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Planning assistances

Safety modules
for galleries and museums

Contents

1. Introduction

Since 1992 SCHMEISSNER GmbH has been developing and offering security technology components and systems for the security of valuable pictures, showcases and museum objects. In combination with burglar and hazard alarm systems, these components and systems monitor valuable works of art and buildings to protect them from theft and vandalism.

High demands are placed on professional sensors with regard to operational safety and non-manipulability. This is confirmed by certification according to German and European standards.
Security systems in museums, cultural agencies and the private area must meet certain special requirements.
They must be as invisible as possible and work with the highest level of reliability. Continuous repairs and excessive servicing stand in the way of normal business and are therefore undesirable.

Modern sensor technology can be, to some extent, organised to think along your lines. In particular, our picture protection system BMS1 can be programmed to react much more sensitively at night than during the daytime, thus taking account of the “turbulence” engendered by a large number of visitors.

The combination- and showcase detector VM4 can be adapted on surrounding per sensitivity adjustment and configuration of the sensors, that can be protected different showcases.
High value sensor and detectors assist the museum staff.

These are just two examples of intelligent sensor systems. On the following pages we present our complete range of sensors and systems for protecting valuable works of art and buildings.Special detectors will also be presented. These detectors will help you to solute special applications on a very easy and effective way.

With this brochure we give expert planers, installers and also for customers an overview of possibilities for protecting of valuable art objects and other objects.

Further information and datasheets for the presented products are available under www.schmeissner-gmbh.de or per direct request to us.

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2. Picture and object security systems

2.1 Electronic picture protection system BMS 1 (rail system)

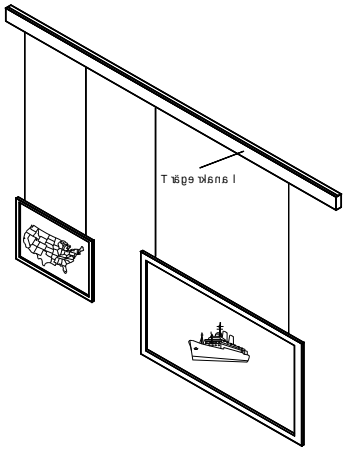
VdS-Class C, G 193 047

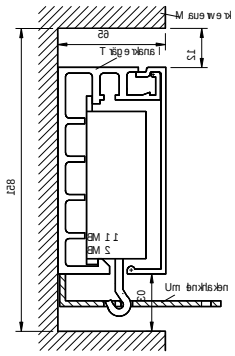
areas of application	The picture protection system BMS 1 is designed to monitor art objects for example paintings, ceramics, arms, tapestries, carvings etc. A carrier system combines the demands of museums and galleries for an unobtrusive hanging of pictures on thin wires with an almost invisible system of sensors, distributors and wiring. It can be connected to the existing alarm system or to the VAG 2 alarm unit.
functional description	Especially for museums, galleries and exhibitions, the system is a valuable addition to area and building detector systems since it can remain active during public visiting hours and so provide for maximum monitoring. Depending on the value of the object to be protected, the electronic picture sensor system BM 1.1 can be installed which can detect whether the object is touched, moved or taken down or the electromechanical picture sensor system BM 2 which can detect if the object is taken down. For monitoring in VdS class C the electronic picture sensor system BM 1.1 must be used.
additional components	The electronic picture protection system BMS 1 can be used for the extensive equipment of museums, galleries, exhibitions etc. It includes the following major components:

BM 1.1	electronic picture sensor
BM 2	electromechanical picture sensor
BMH 1	blind hook
BMD 1	wire ∅1 mm, length 4 m
BMD 2	wire ∅2 mm, length 4 m

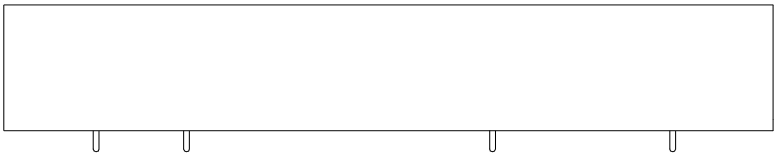
When using the hanging system:

BMTS 1	hanging rail 3 m
BMTE 1	Final piece for BMTS 1
HW 1	keeping angle with sabo- contact
HW 2	keeping angle with sabo- contact

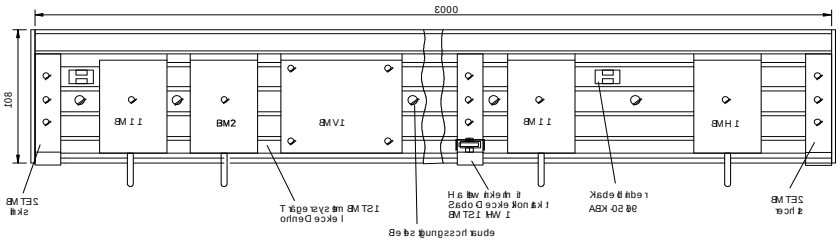




built in mounting of the carrier channel



carrier channel closed



channel open

carrier

technical data:	electronic detector BM1.1	
	supply voltage:	9 – 16 V
	power consumption:	≤ 8 mA (at12 V)
	alarm level:	adjustable / day- night switch
	alarm outputs:	relay ≤ 16 V / 100 mA transistor output
	telecommand inputs:	2
	VdS-Class / Nr.	C / G 193 047

2.2 RSI-sensors (capacitive security system)

VdS-Class C, G 109 084, Cx-16

VdS Class C, G 110 086, Cx-1

areas of application

Capacitive indicators are used for protection of paintings, showcases, steel boxes or safes. Furthermore, they inhibit tries of intrusion and defend terror attacks and can be also applied for secure outdoor fences as well as other applications. Capacitive indicators cover the object to observe in a weak electrical field. Anything that enters changes the measurement field. The crossing of an adjustable level causes an alarm message.

functional description

The capacitive indicator Cx detects the capacity by measuring the frequency as well as the conductance by measuring of the absorbed energy of the electrical field. Both values are physical independent. The electrical conductance gives information about the status of the electrode. However, more important is the resulting sabotage protection. Even by a professional attack with adaptive external power supply a message is caused. In this case external energy is supplied which will be detected by the conductance criterion.

