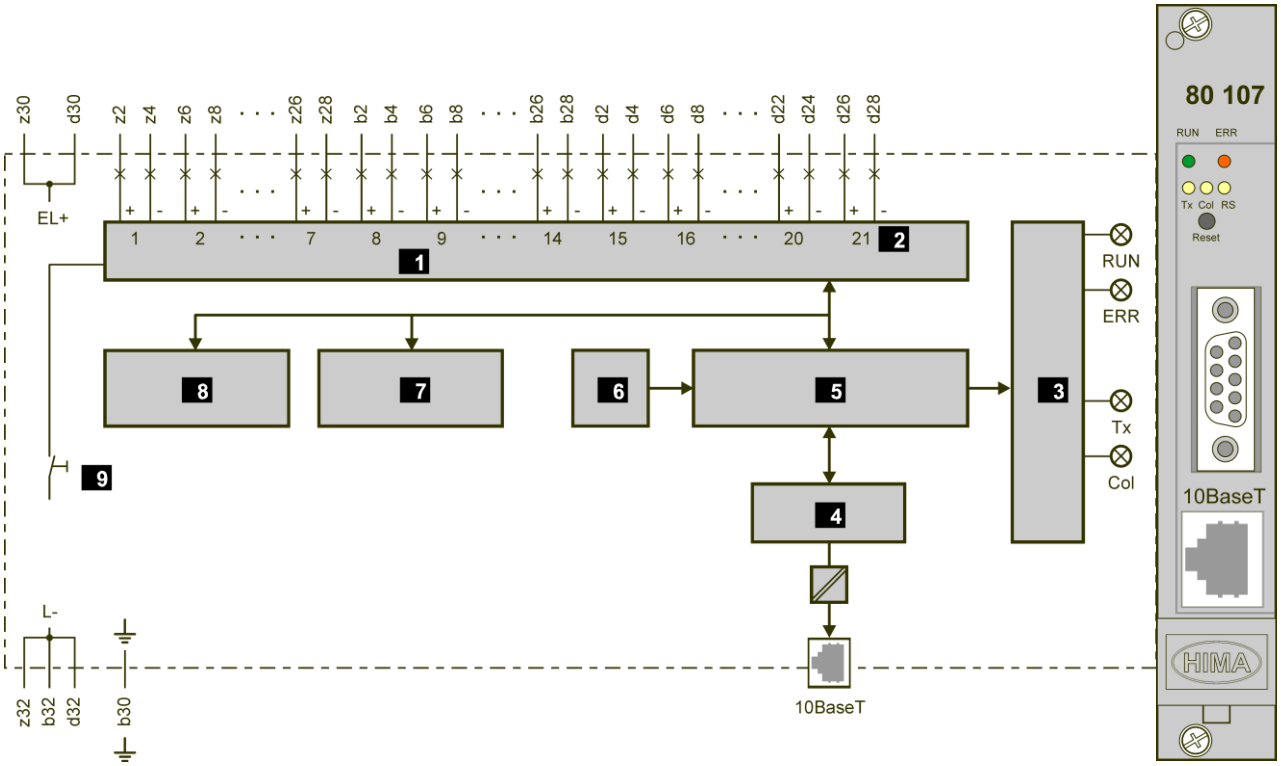
80 107: Communication Module

For data transfer from the Planar4 system via Ethernet (with OPC Server)

No safety function is performed by the communication module.

In terms of safety technology, the module features interference-free operation with the Planar4 system. This is achieved through specific decoupling measures on the interfaces.



1 Multiplexer
2 21 channels (internal communication)
3 Indicators
4 Ethernet controller
5 Processor
6 Pulse
7 Data memory
8 Program memory
9 Reset

Figure 1: Block Diagram

The communication module is used to transfer data from the modules of the Planar4 system to other systems.

Data transfer occurs via Ethernet (with the OPC Server), RJ-45 connector. For further details, refer to the Planar4 system manual (HI 804 003 E) and the manual HIMA OPC-Server V3.0 Rev. 2.

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Up to 21 Planar4 modules can be connected to the communication module via the channels (z2-z4, z6-z8, … , d26-d28).

HIMA recommends using a Planar4 subrack with backplane. This subrack already contains the required connections for internal communication. Any of the Planar4 modules can be inserted in slots 1…20. Slot 21 is reserved for a reset module or a communication module.

The error messages (ERR) on all the Planar4 modules (AS 10 and higher) of a subrack can be acknowledged using the reset key when the triggering error is no longer present.

The reset key does not trigger the reset of the controller!

Processor	32-bit
Main memory	4…16 MB
Connectors	RJ-45 (10BASE-T), RS485 (not used)
Operating data	24 VDC / 300 mA
Space requirement	3 RU, 4 HP

