

Excitation System

UNITROL[®] F Series

Overview

Rev.	A	03-01-22 / Mo	Rev.		Issued: 98-02-13 Ebner	Document	Format	Langue	Page	No. of pages
Rev.	B	03-10-22 / Mo	Rev.		Check 1: 98-03-16 GM	ZAB	A4	E	1	20
Rev.			Rev.		Check 2:					
ABB		Dept. 1	Dept. 2	Der.from/Repla.:		Released: 98-03-16 GM		3BHS102402 E81		
		ATPE		Replaced by:						

5 Excitation module

Each configuration consists of a common but flexible I/O System UNC 4866/8 with AC-Actual Value Measurement UNS 0862 (in AFT configuration, the second AC-Actual Value Measurement UNS 0862 can be provided as an option) and an I/O Interface UNS 0863, the UNITROL[®] F converter module, Power Supply Unit UNS 0868 and the common Control Panel UNS 0874 for local operation, commissioning and maintenance. A PC can be temporarily connected for the use of CMT (Commissioning and Maintenance Tool).

The UNITROL[®] F converter module UNS 487x consists of:

- Power interface board SDCS-PIN 1x / 20xB / 4x / 5x
- Converter 2 or 6 pulse thyristor bridge
- Control board SDCS-CON-2
- Communication interface board SDCS-COM-1/5 (optional for CMT)
- Power supply unit SDCS-POW-1
- Signal Processing Device UNS 1860
- Diode Failure Monitoring UNS 0864 (optional)
- PSS Signal Transformer (slip stabiliser) UNS 0869 (optional)
- Control Panel UNS 0874

1 Overview

1.1 System components

Type	Ident-No.	Purpose	Characteristics
General boards			
SDCS-CON-2	3ADT220072R4	Control Board (i), rev. H and newer	UNF SW 41.222 and newer
SDCS-CON-2	3BHE004059R4	Control Board (i), rev. G	UNF SW 41.220 and .221
SDCS-POW-1	3ADT220090R3	Power Supply board (i) coat	Replaced through POW-4
SDCS-POW-4	3ADT315100 R1001	Power Supply board (i) coat	115 VAC/ 230 VAC, DO8
UNS 0868a V1	HIEE305120R1	Power Supply Unit (e)	24 to 48 VDC
UNS 0868a V2	HIEE305120R2	Power Supply Unit (e)	110 to 250 VDC
UNS 0868b V1	3BHE013940R1	Power Supply Unit (e)	24 to 48 VDC
UNS 0868b V2	3BHE013940R2	Power Supply Unit (e)	110 to 250 VDC
UNS 0862	HIEE405179R1	AC Actual Value Measurement	3 x 100 to 120 VAC, 1 x 1 or 5 ADC
UNS 0863	HIEE305082R1	I/O Interface	16 DI 24 VDC, 18 Relay-DO /4AO/2AI
UNS 1860b V1	3BHB001336R1	Signal Processing Device (i)	fE =33 to 300 Hz
UNS 1860b V2	3BHB001336R2	Signal Processing Device (i)	fE =17 to 38 Hz
Power Interface boards			
SDCS-PIN-1x Set			
SDCS-PIN-11	3ADT306100R1	Power Interface Board (i)	220 to 500 VAC, 25 to 75 ADC
SDCS-PIN-12	3BSE005716R1	Power Interface Board (i)	600 VAC, 50 ADC
SDCS-PIN-20xB Set			
SDCS-PIN-205B	3ADT312500R1	Power Interface Board (i)	220 to 500 VAC, 100 to 1000 ADC
SDCS-PIN-206B	3ADT312500R2	Power Interface Board (i)	500 to 600 VAC, 110 to 450 ADC
SDCS-PIN-41	3BSE004939R1	Pulse Transformer Board (e)	Replaced through PIN-48
SDCS-PIN-48	3BSE004939R2	Pulse Transformer Board (e)	220 to 1000 VAC, 900 to 5150 ADC
SDCS-PIN-51	3BSE004940R1	Measuring Board (e)	220 to 1000 VAC, 900 to 5150 ADC
SDCS-PIN-52	3BSE011316R1	Measuring Board (e)	220 to 500 VAC, 900 to 5150 ADC
Communication boards			
SDCS-COM-5	3BSE006567R1	TC Link Communication Board(i)	(connected to X11)
UNS 0874	3BHB002651R1	Control Panel	Modbus
NMBA-01 V1.7	3ADT220066R5	Fieldbus Interface Modbus	
NPBA-12 V1.4	3ADT220112R5	Fieldbus Interface Profibus	
NMBP-01 V1.6	3ADT220074R4	FB interface Modbus Plus	
Optional boards			
UNS 0864b V1	HIEE405227R1	Diode Failure Monitoring (e)	fE =33 to 300 Hz
UNS 0864b V2	HIEE405227R2	Diode Failure Monitoring (e)	fE =17 to 38 Hz
UNS 0867a V1	HIEE405246R1	Extended I/O	16 DI, 19 DO
UNS 0867a V2	HIEE405246R2	Extended I/O	16 DI, 19 DO, 2 AI, 2 AO
UNS 0869a V2	3BHB001337R2	PSS Signal Transformer (e)	IEEE-PSS Type 2A
(i) internal and (e) external board for the converter module			