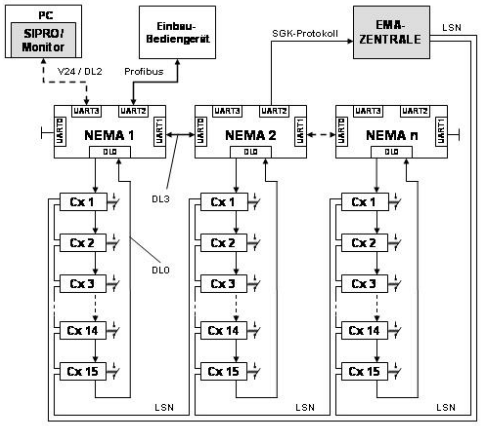
functional description

Within a system the Cx- capacity indicators are connected in a sequence RS422 communication line. With the communication device “NEMA” and the software “SIPRO” the system can be easily started up and configured. The Cx- capacity indicators include two channel terminals. Upon addition of an active 4-fold or 8-fold channel multiplexer the device can be expanded to 8 and 16, respectively, independent measurement circuits. Every circuit and every signal can be identified and adjusted individually.
All capacity indicators possess an integrated local security network (LSN) connection for indication. In addition they have galvanic isolated outputs and a RS-422 interface.

technical data:	RSI-sensors (capacitive security system)	
	supply voltage:	9 – 28 VDC
	power consumption:	17 mA at 12 VDC
	temperature range:	0 – 50 °C
	working frequency:	22 – 28 kHz; 32 adjustable steps
	frequency resolution:	3 ppm (0,08 Hz)
	frequency long-time drift:	< ± 8 Hz
	dynamic triggering sensitivity:	> 0,005 %
	static triggering sensitivity:	> 0,02 %
	reaction time:	120 ms (2 circuits); 171 ms (8 circuits); 322 ms (16 circuits)
	sabotage protection:	by detecting of adaptive external power supply
	interfaces:	LSN; RS422; galvanic isolated outputs
	installation:	DIN- top hat rail mounting (Cx); wall fastening (Dx)
	protection class:	IP65 (Dx)

additional components

Cx-1	capacitive indicator; 1 measuring circuit
Cx-16	Capacitive indicator for 16 measuring circuits (in combination with multiplexer)
KW-8	4-fold channel multiplexer
NEMA	communication device for networking, operation and parameterisation of the capacitive indicators Cx/Dx
SIPRO	start up and operating software



2.3 WOSS (wireless object security system)

areas of application

The transponders are used to protect object art like paintings, vases, sculptures etc. against privation and showcases against opening. For example it is also possible to supervise temperature or humidity in show cases.

functional description

The system "WOSS" shows its strength especially in such cases where with small installation expense e.g. at theft or vandalism of static positioned objects an alarm shall be set .The receiver analyses the information of the on objects fastened transponders over a large distance. The receiver uses a relay interface (sum alarm) or a configurable relays module as well as a serial interface for output alarm messages. With the software WOSS-SW is the single identification possible on PC at in house Ethernet or W-LAN on Tablet-PC. All transponders have acceleration sensors which inhibit any tries of manipulation and burglary of the secured object. Special transponders can be used to control the climate (temperature and humidity) as well as the opening of showcases. On the software "WOSS-SW" is the visualisation as well the logging of the protected objects. The working of several receivers on USB interface or Ethernet network as well as the client/server principle of the software enables a usage of the system in large exhibitions. Internal attacks will limited because of different authorisation in the software.

technical data:	WOSS (wireless object security system)	
	receiver	
	supply voltage:	12 - 24 VDC ± 20 %
	power consumption:	max. 50 mA
	housing:	ABS, light grey
	reading distance:	30 m (subject to the constructional environment)
	frequency range:	433,05 434,79 MHz / 868,00 870 MHz
	channel raster:	50 kHz
	sensitivity:	-100dBm
	noise radiation:	after I-ETS 300 220
	interfaces:	relay (sum relay for alarm and sabotage), serial interface
	temperature range:	5 … 60 °C
	housing dimensions:	154 mm x 89 mm 37 mm
	protection class:	IP54

	transponder	
	dimensions:	50 mm x 50 mm x 10 mm
	supply voltage:	3 V battery CR2450
	motion detector:	sensibility range: 50 … 150 mm/s^2, adjustable in 16 steps
	temperature measuring:	measurement range: 0 +45°C in 0,5 C steps accuracy:± 0,5 C at 25°C,± 2,25°C out of the measurement range
	humidity measuring:	measurement range: 10 90 % r.F. in 0,5 % steps accuracy: ± 3 % r.F.
	durability of the battery:	up to 5 years (transport or storage mode)up to 3 years (active mode)

additional components	Receiver	receiver for wireless communication with transponders, relay outputs for sum alarm, serial interface
	W-USB	USB-interface serial to USB
	W-IP	Ethernet-interface serial to TCP/IP
	TAG-BS	transponder with integrated motion detector and sabo-contact, adjustable sensitivity
	TAG-BK	transponder for connecting n.o.- contacts (incl. motion detector + tamper contact
	TAG-BU	transponder for wireless supervision of temperature and humidity (incl. motion detector+ tamper contact
	Software SW	administration and visualization software, administration of transponders and users, visualization of the monitored levels, advanced reporting, time control, applicable with Microsoft Windows from WIN7
	Demo version (shareware)	limited functions, with inserting the licence key changing in a full version
	Basic licence	For using with 1 pcs receiver and 50 pcs tags
	Extension licence	every additional 1 pcs receiver and 50 pcs tags
	WOSS-RLM	4-times USB Relay modul
	Tablet-PC	Windows Tablet PC Bluechip T10-E1

2.4 Picture and object security system BOSS

areas of application

The BOSS Picture and Object Security System monitors precious, wall-hung valuables and objects art such as paintings, ceramics, weapons, tapestries and carvings. It can also protect sculptures and other valuables and objects art.
Due to the small dimensions of the various rail systems and wall sensors, it can also be used in small museums and exhibits.

functional description

Especially for museums, galleries and exhibitions, the system is a valuable addition to area and building detector systems since it can remain active during public visiting hours and so provide maximum monitoring.
The slave terminal stations UZ 4, UZ5 and UZ 6 can be connected to intrusion alarm systems or to the VAG 2 alarm unit.
One outstanding feature of the BOSS system is that no kind of adjustment is required. The slave terminal stations make an automatic, optimised adjustment to the object to be protected.

slave terminal stations	UZ 4	UZ 5
supply voltage:	9…16 V DC	9…16 V DC
power consumption:	max. 10 mA	max. 8 mA
inputs for sensors: BM 4, SP1, SS2, RS 10	1 channel	4 independent channels
alarm lines		
sensitivity:	± 2 % of the on the sensor area reacting force	± 3 % and so on. ± 5 % of the on the sensor area reacting force; in 2 steps adjustable

slave terminal stations	UZ 4	UZ 5
weight per sensor:	after detector specification	after detector specification
Output alarm relay sabo relay OC-Transistor	 NC, 200V ;0,5 A 50 V, 0,5 A	 NC; max.30 V, 50 mA NC; max.30 V, 50 mA
alarm display:	1 LED	4 LED
alarm memory:	existing	existing, first alarm detection
telecommand inputs:	armed/disarmed, clearing memory by switching UB	armed/disarmed (clearing memory), reading memory / test
temperature range:	- 10 °C …+ 45 °C	- 10 ° C …+ 45 °C
temperature for storage:	- 20 °C …+ 40 °C	- 20 ° C …+ 40 °C
protection class:	IP 53	IP 53
environmental class:	II	II

additional components	slave terminal station UZ 4	with 1 relay input and 2 potential free relay output s (alarm and tamper line)
	slave terminal station UZ 5	with 2 relay inputs and 2 potential free relay output s (alarm and tamper line)
	picture rail BMS 2	for sensors BM 4 (active) und BM 5 (passive)
	round rail RS 16	for sensors RS 10 (active) und RSD 10 (passive)
	sensor plate SP 1	

Each slave terminal station can be connected with 4 sensors.

