RUBIN NT/XP

BOSCH

1   Introduction

1.1   What is RUBIN?

RUBIN NT/XP (referred to in what follows as RUBIN) is a general-purpose, multi-user-capable management system for linking and communicating with very different subsystems in the sectors building management technology and automation (eg security systems, video matrixes, intercom systems).

The system is available in different configuration levels that you can add to or expand step by step.

RUBIN automation was concepted for smaller receiving center, for visualiziaton of alarm messages coming via automatic dialler connections. A maiximum of 5000 detector points are possible.

RUBIN compact, the low-end model, is a single-user system with up to four subsystem interfaces and 200 up to 5000 detector points.

RUBIN modular is a multi-user system with up to six subsystem interfaces and 65000 detector points. This of course has greater functionality compared to RUBIN compact.

RUBIN K1 is a special variant of RUBIN modular with the entire functionality of the latter plus integration of the BoVis remote video system from Bosch. This is intended solely for use in licensed systems, eg by police forces.

1.2   Where can you use RUBIN?

RUBIN is designed for use in security centers and command centers, to receive and record alerts and malfunction reports from all sectors of technical building management, process them and provide the necessary response. Typical examples are fire and intrusion alarm systems, video systems, access control systems, intercom systems or heating, air-conditioning and ventilation installations. These may be systems from the Bosch range or from other producers.

1.3   Legislation, standards, directives

The RUBIN system complies with all specifications set down in applicable legislation, standards and directives, in particular
EN50081   (EMC, emitted interference)
EN50082   (EMC, interference immunity)

1.4   Applicability

The installation manual applies to the RUBIN software version V4.x and later in conjunction with the Bosch PC.

2   Preparing to install

2.1   Important notes on proper installation and startup

Before installation, be sure to read the files **install.wri** (explanation of software and hardware installation) and **readme.wri** (general explanation) on the RUBIN installation diskette or CD. There you will find updated or project-specific information that is not contained in this installation manual. Maybe that more documentation for specific interfaces is available.

The RUBIN system should only be installed and operated by personnel trained for the purpose. On all questions regarding the setup, operating (ambient) conditions or safety of the various hardware components, eg printers and modems, **be sure** to read the documentation of the particular producer.

Only use installation materials specified by BOSCH ST, otherwise reliable working of the system cannot be guaranteed.

Observe the usual precautions regarding CMOS devices when handling circuit boards. Before starting installation, you must discharge yourself to protect electronic boards against electrostatic discharge. It is advisable to wear a grounding band on your arm during all work (also on the security or command center). This also applies to soldering chores.

Touch components as seldom as possible and then only on the edges.

Enter the serial numbers of all cards built into a PC and their component stock numbers in the equipment ID.

During installation you will probably have to abide by stipulations set by regional authorities, administrations and the like.

Installation of the RUBIN system calls for good knowledge of personal computers and the Windows NT operating system.

Instead of a user manual, RUBIN offers extensive online help for programming and operation of the system, which you can call on the RUBIN interface with the **F1** key or through the *Help* menu.

2.2   Installation procedure

You will receive the RUBIN system in its complete configuration. Modules, cards and other components for upgrades and retrofits come ready configured by the producer.

!

Attention:
Before commencing any installation, <u>first make sure that all 230 V power cables are disconnected</u>.

Read the files **install.wri** (explanation of software and hardware installation) and **readme.wri** (general explanation) on the installation diskette or CD. There you will find updated or project-specific information that is not contained in this installation manual.

2.2.1 Hardware

- For security system connection: prepare the interfaces and programming in the command center of the security system (use the installation manual of the command center).
- Set up the RUBIN computer and peripherals, fitting or adding the required modules and components (see Chapter 3).
- For security system connection: set up the transmission link between the RUBIN computer and the security system (see Chapter 4).
- For multi-user system: network the RUBIN system and connect network printers (see Chapter 5).
- For video feature: connect the local video matrix, local video switch and/or local cameras (see Chapter 6).
- For RUBIN modular system variant and driving of RUBIN by ISDN transmission sets: prepare the transmission sets and the ISDN interface on the RUBIN computer (see Chapter 7.1).
- For RUBIN K1 system variant and remote video feature: set up the ISDN interface for receiving video images from a remote BoVis video system from Bosch (see Chapter 7.2).
- For setting up RUBIN automation please refer to the installation manual of the interface to the D6600 receiver.
- For telephony feature: set up the telephone connection (see Chapter 8).
- If used, integrate the magnetic tape drive (see Chapter 9).
- Connect the dongle with the enabled features (see Chapter 11).
- Connect all units to the power source.

2.2.2 Software

Before startup (see Chapter 12) make sure that the remote installations with which RUBIN will communicate are also properly prepared for startup (coding, programming, electrical connections, etc). Depending on the system variant, these may be for example:

- Various security systems
- Transmission units
- BoVis (only for RUBIN K1)
- Local video matrix/video switch, cameras
- Telephone installation
- Printers

*) Initial loading of the RUBIN computer with the Windows NT 4.0, Windows 2000, Windows XP Professional operating system (see Chapter 12)

*) Software configuration of the integrated components (see Chapter 12)
*) Installation of the modular RUBIN NT/XP system software, including a text and graphics editor (see Chapter 12), creation of a backup diskette (see Chapter 12), programming of the system for operation (see Chapter 12)

*) On delivery ex works, the operating system, the software configuration of the integrated components and all necessary system software modules including text and graphics editor are ready installed.

3   Configuring computer

The workstations in a RUBIN system can be configured for different purposes. A distinction is made between user, data housekeeping and system workstations. System workstation means a PC with functionality that is beyond that of a pure programming workstation or that is only available once in a system (eg video system interface with a local matrix, ISDN interface).

In the following presentation of the system components, all details refer to the system workstation unless stated otherwise.

3.1   System requirements

3.1.1   Hardware

- Pentium III, 500 MHz or higher
- 64 Mbyte RAM or more
- 20x CD-ROM drive or higher
- 3.5" diskette drive
- One parallel port LPT1 (for possible connection of log printer, alert printer)
- Two serial ports COM1, COM2 (for possible connection of security system, serial printer/log printer, video matrix or other subsystems)
- Seven system bus interfaces (6 x PCI, 1 x AGP)
- Keyboard and mouse
- Dongle with enabled features

3.1.2   Software

- Microsoft Windows NT 4.0 operating system, service pack 6, or Windows XP Professional
- Basic RUBIN software
- Text and graphics editor
- Operating or file module with or without interface for one security system (depending on whether the system works as an operating system *with* remote control of the security system or as a file system *without* remote control of the security system)

3.2   Other system components

Items from different producers are used in the RUBIN system, so the following details of connection and installation of additional system components are only general. For precise details, refer to the technical documentation of the particular producer.

3.2.1   Connecting extra security systems

Connection of an extra security system to the system workstation requires a serial COM port on the RUBIN interface card, a PCI bus port plus the hardware for a transmission system. In terms of software you need an interface module for the second through fourth security system (exception: RUBIN K1).

3.2.2   Using extra printers on parallel or serial ports

If extra parallel or serial printers are to be connected to the different workstations and the RUBIN interface card with one parallel and two serial ports is already occupied, an interface extension will be necessary. This means a parallel or serial port, parallel or serial connecting cable and appropriate cable adapters.

If printers are operated as network printers, refer to the details on hardware stated under **Multi-user system or system networking** (see below).

3.2.3   Multi-user system or system networking

The Ethernet network interface is necessary for each workstation to network workstations or network printers. If more than one workstation is connected, the multi-user software module is required for each file or user station for system-wide distribution of reports and organization. You also need standard LAN connecting components like cables, line terminations, hubs, etc.

3.2.4   Connecting data housekeeping or programming workstation (w/o security system link)

To connect a separate data housekeeping or programming workstation, you need the components stated under **Multi-user system or system networking** (see above) with the exception of the multi-user module, ie if the workstation is to be networked with the system.

3.2.5   Connecting second monitor for separate graphical display

If a second monitor is to be connected for parallel display of text and graphics, you need to install two MGA graphics cards (AGP and/or PCI system bus interfaces) or a dual-head graphics card (AGP) in the PC of the particular workstation (dual-monitor kit with hardware and software).

3.2.6   Video interface with local matrix

A video matrix is connected to the system workstation on a spare serial port (COM1-4). This calls for one RUBIN video interface module in the overall system. One matrix can be connected in the overall system.

3.2.7   Video interface with local video switch

A video switch is connected to the system workstation on a spare serial port (COM1-4). This calls for one RUBIN video interface module in the overall system. One video switch can be connected in the overall system.

3.2.8   Connecting cameras direct to PC

A frame grabber card is necessary for direct connection of cameras to a workstation. The cameras are connected by frame grabber cables, linking four cameras to the four inputs of a frame grabber card. Refer also to the details on **Local video overlay** (see below).

3.2.9   Local video overlay on first monitor (single-monitor workstation)

To overlay live images from local cameras or cameras connected through a matrix or video switch, you require the video kit (single-monitor mode) for each workstation, containing the necessary software and hardware (frame grabber card, grabber video cable).

3.2.10   Connecting second monitor for separate document display

A second monitor must be connected for display of a location plan (location graphics) parallel to video images. This calls for the video kit (dual-monitor mode) for each video workstation, containing the necessary software and hardware (frame grabber card, dual graphics card(s), grabber video cable). Location plans appear in full format on the second monitor.

3.2.11 Receiving remote video on ISDN interface (only RUBIN K1)

An ISDN card (PCI or ISA system bus interface) must be integrated to receive images from a remote BoVis video system. The computer must be fitted with the remote video software module (optional order item). In the room you require an ISDN socket (S_0 with two B channels) connected by an ISDN cable.

3.2.12 Receiving reports from ISDN units (not RUBIN compact, not with remote video, see above)

Reception of reports from ISDN transmission units requires an ISDN card on the system workstation including software (PCI or ISA system bus interface). There must also be an ISDN socket in the room, connected by an ISDN cable. This provides an S_0 ISDN interface with two B channels for connecting maximally (recommended) 50 transmission units.

3.2.13 Connecting telephone

The telephony feature requires a telephone set with cable (currently only Bosch TS 13.21) and a serial COM interface of the RUBIN interface card for each workstation. Each workstation must also have the RUBIN telephony/action manager software module for system-controlled setup of a voice link. The computer and telephone set are connected by an AEI adapter. Alternatively it is possible to control phones out of HTML pages with an optional availble ActiveX component.

3.2.14 Using integrated magnetic tape drive

Integration and/or connection will depend on the particular type of magnetic tape drive. The necessary SCSI controller is connected on a PCI system bus interface.

3.3 Overview table of interface configuration

Function/unit	Hardware (per workstation)	System bus
Local full-motion video overlay (single-monitor mode)	1 x frame grabber card (standard graphics card)	1 x PCI
Local full-motion video overlay (dual-monitor mode)	1 x frame grabber card 1 x dual graphics card (MGA)	1 x PCI 1 x AGP
Dual-monitor mode without full-motion video overlay	1 x dual graphics card (MGA)	1 x AGP
Connection of video matrix or video switch	1 x serial COM port (on RUBIN interface card, only once per system)	1 x PCI
Data backup with SCSI DAT tape (magnetic tape drive)	1 x SCSI controller	1 x PCI
System workstation networking (also data housekeeping workstations, network printers or dual PC)	1 x Ethernet network card	1 x PCI
ISDN reception from transmission units	1 x ISDN card including software (only once per system)	1 x PCI
ISDN reception of full-motion video images (only RUBIN K1)	1 x ISDN card including software (only once per system)	1 x PCI
Telephone connection	1 x serial COM port (on RUBIN interface card, only once per system)	1 x PCI
Extra log/alert printers	1 x serial COM port (on RUBIN interface card, only once per system) or parallel LPT port	1 x PCI
Data housekeeping workstation (networked)	1 x Ethernet network card	1 x PCI
Each additional security system	1 x serial COM port (on RUBIN interface card, only once per system)	1 x PCI

Use of standard RUBIN interface card:
Two serial (COM) ports: security system, log printer, telephone, video matrix, video switch
One parallel (LPT) port: log printer, alert printer

3.4   Installing system options

3.4.1.1   Motherboard J9, plan view
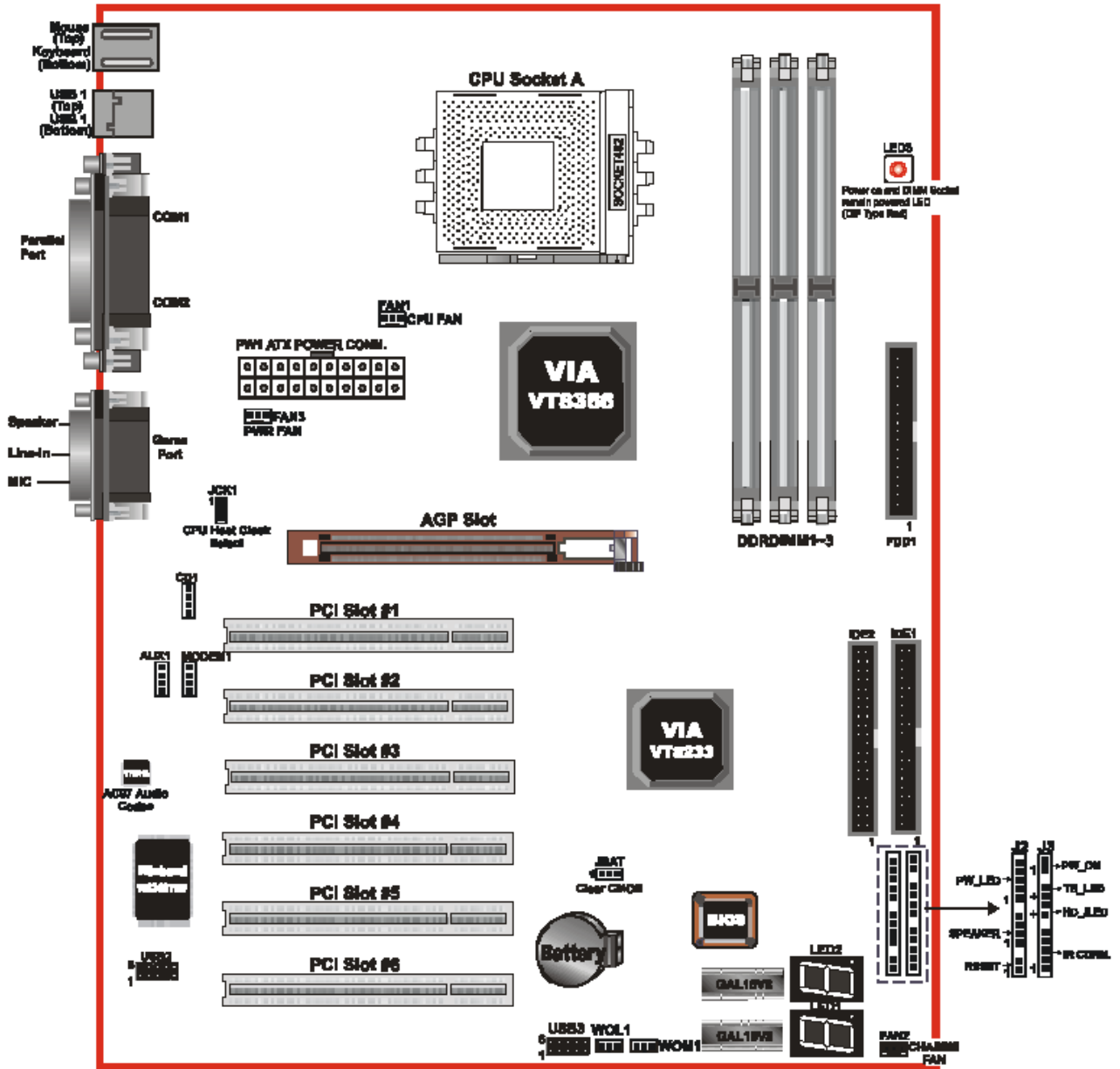
Motherboard Elito Epox 8HKA

Install the cards in the system bus slots as follows:

Type	Slot	System bus
Graphics card		AGP
SCSI controller	1, 2, 3 or 4	PCI
Frame grabber	1, 2, 3 or 4	PCI
ISDN card	3, 4, 5 or 6	PCI
Ethernet network card	3, 4, 5 or 6	PCI
RUBIN interface card	3, 4, 5 or 6	PCI

! **Important note:**
Enter the serial numbers of all cards and their component stock numbers in the equipment ID.

