



H 7505: Multifunctional interface converter

to built up the bus systems:

HIBUS-1 4-wire-bus, HIBUS-L, RS 422, full duplex,
active bus coupling

HIBUS-2 2-wire-bus, RS 485, half duplex,
passive bus coupling

HIBUS-2/HIBUS-2 Repeater

HIBUS-2/HIBUS-1 Repeater

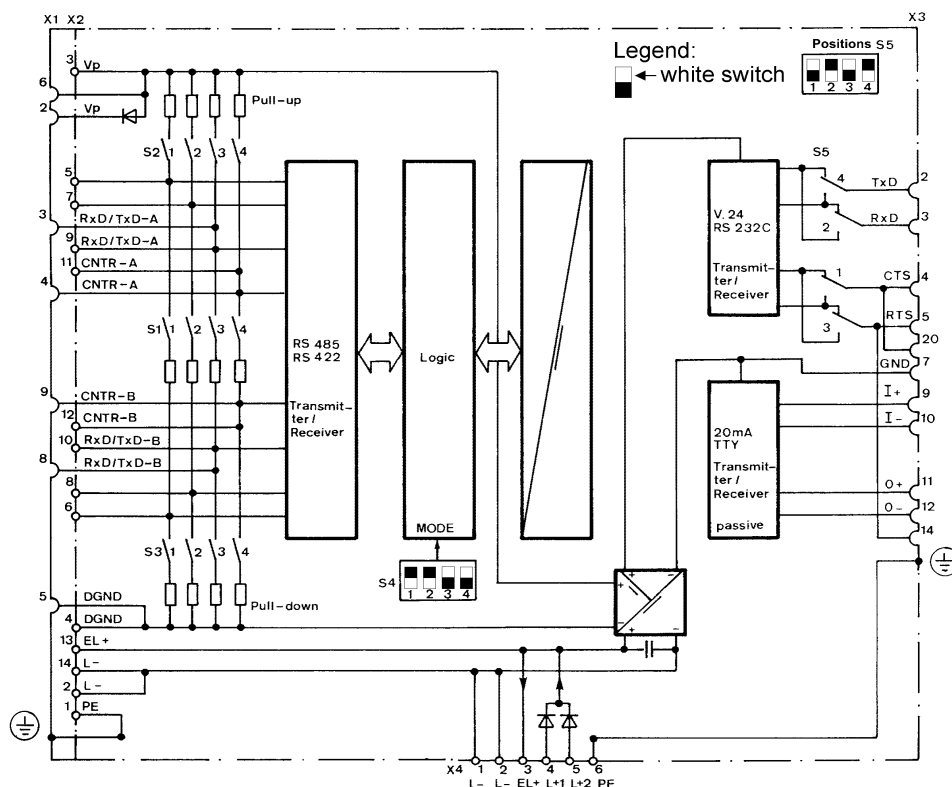


Figure 1: Block diagram

Note The signal designations written at X2 are only valid for the HIBUS-2 connection, otherwise refer to table "operating modes".
Connectors and setting elements (refer also to the block diagram):
S1, S2, S3 Switches for the bus termination resistors
S4 Mode selection switch
S5 Switch for signal crossing (RS 232 C only)

Note Adjust the switches S1...S5 only under the considering of all ESD protection measures. The direct touching is only allowed for electrostatic discharged persons.

X1 MIN-D socket 9-poles for HIBUS-2 connection
X2 Plug clamp 14-poles for HIBUS-1 connection and L+, L- supply
X3 MIN-D socket 25-pole for RS 232 C and TTY connection
X4 Plug clamp 6-poles for L+, L- supply

Note Choice of power supply connection on X2 or X4, depending on the mounting position.
Operating data 24 VDC / 120 mA

Note With exceeding the ambient temperature of 50 °C the transparent cover will be deformed.
This will not influence the function of the module.

