SIEMENS

Product data sheet

Product-type designation

6NH7800-4BA00



TIM 4R-IE SINAUT ST7,

TIM 4R-IE COMMUNICATIONS MODULE FOR SIMATIC S7 -300,

S7-400, C7, PC;

WITH TWO RS232/RS485 INTERFACES FOR SINAUT COMMUNICATION VIA CLASSIC WAN NETWORKS AND TWO RJ45-INTERFACES FOR SINAUT COMMUNICATION VIA IP-BASED NETWORKS (WAN OR LAN)

Transmission rate		
Transmission rate		
with Industrial Ethernet	10 100 Mbit/s	
in accordance with RS 232	50 38400 bit/s	
Interfaces		
Number of interfaces / according to Industrial Ethernet	2	
Number of electrical connections		
 for external data transmission / in accordance with RS 232 	2	
• for power supply	1	
design of the removable storage / C-PLUG	Yes	
Supply voltage, current consumption, power loss		
Type of voltage / of supply voltage	DC	
Supply voltage	24 V	
Supply voltage	20.4 28.8 V	
Consumed current		
• from backplane bus / at 24 V / for DC / maximum	0.2 A	
 from external supply voltage / at 24 V / with DC / maximum 	0.17 A	
Resistive loss	4.6 W	
Product expansion / optional / backup battery	Yes	
Type of battery	Lithium AA / 3.6 V / 2.3 Ah	

