MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Reference package for procurement and maintenance review

SIEMENS

6DS1312-8BB

EABA I/O BUS INTERFACE MODULE

Used with the applicable TELEPERM M AS 235 H configuration.

REFERENCE PACKAGE

OFFICIAL DOCUMENT

Selected official manufacturer pages follow this cover.

Source: Siemens TELEPERM M AS 235 H / ES 100 K Manual C79000-B8076-C293-05, EABA operation and jumper assignments

SIEMENS

TELEPERM M

AS 235 H
Automation System

ES 100 K
Extension System

Manual

Bestell-Nr. C79000-G8076-C293-07

Contents		
Warning Information Suggestions/Corrections	C79000-R8076-C293-02	
AS 235 H Automation System	C79000-B8076-C293-05	**1**
ES 100 K Extension System	C79000-B8076-C124-04	**2**
Comparator Coupler Module 6DS1142-8AA	C79000-T8076-C345-02	**3**
Synchronization Module 6DS1143-8AA	C79000-T8076-C344-02	**4**
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I/O Bus Interface Module 6DS3303-8AA	C79000-T8076-C403-02	**6**
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Spare Part Lists: AS 235 H Automation System System Cabinets ES 100 K Extension System	 C79000-E8076-C293-05 C79000-E8076-C006-10 C79000-E8076-C124-02	**10**

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3.2 Faultless Operation

Both CPUs run synchronously during normal faultless operation.

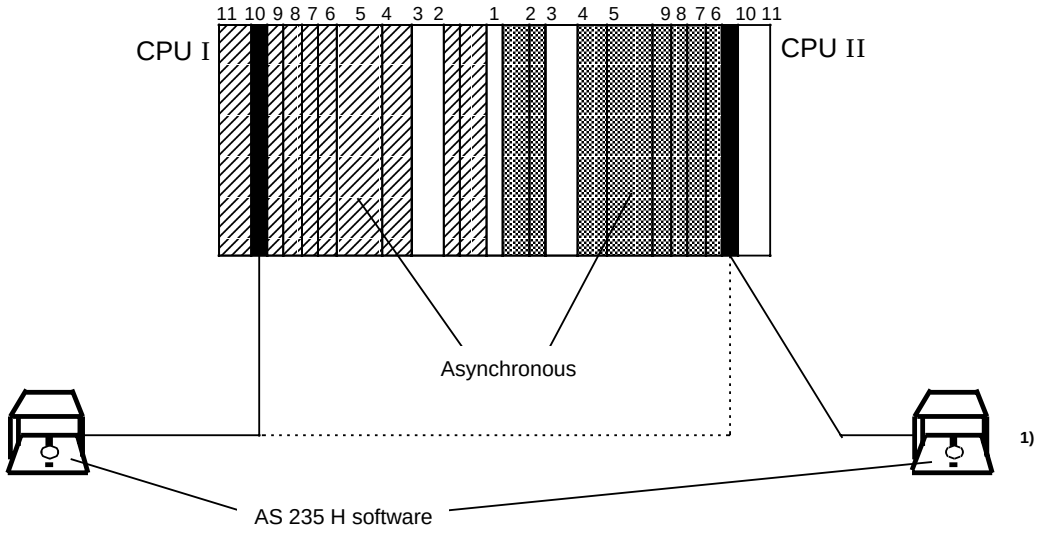
At first, both CPUs start up asynchronously. During commissioning, the same system software is loaded into the memories of the central processing units. This is performed either in succession (with one floppy disk drive) or in parallel (with two floppy disk drives). Subsequently, the system can be synchronized.

The memory contents of both memories are identical in synchronous operation. This means that identical data is read and written. The central processors provide control signals and addresses synchronously. The comparator coupler module (VKB) compares all incoming and outgoing data and signals of the central processing units.

One I/O comparator and switchover module (EAVU) per extension unit performs this comparison on the I/O level.

Each operator terminal possesses two operator input channel interface modules, one in CPU I and one in CPU II.

Although there are two local bus interface modules (N-AS or N8-H), if communication is performed via the CS275 bus system, only the N-AS**/**N8-H of the master CPU is active. (A single N-AS**/**N8-H module is not expedient since the connection to the CS 275 bus system would be interrupted if mastership were changed.)



