SIEMENS

Data sheet 6AG2241-1CH32-1XB0

SIPLUS S7-1200 CM1241 RS422/485 T1 RAIL -25 ... +55°C T1 with 70°C for 10 min with conformal coating based on 6ES7241-1CH32-0XB0 . Communication module CM 1241, RS422/485, 9-pole D-sub (pin) supports Freeport

General information	
Product type designation	CM 1241 RS 422 / 485
Supply voltage	
Rated value (DC)	24 V
permissible range, lower limit (DC)	20.4 V
permissible range, upper limit (DC)	28.8 V
Input current	
Current consumption, max.	220 mA; From backplane bus 5 V DC
Power loss	
Power loss, typ.	1.1 W
Interfaces	
Interfaces/bus type	RS 422 / 485 (X.27)
Number of interfaces	1
Point-to-point connection	
• Cable length, max.	1 000 m
Integrated protocol driver	
— Freeport	Yes

— ASCII	Yes; Available as library function
— Modbus RTU master	Yes
— MODBUS RTU slave	Yes
— USS	Yes; Available as library function

Protocols	
Integrated protocols	
Freeport	
— Bits per character	7 or 8
— Number of stop bits	1 (Standard), 2
— Parity	No parity (standard); even, uneven, mark (parity bit always 1); space (parity bit always 0)
3964 (R)	
— Bits per character	7 or 8
— Number of stop bits	1 (Standard), 2
— Parity	No parity (standard); even, uneven, mark (parity bit always 1); space (parity bit always 0)
Modbus RTU master	
— Address area	1 through 49 999 (Standard Modbus addressing)
— Number of slaves, max.	247; slave numbers 1 through 247, per MODBUS network segment maximum 32 devices, additional repeaters needed to expand the network to maximum configuration
MODBUS RTU slave	
— Address area	1 through 49 999 (Standard Modbus addressing)

Interrupts/diagnostics/status information	
Diagnostics function	Yes
Diagnostics indication LED	
• for status of the outputs	Yes

Degree and class of protection	
IP degree of protection	IP20

Standards, approvals, certificates	
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 UNi = 0.5 kV; UNm = 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	Yes; Rail vehicles - vibrations and shocks: Category 1 Class A/B
• Fire protection acc. to EN 45545-2	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; = Tmin (incl. condensation/frost)
• 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
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	
• 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; Incl. diesel and oil droplets in the air
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; *
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!
Conformal coating	
• Coatings for printed circuit board assemblies acc. to EN 61086	Yes; Class 2 for high reliability
• Protection against fouling acc. to EN 60664-3	Yes; Type 1 protection
• Electronic equipment on rolling stock acc. to EN 50155	Yes; Class PC2 protective coating acc. to EN 50155:2017
• Military testing according to MIL-I-46058C, Amendment 7	Yes; Discoloration of coating possible during service life
• Qualification and Performance of Electrical Insulating Compound for Printed Board Assemblies according to IPC-CC-830A	Yes; Conformal coating, Class A
Dimensions	
Width	30 mm
Height	100 mm
Depth	75 mm
Weights	
Weight, approx.	155 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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