Table of the operating modes

| Mode | Applicati-on | Setting S4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | active connect. |
|----------------------------|--------------|----------------|------------------|------------------|---------------|---------------|------------------|------------------|---------------|---------------|-----------------|
| TTY — RS 232C | ① | ON OFF 1 2 3 4 | — | — | — | — | — | — | — | — | X3 |
| Repeater HIBUS-2 — HIBUS-1 | ② 3) | ON OFF 1 2 3 4 | S+ | S- | E+ | E- | RxD/ TxD-A | RxD/ TxD-B | CNTR -A | CNTR -B | X1/X2 |
| RS 232C — HIBUS-2 | ④ 4) | ON OFF 1 2 3 4 | — | — | — | — | — | — | — | — | X1/X3 |
| RTS — CNTR | ⑤ | ON OFF 1 2 3 4 | BE+ | BE- | AE+ | AE- | AS+ | AS- | BS+ | BS- | X2/X3 |
| TTY — HIBUS-1 | ⑥ 1) | ON OFF 1 2 3 4 | BE+ | BE- | AE+ | AE- | AS+ | AS- | BS+ | BS- | X2/X3 |
| RS 232C — HIBUS-1 | ⑦ | ON OFF 1 2 3 4 | RxD/ TxD-A Bus 1 | RxD/ TxD-B Bus 1 | CNTR -A Bus 2 | CNTR -B Bus 2 | RxD/ TxD-A Bus 2 | RxD/ TxD-B Bus 2 | CNTR -A Bus 1 | CNTR -B Bus 1 | X2 |
| HIBUS-2-Repeater | ⑧ | ON OFF 1 2 3 4 | CTS+ | CTS- | RxD+ | RxD- | TxD+ | TxD- | RTS+ | RTS- | X2 |
| HIMA-network | ⑨ 2) | ON OFF 1 2 3 4 | BE+ | BE- | AE+ | AE- | AS+ | AS- | BS+ | BS- | X2/X3 |
| RS 232C — HIBUS-1 | ⑩ 5) | ON OFF 1 2 3 4 | — | — | — | — | — | — | — | — | X1/X3 |

V.24 = RS 232 C (H50, PC, PLS)

20 mA = TTY (H30)

HIBUS-2 = PROFIBUS (Hardware compatible)

= RS 485 (H51)

HIBUS-1 = RS 422 (H7503)

1) constant status signal (= H7503 A)

2) active status signal (= H 7503)

3) only at the end of the HIBUS-1

4) since 1992 (ref. to planning list), PLESY-P V ≥ 1.5
The DTR signal controls the direction of the H 7505, basic direction RS 485 --> RS 232C

5) till 1992 (ref. to planning list), PLESY-P V ≤ 1.4
The CNTR signals of the RS 485 interface control the direction of the H 7505, basic direction RS 232C --> RS 485
Application ④ and ⑩: Setting in ELOP II, Wizcon / ControlMaestro (connection via Modem, fiber optic cable)

Legend:

◻ ← white switch
◼

Transmission rates

20 mA ≤ 19,200 bps

V.24 ≤ 57,600 bps

RS 485 and RS 422 ≤ 600,000 bps

Cable cross sections for power supply

| max. cable length | 250 m | 400 m | 530 m | 800 m | 1300 m | 2500 m |
|----------------------------------|-------|-------|-------|-------|--------|--------|
| Cross section (mm ²) | 0.5 | 0.75 | 1.0 | 1.5 | 2.5 | 4.0 |