2.5 Optical picture protection PS

areas of application

The PS picture sensor is an opto-electronic sensor for the contact less protection of pictures, paintings or other objects against removal.

functional description

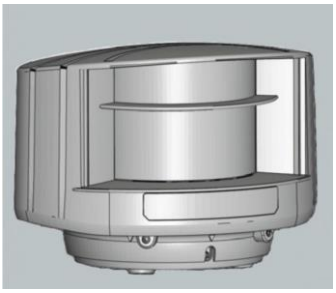
The PS picture sensor illuminates the side of the object turned towards it with infrared light and monitors the reflected radiation. The sensor automatically adjusts itself to the circumstances of use, works very reliably and is resistant to attempts at manipulation or deception. The infrared radiation does not damage the protected object in any way. There are three types from the sensor available,
with different alarm possibility.

technical data:	PS	PS-B	PS-F
operating voltage:	9 – 15 V DC	coin cell CR2450(3V/ 560 mA)	
current draw:	≤ 25 mA	11 mA	
dimension:	78 x 59 x 11 mm	78 x 59 x 11 mm	78 x 59 x 11 mm
VdS-number:	G 199 085, class C	without VdS certificate	
characteristics:	wired connection	self powered detector with integrated buzzer/stand alone	self powered detector with potential free relay (normal closed)for using with transmitters

2.6 Laserscanner LS10

operating range

The **Laserscanner LS10** is usable for survey of painting and other objects that can be protected by a curtain (e.g. pictures or tapestries as well as objects in an alcove and so on).
Due to unrestricted configuration of 2 independent detection fields, usage is even possible in difficult installation settings.



functional description

The system represents an additional supplement to the room and building surveillance especially in museums, galleries and exhibitions, because it can be, depending on the use case, stay activated even at official hours.
For instance a day/night mode is feasible by unrestricted configuration of both detection fields. Possible scenario: surveillance of wall area excluding door to allow visitor access at day and surveillance of wall area including door for additional protection against access at night.
An outstanding feature is the adjustment support by means of visible laser beams. An optimal alignment of the detection field is easily possible thereby. Configuration of the detector is done by IR remote control.

technical data	Laserscanner LS10	
	supply voltage:	10…35 V DC
	power consumption:	< 5W
	switch on peak current	1.8A (max.80ms @ 35V)
	detection range	max. 25 x 25m, 10x10 m @ 2% remission coefficient
	min. detected object size	2,1cm@3m; 3,5cm@5m; 7cm@10m; 17,5cm@25m / object distance
	technology	time of flight measuring
	alarm output	2 electronically relays (potential free) 35V DC / 80mA
	temperature range	-10°C – 60°C
	color	black or white
	cable length	up to 10m
	protection class	IP 65
	dimensions	125mm x 93mm x 70mm without socket
	mounting	installation socket

additional components	LS10 SW	laser scanner LS10 black, 10m cable
	LS10 W	laser scanner LS10 white, 10m cable
	LS10-MS	installation socket for LS10
	LS10-FB	remote control for LS10

2.7 Track & Slide (mechanical fastening and security system)

areas of application

By the chosen of different components the system “Track & Slide“offers a universal mechanical protection of paintings, which serves aesthetic and practical daily needs of any museum.

functional description

Generally, the track unit is mounted onto an object (in most cases a frame), and the slide unit is mounted to a wall. An adjustability screw in the track enables one to adjust the height of the painting following hanging, and without having to remove it from the wall. The T&S® system, which is surprisingly simple from a technical point of view, has additional, positive features. A horizontally placed security screw provides theft protection. For transportation, a special screw with a built-in buffer can be installed in the track, and then mounted to a transportation box. Further functions also have conservational advantages. For example, the hanging system as well as compatible units such as the extender allows for optimal air circulation behind the objects, and special, compatible storage screws enable objects to be easily hung onto storage room grids.

wall fastening	
Medium	height adjustment 7 cm, wire hanging, max. rec. load ≤ 100 kg, dimensions: 100 x 25 x 13 mm
Small	slide: adjustable horizontally or vertically, track can be turned following screw placement, max. rec. load: ≤ 80 kg, dimensions: 25 x 25 x 11 mm
Large	height adjustment 9 cm, rope hanging possible, breaking load ≈ 100 kg, measures 120 x 25 x 13 mm
Junior	height adjustment 2 cm, max. rec. load ≤ 60 kg, dimensions: 44 x 10 x 7 mm
Junior BU	max. rec. load ≤ 80 kg, dimensions 30 x 20 x 8 mm, useable for small frames
Junior M	height adjustment 3 cm, wire hanging, max. rec. load ≤80 kg, dimensions: 44 x 10 x 6 mm
wire hanging systems	
XS	height adjustment as needed, mounting holes, security screw, storage or wall hanging, dimensions 50 x 10 x 10 mm Ø 1,0 mm max. rec. load ≤ 10 kg Ø 1,2 mm max. rec. load ≤ 15 kg Ø 1,5 mm max. rec. load ≤ 25 kg
XSM	like XS, but wire diameter 1,0 mm ... 2,0 mm, max. rec. load ≤ 40 kg, dimensions 70 x Ø 18 mm
XSL	like XS, but wire diameter 1,5 mm ... 3,0 mm, max. rec. load ≤ 100 kg, dimensions: 90 x 25 x 20 mm
XSL-P	like XS, but wire diameter 1,0 mm ... 3,0 mm, max. rec. load ≤ 100 kg, dimensions 90 x 25 x 20 mm, can be moved with a pulley
Miscellaneous	
DS	rail + cover 300 x 38 x 12 mm,Al white
EK	end cap for double rail
SL	hook for double rail,wire Ø 1 - 2 mm

3. Showcase protection

3.1 Electronic showcase detector VM 4

areas of application

The VM4 showcase detector is a triple combination detector for protecting showcases and other cases to be protected against unauthorised opening, tampering and vandalism. The VM 4 showcases detector are designed for use in museums, art galleries jeweller's shops and shop windows.
Simple mounting, low current consumption and high reliability are its particular advantages.

functional description

The VM 4 showcase detector combines three operating principles – PIR motion detector, vibration detector and opening detector.
Further 3 external motion sensors can be connected. For the vibration sensor and the motion sensors the sensitivity can be adjusted by a software tool.
Thereby the manipulation or attacks can be detected very early.

Technical Datas	Electronic showcase detector VM 4
Operating Voltage	9 ... 16 V DC
Current Consumption without ext. PIR-Sensors	< 20mA
Remote control input	2
Tamper Contact	≦ 16V, ≦ 100mA
Magnetic switch	≦ 16V, ≦100mA
Magnet	AlNiCo 500; Ø 8 mm x 30
PIR – Sensor	1 x integrated (Sen4-5m), max. 3 external sensor
Current Consumption PIR – Sensor	< 5mA
Detection angle: Standard Typ (Sen4-5m) Typ for high sensity (Sen4-2m)	 100° horizontal / 80° vertical 90° horizontal / 90° vertical
Range of PIR sensors: Sen4-5m Sen4-2m	 5m 2m
Dimension (L x B x H)	75mm x 28mm x 15mm
Housing, PIR–Sensors, VM4	ABS, white (RAL 9003), brown (RAL 8016)
Temprature Range:	-10 ... +55 °C
Typ of Protection	IP54
Environmental Class	II

additional components	Describtion
VM4 ws	Showcase detector VM4,housing withe
VM4 bn	Showcase detector VM4,housing brown
Sen4-5m ws	external PIR-Sensor, Range 5m, housing withe
Sen4-5m bn	external PIR-Sensor, Range 5m, housing brown
KA1	Configuration tool for setup of VM4, Installer tool

