System description

ABB Procontic T300

Multiprocessor Control System

Planning

Order number
GATS 1315 11 R2001

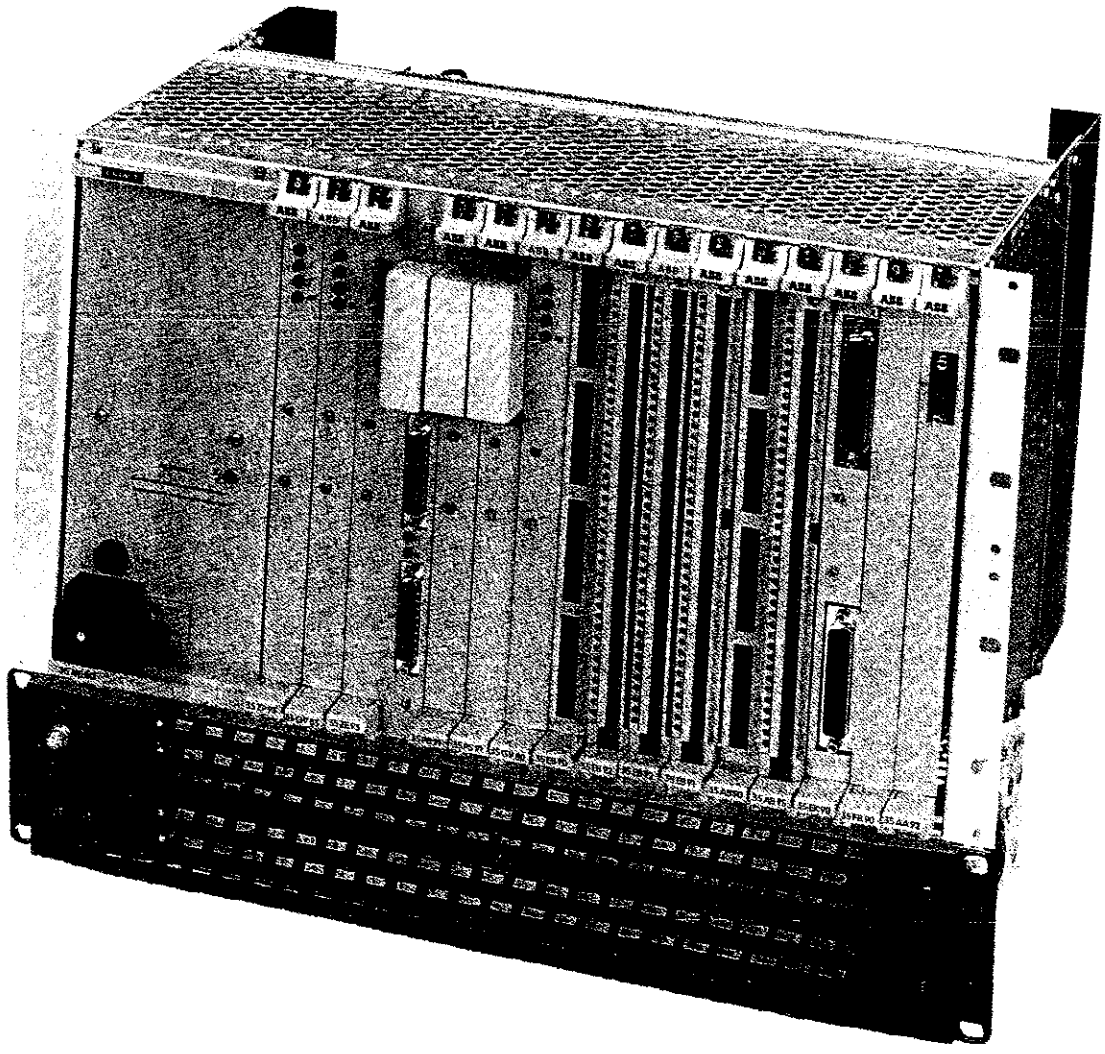

ABB Schalt- und Steuerungstechnik GmbH

ASEA BROWN BOVERI

4 Cabinet structure with two to four subracks

1. A supervision using the level coupler 35 EK 90/91 is not possible
2. The supervision is to be carried out for the subrack
3. All the relevant funtional blocks (PLC, CNC etc.) are to be monitored.