1	Comparator coupler module (VKB)	(6DS1 142-8AA)
2	Synchronization module (SB)	(6DS1 143-8AA)
3	Diagnostic unit interface module (DGA)	
4	Memory module (SP)	(6DS1 837-8DA**/**-8EA**/**-8FA and 6DS1 844-8..)
5	Central processing unit (CPU)	(6DS1 141-8AA)
6	I/O bus interface module 1 (EABA1)	(6DS1 312-8BB)
7	Operator input channel interface module 1 (BKA1)	(6DS1 330-8CA)
8	I/O bus interface module 2 (EABA 2)	
9	Operator input channel interface module 2 (BKA2)	
10	Mini floppy disk interface module (MDA)	(6DS1 326-8BB)
11	N-AS or N8-H local bus interface module	(6DS1 223-8CA or 6DS1 220-8AA)

Fig. 3.1 Start-up and loading

1) Although only one mini floppy disk unit is sufficient for loading the system software and the user program, two mini floppy disk interface units are required. For booting, the mini floppy disk unit is connected to CPU I and CPU II in succession. Both interfaces must, however be installed.

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- Central processing unit (CPU 235 H)

The central processing unit

- contains a 16/32-bit processor,
- is responsible for system start-up and microprogram start-up,
- processes the automation functions according to the program in the user memory.



Caution

Some of the backplane connector pin assignments of CPU 235 H (6DS1 141-8AA) and CPU 235 (6DS1 140-8AA) are different due to the following modifications that are required for synchronous CPU operation:

- External supply of the 20-MHz and 10-MHz processor clock pulses via the two SB modules (the G1 and G2 quartz oscillators have not been installed on the CPU 235 H).
- The 1/256-Hz time clock pulse is routed via the SB module for synchronization.
- The TPURS signal is issued to the SB module.

Due to the different connector pin assignments, the CPU module could be destroyed if a CPU 235 H were installed in a standard AS 235 system and vice versa.

- I/O bus interface module (EABA)

The I/O bus interface module

- transfers data and signals from the CPU to the EAVUs,
- receives data and signals from the EAVUs and transfers them to the CPU.

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– Mini floppy disk interface module (MDA)

The red LED is lit during the start-up phase of the module.
The module is ready when the LED is extinguished. The LED lights up if a fault is detected during initialization.

A defect in the FIFO, RAM or FDC is indicated by the following blinking sequence:

1 x blinking	FIFO defective	(queuing hierarchy disturbed)
2 x blinking	RAM defective	(write/read memory defective)
3 x blinking	FDC defective	(floppy disk controller defective)

The module is defective in all these cases.

- I/O bus interface module (EABA)