3.2 Electronic showcase detector VM 2

Description

Vibration detector for connection to LSN-intruder control and indicating equipment's with integrated opening detector, alarm memory, adjustment of the sensibility (fivefold), first alarm suppression, foreign field protection of the opening detector, 4m connection cable, additional with PIR-sensor for control volume 0,2 – 2,0 m³, opening angle 90° horizontal / vertical, separated activation / deactivation of the triple sensors

Technical Datas	EMS 2	VM 2
max. line tension	33V	33V
Supply voltage	Line supply	Line supply
Current train	< 0,75mA	< 1mA
Alarm display	LED	LED
Alarm memory	Alarmpanel	Alarmpanel
Alarm-Identification	Alarmpanel	Alarmpanel
Set- and Unset sensors	Individually possible by parameter	Individually possible by parameter set
Supervised area motion detector	—	ca. 0,2 … 2m^3
Detektion angel motion detector:	—	ca. 90° (horizontal/vertikal)
Sensity adjustment EM:	5 stufig	5 stufig
Time distance second impuls EM:	10s	10s
Opening contact	Reed contakt (NC)	Reed contakt (NC)
Tamper contact:	existing	existing
Magnet:	AlNiCo 500, ø 8mm x 30mm	AlNiCo 500, ø 8mm x 30mm
Cabel:	LiY(St)Y 4 x 0,14 mm^2	LiY(St)Y 4 x 0,14 mm^2
Cabel length	4m	4m
Housing:	Plastic (ABS), white (RAL9003),	Plastic (ABS), white (RAL9003), brown
Dimensions	75mm x 28mm x 15mm (L x B x H)	75mm x 28mm x 15mm (L x B x H)
Temperature range	-20 … +60°C	-20 … +60°C
Degree of protection	IP54	IP54
Environment class	II	II

Related components

VM 2 - 4w	Vitrinenmelder LSN ; Cabel length 4m, colour white
VM 2 - 4b	Vitrinenmelder LSN ; Cabel length 4m, colour brown
	Special colour on demand

3.3 Glass-break detector

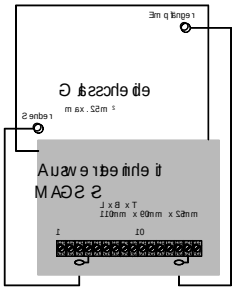
3.3.1 Active glass-break detector MAGS-S (for 1 glass pane)

VdS-Class C, G 188 149

areas of application

The MAGS-S active glass breakage detector is suitable for monitoring almost any kind of glass in a frame construction with undamaged panes in accordance to VdS class C.

functional description



The MAGS-S active glass breakage detector consists of a measuring unit and two identical transmitter/ receiver sensors that are glued to the glass panes.
After mounting, no adjustment is required. The measuring unit makes all the necessary adjustments and compensations automatically. It monitors and evaluates the criteria, frequency, time interval and reflection.
The maximum surveillance area is 25 m^2.
For special kinds of glass, such as armoured or laminated glass, two additional transmitter/receiver sensors can be connected to the measuring unit. The device adapts automatically to changes in environmental conditions without effect to its detection sensitivity.

technical data:	Active glass-break detector MAGS-S		
supply voltage:	12 V DC		
supply voltage range:	10,4 … 15V DC		
current consumption:	idle		alarm
without transmitter/receiver	18mA		26mA
with transmitter/receiver	22mA (start up peak 28mA)		18mA
temperature range:	transmitter / receiver:		-40 °C .. +85 °C
	control unit:		-10 °C .. +75 °C
usage for the follow glass types:	float glass, laminated security glass, security glass with initial tension, wire glass		
sensitivity:	L:	low gain – float glass	
	H:	high gain – security glass	
alarm relay:	potential free normal closed contact; max. 25V DC / 30mA		
alarm indication:	LED		
alarm memory:	existing, reset input (open ≥ 3s for reset)		
tamper contact:	normal closed; max. 25V DC / 30 mA		
reverse polarity protection:	existing		
sensors for MAGS-S:	transmitter, receiver – interchangeable		
control unit color:	white (RAL 9003)		
sensor color :	white (RAL 9003) , brown (RAL8015)		
sensor wire:	LiYCY 1 x 0,14 mm² (ø 1,8 mm), white RAL9003, brown RAL8015 length 6 m (other length on demand)		
dimensions:	sensor:	ø 14mm x 6mm	
	control unit:	110mm x 90mm x 30mm (w x l x h)	

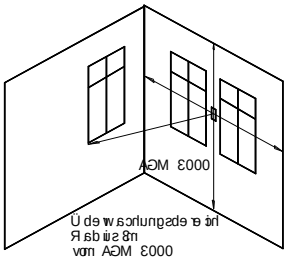
technical data:	Active glass-break detector MAGS-S	
weight:	sensor:	2g
	control unit:	450g
sensor installation:	using gluing template and glass-metal-adhesive Loctite 319 (item no. 29691, adhesive 319 with primer 7649)	
protection class:	IP31	
environmental class (VdS):	sensor:	III
	control unit:	II
VdS certification:	G 188149 / VdS class C	

3.2 Audible glass-break detector AGM 3000 uP, without VdS certification

areas of application

Glass breakage detector for the protection of any single pane crystal glass or thermopene panes.

Suitable for usage in window soffits.



functional description

The acoustic glass breakage detector, AGM 3000, consists of a measuring unit with integrated acoustic sensor that is directed towards the glass panes to be monitored. Any number of detectors can be installed in one room. Installation is discreetly flush-mounted. No adjustments are necessary. No adjustments are required after mounting. The measuring unit makes all the necessary adjustments and compensations automatically. It monitors and evaluates the criteria, frequency, time interval and reflection. The monitoring radius of a detector is 3 m. Automatically self-compensating, no adjustment required.

technical data:	Audible glass-break detector AGM 3000 uP	
	supply voltage:	10,4 .,..16 V DC
	power consumption at 12 V DC:	≤ 22 mA
	dimensions built in (bottom):	75 mm x 105 mm x 16 mm
	dimensions built in (top):	90 mm x 130 mm x 3 mm
	temperature range:	0 °C … 60 °C
	supervision range:	radius 3 m from the detector
	useable for the following glass types:	any single plate crystal glasses and thermopene glasses
	min./max. room volume:	10 m³ / 200 m³
	min./max. glass thickness:	3 mm / 12 mm
	min./max. glass area:	0,25 m² / 15 m²
	alarm relay:	relay contact (n.c.) max. 25 V DC / 30 mA

technical data:	Audible glass-break detector AGM 3000 uP	
	alarm display:	LED
	alarm memory:	existing, reset via telecomm and signal
	cover contact:	existing
	pole protection:	existing
	housing/ colour:	ABS/white (RAL 9003); brown (RAL 8016)
	weight:	approx. 120 g
	protection / environmental class	IP 31/ II

