



Figure similar

SIPLUS S7-300 SM 332 2AQ 20-pole based on 6ES7332-5HB01-0AB0 with conformal coating, -25...+70 °C, analog output isolated, 2 AQ, U/I; resolution 11/12 bit 20-pole, removing/inserting with active backplane bus possible

General information	
based on	6ES7332-5HB01-0AB0
Supply voltage	
Load voltage L+	
• Rated value (DC)	24 V; A power supply according to EN 50155 shall be used for railway applications
• Reverse polarity protection	Yes
Input current	
from load voltage L+ (without load), max.	135 mA
from backplane bus 5 V DC, max.	60 mA
Power loss	
Power loss, typ.	3 W
Analog outputs	
Number of analog outputs	2
Voltage output, short-circuit protection	Yes
Voltage output, short-circuit current, max.	25 mA
Current output, no-load voltage, max.	18 V
Output ranges, voltage	
• 0 to 10 V	Yes
• 1 V to 5 V	Yes
• -10 V to +10 V	Yes
Output ranges, current	
• 0 to 20 mA	Yes
• -20 mA to +20 mA	Yes
• 4 mA to 20 mA	Yes
Load impedance (in rated range of output)	
• with voltage outputs, min.	1 kΩ
• with voltage outputs, capacitive load, max.	1 μF
• with current outputs, max.	500 Ω
• with current outputs, inductive load, max.	10 mH
Cable length	
• shielded, max.	200 m
Analog value generation for the outputs	
Integration and conversion time/resolution per channel	
• Resolution with overrange (bit including sign), max.	12 bit; ±10 V, ±20 mA, 4 mA to 20 mA, 1 V to 5 V: 11 bit + sign; 0 V to 10 V, 0 mA to 20 mA: 12 bit
• Conversion time (per channel)	0.8 ms
Settling time	
• for resistive load	0.2 ms

- for capacitive load 3.3 ms
- for inductive load 0.5 ms; 0.5 ms (1 mH); 3.3 ms (10 mH)

Errors/accuracies

Operational error limit in overall temperature range

- Voltage, relative to output range, (+/-) 0.5 %; ± 0.6 % @ < 0 °C or > 60 °C
- Current, relative to output range, (+/-) 0.6 %; ± 0.7 % @ < 0 °C or > 60 °C

Basic error limit (operational limit at 25 °C)

- Voltage, relative to output range, (+/-) 0.4 %
- Current, relative to output range, (+/-) 0.5 %

Interrupts/diagnostics/status information

Diagnostics function Yes; Parameterizable

Alarms

- Diagnostic alarm Yes; Parameterizable

Diagnoses

- Diagnostic information readable Yes

Diagnostics indication LED

- Group error SF (red) Yes

Potential separation

Potential separation analog outputs

- between the channels No
- between the channels and backplane bus Yes
- Between the channels and load voltage L+ Yes
- between the channels and the power supply of the electronics Yes

Isolation

Isolation tested with 500 V DC

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

- EN 50155 Yes; Sections 4, 5 and 12; no further agreements apply; T1, Category 1, Class A/B, EN 50155:2007 (see SIOS entry 109755985)

Ambient conditions

Ambient temperature during operation

- min. -25 °C; = Tmin
- max. 70 °C; = Tmax; for use on railway vehicles according to EN50155, the rated temperature range -25 ... +55 °C (T1) or 60 °C @ UL/ULhaz/ATEX/FM use applies

Ambient temperature during storage/transportation

- min. -40 °C
- max. 70 °C

Altitude during operation relating to sea level

- 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)

Relative humidity

- 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

- 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 Yes; Class 5C3 (RH < 75 %) incl. salt spray acc. to EN 50155 (ST2); *

60721-3-5	
— to mechanically active substances according to EN 60721-3-5	Yes; Class 5S3 incl. sand, dust; *
Use on ships/at sea	
— 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; *
Usage in industrial process technology	
— 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

Dimensions	
Width	40 mm
Height	125 mm
Depth	120 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	9	EC001420
	ETIM	8	EC001420
	ETIM	7	EC001420
	IDEA	4	3562
	UNSPSC	15	32-15-17-05

Approvals / Certificates

General Product Approval

[Miscellaneous](#)



[Manufacturer Declaration](#)

[Declaration of Conformity](#)



EMV

For use in hazardous locations

[KC](#)



[CCC-Ex](#)

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