3.5 Connections on computer
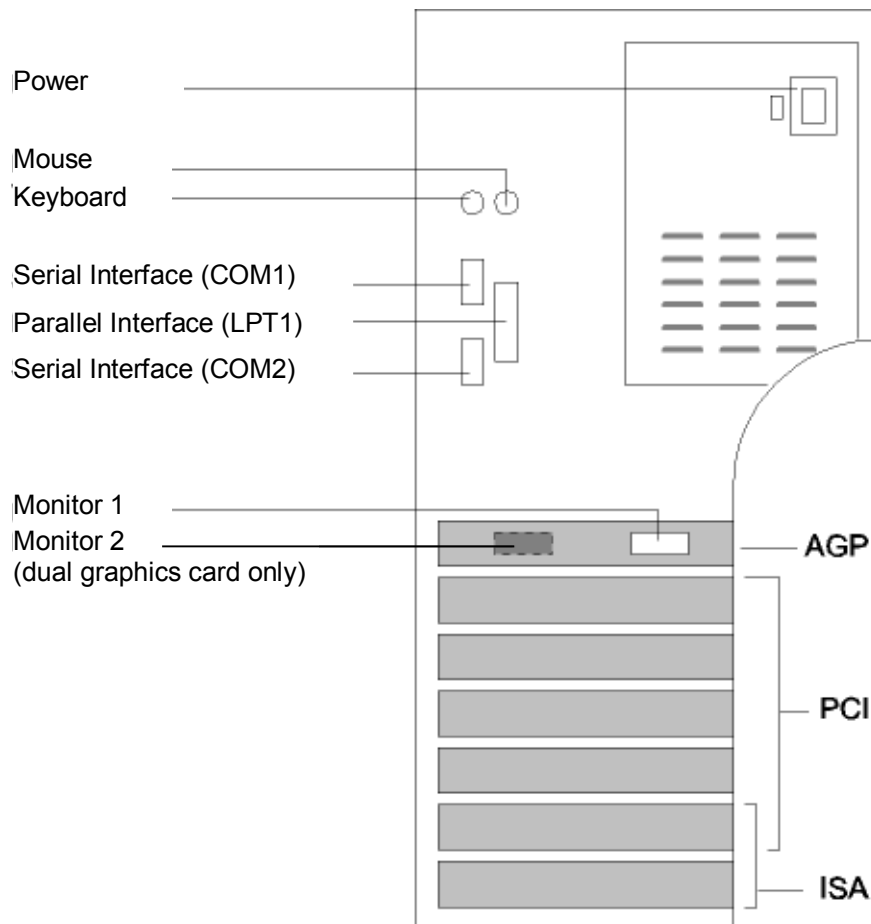
! **Important note:**
You may have to reserve interrupts (IRQ) for ISA cards (eg network card) in the BIOS setup. Refer to Chapter 12.

3.6   Overview of necessary hardware/software settings of individual components in computer

Type	Hardware settings	Software settings required
RUBIN interface card VSCOM 210H PCI	None	Yes
RUBIN interface card EXSYS 4072 **(only for PC with ISA)**	Serial port A (S2): COM3, depending on other components, set to IRQ5, 9 or 10 Serial port B (S1): COM4, depending on other components, set to IRQ5, 9 or 10 Parallel port A (P1): LPT1, IRQ7 (set LPT1 onboard to LPT2/IRQ5 or deactivate)	Yes
RUBIN interface card IM-HISSP **(only for PC with ISA)**	Serial port A (S2): COM3, 3E8H, IRQ see above Serial port B (S1): COM4, 2E8H, IRQ see above Parallel port A (P1): LPT2, 278H, IRQ5	Yes
Ethernet network card	None	Yes
Matrox Gxxx (dual card)	None	Yes
SCSI controller	None	Yes
Meteor or Meteor II frame grabber	None	Yes
ISDN card (ITK)	None (BIOS, interrupt 11 on ISA)	Yes

All necessary software settings are described in Chapter 12 "Startup". Further explanation can be found in the **install.wri** and **readme.wri** files on the RUBIN installation CD or diskette.

RUBIN interface card EXSYS EX-40110 (only for PC with ISA)

The latest interface expansion card manages without jumper settings for the address range and interrupts. The card has its own BIOS, which you can access with the **F2** key when booting the computer as soon as the appropriate display appears onscreen. The defaults are shown below. Those in bold print are the ones to be altered.

Advanced I/O setup utility version x.x					
ROM BIOS address	:	C800 (set by jumper)			
Serial port 1	:	3E8	INTR	:	**4**
Serial port 2	:	2E8	INTR	:	**3**
Parallel port	:	278	INTR	:	**5**
Parallel port mode	:	ECP+EPP	DMA#	:	1
Chip configuration port	:	250			

Unlike its predecessor EX-4072, EX-40110 does not make an automatic LPT1/LPT2 swap. LPT1 remains the parallel port on the motherboard. You should deactivate LPT2 if it is not needed and thus save an interrupt. Then you can use this (usually IRQ5) for COM3 or COM4.

Below you can see EX-40110 and the slot panel expansion. Install the card in a spare ISA slot, the expansion, if necessary, in a spare backplane location. Remove the spare slot panel for this purpose.

Point of connection for slot panel expansion (COM4) **4)**

COM3

LPT2

Expansion card EXSYS EX-40110

Slotblecherweiterung (COM4) zu EXSYS EX-40110
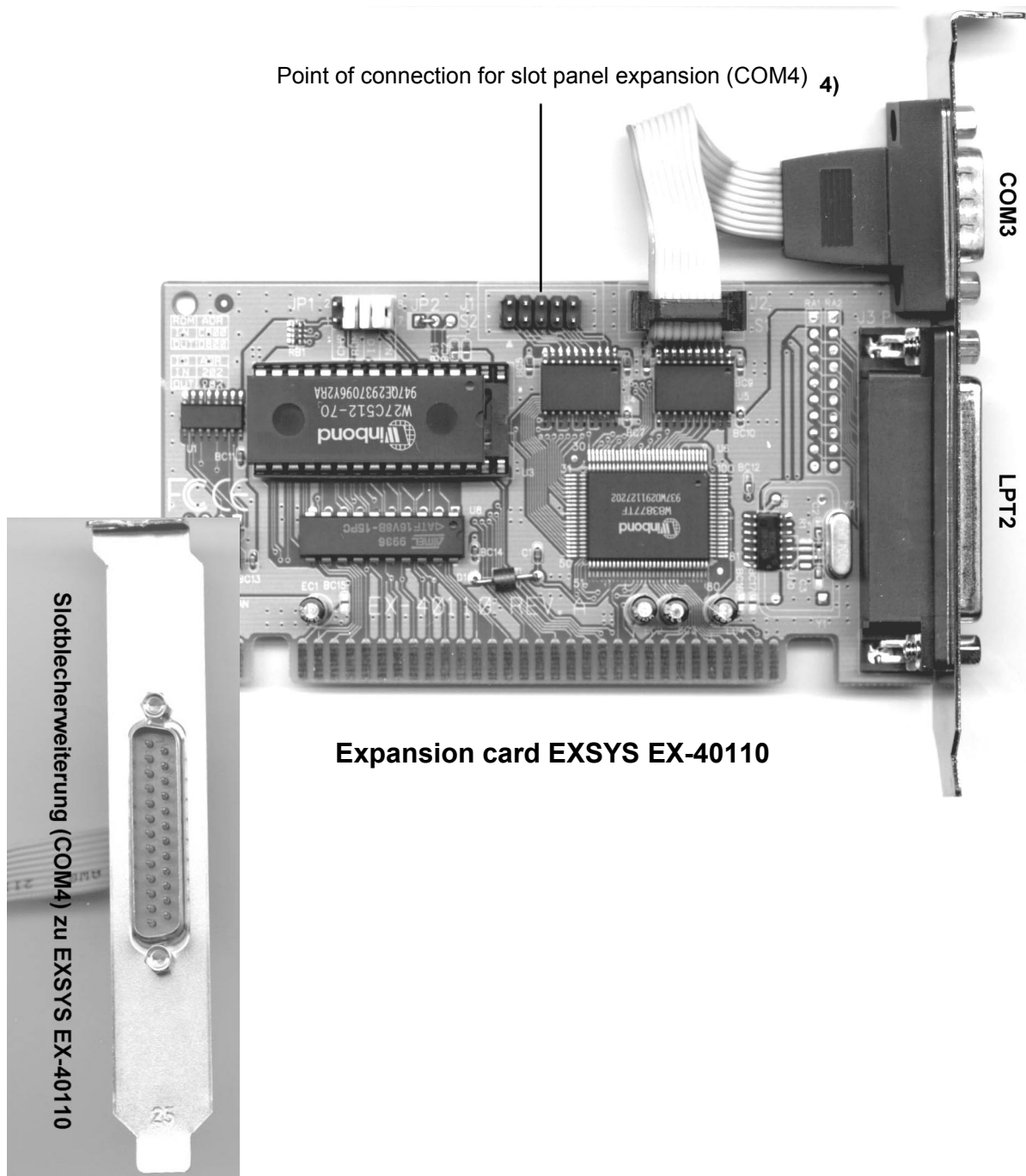
Slot panel expansion (COM4)

4   Connecting RUBIN to security system

There are different ways of setting up a transmission link with a security system:

- Interface converter (optocoupler V.24 interface)
- Optical waveguide
- Modem

If you configure RUBIN as a multi-user system, you connect to the security system through the PC that is intended as the system workstation.

4.1   Connecting by interface converter

If you connect the RUBIN system to a command center at a distance of up to 1000 meters, the commonest solution is an interface converter of the type OVS (optocoupler V.24 interface). This converts the V.24 interface signals of RUBIN to a 20 mA current loop.

Schematic:

RUBIN		**OVS** **(30.0210.8620)**		**GMA**
	2 m		**max. 1000 m**	

V.24
connection cable
(27.9938.2430)

20 mA
installation cable I-Y(St)Y 2x2x0,6
(27.9802.0102)
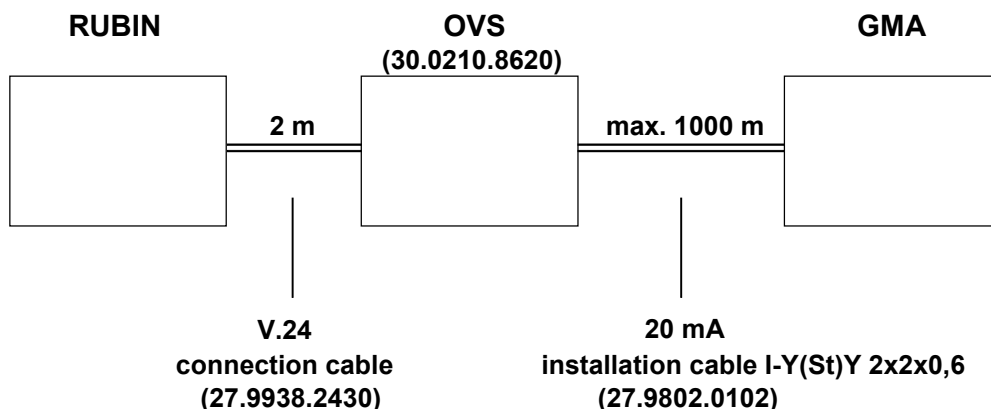
4.1.1   Connecting RUBIN to interface converter

RUBIN		**OVS**
	2 3 5	2 3 5
SUB 9		➤**GMA** (pl. see following pages
COM 1 ... 4		**V.24**
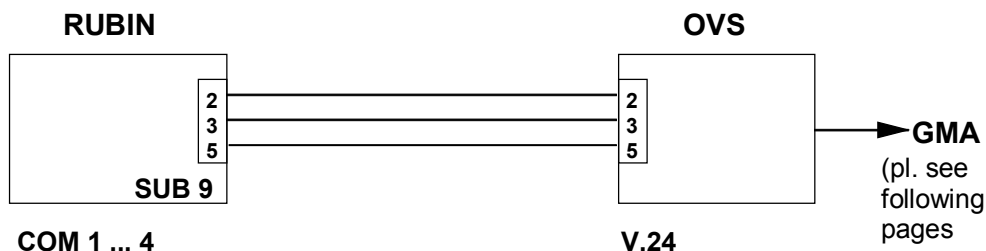
The connection between the interface converter and RUBIN is made on the V.24 output of the converter and the inputs COM1-4 of the PC (depending on configuration).

Caution!
Disrupt power supply before opening the device!

OVS

BR2   BR1

(to GMA, see following pages)   **ST**
(to RUBIN)

OPTO   V.24
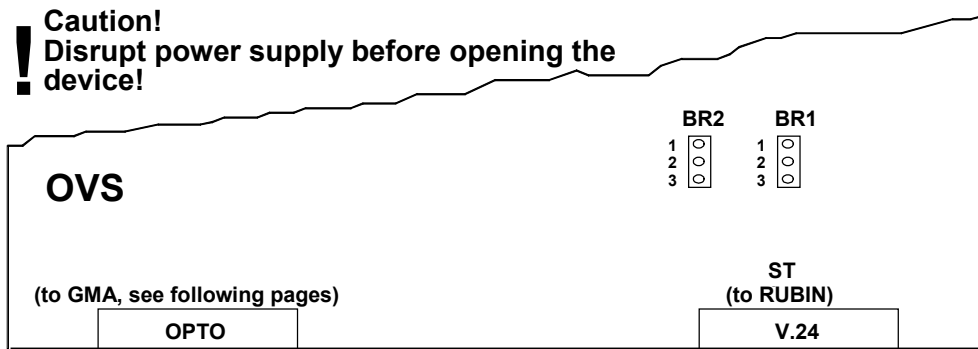
Note concerning the links BR1 and BR2:

In order to eliminate possible wiring errors when connecting the transmitting and receiving wire, you may choose between one of the following variants:

Variant 1:

BR2 BR1

ST3 :
Pin 2 = transmitting line
Pin 3 = receiving line

Variant 2:

BR2 BR1

ST3 :
Pin 2 = receiving line
Pin 3 = transmitting line
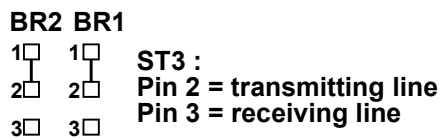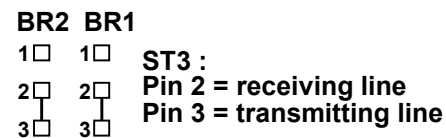
Contact assignment

OPTO (9polig)

Type	Connection
Input +	**1**
Input -	**6**
Output +	**5**
Output -	**9**

V.24 (9polig)

Type	Connection
Transmitter/Receiver	**2**
Receiver/Transmitter	**3**
0 V	**5**

4.1.2   Connecting interface converter to BZ 500

BZ 500 LSN

OVS   **SM 20**   **ANNE 10**

20mA Interface

RUBIN ←

9   SDI+   **RXD**
5   SDI-   **0V**   COM1...
6   SDO+   **TXD**   COM3
1   SDO-   **+**
                         DIR

Connect shield to RUBIN only
Installation cable J-Y (St) Y 2x2x0,6
(27.9802.0102)

SDI = Inputs
SDO = Outputs
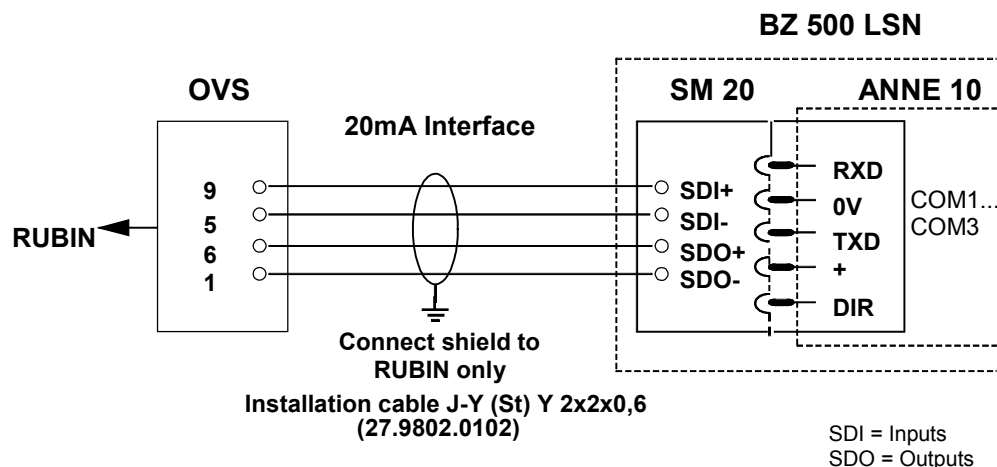
4.1.3   Connecting interface converter to NZ 500