• pipelal000 μA• maximum160 μA• maintum160 μA• maintum160 μA• maintum0• during operating0• during transport40, 470 °C• during transport25 %• Relative humidry (at 25 °C / without condensation / during operating maximum000 mC• Detailed from the series000 mC• Statistic from the series000 mC• with RS 252 interface / maximum010 mC• with RS 252 interface / maximum020 mC• with RS 252 interface / maximum	Backup current		
Permitted ambient conditions Ambient temperature	• typical	100 µA	
Autient temperature unit of or C - during operating 0 60 °C - during transport -40 470 °C - during transport -40 470 °C Relative humidity / at 25 °C / without condensation / during operation 35 % Protection class IP IP20 Design, dimensions and weight Compact module S7-300 double width Module format Compact module S7-300 double width Vidth 00 mm Height 125 mm Depth 120 mm Net weight 04 kg Product properties, functions, components / general on the connection resources of the CPU Cable length - • with RS 252 interface / maximum 6m • with RS 252 interface / maximum 61 • with RS 455 interface / maximum 61 • with PG connections / for S7 communication - • with PG connections / for S7 communication Sevice • with PG connections / maximum 64 • with PG connections / maximum 64 • with PG connections / maximum 64 • Sevice -	• maximum	160 µA	
• during operating060 °Cduring storage40470 °C• during transport40470 °CRelative humidity/ at 25 °L without condensation / during operating5%Protection class IP120Design: dimensions and weightDesign: dimensions and weightOrage dimensions and weightOrage dimensions and weightDesign: dimensions and weightOrage dimensions and weight <td colspan<="" td=""><td>Permitted ambient conditions</td><td></td></td>	<td>Permitted ambient conditions</td> <td></td>	Permitted ambient conditions	
- during transport40 +70 °C- during transport40 +70 °CRelative humidity / at 25 °C / without condensation / during operation / maximum55 %Protection class IPIP20Design.durensions and weightCompact module S7-300 double widthWidth80 mmHeight125 mmDepth20 mmNumber of modules / note120 mmNumber of modules / noteNumber of TIM 4R-IE per S7-300/S7-400: multiple, number depends on the connection resources of the CPUCable length0• with RS 232 interface / maximum6• with RS 232 interface / maximum0• with RS 232 interface / maximum6• with RS 232 interface / maximum6• with RS 245 interface / maximum12• with RS 245 interface / maximum6• with RS 245 interface / maximum12• Subality S7 forought / S7 communication12	Ambient temperature		
- during transport- 40 + 70 °CRelative humidity / at 25 °C / without condensation / during operating / maximum95 %Protection class IP120Design, dimensions and weightCompact module S7-300 double widthModule formatCompact module S7-300 double widthWidth80 mmHeight125 mmDepth20 mmNumber of modules / note0 kProduct properties, functions, components / generalNumber of modules / noteNumber of TIM 4R-IE per S7-300/S7-400: multiple, number depends on the connection resources of the CPUCable length• with RS 232 interface / maximum6 m• with RS 232 interface / maximum6 m• with RS 425 interface / maximum6 M• with RS 645 interface / maximum8 M• with RS 645 interface / maximum8 M• with RS 645 interface / maximum8 M• maximum6 M• with RS 645 interface / maximum8 M• SINAUT ST7 through S7 communicationYes• Number of active connections / with multiprotocol mode18 M• Performance data / telecontolYes• node stationYes• node stationYes• node stationYes• node stationYes• node stationYes• note stationYes <td< td=""><td>during operating</td><td>0 60 °C</td></td<>	during operating	0 60 °C	
Relative humany 28 % Protection class IP IP20 Design, dimensions and weight Compact module S7.300 double width Module format Compact module S7.300 double width Module format 00 mm Height 125 mm Depth 120 mm Net weight 04 kg Protect properties, functions, components / general Number of TIM 4R-IE per S7.300/S7.400; multiple, number depends Number of modules / note Number of TIM 4R-IE per S7.300/S7.400; multiple, number depends • with RS 232 interface / maximum 6 m • with RS 485 interface / maximum 6 m • with RS 485 interface / maximum 6 M • with PG connections / for S7 communication Immer of ansimum • with PG connections / maximum 64 • with PG connections / maximum 62 • with PG connections / maximum 62 • Service Immer of ansitue connections / maximum • with PG connections / maximum 62 • Service Immer of antive connections / with multiprotecol mode • Service Immer of antinumication • Service	during storage	-40 +70 °C	
/ maximum Protection class IP IP20 Design, dimensions and weight Compact module S7-300 double width Module format Compact module S7-300 double width Width 80 mm Height 125 mm Depth 120 mm Number of modules / note Number of TIM 4R-IE per S7-300/S7-400: multiple, number depends on the connection resources of the CPU Cable length on the connection resources of the CPU vwith RS 232 interface / maximum 6 m with RS 485 interface / maximum 6 m with RS 485 interface / maximum 6 d with PG connections / for S7 communication verta with PG connections / for S7 communication 64 with PG connections / maximum 62 service sitNAUT ST7 through S7 communication with PG connections / maximum 62 service sitNAUT ST7 through S7 communication verta of active connections / with multiprotocol mode 128 Performance data / telecontrol Ves Sutability for use ves vidability for use ves inde station	during transport	-40 +70 °C	
Design, dimensions and weight Module format Compact module \$7:300 double width Width 80 mm Height 125 mm Depth 120 mm Net weight 0.4 kg Product properties, functions, components / general Number of TIM 4R-IE per \$7:300(\$7:400: multiple, number depends on the connection resources of the CPU Cable length Number of TIM 4R-IE per \$7:300(\$7:400: multiple, number depends on the connection resources of the CPU Cable length 6 m • with RS 232 interface / maximum 6 m • with RS 485 interface / maximum 6 m • with RS 485 interface / maximum 6 M • with PG connections / for S7 communication • • with PG connections / for S7 communication 62 Service - • VIDAUT ST7 through S7 communication Yes • Performance data / multi-protocol mode 128 Performance data / telecontrol 128 Performance data / telecontrol Yes • under of active connections / with multiprotocol mode 128 Performance data / telecontrol Yes • unde station		95 %	
