



BOSCH

Invented for life

UGM 2020, Universal Security System

- ▶ **Combination of the different line technologies**
- ▶ **Combination of the line technologies within a module frame**
- ▶ **Combination of distress calls, fire alarms and other messages**
- ▶ **Combination of automatic and manual messages**
- ▶ **First detector identification**
- ▶ **Cross-grouping**
- ▶ **automatic, manual and timed activation of control groups**
- ▶ **Linking control groups connections**
- ▶ **project-specific display of group statuses**
- ▶ **free assignment of messages and/or addresses to control panels and printers**

The UGM 2020 is a control unit that processes the entire range of potential danger reports.

Dangerous situations such as fire, attack, intrusion, sabotage, technical malfunctions, house alarms etc. can be covered by this control unit.

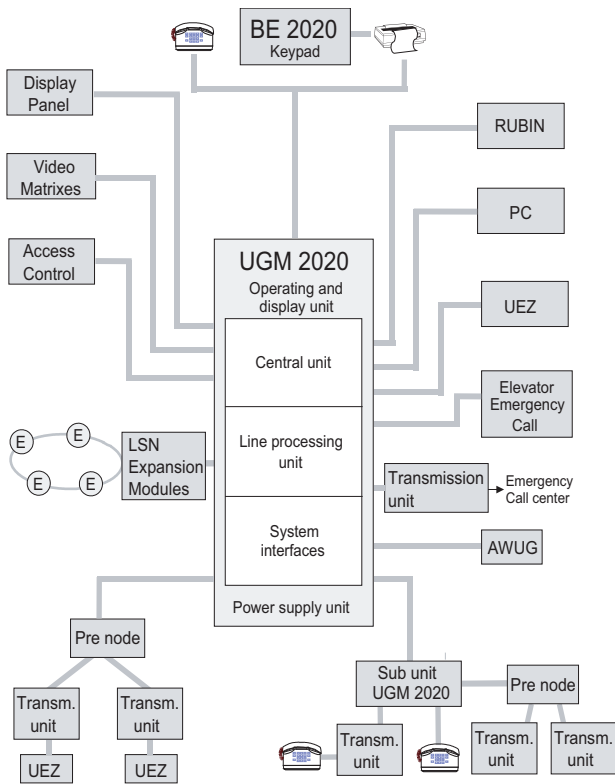
The UGM 2020 is suitable for LSN (local security network) bus technology, conventional DC technology (GLT) and frequency pulse line technology (FIT), and provides the functions of a transmission system in addition to all of the features of a security system.

Through a combination of display, operating and logging equipment, networking with other control units and the integration of access control systems and video matrixes, the UGM 2020 can be used to design an integrated or hierarchical security system that is adaptable to every object size and security task.

The UGM is designed in accordance with DIN VDE 0833 and have the following approvals:

- VdS approval as BMA: G 28530
- VdS approval as ÜAG (BWU): G 189 901
- DIBt approval: Z-6.5 1298
- ZZF approval: ZZF T2-8 no. 017/090g20

System Overview



E = LSN-Element (e. g. detector)

Functions

The UGM 2020 consists of five functional units:

- Central unit
- Line processing unit
- System interfaces
- Display and operating equipment
- Power supply unit

Central unit

In the central unit

- Pre-processed alarm group information analyzed and linked
- switching and control commands are transmitted
- message forwarding to a help service (e.g. police, fire brigade, plant service) is organized
- interconnection to an operating station telephone is facilitated
- data exchange between the control unit and control panel and the control unit and system interfaces is processed (e.g. when connecting slave control units or file and information systems)
- the power supply is monitored
- internal clock time is generated.

The central unit basically contains the control unit processor EPC, the control unit interface UZI and the interface for connecting external areas IEB/AEB.

EPC

The EPC is a single module computer and has

- a program memory consisting of EPROMS in which the control unit operating system is stored
- a working memory consisting of RAMs where current data is stored. Project specific elements are stored in PEROMs. (If the PEROMs are insufficient for the project section, the memory capacity can be expanded by connecting the USP memory board of the universal security system, e.g. to integrate project-specific display and printer texts).

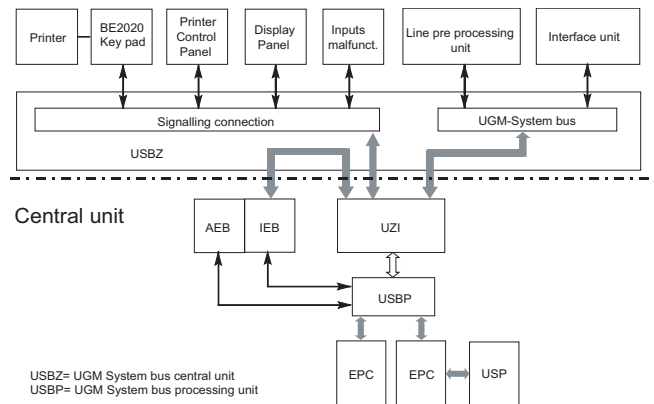
UZI

The UZI control unit interface of the universal security system contains the input and output switches used to process data exchange with all group processing units and interfaces. Control panels and panel items are also activated via the UZI.