NZ 500

OVS

SU 500

20mA Interface

9
5
6
1

RUBIN

SDI+
SDI-
SDO+
SDO-

**Connect shield to
RUBIN only**

**Installation cable J-Y (St) Y 2x2x0,6
(27.9802.0102)**

SDI = Inputs
SDO = Outputs
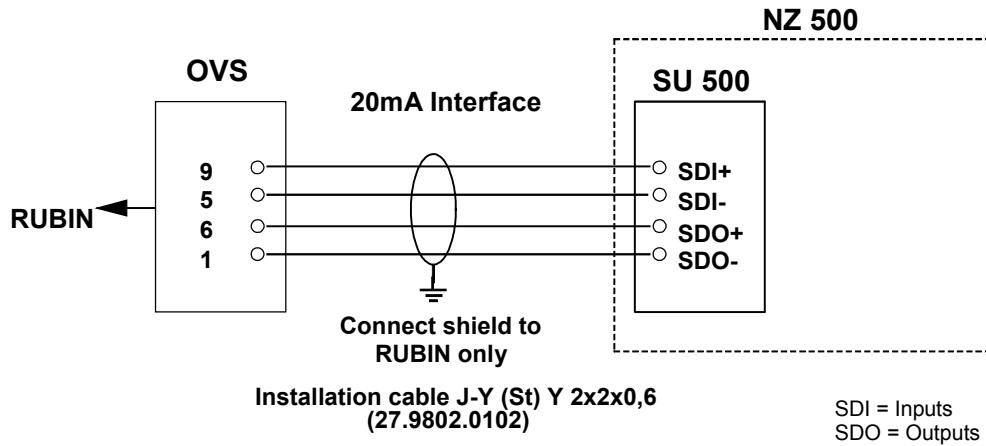
4.1.4   Connecting interface converter to UEZ 1000

UEZ 1000

OVS

AVK

20mA Interface

9
5
6
1

RUBIN

SDI+
SDI-
SDO+
SDO-

**Connect shield to
RUBIN only**

**Installation cable J-Y (St) Y 2x2x0,6
(27.9802.0102)**

SDI = Input
SDO = Output
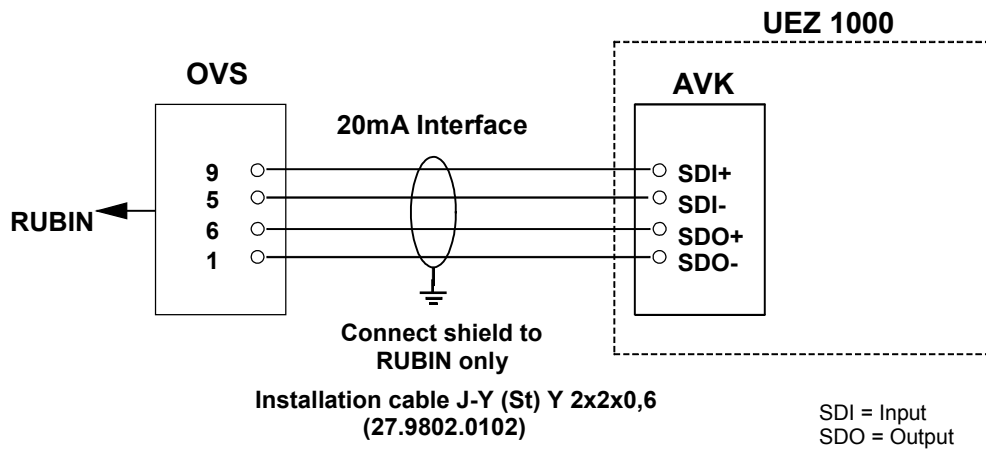
4.1.5   Connecting interface converter to UEZ 2000

UEZ 2000

OVS   **SM 20**   **AVM 100**

20mA Interface

9	SDI+	RXD
5	SDI-	0V
6	SDO+	TXD
1	SDO-	+
		DIR

COM1 ...
COM3

RUBIN

**Connect shield to
RUBIN only**

**Installation cable J-Y (St) Y 2x2x0,6
(27.9802.0102)**

SDI = Input
SDO = Output
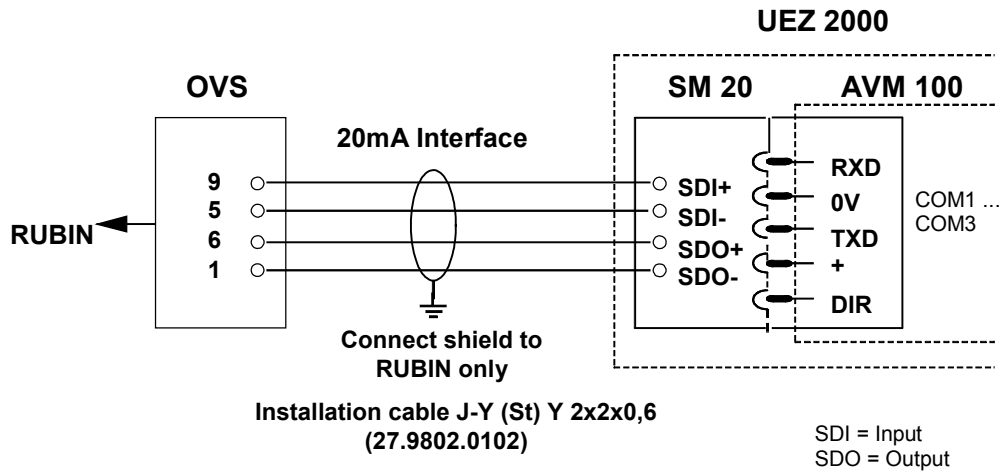
4.1.6   Connecting interface converter to UGM 2005/2020 and UGM 2020

Telecom cables of the type I-Y(St)Y 2x2x0.6 are recommended for cabling (27.9802.0102).
Ground the cable shield at the center end to prevent ground currents.

Connection to UGM 2005/2020 by APP:

UGM 2005/2020

OVS   **APP**   **VGK/SGK**   **EPC**

1	1a (Line1)	SW-Version:	EAPS-3
6	1b (Line1)	SGKUGM,	
5	2a (Line2)	VGKRUB	
9	2b (Line2)		

RUBIN

**Connection APP/VGK, SGK
OUT   A II 16, C II 16
IN   A II 15, C II 15**

Connection to UGM 2005/2020 by UESL:

UGM 2005/2020

OVS	ÜSL	VGK/SGK	EPC

```
          1 ──── b0
RUBIN ←   6 ──── a0       SW-Version:      EAPS-3
          9 ──── b1       SGKUGM,
          5 ──── a1       VGKRUB
```

🔲 **Ribbon cable**

Connection to UGM 2020 by TESP (use of UGM with telephony):

UGM 2020

OVS	TESP	SGK	EPC/EPC2

```
          1 ──── DLA0
RUBIN ←   6 ──── DLB0     SW-Version:      EAPS-4
          9 ──── DLA1     SGKUGM           and up
          5 ──── DLB1
```

Br. 1 - 4 open

Connection to UGM 2020 by UESS:

UGM 2020

OVS	UESS	SGK	EPC/EPC2

SW-Version: SGKUGM   EAPS-4 and up

RUBIN

6 — A0
1 — B0
5 — A1
9 — B1

Ribbon cable
Round cable
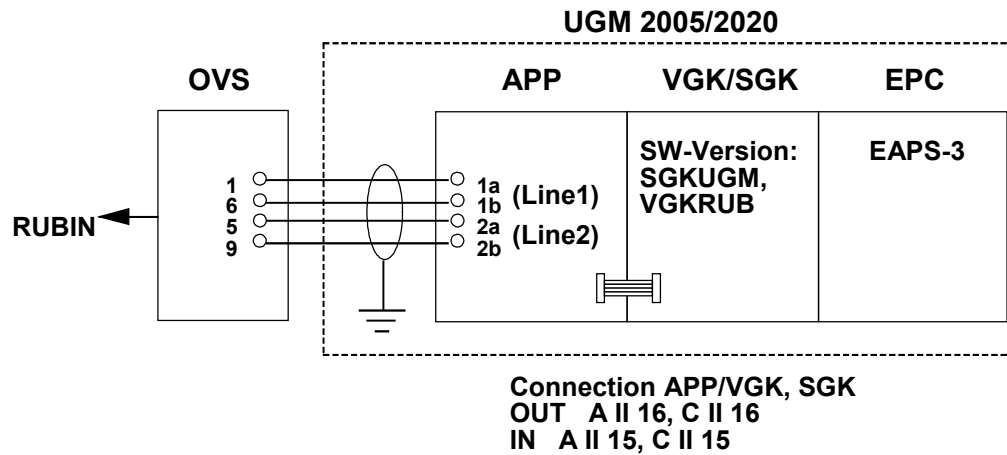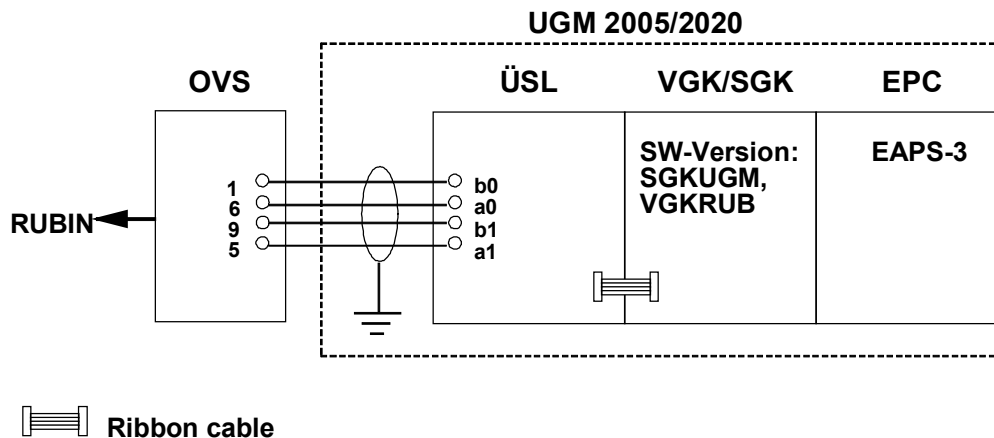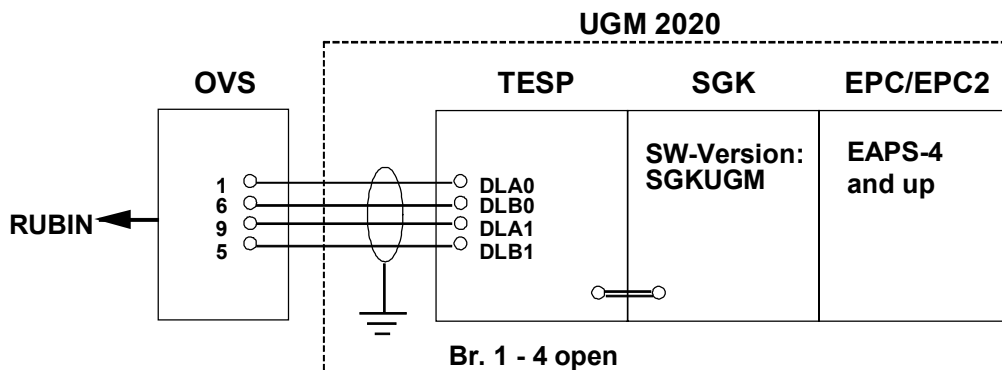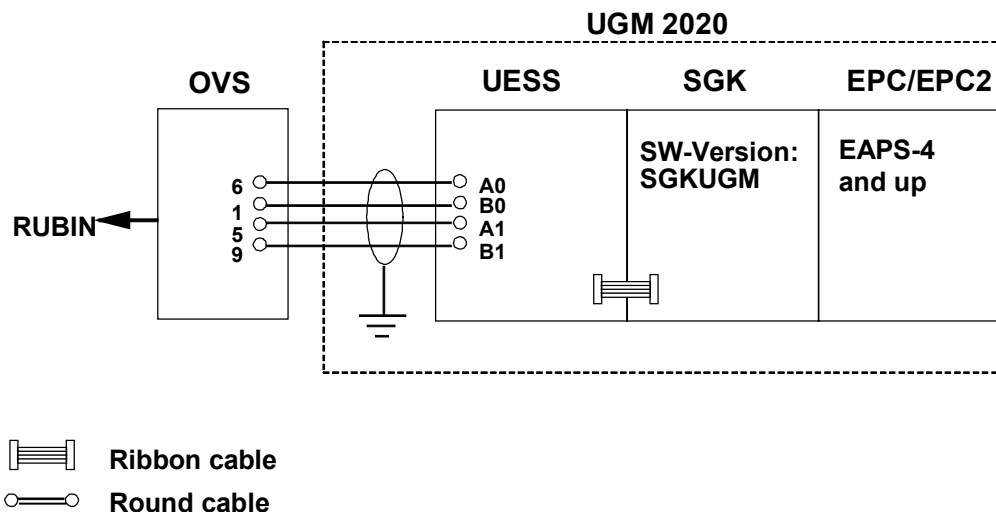
Note:
The standard SGK software can be used for the above connections. You must set the definition jumpers for station A and definition jumper B10 (= new data model/new 4a protocol). Refer to the UGM installation manuals for further information.

4.2   Connecting by optical waveguide

Connection of RUBIN to a security system by an optical waveguide is recommended in all cases where you have high data rates that are to be transmitted with maximum immunity to interference. Connection of optical waveguides calls for a special converter (GO 232 F, M).

Observe the following when working with and laying an optical waveguide:

- The power plug must be withdrawn during installation!
- Lay the optical waveguide so that it cannot chafe on sharp edges.
- The smallest bending radius is 4 cm.
- You can cut the optical waveguide with a diagonal cutter or knife.
- When cutting, make sure you produce smooth edges (make a trial cut beforehand). You may need to strip the insulation first.
- The optical waveguide is not fitted with connectors but plugged straight into the converter.
- To connect the optical waveguide, undo the clamping screw on the converter, push the waveguide in as far as it will go, and then tighten the clamping screw.
- You cannot set the transmission rate (max. 19200 bit/s).
- Each converter has a LED to indicate that its power supply is intact.
- The light coupled into the fiber by the converter appears red when data are being transmitted (detection of transmission route of remote station). This fiber must be joined to the "RX" terminal.

Schematic:

RUBIN	GO 232 F	GO 232 M	GMA
	(27.9933.0138)	(27.9933.0139)	

2 m   max.100 m   2 m

Adapter cable   **Optical waveguide**   **Connection cable**
(27.9933.0137)   **(27.9933.0134)**   **(39.0211.4165)**

9V   9V

Plug-in power unit   **Plug-in power unit**
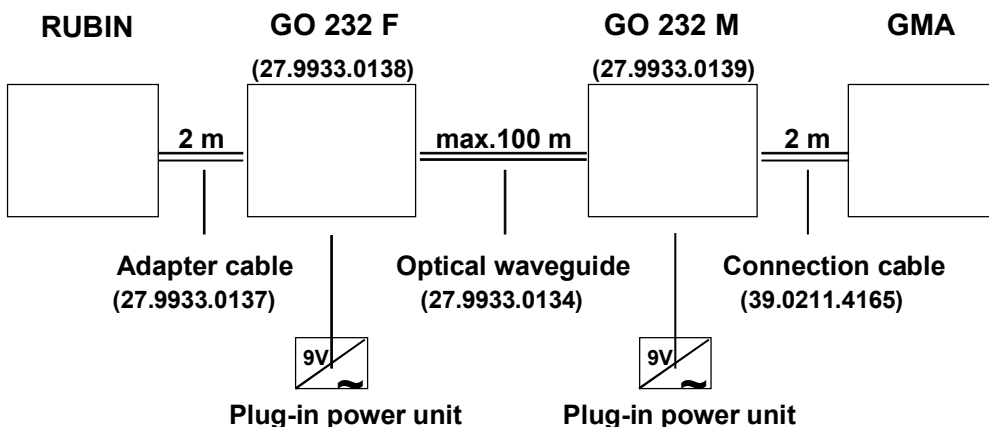
4.2.1 Connecting RUBIN to optical waveguide (converter)

! **Caution!**
Disrupt power supply before starting installation work!

