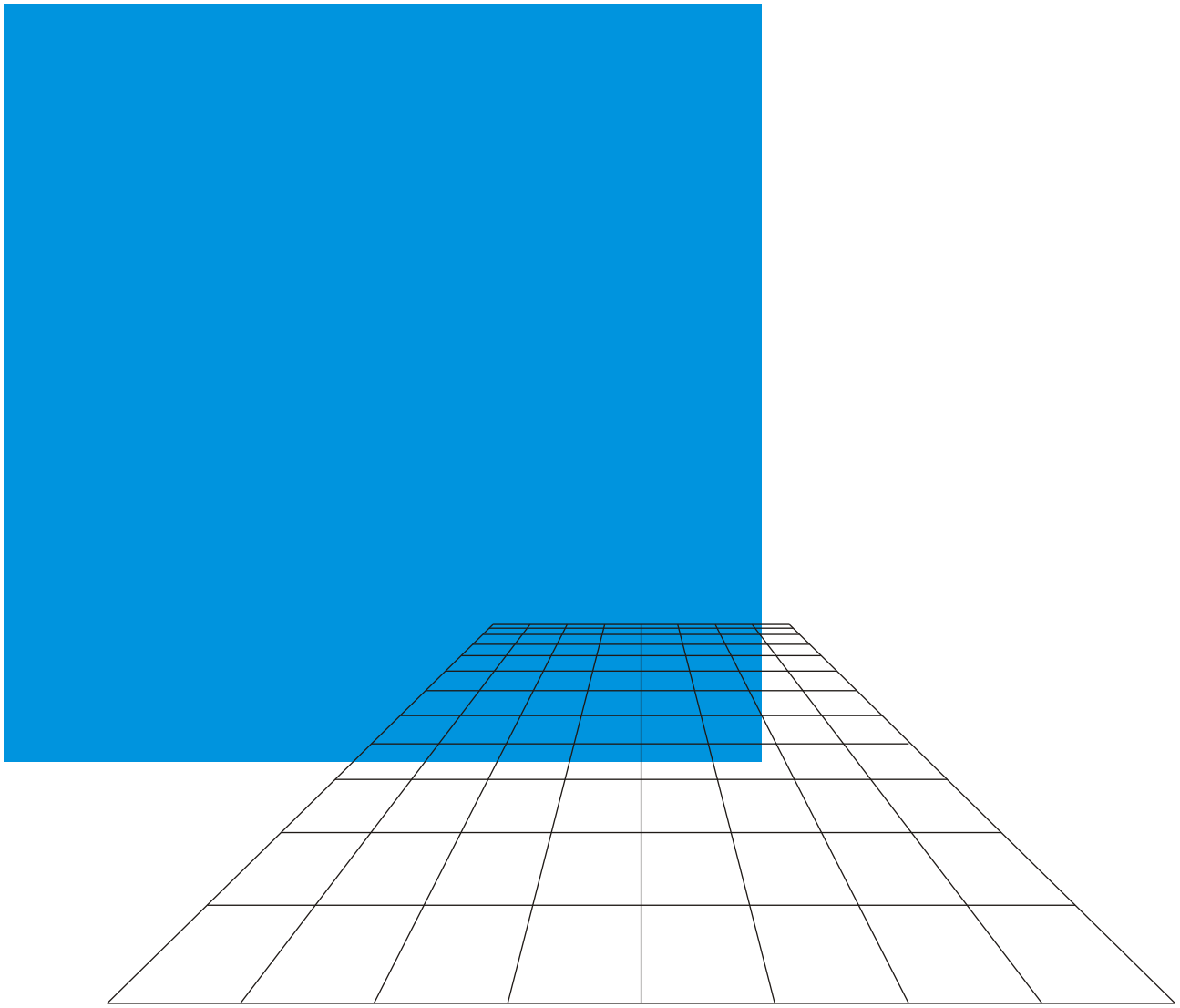
SIEMENS

Video Tracking Sensor System
TELEMAT MD/MTD



Application

TELEMAT MD/MTD and camera work like the human brain and eyes. The camera monitors the scene like your eyes, the TELEMAT MD/MTD localizes, evaluates and signals relevant changes automatically like your brain. Applications range from classical monitoring tasks outdoors such as monitoring of fences or protection of grounds up to tasks associated with production control and quality assurance. Unmanned outstations can be monitored reliably and cheaply using TELEMAT MD/MTD. The alarm pictures are transmitted e.g. via ISDN lines using the TELSCAN digital transmission system to permit verification by the user.