IEB/AEB

The interface for connecting external areas is used to record and control the systems connected to the AEB. These can be transmission devices, control functions or DC lines. In addition, the interface generates peripherals messages that, for example, execute the functions 'Switch day/night mode' or 'Reset sabotage lines'.

Overview of the central unit components

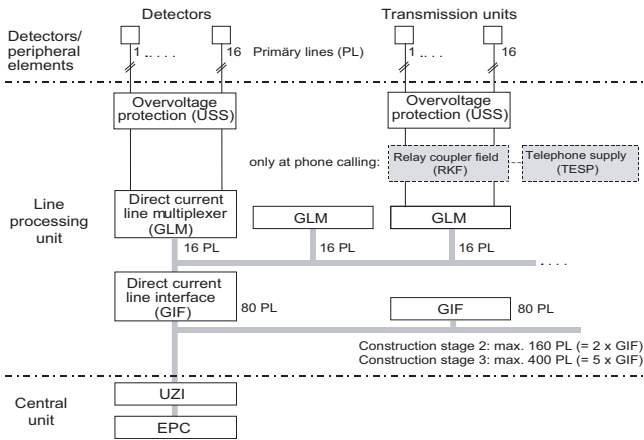


Line processing unit

In the line processing unit, all information exchanged between the detector peripherals and the central unit of the UGM 2020 is pre-processed. The line processing unit is constructed differently according to the line technology used (LSN, GLT or FIT).

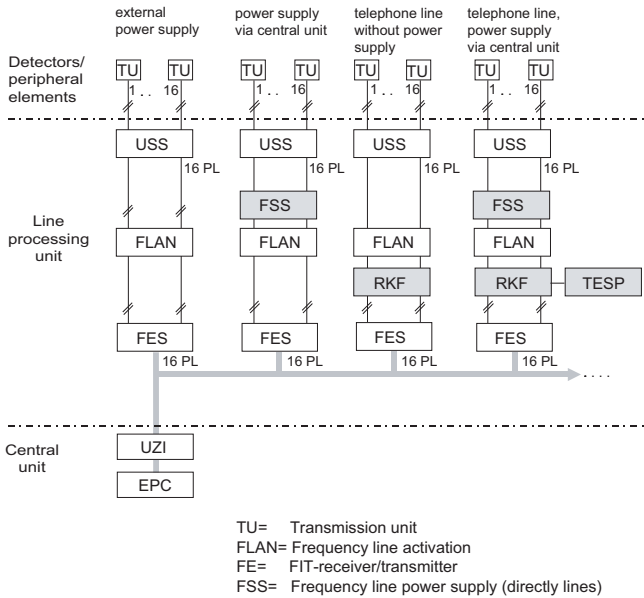
Line processing unit for GLT (DC circuit technology)

In GLT, the individual detectors are linked with the control unit via a wire pair. The primary lines are monitored according to the standby current principle, i.e. every value deviating from the quiescent current is converted into a message. Only one detection criterion can be transmitted at a time.



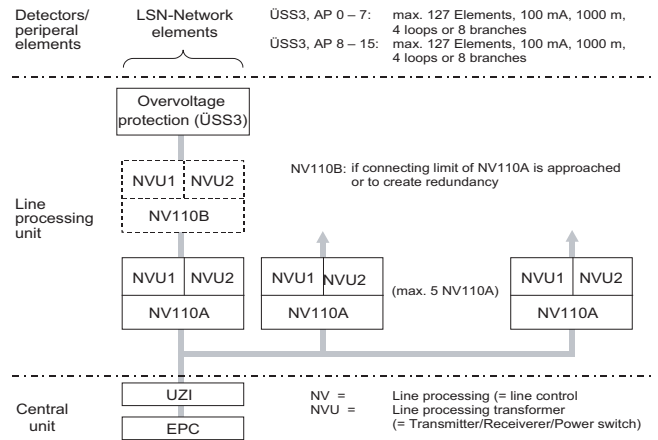
Line processing unit for FIT (frequency pulse circuit technology)

In FIT, transmission equipment is linked with the control unit via a wire pair (that do or do not conduct a DC current). Messages are transmitted in the form of frequency impulses of differing lengths. Up to 5 detection criteria (standby criterion plus 4 additional criteria) can be transmitted.



