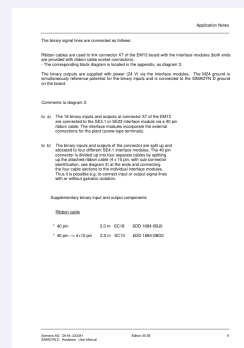


FIELD INSTALLATION QUICK GUIDE

Installation Instructions

6DD1640-0AE0

EM13 analog, digital and encoder I/O board



PRODUCT	6DD1640-0AE0
FAMILY	SIMADYN D EM13
FUNCTION	EM13 analog, digital and encoder I/O board
SOURCE	Siemens SIMADYN D EM13 manufacturer documentation; applicable pages 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 23

01 OFFICIAL MOUNTING AND WIRING

- Isolate the system and observe the documented electrostatic-discharge precautions before handling the EM13 board.
- Install the board in a compatible SIMADYN D local-bus rack and secure it with screws as specified. If used with an adapter, bond the front panel to the chassis through the specified short connection.
- Connect the encoder using shielded cable to X5. Use the specified SC12 and SE7.1 arrangement for analog signals, and the documented interface arrangement for X7 binary signals.
- Verify external binary supply and reference-potential connections against the applicable connector diagrams before energizing the configured system.

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3. Application Notes

The EM 13 board can be used in all SIMADYN D sub-racks connected to the local bus. It requires one slot in the sub-rack.

The board must be fixed to the sub-rack with screws (even during commissioning) to ensure perfect operation.

If the board is plugged onto an adapter, the front panel (or better still one of the two metallized front panel handles) must be electrically connected to chassis via a short lead.

The pulse inputs at connector X5 are linked with the incremental shaft angle encoder of the drive via a multi-core screened cable.

The appropriate block diagram is shown in the appendix, diagram 1.

Supplementary Components at the Speed Input:

Component set

- * SM1.1 6 DD 1680 - 0AB1
15 pin male connector, with casing

The analog input and output signal lines are connected via the SE7.1 interface module, which snaps onto the mounting rail. The 20 pin ribbon cable SC12 is used to inter-connect boards from connector X6 to the interface module connector X1. The cable type SC12 (twisted pair) guarantees higher transmission security.

The SE7.1 interface module provides one screw-type terminal each for signal inputs $\pm$, signal outputs/ground and screen for each channel.

The SE40 interface modules enable additional boards to be connected (1-to-1 connection between faston connectors and screw-type terminals).

The configuration for analog signals is shown in the appendix in diagram 2.

Supplementary components used for analog signals:

Ribbon cable

- * 20 pole, twisted pair, 1.5 m SC12 6 DD 1684 - 0BC0,
- * 20 pole 2.0 m SC11 6 DD 1684 - 0BB0.

Interface modules

- * SE7.1 6 DD 1681 - 0AH1
I/O block, analog, 8/10 channels
- * SE40 6 DD 1681 - 0EA0
terminal block, 20 pole, one to one

The binary signal lines are connected as follows:

Ribbon cables are used to link connector X7 of the EM13 board with the interface modules (both ends are provided with ribbon cable socket connectors).

- The corresponding block diagram is located in the appendix, as diagram 3.

The binary outputs are supplied with power (24 V) via the interface modules. The M24 ground is simultaneously reference potential for the binary inputs and is connected to the SIMADYN D ground on the board.

Comments to diagram 3:

- to a) The 16 binary inputs and outputs at connector X7 of the EM13 are connected to the SE3.1 or SE23 interface module via a 40 pin ribbon cable. The interface modules incorporate the external connections for the plant (screw-type terminals).
- to b) The binary inputs and outputs of the connector are split up and allocated to four different SE4.1 interface modules. The 40 pin connector is divided up into four separate cables by splitting up the attached ribbon cable (4 x 10 pin, with sub-connector identification, see diagram 3) at the ends and connecting the four cable sections to the individual interface modules. Thus it is possible e.g. to connect input or output signal lines with or without galvanic isolation.