3.3.3 Passive glass-break detector PGM 1, PGM 4, PGM 5

PGM 1 VdS-class B, G 195 506
PGM 4 VdS-class B, G 195 543

areas of application

Passive glass breakage detectors monitor smooth, flat panes of glass in showcases and windows for violent breakage. For various applications and connections, passive glass breakage detectors are available in versions suitable for line supply and Z wiring, with DC- isolation from the detector line by MOS opto coupler relays and separate supply and for radio alarm systems.

technical data:		PGM 1	PGM 4
		supply via alarm line,	galvanic insulation with C-MOS-relay
		short circuit of the alarm line	opening at alarm
	supply voltage:	3…15 V	3…16 V
	power consumption at 12 V:	≤ 1 µA	2,5 mA
	alarm memory :	existing	existing
	cable length:	2 – 10 m	2 – 10 m
	VdS- Nr.:	G 195 506	G 195 543
	dimensions:	18 x 18 x 10 mm	
	detection area:	radius 2 m	
	installation:	with Loctite glass- metal gluing set 319	

technical data:		PGM 5
		opening at alarm for ≤ 20 s
	Supply voltage:	No supply voltage needed
	alarm memory:	not exiting
	cable length:	2 m
	dimension:	18 x 18 x 10 mm
	detection area:	radius 2 m
	installation:	with Loctite glass- metal gluing set 319

3.4 Electronic vibration detector

3.4.1 Electronic vibration detector EM aP/uP, EMS aP/uP

VdS-Class B

areas of application

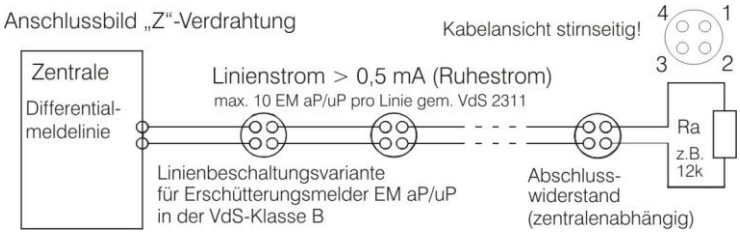
Vibration detectors monitor showcases, receptacles, doors and windows for forcible penetration or attempted penetration or opening. They are screwed or glued to even surfaces or the frames of windows and doors.

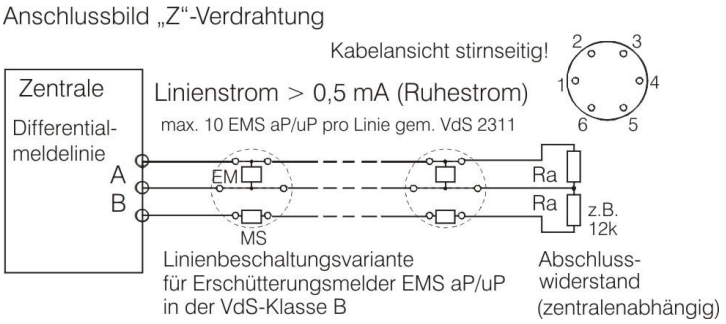
functional description

The EM aP/uP vibration detectors are electronic vibration detectors. By means of a piezoelectric accelerometer, they detect mechanical vibrations, convert them to an electrical signal which is evaluated according to typical frequency, amplitude and time criteria.

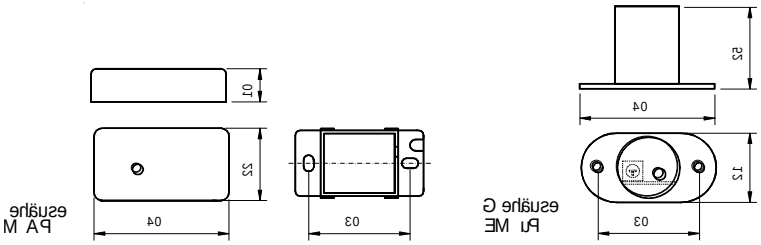
The EMS aP/uP vibration detectors are combined with a magnetic switch and can thereby also protect doors, windows and receptacles against opening. The detectors are available as EMR with potential free relay normally closed contact). The EMR are with out VdS certificate and are for connection to alarm panels with separate power line. The detector EMRT is with time for self reset.

technical data:		EM uP/aP	EMS uP/aP
	supply voltage:	3 – 15 V	3 – 15 V
	power consumption:	≤ 5 µA (12 V)	≤ 5 µA (12 V)
	alarm display:	LED	LED
	alarm memory:	existing	existing
	magnet / contact:		Ø 8 x 30 mm / reed
	cable:	LiYY 4 x 0,14	LiYY 6 x 0,14
	VdS-Class B	G 192 505/G 194 519	G192 506/G 195 547





dimensions



3.4.2 Electronic vibration detector EMS 3

VdS - compliant

areas of application

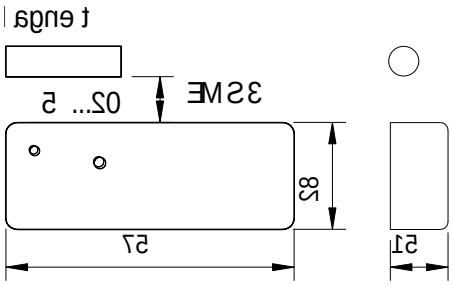
Vibration detector with piezoelectric sensor element, combined with a magnetic switch (EMS 3), detect the use of force on showcases and unauthorised opening.
The EM(S) 3 vibration detectors can be used with advantage in situations where there is a high probability of false alarms. The EM 3 and EMS 3 vibration detectors are designed for use in alarm systems.

functional description

The sensitivity setting of the vibration detector and a counter circuit allow it to be especially well adapted to the environmental conditions. DC isolation of alarm line and power supply by MOS relay. Alarm memory, LED indicator, remote control of memory interrogation, memory erase, functional test and LED indicator. Advantages: Reliable, unobtrusive, low-cost, easily mounted and sabotage proof solution for the monitoring of windows, doors, showcases, recipients and light construction walls for attempted forcible destruction or entry. Simple mounting, low current consumption and high reliability are the particular advantages.

technical data:	Electronic vibration detector EMS 3	
	supply voltage:	9 … 16 V
	power consumption:	≤ 6 mA
	dimensions:	75 x 28 x 15 mm (L x B x H)
	detection area:	approx. 2m
	telecommand inputs:	2

EMS 3

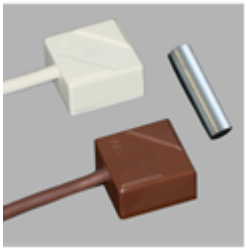


3.4.3 Electronic vibration detector EMS 2

Description	Vibration detector for connection to LSN-intruder control and indicating equipment's with integrated opening detector, alarm memory, adjustment of the sensibility (fivefold), first alarm suppression, foreign field protection of the opening detector, 4m connection cable, housing: plastic, 75 mm x 28 mm x 15 mm (L x B x H)	
Technical data	Look to table at 3.2 LSN show case detector VM 2	
additional components	EMS 2 - 4w	Vibration detector LSN; Cable length 4m, colour: white
	EMS 2 - 4b	Vibration detector LSN; Cable length 4m, colour: brown
		Special colour on demand

