

ZAT-DV **DVXXX**

FEATURES

The board implements connection of PROFIBUS-FMS and PROFIBUS-DP (DIN 19245 I and II, DIN 19245 III, EN 50170) to control board of the set ZAT-DV of the system ZAT-2000 MP.

The board DVXXX belongs to the set of boards ZAT-DV with parallel VME bus according to specification IEC 821. It serves as carrier and VME interface of communication modules Siemens CP5480FMS and CP5480DP. The board also contains circuits WD, generation of status word and circuits of galvanically separated serial line RS485.

On the front board panel there is placed standard connector of bus PROFIBUS, connector RJ for status message of circuit WD, switch DIL8 for setting of base address and two indication LEDs.

Boards DVXXX in co-operation with relevant FW enable redundant operation in bus PROFIBUS.

FUNCTION DESCRIPTION

Concerning function, one could divide the board into part of VME interface for module CP and into part of galvanic separation and line RS485 driving. The board is connected into VME bus through connector J1 and it meets the specification according to IEC 821 A16/A24 : D08(E0) SLAVE, size 3HE. In memory area for VME bus, the board DVXXX occupies 4 kByte. Memory area of the board is (see Fig.2) divided into two parts, the former 2 kByte is occupied by DPM (Dual Port Memory) of module CP5480 and in the latter 2 kByte there are accessible control functions of the board. Status word of the board is read in address B.Adr+D01H, signals RESET and HK (data consistence) for CP5480 are activated by writing to address B.Adr+D00H contingently B.Adr.+800H, and they are reactivated by reading from the same addresses. Circuit WD of the board is set in address B.Adr+ 801H, without setting it releases after approximately

460 ms. Structure of status word is displayed on following figure:

D7						D0	
EN	MA	S8	S7	KN	1	1	1

where EN is diagnosing message from input of connector RJ JP1 (for example for messaging of redundant board activity), MA is diagnosing message about physical connection into bus PROFIBUS of itself board, S8 and S7 is setting of responding switches on the front board panel and KN is diagnosing message about physical connection of standard cable connector PROFIBUS into socket JP2.

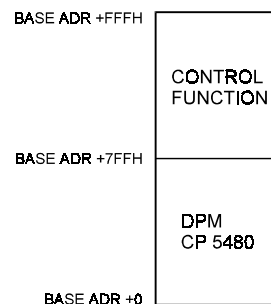


Fig. 2

Base address is set on the front board panel by switch DIL according to Fig. 3.

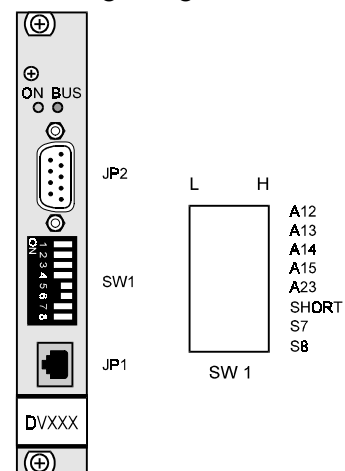


Fig. 3

Base address could be set only by above mentioned switches, yet it could not be placed into any place in address area of VME bus. In area of Short Access (A16, AM 29 and 2D, switch SHORT = H) one could address maximally 16 of these boards in single rack, in area of Standard Access (A24, AM 39 and 3D, switch SHORT = L) one could address 32 boards¹. Switches S7 and S8 are auxiliary ones and are read in status word, e.g. for purposes of distinguishing of redundant boards. The board DVXXX is equipped with SW set circuit WD, which disconnects driving circuits of line RS485 after elapsing of firmly set time (460 ms) by means of relay from network PROFIBUS. Function of circuit WD could be disabled by disconnecting the jumper JP1, placed approximately in the middle of printed circuit board; line driver then stays permanently connected to output connector of network PROFIBUS.

Green LED "BUS" signals physical connection of bus driver to connector of network PROFIBUS, yellow LED "ON" lights in case of

¹ Actual available number of boards DVXXX in single rack is limited by rack capacity.

"keeping index" (Token) of the network, thus in case of network PROFIBUS-DP substantially permanently, in case of Master station of network PROFIBUS-FMS in a cyclic way according to Token rotation, in case of Slave station it does not light at all.

The board DVXXX has two variants:

DVFMS with fitted communication processor CP5480FMS with function Master/Slave of process station of system ZAT-2000 MP in network PROFIBUS-FMS.

DVDP with fitted communication processor CP5480DP with function Master 1 of network PROFIBUS-DP for connection into set of distributed peripherals ZAT-D or other equipment of other producers compatible in level of PROFIBUS-DP.

DVUC – processor is not fitted in this variant.

The boards DVFMS and DVDP could not be inserted into nor removed from the rack of central processors of process stations from the set ZAT-DV, when the rack is alive (under voltage).

When handling with the boards there is needed to meet principles for treating with equipment containing electrostatic sensitive parts.

TECHNICAL DATA

Parameter	Condition	Units
Feeding voltage	Vcc	5 V DC
Tolerance of feeding voltage		± 5 %
Maximal feeding current from 5V	without communication processor CP5480 with communication processor CP5480	Max.200 mA Typ.850, max1000 mA
Max. power demand of board		5 W
Com. interface acc. to EN 50170	RS485	
Used connector	in board accessories	PROFIBUS connector Siemens
Recommended type of communication cable		PROFIBUS type A
Maximal length of line at used communication line	without repeaters	1200 m
Transfer rate		9.6; 19.2; 93.75; 187; 500; 1 500 kBd

Parameter	Conditions	Units
Dielectrical strength of outlets TxD, RxD against earth		500 V
Resistance class EMC	acc. to IEC 1000-4-2, IEC 1000-4-4	4
Range of working temperatures		-5 up to +70 °C
Range of storing temperatures		-20 up to +85 °C
Weight	with fitted communication processor CP 5480	0,25 kg
Dimension		3HE, 4TE
Function of LED on front panel	yellow ON – active in bus PROFIBUS green BUS – connection to bus PROFIBUS	