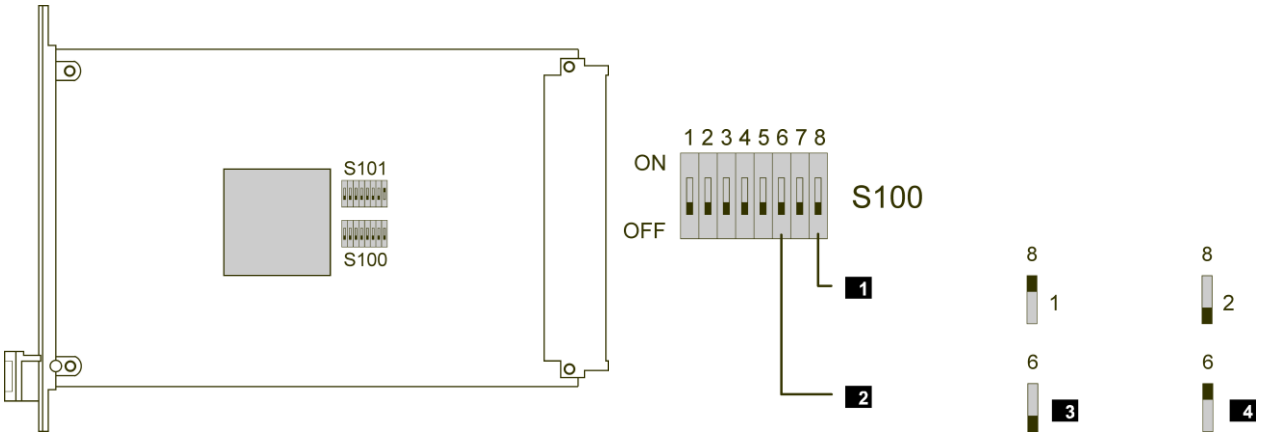
After switching on the supply voltage, a memory test is performed; during this test, the RUN and ERR LEDs blink synchronously. If RUN is lit and ERR is blinking, a communication error occurred between the Planar4 modules and the communication module.

LEDs During Operation

LED	LED	Mode of Operation
RUN = ON	ERR = OFF	Communication active
RUN = Blinking	ERR = Blinking	Booting of the communication module
RUN = OFF	ERR = ON	Error in the communication module
RUN = OFF	ERR = Blinking	Error in the communication module Uploading of errors **Do not remove the communication module!**
TX		Send LED for Ethernet communication
COL		Collision on Ethernet segment

Table 1: LEDs During Operation

Switches for Settings



Position of the module switches

1 Switch 8 for channel 1 or channel 2
2 Switch 6 for communication
3 Setting for Ethernet
4 Not allowed

Figure 2: Switches for Settings

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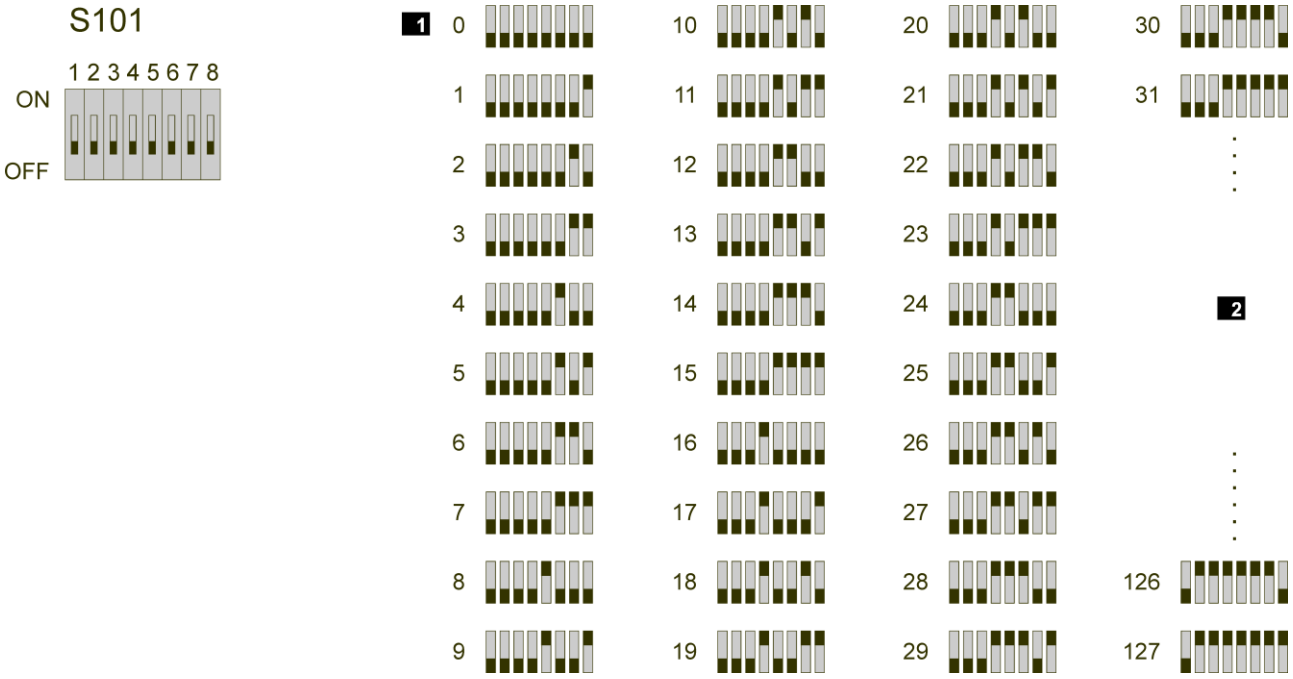
Communication via Ethernet

Twisted pair cables are used to connect the communication modules via the RJ-45 connector to an Ethernet switch, which is connected to the Ethernet card of the HIMA OPC Server. Each communication module has its own ID number (0…127) that is set using the switches on the module.



1 ID number

2 The switch positions comply with the dual code

Figure 3: ID Number Setting

Pin Assignment of the RJ-45 Connector

RJ-45 is an 8-pole connector that is internationally standardized for connecting to STP/UTP lines in accordance with IEEE 802.3 (10BASE-T).

i If the communication module is used outside the Planar4 subrack with backplane, ensure during wiring that the communication lines between the Planar4 modules and the communication module are twisted in pairs and additionally shielded, if possible. The lines must be connected with proper polarity and may not exceed a length of 1 m. One end of the shielding must be connected to ground.