Supplementary binary input and output components

Ribbon cable

* 40 pin	2.0 m	SC18	6DD 1684-0BJ0
* 40 pin --> 4x10 pin	2.0 m	SC13	6DD 1684-0BD0

7. Miscellaneous

7.1. Appendices

7.1.1. Diagrams

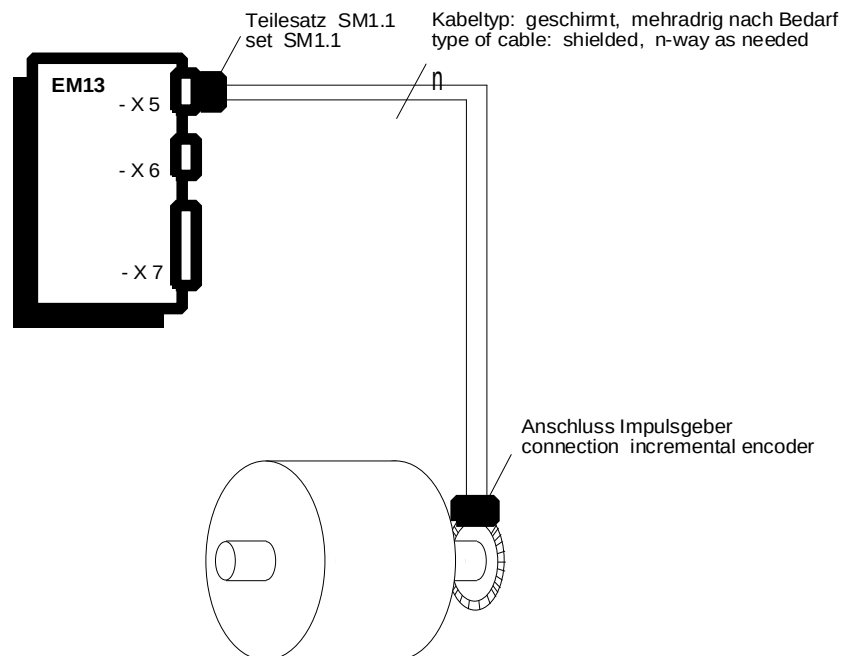


Diagram 1

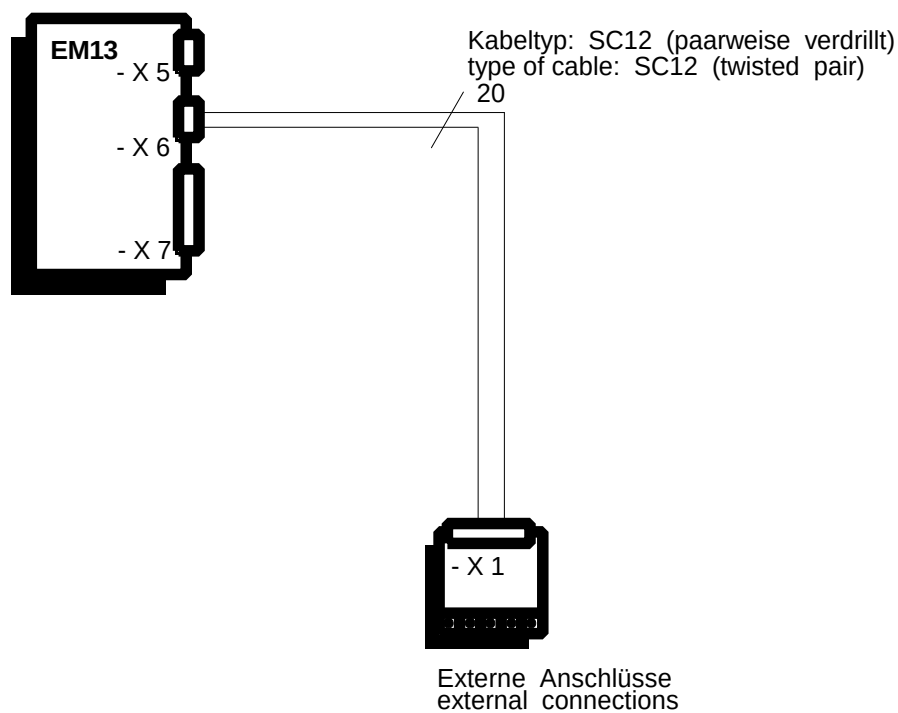
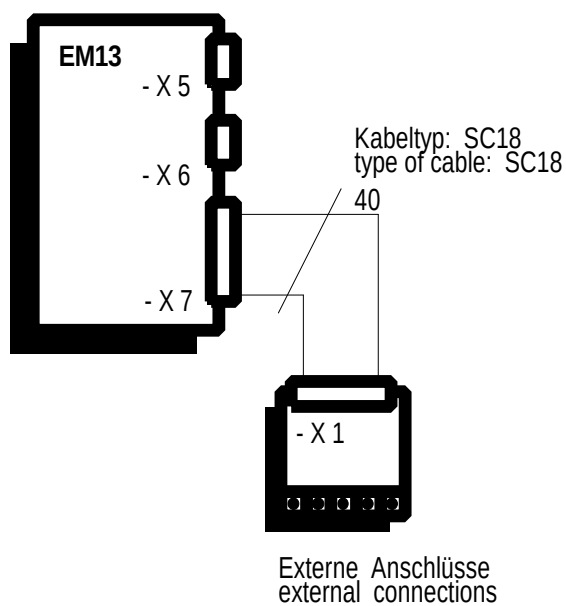


Diagram 2

a)



b)

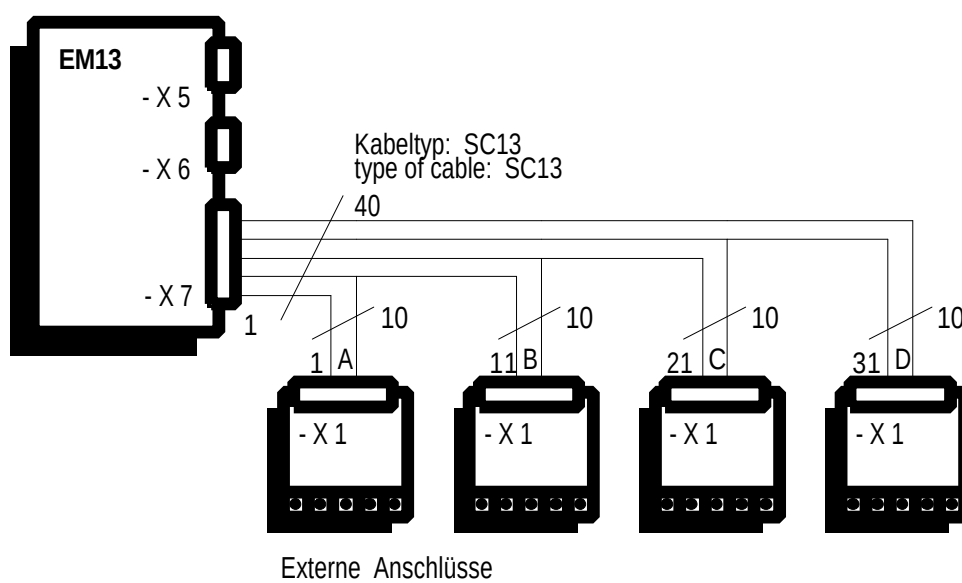


Diagram 3