RUBIN **GO 232 F** **GO 232 M**

COM 1 ... 4
(depending on equipment)

Plug-in power supply   Plug-in power supply
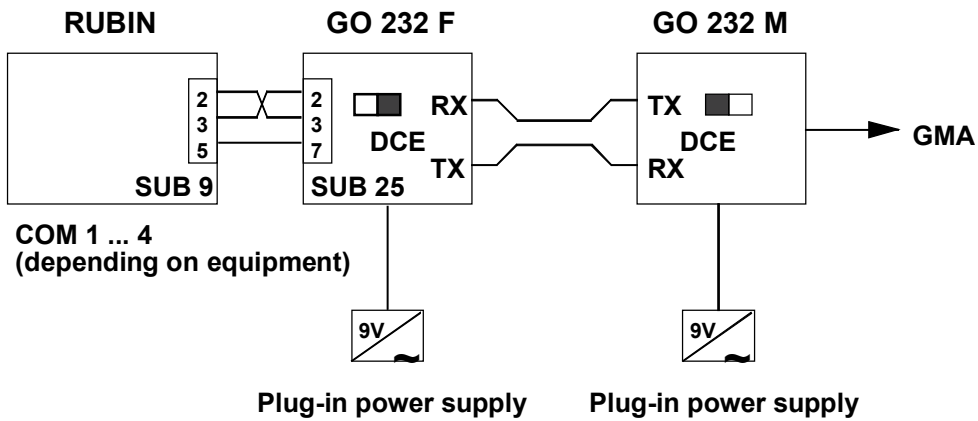
4.2.2 Connecting optical waveguide to UGM 2005/2020 and UGM 2020

Keep the connecting line as short as possible to avoid any stray radiation. The optical waveguide module is preferably attached to the inner back wall of the center.

Connection to UGM 2005/2020:

UGM 2005/2020

GO 232 M   **APP**   **VGK/SGK**   **EPC**
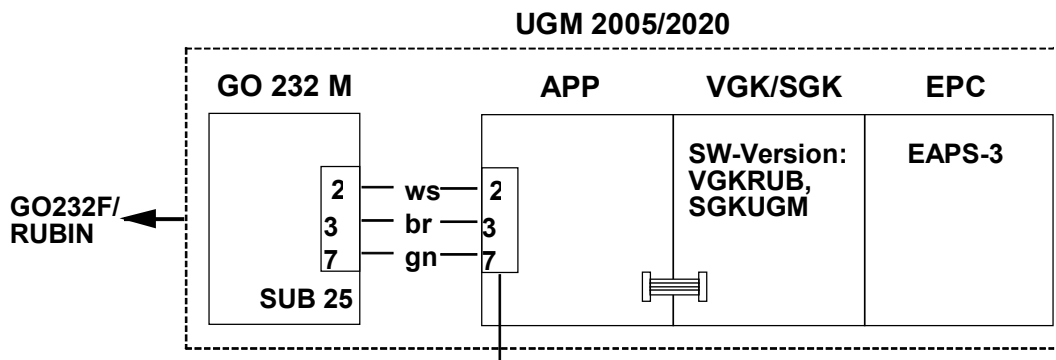
GO232F/
RUBIN

25pol. Cannon

If the converter GO 232 M is not connected by direct plug-in but via 3-wire connection, the pins 4 - 5 and 6 - 8 - 20 of the plug must be bridged.

Ribbon cable

Connection to UGM 2020:

UGM 2020

GO 232 M	**Connection element**	**SGK**	**EPC/ EPC2**
	Cannon panel at the rear of the housing	**SW-Version: SGKUGM**	**EAPS-4 and up**

GO232F/ RUBIN ◄

2	ws	2
3	br	3
7	gn	7

SUB 25

○━━○ **Round cable**

25pol. Cannon

The plug does not need links since these are positioned on the 64-contact ribbon cable receptacle.
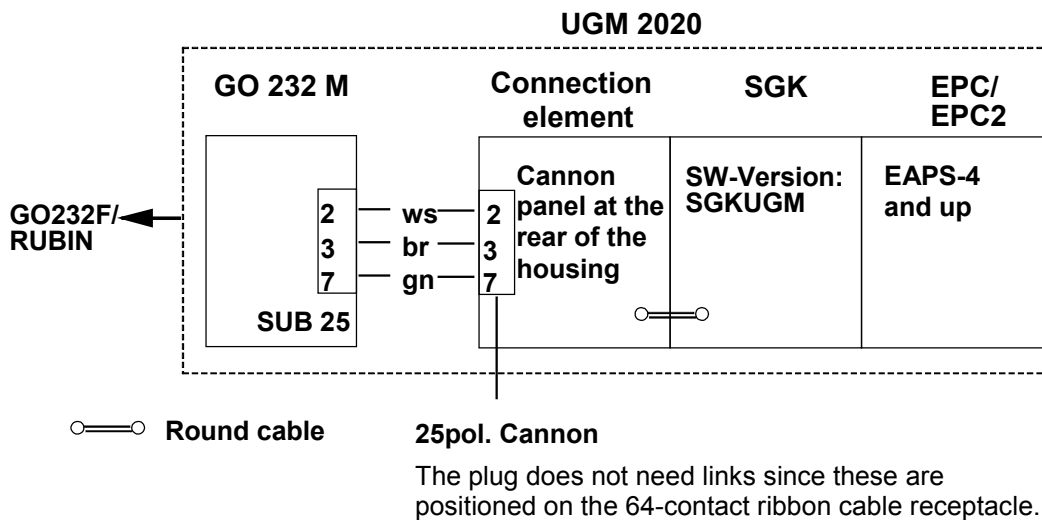
4.3   Connecting by modem

You can connect RUBIN to a security system by modem (two-wire copper line) regardless of the distance between them, and telephone lines can also be used. The use of modems is especially advisable for poor data transmission links because automatic error correction is performed.

Schematic:

RUBIN	Modem	Modem	OVS (39.0210.8620)	GMA

2 m

Adapter cable (27.9933.0137)

Telephone line (cable for connecting the modem to the TAE6-N telephone jack is being supplied)

Cable (9/9) (27.9938.2430) with adapter (9/25) (27.9938.2431)

Installation cable I-Y(St)Y (27.9802.0102)

Plug-in power supply   Plug-in power supply
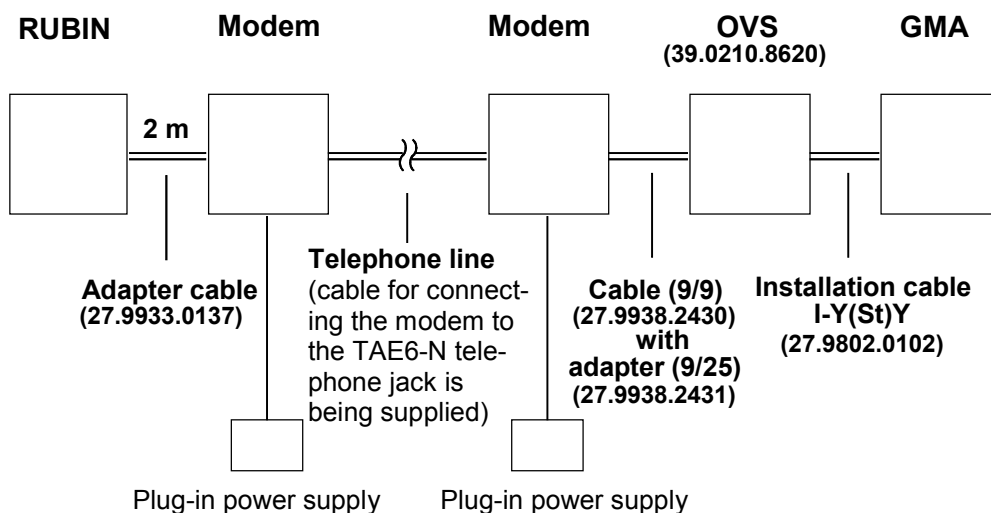
! **Caution!**
Disrupt power supply before starting installation work!

4.3.1   Connecting RUBIN to modem

RUBIN   **Modem**

1			
2		2	
3		3	
4			
5		7	
6			
7			
8			
9			

SUB 9   **SUB 25**

GMA
(via TAE phone jack)
The modem is only to be
connected via a jack
marked "N".
The lines are connected as
follows: a-a, b-b, a2-a2,
b2-b2.

COM 1 ... 4
(depending on equipment)

Plug-in power supply
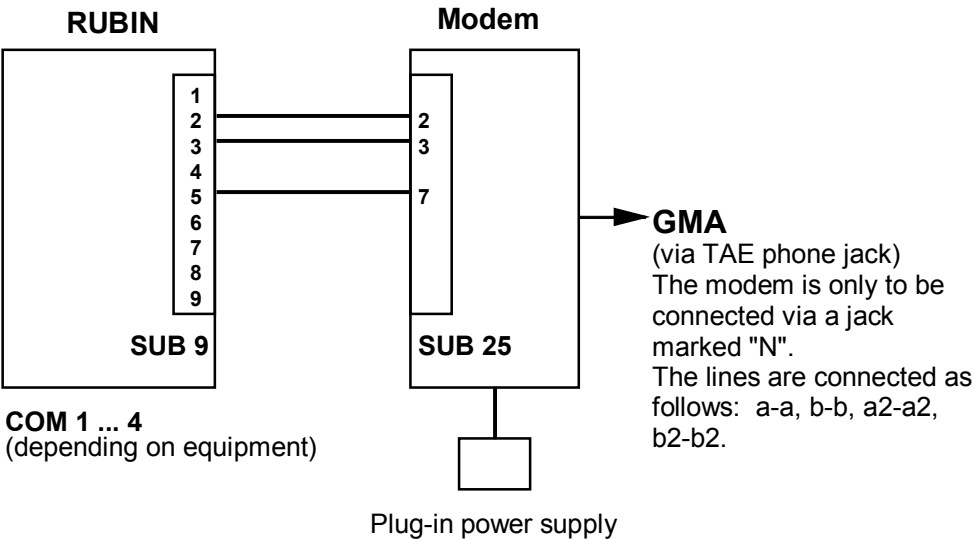
4.3.2 Connecting modem U-1496EG+ to UGM 2005/2020

Telecom cables of the type I-Y(St)Y 2x2x0.6 are recommended for cabling (27.9802.0102). Ground the cable shield at the center end to prevent ground currents.

Connection to UGM 2005/2020 by APP:

UGM 2005/2020

Modem   **OVS**   **APP**   **VGK/SGK**   **EPC**

SW-Version: SGKUGM, VGKRUB   EAPS-3

Modem/RUBIN

Modem	OVS	APP
2	2 — 6	1b (Line1)
3	3 — 1	1a
7	5 — 5	2a (Line2)
	9	2b

Connection APP/VGK, SGK
OUT A II 16, C II 16
IN A II 15, C II 15

Connection to UGM 2005/2020 by UESL:

UGM 2005/2020

Modem   **OVS**   **ÜSL**   **VGK/SGK**   **EPC**

SW-Version: SGKUGM, VGKRUB   EAPS-3

Modem/RUBIN

Modem	OVS	ÜSL
2	2 — 9	a1
3	3 — 5	b1
7	5 — 1	a0
	6	b0

⊨⊨ **Ribbon cable**
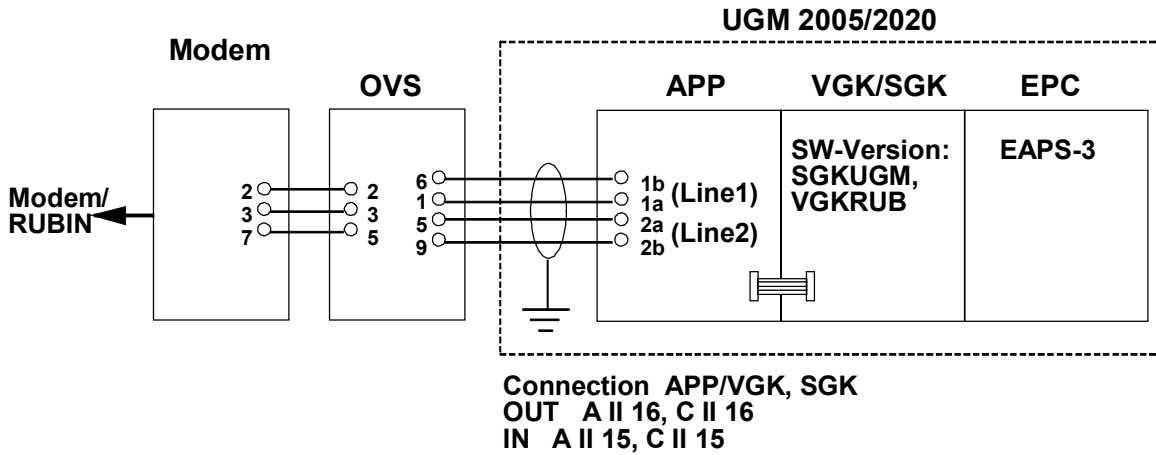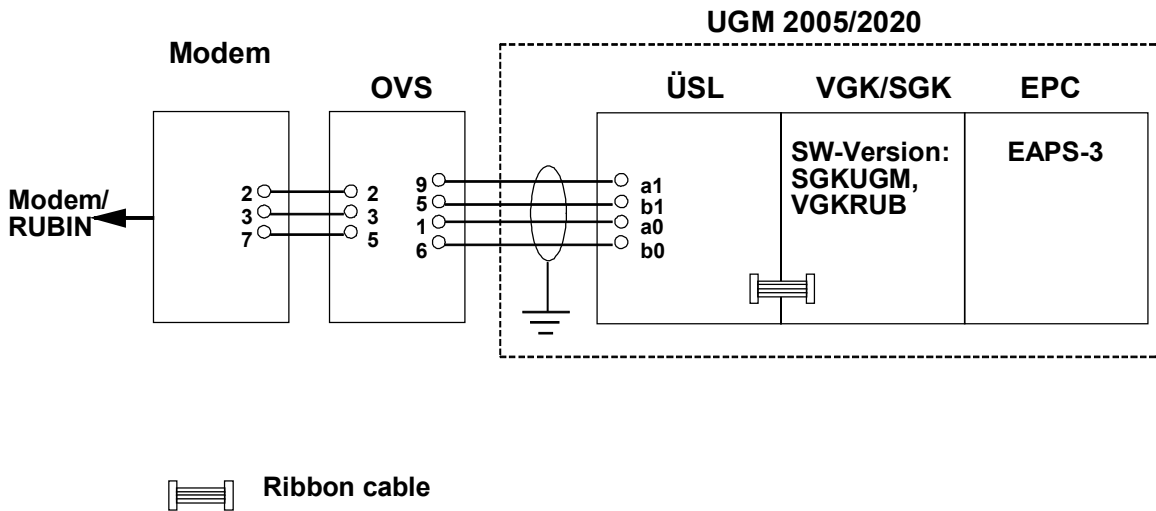
4.3.3 Connecting modem U-1496EG+ to UGM 2020

Telecom cables of the type I-Y(St)Y 2x2x0.6 are recommended for cabling (27.9802.0102). Ground the cable shield at the center end to prevent ground currents.

