MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Reference package for procurement and maintenance review

SIEMENS

6ES7153-2BA70-0XB0

ET 200M INTERFACE MODULE

Used with the applicable PLC System configuration.

REFERENCE PACKAGE

OFFICIAL DOCUMENT

Selected official manufacturer pages follow this cover.

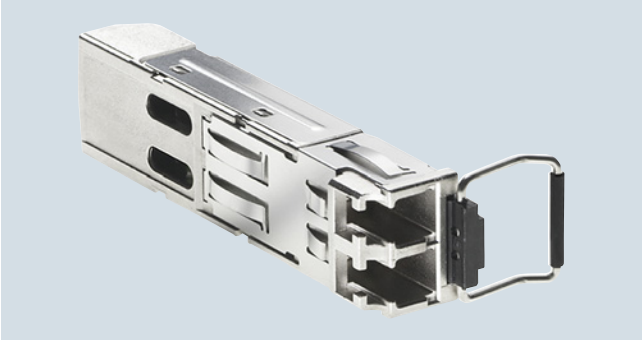
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Sync-module for coupling the CPU 41xH

Overview



- For coupling the two CPU 41xH in the S7-400H subunits.
- Can be plugged direct into the CPU

Technical specifications

Article number	**6ES7960-1AA06-0XA0** S7 SYNC-MOD. V6 F. S7-400H/F/FH	**6ES7960-1AB06-0XA0** S7 SYNC-MOD. V6 F. S7-400H/F/FH
Product type designation		
Input current		
from CPU, max.	220 mA	240 mA
Power losses		
Power loss, typ.	0.77 W	0.83 W
Dimensions		
Width	13 mm	13 mm
Height	14 mm	14 mm
Depth	58 mm	58 mm
Weights		
Weight, approx.	14 g	14 g

Ordering data

	Article No.
Sync module	
For coupling the CPU 41xH for S7-400H/F/FH; 2 modules required per CPU	
• For patch cable, can be used with fiber-optic cables up to 10 m	**6ES7960-1AA06-0XA0**
• For patch and installation cables, can be used with fiber-optic cables up to 10 km	**6ES7960-1AB06-0XA0**

	Article No.
Fiber-optic connecting cable	
For sync module 6ES7960-1AA06-0XA0	
• 1 m	**6ES7960-1AA04-5AA0**
• 2 m	**6ES7960-1AA04-5BA0**
• 10 m	**6ES7960-1AA04-5KA0**
For Sync module 6ES7960-1AB06-0XA0; fiber-optic monomode LC/LC duplex crossed 9/125 µ (max. 10 km)	On request

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Overview



- Transceiver for the transition from a redundant PROFIBUS DP master system to a single-channel PROFIBUS DP master system
- To connect devices with a single PROFIBUS DP interface to the redundant PROFIBUS DP master system of the SIMATIC S7-400H

Technical specifications

Article number	**6ES7153-2BA70-0XB0** ET200M, INTERFACE IM153-2 HF OUTDOOR
General information	
Vendor identification (VendorID)	801Eh
Supply voltage	
Rated value (DC)	
• 24 V DC	Yes
permissible range (ripple included), lower limit (DC)	20.4 V
permissible range (ripple included), upper limit (DC)	28.8 V
external protection for power supply lines (recommendation)	2,5 A
Mains buffering	
• Mains/voltage failure stored energy time	5 ms
Input current	
Current consumption, max.	650 mA
Inrush current, typ.	3 A
I^2t	0.1 $A^2 \cdot s$
Output current	
for backplane bus (5 V DC), max.	1.5 A
Power loss	
Power loss, typ.	5.5 W
Address area	
Addressing volume	
• Inputs	244 byte
• Outputs	244 byte
Hardware configuration	
Number of modules per DP slave interface, max.	12
Time stamping	
Accuracy	1 ms; 1ms at up to 8 modules; 10ms at up to 12 modules
Number of message buffers	15

Article number	**6ES7153-2BA70-0XB0** ET200M, INTERFACE IM153-2 HF OUTDOOR
Messages per message buffer	20
Number of stampable digital inputs, max.	128; Max. 128 signals/station; max. 32 signals/slot
Time format	RFC 1119
Time resolution	0.466 ns
Time interval for transmitting the message buffer if a message is present	1 000 ms
Time stamp on signal change	rising / falling edge as signal entering or exiting
Interfaces	
Interface physics, RS 485	Yes
Interface physics, FOC	No
PROFIBUS DP	
• Node addresses	1 to 125 permitted
• automatic detection of transmission rate	Yes
• Output current, max.	70 mA
• Transmission rate, max.	12 Mbit/s
• Transmission procedure	RS 485
• SYNC capability	Yes
• FREEZE capability	Yes
• Direct data exchange (slave-to-slave communication)	Yes; as publisher with all IO, as subscriber with F-IO only
• Connector type	9-pin sub D
1. Interface	
DP slave	
• GSD file	SI05801E.GSG
• automatic baud rate search	Yes
Protocols	
Bus protocol/transmission protocol	PROFIBUS DP to EN 50170
Isolation	
Isolation tested with	Isolation voltage 500 V
Degree and class of protection	
Degree of protection acc. to EN 60529	
• IP20	Yes

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Technical specifications (continued)

Article number	6ES7153-2BA70-0XB0 ET200M, INTERFACE IM153-2 HF OUTDOOR
Air pressure acc. to IEC 60068-2-13	
• Operating altitude above sea level, max.	3 000 m
Configuration	
Configuration software	
• STEP 7	Yes; STEP 7 / COM PROFIBUS / non-Siemens tools via GSD file
Dimensions	
Width	40 mm
Height	125 mm
Depth	117 mm
Weights	
Weight, approx.	360 g