Module formatCompact module S7-300 double widthWidth80 mmHeight125 mmDepth120 mmNet weight0.4 kgProduct properties, functions, components / generalNumber of modules / noteNumber of TIM 4R-IE per S7-300/57-400: multiple, number depends on the connection resources of the CPUCable length6 m• with RS 232 interface / maximum6 m• with RS 485 interface / maximum30 mPerformance data / S7 communication-• maximum64• with OP connections / for S7 communication2• with OP connections / maximum62Service-• SINAUT ST7 through S7 communicationYes• Performance data / multiprotocol mode128Performance data / multiprotocol mode128Suitability for use-• node stationYes• node stationYes• node stationYes• note onteric resourcesYes• note onteric resourceYes• note on	Protection class IP	IP20	
Nith80 mmHeight25 mmDepth20 mmNetweight0 kgProtect properties, functions, components / generalMuther of TIM 4R-1E per S7-300/S7-400: multiple, number depends on the connection resources of the CPUCable lengthMuther of TIM 4R-1E per S7-300/S7-400: multiple, number depends on the connection resources of the CPUCable lengthSime connection sectores of the CPUe with RS 232 interface / maximum6 mwith RS 485 interface / maximum30 me with RS 485 interface / maximum30 mNumber of possible connections / for S7 communication44i with OP connections / maximum64with OP connections / maximum64with OP connections / maximum64with OP connections / maximum64y ServiceSimei SNAUT ST7 through S7 communication10y ServiceSimey ServiceSimei Subality for use12i node station128i node stationYesi node stationYesi node stationYesi substationYesi notice interYesi	Design, dimensions and weight		
And Peight128 mmBeight20 mmNetweight04 kgProduct properties, functions, components / generalNumber of TIM 4R-1E per S7-300/S7-400: multiple, number depends on the connection resources of the CPUCable length6• with RS 232 interface / maximum6 m• with RS 245 interface / maximum30 m• with RS 455 interface / maximum30 mPerformence data / S7 communication9• naximum64• with PG connections / for S7 communication2• naximum64• with OP connections / maximum64• with OP connections / maximum64• service9• SINAUT ST7 through S7 communication9• performance data / stepcontor128• performance data / tubecontrol128Performance data / tubecontor128Number of active connections / with multiprotecol mode128• performance data / tubecontor9• node station9• node station9• node station9• under of active connections / with multiprotecol mode9• node station9• node station9• node station9• node station9• notice station9•	Module format	Compact module S7-300 double width	
Depth120 mmNetweight0.4 kgProduct properties, functions, components / generalNumber of TIM 4R-IE per S7-300/S7-400: multiple, number depends on the connection resources of the CPUCable length- with RS 232 interface / maximum6 m- with RS 435 interface / maximum0 m- with RS 435 interface / maximum6 M- with RS connections / for S7 communication maximum6 M- with PG connections / for S7 communication2- with PG connections / maximum2- with PG connections / maximum6- with PG connections / maximum8- service silNAUT ST7 through S7 communicationYes- performance data / multi-protocol mode128- Performance data / multi-protocol mode128- Performance data / nulti-protocol mode128- under stationYes- under stationYes- under stationYes- substationYes- substationYes- substationYes- substationYes- control centerYes- protocol / is supportedYes	Width	80 mm	
Net weight Ok k main Product properties, functions, components / general Number of TiM 4R-IE per S7-300/S7-400: multiple, number depends on the connection resources of the CPU Cable length Number of TiM 4R-IE per S7-300/S7-400: multiple, number depends on the connection resources of the CPU Cable length 6 m • with RS 232 interface / maximum 6 m • with RS 485 interface / maximum 30 m Performance data / S7 communication 1000000000000000000000000000000000000	Height	125 mm	
Product properties, functions, components / general Number of modules / note Number of TIM 4R-IE per S7-300/S7-400: multiple, number depends on the connection resources of the CPU Cable length 6 m • with RS 232 interface / maximum 6 m • with RS 485 interface / maximum 6 m • with RS 485 interface / maximum 30 m Performance data / S7 communication 1000000000000000000000000000000000000	Depth	120 mm	
Number of modules / noteNumber of TIM 4R-IE per S7-300/S7-400: multiple, number depends on the connection resources of the CPUCable length• with RS 232 interface / maximum6 m• with RS 485 interface / maximum30 mPerformance data / S7 communication• maximum64• maximum64• with PG connections / for S7 communication2• with PG connections / maximum62• with OP connections / maximum62• with OP connections / maximum42• SINAUT ST7 through S7 communicationYes• Performance data / tubecontrol128Performance data / tubecontrol128Number of active connections / with multiprotocol mode128Suitability for useYes• node stationYes• substationYes• substationYes• control centerYesProtocol / is supportedYes	Net weight	0.4 kg	
Index connection resources of the CPUCable lengthin the connection resources of the CPU• with RS 232 interface / maximum6 m• with RS 435 interface / maximum0 mPerformance data / S7 communication-• maximum64• maximum64• with PG connections / for S7 communication2• with PG connections / maximum62• with PG connections / maximum62• with PG connections / maximum98• Service-• SINAUT ST7 through S7 communicationYes• Performance data / multi-protocol mode12• Performance data / multi-protocol mode-Number of active connections / with multiprotocol mode12• Subatiof russ-• node station12• node station-• subationYes• node stationYes• node stationYes• notice reirYes• protocol reiterYes• prot	Product properties, functions, components / general		