Connection to UGM 2020 by UESS:

Ribbon cable

Connection to UGM 2020 by TESP (use of UGM with telephony):

UGM 2020

| Modem | OVS | | TESP | SGK | EPC2 |

2 — 2
3 — 3
7 — 5

1 — DLA0
6 — DLB0
9 — DLA1
5 — DLB1

Modem/
RUBIN

SW-Ausgabe:
SGKUGM

EAPS-4
and up

**on TESP:
Links BR1 - 4 open**

○══○ **Round cable**
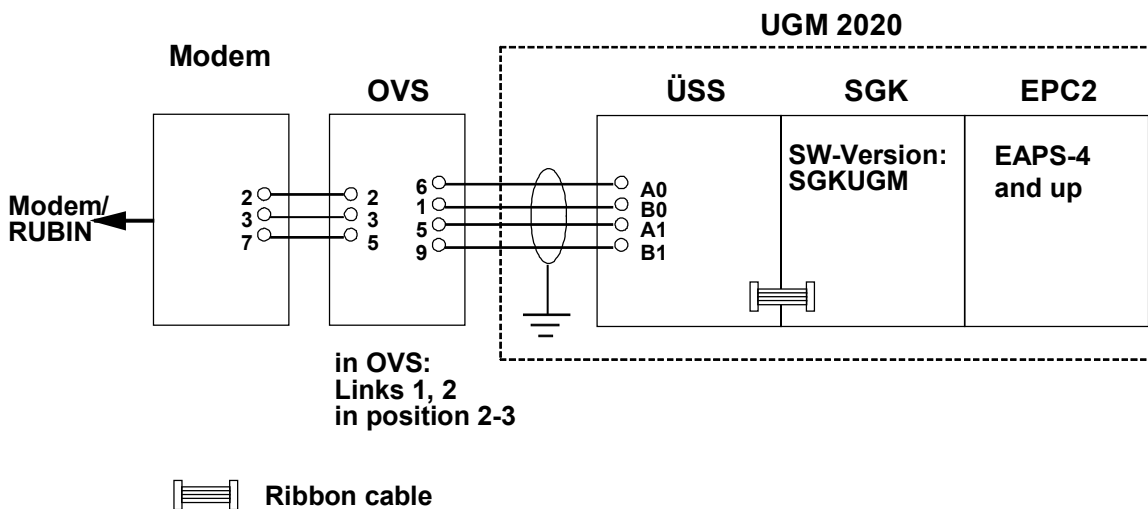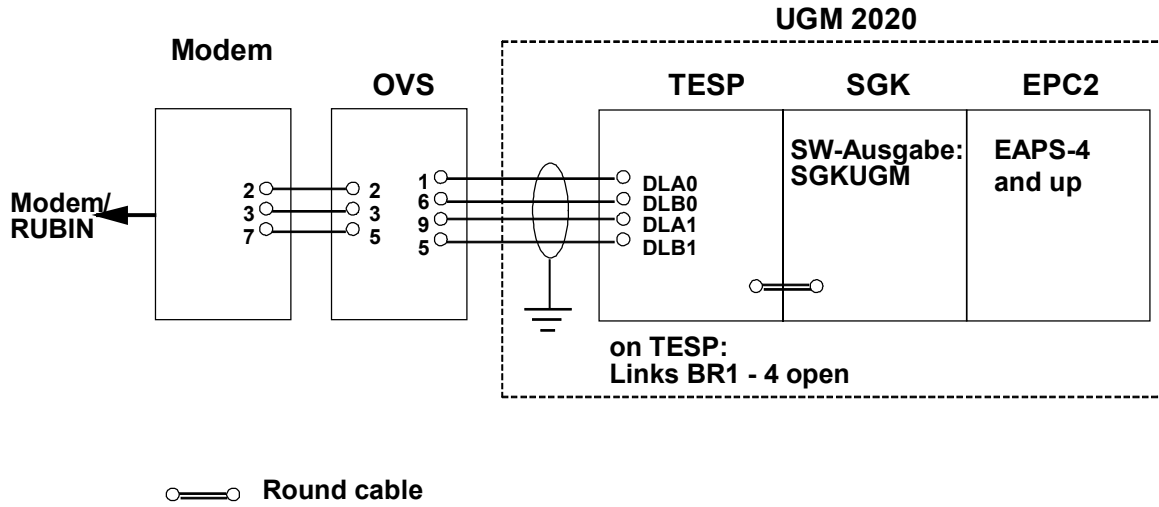
4.3.4   Connecting modem to RUBIN

UGM 2020

| Modem | RUBIN | OVS | | ÜSS | SGK | EPC2 |

2 — 2
3 — 3
7 — 5

2 — 2
3 — 3
5 — 5

6 — A0
1 — B0
5 — A1
9 — B1

Modem/
RUBIN

SW-Version:
SGKUGM

EAPS-4
and up

**in OVS:
Links BR 1, 2
in position 2-3**

▦ **Ribbon cable**
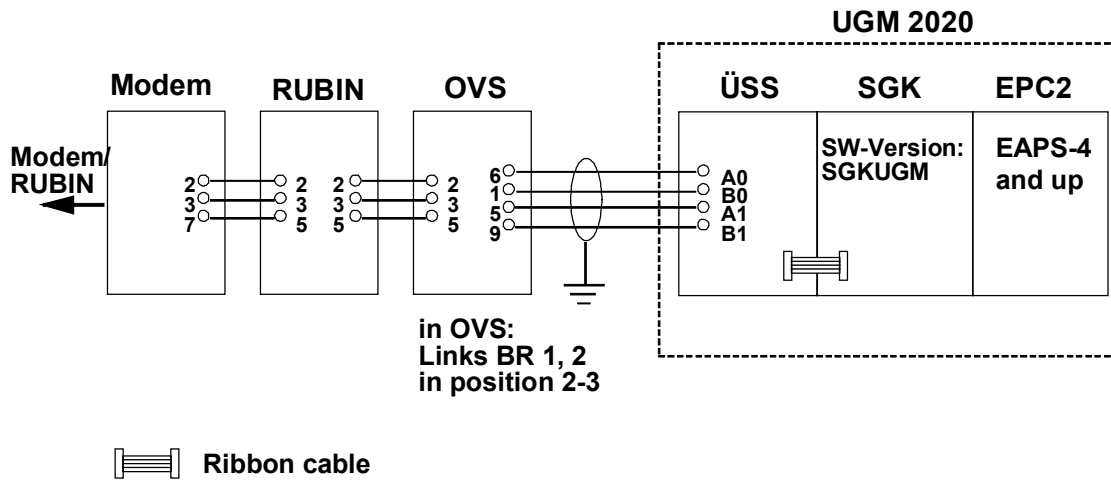
5   RUBIN network

If RUBIN operates as a multi-user system (eg in the RUBIN modular variant), the system workstations (and/or printers) must be **networked**.

5.1   Network topology

The standard network topology for a multi-user RUBIN system is Ethernet. Inquire for details of token ring or other network topologies. Each PC integrated into the network must be fitted with an Ethernet network card and be cabled appropriately. Install the Ethernet network card in a spare slot on the PC (see Chapter 3.4).

5.2   Data exchange

The standard protocol enabled for data exchange between system workstations (distribution of programming and reports) is TCP/IP. This protocol is ready installed by the producer on multi-user PCs with a network card.

5.3   Accompanying requirements for data exchange

Operation of a Windows network and the TCP/IP protocol is governed by the following requirements:

- The individual PCs must have different TCP/IP addresses. Use the following settings unless specified otherwise by the customer for the network:
  IP address: 192.168.001.nnn ("nnn" is the consecutive numbering of the PCs)
  Subnet mask: 255.255.255.0

- All PCs must be allocated to the "RUBIN" working group. The designation of the individual PCs must be different and unique. To standard, use the designations "RUBIN_BP1", "RUBIN_BP2", etc.

5.4   Software configuration of network

Refer to what is said in Chapter 12 ("Startup").

!   **Important note:**
All PCs delivered ex works have the standard designation "RUBIN_BP1". So if two are networked, <u>one of the names must be changed</u> (eg to "RUBIN_BP2", see above). You do this on the Windows user interface through *Start/Settings/Control Panel/Network/Computer name*.

The IP addresses of the individual PCs must also be set differently (see above). Enter a unique number for each PC under "nnn". The first three segments of the address (192.168.001.) must be the same for all PCs. When integrating a PC ready configured ex works into a RUBIN network with old address settings (150.x.x.x), match the addresses appropriately. Do not forget the subnet mask. The figure "255" must appear wherever the segments of the IP address are the same.

5.5   Ethernet network variants

There are three possible variants when using an Ethernet network card, the principle of which is explained below:

- 10Base5 (thick Ethernet)
- 10Base2 (thin Ethernet, Cheapernet)
- 10BaseT (twisted pair)

! **Attention:**
  Disconnect all power cables before starting.

5.5.1   10Base5 (thick Ethernet)

This is a variant for long distances, ie up to 1500 meters with maximum cable lengths of 500 meters and by interconnecting maximally two repeaters.

- The network card of the PC is connected to the cable through a transceiver.
- The distance between two transceivers must be 2.5 meters or a multiple of it.
- The cable must be terminated at both ends by a 50 ohm terminator.
- The cable may only be grounded at one end.
- The cable is not very flexible, so watch the bending radius when laying it (details from the producer).
- Opening the network prevents data exchange of all PCs (bus topology).

Schematic using two segments:
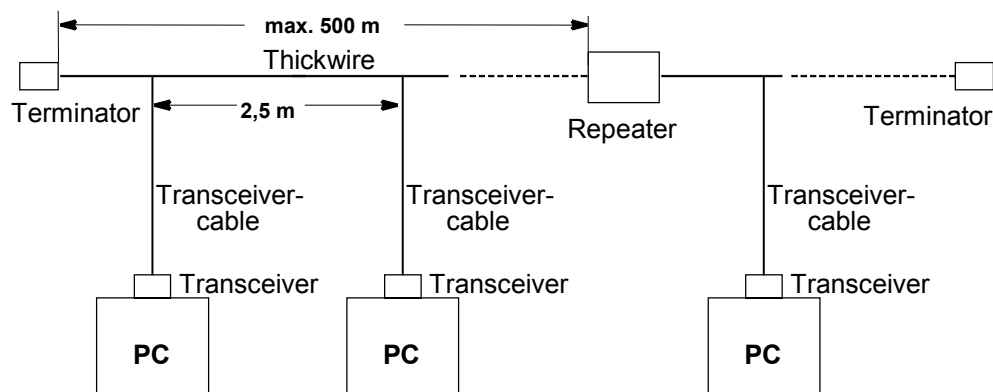
Observe the details provided by the producer when connecting repeaters and network terminators.

5.5.2 10Base2 (thin Ethernet, Cheapernet)

This is a variant for medium distances, ie up to 555 meters with maximum cable lengths of 185 meters and by interconnecting maximally two repeaters.

- The network card of the PC is connected to the cable through a Tee.
- The distance between two PCs must be at least 0.5 meters.
- The cable must be terminated at both ends by a 50 ohm terminator.
- This cable is much more flexible than the thickwire and consequently easier to lay.
- Opening the network prevents data exchange of all PCs (bus topology).

Schematic using two segments:
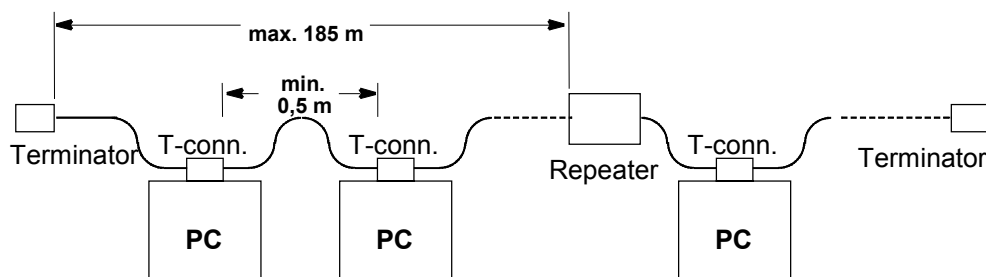
Observe the details provided by the producer when connecting repeaters and network terminators.

5.5.3   10BaseT (twisted pair)

This variant can only be used for short distances. The maximum cable length is 100 meters and can be doubled by interconnecting a repeater. If you connect more than two PCs, you **must** use a repeater (socalled hub).

- The network card of the PC is connected to the cable through a shielded RJ45 connector.
- The cable must meet at least category 3 of the EIA/TIA 568 TSB-36 specification.
- 10BaseT is a point-to-point connection. So disturbance to one link will not affect the entire network, only the particular PC (star topology).

Schematic:
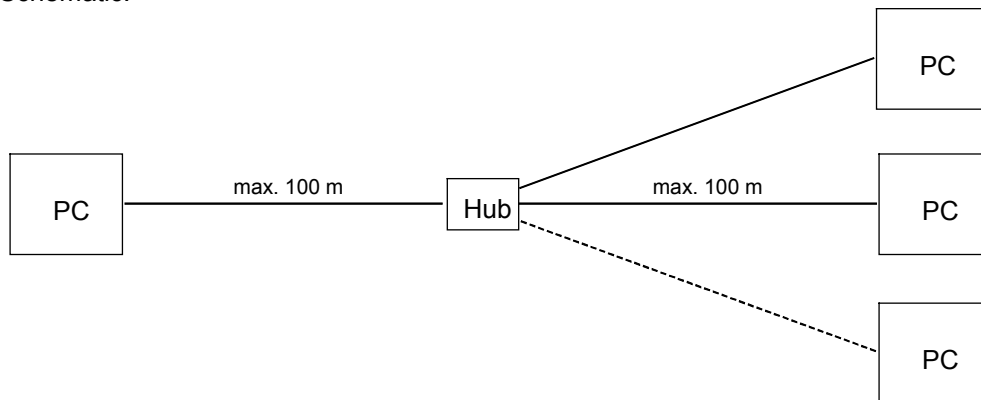
Observe the details provided by the producer when connecting a hub.

5.6   Connecting network printer (only alert printer, not log printer)
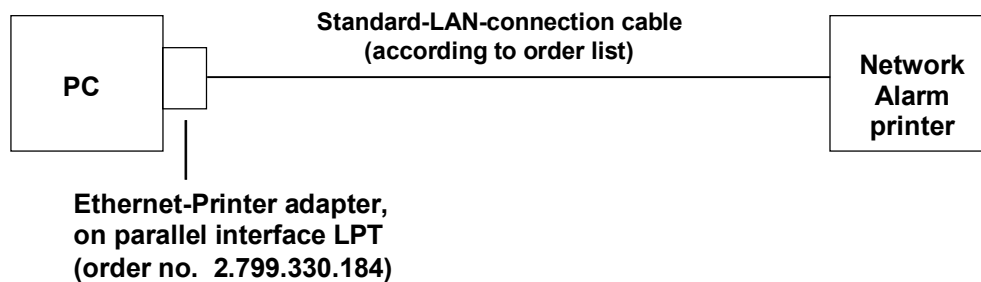
6 Connecting RUBIN to video subsystems (local matrix system, video switch, cameras)

There are two ways of producing full-motion video images on a RUBIN workstation:

- **Indirectly** through the video output of a matrix system or a video switch
- **Directly** by connecting camera outputs to the frame grabber card of a RUBIN workstation

Video installation setup exemplified using a BOSCH TC 8500 matrix system

(Note: The installation setup for a video switch VU 16 is based on the same principle.

max. 64 cameras

Video matrix system BOSCH TC 8500

System interface RUBIN - video matrix (serial)
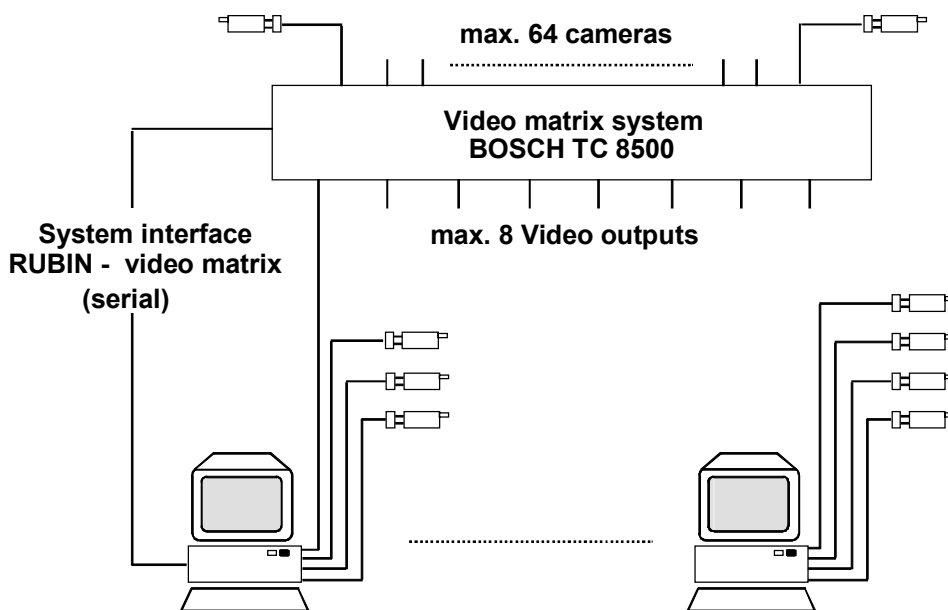
max. 8 Video outputs

Connection options for each workstation with frame grabber card:
- **1 Video output and max. 3 local cameras**
  or:
- **max. 4 local cameras**

Connection of a matrix or video switch involves two steps:

- Interface RUBIN with the matrix or video switch to drive it (Chapter 6.1 and 6.2).
- Connect the video outputs of the matrix or the video output of the video switch to the input of a frame grabber card (Chapter 6.3).

!   **Note:**
System variants with a Meteor frame grabber card require installation of a video driver. Refer to Chapter 12 ("Startup").

6.1 RUBIN/matrix system interface

On each system (single-user or multi-user) it is possible to connect a video matrix or a video switch. For this purpose you must create a system interface to drive it on the RUBIN system workstation PC.

The matrix or video switch is connected/driven on one of the serial ports COM1-2 (ISA system bus interface). No modifications are necessary on the actual matrix or video switch.

!

Note:

You cannot use a standard PC cable to connect RUBIN to the matrix. Matrixes of the type Bosch TC 8112 BX and TC 8124 BX have no standard connectors. The connector on the Bosch TC 8500 matrix is not RS-232-C standard.

For the following connections and settings, make sure you read the system documentation that comes with the particular matrix.