3.4.4 Electronic vibration detector EM5, EMS 5

areas of application	The vibration detector EM5 can be used for monitoring windows (e.g. crown glass), doors, intermediate walls against intrusion and vandalism. The powerless working enables the usage in all radio alarms.
functional description	The electronic detectors reacts to vibrations with the help of an piezoelectric accelerometer. The detectors are working powerless, independent of the pole and doesn't need a voltage supply. At alarm the alarm line is open for ≤ 20 s. The detector polarisation EMS 5 includes in series to the vibration detector a reed contact. This can be used to supervise doors or windows against opening.

technical data:	Electronic vibration detector EM5, EMS 5	
	supply voltage:	--
	line voltage/ current:	≤ 16 V / ≤ 2 mA
	detection area:	≤ 2 m
	alarm memory/ display:	--
	cable/length:	LiYY 2 x 0,14 mm²/ 2 m
	colours:	white/brown
	protection class/ environmental class:	IP 65 / IV
	installation:	with glue or glue pad
	dimensions:	18 x 18 x 10 mm (L x B x H)

3.5 Magnetic switches for built in/up

areas of application

The magnetic switches MS and MSA are designed, amongst other things, for detecting the opening of showcases, recipients, windows and doors. For fittThey are set into or mounted on even surfaces in window and doorframes.
For fitting of magnetic contacts are a wide range of accessories available.
(Build in flange EF1, build in tray EW1, build in housing for ferromagnetic material EG1, EG2 and EG3, Glass mounting set MSG1 and surface housing AG4, AG6 and AG8)
Magnetic switches are available in VdS classes A and B and as sabotage protected detectors in VdS class C. Magnetic switches can be connected to intrusion detection systems or alarm unit, AG 1

Typ	Certification	Response	Dimensions	
MS-NN	VdS-Class A	Opener	Ø 6 mm	L 30 mm
MS-NZ	VdS-Class B	Opener	Ø 6 mm	L 30 mm
MS-NZS	VdS-Class C	Opener	Ø 6 mm	L 16 mm
MS-LN	VdS-Class A	Opener	Ø 8 mm	L 30 mm
MS-LZ	VdS-Class B/ Grade 2 according to EN 50131-2-6	Opener	Ø 8 mm	L 30 mm

Typ	Certification	Response	Dimensions	
MS-LZS	VdS-Class C/ Grade 3 according to EN 50131-2-6	Opener	Ø 8 mm	L 20 mm
WMKE	without VdS	Closer	Ø 8 mm	L 30 mm
MK-SK 2	EN 50131-2-6/ Grad 2	Opener	59x20x17 mm (BxHxT)	

additional components	EG 1/ 2/ 3	built in housing for magnetic switch series MS-L in ferromagnetic materials
	AG4/6/8	built up housing
	EW 1	built in tray for MS-L switches
	EF 1	built in flange for MS-L switches
	MSG1	glass mounting set
	SG	screw bushing for MS-N switches

3.6 Show case alarm unit VAG 2

areas of application

The alarm unit, AG 1, is an electronic switch module that enables an alarm to be given to, for example, the surveillance personnel in galleries, exhibitions etc.

additional components

The showcase alarm unit can be connected with any potential-free sensors like magnetic switches, vibration detectors showcase detectors or other contacts with n.o. or n.c. contact. By the combination of the mentioned sensors, any kind of objects can be supervised against vandalism or opening. Even without an alarm system an acoustic alarm is generated, which can only reset by authorised persons. Furthermore the alarm period is programmable. There are 2 versions, one for 230 AC and one for 12 V DC.

technical data:		VAG2/230VAC	VAG2/12VDC
	supply voltage:	230 V AC, 50 ... 60 Hz	11 30 V DC / 25 mA

	fuse:	5 x 20 mm 32 mAT	-
	pole protection:	-	existing
	max. current out of X2 for power supply of detectors	10 V DC / 7 mA	10 V DC / 70 mA
	siren output:	10 V DC max. 15 mA	
	max. line voltage:	16 V DC	
	max. resistance all n.c.-detectors at non- operative	≤ 1kΩ	

technical data:		VAG2/230VAC	VAG2/12VDC
	max. resistance all n.o.- detectors at non-operative	≤ 1kΩ	
	siren period	5 s ... 6 min adjustable	
	max. cable length to the siren and to the reset button	LiYY 2 x 0,14 mm^2 (length ≤ 6 m)	
	housing:	plastics (ABS)	
	dimensions:	114 mm x 114 mm x 25 mm (L x B x H)	
	colours:	white (RAL 9003), brown (RAL 8016)	
	weight (without cable):	ca. 200 g	
	power cable:	H03VV-F 3 x0,75mm^2	
	length of the power cable:	1,5 m other cable lengths on demand	
	temperature range:	–20 ... + 40 °C	
	protection class/ environmental class:	IP 30/II	

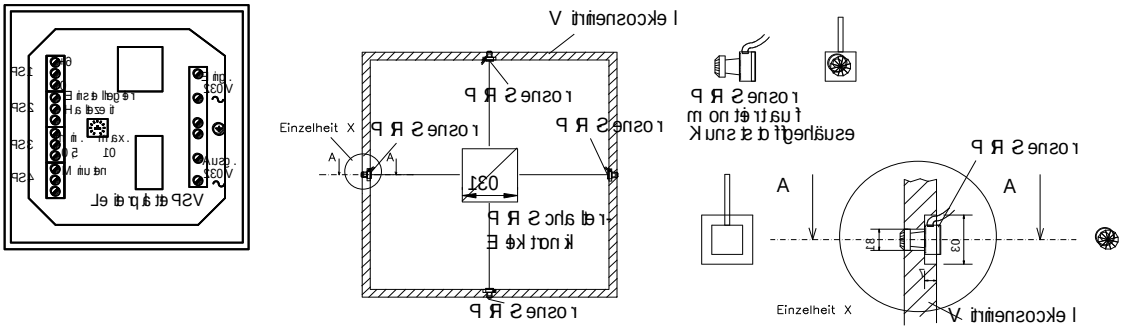
3.7 PIR Switch – Showcase PSV 1

areas of application

The PIR showcase switch is an electronic switch module that turns on the showcase lighting if visitors move within an area of 2 – 3 m from the showcase. The small size of the PIR motion sensors and their plastic housings allow for unobtrusive mounting in the base of the showcase.

functional description

Four small but very sensitive passive infrared (PIR) sensors detect the movement of persons in the vicinity of the showcase and the electronics switches the showcase lighting on for a programmable period of approx. 1 to 10 minutes. Whenever persons move near the showcase, the switch on time of the lighting is prolonged by the programmed interval.
A mains transformer of protection class II, a corresponding power switching relay and a robust plastic housing guarantee the protective insulation. Special circuit details provide for the demands of electromagnetic compatibility.