TELEMAT MD/MTD supports the security personnel by providing electronic reliability round the clock: 24 hours a day, 365 days a year.

Mode of operation MD

The TELEMAT MD digitizes the picture from the video camera and stores this as a reference picture. All subsequent video pictures are compared with this reference. Continuous monitoring is ensured since this comparison is carried out with each frame, i.e. 25 times per second. An intelligent evaluation algorithm then decides whether a change in picture is relevant and should therefore lead to an alarm. The user can easily program which zones in the original picture are to be classified as "dangerous". The video picture consists of over 4000 image fields and thus permits marking of the area to be monitored with exact definition of contours. Objects which trigger an alarm are brightened-up on the monitor and remain displayed in this manner until acknowledged.

Mode of operation MTD

The TELEMAT MTD reacts to changes in scenes, localizes them, and evaluates them. It guarantees continuous monitoring by carrying out 25 evaluations of the scene per second. The scene to be monitored is marked and activated using the mouse.

An intelligent evaluation algorithm analyzes changes in the scene. TELEMAT MTD decides whether these are relevant changes (an object) or non-critical changes, e.g. a change in illumination.

Detected objects are marked and traced. An alarm is only triggered if certain limits defined by the user are violated.

The object is traced further and marked following triggering of an alarm up to acknowledgment.

Design

The TELEMAT MD/MTD is accommodated in a 19-inch subrack of 3 height units. The subrack provides space for a power supply unit, 10 monitoring modules and 2 supplementary modules. Data management between the TELEMAT MD/MTD and PC is handled by the data concentrator. A data concentrator supports up to 30 monitoring modules.

The TELEMAT MD/MTD module has an extended Eurocard format. Each module has 1 video input and 3 video outputs. One output is hard-wired to a BNC socket, the other two can be connected to a bus by the software. Each module has 2 floating inputs via opto-isolators and 2 floating relay outputs. A power supply of DC +5 V is sufficient.