Video interface between RUBIN and matrix system BOSCH TC 8112 BX or BOSCH TC 8124 BX (SUB D 9-socket)
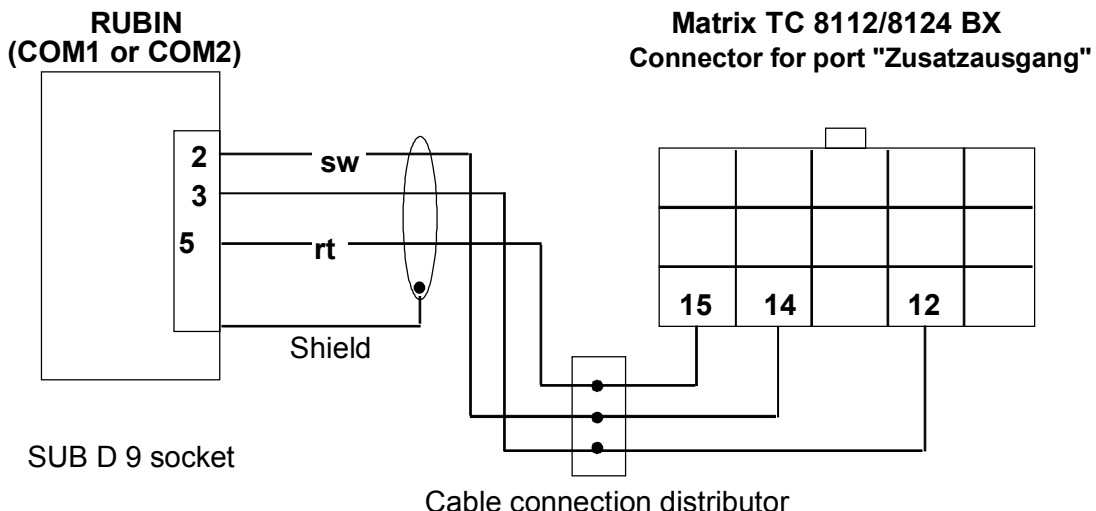
Video interface between RUBIN and matrix system BOSCH TC 8112 BX or BOSCH TC 8124 BX (SUB D 25 socket)

RUBIN
(COM1 or COM2)

Matrix TC 8112/8124 BX
Connector for port "Zusatzausgang"

2   sw

3

7   rt

15 | 14 | | 12

Shield

SUB D 25 socket

Cable connection distributor
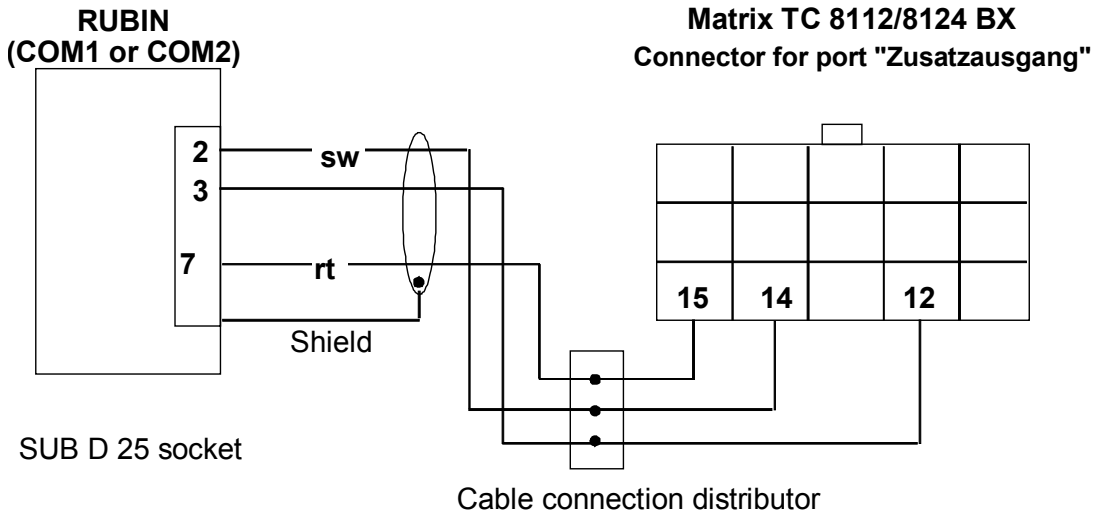
Video interface between RUBIN and matrix system BOSCH TC 8300 - 8900 (SUB D9 socket and port "Console")

RUBIN
(COM1 or COM2)

Matrix TC 8300 - 8900
Connector for port "Console"

1	GND Chassis
3 → 2	Rx
2 → 3	Tx
7 → 4	CTS
8 → 5	RTS
6	nc *
5 → 7	GND Data
8	nc *
9	nc *

SUB D 9 socket   SUB D 9 connector
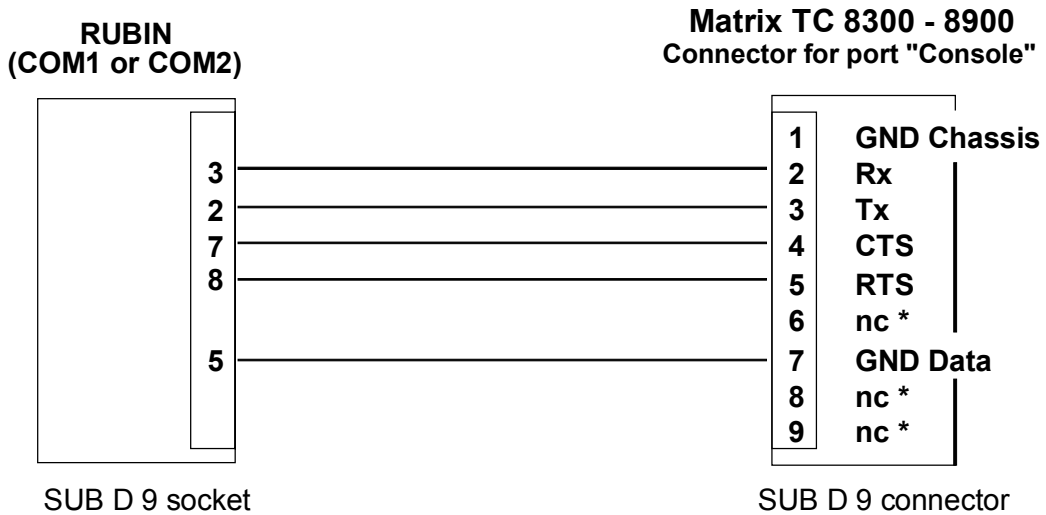
* nc = not connected

Video system interface with Bosch TC 8300-TC 8800 matrix (SUBD9 socket and "Printer" port)

The following connection uses the printer port on the rear of the matrix as a console port. For this purpose you must set DIP switch 4 to **On**. First read what is said under **Setting of DIP switches**.

RUBIN
(COM1 or COM2)

Matrix TC 8300 - 8800
Connector for port "Printer"

3	1 GND Chassis
2	2 Rx
1	3 Tx
8	4 CTS
	5 RTS
	6 nc *
5	7 GND Data
	8 nc *
	9 nc *

SUB D 9 socket   SUB D 9 connector
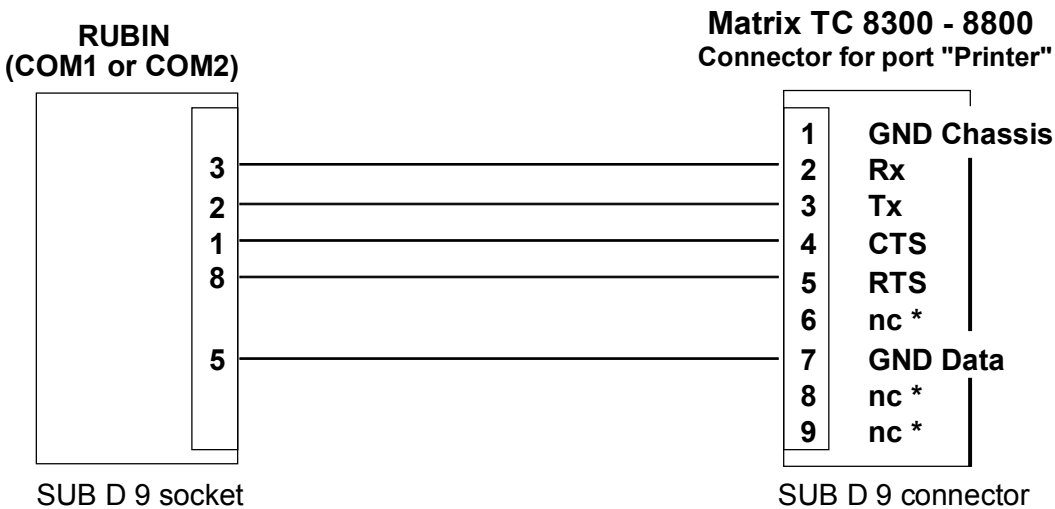
* nc = not connected

Setting of DIP switches on matrix types TC 8500-TC 8800

Some of the functions can be freely defined by DIP switches on matrixes of the type TC 8500-TC 8800 (the TC 8300 matrix has no such DIP switch, ie the settings are not possible in this case).

On TC 8600-TC 8800 matrixes, what is said here **only applies** to the bottom DIP switch S101 (the functions of the top DIP switch S100 are reserved for certain accessories and must be left **Off**).

Switch functions and presetting ex works:

DIP switch number	Function	Presetting
1	TC 8700 VOM type	Off
2	Alert port mode	Off
3	Old keyboard modes	Off
4	Printer port mode	Off
5	Keyboard lock	Off
6	Console lock	Off
7	New keyboard modes	On
8	Communication parameters and boot screen	Off

! **Important note:**
Every time you change a switch setting, <u>you must reset the matrix</u>. This is done either by powering off and on or by keyboard function 15, which is explained in the documentation accompanying the matrix.

Switch 1
This switch is not used on the TC 8500, TC 8600 and TC 8800 matrixes and must be left **Off**.
General performance of the TC 8700 matrix can be improved somewhat by setting the switch to **On**, because then TC 8710 A-CPU modules communicate with TC 8734 video output modules by a fast protocol. This does not apply to older modules however (eg with the part number TC 8734 VOM) but only to later modules without the extension "VOM".
If there are older modules in the matrix system, leave switch 1 **Off**. If *all* output modules are newer versions however, you can set switch 1 **On** to improve performance. In some cases, setting switch 1 **On** may mutilate the overlay on the monitor. If this happens, set the switch back to **Off**.

Switch 2
Setting switch 2 **On** enables you to configure the alert port on the rear of the matrix as an extra console port. In other words, the alert port as well as the normal console port communicates with the optional master control software on the PC. Seeing as the port also serves for controlling the system by the console command language (see CCL manual), the console port and alert port can control the system simultaneously. The communication parameters for the alert port (eg baud rate) must be set by the optional master control software.

! **Important note:**
The pinning of the alert port is different to that of the console port, so the cable supplied with the master control software cannot be used here to connect the alert port.

Switch 3
Switch 3 configures the system CPU to the particular keyboard and determines the protocol that is used (four poll byte or eight poll byte). Use the following settings:

Type	Protocol		Setting switch 3
TC 8500, TC 8600	**Standard:**	**four poll byte**	**Off**
	Exception:	**eight poll byte**	**On**
TC 8700, TC 8800	**Standard:**	**eight poll byte**	**Off**
	Exception:	**four poll byte**	**On**
Older keyboard TC 8550 KB	**Four poll byte**		**Off**
Older keyboard TC 8550 KB-8	**Eight poll byte**		**On**
Newer keyboard TC 8550 TC 8550A TC 8553	**Both protocols and switch settings possible**		

Note:
If a cascaded (satellite) system is set up following on from a TC 8600, set eight poll byte as the protocol, ie switch 3 **On** (but this setting will be ignored if switch 7 is **On**, see matrix documentation).

Switch 4

Setting switch 4 **On** enables you to configure the printer port on the rear of the matrix as an extra console port. As in the case of switch 2 (alert port), here too the printer port in addition to the normal console port communicates with the optional master control software on the PC. Again the communication parameters must be set by the optional master control software. The pinning of the printer port is the same as that of the normal console port, so the cable supplied with the master control software can be used if switch 4 is set **On**.

Refer to the documentation of the particular matrix for more details.

6.2 RUBIN/video switch system interface

Video interface between RUBIN and video switch VU 16 (SUB D 9 socket)
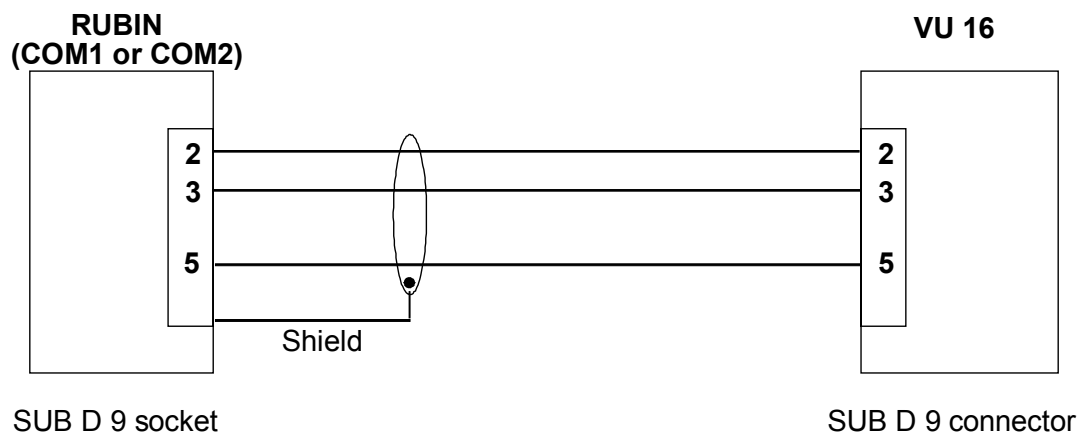
6.3 Connecting video outputs from matrix and video switch to RUBIN

6.3.1 Matrix (TC 8300-TC 8900)

You can connect a matrix output to any frame grabber input. Use a 1/4 frame grabber cable with four BNC inputs. Assignment of cameras to matrix outputs is made when programming the matrix.

Matrix in satellite mode (TC 8112, TC 8124)
If more than one matrix is to be connected to RUBIN, they must be operated in a socalled satellite mode. Here RUBIN assumes the master function. Proceed as follows to activate the satellite mode:

- Deactivate the matrix main CPU bay.
- Attach the extra connector to the rear.
- Activate the main CPU bay again.
- Hold down the **Clear/Reset** key and press key **6**.

Refer to the documentation of the particular matrix for more details.

6.3.2 Video switch VU 16

The procedure for connecting a video switch output is the same as for a matrix output. Use a frame grabber cable to connect the video output to any frame grabber input. The assignment and driving of the cameras is made when programming the RUBIN system. Call up online help for more information.

6.4 Connecting cameras

6.4.1 Connecting local cameras

Connect local cameras straight to the frame grabber card by the frame grabber cable.

6.4.2 Connecting cameras to matrix

For details of connecting cameras to a matrix, refer to the documentation accompanying the particular equipment. Note that you can only connect autodome cameras to a TC 8500, TC 8600 or TC 8800 matrix in the RUBIN system.

6.4.3 Connecting cameras to video switch

Video switch VU 16 allows connection of up to 16 synchronized cameras (BNC socket). The cable used will depend on the type of camera.

7 Connecting ISDN interface

Exemplified connection with ISDN interface

cable supplied by manufacturer	only required for TAE jack (not part of delivery)
	communications network

!
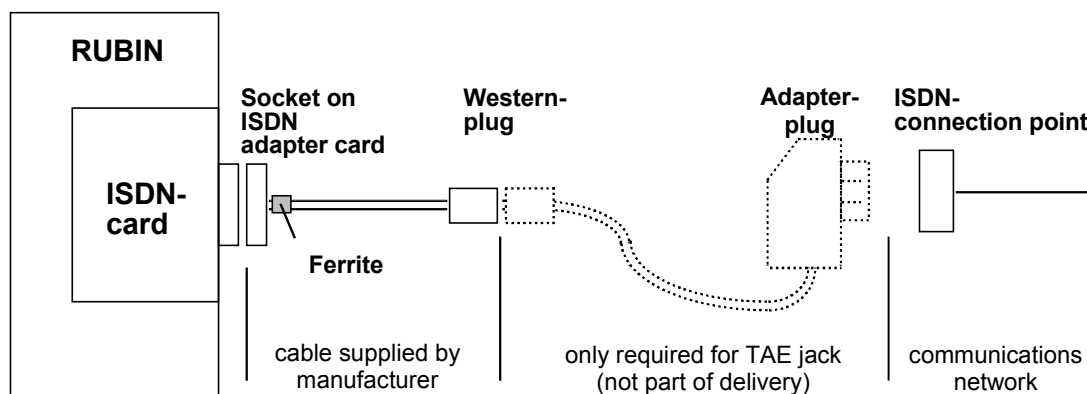
Note:
System variants with an ISDN interface need a software ISDN driver. This is ready installed on systems delivered complete ex works. If an ISDN card is incorporated later, install the driver following the instructions in Chapter 12 ("Startup").