Article number	6ES7197-1LB00-0XA0 Y-COUPLER F. BUILDING Y-LINK, REDUNDANT
General information	
Requirements for DP master system	
• Length of parameter assignment telegram	244 byte
Supply voltage	
Description	via bus module
permissible range, lower limit (DC)	20.4 V
permissible range, upper limit (DC)	28.8 V
Interfaces	
PROFIBUS DP	
Properties of the lower-level DP master system	
- Transmission rate, max.	12 Mbit/s; 45.45 kbit/s to 12 Mbit/s
- Termination of lower-level DP master system	Active terminating resistor (Bus Terminator)
- Use of OLM/OBT	Yes
- Use of RS 485 repeaters, max.	9
- Number of DP slaves, max.	31; 64 when using RS 485 repeaters or OLM/OBT
Protocols	
PROFIBUS DP	Yes
Interrupts/diagnostics/status information	
Status indicator	No
Alarms	No
Diagnostic functions	Yes
Potential separation	
to lower-level DP master system	Yes
Dimensions	
Width	40 mm
Height	125 mm
Depth	130 mm
Weights	
Weight, approx.	200 g

Ordering data

	Article No.
For use with STEP 7 from V5.4 or SIMATIC PCS 7 from V7.0	
Y link For connecting devices with only one PROFIBUS DP interface to a redundant S7-400H, comprising: • 2 IM 153-2 High Feature Outdoor interface modules (6ES7153-2BA70-0XA0) • 1 Y coupler (6ES7197-1LB00-0XA0) • 1 BM IM/IM bus module (6ES7195-7HD80-0XA0) • 1 BM Y-coupler bus module (6ES7654-7HY00-0XA0)	**6ES7197-1LA12-0XA0**
Accessories	
Mounting rail For assembling the Y link with active bus modules	
• Length 483 mm	**6ES7195-1GA00-0XA0**
• Length 530 mm	**6ES7195-1GF30-0XA0**

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Overview



- CPU for SIMATIC S7-400H and S7-400F/FH
- Usable in high-availability systems such as the S7-400H
- Usable with F runtime license as F-capable CPU in S7-400F/FH safety-related systems
- Features a combined MPI/PROFIBUS DP master interface
- Features 2 slots for sync modules

Note:

SIPLUS extreme products are based on SIMATIC standard products. The contents listed here were taken from the respective standard products. SIPLUS extreme specific information was added.

Technical specifications

Article number	**6AG1412-5HK06-7AB0**
Based on	**6ES7412-5HK06-0AB0**
	SIPLUS S7-400 CPU 412-5H
Ambient conditions	
Ambient temperature in operation	
• Min.	-25 °C; = Tmin
• max.	70 °C
Extended ambient conditions	
• Relative to ambient temperature-atmospheric pressure-installation altitude	Tmin ... Tmax at 1080 hPa ... 795 hPa (-1000 m ... +2000 m) // Tmin ... (Tmax - 10K) at 795 hPa ... 658 hPa (+2000 m ... +3500 m) // Tmin ... (Tmax - 20K) at 658 hPa ... 540 hPa (+3500 m ... +5000 m). For "F-Systems" applications max. +2000 m above sea level permissible
Relative humidity	
- With condensation, tested in accordance with IEC 60068-2-38, max.	100 %; RH incl. condensation/frost (no commissioning under condensation conditions)
Resistance	
- against biologically active substances / conformity with EN 60721-3-3	Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna). The supplied connector covers must remain on the unused interfaces during operation!
- against chemically active substances / conformity with EN 60721-3-3	Yes; Class 3C4 (RH < 75 %) incl. salt spray according to EN 60068-2-52 (degree of severity 3). The supplied connector covers must remain on the unused interfaces during operation!
- against mechanically active substances / conformity with EN 60721-3-3	Yes; Class 3S4 incl. sand, dust. The supplied connector covers must remain on the unused interfaces during operation!

Ordering data

	Article No.
SIPLUS S7-400 CPU 412-5H	
CPU for S7-400H with 1 MB RAM (0.5 MB code and 0.5 MB data); 5 interfaces: 1x MPI/DP, DP, PN each and 2 slots for sync modules	
Extended temperature range and exposure to media	**6AG1412-5HK06-7AB0**
Accessories	
Memory card RAM	
(medial exposure)	
• 2 MB	**6AG1952-1AL00-4AA0**
Extended temperature range and exposure to media	
• 4 MB	**6AG1952-1AM00-7AA0**
• 8 MB	**6AG1952-1AP00-7AA0**
• 16 MB	**6AG1952-1AS00-7AA0**
• 64 MB	**6AG1952-1AY00-7AA0**
FEPROM memory card	
Exposure to media	
32 MB	**6AG1952-1KT00-4AA0**
RS 485 bus connector with 90° cable outlet	
Max. transfer rate 12 Mbit/s	
Extended temperature range and exposure to media	
• Without PG interface	**6AG1972-0BA12-2XA0**
• With PG interface	**6AG1972-0BB12-2XA0**

	Article No.
RS 485 bus connector with angled cable outlet	
Max. transmission rate 12 Mbit/s	
Extended temperature range and exposure to media	
• Without PG interface	**6AG1972-0BA42-7XA0**
• With PG interface	**6AG1972-0BB42-7XA0**
RS 485 bus connector with axial cable outlet	
For SIPLUS OP, for connection to PPI, MPI, PROFIBUS	
Extended temperature range and exposure to media	**6AG1500-0EA02-2AA0**
RS 485 repeater for PROFIBUS	
Transfer rate up to 12 Mbit/s; 24 V DC; IP20 enclosure	
Extended temperature range and exposure to media	**6AG1972-0AA02-7XA0**
Additional accessories	See SIMATIC CPU 412-5H, page 1/37