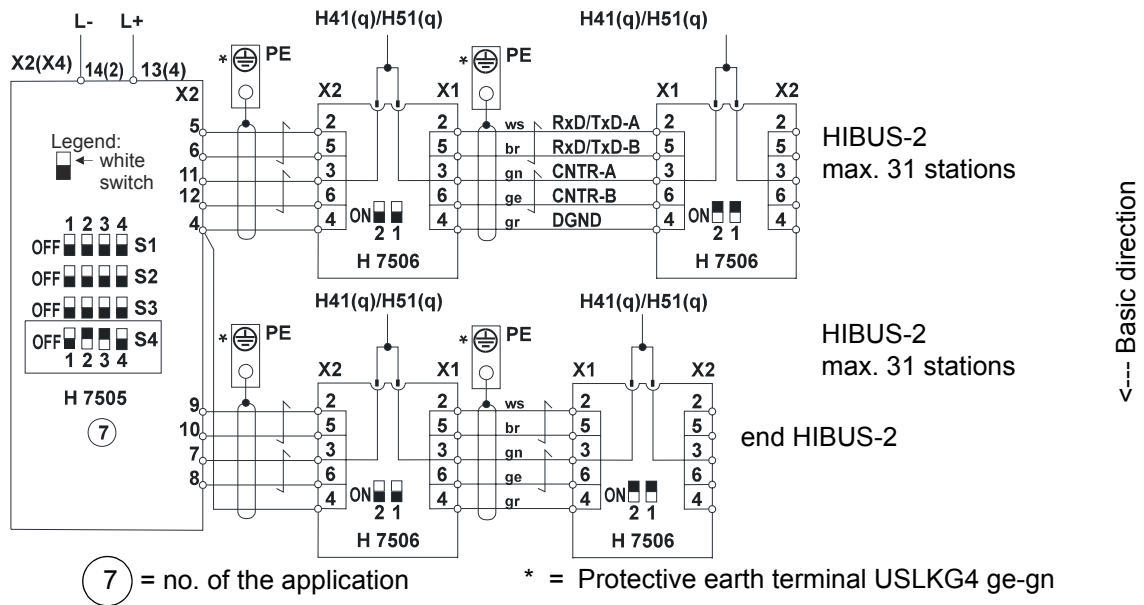


Figure 4: Use as a HIBUS-2 repeater in one basic direction

In this case the control lines to switch over the basic direction have to be used additionally.

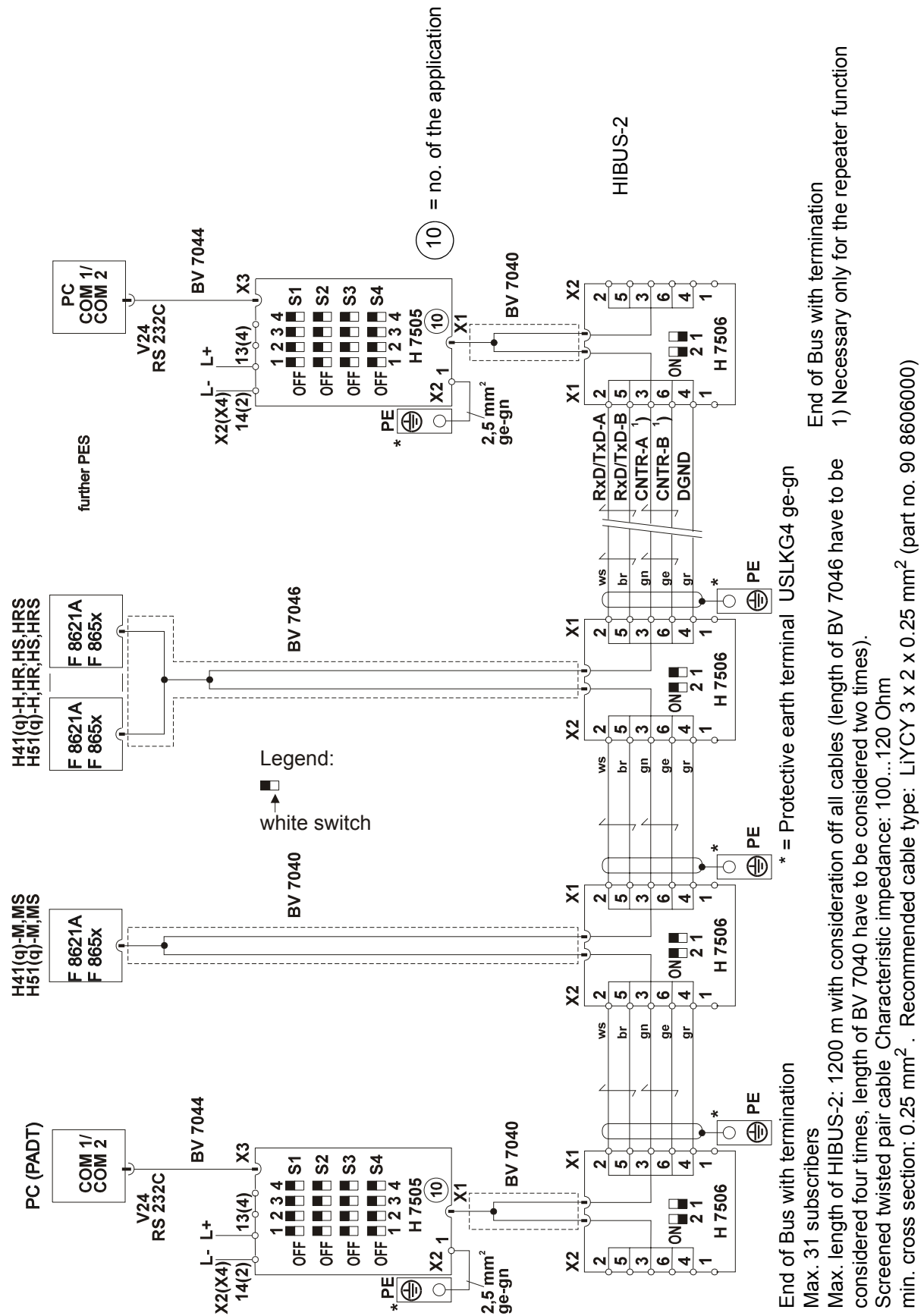


Figure 5: Communication by HIBUS-2

For HIMA system software with flying-master capabilities since 1992 (refer to planning list) and with interface converter since ID-no. 03.