7.1 Receiving reports from transmission units (RUBIN modular)

- For this system variant use an ISDN card with an S_0 interface and two B channels.
- Install the ISDN card in a spare slot of the system workstation and connect by the supplied cable to the ISDN socket in the room.

Only an official line using the Euro ISDN protocol DSS1 is supported. Allocation of the groups reporting through the transmission unit is made in the programming of RUBIN and the transmission unit. Refer to the online help of the particular program for more information.

7.2   Receiving remote video images from BoVis (RUBIN K1)

The ISDN interface in the RUBIN K1 system variant is used to receive images from a remote Bosch video system BoVis. Reception of reports from transmission units as described under 7.1 is not possible in this system variant.

Install the ISDN card in a PCI slot 2 of the system workstation and connect by the supplied cable to the ISDN socket in the room.

Control of image transmission is through the BoVis system. Allocation of the transmitting cameras is through the programming interfaces of RUBIN and BoVis. Refer to the online help of the particular programs and the BoVis installation manual.

8   Connecting telephone

The telephony feature (ie automatic setup of a voice connection) is only possible using a Tenovis or Bosch telephone installation (eg Bosch i33x). Currently only telephone sets of the type Tenovis/Bosch TS 13.21 with an AEI interface can be used.

- Set the AEI mode of the telephone to "Y ETSI AT" (follow the instructions in the manual of the telephone set).
- Connect the telephone set to a serial (COM) interface on those workstations that are to be fitted with a telephone. Use the AEI adapter (ordering code 19.4101.2001).

9   Installing magnetic tape drive

Follow the producer's instructions when installing a magnetic tape drive.

- Install the magnetic tape drive as instructed in the location provided on the PC.
- Use the 50-way SCSI cable to connect the magnetic tape drive to the adapter on the SCSI controller card. Make sure you engage it correctly so that the terminals are not damaged.

Note:
System variants with a magnetic tape drive require a software driver. Refer to Chapter 12 ("Startup").

10 Connecting monitor, keyboard and mouse

The connections are made on the rear of the PC to the standard interfaces of the PC. Install the delivered ferrite around the keyboard an mouse cable an secure it with the delivered cable fastener.

11 Connecting dongle

RUBIN programs are protected against unauthorized use by a special kind of connector called a dongle. The system will not operate if this connector is missing. The dongle must be connected to the LPT1 port of the PC and remain there during operation.

Attention: The use of certain interface expansion cards causes the LPT1 and LPT2 interfaces to be physically swapped (LPT1 to expansion card, LPT2 to motherboard).

LPT1 is also the printer interface, so **the printer must always be powered on**. Otherwise program data cannot be read out and the programs will no longer run.

How to connect the dongle
- Make sure the PC and printer are switched off and not connected to the power.
- Connect the dongle to the LPT1 port of the PC.
- Connect the printer cable to the dongle.
- Plug in the power cables of the printer and PC.
- First power on the printer and then the PC.

> **!** **Attention:**
> **If the printer has to be powered off (eg for maintenance), <u>detach the printer cable from the PC first</u>.**

Note:
When you update a system, it is possible that the new features will require replacement of the dongle. So make sure you use the proper (updated) version. You get a refund when you return the old dongle (see Chapter 14.4 for address).

Once all remote devices with which RUBIN communicates have been properly set up (coding, programming, electrical connection of matrixes, transmission units, command center of security system, telephone installation, BoVis, etc), you can commence startup as explained in Chapter 12.

12 Startup

Before startup, read the files **install.wri** (explanation of software and hardware installation) and **readme.wri** (general explanation) on the installation diskette or CD. There you will find updated or project-specific information that is not contained in this installation manual.

Proceed as follows to start up:

Check all connections

⇓

Power on PC

⇓

Configure system software (if necessary*)

⇓

Load RUBIN software (if necessary*)

⇓

Load text and graphics editor (if necessary*)

⇓

Create backup diskette

⇓

Program system
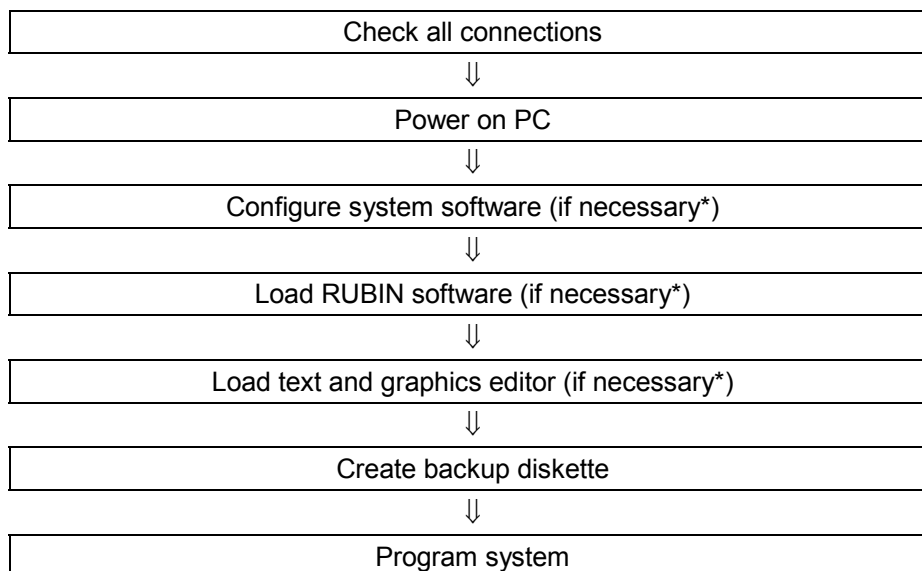
All steps marked * are ready performed by the producer in the case of systems delivered new ex works.

12.1   Checking connections and system components

Before startup, make sure that all parts of the system are properly installed. Check the following in particular:

- Is all hardware correctly interfaced?
- Are all necessary connections made and the transmission links set up?
- Has all coding/programming been carried out in the command center of the security system?
- Is the command center of the security system operative, disarmed and on standby?
- Is the keyboard, mouse, monitor and printer connected?
- Is the dongle of the RUBIN system connected together with the printer on the PC?
- Are all power connectors and data cables in place and peripheral devices activated?

12.2   Booting PC

Power on the PC and monitor. The BOSCH PC is turned on by turning and pressing the blue switch by 90 degrees to the right.

In the case of a system delivered ex works, the software settings are already made and the operating system, RUBIN system software plus text and graphics editor are ready installed.

The start procedure is completed when the RUBIN user interface appears onscreen and the icon is visible. Enter **rubin** as your user name in the dialog box when logging on for the first time (see below).

Authorization levels
To standard, the following user groups or authorization levels are set up on PCs delivered ex works after installation of the RUBIN system software:

- One user named **rubin** with the password **rubin** for all authorization levels (**administrator**).
- One user named **rub2** with the password **rub2** with access to the file manager.
- One user named **rub1** with the password **rub1**, who may only operate the RUBIN system.

Changes and the configuration of extra passwords plus their allocation to authorization levels are part of programming the RUBIN system.

12.3   Installing and configuring software

In the case of new systems delivered ex works, the software is usually ready installed and configured. So the chores explained below will be either unnecessary or only necessary in part.

If you add to or update the system however, you may have to carry out all these software installation and configuration chores.

In such cases, first read the files **install.wri** (explanation of software and hardware installation) and **readme.wri** (general explanation) on the installation CD or diskette. There you will find updated or project-specific information that is not contained in this installation manual.

Important notes on software installation:
- When you are configuring the PC, you have to restart it a number of times. Shut down the PC properly each time (by clicking on *Start* and then *Shut Down*). Simply powering off and on again is not enough, and can result in **loss of data**!
- As of RUBIN version 3.3, you must install Microsoft Internet Explorer version 5.0 or later on the PC.
- All PCs in a multi-user system must have the same software versions.
- All PCs in a multi-user system need different names and IP addresses (network addresses) (see 12.3.4 "Configuring network").

12.3.1   Initial loading of PC (eg change of operating system)

Initial loading of the PC comprises initialization and formatting of the harddisk (NTFS file system) plus installation of the Windows NT 4.0 or XP Professional operating system. Then install Microsoft Internet Explorer version 5.0 or later. Follow the instructions in the Windows NT, XP and Microsoft Internet Explorer documentation.

12.3.2   Settings in BIOS

If there are a large number of cards installed in a RUBIN computer, finding free interrupts can be a problem. This is made more difficult by the automatic interrupt allocation of PCI cards. You may have to deactivate the latter in BIOS.

Call BIOS setup to Bosch ST-PC:
- When booting the PC, press the **Del** key.
- Set the following interrupts in **PNP And PCI Setup** depending on the cards inserted (PCI remains on Auto):

PCI configuration
Slot 1 IRQ   Auto
Slot 2 IRQ   Auto
Slot 3/6 IRQ   Auto
Slot 4/5 IRQ   Auto

PCI/VGA Palette Snoop   Disabled
PCI Latency Timer   32
SYMBIOS SCSI BIOS   Auto
USB IRQ   Disabled
VGA BIOS Sequence   AGP/PCI
PCI/PNP ISA IRQ resource exclusion
IRQ 3 Used By ISA   No
IRQ 4 Used By ISA   No
IRQ 5 Used By ISA   *Yes (only if assigned to interface card)*
IRQ 7 Used By ISA   *Yes (only if assigned to interface card)*
IRQ 9 Used By ISA   No

IRQ 10 Used By ISA	*Yes (only if assigned to Ethernet card)*
IRQ 11 Used By ISA	*Yes (only if assigned to ITK-ISDN card)*
IRQ 12 Used By ISA	No
IRQ 14 Used By ISA	No
IRQ 15 Used By ISA	No
PCI/PNP ISA DMA resource exclusion	
DMA 1 Used By ISA	No
DMA 3 Used By ISA	No
DMA 5 Used By ISA	No

12.3.3   Settings for RUBIN interface card 2 ser./1 par.

The hardware settings on the interface card (see Chapter 3.6) must be advertised to Windows NT. You do this as follows:

- Open the **Connections** dialog box (**Start/Settings/Control Panel/Connections**).
- Select the appropriate COM interface (or configure it with the **Add** button), click on **Settings** and then on **Extended...**.
- Enter the appropriate figures and check the **FIFO activated** box in the **Further settings for COM...** dialog box.

12.3.4   Configuring network

Changing PC name
All PCs must have different names in a RUBIN network. Check the names and change them if necessary through:

- **Start/Settings/Control Panel/Network** (see also Chapter 5 "RUBIN network").

Installing/configuring TCP/IP support
- If this has not already been done, load the TCP/IP printer support and the support for simple TCP/IP services from the Windows NT installation CD.
- Open the **Network** dialog box through **Start/Settings/Control Panel/Network** and add the TCP/IP protocol under **Protocols**.
- Click on the name of the protocol, on the **Properties** button and enter the appropriate figure in the dialog box of the **IP address** tab. Observe the following convention:
  The standard address ex works is 192.168.001.nnn. The "nnn" sement will already be on "001". Enter unique figures for all PCs, eg 002, 003. In the subnet mask, the first three segments of the IP address are the same for all PCs, and these must be set to "255" (255.255.255.0).
- Do not configure DHCP support, and answer any questions relating to it with **No**.
- Do not configure any WINS service, and enter no WINS address.

Advertising hardware settings of network card
Hardware settings of the network card must be advertised to the system. They depend on the type of card used and cannot be generalized.

Follow the instructions in the **install.wri** and **readme.wir** files.

12.3.5   Configuring printer

All connected printers must be configured under Windows. Do this through **Start/Settings/Control Panel/Printer**.

12.3.6   Installing ISDN driver (only for PC with ISA bus)

If the PC incorporates an ISDN card (ITK ix1), you must install an ISDN driver. Proceed as follows:

- Place the "ISDN driver" diskette in drive A:.
- Open the *Network* options through *Start/Settings/Control Panel*.
- Answer *Install network now?* with *No*.
- Select the *Network card* menu and click on the *Add* button.
- Click on the *Diskette* button, check that drive A: is offered and click on *OK*. The chosen driver is installed.
- Select the driver **ITK ix1-basic ISA V1.2 Adapter (2 channels)** and confirm with *OK*.
- Enter the following under *Set resources*:

  Interrupt: 11
  I/O base: 390

- Close all dialog boxes with *OK* and confirm any error messages.
- Remove the diskette from drive A:, shut down the PC properly (by *Start/Shut Down*) and power the PC off.
- Power the PC on again, restart and log on as the administrator.

Checking driver installation
After restarting the PC, check proper installation of the ISDN driver as follows:

- Open the *Devices* options through *Start/Settings/Control Panel*. The driver is correctly installed if it appears in the *Status* column as *Started*.

If driver installation is unsuccessful, the event display of Windows NT may help you.
You can open this through *Start/Programs/Administration (general)/Event display*.

12.3.7   **Activating video driver – settings for Meteor frame grabber card**

First-time installation
The frame grabber card is advertised to the system during installation of the RUBIN software. Answer *Install MIL driver?* with *Yes*.

Upgrade/retrofit
If you install a frame grabber card later on, you do not necessarily have to perform RUBIN installation again, ie unless the system is reconfigured in some other way. You can also advertise the frame grabber card to the system through the DOS interface. Refer to the **install.wri** file for the installation commands.

Checking driver installation
After restarting the PC, check proper installation of the video driver as follows:

▪ Open the *Devices* options through *Start/Settings/Control Panel*. The driver is correctly installed if it appears in the *Status* column as *Started*.

12.3.8   **Installing graphics driver**

Use of the matrix dual graphics card (G450DH) requires installation of a driver. For this you need the producer's installation CD or you can download the latest driver from the Internet (www.matrix.de). Follow the instructions in the setup program and those in the **install.wri** and **readme.wri** files.

12.3.9   **Installing driver for SCSI controller (PCI system bus interface)**

You must install an SCSI-PCI driver for the SCSI controller on the PCI system bus (eg for magnetic tape drives). For this you need the producer's installation CD or diskette. Follow the instructions in the setup program and those in the **install.wri** and **readme.wri** files.

12.3.10   **Installing driver for DAT magnetic tape drive (SCSI)**

You must install a driver for the SCSI controller for a magnetic tape drive.

▪ Open the *Install driver* dialog box through *Start/Settings/Control Panel/Tape Drives.*
▪ Select *Driver* and click on the *Add* button.
▪ Select *Standard tape drives* in the left list box (*Producer*) and *4 mm DAT drive* in the right list box, confirming your choices with *OK.*
▪ Shut down the PC and then restart, logging on as the administrator.

12.4   Installing RUBIN software

RUBIN system software is set up by a program called **setup.exe**. This creates the necessary directories and copies in the programs. Follow what is said in the setup program.

In the case of systems delivered new ex works, the producer will already have installed the RUBIN software.

12.4.1   Systems with frame grabber card

If a frame grabber card is to be used, you must also install a video driver when installing the RUBIN software. Answer *Install frame grabber?* with *Yes*. The current frame grabber is *Meteor II*. Only select *Meteor I* for system updates using a ready existent Meteor I frame grabber.
You can check proper installation of the video driver through *Start/Settings/Control Panel/Devices*.

12.4.2   End of software installation

Installation of the RUBIN software is completed when the RUBIN user interface appears onscreen and the icon is visible.

Checking installation
You can check whether software installation is successful by shutting down and then rebooting the PC.

Logging on in RUBIN
To log on for the first time, enter **rubin** as your user name and **rubin** as your password.
For further details of passwords and authorization levels, refer to Chapter 12.2 of this manual and the online help of the user and programming interface of RUBIN (key **F1** or *Help* menu).

12.5   Loading word processing and graphics program

After you have installed the RUBIN system software, you install these two programs by a **setup.exe** program. This creates the necessary directories and copies in the files. Follow what is said in the setup program.

In the case of systems delivered new ex works, the producer will already have installed the text and graphics editor.

12.6   Creating backup diskette

After completing system installation, and before commencing regular operation, you should create a backup diskette with the entire system configuration as a precautionary measure.

Proceed as follows:
- Place a diskette in drive A:.
- Open the entry level on the Windows NT interface by **Start/Programs/MS-DOS Prompt**.
- Enter the following command: **C:\winnt\system32\rdisk.exe**. A dialog box opens.
- Click on the **Create** button.

Note:
If a backup diskette already exists, you can update it by clicking on the **Update** button.

12.7 Programming

This is where you define the conditions for operation of the RUBIN system. (You can also do this later during actual operation.)

The producer has already set a standard configuration, but you can alter it if need be (eg transfer rate, protocol mode, etc).