Line processing unit for LSN bus technology

In LSN bus technology, all detection, control and other peripheral elements are connected to the control unit with fewer lines using a single transmission technology developed especially for danger reports. For LSN, this is a digital, bi-directional transmission procedure that works on the master/slave principle. It permits the formation of loop and/or stub lines in the security network and the transmission of any number of detection criteria.



System interfaces

The UGM 200 has the option of a range of parallel and serial interfaces. The number of these depends on the stage of extension and system configuration. The interfaces are programmed in the program memory of the central unit of the UGM 200.

Parallel interfaces

Parallel interfaces are used

- for unmonitored switching (e.g. a display panel) Implementation is possible
 - via potential-bearing transistor outputs from the ATBL module (panel connection) or optionally by using relays (RTBL)
 - via potential-bearing transistor outputs from the AEB/IEB module (external area connection/ external area interface) or optionally by using relays (RAEB)
 - in the case of the LSN, also via the outputs from an LSN coupler
- for monitored control (e.g. a detector) with or without feedback Implementation is possible
 - via DC lines (GLT line processing) in conjunction with the SER external control relay
 - by relay connection with RAEB on the AEB/IEB module, which can be used instead of open collector outputs (see above)
 - in the case of the LSN, also via the outputs from an LSN coupler
- to activate a transmission unit Implementation is possible
 - via DC lines (GLT line processing)
 - in the case of the LSN, also via the outputs from an LSN coupler
 - via FIT line processing
 - directly via the 8 transmission unit connection options of the AEB/IEB module.

Switching/controlling is performed using relay kits with which can be addressed by each functional unit.

Serial interfaces

The following connections can be established using the serial interfaces:

- UGM 200 - UGM 200

- UGM 2020 - Slave control unit (e.g. UEZ)
- UGM 2020 - BE 2020 operator panel
- UGM 2020 - printer
- UGM 2020 - automatic telephone dialer (e.g. AT 2000)
- UGM 2020 - management system (RUBIN)
- UGM 2020 - subsystems (e.g. access control systems, video systems etc.).

There are two types of interface hardware in the UGM 2020 for this purpose:

1. SGK serial device coupler
The SGK has a serial interface (for connecting UGM UGM or UGM workstation) that can be configured using bridges for the functionality in accordance with
 - V.21
 - V.24/RS 232 or as
 - an opto-coupler line.
2. SGKX serial device coupler
The SGKX has a V.21 interface for connecting the UGM 2020 to analogue telephone networks. With this, SGKX can be used to
 - establish dialup connections (Telim and Bosch procedures)
 - connect analogue telephone dialers (e.g. AT 2000) and thereby achieve control unit networking and message distribution.

Display and operating equipment

BE 2020 control unit

The UGM 2020 is entirely operated using the BE 2020. On this control panel

- all danger reports and information on system statuses enter the system
- switch/control processes are initiated and the panel is reset
- telecommunications connections are established
- messages can be distributed systematically to multiple control panels as they are received in larger control units of the universal security system, e.g. sorted by group addresses or processing criteria (only test messages, only distress calls, only malfunction messages etc.)

Depending on the upgrade level, the BE 2020 is either a separate tabletop model or a built-in model for integration.

DR 2020 T printer

The UGM 2020 printer is used to

- register all status changes and operating procedures
- all messages are logged with the date, time, message type, message group number and message number
- messages can be distributed systematically to multiple printers as they are received in larger UGM control units, e.g. sorted by group addresses or processing criteria (only test messages, only distress calls, only malfunction messages etc.)

Printer malfunctions and low paper levels are indicated on the BE 2020 control panel.

The printer can be connected as a tabletop model directly to the BE 2020 or directly to the central USM system bus (USBZ) in the universal security system cabinet as a built-in model.

The DR 2020 T is a thermal printer.

Power supply unit

The power supply unit for the UGM 2020 consists of

- the MEV (modular power supply) which generates the voltage required as DC voltage
- multiple converter types that convert the DC voltage into a constant voltage for each user
- 24 V emergency power supply.

The power requirement of each UGM configuration is estimated using the UGMPRO planning program, which calculates the following values:

- Overall power requirement of the system
- Required number of MEV modules
- Required number of converter types
- Requirements for battery capacity taking the individual bridging times into account.

Certifications and Approvals

Region	Certification
Germany	VdS-S S28530 BS UGM 2020 B
	VdS G 204131 UGM 2020B
	DIBt Z-6.5-1631 (B) FSA 2020 LSN
	Z6.5--1631 (E) FSA 2020 LSN
	Z-6.5-1298 (E) FSA 2020 GLT
Europe	Z-6.5-1298 (E) FSA 2020 GLT
	CE UGM2020 level 2
	UGM2020 level 3
	CPD 0786-CPD-20820 UGM 2020 B
	MOE UA1.016.0107652-05 BZ 500, UEZ 2000 B, UGM 2020 B

Country	Certification / ID number	Labeling
Russia	POCC AT.OC 03.B00123	russian
Hungary	BM TOP / 1178-9/99	hungarian
Belgium	BOSEC TCC 2 - 285/286	french

Installation/Configuration Notes

The UGMPRO software is available for planning and quantifying a UGM 2020.