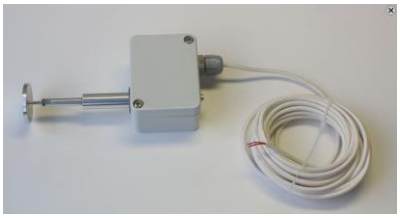


PIR- Switch

4.2 Lock switch contact for roller doors

operating range

The **lock switch contact for roller doors RSK – RT** is usable for lock detection of doors with horizontally bolt. Up to 20mm sideward slide of the door can be compensated by the spring loaded detector.



functional description

The detector uses a reed as switching element, all movable parts are spring loaded. This reduces mechanical wearout compared to conventional switching contacts.
The exceptionally long way of the actuator ensures secure functionality even at doors that might slide sidewards when used. Opening of detector enclosure also causes an alarm message. Mounting is done by screwing directly to mounting surface or by optionally mounting bracket.

technical data	RSK – RT	
	dimensions:	approx. 70 mm x 65 mm x 35 mm
	dimensions with actuator:	approx. 150 mm x 65 mm x 35 mm
	contact configuration:	nc
	switching power:	≤ 5W
	switching current:	10 µA up to 100 mA
	switching voltage:	≤ 110V DC
	switching operations:	$\geq 10^7$
	acceptable sidewise misalignment of door:	≤ 20 mm
	temperature / environmental class:	-25 … +70 °C / III (VdS) resp. III a (EN)
	protection class:	IP 54
	colors:	housing gray, actuator aluminium colorless anodized
	cable LiYY:	2 x 0,14mm^2
	cable length:	2 ... 10 m; default length 2 resp. 4 m (other length on request)
	VdS- no.:	G 112 061
	VdS- class:	C

related components

RSK – RT	lock switch contact for roller doors	20954922
RSK – RT MW Set1	mounting bracket set 1 for RSK – RT	20954924
RSK – RT MW Set2	mounting bracket set 2 for RSK – RT	20954926
RSK – RT ME	mounting element for RSK – RT	on request

4.3 Solar contact MS-PV

operating range

The Solar contact MS-PV is an electronic vibration detector combined with a magnetic contact (opening contact) for surveillance of solar modules in case of theft attempt.

nctional description

The detector combines two operating principles. An integrated magnetic contact ensures removing surveillance of the solar module. A likewise integrated vibration detector is used for tamper surveillance. The detector is designed for connecting to intrusion detection systems. It doesn't need a separate power supply. The Solar contact MS-PV is directly glued to the bottom side of the solar module with 2 components adhesive "Terostat MS 9399". Position can be chosen unrestricted.

technical data	MS-PV	
	supply voltage:	without
	line voltage:	<15V
	line current:	0...3mA
	reverse polarity protection:	available
	alarm memory:	without
	alarm message:	short circuit the alarm line for 3...15s
	reed contact (opening detector):	normal open
	magnet:	NdFeB magnet 8 x 5mm
	temperature range:	-25 … +80 °C
	protection class:	IP 65
	housing:	galvanized steel
	dimensions:	Ø30mm x 30mm
	mounting:	adhesive bonding
	cable:	LI12Y-11Y 2 x 0,25mm² with round connector M8
	cable length:	2m

4.4 Gas detector GM2

operating range

The **Gas detector GM2** is usable for survey of rooms in household and business where systems and machines with inflammable gases are run. It recognizes excessive concentrations of inflammable gases in surrounding air and has a high sensitivity to propane methane and butane as well as city gas and natural gas.

functional description

In case of exceeding certain gas concentrations alerting and forward notification is done via potential free output relay. At the device, alerting is indicated optically (red LED) and via acoustic signal. Notification will last until gas concentration falls below acceptable value again. Response level for alerting (propane) is at 20% lower explosion level (LEL). Readiness for function will be indicated by a green LED. At idle state of the gas detector the relay can be activated by a jumper to get alert notification even if supply voltage breaks down. In this case the notification equipment that has to be switched is to connect to the normal closed contact of the relay.

The Gas detector GM2 is not allowed to be used in explosion-prone rooms.

technical Data	Gas detector GM2	
	supply voltage	9…27 V DC, reverse polarity protected
	supply current	≤ 70 mA (approx. 36 mA @ 12V DC, relay off)
	response level	at approx. 20 % LEL (propane)
	buzzer	continuous tone / 3,5 kHz ± 0,5 kHz, ≥ 85 dB(A) @ 1m distance
	alarm relais: contact configuration switching power ac switching voltage switching current	 1C ≤ 1000 VA ≤ 250 V AC ≤ 5 A
	relay function	normal / reverse (with Jumper adjustable)
	enclosure	plastic (ABS)
	enclosure dimensions	∅ 114 mm x 47 mm
	enclosure color	white (RAL 9003), brown (RAL 8016)
	Weight	approx. 120 g
	temperature range	–10 ... + 40 °C
	protection class	IP 30
	environmental class	II

related components			
	GM2 w	gas detector GM2 white	2096 2200
	GM2 b	gas detector GM2 brown	2096 2210

4.5 wireless vehicle security system “WOSS-KFZ”

operating range

The system is suitable for monitoring of new and historic vehicles at distributors and museums. Because installations is no requires, the system is very user friendly and for daily Suitable operation.

functional description

The system "WOSS-KFZ" indicates its strengths especially where vehicles with little installation expenditure against theft are be monitored.
An outdoor antenna for facades or mast mounting secures the transmission over large distances. The transponder can be used in bin trays (eg, door trim panel) are stowed either in the vehicle hung up (eg on the interior mirror or steering wheel). In this case, the response of the transponder is changed. A scaling of the system for monitoring large areas is also possible. The sensors are flexible because a fixed fitting is not necessary. The messages can be monitored at the PC-Software on a PC, in an in house Ethernet or in W-LAN. Also the receiver can be cascaded for protecting of big areas or floors. The system can be connected to Alarm systems with the relay module.

technical Data	wireless vehicle security system “WOSS-KFZ”	
Receiver	supply voltage:	12 … 24 V DC
	supply current:	max. 50 mA
	reading distance:	30 m (subject to the constructional environment)
	frequency range:	433 MHz
	noise radiation:	after I-ETS 300 220
	interfaces:	relay (sum relay for alarm and sabotage), RS485 individual identification
	temperature range:	-10 °C … +60 °C
	enclosure:	plastic (ABS)
	enclosure dimensions:	154 mm x 89 mm x 37 mm
	enclosure color:	light grey
	protection class:	IP54
	Aerial:	flat panel, 400 mm x 400 mm x 80 mm, with mast bracket
Transponder	dimensions:	115 mm x 65 mm x 26 mm, excl. suspension bracket
	supply voltage:	3 ,6 V battery
	motion detector:	sensibility range: 50 … 150 mm/s^2, adjustable in 16 steps
	durability of the battery:	up to 5 years (transport or storage mode)up to 3 years (active mode)
software	operating system:	Microsoft ® Windows ®

related components	Receiver	Receiver 2 for wireless communication with transponders and connectors for external antennas, relay outputs for sum alarm, serial interface and integrated piezo
	KfZ-Transponder	WOSS transponder with hook and housing including battery for temperature range -40°C…85°C
	penal antenna	antenna 3 penal antenna 433 MHz with mast mounting kit 403 x 406 x 33 (92) (lxbxh), range up to 100m
	rod antenna	Antenna 2 rod antenna 433 MHz with N-Connector for connection to control unit
	Control unit housing	Control unit housing with USV-power supply and connectors, mounting place for receiver2 and akku 12V/7Ah not in scope of delivery, dimensions 300x400x155 mm (lxbxh), Color: RAL 7035, protection grad: IP 66
	W-USB	USB-interface serial to USB
	Software SW	Configuration and operation software, User and transponder management, graphic display of monitoring layers, extended analysis tools like graphs and diagrams, time control functions, up Microsoft WINDOWS 7
	basic license	Basis license for 1 receiver and 30 transponder
	extension license	Extension license every additional 1 receiver und 30 transponders
	WOSS-RLM	4-times USB relay module
	Tablet-PC	Windows Tablet PC Bluechip T10-E1

Incomplete

Reference list

Museums, galleries, private collections

SCHMEISSNER GmbH possesses experiences of many years at anti-theft protection of precious objects d'art in museums, galleries and private collections.

