

The detector is designed for application in intruder alarms and security systems. It features advanced acoustic frequency double trace & analyse system allowing detection of window glass breakage and elimination of false alarms. Microprocessor's controlled power saving system enable three years operation on single alkaline 9V battery. Below listed are characteristic features of the Elmes(\*) GBX1 detector:

- multiple alarm transmissions with *KEELOQ*(\*) hopping code highest security encryption;
- simple learning to Elmes receivers procedure with practical installation test mode;
- acoustic low frequency detection sensitivity adjustment (operating range adjustment);
- improved resistance to radio frequency interferences with three alarm transmissions set on in random time intervals;
- detector's low battery warning and tamper alarm active in operation with Elmes 4, 8 and 20 channel receivers (CH4H, CH8H, CH20H);
- detector's state cyclic test transmissions sent to alarm system receiver;
- wide area of glass break detection range (up to 10m) allowing only one detector to be used regardless of number of windows;
- breakage detection of wide range of window glasses except for foiled and multilayer types.

### Operation & detection

At standby, the GBX1 sound detection system continuously analyses all incoming sounds. When precisely specified glass break characteristic sequential sounds are detected the detector starts sending random alarm transmissions and illuminate the red LED. Sounds identical to those generated at window glass breakage are alarmed only, thus securing elimination of false alarms. After alarming, the detector returns to standby.

The detector's low battery warning and tamper information are included with every alarm and cyclic test transmissions sent to receiver. Battery's voltage drop to 7V in the detector is signalled by flashing LED in receiver (see receiver's instruction manual for details). When old battery is replaced with new good one, low battery warning in receiver sets to off at first transmission received from the detector. Quality alkaline or lithium 9V batteries only should be used to power the detector and every three years of operation battery should be replaced even no low battery warning has been detected yet. Sabotage tamper alarm is signalled by several alarm transmissions in random time intervals.

### Learning to receiver

1. Connect power supply to selected Elmes receiver, set its detector's learning mode and select alarming output channel (see receiver's manual).
  2. Install 9V alkaline or lithium battery to the detector and close its box. Wait till receiver's flashing LED confirms that the detector is learned.
- Once programmed to a receiver, the detector's alarm transmissions will be signalled in selected receiver's output channel whereas sabotage tamper alarm will be signalled in the last output channel of the receiver.

### Installation hints

- Only one GBX1 detector should be installed in one room, preferably in front of the monitored windows, on wall at 2 to 3 meters level above floor and with maximum distance of 10 meters from the windows surface.
- Avoid installing the detector close to electric cables, metal surfaces and other electric/electronic equipment that may screen detector or/and cause interference obstructing radio link with the receiver.
- Avoid installing the detector close to strong airflows, ventilation holes or strong acoustic noise sources that may cause possible false alarms,
- Do not install the detector at the maximum operating range of the internal radio transmitter and before firm installation test its practical operating range. It is recommended to check the detector's radio signal level using Elmes RFM1 monitor (not supplied) connected to receiver.

### Testing

The testing of the GBX1 detector may be performed before or after learning to a receiver. Installed at selected place and with 9V battery connected, the detector is ready for tests. Five (5) minutes lasting test procedure is started every time the detector's plastic top cover being opened and then closed. During this period sensitivity of the low acoustic frequency detection channel may be tested by sounds triggered with blunt soft tool gentle strikes onto the protected glass windows. Detection of these sounds is signalled by single LED lights. This test should be performed for all glass windows in the protected room with eventual adjustment of the low frequency channel sensitivity using potentiometer on board of the detector. Clockwise turning of the potentiometer increases detection sensitivity while anti-clockwise turning decreases detector's sensitivity. The detector should react to audible sounds only. Much increased detection sensitivity may be a cause of false alarms. Testing the detector's reaction to high frequency acoustic sounds requires the use of specified test tool, e.g. AFT-100 a product of DCS(\*) company or, may be also performed in simplified way with the use of metal elements (large steel drills, hand tools, etc.) striking on each other to generate characteristic high acoustic sounds. The high frequency acoustic test must be done within eight (8) seconds from triggering of detected low frequency sounds. Correctly detected high frequency acoustic sounds are confirmed by detector's flashing LED and sent alarm transmissions.

### Specification

- 9V battery operation with ultra low power requirement (0,012mA at standby, 10mA at radio transmission),
- microprocessor's controlled dual trace acoustic frequency sensing system with detection range adjustment,
- low battery voltage warning and the detector's tamper switch,
- CE <5mW/433,92MHz transmitter with up to 20-100m operating range depending on location,
- RF interference immunity better than 10V/m over 0,1 to 1 GHz range,
- indoor use with ambient operating temperature range 0 to +40 deg. Celsius.



Elmes Electronic declares that the product has been manufactured and tested to comply to the following standards:

EN 60950-1 :2001 electric safety, EN 301 489-1 V1.4.1 (2002-08) EMC for radio equipment, EN 301 489-3 V1.2.1 (2002-08) EMC for Short Range Devices, EN 300 220-3 V1.1.1 (2000-09) EMC and Radio Spectrum Matters.

### Limited manufacturer's warranty

Elmes Electronic products carry manufacturer's one year limited warranty as from date of purchase. The warranty is limited to the replacement of faulty original parts or repair defects of improper manufacture. Damage, faulty use or improper handling by the user or installer as well as any changes in product's hardware or software caused by the user or any other unauthorised person vitiates the warranty and all due repair costs will be charged. In all cases, the customer pays costs of delivery to and from the manufacturer of the products to be serviced. Elmes Electronic shall not bear liability for any personal or material damage resulting from any of its products direct, indirect or partial failure to operate properly.

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