SIEMENS

## Data sheet 6NH7800-4BA00

| | |
|---|---|
| **product type designation** | **TIM 4R-IE** |

- - spare part - - SINAUT ST7, TIM 4R-IE communications module for SIMATIC S7-300, S7-400, PC; with two RS232/RS485 interfaces for SINAUT communication via standard WANs and two RJ45 interfaces for SINAUT communication via IP-based networks (WAN or LAN).



Figure similar

| | |
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| Technical Product Detail Page | https://i.siemens.com/1P6NH7800-4BA00 |
| **transfer rate** | |
| transfer rate | |
| ● for Industrial Ethernet | 10 ... 100 Mbit/s |
| ● according to RS 232 | 50 ... 38400 bit/s |
| **interfaces** | |
| number of interfaces / according to Industrial Ethernet | 2 |
| number of electrical connections | |
| ● for external data transmission / according to RS 232 | 2 |
| ● for power supply | 1 |
| type of electrical connection | |
| ● of Industrial Ethernet interface | RJ45 port |
| type of electrical connection | |
| ● at interface 1 / for external data transmission | 9 pin Sub-D-connector, RS232 switchable to RS485 |
| ● at interface 2 / for external data transmission | 9-pole D-sub connector, RS232 can be switched to RS485 |
| ● for power supply | 2-pole plugable terminal block |
| design of the removable storage | |
| ● C-PLUG | Yes |
| **supply voltage, current consumption, power loss** | |
| type of voltage / of the supply voltage | DC |
| supply voltage | 24 V |
| supply voltage | 20.4 ... 28.8 V |
| supply voltage / external / at DC / rated value | 24 V |
| supply voltage / external / at DC / rated value | 20.4 ... 28.8 V |
| consumed current | |
| ● from backplane bus / at DC / at 24 V / maximum | 0.2 A |
| ● from external supply voltage / at DC / at 24 V / maximum | 0.17 A |
| power loss [W] | 4.6 W |
| product extension / optional / backup battery | Yes |
| type of battery | Lithium AA / 3.6 V / 2.3 Ah |
| backup current | |
| ● typical | 100 µA |
| ● maximum | 160 µA |
| **ambient conditions** | |
| ambient temperature | |
| ● during operation | 0 ... 60 °C |
| ● during storage | -40 ... +70 °C |


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| ● during transport | -40 ... +70 °C |
| relative humidity | |
| ● at 25 °C / without condensation / during operation / maximum | 95 % |
| protection class IP | IP20 |
| **design, dimensions and weights** | |
| module format | Compact module S7-300 double width |
| width | 80 mm |
| height | 125 mm |
| depth | 120 mm |
| net weight | 0.4 kg |
| **product features, product functions, product components / general** | |
| number of units | |
| ● note | Number of TIM 4R-IE per S7-300/S7-400: multiple, number depends on the connection resources of the CPU |
| wire length | |
| ● with RS 232 interface / maximum | 6 m |
| ● with RS 485 interface / maximum | 30 m |
| **performance data / S7 communication** | |
| number of possible connections / for S7 communication | |
| ● maximum | 64 |
| ● with PG connections / maximum | 2 |
| ● with OP connections / maximum | 62 |
| service | |
| ● SINAUT ST7 via S7 communication | Yes |
| ● PG/OP communication | Yes |
| **performance data / multi-protocol mode** | |
| number of active connections / with multi-protocol mode | 128 |
| **performance data / telecontrol** | |
| suitability for use | |
| ● node station | Yes |
| ● substation | Yes |
| ● TIM control center | Yes |
| protocol / is supported | |
| ● DNP3 | No |
| ● SINAUT ST1 protocol | Yes |
| ● SINAUT ST7 protocol | Yes |
| product function / data buffering if connection is aborted | Yes; 56,000 data messages |
| storage capacity | |
| ● of S7 CPU work memory / for TD7onCPU mode data blocks on CPU / required | 20 Kibyte |
| ● of S7 CPU work memory / for TD7onTIM mode data blocks on TIM / required | 0 Kibyte |
| ● note | TD7onCPU: at least 20 KB, actual requirement determined by data volume and functional scope TD7onTIM: 0 bytes in most favorable case |
| product feature / buffered message frame memory | Yes |
| transmission format | |
| ● for SINAUT ST1 protocol with polling / 11 bit | Yes |
| ● for SINAUT ST1 protocol with spontaneous / 10-bit or 11-bit | Yes |
| ● for SINAUT ST7 protocol with multi-master polling / 10-bit | Yes |
| ● for SINAUT ST7 protocol with polling or spontaneous / 10-bit or 11-bit | Yes |
| operating mode for scanning of data transmission | |
| ● with dedicated line/radio link / with SINAUT ST1 protocol | Polling, polling with time slot procedure |
| ● with dedicated line/radio link / with SINAUT ST7 protocol | Polling, polling with time slot procedure, multi-master polling with time slot procedure |
| ● with dial-up network / with SINAUT ST1 protocol | spontaneous |
| ● with dial-up network / with SINAUT ST7 protocol | spontaneous |
| hamming distance | |
| ● for SINAUT ST1 protocol | 4 |


