

# Protection of Figurines with Capacitive Sensors



Figurines are used in museums and exhibitions. They are often used to represent historical characters or recreate historical scenes. Figurines are also used to display historical clothing.

In addition to the danger of theft of garments, visitors can often be photographed with the figurines. This may inevitably lead to damage of the figurine or clothing.

The aim is to protect sections of or the entire figurine against physical contact by visitors. A clearly audible warning tone is triggered in case of a physical contact. The alarm can be transmitted to the alarm centre, if desired. The reported signal, for example, can then be transmitted to the supervisor in the exhibition area via pager.



## The Solution with Human Detector

The **Human Detector** alarm module is extremely well suited for the fast and inexpensive protection of figurines. The capacitive field change sensor technology allows the targeted monitoring of physical contact with clothing and figurine surfaces. As an alternative for the overall monitoring we recommend the use of high-frequency sensors (radar detectors). The use of these sensors in connection with the **Human Detector** system is described in a separate data sheet.

The areas monitored by the **Human Detector** alarm sensor need to be equipped with a sensor foil. The easiest way is to place a thin and flexible foil underneath the clothing on the surface of the figurine. Make sure that the sensor foil does not damage the clothing. For this purpose, special foils made of thin aluminium are available as part of the **Human Detector** system which are protected with a PE coating (polyethylene) against the discharge of impermissible emissions. The sensor foil can be attached to the surface of the figurine with clips or a suitable adhesive tape.

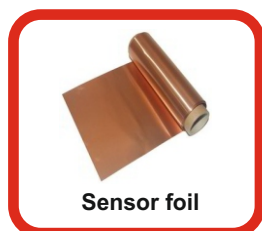
The **Human Detector** alarm sensor and the necessary sensor foil are mounted invisibly to visitors on the figurine. Large detection ranges can be achieved depending on the size of the sensor surfaces and the set sensitivity. They penetrate the figurine's clothing completely. This ensures that an alarm is triggered before the figurine's clothing is actually touched.

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## What Material is Needed?

The listed material is required for the protection of figurines with the capacitive sensor in the **Human Detector**.

### Basic Equipment:



### Optional Accessories:

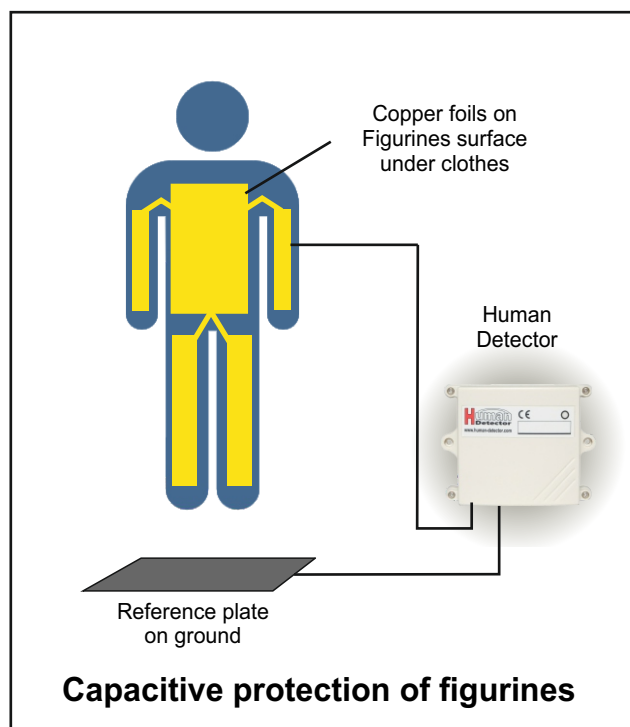


## Installation - This is How it is Done

Please read the operating instructions carefully before commencing any work.

Due to the installation in the immediate vicinity of the object to be protected, the work described above should be carried out by someone who is experienced in dealing with figurines in exhibitions. The installation described would apply if the clothing of the figurine is to be protected. If the entire figurine is to be secured, we recommend the use of radar detectors (see separate data sheet).

If necessary, undress the figurine first. Place the sensor foil on the surface of the area to be protected. It is advisable to install sensor surfaces as large as possible, since these are to be electrically connected. Copper foil is soldered and aluminium sensor foil is bolted.



The sensor surfaces connected in this way are connected to the sensor input of the **Human Detector** alarm module. A foil is placed underneath the stand or platform area as a reference area and connected to the reference input. The alarm module is also attached to the figurine and later covered by the clothing.

Select a low sensitivity setting in the alarm module. Then switch on the alarm module. Test the alarm trigger by approaching the figurine with your hand. You can change the sensitivity in the **Human Detector** module and repeat the process until you have found the ideal setting.

Connecting to the **Human Detector** alarm centre or to an alarm loop of a burglar alarm system can be carried out subsequently. This work should only be carried out by trained personnel.