

SIPLUS S7-1500 CM PTP RS232 HF RAIL based on 6ES7541-1AD01-0AB0 with conformal coating, OT4: -40...+70 °C ST1/2: 85 °C for 10 minutes HF communications module for serial connection RS-232, Freeport, 3964(R), USS, Modbus RTU master, device, 115200 bps, 9-pin D-sub plug 115200 bps, 9-pin D-sub plug

General information	
Product type designation	CM PtP RS 232 HF
based on	6ES7541-1AD01-0AB0
Product function	
<ul style="list-style-type: none"> I&M data Fast startup 	Yes; I&M 0 Yes
Engineering with	
<ul style="list-style-type: none"> STEP 7 TIA Portal configurable/integrated from version 	see entry ID: 109746275
Installation type/mounting	
Rail mounting	Yes; S7-1500 mounting rail
Supply voltage	
Design of the power supply	system power supply
Input current	
Current consumption (rated value)	50 mA; From the backplane bus
Power	
Power consumption from the backplane bus	0.75 W
Power loss	
Power loss, typ.	0.6 W
Address area	
Address space per module	
<ul style="list-style-type: none"> Inputs Outputs 	8 byte; performance mode: 32 byte 0 byte; performance mode: 32 byte
Interface types	
RS 232	
<ul style="list-style-type: none"> Transmission rate, max. Cable length, max. RS 232 auxiliary signals 	115.2 kbit/s 15 m RTS, CTS, DTR, DSR, RI, DCD
Protocols	
Integrated protocols	
Freeport	
<ul style="list-style-type: none"> Telegram length, max. Bits per character Number of stop bits Parity 	4 kbyte 7 or 8 1 or 2 bit None, even, odd, always 1, always 0, any
3964 (R)	
<ul style="list-style-type: none"> Telegram length, max. Bits per character Number of stop bits Parity 	4 kbyte 7 or 8 1 or 2 bit None, even, odd, always 1, always 0, any
Modbus RTU master	
<ul style="list-style-type: none"> Address area max. number of devices 	1 to 247, extended 1 to 65535 1
protocols / Modbus RTU device / header	
<ul style="list-style-type: none"> Address area 	1 to 247, extended 1 to 65535
Telegram buffer	
<ul style="list-style-type: none"> Buffer memory for telegrams Number of telegrams which can be buffered 	8 kbyte 255
Interrupts/diagnostics/status information	

Diagnostics function	Yes
Alarms	
• Diagnostic alarm	Yes
• Hardware interrupt	No
Diagnoses	
• Wire-break	Yes
Diagnostics indication LED	
• RUN LED	Yes; green LED
• ERROR LED	Yes; red LED
• Receive RxD	Yes; Yellow LED
• Transmit TxD	Yes; Yellow LED
Potential separation	
between backplane bus and interface	Yes
Isolation	
Isolation tested with	750 V DC (type test) and according to EN 50155 (routine test)
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 50121-5	Yes; EMC for fixed installations and railway power supply equipment
• 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 OT4, ST1/ST2, horizontal mounting position
• EN 61373	Yes; Rail vehicles - vibrations and shocks: Category 1 Class A/B
• Fire protection acc. to EN 45545-2	Yes; For proof of conformity, see Service & Support
product functions / security / header	
signed firmware update	Yes
Ambient conditions	
Ambient temperature during operation	
• horizontal installation, min.	-40 °C; = Tmin (incl. condensation/frost)
• horizontal installation, max.	70 °C; = Tmax; +85 °C for 10 min (OT4, ST1/ST2 acc. to EN 50155)
• vertical installation, min.	-40 °C; = Tmin
• vertical installation, max.	40 °C; = Tmax
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 in bedewed state), horizontal installation
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 60068-2-52 (severity degree 3); *
— 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
- Environmental conditions for process, measuring and control systems acc. to ANSI/ISA-71.04

Yes; Class 3 (excluding trichlorethylene)

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
- Protection against fouling acc. to EN 60664-3
- Electronic equipment on rolling stock acc. to EN 50155
- Military testing according to MIL-I-46058C, Amendment 7
- Qualification and Performance of Electrical Insulating Compound for Printed Board Assemblies according to IPC-CC-830A

Yes; Class 2 for high reliability

Yes; Type 1 protection

Yes; class PC2 protective coating acc. to EN 50155

Yes; Discoloration of coating possible during service life

Yes; Conformal coating, Class A

Decentralized operation

to SIMATIC S7-300	Yes
to SIMATIC S7-400	Yes
to SIMATIC S7-1500	Yes
to standard PROFINET controller	Yes

Dimensions

Width	35 mm
Height	147 mm
Depth	127 mm

Weights

Weight, approx.	0.22 kg
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Other

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

Classifications

	Version	Classification
eClass	14	27-24-22-08
eClass	12	27-24-22-08
eClass	9.1	27-24-22-08
eClass	9	27-24-22-08
eClass	8	27-24-22-08
eClass	7.1	27-24-22-08
eClass	6	27-24-22-08
ETIM	9	EC001423
ETIM	8	EC001423
ETIM	7	EC001423

Approvals / Certificates

General Product Approval	Railway
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[Manufacturer Declaration](#)

[Miscellaneous](#)



[Confirmation](#)

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