

SIPLUS S7-1200 SM 1232 T1 RAIL -25 ... +55°C T1 with 70°C for 10 min with conformal coating Based on: 6ES7232-4HD32-0XB0 . S7-1200, Analog output, SM 1232, 4 AO, +/-10 V, 14-bit resolution: or 0-20 mA, 13-bit resolution:



General information	
Product type designation	SM 1232, AQ 4x14 bit
Supply voltage	
Rated value (DC)	Yes
• 24 V DC	
Input current	
Current consumption, typ.	45 mA
from backplane bus 5 V DC, typ.	80 mA
Power loss	
Power loss, typ.	1.5 W
Analog outputs	
Number of analog outputs	4; Current or voltage
Output ranges, voltage	
• -10 V to +10 V	Yes
Output ranges, current	
• 0 to 20 mA	Yes
Load impedance (in rated range of output)	

- with voltage outputs, min. 1 000 Ω
- with current outputs, max. 600 Ω

Analog value generation for the outputs

Integration and conversion time/resolution per channel

- Resolution (incl. overrange) Voltage: 14 bits; Current : 13 bits

Errors/accuracies

Temperature error (relative to output range), (+/-) 25 °C ±0.3%, to 55 °C ±0.6% total measurement range

Basic error limit (operational limit at 25 °C)

- Voltage, relative to output range, (+/-) 0.3 %
- Current, relative to output range, (+/-) 0.3 %

Interference voltage suppression for $f = n \times (f_1 \pm 1 \%)$, $f_1 =$ interference frequency

- Common mode voltage, max. 12 V

Interrupts/diagnostics/status information

Alarms Yes

Diagnostic functions Yes

Alarms

- Diagnostic alarm Yes

Diagnostic messages

- Monitoring the supply voltage Yes
- Wire-break Yes
- Short-circuit Yes

Diagnostics indication LED

- for status of the outputs Yes
- for maintenance Yes

Degree and class of protection

Degree of protection acc. to EN 60529

- IP20 Yes

Standards, approvals, certificates

CE mark Yes

Railway application

- EN 50121-3-2 Yes; EMC for rail vehicles
- EN 50121-4 Yes; EMC for signal and telecommunications systems
- EN 50124-1 Yes; Railway applications - overvoltage category OV2; pollution degree PD2; rated surge voltage $UN_i = 0.5$ kV; $UN_m = 24$ V DC
- EN 50125-1 Yes; Rail vehicles - see ambient conditions
- EN 50125-2 Yes; Stationary electrical equipment - see ambient conditions
- EN 50125-3 Yes; Signal and telecommunications systems - see ambient conditions; vibrations and shocks: Application point outside of tracks (1 m to 3 m away from track)
- EN 50155 Yes; Rail vehicles - temperature class T1, horizontal mounting position, salt spray Class ST2

- EN 61373
- Fire protection acc. to EN 45545-2

Yes; Rail vehicles - vibrations and shocks: Category 1 Class A/B
 Yes; Rail vehicles - verification on request

Ambient conditions

Free fall	
• Fall height, max.	0.3 m; five times, in product package
Ambient temperature during operation	
• min.	-25 °C
• max.	60 °C; = Tmax; +70 °C for 10 minutes (T1 acc. to EN 50155) for horizontal mounting position
Ambient temperature during storage/transportation	
• min.	-40 °C
• max.	70 °C
Air pressure acc. to IEC 60068-2-13	
• Storage/transport, min.	660 hPa
• Storage/transport, max.	1 080 hPa
Altitude during operation relating to sea level	
• Installation altitude above sea level, max.	2 000 m
• Ambient air temperature-barometric pressure-altitude	Tmin ... Tmax at 1 140 hPa ... 795 hPa (-1 000 m ... +2 000 m)
Relative humidity	
• Operation at 25 °C without condensation, max.	95 %
• With condensation, tested in accordance with IEC 60068-2-38, max.	100 %; RH incl. condensation/frost (no commissioning under condensation conditions)
Resistance	
Coolants and lubricants	
— Resistant to commercially available coolants and lubricants	Yes
Use in stationary industrial systems	
— 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, *
Use on land craft, rail vehicles and special-purpose vehicles	
— to biologically active substances according to EN 60721-3-5	Yes; Class 5B2 mold, fungus and dry rot spores (with the exception of fauna); Class 5B3 on request
— to chemically active substances according to EN 60721-3-5	Yes; Class 5C3 (RH < 75 %) incl. salt spray acc. to EN 50155 (ST2); *
— to mechanically active substances according to EN 60721-3-5	Yes; Class 5S3 incl. sand, dust; *
from supply voltage 1L+	

— Note regarding classification of environmental conditions acc. to EN 60721

* The supplied plug covers must remain in place over the unused interfaces during operation!

Connection method

required front connector Yes

Mechanics/material

Enclosure material (front)

• Plastic Yes

Dimensions

Width 45 mm

Height 100 mm

Depth 75 mm

Weights

Weight, approx. 180 g

Other

Note: For use in railway applications, also observe the product information "SIPLUS extreme RAIL" A5E37661960A Online Support article 109736776

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