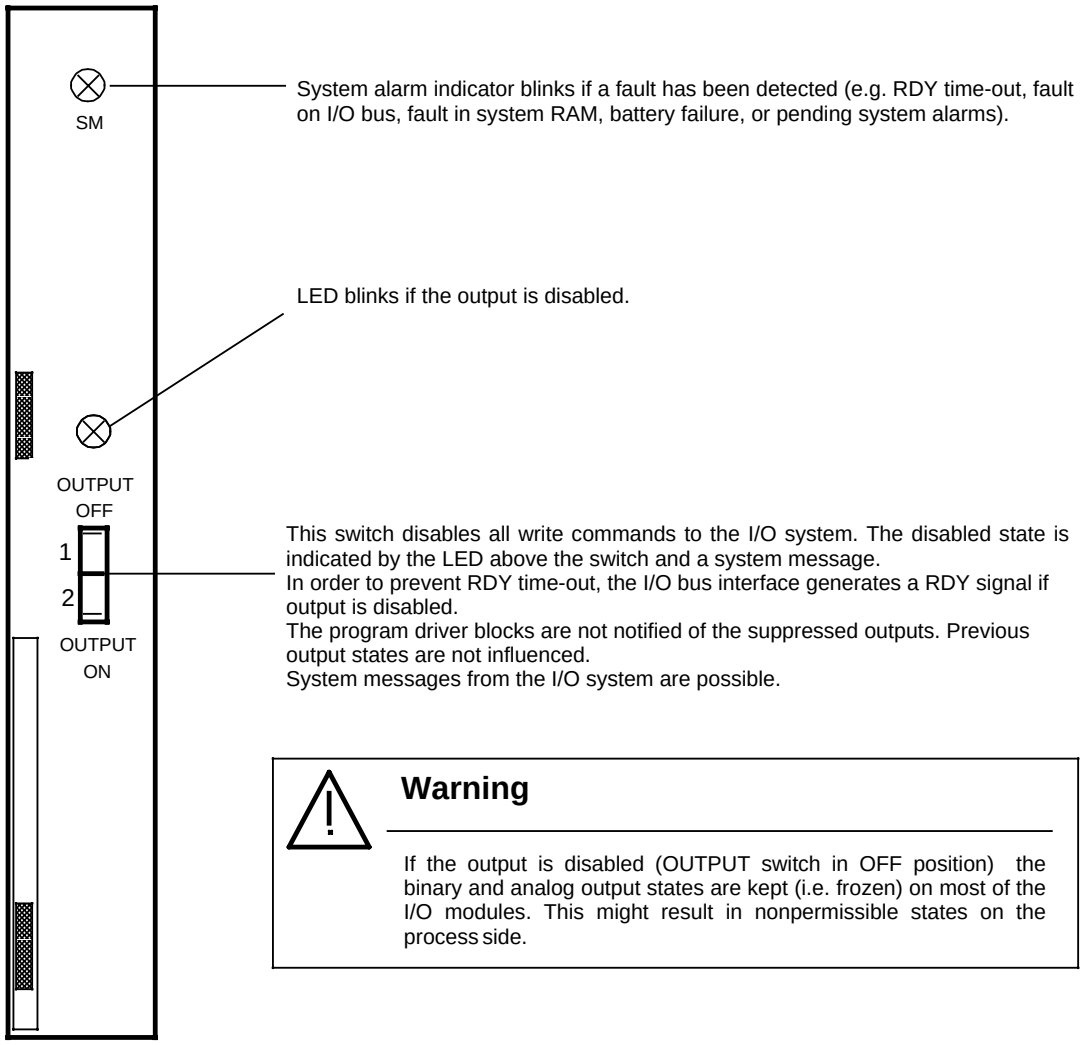
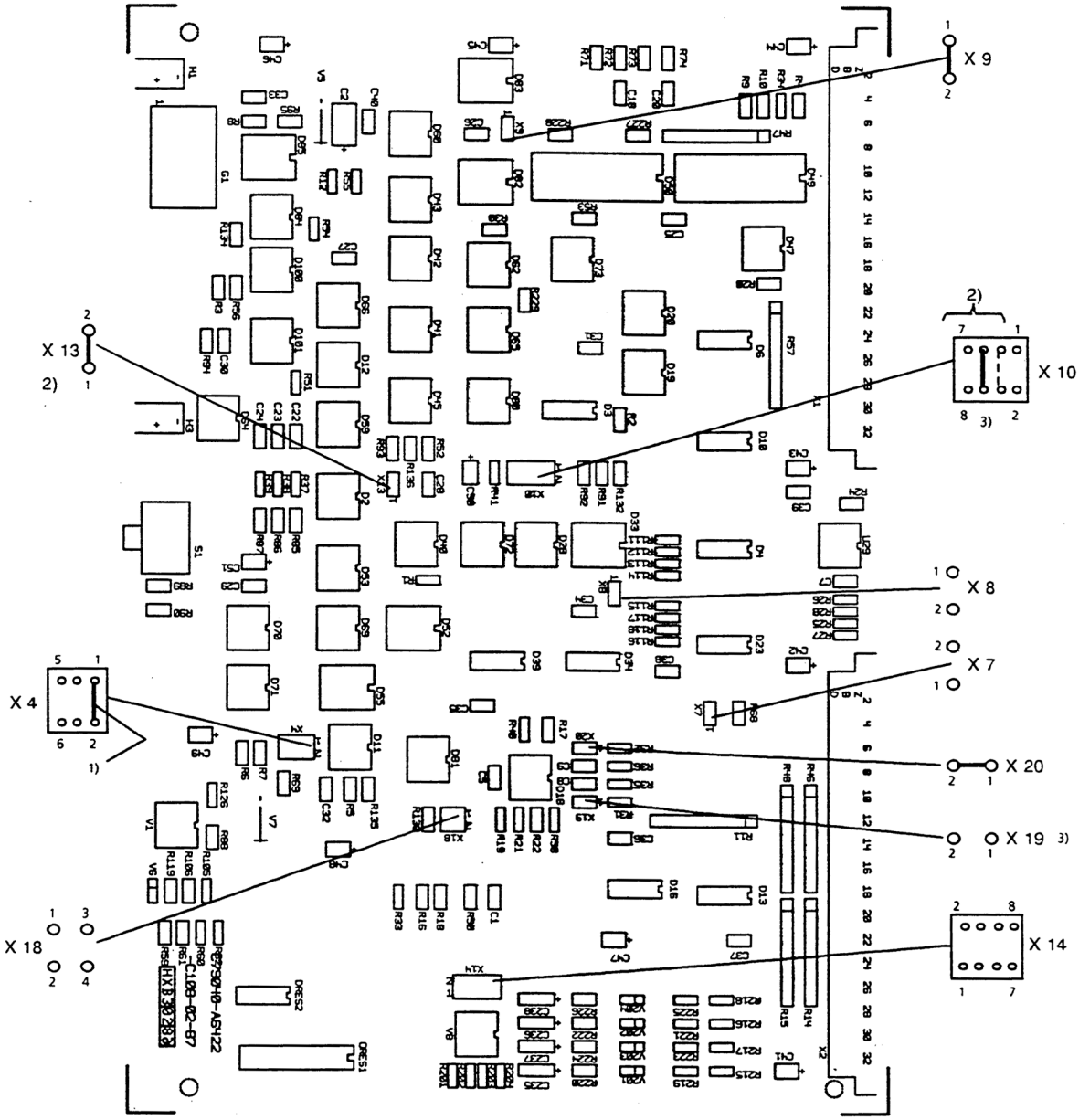