Besides comprehensive advice the following components and systems are offered:

1. Picture security systems: BMS1; BOSS; RSI; WOSS; EBS; TRACK & SLIDE

2. Showcase protection: VM4; VM2 (with LSN); VAG; PSV1; sundry vibration detectors; active, acoustic and passive glass-break detectors; distributors; magnetic switches - sabo- protected

3. Object protection: BOSS; EBS; RSI; WOSS; sundry sabo- protected magnetic switches

These mentioned parts are used in different designs at the following places:

- **Old Pinakothek of Munich**
- **Folkwang Museum Essen**
- **Castle Königswusterhausen**
- **Feininger Gallery Quedlinburg**
- **Goethe Museum Weimar**
- **Porcelain Collection of Dresden**
- **Cathedral treasure Osnabrück**
- **Bauhaus Dessau**
- **Academy of Arts Berlin**
- **Otto von Bismarck – Donation Friedrichsruh**
- **State Museum of the Rhineland**
- **American Academy in Berlin**
- **Ermitage – St. Petersburg**
- **MuseumsQuartier Vienna Leopoldmuseum MUMOK**
- **Museum of Natural History Vienna**
- **Kunsthistorisches Museum Vienna**
- **Picture Collection in the National Gallery of Ireland**
- **Gallery of Stuttgart**
- **Silesian Museum Görlitz**
- **Castles and Museums in Moritzburg, Meiningen, Zwickau**
- **Pei- Museum Berlin - Unter den Linden**
- **Green Vault Dresden**
- **Art collection Dresden**

… and many others.

Furthermore these components and systems are offered and used by renowned OEM-partners in Germany and Europe.

SICHER PRÄSENTIEREN

Kunst- und Schauobjekte unsichtbar und optimal überwachen und schützen

Kapazitive, optische und RFID-Sicherungssysteme

Dezent und zuverlässig: Vitrinenmelder VM-3

Museumsdirektoren wissen um den Spagat im Umgang mit Kunstschätzen. Einerseits müssen sie der Nachwelt erhalten und vor Beschädigung und Verlust durch den „Zahn der Zeit" sowie durch Vandalismus und Diebstahl geschützt werden. Andererseits soll die Öffentlichkeit diese Zeugnisse der Kunst und Geschichte möglichst uneingeschränkt genießen können. Zudem dürfen Sicherheits- und Monitoringsysteme den meist angespannten Haushalt nicht zusätzlich und übermäßig belasten.

Exponate im Außen- und Innenbereich zuverlässig überwachen

Einzelobjekte in Außenbereichen schützt der Outdoor-Objektsensor MS-PV, die jüngste Entwicklung aus Thüringen und Messeneuheit auf der EXPONATEC 2013. Der unauffällige Schutz reagiert auf Wegnahmeversuche sowie bei Vandalismus. Ein Magnetschalter registriert sofort das Entfernen vom Standort. Ein ebenfalls im Sensor implementierter Erschütterungsmelder erkennt Manipulationsversuche.

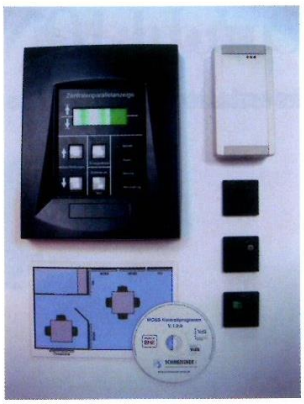
Praktisch unsichtbar signalisiert das RFID-System WOSS zur Überwachung einzelner Kunstwerke und Vitrinen geringste Veränderungen. Die kleinen aktiven Transponder, ausgestattet mit unterschiedlichen Sensoren, lassen sich zu einem jeweils optimalen System zur Überwachung auf Wegnahme, Manipulation, Bewegung sowie zur Signalisierung schädlicher Veränderungen von Temperatur und Luftfeuchte (Monitoring) kombinieren. Der WOSS-Receiver kann die Signale der maximal 100 Melder aus bis zu 50 Metern empfangen und Alarm auslösen. Das Tableau WOSS-TAB zeigt Einzelalarme in Klartext an, die Software WOSS-SW verwaltet und visualisiert diese am PC. Dank neuer Transpondergehäuse kann der Errichter den Batteriewechsel vor Ort vornehmen.

Unauffällige kapazitive Systeme und Lichtvorhänge für Vitrinen und Wände

Der Vitrinenmelder VM-3 kann Signale von bis zu drei externen Infrarot-Bewegungsmeldern (PIR) auswerten. Das reduziert Aufwendungen für Anschaffung und Installation. Spezielle Gehäusefarben machen die Sicherungssysteme für den Betrachter unauffällig. Das elektronische System kombiniert erstmals die opto-elektronischen Sensoren zusätzlich mit akustischen Erschütterungsmeldern sowie Magnet-Öffnungskontakten. Speziell für den Einsatz in Museen, Kunstgalerien, Bijouterien und Schaufenstern konzipiert, zeichnen sich die Melder durch einfache Montage und geringe Stromaufnahme aus. Am Aufstellort erlauben Einstellmöglichkeiten die Anpassung an Vitrinenart und Umgebungsbedingungen.

Mit der SPI-Systemfamilie lassen sich passive Infrarotlichtvorhänge geometrisch exakt begrenzt und parallel zur Wand anlegen. Der Detektor wird unauffällig unter Putz montiert. Mit Reichweiten von bis zu sechs Metern oder bis zu 40 Metern eignet sich das Schutzprinzip für einzelne Gemälde ebenso wie für gesamte Wände in Gängen und Ausstellungsräumen. Der nicht durchgreifbare Schutzvorhang des LaserScanners LS 10 reicht neu über bis zu 25 Meter. Das vergleichsweise preisgünstige System kann von versierten Kunden selbst justiert werden.

SICHER PRÄSENTIEREN



Objektsensor MS-PV zur Überwachung von Einzelobjekten im Außenbereich
Optimaler Schutz auch über größere Distanzen: RFID-System WOSS
© SCHMEISSNER GmbH

Das RSI-Sicherungssystem mit VdS-Zertifizierung Klasse C basiert auf kapazitiven Sensoren, die auf Veränderungen des schwachen elektrischen Messfeldes reagieren. Spezielle Auswerteroutinen für Kapazität und Leitwert schließen Überlistungen und Fehlalarme praktisch aus. Feldänderungsmelder für bis zu 16 Messkanäle enthält das Sortiment. Insgesamt 240 Melder können von einer Anlage über die Software SIPRO verwaltet werden.

Die neuen Kunstsicherungssysteme von SCHMEISSNER sind vom 20. bis 22. November 2013 auf der EXPONATEC COLOGNE (Halle 3.2, Gang E 079) zu sehen.

Karsten Seifert

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