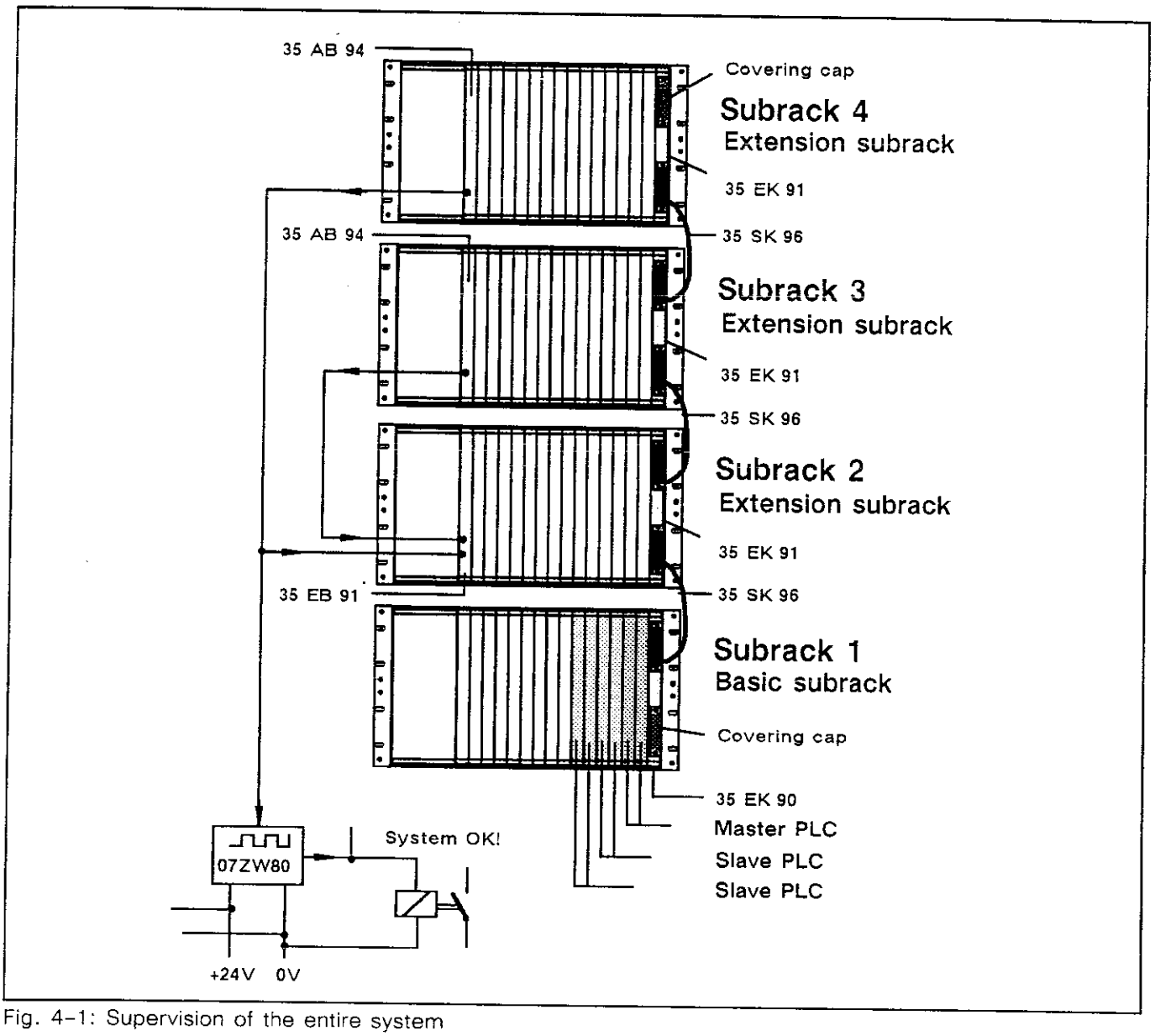

Fig. 4-1: Supervision of the entire system

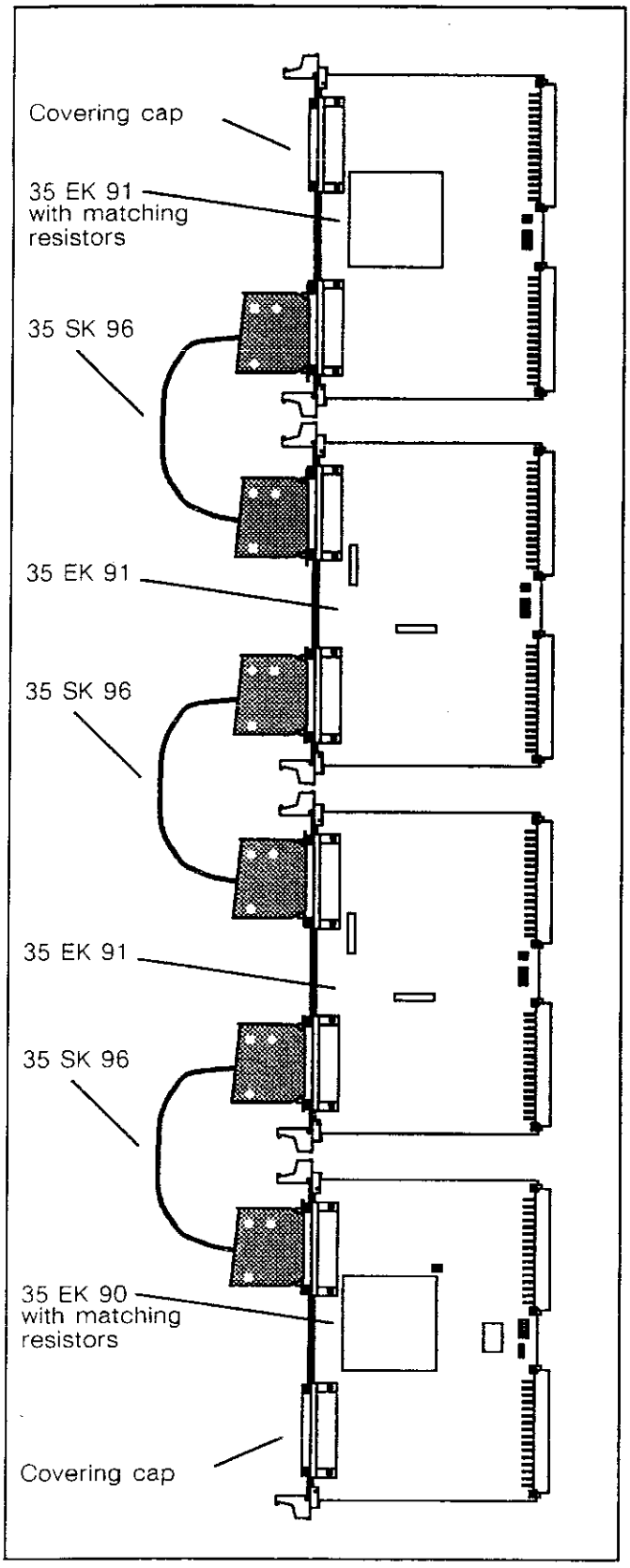

Fig. 4-2: Connecting four subracks

Principle:

The Master PLC is responsible for supervising the Slave PLC and the subracks. The Master PLC is monitored by a second, external logic.

Slave PLC supervision

A signal exchange is carried out between each program of the Slave PLC to be supervised and the program of the Master PLC via super global values. The Master PLC outputs a signal; this is read by the Slave PLC and output as another super global value. The Master PLC reads this signal, inverts it and outputs it again. If the two programs (Master PLC and Slave PLC) are being processed, the signal oscillates. The time of the oscillation is monitored. If a malfunction occurs, the signal remains in status "0" or "1".

Subrack supervision

At least one binary output unit (subrack 1, 2) is located in the Slave levels. 1 channel each is required from these output units for the supervision. A binary input unit (subrack 3) is located in a Slave level. As is shown in Fig. 1, an output of an output unit from subrack 1 and subrack 2 is to be connected with an input of the input unit. A signal is exchanged via the subracks to be monitored as described in section "Slave PLC supervision".

The Master level is monitored by the external logic "07 ZW 80".

Monitoring the entire system

The entire system is monitored by an external logic. The supervision is carried out by exchanging a signal within defined times. If the signal exchange does not occur, a malfunction is registered.

The control of the external logic is carried out with the "Subrack supervision". If the external logic is to be controlled separately in order to create greater clarity in the case of a malfunction, another output channel is required.

More details can be taken from the data page of the cycle supervision 07 ZW 80 R2.

PLC program

A coupling element for the programming and test software 907 PC 32 was designed in order to simplify the programming of the supervision function for the user.