to space ratio 1:20)
permissible input current for current input (destruction limit), max.	40 mA
Input ranges	
<ul style="list-style-type: none"> Voltage 	Yes
<ul style="list-style-type: none"> Current 	Yes
<ul style="list-style-type: none"> Thermocouple 	No
<ul style="list-style-type: none"> Resistance thermometer 	No
<ul style="list-style-type: none"> Resistance 	No
Input ranges (rated values), voltages	
<ul style="list-style-type: none"> 0 to +10 V 	No
<ul style="list-style-type: none"> 1 V to 5 V 	Yes
— Input resistance (1 V to 5 V)	10 MΩ
<ul style="list-style-type: none"> 1 V to 10 V 	No
<ul style="list-style-type: none"> -1 V to +1 V 	No
<ul style="list-style-type: none"> -10 V to +10 V 	Yes
— Input resistance (-10 V to +10 V)	10 MΩ
<ul style="list-style-type: none"> -2.5 V to +2.5 V 	No
<ul style="list-style-type: none"> -250 mV to +250 mV 	No
<ul style="list-style-type: none"> -5 V to +5 V 	Yes
— Input resistance (-5 V to +5 V)	10 MΩ
<ul style="list-style-type: none"> -50 mV to +50 mV 	No
<ul style="list-style-type: none"> -500 mV to +500 mV 	No
<ul style="list-style-type: none"> -80 mV to +80 mV 	No
Input ranges (rated values), currents	
<ul style="list-style-type: none"> 0 to 20 mA 	Yes
— Input resistance (0 to 20 mA)	250 Ω

<ul style="list-style-type: none"> • -20 mA to +20 mA <ul style="list-style-type: none"> — Input resistance (-20 mA to +20 mA) • -3.2 mA to +3.2 mA • 4 mA to 20 mA <ul style="list-style-type: none"> — Input resistance (4 mA to 20 mA) 	<p>Yes 250 Ω No Yes 250 Ω</p>
Input ranges (rated values), thermocouples	
<ul style="list-style-type: none"> • Type B • Type C • Type E • Type J • Type K • Type L • Type N • Type R • Type S • Type T • Type U • Type TXK/TXK(L) to GOST 	<p>No No No No No No No No No No No No</p>
Input ranges (rated values), resistance thermometer	
<ul style="list-style-type: none"> • Cu 10 • Ni 100 • Ni 1000 • LG-Ni 1000 • Ni 120 • Ni 200 • Ni 500 • Pt 100 • Pt 1000 • Pt 200 • Pt 500 	<p>No No No No No No No No No No No</p>
Input ranges (rated values), resistors	
<ul style="list-style-type: none"> • 0 to 150 ohms • 0 to 300 ohms • 0 to 600 ohms • 0 to 6000 ohms 	<p>No No No No</p>
Cable length	
<ul style="list-style-type: none"> • shielded, max. 	<p>200 m</p>
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 • Basic conversion time (ms) • Interference voltage suppression for interference frequency f1 in Hz 	<p>16 bit; Unipolar: 15/15/15/15 bit; bipolar: 15 bit + sign/15 bit + sign/15 bit + sign Yes; 23 / 72 / 83 / 95 ms 10 ms (4-channel mode); 95/83/72/23 ms (8-channel mode) 400 / 60 / 50 Hz, combinations of 400, 60, 50 Hz</p>
Encoder	
Connection of signal encoders	
<ul style="list-style-type: none"> • for voltage measurement • for current measurement as 2-wire transducer • for current measurement as 4-wire transducer 	<p>Yes Yes; with external transmitter, current supply; possible with separate supply for transmitter Yes</p>
Errors/accuracies	
Operational error limit in overall temperature range	
<ul style="list-style-type: none"> • Voltage, relative to input range, (+/-) • Current, relative to input range, (+/-) 	<p>0.1 %; @ 0 ... +60 °C; ±0.2% @ -25 ... +60 °C 0.1 %; @ 0 ... +60 °C; ±0.2% @ -25 ... +60 °C</p>
Basic error limit (operational limit at 25 °C)	
<ul style="list-style-type: none"> • Voltage, relative to input range, (+/-) • Current, relative to input range, (+/-) 	<p>0.05 % 0.05 %</p>
Interrupts/diagnostics/status information	
<ul style="list-style-type: none"> • Diagnostics function 	<p>Yes; Parameterizable</p>

Alarms	
<ul style="list-style-type: none"> • Diagnostic alarm • Limit value alarm 	Yes; Parameterizable
<ul style="list-style-type: none"> • Hardware interrupt 	Yes; Parameterizable all channels (end of cycle interrupt is also supported across modules)
Diagnoses	
<ul style="list-style-type: none"> • Diagnostic information readable 	Yes
Diagnostics indication LED	
<ul style="list-style-type: none"> • Group error SF (red) 	Yes
Potential separation	
Potential separation analog inputs	
<ul style="list-style-type: none"> • between the channels 	No
<ul style="list-style-type: none"> • between the channels, in groups of 	2
<ul style="list-style-type: none"> • between the channels and backplane bus 	Yes
<ul style="list-style-type: none"> • between the channels and the power supply of the electronics 	Yes
Isolation	
Isolation tested with	500 V AC
Standards, approvals, certificates	
CE mark	Yes
UL approval	Yes; File E239877
RCM (formerly C-TICK)	Yes
KC approval	Yes
EAC (formerly Gost-R)	Yes
Railway application	
<ul style="list-style-type: none"> • EN 50121-4 	No
<ul style="list-style-type: none"> • EN 50155 	No
Ambient conditions	
Ambient temperature during operation	
<ul style="list-style-type: none"> • min. 	-25 °C; = Tmin
<ul style="list-style-type: none"> • max. 	60 °C; = Tmax
Ambient temperature during storage/transportation	
<ul style="list-style-type: none"> • min. 	-40 °C
<ul style="list-style-type: none"> • max. 	70 °C
Altitude during operation relating to sea level	
<ul style="list-style-type: none"> • Installation altitude above sea level, max. 	5 000 m
<ul style="list-style-type: none"> • Ambient air temperature-barometric pressure-altitude 	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	
<ul style="list-style-type: none"> — 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
<ul style="list-style-type: none"> — 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); *
<ul style="list-style-type: none"> — to mechanically active substances according to EN 60721-3-3 	Yes; Class 3S4 incl. sand, dust, *
Use on ships/at sea	
<ul style="list-style-type: none"> — to biologically active substances according to EN 60721-3-6 	Yes; Class 6B2 mold and fungal spores (excluding fauna); Class 6B3 on request
<ul style="list-style-type: none"> — 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); *
<ul style="list-style-type: none"> — to mechanically active substances according to EN 60721-3-6 	Yes; Class 6S3 incl. sand, dust; *
Usage in industrial process technology	
<ul style="list-style-type: none"> — Against chemically active substances acc. to EN 60654-4 	Yes; Class 3 (excluding trichlorethylene)
<ul style="list-style-type: none"> — Environmental conditions for process, measuring and control systems acc. to ANSI/ISA- 	Yes; Level GX group A/B (excluding trichlorethylene; harmful gas concentrations up to the limits of EN 60721-3-3 class 3C4 permissible);

71.04	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 / header	
required front connector	40-pin
Dimensions	
Width	40 mm
Height	125 mm
Depth	120 mm
Weights	
Weight, approx.	272 g
last modified:	1/16/2021 