VITROTERM - MURÓW S.A.

DATA SHEET

PRODUCT: GLASS WITH ALARM LOOP

PARAMETER	DESCRIPTION
Function	A glass with an alarm loop is a laminated glass or insulating glass with additional anti-burglary protection. It is made using the technology of tempered safety glass. A sensor made of conductive ceramic enamel is applied to the glass by screen printing and connected to the electrical circuit of the alarm system. In the event of an attempt to break the glass, the tempered glass completely shatters, the electrical circuit is interrupted, and the alarm is triggered. The sensor does not interfere with visibility in the room, and the alarm is triggered outside the protected area and before the aggressor gains access to the secured property. The sensor used eliminates accidental triggering of the alarm and is not activated by movement in the protected room.
Application	Protection against burglary and theft in facilities that require the protection of property and premises.
Purpose	Banks, jewelry stores, military and police units, offices, single-family homes, industrial plants, shops, archives, etc. requiring protection against burglary and theft.
Versions	Insulating glass with monolithic tempered glass. Insulating glass with laminated and tempered glass. Tempered and laminated glass. Possible execution on glass 4-15 mm thick, both clear and tinted. It is not possible to place the loop on conductive coatings.
Fulfilled requirements for building glass	Tempered glass with an alarm loop meets the requirements of PN-EN 12150 standard. Laminated and tempered glass with an alarm loop meets the requirements of PN-EN 12543 and PN-EN 14449 standards. Insulating glass meets the requirements of PN-EN 1279 standard.
Maximum dimensions WIDTH x HEIGHT	4mm glass - 1500 x 2500 mm 5mm glass - 2000 x 3000 mm 6mm glass - 2440 x 4800 mm 8mm glass - 2440 x 4800 mm 10mm glass - 2440 x 4800 mm 12mm glass - 2440 x 4800 mm 15mm glass - 2440 x 4800 mm

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Minimum dimensions of glass with an alarm loop	Insulating glass with monolithic tempered glass: 200 x 300 mm. Insulating glass with laminated and tempered glass: 200 x 300 mm. Laminated and tempered glass: 200 x 300 mm.
Electrical parameters	The alarm loop resistance is in the range of 0.7-6 Ohm. The permissible current intensity is 100mA. Each glass has a label with the measured resistance parameter for that specific glass and the correct installation side of the glazing.
Electrical connection to the alarm system	To connect glass with an alarm loop, 4-core cables (4 x 0.14 mm2) terminated with a plug are used. Only 2 out of 4 cores are active. The glass is delivered to the customer with wires (approximately 30 cm long) soldered to the glass.  Plug (next to the glass)  Extension cord (additional element) To connect to the alarm system, extension cables of lengths 3, 6, and 10 meters are used. The plug sockets are protected by protective caps, which should be removed before connecting to the alarm installation. When connecting the plugs, make sure that the plug snaps are properly closed, which will ensure the correct electrical connection.

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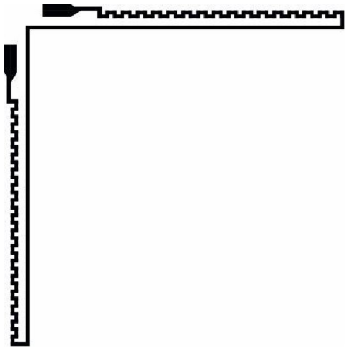
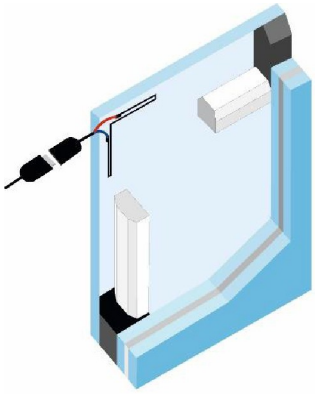
Installation	The glass with the alarm loop must always be installed on the side expected to be attacked. The installation of the alarm glass must be carried out in such a way that removing the glazing beads and dismantling the glass with the sensor is impossible or attempting to remove it results in damage to the glass and activation of the alarm system. Regardless of the type of glazing system (PVC, wood, steel, aluminum), the window frame must be properly ventilated and drained. Allowances for installation clearances (approximately 7 mm) must be taken into account for free routing of the alarm system wiring. Wiring should be routed avoiding sharp bends.
Optical and thermal parameters of the glass	The parameters of laminated glass and composite glass with an alarm loop are identical to those of glass with the same structure but without an alarm loop. The manufacturer can provide specific parameters for a selected variant of glass with an alarm loop upon the customer's request.
Shape of the alarm loop and its connection	The shape of the alarm loop is shown in the diagram below. Typically (for safety reasons), the alarm loop is covered by the glazing bars and is not visible. Upon special request, the information that the glass is secured with an alarm sensor can be permanently marked on the surface of the glass. The requirement for such additional (paid) marking should be specified and agreed upon when placing an order.  An example appearance of a sensor (alarm loop)  Illustrative diagram of glass with an alarm loop

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Ordering	When placing an order, in addition to providing the construction of the glass, the required location of the sensor should be specified (looking at the glass from the inside of the room) according to the following sample illustrations.  Sensor in the left upper corner  Sensor in the right upper corner.  Sensor in the left lower corner  Sensor in the right lower corner
Additional execution options	A glass with an alarm loop can be produced with additional options in the following versions: • with ceramic printing • with screen printing • sandblasted • satin-finished These options are carried out before the glass is tempered and should be agreed upon with the glass manufacturer.
Cleaning and maintenance	Glass with alarm loops must be regularly cleaned with commonly used glass cleaning agents. It is not allowed to use products containing solid abrasive particles or fluorine compounds that could permanently damage the glass.
Storage	The glass with an alarm loop should be stored in dry, ventilated, and covered rooms.
Transportation	Typical transportation is done on racks and crates designed for glass transport. It is not allowed to pull on the connecting wires, which may result in their detachment from the soldered connections to the glass.