



*Industrial Filtration*

## ATEX recommendation process technology Process filters in hazardous zones

Recommendation for the use of process filters and maintenance indicators in hazardous zones  
acc. to Directive 94/9EG (ATEX)

Short description

## Process filters

Process filters in fluid systems could be subject to this directive.

Accordant a CE- marking is necessary.

For process filters to be used in hazardous zones, the ignition sources have to be analysed by the operator, considering the complete installation. MAHLE Filtersysteme GmbH, Industriefiltration as manufacturer of the process filters may assist.

For use in hazardous zones, MAHLE Filtersysteme GmbH, Industriefiltration recommends to use only metal filter housings and to connect the housing electrically to ground.

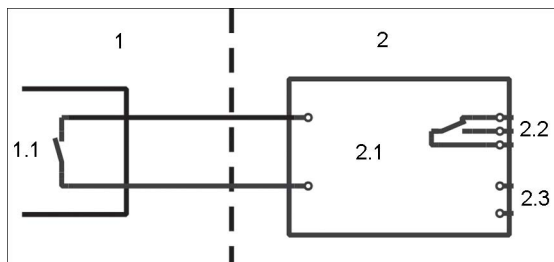
The earthing is realised by using the clamping bolts. The maximum content of magnesium is less than 7,5 %.

The size of the largest projected nonconducting areas are smaller than 100 sqcm (400 sqcm if a conducting framing is provided).

Because of low circumferencial speed process filters are easy, not electrical apparatuses, considering of EN 13463. Therefor a participation of a named area is not necessary.

According to 94/9EG/ATEX the MAHLE process filters are suitable for the use in appliance group II group G up to 120 Deg C.

The function of the electrical maintenance indicator is described in the right column.



Subject to technical alteration without prior notice.

## Maintenance indicators

The electrical maintenance indicators, which are mentioned in the MAHLE list of released products, are simple electrical devices according to DIN EN 50020, without own supply voltage.

The electrical components consists of reed-contacts, bimetal switches, plug connections and terminal clamps.

The components are in accordance with DIN EN 50014 and DIN EN 50020.

For equipment group II, category 2G (zone 1) and category 3G (zone 2), these components can be used acc. DIN EN 60079-14 in intrinsically safe circuits [EEX ib] without making and certification.

The electrical utilities are attributed to category ib and temperature class T5.

Das If the electrical upper part is used conventional (intrinsically safe circuit) it will not present itself as a heat source.

Usage in EX- zones is possible when the indicators are connected intrinsically safe (EX-i).

For that purpose a switch-amplifier with an intrinsically safe input is required. The switch amplifier must be installed outside the EX- zone, leaving only the intrinsically safe wires in contact with the hazardous zone.

1. Ex-zones
  - 1.1 Maintenance indicator
2. Intrinsically safe input
  - 2.1 Switch-amplifier with PTB-approval
  - 2.2 Output cast
  - 2.3 Power-supply

The required switch-amplifiers are offered by manufacturers of Ex-control equipment.

A two-step indicator requires a switch amplifier with two intrinsically safe inputs.

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