Tab. 1 Circuit board summary table

12 Communication Board SDCS-COM5

12.1 Block diagram

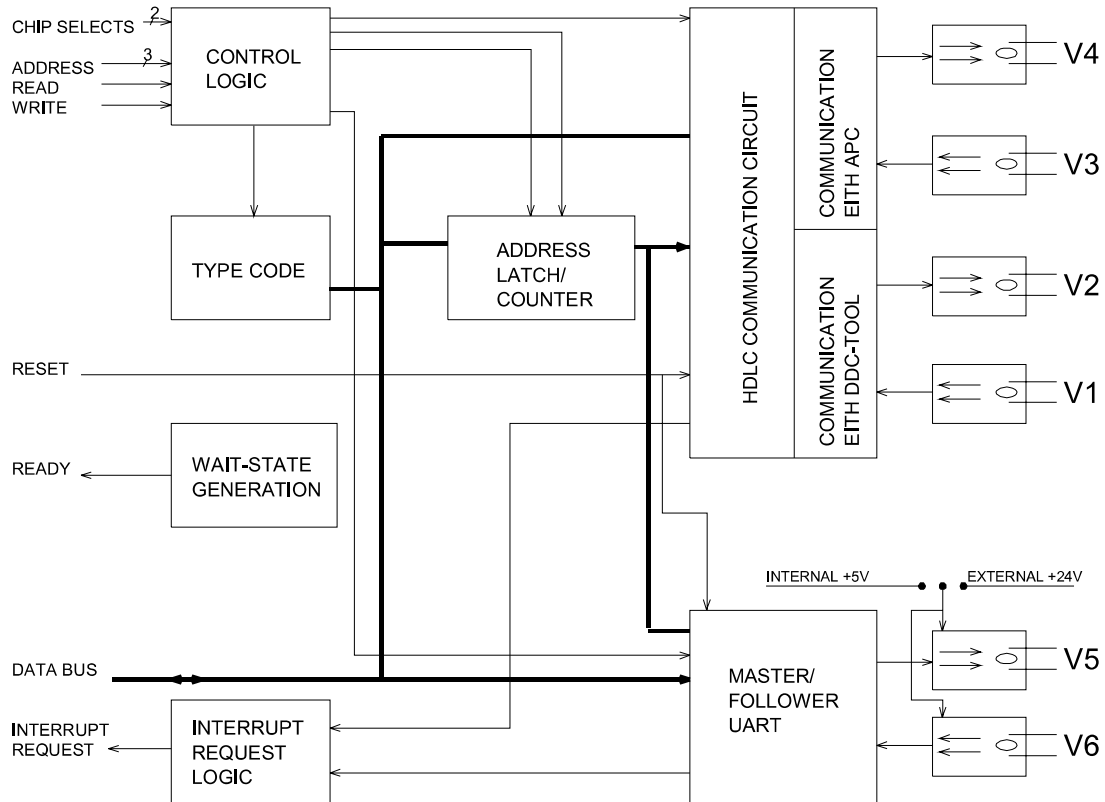


Fig. 43 Block diagram SDCS-COM-1/5

12.2 Connection to the control board

The communication interface is plugged onto connector X11 of the control board SDCS-CON-2.

12.3 Functional description

Communication with CMT software tool (3.x)

Channel A of the HDLC communication device is used for the exchange of data with the CMT software tool, which can be installed on a PC together with the corresponding hardware. The transmission rate via fibre optic cable between PC and SDCS-COM-1/5 is 1.5 MBaud. Communication is synchronous. The matching connection points on the SDCS-COM-1/5 board and the fibre optic cable are marked in the same colour.

12.4 Jumper settings

Jumper S1:

In the factory setting, the short circuit plug is connected to pins 1-1. This position corresponds to the device address (converter number) "1". Only this setting is supported by the voltage regulator software.

3.6.2 Table for hardware trouble shooting

The following table is intended to assist the user in interpreting hardware fault messages and contains instructions on eliminating the faults.

NOTE: The individual alarms and faults are described in the following chapter 0 "Alarm and fault messages".

If this message appears there is no communication with the CON2-Board.

Error code	Possible Error / Action
<p>01</p>	<p>ROM memory test error</p> <p>Operator Information The test of the ROM (Read Only Memory) failed, e.g. due to a defective system program having been stored.</p> <p>Trouble Shooting</p> <ul style="list-style-type: none"> • Replace the SDCS-CON-2 board.
<p>02</p>	<p>RAM memory test error</p> <p>Operator Information A fault was detected in the RAM memory circuit.</p> <p>Trouble Shooting</p> <ul style="list-style-type: none"> • Try to restart the UNITROL® F system. • If this error message appears again after restarting the UNITROL® F system, replace the SDCS-CON-2 board.
<p>04</p>	<p>Bad COM-1 or COM-5 board</p> <p>Operator Information This error message appears if the UNITROL® F system encounters transmission problems in communication via an optic fibre cable.</p> <p>Trouble Shooting</p> <ul style="list-style-type: none"> • Check that the SDCS-COM-1 or COM-5 board is present, correctly plugged in to the SDCS-CON-2 board and that the hardware settings are correct (see "Hardware Description"). • Check the fibre optics connections. • Replace the SDCS-COM-1 or COM-5 board. • Exchange the SDCS-CON-2 board.