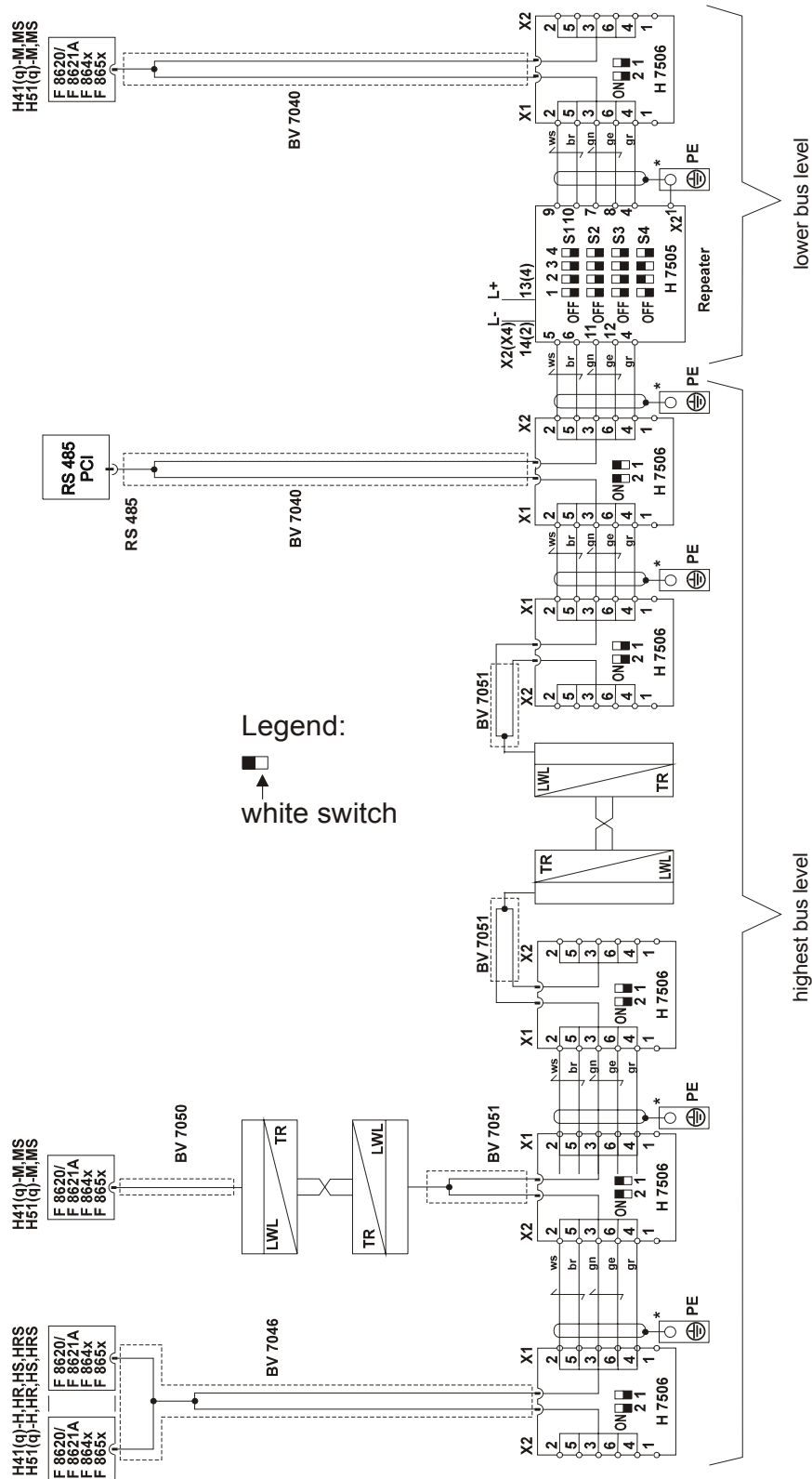


Figure 6: Use of optical fibres

The 4-wire-connections can also be designed as optical fibres.

- Range: 2000 m max.
- With using in bus systems with several bus levels coupled with repeaters the optical conductors may only be used in the highest bus level (no transmission of the status signal)!

The coupling of a device with RS 232C interface is only possible with the correct operating of the status signal.

* = Protective earth terminal USLKG4 ge-gn