12.7.1 Calling program

Left click on the *Administration* menu on the user interface and then on *Programming*. This opens the programming interface with its own main menu.

12.7.2 Online help

Both the user and the programming interface of RUBIN feature online help, which is accessible through the *Help* menu or function key **F1**. Online help provides detailed information on all aspects of programming and operation.

12.7.3 Programming procedure

It is not possible to detail the procedure because it will depend on the particular security system. The following outline procedure is recommended:

- Create one directory each for all text and graphics files and put the files into your data inventory.
- Create the location structure.
- Allocate detector addresses to the locations.
- Define a graphic for each location.
- Place detector and location icons in the graphics.
- Allocate transparencies to the location graphics.
- Create other display documents (eg brief information, text of measures, graphics).

Refer to the online help for explanation of the procedure.

12.7.4 Importing programmed data

After completing all programming chores, change back to the RUBIN user interface (the online help will tell you how). Import your data by clicking on the *Administration* menu and then on *Import program*.

This completes preparations for startup.

13 Notes on maintenance, service, cleaning

Maintenance of the RUBIN system should **only be performed by specialist personnel**.

13.1 Logbook

Read the logbook before commencing any maintenance. You do this either through Windows NT Explorer (*C:\RUBIN_NT\protocol\error.txt*) or on the RUBIN user interface through the *Administration* menu and *Maintenance*. You can delete the logbook after finishing maintenance.

13.2 Replacing ribbon cartridge, ink cartridge and paper

To uphold operation of the system, **but only if the documentation of the particular equipment producer does not state anything to the contrary**, you need not power off the various printers for this purpose. **Be sure to consult the documentation of the particular producer beforehand!**

!   **Attention:**
If you power off a printer for maintenance for example, remember to <u>first remove the cable connecting it to the PC</u>.

13.3 Cleaning

Refer to the documentation of the particular producer.

The following applies in general:

- Protect equipment against dust and damp and do not use any aggressive cleaning agents.
- Do not apply plastic cleaning agents and anti-static sprays direct to the equipment. First damp a soft cloth with the agent and then use this to wipe the surface of the equipment.

13.4   Computer maintenance

Maintenance of the PC also includes internal components like harddisks and the periphery, ie monitor, printer and connections.

The following items regarding maintenance refer to the Windows NT 4.0 operating system. But the procedure will be similar for older installations like NT 3.51.

13.4.1   Checking harddisk for errors

Check the harddisk for errors like concatenated files and poor sectors. Before starting, close all open programs like RUBIN, Explorer, etc. Then proceed as follows. If the harddisk has two partitions, check the second (drive D:) first.

Start the error checking software for an harddisk by selecting it in the context menu that appears when you right-click the apropriate harddisk.

Mark both check boxes with the left mouse key and then click on the *Start* button. This starts the check of the harddisk. You can see the status from the bar above the *Start* button. The process may last a few minutes, depending on the capacity and speed of the harddisk.

If you receive messages about errors in one of the checks, follow the instructions provided in Windows.

In multi-user RUBIN systems, proceed in the same way for the other PCs. There should be no data exchange from other PCs while checking a harddisk. You may have to stop RUBIN on the other PCs if there are any access problems.

13.4.2   Optimizing (defragmenting) harddisk

A defragmenting tool is not installed to standard with Windows NT 4.0.

13.4.3   Checking harddisk for spare capacity

Check the harddisk for spare capacity, minimally 100 MB. If less is available, consider which components can be deleted.

13.4.4   Checking periphery

- Check the monitor (visually) for unsharpness or distortion.
- Check the monitor for soiling and clean if necessary (make sure you use the right cleaning agents).
- Check the printer for soiling and clean if necessary.
- Make a trial printout to check picture quality and replace the toner/ink cartridge if necessary.
- Check connections and cables for proper seating and possible damage, and replace any damaged components.
- Check the system time and readjust if necessary.
- Check the power supply fan for soiling and clean if necessary.
- If there are any processor fans, check them for proper functioning and soiling (this means opening the PC).
- Check the connection to the command center, trigger and process a trial alert.
- Set up a trial link if any remote connections (ISDN) are installed.
- Check magnetic tape drives for proper functioning (trial backup).

13.5   Checking software

For this check you must distinguish between system programs and RUBIN programs.

!   **Attention:**
The following procedures should only be performed by specialist personnel. <u>Otherwise data in the system structure could be lost</u>.

13.5.1   Data backup

Before the following steps, be sure to back up all relevant system data. Do this with the standard backup program and the magnetic tape drive of the RUBIN system. If the RUBIN system has no backup medium, you are advised not to carry out the following steps. Point out the urgency of data backup to the customer.

13.5.2   Virus check

Check memory, the boot sector of the harddisk and all executable programs on the PC for viruses. Check text documents for macro viruses. If there is no virus program installed on the RUBIN system (as delivered ex works), use a virus program of the service CD available to all service technicians.

13.5.3   Data exchange (multi-user)

In a multi-user system, generate trial data (eg new detector) and distribute them to all system workstations. Delete the data afterwards.

13.6   Documenting checks

Document all maintenance and checks in the operating log.

14 Malfunctions

14.1 General

The interfaces between RUBIN and security systems are monitored. If a malfunction occurs, it appears onscreen as a periphery message (eg "Security system interface malfunction").

In the event of a malfunction, the name of the security system appears in the status bar of the main window:

- crossed through once diagonally if there is a standby link and this is still working,
- crossed out twice if there is no standby link or it is likewise malfunctioning.

Read the online help of the user interface.

The texts in the documents of the particular message tell you what to do in the event of a malfunction. If a malfunction cannot be remedied in the way suggested, you must inform the troubleshooting service. Note also the sequence of steps in Chapter 14.2.

Checks and corrective measures should only be performed by specialist personnel.

!   **Attention:**
If you power off a printer for the purpose of troubleshooting, remember to first remove the cable connecting it to the PC.

14.2 Procedure for malfunctions

If errors or malfunctions appear, remember in each case to follow the steps below.

First make sure – especially in the case of a non-specific malfunction – that all connections are still properly in place and that the malfunction is not caused by a loose connector.

Important note:
Steps 4 through 8 of the procedure may only be performed by the system administrator or other specialist personnel.

1. Immediately after the appearance of a malfunction message onscreen, write down the **precise** wording.
2. Write down what you did or the system functions **immediately before appearance of the malfunction**.
3. Call the RUBIN logbook and print it out if possible. Open the logbook through the user interface. Click on the *Administration* menu and then on *Maintenance* (call the online help if you need information about how to print out).
4. Call the event display of Windows NT through *Start/Programs/Administration (general)/Event display...*.
5. Try to correct the malfunction by one of the following measures (in the order shown):
   a) Restart the RUBIN program (through *System* in the main menu and then *Exit*).
   b) Log on and off at Windows NT level.

c)   Shut down the entire system. Do this – if still possible – through *System* in the main menu of the user interface and *Shut Down*, then *Start/Shut Down* on the Windows NT interface. Power off the PC and wait about 20 seconds before restarting.

!   **Attention:**
              The measures undertaken in 5. <u>interrupt connection to the security system</u>.

6.   If you cannot correct the malfunction by the measures in 5. above, it may be possible to remedy it by reloading the entire software from original diskettes. Shut down the complete computer system (see above) and follow the instructions in Chapter 12 to re-install.

7.   If the above measures do not help, there is very likely a hardware malfunction. Check the hardware with reference to the information produced by steps 4., 5. and 6.

8.   If you suspect a software fault, send a detailed report using the form *Störungsmeldung.doc* to department UC-ST/SPC (Support Center Ottobrunn). You will find the form in the directory *RUBIN_NT\BIN*.

Make sure you state the software version of

-        Windows NT **or XP** (can be read under *Start/Programs/winmsd*).
-        RUBIN NT/XP (can be read on the RUBIN interface through the *Help* menu and *About*).

14.3   Test and diagnostic possibilities for malfunctions of network and security system interface

Network and interface malfunctions can be located by the following, extended test and diagnostic possibilities.

14.3.1   Locating network malfunctions (through operating system level)

1.   Determine the TCP/IP address of the computer as follows:

-        Open the *Installed network software* dialog box through *Start/Settings/Control Panel/Network*.
-        Select the *Protocols* option, then *TCP/IP*.
-        Click on the *Properties* button. You can read the network address under which the particular computer is entered with the other computers of the network. Note this address.

2.   Start the ping program to check the network as follows:

-        Open DOS command entry through *Start/Programs/MS-DOS Prompt*.
-        Enter the command to start the ping program and the TCP/IP address of the local PC, eg "ping 150.010.098.004".
-        Start the ping program also with the TCP/IP address of the remote PC with which you want to check the network.

The network is only functioning correctly if you receive a positive response to both calls.

14.3.2 Locating security system interface malfunctions (through RUBIN level)

1. Open the ***Security system interface*** window from the RUBIN user interface by pressing keys Ctrl+D. The window appears at the bottom right margin. (Press Ctrl+D again to close this application.)

2. Right click on the double arrow icon ⬄ in the status bar at the bottom right corner of the screen.

3. Left click on ***Interface analysis***. The ***Interface monitor*** dialog box opens.

    This enables you to view the following recordings:

    a) Internal telegram traffic
    b) Interface protocols
    c) Data of acknowledgement management
    d) Active connections

> **!** **Attention:**
> **You cannot close the *Interface monitor* dialog box by clicking on its system menu box. This would produce a crash.**
> **You must close it by clicking on *OK* when the *No debug function* option button is active.**

a) Display of internal telegram traffic

▪ Click on the ***Telegram window*** option.
▪ Click on the required telegram types and then on ***OK***. The internal telegram traffic appears onscreen.

b) Display of interface protocols

▪ Click on the ***Protocol window*** option.
▪ Click on the required interface SST_1 or SST_2 and then on ***OK***. The particular 4a protocol as seen by RUBIN appears onscreen.

Note:
For more accurate analysis of telegram traffic, you can divert the protocol display into a file by selecting the ***Protocol file*** option. But you should only activate this function for a short time if possible because it slows down the process very much and fast exceeds harddisk capacity.

c) Display of acknowledgement management

▪ Click on the ***Acknowledgement management window*** option.
▪ Click on the required interface SST_1 or SST_2 and then on ***OK***. All messages not yet fully processed for the particular interface appear onscreen.

d) Display of active connections

▪ Click on the ***Active connections*** option. All active connections to local (internal) and remote (external) processes or computers appear onscreen.

End of diagnosis
- Close the *Interface monitor* dialog box **only** through the *No debug function* (see above).
- Hide the *Security system interface* application by again pressing keys Ctrl+D on the RUBIN user interface.

14.4   Spare parts

If a module replacement or repair is necessary to correct a malfunction caused by a hardware defect, return the defective part to the following address:

> Bosch Telecom
> ST/FVA24
> Reparaturannahme
> Robert-Koch-Str. 100
> D-85521 Ottobrunn

You can find further details in after sales information KI-7. To find out more about this, contact department ST/PMS at Bosch Telecom in Ottobrunn.

Make sure that all unusable and unrepairable components of the RUBIN system are correctly disposed of.

---

15 Technical data

For technical data not stated below, refer to the documentation/data sheets accompanying the equipment.

15.1   Computer (Bosch ST-PC J9/10 - 4.998.114.823)

Processor	AMD Athlon 1.2 GHz
Operating system	Windows NT 4.0, service pack 6a or XP
Level 2 cache	512 KB, pipeline burst
Bus	133 MHz frontside bus
Main memory	256 MB 168-pin DIMM SD-RAM
Harddisk	40.1 GB
Graphics card	AGP card 32 MB RAM
Controller for disk drives	master enhanced IDE
Connections (rear)	▪ mini-DIN mouse
	▪ mini-DIN keyboard
	▪ parallel interface 25-pin for printer and dongle
	▪ two buffered serial interfaces 9-pin for subsystems (security system, telephone, etc)
Parallel interface	normal, EPP, ECP, EPP+ECP
Expansion slots	6 x 32 bit PCI
	1 x AGP
Frame for magnetic tape drive	4 mm DAT tape
Power supply	
▪ Input voltage	100 to 120 Vac and 200 to 240 Vac with 50/60Hz (manual switchover)
▪ Power consumption	50 W (typical)
▪ Power rating	400 W
Weight	approx. 12 kg (w/o keyboard and monitor)
Dimensions (HxWxD)	approx. 41 x 19 x 46 cm
Shelf temperature	233 to 343 K (-40 to 70°C)
Relative humidity in storage	8 to 80%
Operating temperature	278 to 313 K (5 to 40°C)
Relative humidity in operation	15 to 80%

15.2 Printer dimensions

Refer to the accompanying documentation for
- Log printer (matrix)
- Alert printer (B&W, laser)
- Alert printer (color, ink-jet)

15.3 Monitor dimensions

Philips 17"
WxHxD:	417 x 432 x 467 mm
Weight:	18 kg

Philips 19"
WxHxD:	485 x 490 x 515 mm
Weight:	24.5 kg

15.4 Interface converter OVS

Voltage:	230 V (-15/+10%)
Frequency:	50 Hz
Current consumption:	approx. 30 mA
Loop current:	max. 10 mA
Transfer rate:	max. 19200 bit/s
Range V.24:	max. 15 m
Range current loop:	max. 1000 m
Fuse protection:	slow-blow (T50) fuse link
Ambient temperature:	273 to 323 K (0 to 50°C)
Dimensions (WxHxD):	155 x 65 x 200 mm

15.5 Optical waveguide converter GO 232 M, GO 232 F

Voltage (for plug-in power supply):	230 V ($\pm$10%)	
Power consumption:	5 W	
Max. transfer rate:	19200 bit/s	
Range:	max. 100 m	
Ambient conditions:	temperature:	278 to 323 K (5 to 50°C)
	relative humidity:	10 to 90% (non-condensing)

15.6   Modem U-1496EG+

Plug-in power supply
Voltage:	230 V (-15/+10%)
Frequency:	50 Hz
Output:	21 V/900 mA

Modem
Voltage:	21 V
Current consumption:	380 mA
Power consumption:	8 W

Transmission route:	public telephone network or two-wire dedicated line
Transmission method:	full-duplex CCITT V.32/9600 bit/s
Transmission mode:	asynchronous buffered
Max. transfer rate:	19200 bit/s
Modulation:	TCM, TCM/QAM (V.32)
Carrier frequencies:	upper channel: 1200 Hz, 1700 Hz lower channel: 1800 Hz, 2400 Hz
Transmit level:	0 to -15 dBm (max. setting -6 dBm on two-wire dedicated line)
Receive level:	0 to -43 dBm
Interface:	V.24/RS-232-C
Connector:	25-pin SUBD (female) DTE/EIA Z32D
Operation:	manual from terminal by AT commands
Controls:	Data/Voice (momentary-contact switch) Ans/Org (arresting switch)
EMC proofing:	to IEC 801
Safety class:	IP
BZT approval:	A 105476 D
Weight:	approx. 0.8 kg
Dimensions (WxHxD):	253 x 41 x 169 mm

15.7   Video switch VU 16

Plug-in power supply

Input:	230 Vac, 50 Hz, 55 mA
Output:	5 Vdc, 600 mA

Video switch (no equipotential connection to PC)

Input:	see plug-in power supply
Output:	5 Vdc, 200 mA
PC interface:	serial V.24
Connection to PC:	SUBD (9-pin), standard cable
Number of connected cameras:	
	max. 16 camera inputs, 1 video output
Picture rate:	max. 50 frames/s (= 25 pix/s)
Ambient conditions	tested to DIN EN 60068/VdS 2110
Temperature:	268 to 313 K (-5 to 40°C)
Relative humidity:	max. 93%
Dimensions (WxHxD):	140 x 185 x 50 mm

16 Abbreviations

ANNE	interface power supply unit (BZ 500)
APP	interface board (periphery)
AVK	interface connections (compact)
AVM	interface connections (modular)
CCITT	International Consultative Committee for Telegraphy and Telephony
EAPS	user program software
EDI	editor
EPC	single-board computer
GOM	push-pull optocoupler module
IDE	integrated drive electronics (interface standard by which harddisk controller is put onto drive)
ISA	industry standard architecture (system bus interface)
OVS	optocoupler V.24 interface
PCI	Peripheral Component Interconnect (system bus interface)
RUBIN	computer-aided operating and information system
SCSI	Small Computer Systems Interface
SDI	serial data in
SDO	serial data out
SGK	serial device interface
SM 20	interface module for 20 mA interface
SU 500	interface converter (NZ 500)
TCP/IP	Transmission Control Protocol/Internet Protocol
TESP	telephone feed
UESL	overvoltage protection for lines
UESS	overvoltage protection
Vac	alternating voltage
Vdc	direct voltage
VGK	V.24 device interface

BOSCH