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| ● for SINAUT ST7 protocol | 4 |
| **product functions / management, configuration, engineering** | |
| configuration software | |
| ● required | SINAUT ST7 ES |
| ● for CPU configuring / required / SINAUT TD7 block library for CPU | Yes |
| ● for PG configuring / required / SINAUT ST7 configuration software for PG | Yes |
| storage location / of TIM configuration data | on internal TIM flash memory, or on TIM in optional C-PLUG, or on MMC of the S7-300 CPU if TIM installed in S7-300 controller |
| product function / is supported / identification link | Yes; acc. to IEC 61406-1:2022 |
| **product functions / security** | |
| operating mode / Virtual Private Network (VPN) | Yes |
| type of authentication / with Virtual Private Network / PSK | Yes |
| product function | |
| ● password protection for VPN | Yes |
| ● MSC client via GPRS modem with MSC capability | Yes |
| protocol | |
| ● is supported / MSC protocol | Yes |
| ● with Virtual Private Network MSC / is supported | TCP/IP |
| key length / for MSC / with Virtual Private Network | 128 bit |
| number of possible connections | |
| ● as MSC client / with VPN connection | 1 |
| ● as MSC server / with VPN connection | 128 |
| **product functions / time** | |
| product component / hardware real time clock | Yes |
| product feature / hardware real time clock w. battery backup | Yes |
| accuracy / of the hardware real time clock / per day / maximum | 4 s |
| time synchronization | |
| ● from NTP-server | Yes |
| **standards, specifications, approvals** | |
| certificate of suitability / CE marking | Yes |
| certificate of suitability / UKCA marking | Yes |
| certificate of suitability / KC approval | Yes |
| certificate of suitability / Regulatory Compliance Mark (RCM) | Yes |
| certificate of suitability / RoHS conformity | Yes |
| **standards, specifications, approvals / hazardous environments / header** | |
| certificate of suitability / ATEX | Yes |
| certificate of suitability / IECEx | Yes |
| certificate of suitability / ULhazloc approval | Yes |
| certificate of suitability / CCC / for hazardous zone according to GB standard | Yes |
| certificate of suitability / FM registration | Yes |
| **further information / internet links** | |
| internet link | |
| ● to website: Selection guide for cables and connectors | https://support.industry.siemens.com/cs/ww/en/view/109766358 |
| ● to web page: selection aid TIA Selection Tool | https://www.siemens.com/tstcloud |
| ● to website: Industrial communication | https://www.siemens.com/simatic-net |
| ● to web page: SiePortal | https://sieportal.siemens.com/ |
| ● to website: Image database | https://www.automation.siemens.com/bilddb |
| ● to website: CAx-Download-Manager | https://siemens.com/cax |
| ● to website: Industry Online Support | https://support.industry.siemens.com |
| **security information** | |
| security information | Siemens provides products and solutions with industrial cybersecurity functions that support the secure operation of plants, systems, machines and networks. In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial cybersecurity concept. Siemens' products and solutions constitute one element of such a concept. Customers are responsible for preventing unauthorized access to their plants, systems, machines and networks. Such systems, machines and components should only be connected to an enterprise network or the internet if and to the extent such a connection is |


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## Approvals / Certificates

### General Product Approval

| | | | | | |
|---|---|---|---|---|---|
| CE EG-Konf. | Declaration of Conformity | UKCA | CCC | China RoHS | UL |

| General Product Approval | EMV | For use in hazardous locations | | | |
|---|---|---|---|---|---|
| RCM | KC | ATEX | IECEx | FM | CCC-Ex |

### For use in hazardous locations

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| UL |

**last modified:** 10/28/2025


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