

SIPLUS S7-300 SM 331-20-pole medial exposure with conformal coating based on 6ES7331-7SF00-0AB0 without PTB approval



Figure similar

<b>Supply voltage</b>	
Load voltage L+	
• Rated value (DC)	24 V
<b>Input current</b>	
from backplane bus 5 V DC, max.	120 mA
<b>Power loss</b>	
Power loss, typ.	0.6 W
<b>Analog inputs</b>	
Number of analog inputs	8; 8x thermocouples; 4x RTD thermoresistors
<b>Input ranges</b>	
• 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
<b>Input ranges (rated values), resistance thermometer</b>	
• 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
<b>Cable length</b>	
• shielded, max.	200 m; TC: 50 m
<b>Analog value generation for the inputs</b>	
Measurement principle	Sigma Delta
<b>Integration and conversion time/resolution per channel</b>	
• Resolution with overrange (bit including sign), max.	16 bit; 10 bit to 15 bit + sign
• Integration time, parameterizable	Yes; 2.5 to 100 ms
• Interference voltage suppression for interference frequency f1 in Hz	10 to 400 Hz
<b>Encoder</b>	
<b>Connection of signal encoders</b>	
• 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
<b>Operational error limit in overall temperature range</b>	
<ul style="list-style-type: none"> <li>Resistance thermometer, relative to input range, (+/-)</li> </ul>	0.09 to 0.04%
<b>Basic error limit (operational limit at 25 °C)</b>	
<ul style="list-style-type: none"> <li>Resistance thermometer, relative to input range, (+/-)</li> </ul>	0.1 %
<b>Interference voltage suppression for <math>f = n \times (f_1 \pm 1 \%)</math>, <math>f_1</math> = interference frequency</b>	
<ul style="list-style-type: none"> <li>Series mode interference (peak value of interference &lt; rated value of input range), min.</li> </ul>	60 dB
<ul style="list-style-type: none"> <li>Common mode interference, min.</li> </ul>	130 dB

## Interrupts/diagnostics/status information

Diagnostics function	Yes
<b>Diagnostic messages</b>	
<ul style="list-style-type: none"> <li>Diagnostic information readable</li> </ul>	Yes
<ul style="list-style-type: none"> <li>Overrange</li> </ul>	Yes
<ul style="list-style-type: none"> <li>Wire-break in signal transmitter cable</li> </ul>	Yes
<ul style="list-style-type: none"> <li>Short-circuit of the signal encoder cable</li> </ul>	Yes
<b>Diagnostics indication LED</b>	
<ul style="list-style-type: none"> <li>Group error SF (red)</li> </ul>	Yes
<ul style="list-style-type: none"> <li>Channel fault indicator F (red)</li> </ul>	Yes

## Ex(i) characteristics

Module for Ex(i) protection	Yes
<b>Maximum values of input circuits (per channel)</b>	
<ul style="list-style-type: none"> <li>Co (permissible external capacity), max.</li> </ul>	43 µF
<ul style="list-style-type: none"> <li>Io (short-circuit current), max.</li> </ul>	28.8 mA
<ul style="list-style-type: none"> <li>Lo (permissible external inductivity), max.</li> </ul>	40 mH
<ul style="list-style-type: none"> <li>Po (power of load), max.</li> </ul>	41.4 mW
<ul style="list-style-type: none"> <li>Uo (output no-load voltage), max.</li> </ul>	5.9 V

## Potential separation

<b>Potential separation analog inputs</b>	
<ul style="list-style-type: none"> <li>Potential separation analog inputs</li> </ul>	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 the 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
UL approval	Yes; File E239877

RCM (formerly C-TICK)	Yes
KC approval	Yes
EAC (formerly Gost-R)	Yes
<b>Use in hazardous areas</b>	
• Test number KEMA	KEMA 09 ATEX 0077X
<b>Railway application</b>	
• EN 50155	No
<b>Ambient conditions</b>	
<b>Ambient temperature during operation</b>	
• min.	0 °C; = Tmin
• max.	60 °C; = Tmax
<b>Ambient temperature during storage/transportation</b>	
• min.	-40 °C
• max.	70 °C
<b>Altitude during operation relating to sea level</b>	
• Installation altitude above sea level, max.	5 000 m
• 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)
<b>Relative humidity</b>	
• With condensation, tested in accordance with IEC 60068-2-38, max.	100 %; RH incl. condensation/frost (no commissioning under condensation conditions)
<b>Resistance</b>	
<b>Use in stationary industrial systems</b>	
— 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, *
<b>Use on ships/at sea</b>	
— 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; *
<b>Usage in industrial process technology</b>	
— 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

#### Weights

Weight, approx.

210 g

**last modified:**

08/30/2019