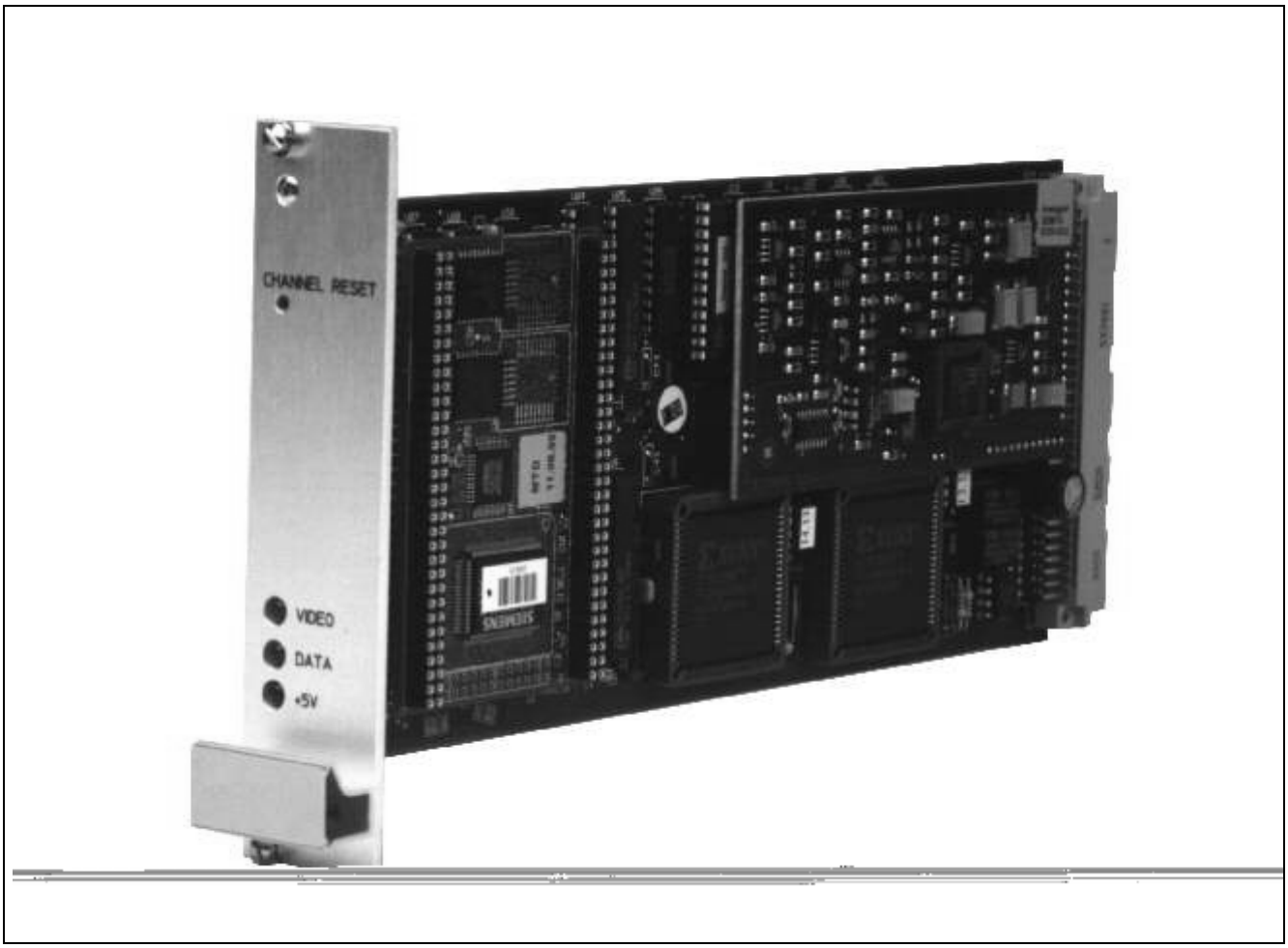


Fig. 1: TELEMAT MD/MTD monitoring module

Possible TELEMAT MD/MTD system configuration

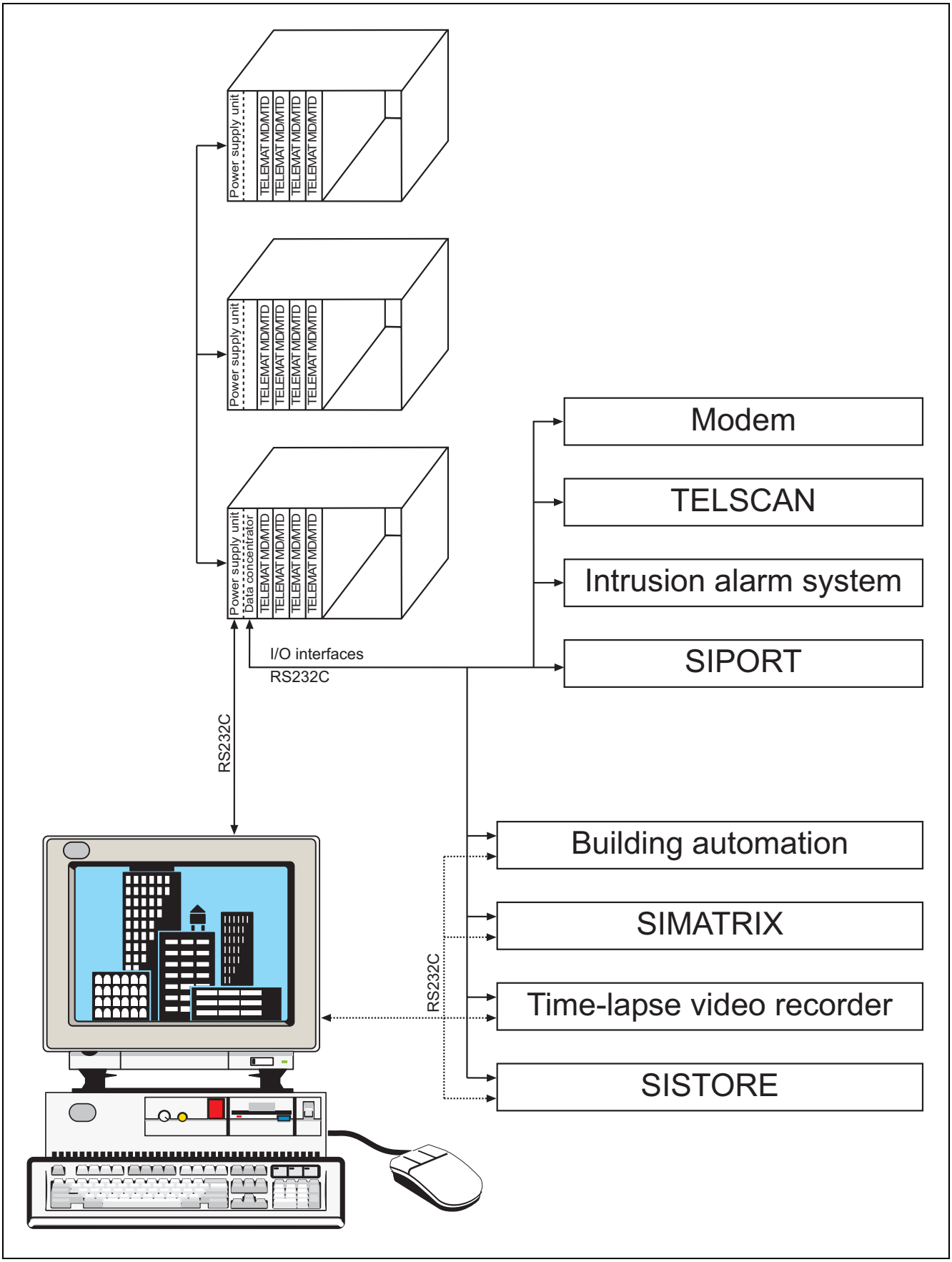


Fig. 2: Example system configuration

Technical data

TELEMAT MD/MTD monitoring module

Operating voltage	DC 5 V ± 5 %
Video standard	Convertible
CCIR/PAL	625 lines, 50 fields/s
EIA/NTSC	525 lines, 60 fields/s
Video input	U_{pp} = 1 V ± 25 % into 75 Ω
Video output	U_{pp} = 1 V ± 25 % into 75 Ω
Video bandwidth	10 MHz
Status inputs	2, floating via opto-isolators
Status outputs	2, floating via relays
Signal/noise ratio	65 dB
Temperature of use	0 °C to +50 °C
Dimensions (W x H x D)	6 modular spacings x 3 HU x 230 mm

TELEMAT MD/MTD video tracking sensor system

Comprising:
- Subrack
- Power supply unit
- Data concentrator [1)]
- Max. 10 monitoring modules

Video standard	Convertible
CCIR/PAL	625 lines, 50 fields/s
EIA/NTSC	525 lines, 60 fields/s
Video input (per module)	U_{pp} = 1 V ± 25 % into 75 Ω
Video output (per module)	U_{pp} = 1 V ± 25 % into 75 Ω
Video buses	2, with one output each
Video bandwidth	10 MHz
External interfaces	1 x RS485, 2 x RS232C
Alarm picture storage unit	
Resolution	640 x 256 pixels
Size	32 pictures
Status inputs	2 x per module, floating via opto-isolators
Status outputs	2 x per module, floating via relays
Signal/noise ratio	65 dB
Crosstalk attenuation	60 dB
Transmission loss	0 dB
Temperature of use	0 °C to +50 °C
Power supply	230 V ± 10 %, 50 Hz, ca. 300 mA
Housing dimensions (W x H x D)	19 inch x 3 HU x 300 mm

[1)] Max. 30 monitoring modules, i.e. three completely fitted subracks, can be operated with one data concentrator.

I/O card

Number	Max. 1 per subrack
Status inputs	14, floating via opto-isolators
