



Figure similar

\*\*\*spare part\*\*\* SIPLUS S7-1200 SM 1231 RTD 8AI based on 6ES7231-5PF30-0XB0 with conformal coating, -25...+70 °C, analog input, SM 1231 RTD, 8xAI RTD module

General information	
Product type designation	SM 1231, AI 8x16 bit RTD
Supply voltage	
Rated value (DC)	24 V
Input current	
Current consumption, typ.	90 mA
from backplane bus 5 V DC, typ.	80 mA
Power loss	
Power loss, typ.	1.5 W
Analog inputs	
Number of analog inputs	8; Resistance thermometer
permissible input voltage for voltage input (destruction limit), max.	±35 V
Technical unit for temperature measurement adjustable	Degrees Celsius/degrees Fahrenheit
Input ranges	
<ul style="list-style-type: none"> <li>Resistance thermometer</li> </ul>	Yes; Resistance-type transmitter: Pt10, Pt50, Pt100, Pt200, Pt500, Pt1000, Ni100, Ni120, Ni200, Ni500, Ni1000, Cu10, Cu50, Cu100, LG-Ni1000
<ul style="list-style-type: none"> <li>Resistance</li> </ul>	Yes; 150 Ω, 300 Ω, 600 Ω
Input ranges (rated values), resistance thermometer	
<ul style="list-style-type: none"> <li>Cu 10                             <ul style="list-style-type: none"> <li>— Input resistance (Cu 10)</li> </ul> </li> <li>Ni 100                             <ul style="list-style-type: none"> <li>— Input resistance (Ni 100)</li> </ul> </li> <li>Ni 1000                             <ul style="list-style-type: none"> <li>— Input resistance (Ni 1000)</li> </ul> </li> <li>LG-Ni 1000                             <ul style="list-style-type: none"> <li>— Input resistance (LG-Ni 1000)</li> </ul> </li> <li>Ni 120                             <ul style="list-style-type: none"> <li>— Input resistance (Ni 120)</li> </ul> </li> <li>Ni 200                             <ul style="list-style-type: none"> <li>— Input resistance (Ni 200)</li> </ul> </li> <li>Ni 500                             <ul style="list-style-type: none"> <li>— Input resistance (Ni 500)</li> </ul> </li> <li>Pt 100                             <ul style="list-style-type: none"> <li>— Input resistance (Pt 100)</li> </ul> </li> <li>Pt 1000                             <ul style="list-style-type: none"> <li>— Input resistance (Pt 1000)</li> </ul> </li> <li>Pt 200</li> </ul>	Yes 10 Ω Yes 100 Ω Yes 1 000 Ω Yes 1 000 Ω Yes 120 Ω Yes 200 Ω Yes 500 Ω Yes 100 Ω Yes 1 000 Ω Yes

— Input resistance (Pt 200)	200 Ω
● Pt 500	Yes
— Input resistance (Pt 500)	500 Ω
<b>Input ranges (rated values), resistors</b>	
● 0 to 150 ohms	Yes
● 0 to 300 ohms	Yes
● 0 to 600 ohms	Yes
<b>Thermocouple (TC)</b>	
<b>Temperature compensation</b>	
— Parameterizable	No
<b>Analog value generation for the inputs</b>	
Measurement principle	integrating
<b>Integration and conversion time/resolution per channel</b>	
● Resolution with overrange (bit including sign), max.	15 bit; + sign
● Integration time, parameterizable	No
● Interference voltage suppression for interference frequency f1 in Hz	85 dB at 50 / 60 / 400 Hz
<b>Errors/accuracies</b>	
cold connection point	±1,5 °C
Temperature error (relative to input range), (+/-)	25 °C ±0.1%, -25 °C to 70 °C ±0.4 % entire measuring range
Repeat accuracy in steady state at 25 °C (relative to output range), (+/-)	0.05 %
<b>Interference voltage suppression for <math>f = n \times (f1 \pm 1 \%)</math>, f1 = interference frequency</b>	
● Common mode interference, min.	120 dB
<b>Interrupts/diagnostics/status information</b>	
Alarms	Yes
Diagnostics function	Yes; Can be read out
<b>Alarms</b>	
● Diagnostic alarm	Yes
<b>Diagnoses</b>	
● Monitoring the supply voltage	Yes
● Wire break	Yes
<b>Diagnostics indication LED</b>	
● for status of the inputs	Yes
● for maintenance	Yes
<b>Degree and class of protection</b>	
IP degree of protection	IP20
<b>Standards, approvals, certificates</b>	
CE mark	Yes
<b>Ambient conditions</b>	
<b>Free fall</b>	
● Fall height, max.	0.3 m; five times, in product package
<b>Ambient temperature during operation</b>	
● min.	-25 °C; = Tmin
● max.	70 °C; = Tmax
<b>Ambient temperature during storage/transportation</b>	
● min.	-40 °C
● max.	70 °C
<b>Altitude during operation relating to sea level</b>	
● Ambient air temperature-barometric pressure-altitude	Tmin ... Tmax at 1 080 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 permitted (no commissioning in bedewed state)
<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 incl. salt spray. The supplied connector covers must remain on the unused interfaces during operation!

— to mechanically active substances according to 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 Yes

**Mechanics/material**

Enclosure material (front)  
 • Plastic Yes

**Dimensions**

Width 70 mm  
 Height 100 mm  
 Depth 75 mm

**Weights**

Weight, approx. 220 g

**Classifications**

	Version	Classification
eClass	14	27-24-22-01
eClass	12	27-24-22-01
eClass	9.1	27-24-22-01
eClass	9	27-24-22-01
eClass	8	27-24-22-01
eClass	7.1	27-24-22-01
eClass	6	27-24-22-01
ETIM	10	EC001420
ETIM	9	EC001420
ETIM	8	EC001420
ETIM	7	EC001420
IDEA	4	3562
UNSPSC	15	32-15-17-05

**Approvals / Certificates**

General Product Approval

EMV

[Manufacturer Declaration](#)

[China RoHS](#)

[Metrological Approval](#)



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