Fig. 3.15 EABA front panel (6DS1 312-8BB)

- I/O bus interface units (EABA)
  Jumper assignments for **I/O bus 1 and I/O bus 2**



1) Jumper not inserted for EABA2

2) Insert jumpers (option)

3)

X10/ 3 - 4 inserted	Negative edge of external minute impulse is effective	One of the two jumpers must be inserted on EABA1 and EABA2
X10/ 5 - 6 inserted	Positive edge of external minute impulse is effective	
X10/ 7 - 8 inserted	Minute impulse triggers PU6 interrupt on EABA1	Remove the jumper X13/1-2 on EABA 1 if the minute impulses are to be used
X10/ 7 - 8 not inserted	No interrupt by minute impulse	The jumper X13/1-2 may be inserted

Fig. 4.32 I/O bus interface module 6DS1 312-8BB

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AS 235 H, Standard Configuration with Order Numbers (without I/O modules)

AF	Remote bus connector board	6DS9 203-8DA
BKA	Operator input channel interface module	6DS1 330-8CA
BL	Blinking clock-pulse generator module	6DS1 922-8AA
CPU 235 H	Central processing unit)	6DS1 141-8AA
EABA	I/O bus interface module	6DS1 312-8BB
EAVU	I/O comparator and switchover module	6DS1 144-8AA
EE	Extension unit for maxi-termi-point	6DS9 002-8BA
EE	Extension unit for wire-wrap	6DS9 002-8BB
GE	Basic unit (subrack for CPU I and CPU II)	6DS9 027-8AB
M	(Color) monitor for AC 110/230 V	6DS3 401-8BK
	for DC 24 V	6DS3 401-8BL
MDA	Mini floppy disk interface module	6DS1 326-8BB
MDE	Mini floppy disk unit	6DS3 900-8AD
ML	Alarm logic module	6DS1 901-8AA
N-AS	Local bus interface module	6DS1 223-8AA
PBT	Process communication keyboard	6DS3 305-8BA
PUM	Buffer module	C79451-A3125-B227
SB	Synchronization module	6DS1 143-8AA
SED	Cabinet power supply diode	C74103-A1900-A351
SES	Cabinet power supply unit	6DS4 428-8AA
SP	Memory module	6DS1 837-8DA/-8EA/-8FA
SP	Memory module	6DS1 844-8CA/DA
ST	Configuring keyboard	6DS3 303-8AA
SV	Power supply module	C79451-Z1359-U9
SVE	Power supply unit	6DS4 432-8AA
SVM	Power supply module	C79451-A3117-D29
SVME	Power supply unit for extension unit	6DS1 006-8AA
UI	Inductive bus converter for CS 275	6DS4 400-8AB
VKB	Comparator coupler module	6DS1 142-8AA
VR	Video relay	C79451-Z1399-U910

Note: Each CPU contains one or two EABA and BKA modules.
They are identified by the index 1 or 2.

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