Status outputs	10, floating via relays

Minimum requirements for computer hardware if PC is only envisaged for commissioning

Processor	Pentium
Main memory	16 Mbyte
Hard disk	1 Gbyte
Interfaces	1 x serial for TELEMAT MTD connection
Diskette drive	3½ inch
Monitor resolution	640 x 480 pixels (800 x 600 pixels recommendable)
Mouse or trackball	

Computer software requirements

Operating system	Windows 3.11 (MS-DOS 6.0), 95, 98 or NT
Graphical user interface	Windows 3.11, 95, 98 or NT

Ordering data

Designation	Order No.	Approx. weight in kg
TELEMAT MD/MTD video tracking sensor system 19-inch subrack, with data concentrator, power supply unit without monitoring modules (max. configuration 10 monitoring modules)	**2GF6111-8AF**	3.5
Commissioning/parameterization software for commissioning and parameterizing the TELEMAT MD/MTD, without IVM NT system 3½-inch disks, for Microsoft Windows 3.11, 95, 98 or NT	**2GF6111-8AJ**	
IVM NT graphical user interface for convenient configuring, parameterization and operation of the TELEMAT MD/MTD system	**on request**	
Extensions		
TELEMAT MD monitoring module with one monitoring channel	**2GF6111-8AB**	0.35
TELEMAT MTD monitoring module with one monitoring channel	**2GF6111-8AG**	0.35
TELEMAT MTD monitoring module with one monitoring channel, with alarm picture storage unit for 32 pictures	**2GF6111-8AK**	0.4
TELEMAT MD/MTD I/O card with 10 floating inputs via opto-isolators and 10 floating outputs via relays	**2GF6111-8AC**	0.22
TELEMAT MD/MTD video sensor system extension 19-inch subrack, with power supply unit, without monitoring modules (max. configuration 10 monitoring modules)	**2GF6111-8AH**	3.1

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