The appropriate version can be called up via the Bosch intranet.

VdS

According to VdS stipulations, the following must be considered in the UGM 2020 for fire:

- BE 2020 control panel must be built into the control unit. If the BE 2020 can only be installed externally, it must be operated in redundancy, i.e. there must be a second external BE 2020.
- Connect control panels that are not included within the control panel housing using fiber optics
- In FIT, the use of one detector group is permitted.
- If more than 512 detectors are connected, processor units must be doubled up, these being:
 - EPC central processor (per central unit)
 - GIF group processors for GLT lines
 - NV 110 network processor for LSN
(There is no doubling up of FIT elements.)
- The control unit has a standard 'Extinguish' interface for connection of extinguisher system control equipment. Connection may only take place after consultation with the builders of each extinguisher system.
When processor units are doubled up (see above), the fire detection control system is suitable for the activation of more than one extinguisher area. (For LSN, the NV 110 that activates the extinguisher system must be doubled up.)
- Alarm counters must be present
- An individual group display is required in accordance with DIN 14675.
- For power supply in the event of a mains failure, only VdS-approved batteries may be used.

Benchmark values for the LSN bus technology

Limit values of NV 110	First NVU of the NV 110	Second NVU of the NV 110	NV 110
System limits Connection of LSN-Elements	max. 127 LSN-Elements (LSN-E)	max. 127 LSN-Elements (LSN-E)	max. 2x 127 LSN-E
Permissible current	max. 100 mA	max. 100 mA	max. 2x 100 mA
Line length (Summary)	max. 1000 m	max. 1000 m	max. 2x 1000 m
VdS-Fire Connection of peripheral elements (PE)	Number of LSN-Elements of the first NVU + Number of GLT-Fire detectors of the first NVU	Number of LSN-Elements of the second NVU + Number of GLT-Fire detectors of the second NVU	
	Summary of PE of the first NVU + Summary of PE of the second NVU ≤ 512 PE		
Monitoring range of the detectors	max. 6000 m ²	max. 6000 m ²	max. 12 000 m ²
Line length as summary of all MPAs	max. 500 m	max. 500 m	max. 2x 500 m
Löschsatz	max. 1, no limitation with doubling the NVU		max. 22
VdS-Intrusion Connection of peripheral elements (PE)	max. 127 peripheral elements per each primary line (loop or branch)	max. 127 peripheral elements per each primary line (loop or branch)	for loops max. 8x 127 PE for branches max. 16x 127 PE
Connection of detectors	max. 20 detectors per each primary line		

LSN-Element = LSN-Coupler = LSN-Detector
 Peripheral element = LSN-Element = GLT-Fire detector = Intrusion detector = MPA
 (MPA = Parallel alarm display unit)

Requirement	Application	Fire	Intrusion
Dividing the NV 110 into loops and branch lines		Each processing unit NV 110 has two processing converters NVU with 8 connecting points each. An individual arrangement for loops and branch lines is possible. Each NVU enables <ul style="list-style-type: none"> - 1 loop or - 4 loops or - 8 branch lines or - 1 loop and 6 branch lines or - 2 loops and 4 branch lines or - 3 loops and 2 branch lines (Heed the limit values!). Due to the higher security of loops in opposite to branch lines should always loops be favoured.	
Connection limits		If the connection limit of a NV110 is reached, although the respective USS3 is not fully engaged, will with use of a further NV 110) the free connecting points at the USS3 engageable. The second NV 110 has to be placed in the module installation frame directly beside the first NV 110 . The first NV 110 will be named as "NV 110 A" and the second one as "NV 110 B" . The connection of both NV110 will supplied with the same ribbon cable to the same USS3 (see the following example).	
Melding of LSN-Couplers and LSN-Detectors		Melding of LSN couplers (interfaces) and LSN detectors is possible within a loop or branch line (not VdS).	
Serial interfaces		Attention: Danger of destruction! If a NV110 with the appendand 35V converter will be fitted in a cupboard, no VGS or VGK may be used. Serial interfaces have to be realized only with the SGK.	

Information on the connection of LSN peripherals can be found in the corresponding product chapter in this catalogue.

Technical Specifications

Environmental class	II, as per VdS 2110
Protection category	II, as per DIN VDE 0106 Part 1
Protection type (control unit)	IP 30 as per EN 60 529 (DIN VDE 0470 Part 1)
Electromagnetic compatibility	DIN EN 50 130-4 (VDE 08 130 Parts 1-4)
EMC interference emission	DIN EN 50 081-1

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