• with RS 232 interface / maximum6 m• with RS 232 interface / maximum30 m• with RS 485 interface / maximum30 mPerformance data / S7 communication-Number of possible connections / for S7 communication64• maximum64• maximum62• with PG connections / maximum62• with OP connections / maximum62• Service-• SINAUT ST7 through S7 communicationYes• PG-OP-communication128Performance data / falecontrol-Number of active connections / with multiprotocol mode128Performance data / falecontrol-Subability for use-• node stationYes• substationYes• control centerYes• protocol referYes• protocol referYes <td< td=""><td>Number of modules / note</td><td></td></td<>	Number of modules / note		
• with RS 485 interface / maximum30 mPerformance data / S7 communicationNumber of possible connections / for S7 communication• maximum64• with PG connections / maximum2• with PG connections / maximum62• with OP connections / maximum62• solve-• SINAUT ST7 through S7 communicationYes• PG-OP-communication128• Performance data / telecontrol-Number of active connections / with multiprotocol mode128Performance data / telecontrol-• substationYes• node stationYes• node stationYes• control centerYes• control centerYes• protocol relationYes• notice tenterYes• notice tenterYes• notice tenterYes• notice tenterYes• protocol relationYes• protocol relationYes <td>Cable length</td> <td></td>	Cable length		
Performance data / S7 communicationNumber of possible connections / for S7 communication• maximum64• with PG connections / maximum2• with PG connections / maximum62• with OP connections / maximum62• service-• SINAUT ST7 through S7 communicationYes• PG-/OP-communicationYes• Pdeformance data / multi-protocol mode128Performance data / telecontrol-Suitability for use-• node stationYes• node stationYes• substationYes• control centerYes• protocol / is supportedYes	with RS 232 interface / maximum	6 m	
Number of possible connections / for S7 communicationA• maximum64• with PG connections / maximum2• with OP connections / maximum62Service-• SINAUT ST7 through S7 communicationYes• PG-/OP-communicationYes• Pdeformance data / multi-protocol mode128Performance data / talecontrol128Sublability for use-• node stationYes• node stationYes• node stationYes• control centerYes• control centerYes• protocol tradeYes• protocol tradeYes• node stationYes• control centerYes• protocol tradeYes• protocol tradeYes<	• with RS 485 interface / maximum	30 m	
• maximum64• with PG connections / maximum2• with OP connections / maximum62• service-• SINAUT ST7 through S7 communicationYes• PG-OP-communicationYes• PG-OP-communication128Performance data / multi-protocol mode-Performance data / telecontrol-Suitability for use-• node stationYes• substationYes• control center-Performance-• substationYes• control centerYes• control centerYes<	Performance data / S7 communication		
• with PG connections / maximum2• with OP connections / maximum62Service-• SINAUT ST7 through S7 communicationYes• PG-/OP-communicationYes• PG-/OP-communication128Performance data / multi-protocol mode-Number of active connections / with multiprotocol mode-Performance data / telecontrol-Suitability for use-• node stationYes• substationYes• control centerYesProtocol / is supportedYes	Number of possible connections / for S7 communication		
• with OP connections / maximum62Service-• SINAUT ST7 through S7 communicationYes• PG-OP-communicationYesPerformance data / multi-protocol mode-Number of active connections / with multiprotocol mode-Performance data / telecontrol-Suitability for use-• node stationYes• substationYes• control centerYesPortocol / is supportedYesProcol / is supported-	• maximum	64	
ServiceImage: service• SINAUT ST7 through S7 communicationYes• PG-/OP-communicationYesPerformance data / multi-protocol mode128Number of active connections / with multiprotocol mode128Performance data / telecontrolYesSuitability for useYes• node stationYes• substationYes• control centerYesProtocol / is supportedYes	with PG connections / maximum	2	
SINAUT ST7 through S7 communicationYesPG-/OP-communicationYesPerformance data / multi-protocol mode128Number of active connections / with multiprotocol mode128Performance data / telecontrolYesSuitability for useYes• node stationYes• substationYes• control centerYes• control centerYesProtocol / is supportedYes	with OP connections / maximum	62	
• PG-/OP-communicationYesPerformance data / multi-protocol modeXesNumber of active connections / with multiprotocol mode128Performance data / telecontrolYesSuitability for useYes• node stationYes• substationYes• control centerYesProtocol / is supportedYes	Service		
Performance data / multi-protocol mode 128 Number of active connections / with multiprotocol mode 128 Performance data / telecontrol 128 Suitability for use Yes • node station Yes • substation Yes • control center Yes Protocol / is supported Yes	SINAUT ST7 through S7 communication	Yes	
Number of active connections / with multiprotocol mode128Performance data / telecontrol128Suitability for use-• node stationYes• substationYes• control centerYesProtocol / is supported-	PG-/OP-communication	Yes	
Performance data / telecontrolAdditionSuitability for useYes• node stationYes• substationYes• control centerYesProtocol / is supportedYes	Performance data / multi-protocol mode		
Suitability for use Yes • node station Yes • substation Yes • control center Yes Protocol / is supported Yes	Number of active connections / with multiprotocol mode	128	
• node stationYes• substationYes• control centerYesProtocol / is supportedYes	Performance data / telecontrol		
• substationYes• control centerYesProtocol / is supportedYes	Suitability for use		
 control center Yes Protocol / is supported 	node station	Yes	
Protocol / is supported	substation	Yes	
	control center	Yes	
• TCP/IP Yes	Protocol / is supported		
	• TCP/IP	Yes	

- DND2	No
SINAUT ST1 protocol	Yes
SINAUT ST7 protocol	Yes
Product function / data buffering if connection is aborted	Yes
• note	56,000 data messages
Storage capacity	
• of user memory of S7 CPU	
 for TD7onCPU mode data blocks on CPU / required 	20 Kibyte
 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 property / retentive 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 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 SINAUT ST7 protocol	spontaneous
Hamming distance	
for SINAUT ST1 protocol	4
for SINAUT ST7 protocol	4
Product functions / management, configuration	
Configuration software	
 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 functions / security / Virtual Private Network	
Suitability for installation / Virtual Private Network	Yes
Product function	
password protection for VPN	Yes

MSC client via GPRS modem with MSC capability	Yes
Protocol / is supported / MSC protocol	Yes
Number of possible connections	
 as MSC client / with VPN connection 	1
 as MSC server / with VPN connection 	128
Protocol / with Virtual Private Network MSC / is supported	TCP/IP
Key length / for MSC / with Virtual Private Network	128 bit
Type of authentication / with Virtual Private Network / PSK	Yes
Product functions / Time	
Product component / Hardware real-time clock	Yes
Product property / battery-backed hardware real-time clock	Yes
Accuracy / of hardware real-time clock / per day / maximum	4 s
letzte Änderung:	Dec 2, 2013